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AMENDMENT 2

20 APR 2023

CONSULT NOTAM FOR LATEST INFORMATION

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

AIP Amendment 2

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GEN 0.5 List of Hand Amendments to the AIP – Not applicable

ANNEX 7 – AIRCRAFT NATIONALITY AND REGISTRATION MARKS	
3.3.1 and 4.2.1	The marks on wing surfaces are not required.
3.2.5 and Section 8	Identification plates are not required on unmanned, free balloons.
4.2.2	The minimum height of marks on small (12,500 lb or less), fixed–wing aircraft is 3 inches when none of the following exceeds 180 knots true airspeed: (1) design cruising speed; (2) maximum operating limit speed; (3) maximum structural cruising speed; and (4) if none of the foregoing speeds have been determined for the aircraft, the speed shown to be the maximum cruising speed of the aircraft.
Section 6	A centralized registry of unmanned free balloons is not maintained. Operators are required to furnish the nearest ATC facility with a prelaunch notice containing information on the date, time, and location of release, and the type of balloon. This information is not maintained for any specified period of time.
Section 8	United States Identification plate does not have nationality or registration mark. ICAO ID plate information required by Annex 7.8 does not include nationality or registration mark. Also for non Part 121 and commuter aircraft, location must be either adjacent to and aft of the rear-most entrance door or on the fuselage near the tail surfaces.

ANNEX 8 – AIRWORTHINESS OF AIRCRAFT	
PART II Procedures for Certification and Continued Airworthiness	
Chapter 1	**Type Certification**
1.2.5	ICAO requires that the design of an aircraft under ICAO Annex 8, Parts IIIB, IVB, and V use alternative fire extinguishing agents to halon in the lavatories, engines, and auxiliary power units. The United States does not have a similar requirement.
PART III Aeroplanes	
Part IIIA	
Chapter 4	**Design and Construction**
4.1.6 (b), 4.1.6 (g), 4.1.6 (h), 4.1.6 (i)	The United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Chapter 8	**Instruments and Equipment**
8.4.1	ICAO requires that airplanes operating on the movement area of an airport shall have airplane lights of such intensity, color, fields of coverage and other characteristics to furnish personnel on the ground with as much time as possible for interpretation and for subsequent maneuver necessary to avoid a collision. The FAA has no such requirement.
8.4.2 (b)	This provision addresses the lights' affect on outside observers in reference to "harmful dazzle." The U.S. regulations do not address the affect of aircraft lights on outside observers. However, visibility to other pilots and the lights' affect on the flight crew is addressed.
Chapter 9	**Operating Limitations and Information**
9.3.5	The United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Chapter 11	**Security**
11.2, 11.3, 11.4	With the exception of the door required by 11.3, the United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Part IIIB	**Large Aeroplane Certification**
Chapter 3	**Structure**
3.8.2	The corresponding FAA requirement does not specify the use of failsafe principles; however, the FAA does advise the use of failsafe principles.
Chapter 4	**Design and Construction**
4.1.6	On November 28, 2008, the FAA adopted new regulations that meet the intent of these provisions. However, Part IIIB applies to airplanes with a date of application of March 2, 2004 or later, but the U.S. requirements apply to airplanes with a date of application of November 28, 2008 or later.
4.2 g)4)	The United States has not modified regulations to require manufacturers to include the elements of the aeroplane design associated with cargo compartment fire protection and a summary of the demonstrated standards that were considered in the process of aeroplane certification, in the documentation made available to the operator for those aircraft certificated on or after 1 January 2025.

D.2 (g)	Paragraph D.2.g.1 of the ICAO standard requires a fire suppression system for each cargo compartment accessible to a crewmember in a passenger–carrying airplane. U.S. requirements permit manual fire fighting in an accessible cargo compartment by a crewmember or members for an all–passenger–carrying airplane or a passenger–cargo combination carrying airplane. Additionally, the FAA does not have specific requirements to consider the effects of explosions or incendiary devices.
D.2 (h)	The United States does have provisions to protect against possible instances of cabin depressurization. However, the FAA does not have specific requirements to consider the effects of explosions or incendiary devices.
F.4.1	ICAO requires that airplanes operating on the movement area of an airport shall have airplane lights of such intensity, color, fields of coverage and other characteristics to furnish personnel on the ground with as much time as possible for interpretation and for subsequent maneuver necessary to avoid a collision. The U.S. has no such requirement.
Chapter 7	**Operating Limitations and Information**
7.3.5	The United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Chapter 10	**Security**
10.3.1, 10.3.2	The FAA has a door requirement, but no requirements addressing bulkheads, floors, etc. On January 5, 2007, the FAA published Notice of Proposed Rulemaking that, when adopted, will meet the intent of these provisions.
PART IV Helicopters	
Part IIIB	**Large Aeroplane Certification**
Chapter 2	**Design and Production**
4.2	The United States does not have a specific requirement for physical separation of systems. However, physical separation is considered in the means of compliance to various regulations such as 25.1309, 25.901(c) and 25.903(d).
Part IVA	
Chapter 2	**Flight**
2.2.3.1, 2.2.3.1.1 – 2.2.3.1.4	These provisions address take–off performance data for all classes of helicopters and require that this performance data include the take–off distance required. However, the United States has adopted the requirements only for Category A helicopters.
Chapter 6	**Rotor and Power Transmissions Systems and Powerplant Installation**
6.7	This provision requires that there be a means for restarting a helicopter's engine at altitudes up to a declared maximum altitude. In some cases the FAA does not require demonstration of engine restart capability. Since there is a different level of certitude for transport and normal category helicopters in the United States, the engine restart capability is only required for Category A and B helicopters (14 CFR Part 29) and Category A normal helicopters (14 CFR Part 27).
Chapter 7	**Instruments and Equipment**
7.4.2	This provision addresses the need to switch off or reduce the intensity of the flashing lights. The United States has minimum acceptable intensities that are prescribed for navigation lights and anti–collision lights. No reduction below these levels is possible.
7.4.2 (b)	This provision addresses the lights' affect on outside observers in reference to "harmful dazzle." The U.S. regulations do not address the affect of aircraft lights on outside observers. However, visibility to other pilots and the lights' affect on the flight crew is addressed.

8.4.2 (b)	This provision addresses the lights' affect on outside observers in reference to "harmful dazzle." The U.S. regulations do not address the affect of aircraft lights on outside observers. However, visibility to other pilots and the lights' affect on the flight crew is addressed.
Part IVB	
Chapter 6	**Systems and Equipment**
6.5	U.S. regulations do not address electromagnetic interference from external sources. High Intensity Radiated Fields (HIRF) are addressed by Special Conditions but only for flight critical systems, not flight essential systems.
PART V Small Aeroplanes	
Chapter 8	**Crashworthiness and Cabin Safety**
8.5 (e)	The FAA provides requirements for emergency lighting systems in 14CFR 23.812. These requirements do not address the impact of the fuel spillage on emergency lighting systems. Only commuter category airplanes are required to install emergency lighting systems.

ANNEX 19 – SAFETY MANAGEMENT	
Chapter 3	**State Safety Management Responsibilities**
3.3.2.1	U.S. does not currently require the implementation of SMS by approved training organizations that are exposed to safety risks related to aircraft operations during the provision of their services; some operators of aeroplanes or helicopters authorized to conduct international commercial air transport; approved maintenance organizations providing services to operators of aeroplanes or helicopters engaged in international commercial air transport; organizations responsible for the type design or manufacture of aircraft, engines or propellers; and operators of certified aerodromes.
3.3.2.3	The U.S. has not established criteria for international general aviation operators of large or turbojet aeroplanes to implement an SMS.

PANS – OPS – 8168/611	
VOLUME I – Flight Procedures	
PART III	
Table III−1−1 and Table III−1−2	Max speeds for visual maneuvering (Circling)" must not be applied to circling procedures in the U.S. Comply with the airspeeds and circling restrictions in ENR 1.5, paragraphs 11.1 and 11.6, in order to remain within obstacle protection areas.
PART IV	
1.2.1	The airspeeds contained in ENR 1.5 shall be used in U.S. **CONTROLLED AIRSPACE**.
VOLUME III – Aircraft Operating Procedures	
Section 10 – Flight Tracking	
1.2.1	The United States has notified differences to the distress tracking standards in Annex 6, Part I, 6.18. Consistent with those differences, the United States does not require U.S. operators to establish training programs and procedures specific to autonomous distress tracking and will not perform surveillance of implementation by U.S. operators.
1.2.2	FAA Order JO 7210.632, Air Traffic Organization Occurrence Reporting, establishes mandatory occurrence reporting (MOR) requirements and format for FAA employees, including reports sourced from operators and missed position reporting. The MOR Report form includes most, but not all, of the template in the Appendix to Ch. 1.
1.2.3	The United States has notified differences to the distress tracking standards in Annex 6, Part I, 6.18. Consistent with those differences, the United States does not require U.S. operators to maintain contact details in the ICAO OPS CTRL.

GEN 2.2 Abbreviations Used in AIS Publications

NOTE–
An "s" may be added for plural. ICAO indicates ICAO usage.

A	
/	and
A/C	approach control
AAM	Advanced Air Mobility
AAS	airport advisory service
ICAO:	AAP – approach control; AC – altocumulus
ACFT	aircraft
ACR	air carrier
ADF	automatic direction finder
AER	approach end runway
AFIS	Automatic Flight Information Service
AFT	after
AGL	above ground level
AHRS	Attitude Heading Reference System
AIM	Aeronautical Information Manual
AIS	Aeronautical Information Services
ALS	approach light system
ALSF–1	standard 2400' high–intensity approach lighting system with sequenced flashers (Category I configuration)
ALSF–2	standard 2400' high–intensity approach lighting system with sequenced flashers (Category II configuration)
ALSTG	altimeter setting
ALT	altitude
ALTM	altimeter
ALTN	alternate
AMDT	amendment
ICAO:	AMD – amendment
APCH	approach
APCHG	approaching
APRX	approximate
APV	approve or approved or approval
ARAC	Army Radar Approach Control facility (US Army)
ARPT	airport
ATO	Air Traffic Organization
ICAO:	AD – aerodrome
ARR	arrive or arrival
ARSR	air route surveillance radar
ARTCC	air route traffic control center
ASDE	airport surface detection equipment
ASPH	asphalt
ASSC	Airport Surface Surveillance Capability
ATCT	air traffic control tower
ATD	along–track distance
ASR	airport surveillance radar
ATIS	automatic terminal information service
AVBL	available
AWY	airway
B	
BC	back course
BCN	beacon
BCST	broadcast
BLDG	building
BRG	bearing
BTN	between
BVLOS	Beyond Visual Line of Sight
BYD	beyond
C	
CAT	category
ICAO:	CAT – clear air turbulence
CBO	Community–Based Organization
CFR	Code of Federal Regulations
CFR	crash fire rescue
CLNC	clearance
ICAO:	CLR – clear/cleared to/clearance
CLSD	close or closed or closing
CMSND	commissioned
CNTR	center
CNTRLN	centerline
ICAO:	CL – centerline
COA	Certificate of Waiver or Authorization
COMLO	compass locator
CONST	construction
CPTY	capacity
CRS	course
CTC	contact
ICAO:	CTR – control zone

D	
ICAO:	D – danger area
ICAO:	D – downward (tendency in RVR during previous 10 minutes)
DALGT	daylight
DCMSND	decommissioned
DDT	runway weight bearing capacity for aircraft with double dual−tandem type landing gear
DEGS	degrees
ICAO:	C – degrees Celsius (Centigrade) F – degrees Fahrenheit
DEP	depart; departure
ICAO:	DEP – depart/departure/departure message
DF	direction finder
ICAO:	DF – I am connecting you to the station you request
DH	decision height
DME	UHF standard (TACAN compatible distance measuring equipment)
ICAO:	DME – distance meaning equipment
DSPLCD	displaced
DSTC	distance
ICAO:	DIST – distance
DT	runway weight bearing capacity for aircraft with dual−tandem type landing gear
DURG	during
ICAO:	DRG – during
DVFR	defense visual flight rule
DW	runway weight bearing capacity for aircraft with dual−wheel type landing gear
E	
E	east
ICAO:	E – east/east longitude
EQUIP	equipment
ICAO:	EQPT – equipment
ETA	estimated time of arrival
ETE	estimated time en route
EXCP	except
ICAO:	EXC−except
EXTD	extend or extended
F	
FAF	final approach fix
FAR	Federal Aviation Regulation
FDC	flight data center
Fl/P	flight information (permanent)
Fl/T	flight information (temporary)
FL	flight level
FM	fan marker
FM	from
ICAO:	FM – from; FM – from (followed by time weather change is forecast to begin)
FREQ	frequency
FRIA	FAA−Recognized Identification Area
FRQ	frequent
FSS	Flight Service Station
FT	feet
G	
GOVT	government
GP	glide path
ICAO:	GP – glide path
GS	glide slope
ICAO:	GS – ground speed; GS – small hail and/or snow pellets
GWT	gross weight
H	
HAA	height above airport
HAT	height above touchdown
HAZMAT	Hazardous Material
ICAO:	HGT – height/height above
HIRL	High intensity runway lights
HOL	holiday
HWY	highway
I	
IAF	initial approach fix
IAP	instrument approach procedure
ICAO:	INA – initial approach
IDENT	identification
ICAO:	ID – identifier/identification/identify
IF	intermediate fix
ICAO:	IF – intermediate approach fix
IFR	instrument flight rules
IFSS	international flight service station
ILS	instrument landing system
INFO	information
INOP	inoperative
INS	Inertial Navigation System
INT	intersection

INTL	international
INTST	intensity
IRU	Inertial Reference Unit
J	
J–bar	jet runway barrier
K	
KHZ	kilohertz
L	
L	left (used only to designate rwys; e.g., rwy 12L)
ICAO:	L – left/runway identification/locator
LAANC	Low Altitude Authorization and Notification Capability
LAT	latitude
LB	pounds (weight)
LCTD	located
LDA	localizer type directional aid
ICAO:	LDA – landing distance available LLZ – localizer
LGTD	lighted
LMM	compass locator at ILS middle marker
LNDG	landing
ICAO:	LDG – landing
LOC	localizer
ICAO:	LOC–localizer or locally or location or located
LOM	compass locator at ILS outer marker
LONG	longitude
LRCO	limited remote communications outlet
M	
MAA	maximum authorized altitude
MAG	magnetic
MAINT	maintain, maintenance
ICAO:	MNTN – maintain; MAINT – maintenance
MALS	medium intensity approach light system
MALSR	medium intensity approach light system with runway alignment indicator lights
MAP	missed approach point
ICAO:	MAP – aeronautical maps and charts
MAX	maximum
MCA	minimum crossing altitude
MDA	minimum descent altitude
MEA	minimum en route IFR altitude
MGOW	Maximum Gross Operating Weight
MHZ	megahertz
MIN	minimum or minute
MIRL	medium intensity runway edge lights
MM	middle marker ILS
MOCA	minimum obstruction clearance altitude
MRA	minimum reception altitude
MSA	minimum safe altitude
MSL	mean sea level
MUNI	municipal
N	
N	north
NA	not authorized
NATL	national
NAVAID	navigational aid
NDB	nondirectional radio beacon
NM	nautical mile(s)
NOPT	no procedure turn required
NR	number
O	
OBSTN	obstruction
OCA	Oceanic Control Area
ODALS	omnidirectional approach lighting system
OM	outer marker ILS
OOP	Operations Over People
OPER	operate
OPN	operation
ICAO:	OPR – operator/operate/operative/ operating/operational
ORIG	original
OTS	out of service
OVRN	overrun
P	
PAO	Public Aircraft Operation
PAR	precision approach radar
PAT	pattern
PBCS	Performance–Based Communication and Surveillance
PCN	pavement classification number
PERMLY	permanently
PIC	Pilot–in–Command
POB	persons on board
PPR	prior permission required
PROC	procedure

Q	
QUAD	quadrant
R	
R	right (used only to designate rwys; e.g., rwy 19R)
ICAO:	R − received (acknowledgement of receipt)/red/restricted area (followed by identification)/right (runway identification)
RADAR	radio detection and ranging
RAPCON	Radar Approach Control facility (USAF, USN and USMC)
RATCF	Radar Air Traffic Control Facility (USN and USMC)
RC	Radio−Controlled
RCAG	remote communications air/ground
RCLS	runway centerline lights system
ICAO:	RCL − runway centerline
RCO	remote communications outlet
RCV	receive
RCVG	receiving
REIL	runway end identifier lights
REQ	request
RID	Remote Identification
RNAV	area navigation
RPIC	Remote Pilot−in−Command
RRP	runway reference point
REL	runway entrance lights
RLLS	Runway Lead−in Light System
RSTRD	restricted
RTS	returned to service
RVR	runway visual range
RVRM	runway visual range midpoint
RVRR	runway visual range rollout
RVRT	runway visual range touchdown
RWSL	runway status light
RWY	runway
ICAO:	RWY−runway
S	
S	runway weight bearing capacity for aircraft with single−wheel type landing gear
S	south
ICAO:	S − south/south latitude
SAA	Sense and Avoid
SDF	simplified directional facility
SEC	second
SFC	surface
SFL	sequenced flashing lights
SGI	Special Government Interest
SI	straight−in approach
ICAO:	STA − straight−in approach
SM	statute mile(s)
SR	sunrise
SS	sunset
ICAO:	SS − sandstorm
SSALF	simplified short approach lighting system with sequenced flashers
SSALR	simplified short approach lighting system with runway alignment indicator lights
SSALS	simplified short approach lighting system
STOL	short take−off and landing runway
ICAO:	STOL − short takeoff and landing
sUAS	Small UAS
SVC	service
ICAO:	SVC − service message
T	
T	true (after a bearing)
ICAO:	T − temperature
TAC	terminal area chart
TACAN	UHF navigational facility − omnidirectioal course and distance information
ICAO:	TACAN − VHF tactical navigational aid
TAS	true air speed
TCH	threshold crossing height
ICAO:	TEMPO − Temporary/temporarily
TFC	traffic
THL	takeoff hold lights
THR	threshold
THRU	through
ICAO:	THRU − through/I am connecting you to another switchboard
TKOF	take−off
TEMPRLY	temporarily
ICAO:	TMA − TERMINAL CONTROL AREA
TMPRY	temporary/temporarily
TPA	traffic pattern altitude

TRACON	terminal radar approach control
TRML	terminal
TRSA	terminal radar service area
TRUST	The Recreational UAS Safety Test
TSNT	transient
TWR	tower
TWY	taxiway
U	
ICAO:	U/S – unserviceable
UAM	Urban Air Mobility
UAS	Unmanned Aircraft System
UASFM	UAS Facility Map
UAVBL	unavailable
UHF	ultra high frequency
UNLGTD	unlighted
UNMON	unmonitored
UNSKED	unscheduled
UNUSBL	unusable
UTM	UAS Traffic Management
V	
VASI	visual approach slope indicator
VCNTY	vicinity
VDP	visual descent point
VFR	visual flight rules
VHF	very high frequency
VOR	VHF omni–directional radio range
VLOS	Visual Line of Sight
VO	Visual Observer
VORTAC	Combined VOR and TACAN system (collocated)
VOT	a VOR Receiver testing facility
VSBY	visibility
ICAO:	VIS – visibility
W	
W	west
WEA	weather
ICAO:	WX – weather
WKDAY	weekday
WKEND	weekend
WPT	waypoint
WS	Weather Service
WT	weight
Z	
Z	Coordinated Universal Time
ICAO:	UTC – Coordinated Universal Time

regular airport meteorological stations. English is the language used for all U.S. flight documentation. Briefings can be provided either in person or received by telephone at all airport meteorological offices.

2.2.3 All airport forecasts (TAF) prepared for U.S. international airports cover the following validity periods: 00−24 UTC, 06−06 UTC, 12−12 UTC, and 18−18 UTC. At the present time, specific landing forecasts are not made for any U.S. airport. The portion of the airport's TAF valid closest to the time of landing is used in lieu of a landing forecast.

2.2.4 Supplementary information available at U.S. meteorological airport offices includes extended weather and severe weather outlooks, pilot reports, runway braking action reports (during the winter), relative humidity, times of sunrise and sunset, surface and upper air analyses, radar echo charts, and forecasts of maximum and minimum surface temperatures.

2.2.5 All meteorological offices shown as taking routine aviation observations also take unscheduled special aviation observations when meteorological conditions warrant.

3. Types of Service Provided

3.1 Area Forecast Charts (Facsimile Form)

3.1.1 The U.S. has one Area Forecast Center, the National Center for Environmental Predictions (NCEP), located in Suitland, Maryland. The NCEP prepares current weather, significant weather, forecast weather, constant pressure, and tropopause−vertical wind shear charts for the U.S., the Caribbean and Northern South America, the North Atlantic, and the North Pacific areas. The NCEP also prepares a constant pressure and tropopause−vertical wind shear chart for Canada.

3.2 Local and Regional Aviation Forecasts (Printed Form)

3.2.1 Numerous forecasts and weather advisories are prepared which serve local and regional areas of the U.S. These forecasts are generally prepared by the NWS on a scheduled basis or, as in the case of severe weather advisories, as needed. These forecasts are Area Forecast (FA), Airport Forecast (TAF), Severe Weather Forecast (WW), Hurricane Advisories (WT), Winds and Temperature Aloft Forecast (FD), Simplified Surface Analyses (AS), 12− and 24−Hour Prognoses (FS), and flight advisory notices, such as SIGMETs (WS), AIRMETs (text bulletins−[WA] and graphics [G−AIRMET]), Center Weather Advisories (CWA), and Radar Weather Reports (SD).

3.3 Preflight Briefing Services

3.3.1 Preflight briefing services and flight documentation are provided through FAA Flight Service Stations (FSS).

3.4 National Weather Service Aviation Weather Service Program

3.4.1 Weather service to aviation is a joint effort of the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service (NWS), the Federal Aviation Administration (FAA), Department of Defense, and various private sector aviation weather service providers. Requirements for all aviation weather products originate from the FAA, which is the Meteorological Authority for the U.S.

3.4.2 NWS meteorologists are assigned to all air route traffic control centers (ARTCC) as part of the Center Weather Service Units (CWSU) as well as the Air Traffic Control System Command Center (ATCSCC). These meteorologists provide specialized briefings as well as tailored forecasts to support the needs of the FAA and other users of the NAS.

3.4.3 Aviation Products

3.4.3.1 The NWS maintains an extensive surface, upper air, and radar weather observing program; and a nationwide aviation weather forecasting service.

3.4.3.2 Airport observations (METAR and SPECI) supported by the NWS are provided by automated observing systems.

3.4.3.3 Terminal Aerodrome Forecasts (TAF) are prepared by 123 NWS Weather Forecast Offices (WFOs) for over 700 airports. These forecasts are valid for 24 or 30 hours and amended as required.

3.4.3.4 Inflight aviation advisories (for example, Significant Meteorological Information (SIGMETs) and Airmen's Meteorological Information (AIRMETs)) are issued by three NWS Meteorological Watch Offices (MWOs); the Aviation Weather Center (AWC) in Kansas City, MO, the Alaska Aviation Weather Unit (AAWU) in Anchorage, AK, and the Weather Service Forecast Office (WFO) in Honolulu, HI. The AWC, the AAWU, and WSFO Honolulu issue area forecasts for selected areas. In addition, NWS meteorologists assigned to most ARTCCs as part of the Center Weather Service Unit (CWSU) provide Center Weather Advisories (CWAs) and gather weather information to support the needs of the FAA and other users of the system.

3.4.3.5 Several NWS National Centers for Environmental Production (NCEP) provide aviation specific weather forecasts, or select public forecasts which are of interest to pilots and operators.

a) The Aviation Weather Center (AWC) displays a variety of domestic and international aviation forecast products over the Internet at aviationweather.gov.

b) The NCEP Central Operations (NCO) is responsible for the operation of many numerical weather prediction models, including those which produce the many wind and temperature aloft forecasts.

c) The Storm Prediction Center (SPC) issues tornado and severe weather watches along with other guidance forecasts.

d) The National Hurricane Center (NHC) issues forecasts on tropical weather systems (for example, hurricanes).

e) The Space Weather Prediction Center (SWPC) provides alerts, watches, warnings and forecasts for space weather events (for example, solar storms) affecting or expected to affect Earth's environment.

f) The Weather Prediction Center (WPC) provides analysis and forecast products on a national scale including surface pressure and frontal analyses.

3.4.3.6 NOAA operates two Volcanic Ash Advisory Centers (VAAC) which issue forecasts of ash clouds following a volcanic eruption in their area of responsibility.

3.4.3.7 Details on the products provided by the above listed offices and centers is available in FAA Advisory Circular 00-45, Aviation Weather Services.

3.4.4 Weather element values may be expressed by using different measurement systems depending on several factors, such as whether the weather products will be used by the general public, aviation interests, international services, or a combination of these users. FIG GEN 3.5−1 provides conversion tables for the most used weather elements that will be encountered by pilots.

observations; for example, contract towers and airport operators may be approved by the Federal Government to provide weather observations.

3.6.11.2 Enhanced Weather Information System (EWINS). An EWINS is an FAA authorized, proprietary system for tracking, evaluating, reporting, and forecasting the presence or lack of adverse weather phenomena. The FAA authorizes a certificate holder to use an EWINS to produce flight movement forecasts, adverse weather phenomena forecasts, and other meteorological advisories. For more detailed information regarding EWINS, see the Aviation Weather Services Advisory Circular 00–45 and the Flight Standards Information Management System 8900.1.

3.6.11.3 Commercial Weather Information Providers. In general, commercial providers produce proprietary weather products based on NWS/FAA products with formatting and layout modifications but no material changes to the weather information itself. This is also referred to as "repackaging." In addition, commercial providers may produce analyses, forecasts, and other proprietary weather products that substantially alter the information contained in government–produced products. However, those proprietary weather products that substantially alter government–produced weather products or information, may only be approved for use by 14 CFR Part 121 and Part 135 certificate holders if the commercial provider is EWINS qualified.

NOTE–
Commercial weather information providers contracted by FAA to provide weather observations, analyses, and forecasts (e.g., contract towers) are included in the Federal Government category of approved sources by virtue of maintaining required technical and quality assurance standards under Federal Government oversight.

3.7 Graphical Forecasts for Aviation (GFA)

3.7.1 The GFA website is intended to provide the necessary aviation weather information to give users a complete picture of the weather that may affect flight in the continental United States (CONUS). The website includes observational data, forecasts, and warnings that can be viewed from 14 hours in the past to 15 hours in the future, including thunderstorms, clouds, flight category, precipitation, icing, turbulence, and wind. Hourly model data and forecasts, including information on clouds, flight category, precipitation, icing, turbulence, wind, and graphical output from the National Weather Service's (NWS) National Digital Forecast Data (NDFD) are available. Wind, icing, and turbulence forecasts are available in 3,000 ft increments from the surface up to 30,000 ft MSL, and in 6,000 ft increments from 30,000 ft MSL to 48,000 ft MSL. Turbulence forecasts are also broken into low (below 18,000 ft MSL) and high (at or above 18,000 ft MSL) graphics. A maximum icing graphic and maximum wind velocity graphic (regardless of altitude) are also available. Built with modern geospatial information tools, users can pan and zoom to focus on areas of greatest interest. Target users are commercial and general aviation pilots, operators, briefers, and dispatchers.

3.7.2 Weather Products.

3.7.2.1 The Aviation Forecasts include gridded displays of various weather parameters as well as NWS textual weather observations, forecasts, and warnings. Icing, turbulence, and wind gridded products are three–dimensional. Other gridded products are two–dimensional and may represent a "composite" of a three–dimensional weather phenomenon or a surface weather variable, such as horizontal visibility. The following are examples of aviation forecasts depicted on the GFA:

a) Terminal Aerodrome Forecast (TAF)

b) Ceiling & Visibility (CIG/VIS)

c) Clouds

d) Precipitation / Weather (PCPN/WX)

e) Thunderstorm (TS)

f) Winds

g) Turbulence

h) Ice

3.7.2.2 Observations & Warnings (Obs/Warn). The Obs/Warn option provides an option to display weather data for the current time and the previous 14 hours (rounded to the nearest hour). Users may advance through time using the arrow buttons or by clicking on the desired hour. Provided below are the Obs/Warn product tabs available on the GFA website:

a) METAR

b) Precipitation/Weather (PCPN/WX)

c) Ceiling & Visibility (CIG/VIS)

d) Pilot Weather Report (PIREP)

e) Radar & Satellite (RAD/SAT)

3.7.2.3 The GFA will be continuously updated and available online at http://aviationweather.gov/gfa. Upon clicking the link above, select INFO on the top right corner of the map display. The next screen presents the option of selecting Overview, Products, and Tutorial. Simply select the tab of interest to explore the enhanced digital and graphical weather products designed to replace the legacy FA. Users should also refer to AC 00−45, *Aviation Weather Services,* for more detailed information on the GFA.

3.7.2.4 GFA Static Images. Some users with limited internet connectivity may access static images via the Aviation Weather Center (AWC) at: http://www.aviationweather.gov/gfa/plot. There are two static graphical images available, titled *Aviation Cloud Forecast* and *Aviation Surface Forecast*. The Aviation Cloud Forecast provides cloud coverage, bases, layers, tops with AIRMETs for mountain obscuration, and AIRMETs for icing overlaid. The Aviation Surface Forecast provides visibility, weather phenomena, and winds (including wind gusts) with AIRMETs for instrument flight rules conditions and AIRMETs for sustained surface winds of 30 knots or more overlaid. These images are presented on ten separate maps providing forecast views for the entire contiguous United States (U.S.) on one and nine regional views which provide more detail for the user. They are updated every 3 hours and provide forecast snapshots for 3, 6, 9, 12, 15, and 18 hours into the future. (See FIG GEN 3.5−2 and FIG GEN 3.5−3.)

NOTE−
The contiguous United States (U.S.) refers to the 48 adjoining U.S. states on the continent of North America that are south of Canada and north of Mexico, plus the District of Columbia. The term excludes the states of Alaska, Hawaii, and all off−shore U.S. territories and possessions, such as Puerto Rico.

FIG GEN 3.5–2
Aviation Surface Forecast

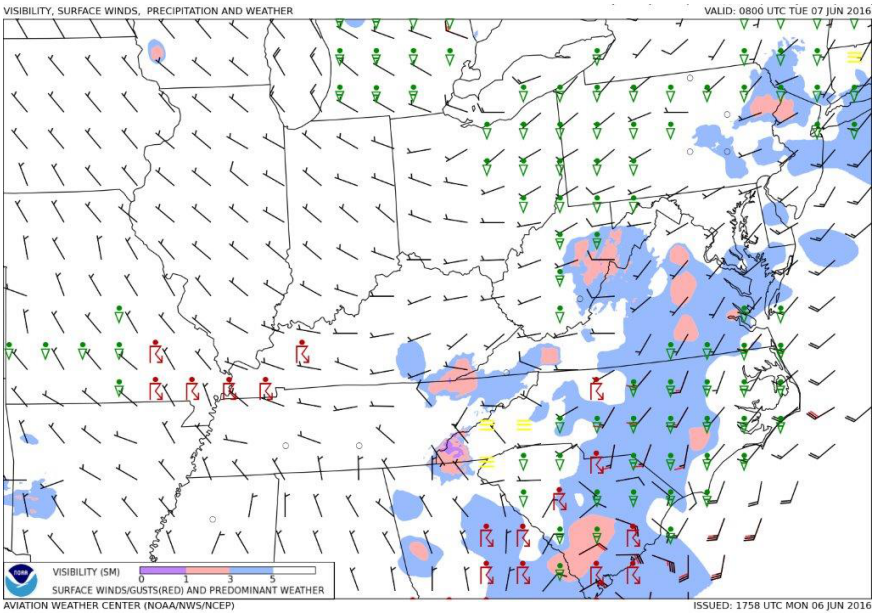
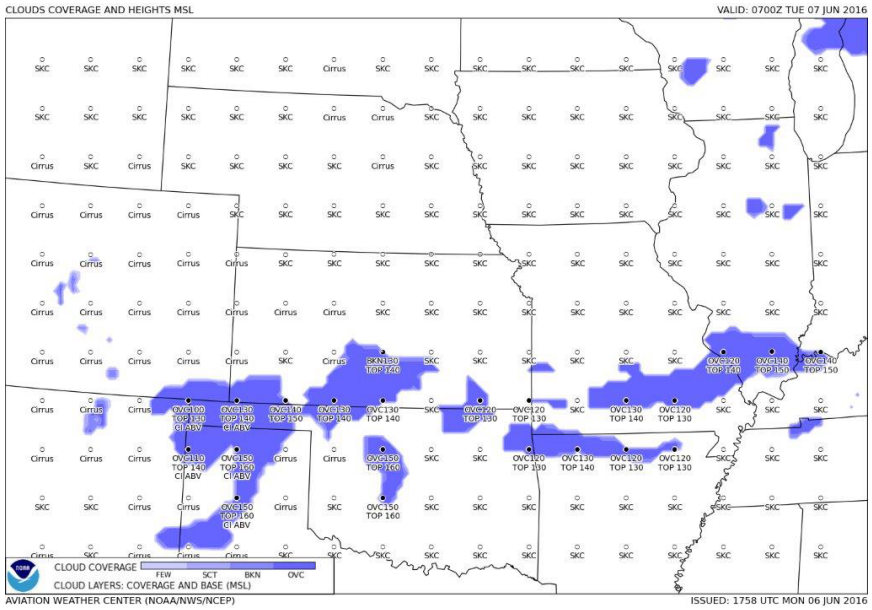


FIG GEN 3.5–3
Aviation Cloud Forecast



3.8 Preflight Briefing

3.8.1 Flight Service is one of the primary sources for obtaining preflight briefings and to file flight plans by phone or the Internet. Flight Service Specialists are qualified and certificated as Pilot Weather Briefers by the FAA. They are not authorized to make original forecasts, but are authorized to translate and interpret available forecasts and reports directly into terms describing the weather conditions which you can expect along your flight route and at your destination. Prior to every flight, pilots should gather all information vital to the nature of the flight. Pilots can receive a regulatory compliant briefing without contacting Flight Service. Pilots are encouraged

to use automated resources and review AC 91−92, Pilot's Guide to a Preflight Briefing, for more information. Pilots who prefer to contact Flight Service are encouraged to conduct a self−brief prior to calling. Conducting a self−brief before contacting Flight Service provides familiarity of meteorological and aeronautical conditions applicable to the route of flight and promotes a better understanding of weather information.

Three basic types of preflight briefings (Standard, Abbreviated, and Outlook) are available to serve the pilot's specific needs. Pilots should specify to the briefer the type of briefing they want, along with their appropriate background information. This will enable the briefer to tailor the information to the pilot's intended flight. The following paragraphs describe the types of briefings available and the information provided in each briefing.

3.8.2 Standard Briefing. You should request a Standard Briefing any time you are planning a flight and you have not received a previous briefing or have not received preliminary information through online resources. International data may be inaccurate or incomplete. If you are planning a flight outside of U.S. controlled airspace, the briefer will advise you to check data as soon as practical after entering foreign airspace, unless you advise that you have the international cautionary advisory. The briefer will automatically provide the following information in the sequence listed, except as noted, when it is applicable to your proposed flight.

3.8.2.1 Adverse Conditions. Significant meteorological and/or aeronautical information that might influence the pilot to alter or cancel the proposed flight; for example, hazardous weather conditions, airport closures, air traffic delays, etc. Pilots should be especially alert for current or forecast weather that could reduce flight minimums below VFR or IFR conditions. Pilots should also be alert for any reported or forecast icing if the aircraft is not certified for operating in icing conditions. Flying into areas of icing or weather below minimums could have disastrous results.

3.8.2.2 VFR Flight Not Recommended. When VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that, in the briefer's judgment, would make flight under VFR doubtful, the briefer will describe the conditions, describe the affected locations, and use the phrase *"VFR flight not recommended."* This recommendation is advisory in nature. The final decision as to whether the flight can be conducted safely rests solely with the pilot. Upon receiving a "*VFR flight not recommended*" statement, the non−IFR rated pilot will need to make a "go or no go" decision. This decision should be based on weighing the current and forecast weather conditions against the pilot's experience and ratings. The aircraft's equipment, capabilities and limitations should also be considered.

NOTE−
Pilots flying into areas of minimal VFR weather could encounter unforecasted lowering conditions that place the aircraft outside the pilot's ratings and experience level. This could result in spatial disorientation and/or loss of control of the aircraft.

3.8.2.3 Synopsis. A brief statement describing the type, location, and movement of weather systems and/or air masses which might affect the proposed flight.

NOTE−
The first 3 elements of a standard briefing may be combined in any order when the briefer believes it will help to describe conditions more clearly.

3.8.2.4 Current Conditions. Reported weather conditions applicable to the flight will be summarized from all available sources; e.g., METARs, PIREPs, RAREPs. This element may be omitted if the proposed time of departure is beyond two hours, unless the information is specifically requested by the pilot. For more detailed information on PIREPS, users can refer to the current version of AC 00−45, Aviation Weather Services.

3.8.2.5 En Route Forecast. En route conditions forecast for the proposed route are summarized in logical order; i.e., departure−climbout, en route, and descent.

3.8.2.6 Destination Forecast. The destination forecast (TAF) for the planned estimated time of arrival (ETA). Any significant changes within 1 hour before and after the planned arrival are included.

3.8.2.7 Winds Aloft. Forecast winds aloft for the proposed route will be provided using degrees of the compass. The briefer will interpolate wind directions and speeds between levels and stations as necessary to provide expected conditions at planned altitudes.

3.8.2.8 Notices to Air Missions (NOTAMs)

a) Available NOTAM (D) information pertinent to the proposed flight, including special use airspace (SUA) NOTAMs for restricted areas, aerial refueling, and night vision goggles (NVG).

NOTE−
Other SUA NOTAMs (D), such as military operations area (MOA), military training route (MTR), and warning area NOTAMs, are considered "upon request" briefing items as indicated in paragraph 3.8.2.10.

b) Prohibited Areas P−40, P−49, P−56, and the special flight rules area (SFRA) for Washington, DC.

NOTE−
For information on SFRAs, see ENR 5, Navigation Warnings, paragraph 2.4.2.

c) FSS briefers do not provide FDC NOTAM information for special instrument approach procedures unless specifically asked. Pilots authorized by the FAA to use special instrument approach procedures must specifically request FDC NOTAM information for these procedures.

NOTE−
1. *NOTAM information may be combined with current conditions when the briefer believes it is logical to do so.*

2. *Airway NOTAMs, procedural NOTAMs, and NOTAMs that are general in nature and not tied to a specific airport/facility (for example, flight advisories and restrictions, open duration special security instructions, and special flight rules areas) are briefed solely by pilot request. NOTAMs, graphic notices, and other information published in the Domestic Notices and International Notices are not included in pilot briefings unless the pilot specifically requests a review of these notices. For complete flight information, pilots are urged to review the Domestic Notices and International Notices found in the External Links section of the Federal NOTAM System (FNS) NOTAM Search or Air Traffic Plans and Publications website and the Chart Supplement U.S. in addition to obtaining a briefing.*

3.8.2.9 Air Traffic Control (ATC) Delays. Any known ATC delays and flow control advisories which might affect the proposed flight.

3.8.2.10 Pilots may obtain the following from flight service station briefers upon request:

a) Information on Special Use Airspace (SUA) and SUA related airspace, except those listed in paragraph 3.8.2.8.

NOTE−
1. *For the purpose of this paragraph, SUA and related airspace includes the following types of airspace: alert area, military operations area (MOA), warning area, and air traffic control assigned airspace (ATCAA). MTR data includes the following types of airspace: IFR training routes (IR), VFR training routes (VR), and slow training routes (SR).*

2. *Pilots are encouraged to request updated information from ATC facilities while in flight.*

b) A review of airway NOTAMs, procedural NOTAMs, and NOTAMs that are general in nature and not tied to a specific airport/facility (for example, flight advisories and restrictions, open duration special security instructions, and special flight rules areas), Domestic Notices and International Notices. Domestic Notices and International Notices are found in the External Links section of the Federal NOTAM System (FNS) NOTAM Search System.

c) Approximate density altitude data.

d) Information regarding such items as air traffic services and rules, customs/immigration procedures, ADIZ rules, and search and rescue.

e) NOTAMs, available military NOTAMs, runway friction measurement value NOTAMs.

f) GPS RAIM availability for 1 hour before to 1 hour after ETA, or a time specified by the pilot.

g) Other assistance as required.

3.8.3 Abbreviated Briefing. Request an Abbreviated Briefing when you need information to supplement mass disseminated data, to update a previous briefing, or when you need only one or two specific items. Provide the briefer with appropriate background information, the time you received the previous information, and/or the

specific items needed. You should indicate the source of the information already received so that the briefer can limit the briefing to the information that you have not received, and/or appreciable changes in meteorological/aeronautical conditions since your previous briefing. To the extent possible, the briefer will provide the information in the sequence shown for a Standard Briefing. If you request only one or two specific items, the briefer will advise you if adverse conditions are present or forecast. Adverse conditions contain both meteorological and aeronautical information. Details on these conditions will be provided at your request.

3.8.4 Outlook Briefing. You should request an Outlook Briefing whenever your proposed time of departure is 6 or more hours from the time of the briefing. The briefer will provide available forecast data applicable to the proposed flight. This type of briefing is provided for planning purposes only. You should obtain a Standard or Abbreviated Briefing prior to departure in order to obtain such items as adverse conditions, current conditions, updated forecasts, winds aloft, and NOTAMs.

3.8.5 Inflight Briefing. You are encouraged to conduct a self−briefing using online resources or obtain your preflight briefing by telephone or in person before departure (Alaska only). In those cases where you need to obtain a preflight briefing or an update to a previous briefing by radio, you should contact the nearest FSS to obtain this information. After communications have been established, advise the specialist of the type briefing you require and provide appropriate background information. You will be provided information as specified in the above paragraphs, depending on the type of briefing requested. En Route advisories tailored to the phase of flight that begins after climb−out and ends with descent to land are provided upon pilot request. Besides flight service, there are other resources available to the pilot inflight, including:

Automatic Dependent Surveillance–Broadcast (ADS−B). Free traffic, weather, and flight information are available on ADS−B In receivers that can receive data over 978 MHz (UAT) broadcasts. These services are available across the nation to aircraft owners who equip with ADS−B In, with further advances coming from airborne and runway traffic awareness. Even search−and−rescue operations benefit from accurate ADS−B tracking.

Flight Information Services−Broadcast (FIS−B). FIS−B is a free service; but is only available to aircraft who can receive data over 978 MHz (UAT). FIS−B automatically transmits a wide range of weather products with national and regional focus to all equipped aircraft. Having current weather and aeronautical information in the cockpit helps pilots plan more safe and efficient flight paths, as well as make strategic decisions during flight to avoid potentially hazardous weather.

Pilots are encouraged to provide a continuous exchange of information on weather, winds, turbulence, flight visibility, icing, etc., between pilots and inflight specialists. Pilots should report good weather as well as bad, and confirm expected conditions as well as unexpected. Remember that weather conditions can change rapidly and that a “go or no go” decision, as mentioned in paragraph 3.8.2.2, should be assessed at all phases of flight.

3.8.6 Following any briefing, feel free to ask for any information that you or the briefer may have missed. It helps to save your questions until the briefing has been completed. This way the briefer is able to present the information in a logical sequence and lessens the chance of important items being overlooked.

3.9 Inflight Aviation Weather Advisories

3.9.1 Inflight Aviation Weather Advisories are forecasts to advise en route aircraft of development of potentially hazardous weather. Inflight aviation weather advisories in the conterminous U.S. are issued by the Aviation Weather Center (AWC) in Kansas City, MO, as well as 20 Center Weather Service Units (CWSU) associated with ARTCCs. AWC also issues advisories for portions of the Gulf of Mexico, Atlantic and Pacific Oceans, which are under the control of ARTCCs with Oceanic flight information regions (FIRs). The Weather Forecast Office (WFO) in Honolulu issues advisories for the Hawaiian Islands and a large portion of the Pacific Ocean. In Alaska, the Alaska Aviation Weather Unit (AAWU) issues inflight aviation weather advisories along with the Anchorage CWSU. All heights are referenced MSL, except in the case of ceilings (CIG) which indicate AGL.

3.9.2 There are four types of inflight aviation weather advisories: the SIGMET, the Convective SIGMET, the AIRMET, and the Center Weather Advisory (CWA). All of these advisories use VORs, airports, or well−known geographic areas to describe the hazardous weather areas.

3.9.3 The Severe Weather Watch Bulletins (WWs), (with associated Alert Messages) (AWW) supplements these Inflight Aviation Weather Advisories.

3.9.4 SIGMET. A SIGMET is a concise description of the occurrence or expected occurrence of specified en route weather phenomena which is expected to affect the safety of aircraft operations.

3.9.4.1 SIGMETs:

a) Are intended for dissemination to all pilots in flight to enhance safety.

b) Are issued by the responsible MWO as soon as it is practical to alert operators and aircrews of hazardous en route conditions.

c) Are unscheduled products that are valid for 4 hours; except SIGMETs associated with tropical cyclones and volcanic ash clouds are valid for 6 hours. Unscheduled updates and corrections are issued as necessary.

d) Use geographical points to describe the hazardous weather areas. These points can reference either VORs, airports, or latitude−longitude depending on SIGMET location. If the total area to be affected during the forecast period is very large, it could be that in actuality only a small portion of this total area would be affected at any one time.

EXAMPLE−
Example of a SIGMET:
BOSR WS 050600
SIGMET ROMEO 2 VALID UNTIL 051000
ME NH VT
FROM CAR TO YSJ TO CON TO MPV TO CAR
OCNL SEV TURB BLW 080 EXP DUE TO STG NWLY FLOW. CONDS CONTG BYD 1000Z.

3.9.4.2 SIGMETs over the contiguous U.S.:

a) Are issued corresponding to the areas described in FIG GEN 3.5−5 and are only for non−convective weather. The U.S. issues a special category of SIGMETs for convective weather called Convective SIGMETs.

b) Are identified by an alphabetic designator, from November through Yankee, excluding Sierra and Tango. Issuance for the same phenomenon will be sequentially numbered using the original designator until the phenomenon ends. For example, the first issuance in the Chicago (CHI) area (reference FIG GEN 3.5−5) for phenomenon moving from the Salt Lake City (SLC) area will be SIGMET Papa 3, if the previous two issuances, Papa 1 and Papa 2, had been in the SLC area. Note that no two different phenomena across the country can have the same alphabetic designator at the same time.

c) Use location identifiers (either VORs or airports) to describe the hazardous weather areas.

d) Are issued when the following phenomena occur or are expected to occur:

1) Severe icing not associated with thunderstorms.

2) Severe or extreme turbulence or clear air turbulence (CAT) not associated with thunderstorms.

3) Widespread dust storms or sandstorms lowering surface visibilities to below 3 miles.

4) Volcanic ash.

3.9.4.3 SIGMETs over Alaska:

a) Are issued for the Anchorage FIR including Alaska and nearby coastal waters corresponding to the areas described in FIG GEN 3.5−4 and are only for non−convective weather. The U.S. issues a special category of SIGMETs for convective weather called Convective SIGMETs.

b) Use location identifiers (either VORs or airports) to describe the hazardous weather areas.

c) Use points of latitude and longitude over the ocean areas of the Alaska FIR.

d) Are identified by an alphabetic designator from India through Mike.

e) In addition to the phenomenon applicable to SIGMETs over the contiguous U.S., SIGMETs over Alaska are also issued for:

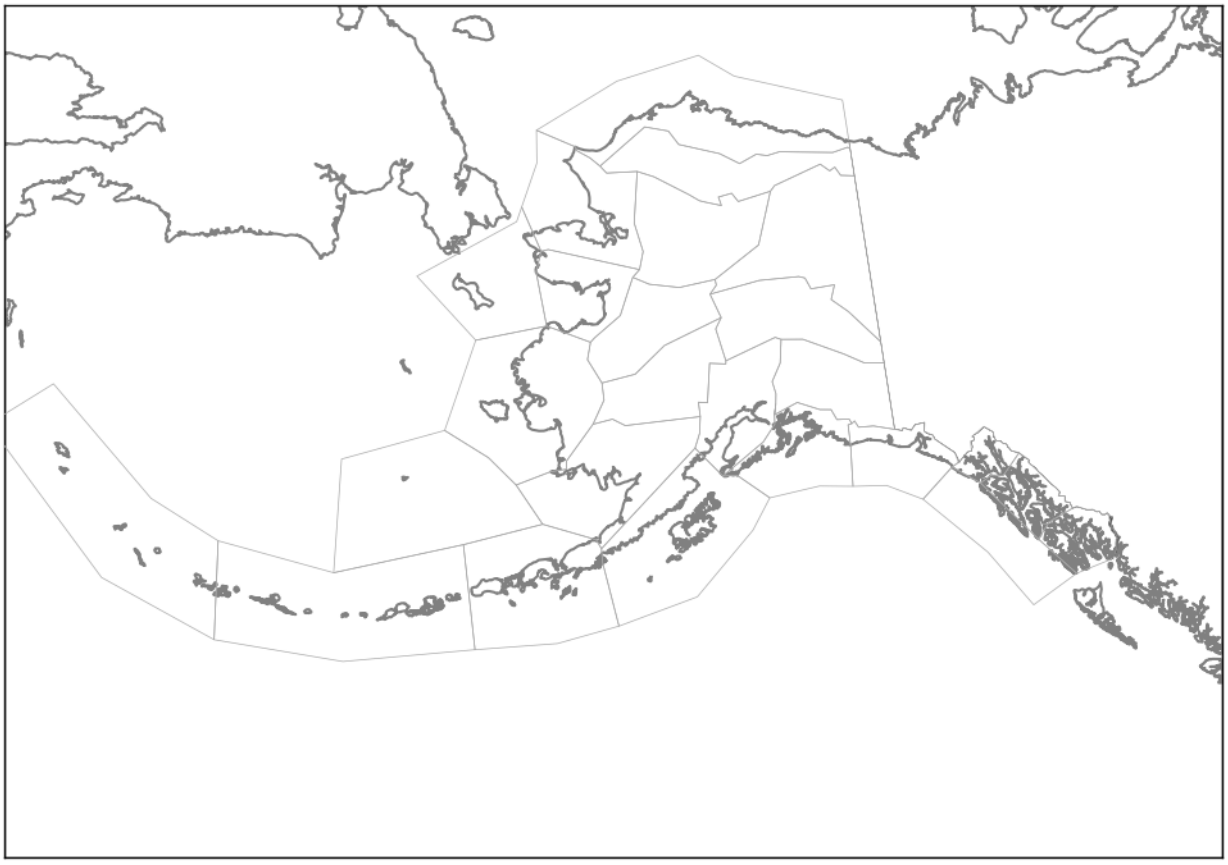
1) Tornadoes.

2) Lines of thunderstorms.

3) Embedded thunderstorms.

4) Hail greater than or equal to ¾ inch in diameter.

FIG GEN 3.5–4
Alaska SIGMET and Area Forecast Zones



3.9.4.4 SIGMETs over oceanic regions (New York Oceanic FIR, Oakland Oceanic FIR including Hawaii, Houston Oceanic FIR, Miami Oceanic FIR, San Juan FIR), points of latitude and longitude are used to describe the hazard area.

a) SIGMETs over the Oakland Oceanic FIR west of 140 west and south of 30 north (including the Hawaiian Islands), are identified by an alphabetic designator from November through Zulu.

b) SIGMETs over the Oakland Oceanic FIR east of 140 west and north of 30 north are identified by an alphabetic designator from Alpha through Mike.

c) SIGMETs over the New York Oceanic FIR, Houston Oceanic FIR, Miami Oceanic FIR, and San Juan FIR are identified by an alphabetic designator from Alpha through Mike.

d) In addition to SIGMETs issued for the phenomenon for the contiguous U.S., SIGMETs in the oceanic regions are also issued for:

1) Tornadoes.

2) Lines of thunderstorms.

3) Embedded thunderstorms.

4) Hail greater than or equal to ¾ inch in diameter.

3.9.5 Convective SIGMET

3.9.5.1 Convective SIGMETs are issued in the conterminous U.S. for any of the following:

a) Severe thunderstorm due to:

1) Surface winds greater than or equal to 50 knots.

2) Hail at the surface greater than or equal to $^{3}/_{4}$ inches in diameter.

3) Tornadoes.

b) Embedded thunderstorms.

c) A line of thunderstorms.

d) Thunderstorms producing precipitation greater than or equal to heavy precipitation affecting 40 percent or more of an area at least 3,000 square miles.

3.9.5.2 Any convective SIGMET implies severe or greater turbulence, severe icing, and low−level wind shear. A convective SIGMET may be issued for any convective situation that the forecaster feels is hazardous to all categories of aircraft.

3.9.5.3 Convective SIGMET bulletins are issued for the western (W), central (C), and eastern (E) United States. (Convective SIGMETs are not issued for Alaska or Hawaii.) The areas are separated at 87 and 107 degrees west longitude with sufficient overlap to cover most cases when the phenomenon crosses the boundaries. Bulletins are issued hourly at H+55. Special bulletins are issued at any time as required and updated at H+55. If no criteria meeting convective SIGMET requirements are observed or forecasted, the message "CONVECTIVE SIGMET... NONE" will be issued for each area at H+55. Individual convective SIGMETs for each area (W, C, E) are numbered sequentially from number one each day, beginning at 00Z. A convective SIGMET for a continuing phenomenon will be reissued every hour at H+55 with a new number. The text of the bulletin consists of either an observation and a forecast or just a forecast. The forecast is valid for up to 2 hours.

EXAMPLE−
CONVECTIVE SIGMET 44C
VALID UNTIL 1455Z
AR TX OK
FROM 40NE ADM-40ESE MLC-10W TXK-50WNW LFK-40ENE SJT-40NE ADM
AREA TS MOV FROM 26025KT. TOPS ABV FL450.
OUTLOOK VALID 061455-061855
FROM 60WSW OKC-MLC-40N TXK-40WSW IGB-VUZ-MGM-HRV-60S BTR-40N
IAH-60SW SJT-40ENE LBB-60WSW OKC
WST ISSUANCES EXPD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS

FIG GEN 3.5–5
SIGMET Locations – Contiguous U.S.

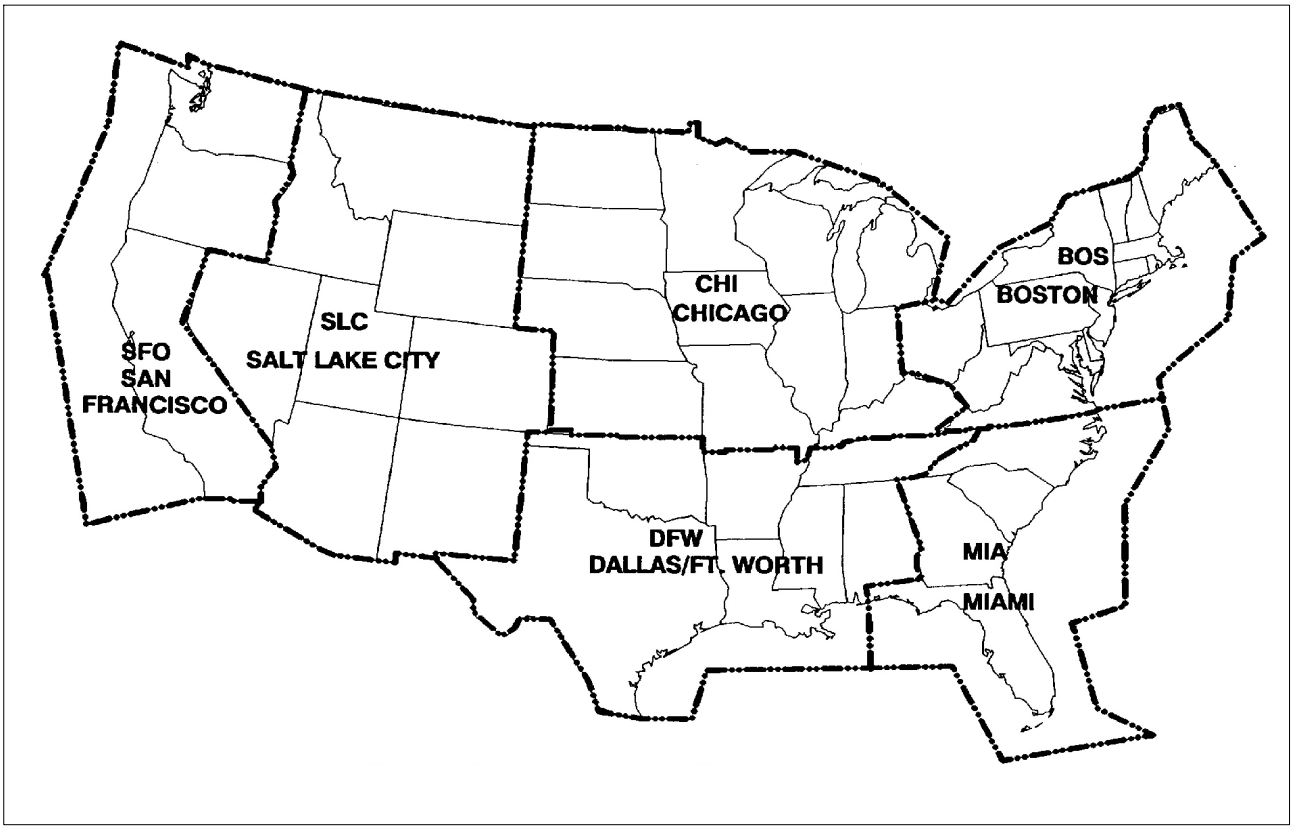
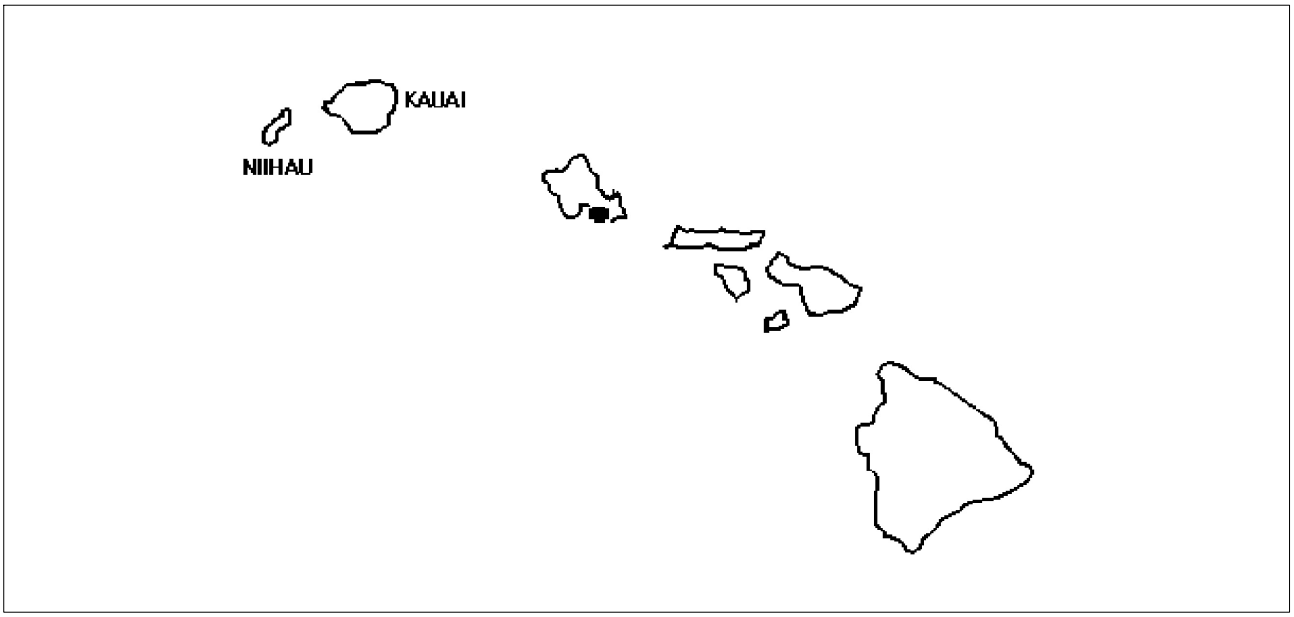


FIG GEN 3.5–6
Hawaii Area Forecast Locations



3.9.6 AIRMET. An AIRMET is a concise description of the occurrence or expected occurrence of specified en route weather phenomena that may affect the safety of aircraft operations, but at intensities lower than those which require the issuance of a SIGMET.

3.9.6.1 AIRMETS contain details about Instrument Flight Rule (IFR) conditions, extensive mountain obscuration, turbulence, strong surface winds, icing, and freezing levels. Unscheduled updates and corrections are issued as necessary.

3.9.6.2 AIRMETs:

a) Are intended to inform all pilots, but especially Visual Flight Rules pilots and operators of sensitive aircraft, of potentially hazardous weather phenomena.

b) Are issued on a scheduled basis every 6 hours, except every 8 hours in Alaska. Unscheduled updates and corrections are issued as necessary.

c) Are intended for dissemination to all pilots in the preflight and en route phase of flight to enhance safety. En route, AIRMETs are available over Flight Service frequencies. Over the contiguous U.S., AIRMETs are also available on equipment intended to display weather and other non−air traffic control−related flight information to pilots using the Flight Information Service−Broadcast (FIS−B). In Alaska and Hawaii, AIRMETs are broadcast on air traffic frequencies.

d) Are issued for the contiguous U.S., Alaska, and Hawaii. No AIRMETs are issued for U.S. Oceanic FIRs in the Gulf of Mexico, Caribbean, Western Atlantic and Pacific Oceans.

TBL GEN 3.5−3
U.S. AIRMET Issuance Time and Frequency

Product Type	Issuance Time	Issuance Frequency
AIRMETs over the Contiguous U.S.	0245, 0845, 1445, 2045 UTC	Every 6 hours
AIRMETs over Alaska	0515, 1315, 2115 UTC (standard time) 0415, 1215, 2015 UTC (Daylight savings time)	Every 8 hours
AIRMETs over Hawaii	0400, 1000, 1600, 2200 UTC	Every 6 hours

3.9.6.3 AIRMETs over the Contiguous U.S.:

a) Are displayed graphically on websites, such as aviationweather.gov and 1800wxbrief.com, and equipment receiving FIS−B information.

b) Provide a higher forecast resolution than AIRMETs issued in text format.

c) Are valid at discrete times no more than 3 hours apart for a period of up to 12 hours into the future (for example; 00, 03, 06, 09, and 12 hours). Additional forecasts may be inserted during the first 6 hours (for example; 01, 02, 04, and 05). 00−hour represents the initial conditions, and the subsequent graphics depict the area affected by the particular hazard at that valid time. Forecasts valid at 00 through 06 hours correspond to the text AIRMET bulletin.

d) Depict the following en route aviation weather hazards:

1) Instrument flight rule conditions (ceiling < 1000’ and/or surface visibility <3 miles).

2) Widespread mountain obscuration.

3) Moderate icing.

4) Freezing levels.

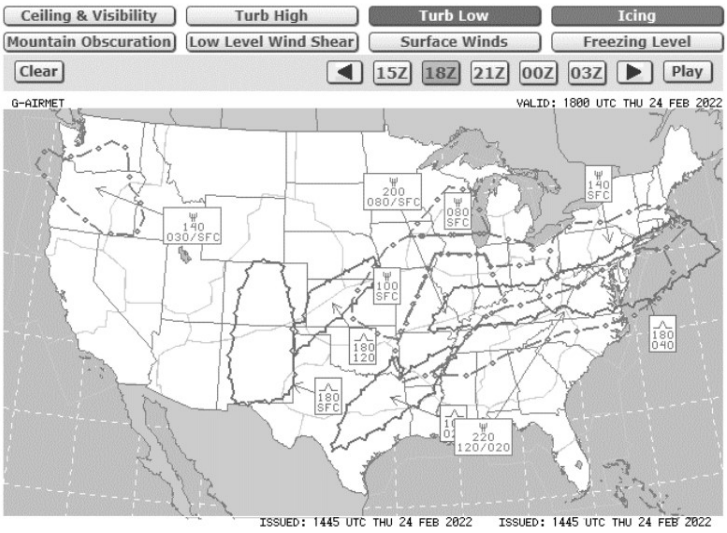
5) Moderate turbulence.

6) Non−convective low−level wind shear potential below 2,000 feet AGL.

7) Sustained surface winds greater than 30 knots.

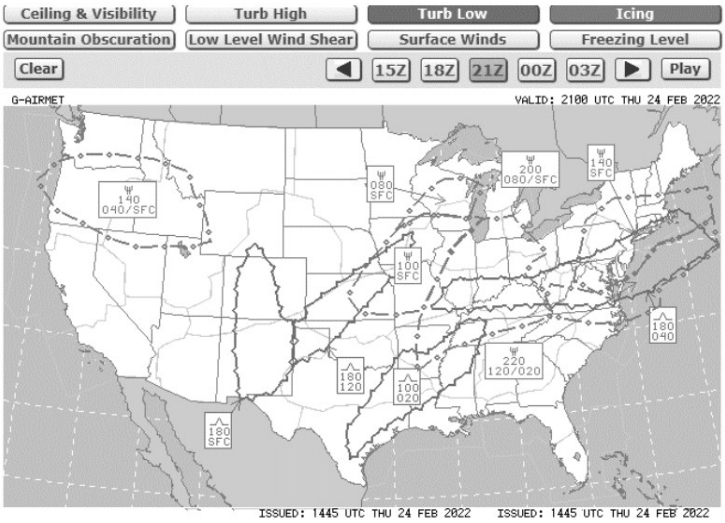
3.9.6.4 Interpolation of time periods between AIRMETs over the contiguous U.S. valid times: Users must keep in mind when using the AIRMET over the contiguous U.S. that if a 00−hour forecast shows no significant weather and a 03−hour forecast shows hazardous weather, they must assume a change is occurring during the period between the two forecasts. It should be taken into consideration that the hazardous weather starts immediately after the 00−hour forecast unless there is a defined initiation or ending time for the hazardous weather. The same would apply after the 03−hour forecast. The user should assume the hazardous weather condition is occurring between the snapshots unless informed otherwise. For example, if a 00−hour forecast shows no hazard, a 03−hour forecast shows the presence of hazardous weather, and a 06−hour forecast shows no hazard, the user should assume the hazard exists from the 0001 hour to the 0559 hour time period.

FIG GEN 3.5–7
AIRMETs over the Contiguous U.S.



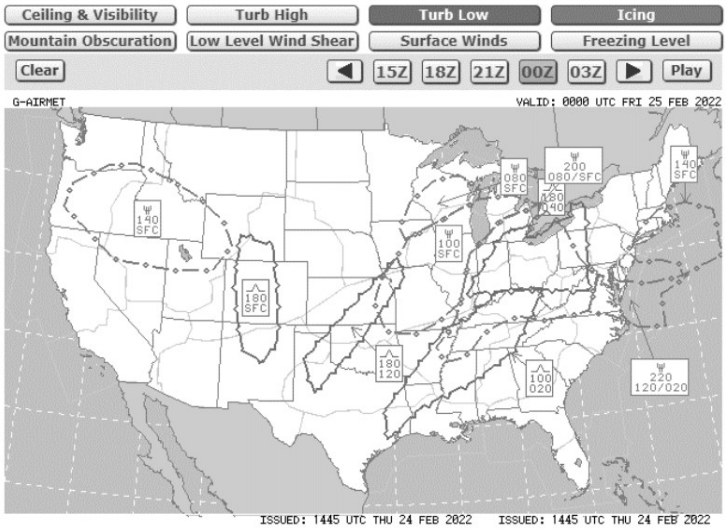
Example: G-AIRMET Valid at 1800Z on February 24, 2022

Displaying: Low Level Turbulence and Icing



Example: G-AIRMET Valid at 2100Z on February 24, 2022

Displaying: Low Level Turbulence and Icing



Example: G-AIRMET Valid at 0000Z on February 25, 2022

Displaying: Low Level Turbulence and Icing

3.9.6.5 AIRMETs over Alaska and Hawaii:

a) AIRMETs over Alaska and Hawaii are in text format. The hazard areas are described using well−known geographical areas. AIRMETs over Alaska are issued for three Alaskan regions corresponding to Alaska area forecasts (See FIG GEN 3.5−4).

b) AIRMETs over Alaska are valid up to eight hours. AIRMETs over Hawaii are valid up to six hours. Unscheduled issuances contain an update number for easier identification.

c) AIRMET Zulu describes moderate icing and provides freezing level heights.

EXAMPLE−
Example of AIRMET Sierra issued for the Southeast Alaska area:

WAAK47 PAWU 241324
WA7O
JNUS WA 241315
AIRMET SIERRA FOR IFR AND MT OBSC VALID UNTIL 242115

LYNN CANAL AND GLACIER BAY JB
MTS OBSC BY CLDS/ISOL PCPN. NC.

CNTRL SE AK JC
MTS OCNL OBSC IN CLDS. NC.

SRN SE AK JD
PAWG−PAKT LN W OCNL CIGS BLW 010/VIS BLW 3SM BR. IMPR.

ERN GLF CST JE
OCNL CIGS BLW 010/VIS BLW 3SM BR/−RA BR. DTRT.

=JNUT WA 241315
AIRMET TANGO FOR TURB/STG SFC WINDS VALID UNTIL 242115

ERN GLF CST JE
OFSHR ICY BAY W SUSTAINED SFC WND 30 KTS
OR GTR. SPRDG E. INTSF.

=JNUZ WA 241315
AIRMET ZULU FOR ICING VALID UNTIL 242115

ERN GLF CST JE
16Z TO 19Z ALG CST W ICY BAY OCNL MOD ICEIC 080−160.
FZLVL 045 EXC 015 INLAND. WKN.

EXAMPLE−
Example of AIRMET Tango issued for Hawaii FA area:

WAHW31 PHFO 241529
WA0HI

HNLS WA 241600
AIRMET SIERRA UPDATE 2 FOR IFR VALID UNTIL 242200

NO SIGNIFICANT IFR EXP.

=HNLT WA 241600
AIRMET TANGO UPDATE 3 FOR TURB VALID UNTIL 242200

AIRMET TURB...HI
OVER AMD IMT S THRU W OF MTN.
TEMPO MOD TURB BLW 070.
COND CONT BEYOND 2200Z.

=HNLZ WA 241600
AIRMET ZULU UPDATE 2 FOR ICE AND FZLVL VALID UNTIL 242200
NO SIGNIFICANT ICE EXP

3.9.7 Watch Notification Messages

The Storm Prediction Center (SPC) in Norman, OK, issues Watch Notification Messages to provide an area threat alert for forecast organized severe thunderstorms that may produce tornadoes, large hail, and/or convective damaging winds within the CONUS. SPC issues three types of watch notification messages: Aviation Watch Notification Messages, Public Severe Thunderstorm Watch Notification Messages, and Public Tornado Watch Notification Messages.

It is important to note the difference between a Severe Thunderstorm (or Tornado) Watch and a Severe Thunderstorm (or Tornado) Warning. A watch means severe weather is possible during the next few hours, while a warning means that severe weather has been observed, or is expected within the hour. Only the SPC issues Severe Thunderstorm and Tornado Watches, while only NWS Weather Forecasts Offices issue Severe Thunderstorm and Tornado Warnings.

3.9.7.1 The Aviation Watch Notification Message. The Aviation Watch Notification Message product is an approximation of the area of the Public Severe Thunderstorm Watch or Public Tornado Watch. The area may be defined as a rectangle or parallelogram using VOR navigational aides as coordinates.

The Aviation Watch Notification Message was formerly known as the Alert Severe Weather Watch Bulletin (AWW). The NWS no longer uses that title or acronym for this product. The NWS uses the acronym SAW for the Aviation Watch Notification Message, but retains AWW in the product header for processing by weather data systems.

EXAMPLE–
Example of an Aviation Watch Notification Message:
WWUS30 KWNS 271559
SAW2
SPC AWW 271559
WW 568 TORNADO AR LA MS 271605Z - 280000Z
AXIS..65 STATUTE MILES EAST AND WEST OF LINE..
45ESE HEZ/NATCHEZ MS/ - 50N TUP/TUPELO MS/
..AVIATION COORDS.. 55NM E/W /18WNW MCB - 60E MEM/
HAIL SURFACE AND ALOFT..3 INCHES. WIND GUSTS..70 KNOTS. MAX TOPS TO 550. MEAN STORM MOTION VECTOR 26030.
LAT...LON 31369169 34998991 34998762 31368948
THIS IS AN APPROXIMATION TO THE WATCH AREA. FOR A COMPLETE DEPICTION OF THE WATCH SEE WOUS64 KWNS FOR WOU2.

3.9.7.2 Public Severe Thunderstorm Watch Notification Messages describe areas of expected severe thunderstorms. (Severe thunderstorm criteria are 1-inch hail or larger and/or wind gusts of 50 knots [58 mph] or greater). A Public Severe Thunderstorm Watch Notification Message contains the area description and axis, the watch expiration time, a description of hail size and thunderstorm wind gusts expected, the definition of the watch, a call to action statement, a list of other valid watches, a brief discussion of meteorological reasoning and technical information for the aviation community.

3.9.7.3 Public Tornado Watch Notification Messages describe areas where the threat of tornadoes exists. A Public Tornado Watch Notification Message contains the area description and axis, watch expiration time, the term “damaging tornadoes,” a description of the largest hail size and strongest thunderstorm wind gusts expected, the definition of the watch, a call to action statement, a list of other valid watches, a brief discussion of

meteorological reasoning and technical information for the aviation community. SPC may enhance a Public Tornado Watch Notification Message by using the words "THIS IS A PARTICULARLY DANGEROUS SITUATION" when there is a likelihood of multiple strong (damage of EF2 or EF3) or violent (damage of EF4 or EF5) tornadoes.

3.9.7.4 Public severe thunderstorm and tornado watch notification messages were formerly known as the Severe Weather Watch Bulletins (WW). The NWS no longer uses that title or acronym for this product but retains WW in the product header for processing by weather data systems.

EXAMPLE–
Example of a Public Tornado Watch Notification Message:
WWUS20 KWNS 050550
SEL2
SPC WW 051750
URGENT - IMMEDIATE BROADCAST REQUESTED
TORNADO WATCH NUMBER 243
NWS STORM PREDICTION CENTER NORMAN OK
1250 AM CDT MON MAY 5 2011
THE NWS STORM PREDICTION CENTER HAS ISSUED A
**TORNADO WATCH FOR PORTIONS OF*
WESTERN AND CENTRAL ARKANSAS
SOUTHERN MISSOURI
FAR EASTERN OKLAHOMA
**EFFECTIVE THIS MONDAY MORNING FROM 1250 AM UNTIL 600 AM CDT.*
...THIS IS A PARTICULARLY DANGEROUS SITUATION...
**PRIMARY THREATS INCLUDE*
NUMEROUS INTENSE TORNADOES LIKELY
NUMEROUS SIGNIFICANT DAMAGING WIND GUSTS TO 80 MPH LIKELY
NUMEROUS VERY LARGE HAIL TO 4 INCHES IN DIAMETER LIKELY
THE TORNADO WATCH AREA IS APPROXIMATELY ALONG AND 100 STATUTE MILES EAST AND WEST OF A LINE FROM 15 MILES WEST NORTHWEST OF FORT LEONARD WOOD MISSOURI TO 45 MILES SOUTHWEST OF HOT SPRINGS ARKANSAS. FOR A COMPLETE DEPICTION OF THE WATCH SEE THE ASSOCIATED WATCH OUTLINE UPDATE (WOUS64 KWNS WOU2).
REMEMBER...A TORNADO WATCH MEANS CONDITIONS ARE FAVORABLE FOR TORNADOES AND SEVERE THUNDERSTORMS IN AND CLOSE TO THE WATCH AREA. PERSONS IN THESE AREAS SHOULD BE ON THE LOOKOUT FOR THREATENING WEATHER CONDITIONS AND LISTEN FOR LATER STATEMENTS AND POSSIBLE WARNINGS.
OTHER WATCH INFORMATION...THIS TORNADO WATCH REPLACES TORNADO WATCH NUMBER 237. WATCH NUMBER 237 WILL NOT BE IN EFFECT AFTER
1250 AM CDT. CONTINUE...WW 239...WW 240...WW 241...WW 242...
DISCUSSION...SRN MO SQUALL LINE EXPECTED TO CONTINUE EWD...WHERE LONG/HOOKED HODOGRAPHS SUGGEST THREAT FOR EMBEDDED SUPERCELLS/POSSIBLE TORNADOES. FARTHER S...MORE WIDELY SCATTERED
SUPERCELLS WITH A THREAT FOR TORNADOES WILL PERSIST IN VERY STRONGLY DEEP SHEARED/LCL ENVIRONMENT IN AR.
AVIATION...TORNADOES AND A FEW SEVERE THUNDERSTORMS WITH HAIL SURFACE AND ALOFT TO 4 INCHES. EXTREME TURBULENCE AND SURFACE WIND GUSTS TO 70 KNOTS. A FEW CUMULONIMBI WITH MAXIMUM TOPS TO 500. MEAN STORM MOTION VECTOR 26045.

3.9.7.5 Status reports are issued as needed to show progress of storms and to delineate areas no longer under the threat of severe storm activity. Cancellation bulletins are issued when it becomes evident that no severe weather will develop or that storms have subsided and are no longer severe.

3.9.8 Center Weather Advisories (CWA)

3.9.8.1 CWAs are unscheduled inflight, flow control, air traffic, and air crew advisory. By nature of its short lead time, the CWA is not a flight planning product. It is generally a nowcast for conditions beginning within the next two hours. CWAs will be issued:

a) As a supplement to an existing SIGMET, Convective SIGMET or AIRMET.

b) When an Inflight Advisory has not been issued but observed or expected weather conditions meet SIGMET/AIRMET criteria based on current pilot reports and reinforced by other sources of information about existing meteorological conditions.

c) When observed or developing weather conditions do not meet SIGMET, Convective SIGMET, or AIRMET criteria; e.g., in terms of intensity or area coverage, but current pilot reports or other weather information sources indicate that existing or anticipated meteorological phenomena will adversely affect the safe flow of air traffic within the ARTCC area of responsibility.

3.9.8.2 The following example is a CWA issued from the Kansas City, Missouri, ARTCC. The "3" after ZKC in the first line denotes this CWA has been issued for the third weather phenomena to occur for the day. The "301" in the second line denotes the phenomena number again (3) and the issuance number (01) for this phenomena. The CWA was issued at 2140Z and is valid until 2340Z.

EXAMPLE−
ZKC3 CWA 032140
ZKC CWA 301 VALID UNTIL 032340
ISOLD SVR TSTM over KCOU MOVG SWWD 10 KTS ETC.

4. Categorical Outlooks

4.1 Categorical outlook terms describing general ceiling and visibility conditions for advance planning purposes are used only in area forecasts. They are defined as follows:

4.1.1 LIFR (Low IFR). Ceiling less than 500 feet and/or visibility less than 1 mile.

4.1.2 IFR. Ceiling 500 to less than 1,000 feet and/or visibility 1 to less than 3 miles.

4.1.3 MVFR (Marginal VFR). Ceiling 1,000 or 3,000 feet and/or visibility 3 to 5 miles inclusive.

4.1.4 VFR. Ceiling greater than 3,000 feet and visibility greater than 5 miles; includes sky clear.

4.2 The cause of LIFR, IFR, or MVFR is indicated by either ceiling or visibility restrictions or both. The contraction "CIG" and/or weather and obstruction to vision symbols are used. If winds or gusts of 25 knots or greater are forecast for the outlook period, the word "WIND" is also included for all categories, including VFR.

EXAMPLE−
1. *LIFR CIG−low IFR due to low ceiling.*

2. *IFR FG−IFR due to visibility restricted by fog.*

3. *MVFR CIG HZ FU−marginal VFR due both to ceiling and to visibility restricted by haze and smoke.*

4. *IFR CIG RA WIND−IFR due both to low ceiling and to visibility restricted by rain; wind expected to be 25 knots or greater.*

5. Inflight Weather Advisory Broadcasts

ARTCCs broadcast a Convective SIGMET, SIGMET, AIRMET (except in the contiguous U.S.), Urgent Pilot Report, or CWA alert once on all frequencies, except emergency frequencies, when any part of the area described is within 150 miles of the airspace under their jurisdiction. These broadcasts advise pilots of the availability of hazardous weather advisories and to contact the nearest flight service facility for additional details.

EXAMPLE−
1. *Attention all aircraft, SIGMET Delta Three, from Myton to Tuba City to Milford, severe turbulence and severe clear icing below one zero thousand feet. Expected to continue beyond zero three zero zero zulu.*

2. *Attention all aircraft, Convective SIGMET Two Seven Eastern. From the vicinity of Elmira to Phillipsburg. Scattered embedded thunderstorms moving east at one zero knots. A few intense level five cells, maximum tops four five zero.*

3. *Attention all aircraft, Kansas City Center weather advisory one zero three. Numerous reports of moderate to severe icing from eight to niner thousand feet in a three zero mile radius of St. Louis. Light or negative icing reported from four thousand to one two thousand feet remainder of Kansas City Center area.*

NOTE−
Terminal control facilities have the option to limit hazardous weather information broadcast as follows: Tower cab and approach control positions may opt to broadcast hazardous weather information alerts only when any part of the area described is within 50 miles of the airspace under their jurisdiction.

REFERENCE−
FAA Order JO 7110.65, Para 2−6−6, Hazardous Inflight Weather Advisory.

6. Flight Information Services (FIS)

6.1 FIS. FIS is a method of disseminating meteorological (MET) and aeronautical information (AI) to displays in the cockpit in order to enhance pilot situational awareness, provide decision support tools, and improve safety. FIS augments traditional pilot voice communication with Flight Service Stations (FSSs), ATC facilities, or Airline Operations Control Centers (AOCCs). FIS is not intended to replace traditional pilot and controller/flight service specialist/aircraft dispatcher preflight briefings or inflight voice communications. FIS, however, can provide textual and graphical information that can help abbreviate and improve the usefulness of such communications. FIS enhances pilot situational awareness and improves safety.

6.1.1 Data link Service Providers (DSPs). DSPs deploy and maintain airborne, ground−based, and, in some cases, space−based infrastructure that supports the transmission of AI/MET information over one or more physical links. A DSP may provide a free of charge or a for−fee service that permits end users to uplink and downlink AI/MET and other information. The following are examples of DSPs:

6.1.1.1 FAA FIS-B. A ground-based broadcast service provided through the ADS-B Universal Access Transceiver (UAT) network. The service provides users with a 978 MHz data link capability when operating within range and line-of-sight of a transmitting ground station. FIS-B enables users of properly equipped aircraft to receive and display a suite of broadcast weather and aeronautical information products.

6.1.1.2 Non-FAA FIS Systems. Several commercial vendors provide customers with FIS data over both the aeronautical spectrum and on other frequencies using a variety of data link protocols. Services available from these providers vary greatly and may include tier based subscriptions. Advancements in bandwidth technology permits preflight as well as inflight access to the same MET and AI information available on the ground. Pilots and operators using non-FAA FIS for MET and AI information should be knowledgeable regarding the weather services being provided as some commercial vendors may be repackaging NWS sourced weather, while other commercial vendors may alter the weather information to produce vendor−tailored or vendor−specific weather reports and forecasts.

6.1.2 Three Data Link Modes. There are three data link modes that may be used for transmitting AI and MET information to aircraft. The intended use of the AI and/or MET information will determine the most appropriate data link service.

6.1.2.1 Broadcast Mode: A one-way interaction in which AI and/or MET updates or changes applicable to a designated geographic area are continuously transmitted (or transmitted at repeated periodic intervals) to all aircraft capable of receiving the broadcast within the service volume defined by the system network architecture.

6.1.2.2 Contract/Demand Mode: A two-way interaction in which AI and/or MET information is transmitted to an aircraft in response to a specific request.

6.1.2.3 Contract/Update Mode: A two-way interaction that is an extension of the Demand Mode. Initial AI and/or MET report(s) are sent to an aircraft and subsequent updates or changes to the AI and/or MET information that meet the contract criteria are automatically or manually sent to an aircraft.

6.1.3 To ensure airman compliance with Federal Aviation Regulations, manufacturer's operating manuals should remind airmen to contact ATC controllers, FSS specialists, operator dispatchers, or airline operations control centers for general and mission critical aviation weather information and/or NAS status conditions (such as NOTAMs, Special Use Airspace status, and other government flight information). If FIS products are systemically modified (for example, are displayed as abbreviated plain text and/or graphical depictions), the modification process and limitations of the resultant product should be clearly described in the vendor's user guidance.

6.1.4 Operational Use of FIS. Regardless of the type of FIS system being used, several factors must be considered when using FIS:

6.1.4.1 Before using FIS for inflight operations, pilots and other flight crewmembers should become familiar with the operation of the FIS system to be used, the airborne equipment to be used, including its system architecture, airborne system components, coverage service volume and other limitations of the particular system, modes of operation and indications of various system failures. Users should also be familiar with the specific content and format of the services available from the FIS provider(s). Sources of information that may provide this specific guidance include manufacturer's manuals, training programs, and reference guides.

6.1.4.2 FIS should not serve as the sole source of aviation weather and other operational information. ATC, FSSs, and, if applicable, AOCC VHF/HF voice remain as a redundant method of communicating aviation weather, NOTAMs, and other operational information to aircraft in flight. FIS augments these traditional ATC/FSS/AOCC services and, for some products, offers the advantage of being displayed as graphical information. By using FIS for orientation, the usefulness of information received from conventional means may be enhanced. For example, FIS may alert the pilot to specific areas of concern that will more accurately focus requests made to FSS or AOCC for inflight updates or similar queries made to ATC.

6.1.4.3 The airspace and aeronautical environment is constantly changing. These changes occur quickly and without warning. Critical operational decisions should be based on use of the most current and appropriate data available. When differences exist between FIS and information obtained by voice communication with ATC, FSS, and/or AOCC (if applicable), pilots are cautioned to use the most recent data from the most authoritative source.

6.1.4.4 FIS aviation weather products (for example, graphical ground−based radar precipitation depictions) are not appropriate for tactical (typical timeframe of less than 3 minutes) avoidance of severe weather such as negotiating a path through a weather hazard area. FIS supports strategic (typical timeframe of 20 minutes or more) weather decision−making such as route selection to avoid a weather hazard area in its entirety. The misuse of information beyond its applicability may place the pilot and aircraft in jeopardy. In addition, FIS should never be used in lieu of an individual preflight weather and flight planning briefing.

6.1.4.5 DSPs offer numerous MET and AI products with information that can be layered on top of each other. Pilots need to be aware that too much information can have a negative effect on their cognitive work load. Pilots need to manage the amount of information to a level that offers the most pertinent information to that specific flight without creating a cockpit distraction. Pilots may need to adjust the amount of information based on numerous factors including, but not limited to, the phase of flight, single pilot operation, autopilot availability, class of airspace, and the weather conditions encountered.

6.1.4.6 FIS NOTAM products, including Temporary Flight Restriction (TFR) information, are advisory−use information and are intended for situational awareness purposes only. Cockpit displays of this information are not appropriate for tactical navigation − pilots should stay clear of any geographic area displayed as a TFR NOTAM. Pilots should contact FSSs and/or ATC while en route to obtain updated information and to verify the cockpit display of NOTAM information.

6.1.4.7 FIS supports better pilot decision−making by increasing situational awareness. Better decision−making is based on using information from a variety of sources. In addition to FIS, pilots should take advantage of other weather/NAS status sources, including, briefings from Flight Service Stations, data from other air traffic control facilities, airline operation control centers, pilot reports, as well as their own observations.

6.1.4.8 FAA's Flight Information Service−Broadcast (FIS−B).

a) FIS−B is a ground−based broadcast service provided through the FAA's Automatic Dependent Surveillance−Broadcast (ADS−B) Services Universal Access Transceiver (UAT) network. The service provides users with a 978 MHz data link capability when operating within range and line−of−sight of a transmitting ground station. FIS−B enables users of properly−equipped aircraft to receive and display a suite of broadcast weather and aeronautical information products.

b) TBL GEN 3.5−4 lists the text and graphical products available through FIS−B and provided free−of−charge. Detailed information concerning FIS−B meteorological products can be found in Advisory Circular 00−45, Aviation Weather Services; and AC 00−63, Use of Cockpit Displays of Digital Weather and Aeronautical Information. Information on Special Use Airspace (SUA), Temporary Flight Restriction (TFR), and Notice to Air Missions (NOTAM) products can be found in Chapters ENR 1 and ENR 5 of this manual.

c) Users of FIS−B should familiarize themselves with the operational characteristics and limitations of the system, including: system architecture; service environment; product lifecycles; modes of operation; and indications of system failure.

d) FIS−B products are updated and transmitted at specific intervals based primarily on product issuance criteria. Update intervals are defined as the rate at which the product data is available from the source for transmission. Transmission intervals are defined as the amount of time within which a new or updated product transmission must be completed and/or the rate or repetition interval at which the product is rebroadcast. Update and transmission intervals for each product are provided in TBL GEN 3.5−4.

NOTE−
The NOTAM−D and NOTAM−FDC products broadcast via FIS−B are limited to those issued or effective within the past 30 days. Except for TFRs, NOTAMs older than 30 days are not provided. The pilot in command is responsible for reviewing all necessary information prior to flight.

e) Where applicable, FIS−B products include a look−ahead range expressed in nautical miles (NM) for three service domains: Airport Surface; Terminal Airspace; and Enroute/Gulf−of−Mexico (GOMEX). TBL GEN 3.5−5 provides service domain availability and look−ahead ranging for each FIS−B product.

f) Prior to using this capability, users should familiarize themselves with the operation of FIS−B avionics by referencing the applicable User's Guides. Guidance concerning the interpretation of information displayed should be obtained from the appropriate avionics manufacturer.

g) FIS−B malfunctions not attributed to aircraft system failures or covered by active NOTAM should be reported by radio or telephone to the nearest FSS facility, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

1) Condition observed;

2) Date and time of observation;

3) Altitude and location of observation;

4) Type and call sign of the aircraft; and

5) Type and software version of avionics system.

6.2 Non−FAA FIS Systems. Several commercial vendors also provide customers with FIS data over both the aeronautical spectrum and on other frequencies using a variety of data link protocols. In some cases, the vendors provide only the communications system that carries customer messages, such as the Aircraft Communications Addressing and Reporting System (ACARS) used by many air carrier and other operators.

6.2.1 Operators using non−FAA FIS data for inflight weather and other operational information should ensure that the products used conform to FAA/NWS standards. Specifically, aviation weather and NAS status information should meet the following criteria:

6.2.1.1 The products should be either FAA/NWS "accepted" aviation weather reports or products, or based on FAA/NWS accepted aviation weather reports or products. If products are used which do not meet this criteria, they should be so identified. The operator must determine the applicability of such products to their particular flight operations.

6.2.1.2 In the case of a weather product which is the result of the application of a process which alters the form, function or content of the base FAA/NWS accepted weather product(s), that process, and any limitations to the application of the resultant product, should be described in the vendor's user guidance material. An example

would be a NEXRAD radar composite/mosaic map, which has been modified by changing the scaling resolution. The methodology of assigning reflectivity values to the resultant image components should be described in the vendor's guidance material to ensure that the user can accurately interpret the displayed data.

TBL GEN 3.5−4

FIS−B Over UAT Product Update and Transmission Intervals

Product	Update Interval[1]	Transmission Interval (95%)[2]	Basic Product
AIRMET	As Available	5 minutes	Yes
AWW/WW	As Available, then at 15 minute intervals for 1 hour	5 minutes	No
Ceiling	As Available	10 minutes	No
Convective SIGMET	As Available, then at 15 minute intervals for 1 hour	5 minutes	Yes
D−ATIS	As Available	1 minute	No
Echo Top	5 minutes	5 minutes	No
METAR/SPECI	1 minute (where available), As Available otherwise	5 minutes	Yes
MRMS NEXRAD (CONUS)	2 minutes	15 minutes	Yes
MRMS NEXRAD (Regional)	2 minutes	2.5 minutes	Yes
NOTAMs−D/FDC	As Available	10 minutes	Yes
NOTAMs−TFR	As Available	10 minutes	Yes
PIREP	As Available	10 minutes	Yes
SIGMET	As Available, then at 15 minute intervals for 1 hour	5 minutes	Yes
SUA Status	As Available	10 minutes	Yes
TAF/AMEND	6 Hours (±15 minutes)	10 minutes	Yes
Temperature Aloft	12 Hours (±15 minutes)	10 minutes	Yes
TWIP	As Available	1 minute	No
Winds aloft	12 Hours (±15 minutes)	10 minutes	Yes
Lightning strikes [3]	5 minutes	5 minutes	Yes
Turbulence [3]	1 minute	15 minutes	Yes
Icing, Forecast Potential (FIP) [3]	60 minutes	15 minutes	Yes
Cloud tops [3]	30 minutes	15 minutes	Yes
1 Minute AWOS [3]	1 minute	10 minutes	No
Graphical−AIRMET [3]	As Available	5 minutes	Yes
Center Weather Advisory (CWA) [3]	As Available	10 minutes	Yes
Temporary Restricted Areas (TRA)	As Available	10 minutes	Yes
Temporary Military Operations Areas (TMOA)	As Available	10 minutes	Yes

[1] The Update Interval is the rate at which the product data is available from the source.

[2] The Transmission Interval is the amount of time within which a new or updated product transmission must be completed (95%) and the rate or repetition interval at which the product is rebroadcast (95%).
[3] The transmission and update intervals for the expanded set of basic meteorological products may be adjusted based on FAA and vendor agreement on the final product formats and performance requirements.

NOTE−

1. *Details concerning the content, format, and symbols of the various data link products provided should be obtained from the specific avionics manufacturer.*

2. *NOTAM−D and NOTAM−FDC products broadcast via FIS−B are limited to those issued or effective within the past 30 days.*

TBL GEN 3.5−5

Product Parameters for Low/Medium/High Altitude Tier Radios

Product	Surface Radios	Low Altitude Tier	Medium Altitude Tier	High Altitude Tier
CONUS NEXRAD	N/A	CONUS NEXRAD not provided	CONUS NEXRAD imagery	CONUS NEXRAD imagery
Winds & Temps Aloft	500 NM look−ahead range	500 NM look−ahead range	750 NM look−ahead range	1,000 NM look−ahead range
METAR	100 NM look−ahead range	250 NM look−ahead range	375 NM look−ahead range	CONUS: CONUS Class B & C airport METARs and 500 NM look−ahead range Outside of CONUS: 500 NM look-ahead range
TAF	100 NM look−ahead range	250 NM look−ahead range	375 NM look−ahead range	CONUS: CONUS Class B & C airport TAFs and 500 NM look−ahead range Outside of CONUS: 500 NM look-ahead range
AIRMET, SIGMET, PIREP, and SUA/SAA	100 NM look−ahead range. PIREP/SUA/SAA is N/A.	250 NM look−ahead range	375 NM look−ahead range	500 NM look−ahead range
Regional NEXRAD	150 NM look−ahead range	150 NM look−ahead range	200 NM look−ahead range	250 NM look−ahead range
NOTAMs D, FDC, and TFR	100 NM look−ahead range	100 NM look−ahead range	100 NM look−ahead range	100 NM look−ahead range

7. Weather Observing Programs

7.1 Manual Observations. Aviation Routine Weather Reports (METAR) are taken at more than 600 locations in the U.S. With only a few exceptions, these stations are located at airport sites and most are staffed by FAA personnel who manually observe, perform calculations, and enter the observation into the distribution system. The format and coding of these observations are contained in FIG GEN 3.5−26 and FIG GEN 3.5−27.

7.2 Automated Weather Observing System (AWOS)

7.2.1 Automated weather reporting systems are increasingly being installed at airports. These systems consist of various sensors, a processor, a computer−generated voice subsystem, and a transmitter to broadcast local, minute−by−minute weather data directly to the pilot.

NOTE−
When the barometric pressure exceeds 31.00 inches Hg., see subparagraph ENR 1.7−3, Altimeter Setting Procedures.

7.2.2 The AWOS observations will include the prefix "AUTO" to indicate that the data are derived from an automated system. Some AWOS locations will be augmented by certified observers who will provide weather and obstruction to vision information in the remarks of the report when the reported visibility is less than 3 miles. These sites, along with the hours of augmentation, are published in the Chart Supplement U.S. Augmentation is identified in the observation as "OBSERVER WEATHER." The AWOS wind speed, direction and gusts, temperature, dew point, and altimeter setting are exactly the same as for manual observations. The AWOS will also report density altitude when it exceeds the field elevation by more than 1,000 feet. The reported visibility is derived from a sensor near the touchdown of the primary instrument runway. The visibility sensor output is converted to a visibility value using a 10−minute harmonic average. The reported sky condition/ceiling is derived from the ceilometer located next to the visibility sensor. The AWOS algorithm integrates the last 30 minutes of ceilometer data to derive cloud layers and heights. This output may also differ from the observer sky condition in that the AWOS is totally dependent upon the cloud advection over the sensor site.

7.2.3 Referred to as AWOS, these real−time systems are operationally classified into nine basic levels:

7.2.3.1 AWOS−A only reports altimeter setting.

NOTE−
Any other information is advisory only.

7.2.3.2 AWOS−AV reports altimeter and visibility;

NOTE−
Any other information is advisory only.

7.2.3.3 AWOS−l usually reports altimeter setting, wind data, temperature, dew point, and density altitude.

7.2.3.4 AWOS−2 provides the information provided by AWOS−l, plus visibility.

7.2.3.5 AWOS−3 provides the information provided by AWOS−2, plus cloud/ceiling data.

7.2.3.6 AWOS− 3P provides reports the same as the AWOS 3 system, plus a precipitation identification sensor.

7.2.3.7 AWOS− 3PT reports the same as the AWOS 3P System, plus thunderstorm/lightning reporting capability.

7.2.3.8 AWOS− 3T reports the same as AWOS 3 system and includes a thunderstorm/lightning reporting capability.

7.2.3.9 AWOS− 4 reports the same as the AWOS 3 system, plus precipitation occurrence, type and accumulation, freezing rain, thunderstorm, and runway surface sensors.

7.2.4 The information is transmitted over a discrete VHF radio frequency or the voice portion of a local NAVAID. AWOS transmissions on a discrete VHF radio frequency are engineered to be receivable to a maximum of 25 NM from the AWOS site and a maximum altitude of 10,000 feet AGL. At many locations, AWOS signals may be received on the surface of the airport, but local conditions may limit the maximum AWOS reception distance and/or altitude. The system transmits a 20− to 30−second weather message updated each minute. Pilots should monitor the designated frequency for the automated weather broadcast. A description of the broadcast is contained in Paragraph 7.3, Automated Weather Observing System (AWOS) Broadcasts. There is no two−way communication capability. Most AWOS sites also have a dial−up capability so that the minute−by−minute weather messages can be accessed via telephone.

7.2.5 AWOS information (system level, frequency, phone number) concerning specific locations is published, as the systems become operational, in the Chart Supplement U.S. and, where applicable, on published Instrument

Approach Procedure (IAP) charts. Selected individual systems may be incorporated into nationwide data collection and dissemination networks in the future.

7.3 AWOS Broadcasts. Computer−generated voice is used in AWOS to automate the broadcast of the minute−by−minute weather observations. In addition, some systems are configured to permit the addition of an operator−generated voice message; e.g., weather remarks, following the automated parameters. The phraseology used generally follows that used for other weather broadcasts. Following are explanations and examples of the exceptions.

7.3.1 Location and Time. The location/name and the phrase "AUTOMATED WEATHER OBSERVATION" followed by the time are announced.

7.3.1.1 If the airport's specific location is included in the airport's name, the airport's name is announced.

EXAMPLE−
"Bremerton National Airport automated weather observation one four five six zulu."

"Ravenswood Jackson County Airport automated weather observation one four five six zulu."

7.3.1.2 If the airport's specific location is not included in the airport's name, the location is announced followed by the airport's name.

EXAMPLE−
"Sault Ste. Marie, Chippewa County International Airport automated weather observation."

"Sandusky, Cowley Field automated weather observation."

7.3.1.3 The word "TEST" is added following "OBSERVATION" when the system is not in commissioned status.

EXAMPLE−
"Bremerton National Airport automated weather observation test one four five six zulu."

7.3.1.4 The phrase "TEMPORARILY INOPERATIVE" is added when the system is inoperative.

EXAMPLE−
"Bremerton National Airport automated weather observing system temporarily inoperative."

7.3.2 Ceiling and Sky Cover

7.3.2.1 Ceiling is announced as either "CEILING" or "INDEFINITE CEILING." The phrases "MEASURED CEILING" and "ESTIMATED CEILING" are not used. With the exception of indefinite ceilings, all automated ceiling heights are measured.

EXAMPLE−
"Bremerton National Airport automated weather observation one four five six zulu, ceiling two thousand overcast."

"Bremerton National Airport automated weather observation one four five six zulu, indefinite ceiling two hundred."

7.3.2.2 The word "CLEAR" is not used in AWOS due to limitations in the height ranges of the sensors. No clouds detected is announced as, "No clouds below XXX" or, in newer systems as, "Clear below XXX" (where XXX is the range limit of the sensor).

EXAMPLE−
"No clouds below one two thousand."

"Clear below one two thousand."

7.3.2.3 A sensor for determining ceiling and sky cover is not included in some AWOS. In these systems, ceiling and sky cover are not announced. "SKY CONDITION MISSING" is announced only if the system is configured with a ceilometer, and the ceiling and sky cover information is not available.

7.3.3 Visibility

7.3.3.1 The lowest reportable visibility value in AWOS is "less than $^1/_4$." It is announced as "VISIBILITY LESS THAN ONE QUARTER."

7.3.3.2 A sensor for determining visibility is not included in some AWOSs. In these systems, visibility is not announced. "VISIBILITY MISSING" is announced only if the system is configured with a visibility sensor and visibility information is not available.

7.3.4 Weather. In the future, some AWOSs are to be configured to determine the occurrence of precipitation. However, the type and intensity may not always be determined. In these systems, the word "PRECIPITATION" will be announced if precipitation is occurring, but the type and intensity are not determined.

7.3.5 Remarks. If remarks are included in the observation, the word "REMARKS" is announced following the altimeter setting. Remarks are announced in the following order of priority:

7.3.5.1 Automated "remarks."

a) Variable visibility.

b) Density altitude.

7.3.5.2 Manual input remarks. Manual input remarks are prefaced with the phrase "OBSERVER WEATHER." As a general rule the manual remarks are limited to:

a) Type and intensity of precipitation.

b) Thunderstorms, intensity (if applicable), and direction.

c) Obstructions to vision when the visibility is less than 7 miles.

EXAMPLE–
"Remarks…density altitude, two thousand five hundred…visibility variable between one and two…wind direction variable between two four zero and three one zero…observed weather…thunderstorm moderate rain showers and mist…thunderstorm overhead."

7.3.5.3 If an automated parameter is "missing" and no manual input for that parameter is available, the parameter is announced as "MISSING." For example, a report with the dew point "missing," and no manual input available, would be announced as follows:

EXAMPLE–
"Ceiling one thousand overcast, visibility three, precipitation, temperature three zero, dew point missing, wind calm, altimeter three zero zero one."

7.3.5.4 "REMARKS" are announced in the following order of priority:

a) Automated "REMARKS":

1) Variable visibility.

2) Density altitude.

b) Manual Input "REMARKS." As a general rule, the remarks are announced in the same order as the parameters appear in the basic text of the observation.

EXAMPLE–
"Remarks, density altitude, two thousand five hundred, visibility variable between one and two, wind direction variable between two four zero and three one zero, observer ceiling estimated two thousand broken, observer temperature two, dew point minus five."

7.4 Automated Surface Observing System (ASOS)/Automated Weather Observing System (AWOS)

7.4.1 The ASOS/AWOS is the primary surface weather observing system of the U.S. The program to install and operate these systems throughout the U.S. is a joint effort of the NWS, the FAA and the Department of Defense. ASOS/AWOS is designed to support aviation operations and weather forecast activities. The ASOS/AWOS will provide continuous minute-by-minute observations and perform the basic observing functions necessary to

generate an aviation routine weather report (METAR) and other aviation weather information. The information may be transmitted over a discrete VHF radio frequency or the voice portion of a local NAVAID. ASOS/AWOS transmissions on a discrete VHF radio frequency are engineered to be receivable to a maximum of 25 NM from the ASOS/AWOS site and a maximum altitude of 10,000 feet AGL. At many locations, ASOS/AWOS signals may be received on the surface of the airport, but local conditions may limit the maximum reception distance and/or altitude. While the automated system and the human may differ in their methods of data collection and interpretation, both produce an observation quite similar in form and content. For the "objective" elements such as pressure, ambient temperature, dew point temperature, wind, and precipitation accumulation, both the automated system and the observer use a fixed location and time-averaging technique. The quantitative differences between the observer and the automated observation of these elements are negligible. For the "subjective" elements, however, observers use a fixed time, spatial averaging technique to describe the visual elements (sky condition, visibility and present weather), while the automated systems use a fixed location, time averaging technique. Although this is a fundamental change, the manual and automated techniques yield remarkably similar results within the limits of their respective capabilities. (See FIG GEN 3.5−26 and FIG GEN 3.5−27, Key to Decode an ASOS/AWOS (METAR) Observation.

7.4.2 System Description

7.4.2.1 The ASOS/AWOS at each airport location consists of four main components:

a) Individual weather sensors.

b) Data collection and processing units.

c) Peripherals and displays.

7.4.2.2 The ASOS/AWOS sensors perform the basic function of data acquisition. They continuously sample and measure the ambient environment, derive raw sensor data and make them available to the collection and processing units.

7.4.3 Every ASOS/AWOS will contain the following basic set of sensors.

7.4.3.1 Cloud height indicator (one or possibly three).

7.4.3.2 Visibility sensor (one or possibly three).

7.4.3.3 Precipitation identification sensor.

7.4.3.4 Freezing rain sensor.

7.4.3.5 Pressure sensors (two sensors at small airports; three sensors at large airports).

7.4.3.6 Ambient temperature/dew point temperature sensor.

7.4.3.7 Anemometer (wind direction and speed sensor).

7.4.3.8 Rainfall accumulation sensor.

7.4.3.9 Automated Lightning Detection and Reporting System (ALDARS) (excluding Alaska and Pacific Island sites).

7.4.4 The ASOS/AWOS data outlets include:

7.4.4.1 Those necessary for on−site airport users.

7.4.4.2 National communications networks.

7.4.4.3 Computer−generated voice (available through FAA radio broadcast to pilots and dial-in telephone line).

NOTE−
Wind direction is reported relative to magnetic north in ATIS as well as ASOS and AWOS radio (voice) broadcasts.

7.5 A comparison of weather observing programs and the elements observed by each are in TBL GEN 3.5−6, Weather Observing Programs.

7.6 Service Standards. During 1995, a government/industry team worked to comprehensively reassess the requirements for surface observations at the nation's airports. That work resulted in agreement on a set of service standards and the FAA and NWS ASOS sites to which the standards would apply. The term "Service Standards" refers to the level of detail in the weather observation. The service standards consist of four different levels of service (A, B, C, and D) as described below. Specific observational elements included in each service level are listed in TBL GEN 3.5−7, Weather Observation Service Standards.

7.6.1 Service Level D defines the minimum acceptable level of service. It is a completely automated service in which the ASOS/AWOS observation will constitute the entire observation; i.e., no additional weather information is added by a human observer. This service is referred to as a stand alone D site.

7.6.2 Service Level C is a service in which the human observer, usually an air traffic controller, augments or adds information to the automated observation. Service Level C also includes backup of ASOS/AWOS elements in the event of an ASOS/AWOS malfunction or an unrepresentative ASOS/AWOS report.

7.6.3 In backup, the human observer inserts the correct or missing value for the automated ASOS/AWOS elements. This service is provided by air traffic controllers under the Limited Aviation Weather Reporting Station (LAWRS) process, FSS and NWS observers, and, at selected sites, Non−Federal Observation Program observers.

Two categories of airports require detail beyond Service Level C in order to enhance air traffic control efficiency and increase system capacity. Services at these airports are typically provided by contract weather observers, NWS observers, and, at some locations, FSS observers.

7.6.4 Service Level B is a service in which weather observations consist of all elements provided under Service Level C, plus augmentation of additional data beyond the capability of the ASOS/AWOS. This category of airports includes smaller hubs or airports special in other ways that have worse than average bad weather operations for thunderstorms and/or freezing/frozen precipitation, and/or that are remote airports.

7.6.5 Service Level A, the highest and most demanding category, includes all the data reported in Service Standard B, plus additional requirements as specified. Service Level A covers major aviation hubs and/or high volume traffic airports with average or worse weather.

TBL GEN 3.5−6

Weather Observing Programs

Element Reported / Type	Wind	Visibility	Temperature Dew Point	Altimeter	Density Altimeter	Cloud/Ceiling	Precipitation Identification	Thunderstorm/ Lightning	Precipitation Occurrence	Rainfall Accumulation	Runway Surface Condition	Freezing Rain Occurrence	Remarks
ASOS	X	X	X	X	X	X	X			X		X	X
AWOS−A				X									
AWOS−A/V		X		X									
AWOS−1	X		X	X	X								
AWOS−2	X	X	X	X	X								
AWOS−3	X	X	X	X	X	X							
AWOS−3P	X	X	X	X	X	X	X						
AWOS−3T	X	X	X	X	X	X		X					
AWOS−3P/T	X	X	X	X	X	X	X	X					
AWOS−4	X	X	X	X	X	X	X	X	X	X	X	X	
Manual	X	X	X	X		X	X						X

REFERENCE− FAA Order JO 7900.5, Surface Weather Observing, for element reporting.

TBL GEN 3.5–7
Weather Observation Service Standards

SERVICE LEVEL A	
Service Level A consists of all the elements of Service Levels B, C and D plus the elements listed to the right, if observed.	10 minute longline RVR at precedented sites or additional visibility increments of 1/8, 1/16 and 0 Sector visibility Variable sky condition Cloud layers above 12,000 feet and cloud types Widespread dust, sand and other obscurations Volcanic eruptions
SERVICE LEVEL B	
Service Level B consists of all the elements of Service Levels C and D plus the elements listed to the right, if observed.	Longline RVR at precedented sites (may be instantaneous readout) Freezing drizzle versus freezing rain Ice pellets Snow depth & snow increasing rapidly remarks Thunderstorm and lightning location remarks Observed significant weather not at the station remarks
SERVICE LEVEL C	
Service Level C consists of all the elements of Service Level D plus augmentation and backup by a human observer or an air traffic control specialist on location nearby. Backup consists of inserting the correct value if the system malfunctions or is unrepresentative. Augmentation consists of adding the elements listed to the right, if observed. During hours that the observing facility is closed, the site reverts to Service Level D.	Thunderstorms Tornadoes Hail Virga Volcanic ash Tower visibility Operationally significant remarks as deemed appropriate by the observer
SERVICE LEVEL D	
This level of service consists of an ASOS or AWOS continually measuring the atmosphere at a point near the runway. The ASOS or AWOS senses and measures the weather parameters listed to the right.	Wind Visibility Precipitation/Obstruction to vision Cloud height Sky cover Temperature Dew point Altimeter

8. Weather Radar Services

8.1 The National Weather Service operates a network of radar sites for detecting coverage, intensity, and movement of precipitation. The network is supplemented by FAA and DoD radar sites in the western sections of the country. Local warning radars augment the network by operating on an as needed basis to support warning and forecast programs.

8.2 Scheduled radar observations are taken hourly and transmitted in alpha–numeric format on weather telecommunications circuits for flight planning purposes. Under certain conditions special radar reports are issued in addition to the hourly transmittals. Data contained in the reports is also collected by the National Meteorological Center and used to prepare hourly national radar summary charts for dissemination on facsimile circuits.

8.3 All En route Flight Advisory Service facilities and many Automated Flight Service Stations have equipment to directly access the radar displays from the individual weather radar sites. Specialists at these locations are trained to interpret the display for pilot briefing and inflight advisory services. The Center Weather Service Units

located in the ARTCCs also have access to weather radar displays and provide support to all air traffic facilities within their center's area.

8.4 A clear radar display (no echoes) does not mean that there is no significant weather within the coverage of the radar site. Clouds and fog are not detected by the radar. However, when echoes are present, turbulence can be implied by the intensity of the precipitation, and icing is implied by the presence of the precipitation at temperatures at or below zero degrees Celsius. Used in conjunction with other weather products, radar provides invaluable information for weather avoidance and flight planning.

8.5 Additional information on weather radar products and services can be found in FAA Advisory Circular 00–45, "Aviation Weather Services."

REFERENCE–
Pilot/Controller Glossary Term– Precipitation Radar Weather Descriptions.
AIP, GEN 3.5, Para 26., Thunderstorms.
Chart Supplement U.S., Charts, NWS Upper Air Observing Stations and Weather Network for the location of specific radar sites.

9. ATC Inflight Weather Avoidance Assistance

9.1 ATC Radar Weather Display

9.1.1 ATC radars are able to display areas of precipitation by sending out a beam of radio energy that is reflected back to the radar antenna when it strikes an object or moisture which may be in the form of rain drops, hail, or snow. The larger the object is, or the more dense its reflective surface, the stronger the return will be presented. Radar weather processors indicate the intensity of reflective returns in terms of decibels (dBZ). ATC systems cannot detect the presence or absence of clouds. The ATC systems can often determine the intensity of a precipitation area, but the specific character of that area (snow, rain, hail, VIRGA, etc.) cannot be determined. For this reason, ATC refers to all weather areas displayed on ATC radar scopes as "precipitation."

9.1.2 All ATC facilities using radar weather processors with the ability to determine precipitation intensity, will describe the intensity to pilots as:

9.1.2.1 "LIGHT" (< 26 dBZ)

9.1.2.2 "MODERATE" (26 to 40 dBZ)

9.1.2.3 "HEAVY" (> 40 to 50 dBZ)

9.1.2.4 "EXTREME" (> 50 dBZ)

NOTE–
En Route ATC radar's Weather and Radar Processor (WARP) does not display light precipitation intensity.

9.1.3 ATC facilities that, due to equipment limitations, cannot display the intensity levels of precipitation, will describe the location of the precipitation area by geographic position, or position relative to the aircraft. Since the intensity level is not available, the controller will state "INTENSITY UNKNOWN."

9.1.4 ARTCC facilities normally use a Weather and Radar Processor (WARP) to display a mosaic of data obtained from multiple NEXRAD sites. There is a time delay between actual conditions and those displayed to the controller. For example, the precipitation data on the ARTCC controller's display could be up to 6 minutes old. When the WARP is not available, a second system, the narrowband Air Route Surveillance Radar (ARSR) can display two distinct levels of precipitation intensity that will be described to pilots as "MODERATE" (26 to 40 dBZ) and "HEAVY TO EXTREME" (> 40 dBZ). The WARP processor is only used in ARTCC facilities.

9.1.5 *ATC radar is not able to detect turbulence.* Generally, turbulence can be expected to occur as the rate of rainfall or intensity of precipitation increases. Turbulence associated with greater rates of rainfall/precipitation will normally be more severe than any associated with lesser rates of rainfall/precipitation. Turbulence should be expected to occur near convective activity, even in clear air. Thunderstorms are a form of convective activity that imply severe or greater turbulence. Operation within 20 miles of thunderstorms should be approached with great caution, as the severity of turbulence can be markedly greater than the precipitation intensity might indicate.

9.2 Weather Avoidance Assistance

9.2.1 To the extent possible, controllers will issue pertinent information of weather or chaff areas and assist pilots in avoiding such areas if requested. Pilots should respond to a weather advisory by either acknowledging the advisory or by acknowledging the advisory and requesting an alternative course of action as follows:

9.2.1.1 Request to deviate off course by stating a heading or degrees, direction of deviation, and approximate number of miles. In this case, when the requested deviation is approved, navigation is at the pilot's prerogative, but must maintain the altitude assigned, and remain within the lateral restrictions issued by ATC.

9.2.1.2 An approval for lateral deviation authorizes the pilot to maneuver left or right within the lateral limits specified in the clearance.

NOTE–
1. *It is often necessary for ATC to restrict the amount of lateral deviation ("twenty degrees right," "up to fifteen degrees left," "up to ten degrees left or right of course").*

2. *The term "when able, proceed direct," in an ATC weather deviation clearance, refers to the pilot's ability to remain clear of the weather when returning to course/route.*

9.2.1.3 Request a new route to avoid the affected area.

9.2.1.4 Request a change of altitude.

9.2.1.5 Request radar vectors around the affected areas.

9.2.2 For obvious reasons of safety, an IFR pilot must not deviate from the course or altitude/flight level without a proper ATC clearance. When weather conditions encountered are so severe that an immediate deviation is determined to be necessary and time will not permit approval by ATC, the pilot's emergency authority may be exercised.

9.2.3 When the pilot requests clearance for a route deviation or for an ATC radar vector, the controller must evaluate the air traffic picture in the affected area and coordinate with other controllers (if ATC jurisdictional boundaries may be crossed) before replying to the request.

9.2.4 It should be remembered that the controller's primary function is to provide safe separation between aircraft. Any additional service, such as weather avoidance assistance, can only be provided to the extent that it does not derogate the primary function. It is also worth noting that the separation workload is generally greater than normal when weather disrupts the usual flow of traffic. ATC radar limitations and frequency congestion may also be factors in limiting the controller's capability to provide additional service.

9.2.5 It is very important that the request for deviation or radar vector be forwarded to ATC as far in advance as possible. Delay in submitting it may delay or even preclude ATC approval or require that additional restrictions be placed on the clearance. Insofar as possible, the following information should be furnished to ATC when requesting clearance to detour around weather activity:

9.2.5.1 Proposed point where detour will commence.

9.2.5.2 Proposed route and extent of detour (direction and distance).

9.2.5.3 Point where original route will be resumed.

9.2.5.4 Flight conditions (IFR or VFR).

9.2.5.5 Any further deviation that may become necessary as the flight progresses.

9.2.5.6 Advise if the aircraft is equipped with functioning airborne radar.

9.2.6 To a large degree, the assistance that might be rendered by ATC will depend upon the weather information available to controllers. Due to the extremely transitory nature of severe weather situations, the controller's weather information may be of only limited value if based on weather observed on radar only. Frequent updates by pilots giving specific information as to the area affected, altitudes, intensity, and nature of the severe weather can be of considerable value. Such reports are relayed by radio or phone to other pilots and controllers, and they also receive widespread teletypewriter dissemination.

9.2.7 Obtaining IFR clearance or an ATC radar vector to circumnavigate severe weather can often be accommodated more readily in the en route areas away from terminals because there is usually less congestion and, therefore, greater freedom of action. In terminal areas, the problem is more acute because of traffic density, ATC coordination requirements, complex departure and arrival routes, and adjacent airports. As a consequence, controllers are less likely to be able to accommodate all requests for weather detours in a terminal area or be in a position to volunteer such routes to the pilot. Nevertheless, pilots should not hesitate to advise controllers of any observed severe weather and should specifically advise controllers if they desire circumnavigation of observed weather.

9.3 ATC Severe Weather Avoidance Plans

9.3.1 Air Route Traffic Control Centers and some Terminal Radar Control facilities utilize plans for severe weather avoidance within their control areas. Aviation−oriented meteorologists provide weather information. Preplanned alternate route packages developed by the facilities are used in conjunction with flow restrictions to ensure a more orderly flow of traffic during periods of severe or adverse weather conditions.

9.3.2 During these periods, pilots may expect to receive alternative route clearances. These routes are predicated upon the forecasts of the meteorologist and coordination between the Air Traffic Control System Command Center and the other centers. The routes are utilized as necessary in order to allow as many aircraft as possible to operate in any given area, and frequently they will deviate from the normal preferred routes. With user cooperation, this plan may significantly reduce delays.

9.4 Procedures for Weather Deviations and Other Contingencies in Oceanic Controlled Airspace

9.4.1 See ENR 7.3, Paragraph 4, Weather Deviation Procedures.

10. Notifications Required From Operators

10.1 Preflight briefing and flight documentation services provided by FSSs do not require prior notification.

10.2 Preflight briefing and flight documentation services provided by a National Weather Service Office (or contract office) are available upon request for long−range international flights for which meteorological data packages are prepared for the pilot−in−command. Briefing times should be coordinated between the local representative and the local meteorological office.

10.3 Flight Service Stations do not normally have the capability to prepare meteorological data packages for a preflight briefing.

11. Weather Observing Systems and Operating Procedures

For surface wind readings, most meteorological reporting stations have a direct reading, 3−cup anemometer wind system for which a 1−minute mean wind speed and direction (based on true north) is taken. Some stations also have a continuous wind speed recorder which is used in determining the gustiness of the wind.

12. Runway Visual Range (RVR)

There are currently two configurations of the RVR, commonly identified as Taskers and New Generation RVR. The Taskers use transmissometer technology. The New Generation RVRs use forward scatter technology and are currently being deployed to replace the existing Taskers.

12.1 RVR values are measured by transmissometers mounted on 14−foot towers along the runway. A full RVR system consists of:

12.1.1 A transmissometer projector and related items.

12.1.2 A transmissometer receiver (detector) and related items.

12.1.3 An analog recorder.

12.1.4 A signal data converter and related items.

12.1.5 A remote digital or remote display programmer.

12.2 The transmissometer projector and receiver are mounted on towers 250 feet apart. A known intensity of light is emitted from the projector and is measured by the receiver. Any obscuring matter, such as rain, snow, dust, fog, haze, or smoke, reduces the light intensity arriving at the receiver. The resultant intensity measurement is then converted to an RVR value by the signal data converter. These values are displayed by readout equipment in the associated air traffic facility and updated approximately once every minute for controller issuance to pilots.

12.3 The signal data converter receives information on the high−intensity runway edge light setting in use (step 3, 4, or 5), transmission values from the transmissometer, and the sensing of day or night conditions. From the three data sources, the system will compute appropriate RVR values.

12.4 An RVR transmissometer established on a 250−foot baseline provides digital readouts to a minimum of 600 feet, which are displayed in 200−foot increments to 3,000 feet, and in 500−foot increments from 3,000 feet to a maximum value of 6,000 feet.

12.5 RVR values for Category IIIa operations extend down to 700−foot RVR; however, only 600 and 800 feet are reportable RVR increments. The 800 RVR reportable value covers a range of 701 feet to 900 feet and is therefore a valid minimum indication of Category IIIa operations.

12.6 Approach categories with the corresponding minimum RVR values are listed in TBL GEN 3.5−8.

TBL GEN 3.5−8

Category	Visibility (RVR)
Nonprecision	2,400 feet
Category I	1,800 feet*
Category II	1,000 feet
Category IIIa	700 feet
Category IIIb	150 feet
Category IIIc	0 feet

* 1,400 feet with special equipment and authorization

12.7 Ten−minute maximum and minimum RVR values for the designated RVR runway are reported in the body of the aviation weather report when the prevailing visibility is less than 1 mile and/or the RVR is 6,000 feet or less. ATCTs report RVR when the prevailing visibility is 1 mile or less and/or the RVR is 6,000 feet or less.

12.8 Details on the requirements for the operational use of RVR are contained in FAA Advisory Circular 97−1, "Runway Visual Range (RVR)." Pilots are responsible for compliance with minimums prescribed for their class of operations in appropriate Federal Aviation Regulations and/or operations specifications.

12.8.1 RVR values are also measured by forward scatter meters mounted on 14−foot frangible fiberglass poles. A full RVR system consists of:

12.8.1.1 Forward scatter meter with a transmitter, receiver and associated items.

12.8.1.2 A runway light intensity monitor (RLIM).

12.8.1.3 An ambient light sensor (ALS).

12.8.1.4 A data processor unit (DPU).

12.8.1.5 A controller display (CD).

12.8.2 The forward scatter meter is mounted on a 14−foot frangible pole. Infrared light is emitted from the transmitter and received by the receiver. Any obscuring matter such as rain, snow, dust, fog, haze, or smoke increases the amount of scattered light reaching the receiver. The resulting measurement along with inputs from

the runway light intensity monitor and the ambient light sensor are forwarded to the DPU which calculates the proper RVR value. The RVR values are displayed locally and remotely on controller displays.

12.8.3 The runway light intensity monitors both the runway edge and centerline light step settings (steps 1 through 5). Centerline light step settings are used for CAT IIIb operations. Edge light step settings are used for CAT I, II, and IIIa operations.

12.8.4 New Generation RVRs can measure and display RVR values down to the lowest limits of Category IIIb operations (150 foot RVR). RVR values are displayed in 100−foot increments and are reported as follows:

12.8.4.1 100−foot increments for products below 800 feet.

12.8.4.2 200−foot increments for products between 800 feet and 3,000 feet.

12.8.4.3 500−foot increments for products between 3,000 feet and 6,500 feet.

12.8.4.4 25−meter increments for products below 150 meters.

12.8.4.5 50−meter increments for products between 150 meters and 800 meters.

12.8.4.6 100−meter increments for products between 800 meters and 1,200 meters.

12.8.4.7 200−meter increments for products between 1,200 meters and 2,000 meters.

13. Reporting of Cloud Heights

13.1 Ceiling, by definition in Federal Aviation Regulations, and as used in Aviation Weather Reports and Forecasts, is the height above ground (or water) level of the lowest layer of clouds or obscuring phenomenon that is reported as “broken,” “overcast,” or “the vertical visibility into an obscuration.” For example, an aerodrome forecast which reads “BKN030” refers to heights above ground level (AGL). An area forecast which reads “BKN030” states that the height is above mean sea level (MSL). See FIG GEN 3.5−24 for the Key to Routine Aviation Weather Reports and Forecasts for the definition of “broken,” “overcast,” and “obscuration.”

13.2 Information on cloud base height is obtained by use of ceilometers (rotating or fixed beam), ceiling lights, ceiling balloons, pilot reports, and observer estimations. The systems in use by most reporting stations are either the observer estimation or the rotating beam ceilometer.

13.3 Pilots usually report height values above mean sea level, since they determine heights by the altimeter. This is taken into account when disseminating and otherwise applying information received from pilots. (“Ceiling” heights are always above ground level.) In reports disseminated as pilot reports, height references are given the same as received from pilots; that is, above mean sea level.

13.4 In area forecasts or inflight Advisories, ceilings are denoted by the contraction “CIG” when used with sky cover symbols as in “LWRG TO CIG OVC005,” or the contraction “AGL” after the forecast cloud height value. When the cloud base is given in height above mean sea level, it is so indicated by the contraction “MSL” or “ASL” following the height value. The heights of cloud tops, freezing level, icing, and turbulence are always given in heights above mean sea level (ASL or MSL).

14. Reporting Prevailing Visibility

14.1 Surface (horizontal) visibility is reported in METAR reports in terms of statute miles and increments thereof; e.g., $^{1}/_{16}$, $^{1}/_{8}$, $^{3}/_{16}$, $^{1}/_{4}$, $^{5}/_{16}$, $^{3}/_{8}$, $^{1}/_{2}$, $^{5}/_{8}$, $^{3}/_{4}$, $^{7}/_{8}$, 1, 1 $^{1}/_{8}$, etc. (Visibility reported by an unaugmented automated site is reported differently than in a manual report; i.e., ASOS/AWOS: 0, $^{1}/_{16}$, $^{1}/_{8}$, $^{1}/_{4}$, $^{1}/_{2}$, $^{3}/_{4}$, 1, 1 $^{1}/_{4}$, 1 $^{1}/_{2}$, 1 $^{3}/_{4}$, 2, 2 $^{1}/_{2}$, 3, 4, 5, etc., AWOS: M$^{1}/_{4}$, $^{1}/_{4}$, $^{1}/_{2}$, $^{3}/_{4}$, 1, 1 $^{1}/_{4}$, 1 $^{1}/_{2}$, 1 $^{3}/_{4}$, 2, 2 $^{1}/_{2}$, 3, 4, 5, etc.) Visibility is determined through the ability to see and identify preselected and prominent objects at a known distance from the usual point of observation. Visibilities which are determined to be less than 7 miles, identify the obscuring atmospheric condition; e.g., fog, haze, smoke, etc., or combinations thereof.

14.2 Prevailing visibility is the greatest visibility equaled or exceeded throughout at least one−half the horizon circle, not necessarily contiguous. Segments of the horizon circle which may have a significantly different

visibility may be reported in the remarks section of the weather report; i.e., the southeastern quadrant of the horizon circle may be determined to be 2 miles in mist while the remaining quadrants are determined to be 3 miles in mist.

14.3 When the prevailing visibility at the usual point of observation, or at the tower level, is less than 4 miles, certificated tower personnel will take visibility observations in addition to those taken at the usual point of observation. The lower of these two values will be used as the prevailing visibility for aircraft operations.

15. Estimating Intensity of Rain and Ice Pellets

15.1 Rain

15.1.1 Light. From scattered drops that, regardless of duration, do not completely wet an exposed surface up to a condition where individual drops are easily seen.

15.1.2 Moderate. Individual drops are not clearly identifiable; spray is observable just above pavements and other hard surfaces.

15.1.3 Heavy. Rain seemingly falls in sheets; individual drops are not identifiable; heavy spray to a height of several inches is observed over hard surfaces.

15.2 Ice Pellets

15.2.1 Light. Scattered pellets that do not completely cover an exposed surface regardless of duration. Visibility is not affected.

15.2.2 Moderate. Slow accumulation on the ground. Visibility is reduced by ice pellets to less than 7 statute miles.

15.2.3 Heavy. Rapid accumulation on the ground. Visibility is reduced by ice pellets to less than 3 statute miles.

16. Estimating the Intensity of Snow or Drizzle (Based on Visibility)

16.1 Light. Visibility more than $^1/_2$ statute mile.

16.2 Moderate. Visibility from more than $^1/_4$ statute mile to $^1/_2$ statute mile.

16.3 Heavy. Visibility $^1/_4$ statute mile or less.

17. Pilot Weather Reports (PIREPs)

17.1 FAA air traffic facilities are required to solicit PIREPs when the following conditions are reported or forecast: ceilings at or below 5,000 feet, visibility at or below 5 miles (surface or aloft), thunderstorms and related phenomena, icing of a light degree or greater, turbulence of a moderate degree or greater, wind shear, and reported or forecast volcanic ash clouds, including the presence of sulphur gases (SO_2 or H_2S). SO_2 is identifiable as the sharp, acrid odor of a freshly struck match. H_2S, also known as sewer gas, has the odor of rotten eggs. Electrical smoke and fire and SO_2 are two odors described as somewhat similar.

NOTE−
After determining there are no secondary indications that would result from and indicate an electrical fire, the flight crew must establish whether the sulphur odor is transient or not. This is best achieved by flight crew donning oxygen mask(s) and breathing 100 percent oxygen for the period of time that results in a complete change of air within the cockpit and also allows the sense of smell to be regained. After the appropriate time period, the flight crew should remove the oxygen mask and determine if the odor is still present. The detection of sulphur gases are to be reported as SO_2 to conform to ICAO practices.

17.2 Pilots are urged to cooperate and promptly volunteer reports of these conditions and other atmospheric data, such as cloud bases, tops and layers, flight visibility, precipitation, visibility restrictions (haze, smoke, and dust), wind at altitude, and temperature aloft.

17.3 PIREPs should be given to the ground facility with which communications are established; i.e., FSS, ARTCC, or terminal ATC. One of the primary duties of the Inflight position is to serve as a collection point for the exchange of PIREPs with en route aircraft.

17.4 If pilots do not make PIREPs by radio, it is helpful if, upon landing, they report to the nearest FSS or Weather Forecast Office the inflight conditions which they encountered. Some of the uses made of the reports are:

17.4.1 The ATCT uses the reports to expedite the flow of air traffic in the vicinity of the field and for hazardous weather avoidance procedures.

17.4.2 The FSS uses the reports to brief other pilots, to provide inflight advisories and weather avoidance information to en route aircraft.

17.4.3 The ARTCC uses the reports to expedite the flow of en route traffic, to determine most favorable altitudes, and to issue hazardous weather information within the center's area.

17.4.4 The NWS uses the reports to verify or amend conditions contained in aviation forecasts and advisories; (In some cases, pilot reports of hazardous conditions are the triggering mechanism for the issuance of advisories.)

17.4.5 The NWS, other government organizations, the military, and private industry groups use PIREPs for research activities in the study of meteorological phenomena.

17.4.6 All air traffic facilities and the NWS forward the reports received from pilots into the weather distribution system to assure the information is made available to all pilots and other interested parties.

17.5 The FAA, NWS, and other organizations that enter PIREPs into the weather reporting system use the format listed in TBL GEN 3.5−9, PIREP Element Code Chart. Items 1 through 6 are included in all transmitted PIREPs along with one or more of items 7 through 13. Although the PIREP should be as complete and concise as possible, pilots should not be overly concerned with strict format or phraseology. The important thing is that the information is relayed so other pilots may benefit from your observation. If a portion of the report needs clarification, the ground station will request the information.

17.6 Completed PIREPs will be transmitted to weather circuits as in the following examples:

EXAMPLE−
KCMH UA/OV APE 230010/TM 1516/FL085/TP BE20/SK BKN065/WX FV03SM HZ FU/TA 20/TB LGT.

Translation: one zero miles southwest of Appleton VOR; time 1516 UTC; altitude eight thousand five hundred; aircraft type BE20; base of the broken cloud layer is six thousand five hundred; flight visibility 3 miles with haze and smoke; air temperature 20 degrees Celsius; light turbulence.

EXAMPLE−
KCRW UA/OV KBKW 360015−KCRW/TM 1815/ FL120/TP BE99/SK IMC/WX RA−/TA M08/WV 290030/TB LGT−MDT/IC LGT RIME/RM MDT MXD ICG DURC KROA NWBND FL080−100 1750Z.
Translation: from 15 miles north of Beckley VOR to Charleston VOR; time 1815 UTC; altitude 12,000 feet; type aircraft, BE−99; in clouds; rain; temperature minus 8 Celsius; wind 290 degrees magnetic at 30 knots; light to moderate turbulence; light rime icing during climb northwestbound from Roanoke, VA, between 8,000 and 10,000 feet at 1750 UTC.

TBL GEN 3.5−9
PIREP Element Code Chart

	PIREP ELEMENT	PIREP CODE	CONTENTS
1.	3−letter station identifier	XXX	Nearest weather reporting location to the reported phenomenon
2.	Report type	UA or UUA	Routine or urgent PIREP
3.	Location	/OV	In relation to a VOR
4.	Time	/TM	Coordinated Universal Time
5.	Altitude	/FL	Essential for turbulence and icing reports
6.	Type aircraft	/TP	Essential for turbulence and icing reports
7.	Sky cover	/SK	Cloud height and coverage (sky clear, few, scattered, broken, or overcast)
8.	Weather	/WX	Flight visibility, precipitation, restrictions to visibility, etc.
9.	Temperature	/TA	Degrees Celsius
10.	Wind	/WV	Direction in degrees magnetic north and speed in knots
11.	Turbulence	/TB	See paragraph 21.
12.	Icing	/IC	See paragraph 19.
13.	Remarks	/RM	For reporting elements not included or to clarify previously reported items

18. Mandatory MET Points

18.1 Within the ICAO CAR/SAM Regions and within the U.S. area of responsibility, several mandatory MET reporting points have been established. These points are located within the Houston, Miami, and San Juan Flight Information Regions (FIR). These points have been established for flights between the South American and Caribbean Regions and Europe, Canada and the U.S.

18.2 Mandatory MET Reporting Points Within the Houston FIR

Point	For Flights Between
ABBOT	Acapulco and Montreal, New York, Toronto, Mexico City and New Orleans.
ALARD	New Orleans and Belize, Guatemala, San Pedro Sula, Mexico City and Miami, Tampa.
ARGUS	Toronto and Guadalajara, Mexico City, New Orleans and Mexico City.
SWORD	Dallas−Fort Worth, New Orleans, Chicago and Cancun, Cozumel, and Central America.

18.3 Mandatory MET Reporting Points Within the Miami FIR

Point	For Flights Between
Grand Turk	New York and Aruba, Curacao, Kingston, Miami and Belem, St. Thomas, Rio de Janeiro, San Paulo, St. Croix, Kingston and Bermuda.
GRATX	Madrid and Miami, Havana.
MAPYL	New York and Guayaquil, Montego Bay, Panama, Lima, Atlanta and San Juan.
RESIN	New Orleans and San Juan.
SLAPP	New York and Aruba, Curacao, Kingston, Port−au−Prince. Bermuda and Freeport, Nassau. New York and Barranquilla, Bogota, Santo Domingo, Washington and Santo Domingo, Atlanta and San Juan.

18.4 Mandatory MET Reporting Points Within the San Juan FIR

Point	For Flights Between
GRANN	Toronto and Barbados, New York and Fort de France. At intersection of routes A321, A523, G432.
KRAFT	San Juan and Buenos Aires, Caracas, St. Thomas, St. Croix, St. Maarten, San Juan, Kingston and Bermuda.
PISAX	New York and Barbados, Fort de France, Bermuda and Antigua, Barbados.

19. PIREPs Relating to Airframe Icing

19.1 The effects of ice accretion on aircraft are: cumulative−thrust is reduced, drag increases, lift lessens, weight increases. The results are an increase in stall speed and a deterioration of aircraft performance. In extreme cases, 2 to 3 inches of ice can form on the leading edge of the airfoil in less than 5 minutes. It takes but $^1/_2$ inch of ice to reduce the lifting power of some aircraft by 50 percent and to increase the frictional drag by an equal percentage.

19.2 A pilot can expect icing when flying in visible precipitation, such as rain or cloud droplets, and the temperature is between +02 and −10 degrees Celsius. When icing is detected, a pilot should do one of two things (particularly if the aircraft is not equipped with deicing equipment). The pilot should get out of the area of precipitation or go to an altitude where the temperature is above freezing. This “warmer” altitude may not always be a lower altitude. Proper preflight action includes obtaining information on the freezing level and the above−freezing levels in precipitation areas. Report the icing to an ATC or FSS facility, and if operating IFR, request new routing or altitude if icing will be a hazard. Be sure to give the type of aircraft to ATC when reporting icing. TBL GEN 3.5−10 describes how to report icing conditions.

TBL GEN 3.5−10

Intensity	Ice Accumulation
Trace	Ice becomes noticeable. The rate of accumulation is slightly greater than the rate of sublimation. A representative accretion rate for reference purposes is less than ¼ inch (6 mm) per hour on the outer wing. The pilot should consider exiting the icing conditions before they become worse.
Light	The rate of ice accumulation requires occasional cycling of manual deicing systems to minimize ice accretions on the airframe. A representative accretion rate for reference purposes is ¼ inch to 1 inch (0.6 to 2.5 cm) per hour on the unprotected part of the outer wing. The pilot should consider exiting the icing condition.
Moderate	The rate of ice accumulation requires frequent cycling of manual deicing systems to minimize ice accretions on the airframe. A representative accretion rate for reference purposes is 1 to 3 inches (2.5 to 7.5 cm) per hour on the unprotected part of the outer wing. The pilot should consider exiting the icing condition as soon as possible.
Severe	The rate of ice accumulation is such that ice protection systems fail to remove the accumulation of ice and ice accumulates in locations not normally prone to icing, such as areas aft of protected surfaces and any other areas identified by the manufacturer. A representative accretion rate for reference purposes is more than 3 inches (7.5 cm) per hour on the unprotected part of the outer wing. By regulation, immediate exit is required.
Pilot Report: Aircraft Identification, Location, Time (UTC), Intensity of Type[1], Altitude/FL, Aircraft Type, Indicated Air Speed (IAS), and Outside Air Temperature (OAT)[2].	
[1]Rime or Clear Ice: Rime ice is a rough, milky, opaque ice formed by the instantaneous freezing of small supercooled water droplets. Clear ice is a glossy, clear, or translucent ice formed by the relatively slow freezing of large supercooled water droplets.	
[2]The Outside Air Temperature (OAT) should be requested by the FSS or ATC if not included in the PIREP.	
NOTE − Severe icing is aircraft dependent, as are the other categories of icing intensity. Severe icing may occur at any ice accumulation rate when the icing rate or ice accumulations exceed the tolerance of the aircraft.	

20. Definitions of Inflight Icing Terms

See TBL GEN 3.5−11, Icing Types, and TBL GEN 3.5−12, Icing Conditions.

TBL GEN 3.5−11
Icing Types

Clear Ice	See Glaze Ice.
Glaze Ice	Ice, sometimes clear and smooth, but usually containing some air pockets, which results in a lumpy translucent appearance. Glaze ice results from supercooled drops/droplets striking a surface but not freezing rapidly on contact. Glaze ice is denser, harder, and sometimes more transparent than rime ice. Factors, which favor glaze formation, are those that favor slow dissipation of the heat of fusion (i.e., slight supercooling and rapid accretion). With larger accretions, the ice shape typically includes “horns” protruding from unprotected leading edge surfaces. It is the ice shape, rather than the clarity or color of the ice, which is most likely to be accurately assessed from the cockpit. The terms “clear” and “glaze” have been used for essentially the same type of ice accretion, although some reserve “clear” for thinner accretions which lack horns and conform to the airfoil.
Intercycle Ice	Ice which accumulates on a protected surface between actuation cycles of a deicing system.
Known or Observed or Detected Ice Accretion	Actual ice observed visually to be on the aircraft by the flight crew or identified by on−board sensors.
Mixed Ice	Simultaneous appearance or a combination of rime and glaze ice characteristics. Since the clarity, color, and shape of the ice will be a mixture of rime and glaze characteristics, accurate identification of mixed ice from the cockpit may be difficult.
Residual Ice	Ice which remains on a protected surface immediately after the actuation of a deicing system.
Rime Ice	A rough, milky, opaque ice formed by the rapid freezing of supercooled drops/droplets after they strike the aircraft. The rapid freezing results in air being trapped, giving the ice its opaque appearance and making it porous and brittle. Rime ice typically accretes along the stagnation line of an airfoil and is more regular in shape and conformal to the airfoil than glaze ice. It is the ice shape, rather than the clarity or color of the ice, which is most likely to be accurately assessed from the cockpit.
Runback Ice	Ice which forms from the freezing or refreezing of water leaving protected surfaces and running back to unprotected surfaces.
Note− *Ice types are difficult for the pilot to discern and have uncertain effects on an airplane in flight. Ice type definitions will be included in the AIP for use in the “Remarks” section of the PIREP and for use in forecasting.*	

TBL GEN 3.5−12
Icing Conditions

Appendix C Icing Conditions	Appendix C (14 CFR, Part 25 and 29) is the certification icing condition standard for approving ice protection provisions on aircraft. The conditions are specified in terms of altitude, temperature, liquid water content (LWC), representative droplet size (mean effective drop diameter [MED]), and cloud horizontal extent.
Forecast Icing Conditions	Environmental conditions expected by a National Weather Service or an FAA−approved weather provider to be conducive to the formation of inflight icing on aircraft.
Freezing Drizzle (FZDZ)	Drizzle is precipitation at ground level or aloft in the form of liquid water drops which have diameters less than 0.5 mm and greater than 0.05 mm. Freezing drizzle is drizzle that exists at air temperatures less than 0°C (supercooled), remains in liquid form, and freezes upon contact with objects on the surface or airborne.
Freezing Precipitation	Freezing precipitation is freezing rain or freezing drizzle falling through or outside of visible cloud.
Freezing Rain (FZRA)	Rain is precipitation at ground level or aloft in the form of liquid water drops which have diameters greater than 0.5 mm. Freezing rain is rain that exists at air temperatures less than 0°C (supercooled), remains in liquid form, and freezes upon contact with objects on the ground or in the air.
Icing in Cloud	Icing occurring within visible cloud. Cloud droplets (diameter < 0.05 mm) will be present; freezing drizzle and/or freezing rain may or may not be present.
Icing in Precipitation	Icing occurring from an encounter with freezing precipitation, that is, supercooled drops with diameters exceeding 0.05 mm, within or outside of visible cloud.
Known Icing Conditions	Atmospheric conditions in which the formation of ice is observed or detected in flight. ***Note−*** *Because of the variability in space and time of atmospheric conditions, the existence of a report of observed icing does not assure the presence or intensity of icing conditions at a later time, nor can a report of no icing assure the absence of icing conditions at a later time.*
Potential Icing Conditions	Atmospheric icing conditions that are typically defined by airframe manufacturers relative to temperature and visible moisture that may result in aircraft ice accretion on the ground or in flight. The potential icing conditions are typically defined in the Airplane Flight Manual or in the Airplane Operation Manual.
Supercooled Drizzle Drops (SCDD)	Synonymous with freezing drizzle aloft.
Supercooled Drops or /Droplets	Water drops/droplets which remain unfrozen at temperatures below 0°C. Supercooled drops are found in clouds, freezing drizzle, and freezing rain in the atmosphere. These drops may impinge and freeze after contact on aircraft surfaces.
Supercooled Large Drops (SLD)	Liquid droplets with diameters greater than 0.05 mm at temperatures less than 0°C, i.e., freezing rain or freezing drizzle.

21. PIREPs Relating to Turbulence

21.1 When encountering turbulence, pilots are urgently requested to report such conditions to ATC as soon as practicable. PIREPs relating to turbulence should state:

21.1.1 Aircraft location.

21.1.2 Time of occurrence in UTC.

21.1.3 Turbulence intensity.

21.1.4 Whether the turbulence occurred in or near clouds.

21.1.5 Aircraft altitude, or flight level.

21.1.6 Type of aircraft.

21.1.7 Duration of turbulence.

EXAMPLE−

1. *Over Omaha, 1232Z, moderate turbulence in clouds at Flight Level three one zero, Boeing 707.*

2. *From five zero miles south of Albuquerque to three zero miles north of Phoenix, 1250Z, occasional moderate chop at Flight Level three three zero, DC8.*

21.2 Duration and classification of intensity should be made using TBL GEN 3.5−13, Turbulence Reporting Criteria Table.

TBL GEN 3.5−13

Turbulence Reporting Criteria Table

Intensity	Aircraft Reaction	Reaction inside Aircraft	Reporting Term−Definition
Light	Turbulence that momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw). Report as **Light Turbulence;** [1] or Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. Report as **Light Chop.**	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted, and little or no difficulty is encountered in walking.	Occasional−Less than $^1/_3$ of the time. Intermittent−$^1/_3$ to $^2/_3$. Continuous−More than $^2/_3$.
Moderate	Turbulence that is similar to Light Turbulence but of greater intensity. Changes in altitude and/or attitude occur, but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. Report as **Moderate Turbulence;** [1] or Turbulence that is similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. Report as **Moderate Chop.** [1]	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.	**NOTE** 1. Pilots should report location(s), time (UTC), intensity, whether in or near clouds, altitude, type of aircraft and, when applicable, duration of turbulence. 2. Duration may be based on time between two locations or over a single location. All locations should be readily identifiable. **EXAMPLES:** a. Over Omaha. 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707. b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.
Severe	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. Report as **Severe Turbulence.**[1]	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food service and walking are impossible.	
Extreme	Turbulence in which the aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. Report as **Extreme Turbulence.** [1]		

[1] High level turbulence (normally above 15,000 feet ASL) not associated with cumuliform cloudiness, including thunderstorms, should be reported as clear air turbulence (CAT) preceded by the appropriate intensity, or light or moderate chop.

22. Wind Shear PIREPs

22.1 Because unexpected changes in wind speed and direction can be hazardous to aircraft operations at low altitudes on approach to and departing from airports, pilots are urged to promptly volunteer reports to controllers of wind shear conditions they encounter. An advance warning of this information will assist other pilots in avoiding or coping with a wind shear on approach or departure.

22.2 When describing conditions, the use of the terms “negative” or “positive” wind shear should be avoided. PIREPs of negative wind shear on final, intended to describe loss of airspeed and lift, have been interpreted to

mean that no wind shear was encountered. The recommended method for wind shear reporting is to state the loss/gain of airspeed and the altitude(s) at which it was encountered.

EXAMPLE−
1. *Denver Tower, Cessna 1234 encountered wind shear, loss of 20 knots at 400.*

2. *Tulsa Tower, American 721 encountered wind shear on final, gained 25 knots between 600 and 400 feet followed by loss of 40 knots between 400 feet and surface.*

Pilots using Inertial Navigation Systems should report the wind and altitude both above and below the shear layer.

EXAMPLE−
Miami Tower, Gulfstream 403 Charlie encountered an abrupt wind shear at 800 feet on final, max thrust required.

Pilots who are not able to report wind shear in these specific terms are encouraged to make reports in terms of the effect upon their aircraft.

22.3 Wind Shear Escape

22.3.1 Pilots should report to ATC when they are performing a wind shear escape maneuver. This report should be made as soon as practicable, but not until aircraft safety and control is assured, which may not be satisfied until the aircraft is clear of the wind shear or microburst. ATC should provide safety alerts and traffic advisories, as appropriate.

EXAMPLE−
"Denver Tower, United 1154, wind shear escape."

22.3.2 Once the pilot initiates a wind shear escape maneuver, ATC is not responsible for providing approved separation between the aircraft and any other aircraft, airspace, terrain, or obstacle until the pilot reports that the escape procedure is complete and approved separation has been re−established. Pilots should advise ATC that they are resuming the previously assigned clearance or should request an alternate clearance.

EXAMPLE−
"Denver Tower, United ll54, wind shear escape complete, resuming last assigned heading/(name) DP/clearance."
or
"Denver Tower, United ll54, wind shear escape complete, request further instructions."

23. Clear Air Turbulence (CAT) PIREPs

23.1 Clear air turbulence (CAT) has become a very serious operational factor to flight operations at all levels and especially to jet traffic flying in excess of 15,000 feet. The best available information on this phenomenon must come from pilots via the PIREP procedures. All pilots encountering CAT conditions are urgently requested to report time, location, and intensity (light, moderate, severe, or extreme) of the element to the FAA facility with which they are maintaining radio contact. If time and conditions permit, elements should be reported according to the standards for other PIREPs and position reports. See TBL GEN 3.5−13, Turbulence Reporting Criteria Table.

24. Microbursts

24.1 Relatively recent meteorological studies have confirmed the existence of microburst phenomena. Microbursts are small−scale intense downdrafts which, on reaching the surface, spread outward in all directions from the downdraft center. This causes the presence of both vertical and horizontal wind shears that can be extremely hazardous to all types and categories of aircraft, especially at low altitudes. Due to their small size, short life−span, and the fact that they can occur over areas without surface precipitation, microbursts are not easily detectable using conventional weather radar or wind shear alert systems.

24.2 Parent clouds producing microburst activity can be any of the low or middle layer convective cloud types. Note however, that microbursts commonly occur within the heavy rain portion of thunderstorms, and in much weaker, benign−appearing convective cells that have little or no precipitation reaching the ground.

24.3 The life cycle of a microburst as it descends in a convective rain shaft is seen in FIG GEN 3.5−8, Evolution of a Microburst. An important consideration for pilots is the fact that the microburst intensifies for about 5 minutes after it strikes the ground.

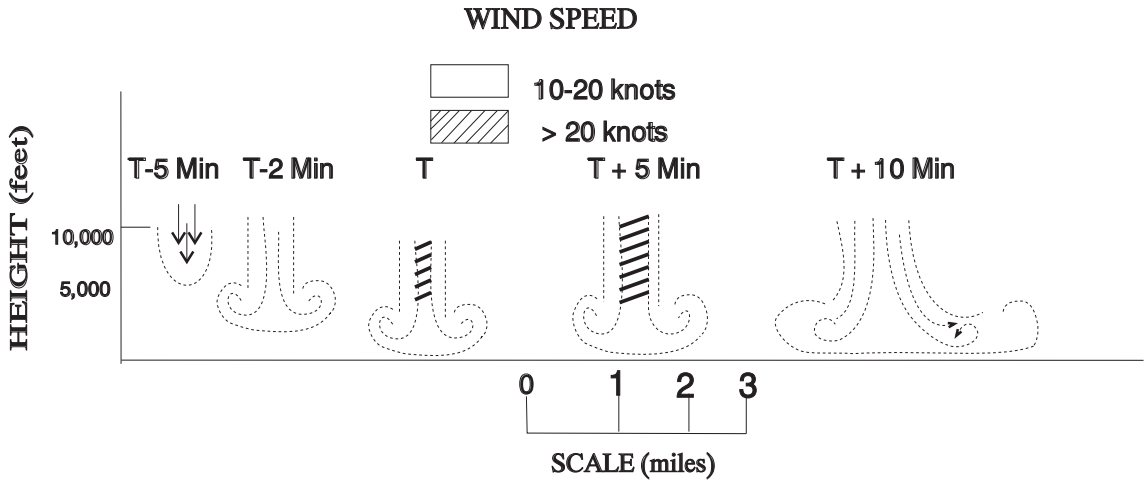
24.4 Characteristics of microbursts include:

24.4.1 Size. The microburst downdraft is typically less than 1 mile in diameter as it descends from the cloud base to about 1,000−3,000 feet above the ground. In the transition zone near the ground, the downdraft changes to a horizontal outflow that can extend to approximately 2 $^{1}/_{2}$ miles in diameter.

24.4.2 Intensity. The downdrafts can be as strong as 6,000 feet per minute. Horizontal winds near the surface can be as strong as 45 knots resulting in a 90−knot shear (headwind to tailwind change for a traversing aircraft) across the microburst. These strong horizontal winds occur within a few hundred feet of the ground.

24.4.3 Visual Signs. Microbursts can be found almost anywhere that there is convective activity. They may be embedded in heavy rain associated with a thunderstorm or in light rain in benign− appearing virga. When there is little or no precipitation at the surface accompanying the microburst, a ring of blowing dust may be the only visual clue of its existence.

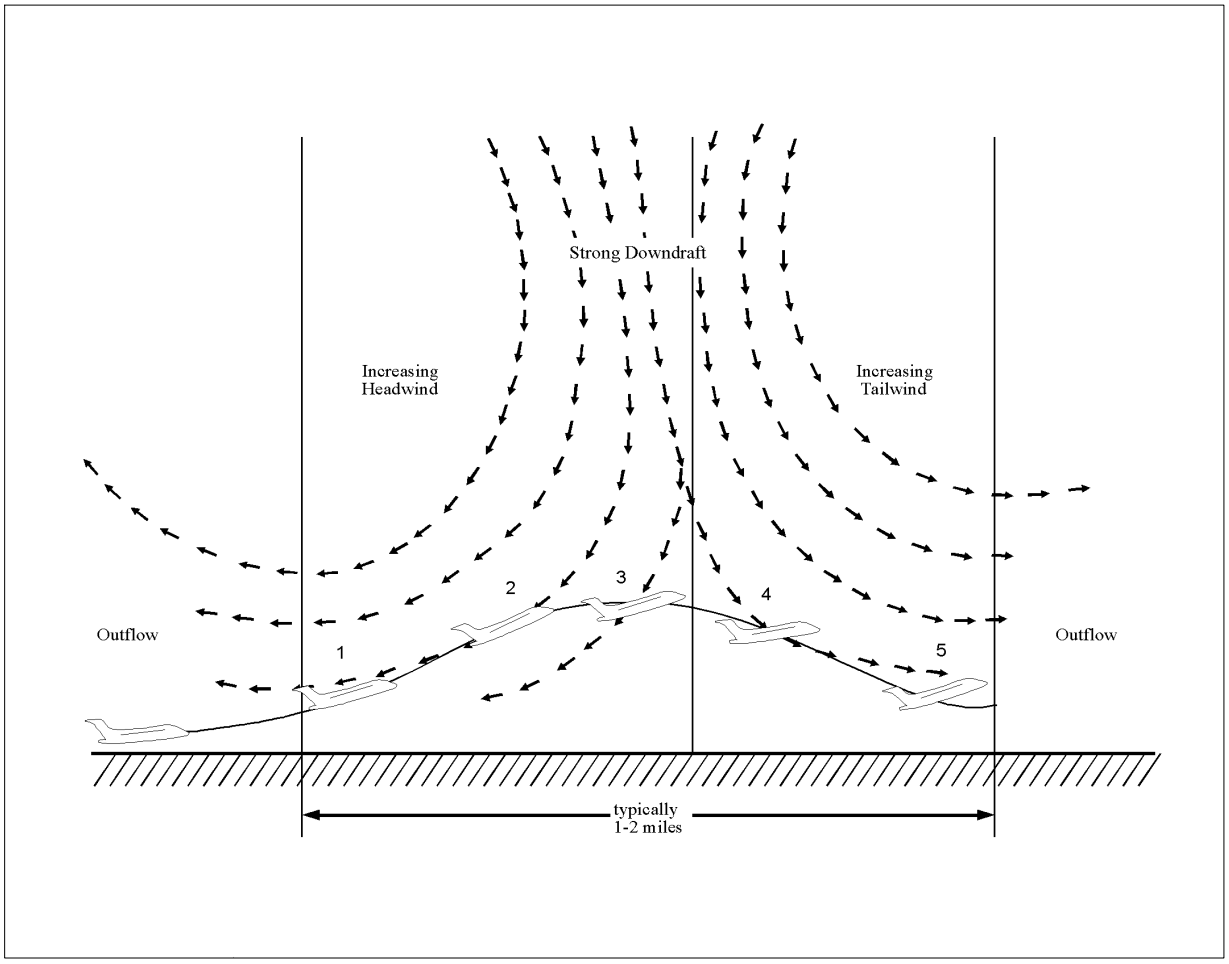
FIG GEN 3.5−8
Evolution of a Microburst



Vertical cross section of the evolution of a microburst wind field. T is the time of initial divergence at the surface. The shading refers to the vector wind speeds. Figure adapted from Wilson et al., 1984, Microburst Wind Structure and Evaluation of Doppler Radar for Wind Shear Detection, DOT/FAA Report No. DOT/FAA/PM-84/29, National Technical Information Service, Springfield, VA 37 pp.

24.4.4 Duration. An individual microburst will seldom last longer than 15 minutes from the time it strikes the ground until dissipation. The horizontal winds continue to increase during the first 5 minutes with the maximum intensity winds lasting approximately 2−4 minutes. Sometimes microbursts are concentrated into a line structure and, under these conditions, activity may continue for as long as 1 hour. Once microburst activity starts, multiple microbursts in the same general area are not uncommon and should be expected.

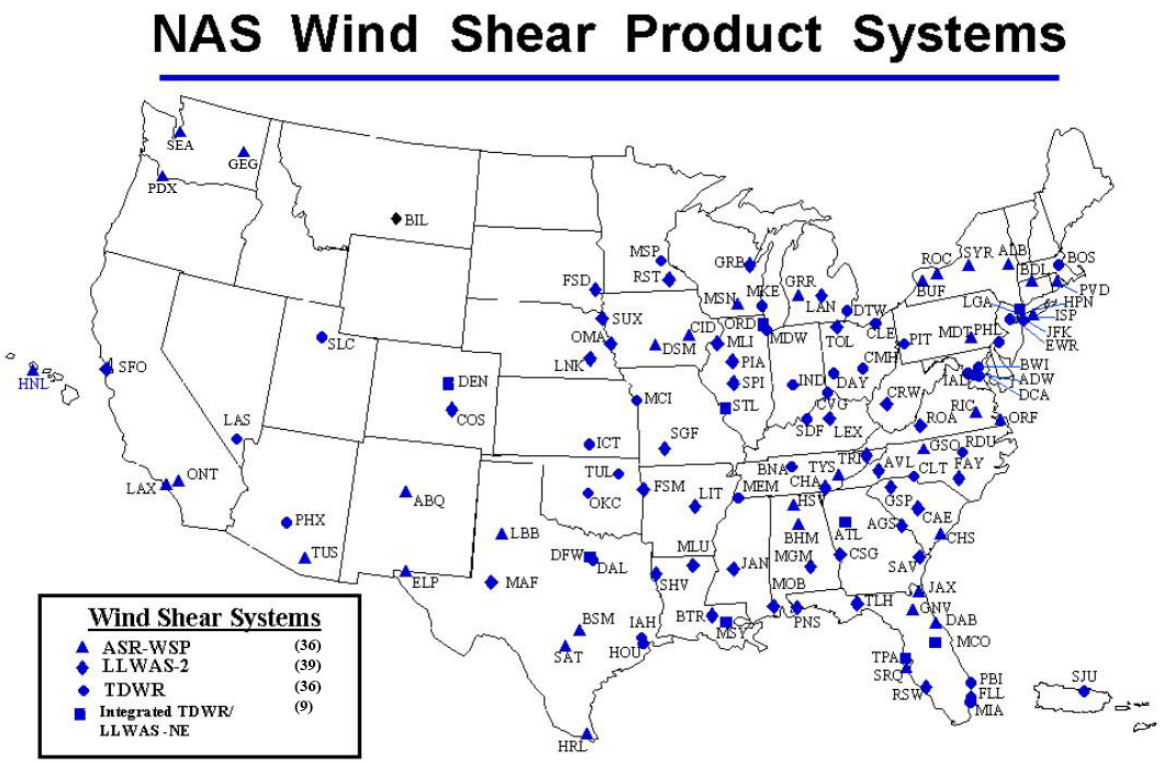
FIG GEN 3.5−9
Microburst Encounter During Takeoff



NOTE−
A microburst encounter during takeoff. The airplane first encounters a headwind and experiences increasing performance (1), this is followed in short succession by a decreasing headwind component (2), a downdraft (3), and finally a strong tailwind (4), where 2 through 5 all result in decreasing performance of the airplane. Position (5) represents an extreme situation just prior to impact. Figure courtesy of Walter Frost, FWG Associates, Inc., Tullahoma, Tennessee.

24.5 Microburst wind shear may create a severe hazard for aircraft within 1,000 feet of the ground, particularly during the approach to landing and landing and take−off phases. The impact of a microburst on aircraft which have the unfortunate experience of penetrating one is characterized in FIG GEN 3.5−9. The aircraft may encounter a headwind (performance increasing), followed by a downdraft and a tailwind (both performance decreasing), possibly resulting in terrain impact.

FIG GEN 3.5−10
NAS Wind Shear Product Systems



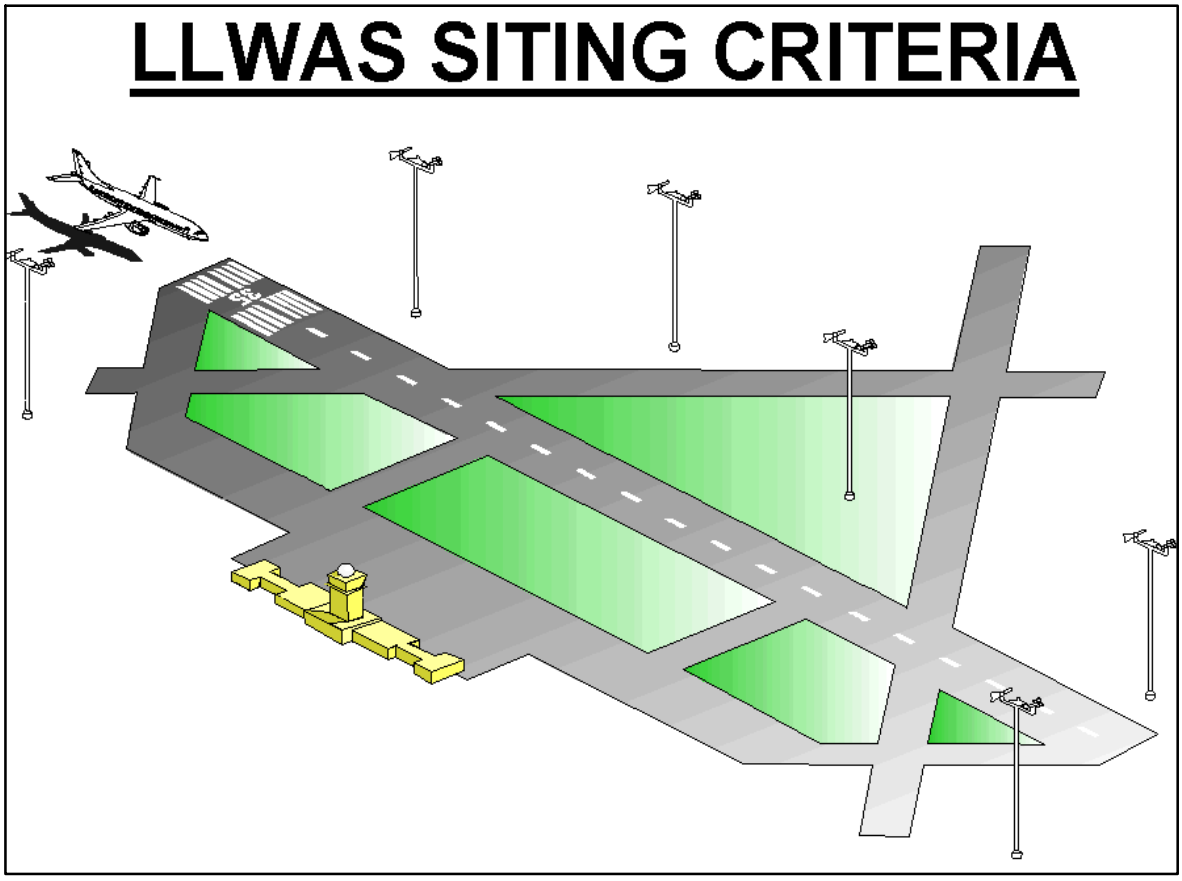
24.6 Detection of Microbursts, Wind Shear, and Gust Fronts

24.6.1 FAA's Integrated Wind Shear Detection Plan

24.6.1.1 The FAA currently employs an integrated plan for wind shear detection that will significantly improve both the safety and capacity of the majority of the airports currently served by the air carriers. This plan integrates several programs, such as the Integrated Terminal Weather System (ITWS), Terminal Doppler Weather Radar (TDWR), Weather System Processor (WSP), and Low Level Wind Shear Alert Systems (LLWAS) into a single strategic concept that significantly improves the aviation weather information in the terminal area. (See FIG GEN 3.5−10.)

24.6.1.2 The wind shear/microburst information and warnings are displayed on the ribbon display terminal (RBDT) located in the tower cabs. They are identical (and standardized) to those in the LLWAS, TDWR and WSP systems, and designed so that the controller does not need to interpret the data, but simply read the displayed information to the pilot. The RBDTs are constantly monitored by the controller to ensure the rapid and timely dissemination of any hazardous event(s) to the pilot.

FIG GEN 3.5−11
LLWAS Siting Criteria



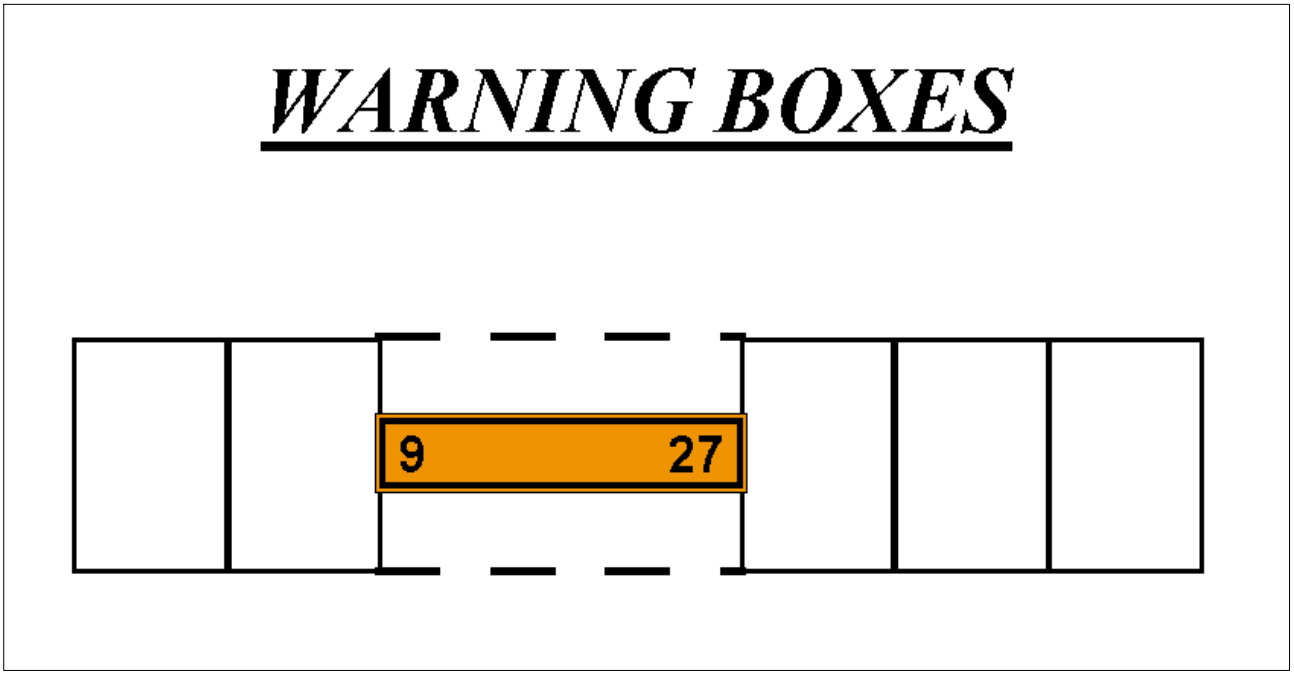
24.6.1.3 The early detection of a wind shear/microburst event, and the subsequent warning(s) issued to an aircraft on approach or departure, will alert the pilot/crew to the potential of, and to be prepared for, a situation that could become very dangerous! Without these warnings, the aircraft may NOT be able to climb out of or safely transition the event, resulting in a catastrophe. The air carriers, working with the FAA, have developed specialized training programs using their simulators to train and prepare their pilots on the demanding aircraft procedures required to escape these very dangerous wind shear and/or microburst encounters.

24.6.1.4 Low Level Wind Shear Alert System (LLWAS)

a) The LLWAS provides wind data and software processes to detect the presence of hazardous wind shear and microbursts in the vicinity of an airport. Wind sensors, mounted on poles sometimes as high as 150 feet, are (ideally) located 2,000 – 3,500 feet, but not more than 5,000 feet, from the centerline of the runway. (See FIG GEN 3.5−11.)

b) The LLWAS was fielded in 1988 at 110 airports across the nation. Many of these systems have been replaced by new Terminal Doppler Weather Radar (TDWR) and Weather Systems Processor (WSP) technology. While all legacy LLWAS systems will eventually be phased out, 39 airports will be upgraded to LLWAS−NE (Network Expansion) system. The new LLWAS−NE systems not only provide the controller with wind shear warnings and alerts, including wind shear/microburst detection at the airport wind sensor location, but also provide the location of the hazards relative to the airport runway(s). It also has the flexibility and capability to grow with the airport as new runways are built. As many as 32 sensors, strategically located around the airport and in relationship to its runway configuration, can be accommodated by the LLWAS−NE network.

FIG GEN 3.5–12
Warning Boxes



24.6.1.5 Terminal Doppler Weather Radar (TDWR)

a) TDWRs have been deployed at 45 locations across the U.S. Optimum locations for TDWRs are 8 to 12 miles from the airport proper, and designed to look at the airspace around and over the airport to detect microbursts, gust fronts, wind shifts, and precipitation intensities. TDWR products advise the controller of wind shear and microburst events impacting all runways and the areas $^{1}/_{2}$ mile on either side of the extended centerline of the runways and to a distance of 3 miles on final approach and 2 miles on departure. FIG GEN 3.5–12 is a theoretical view of the runway and the warning boxes that the software uses to determine the location(s) of wind shear or microbursts. These warnings are displayed (as depicted in the examples in subparagraph e) on the ribbon display terminal located in the tower cabs.

b) It is very important to understand what TDWR DOES NOT DO:

1) It **DOES NOT** warn of wind shear outside of the alert boxes (on the arrival and departure ends of the runways).

2) It **DOES NOT** detect wind shear that is NOT a microburst or a gust front.

3) It **DOES NOT** detect gusty or cross wind conditions.

4) It **DOES NOT** detect turbulence.

However, research and development is continuing on these systems. Future improvements may include such areas as storm motion (movement), improved gust front detection, storm growth and decay, microburst prediction, and turbulence detection.

c) TDWR also provides a geographical situation display (GSD) for supervisors and traffic management specialists for planning purposes. The GSD displays (in color) 6 levels of weather (precipitation), gust fronts and predicted storm movement(s). This data is used by the tower supervisor(s), traffic management specialists, and controllers to plan for runway changes and arrival/departure route changes in order to reduce aircraft delays and increase airport capacity.

24.6.1.6 Weather Systems Processor (WSP)

a) The WSP provides the controller, supervisor, traffic management specialist, and ultimately the pilot, with the same products as the terminal doppler weather radar at a fraction of the cost. This is accomplished by utilizing

new technologies to access the weather channel capabilities of the existing ASR−9 radar located on or near the airport, thus eliminating the requirements for a separate radar location, land acquisition, support facilities, and the associated communication landlines and expenses.

b) The WSP utilizes the same RBDT display as the TDWR and LLWAS, and, like the TDWR, has a GSD for planning purposes by supervisors, traffic management specialists, and controllers. The WSP GSD emulates the TDWR display; i.e., it also depicts 6 levels of precipitation, gust fronts and predicted storm movement, and like the TDWR, GSD is used to plan for runway changes and arrival/departure route changes in order to reduce aircraft delays and to increase airport capacity.

c) This system is installed at 34 airports across the nation, substantially increasing the safety of flying.

24.6.1.7 Operational Aspects of LLWAS, TDWR, and WSP

To demonstrate how this data is used by both the controller and the pilot, 3 ribbon display examples and their explanations are presented:

a) MICROBURST ALERTS

EXAMPLE−
This is what the controller sees on his/her ribbon display in the tower cab.

27A MBA 35K− 2MF 250 20

NOTE−
(See FIG GEN 3.5−13 to see how the TDWR/WSP determines the microburst location).

This is what the controller will say when issuing the alert.

PHRASEOLOGY−
RUNWAY 27 ARRIVAL, MICROBURST ALERT, 35 KT LOSS 2 MILE FINAL, THRESHOLD WINDS 250 AT 20.

In plain language, the controller is telling the pilot that on approach to runway 27, there is a microburst alert on the approach lane to the runway, and to anticipate or expect a 35−knot loss of airspeed at approximately 2 miles out on final approach (where the aircraft will first encounter the phenomena). With that information, the aircrew is forewarned, and should be prepared to apply wind shear/microburst escape procedures should they decide to continue the approach. Additionally, the surface winds at the airport for landing runway 27 are reported as 250 degrees at 20 knots.

NOTE−
Threshold wind is at pilot's request or as deemed appropriate by the controller.

b) WIND SHEAR ALERTS

EXAMPLE−
This is what the controller sees on his/her ribbon display in the tower cab.

27A WSA 20K− 3MF 200 15

NOTE−
(See FIG GEN 3.5−14 to see how the TDWR/WSP determines the wind shear location).

This is what the controller will say when issuing the alert.

PHRASEOLOGY−
RUNWAY 27 ARRIVAL, WIND SHEAR ALERT, 20 KT LOSS 3 MILE FINAL, THRESHOLD WINDS 200 AT 15.

In plain language, the controller is advising the aircraft arriving on runway 27 that at 3 miles out the pilot should expect to encounter a wind shear condition that will decrease airspeed by 20 knots and possibly the aircraft will encounter turbulence. Additionally, the airport surface winds for landing runway 27 are reported as 200 degrees at 15 knots.

NOTE−
Threshold wind is at pilot's request or as deemed appropriate by the controller.

FIG GEN 3.5–13
Microburst Alert

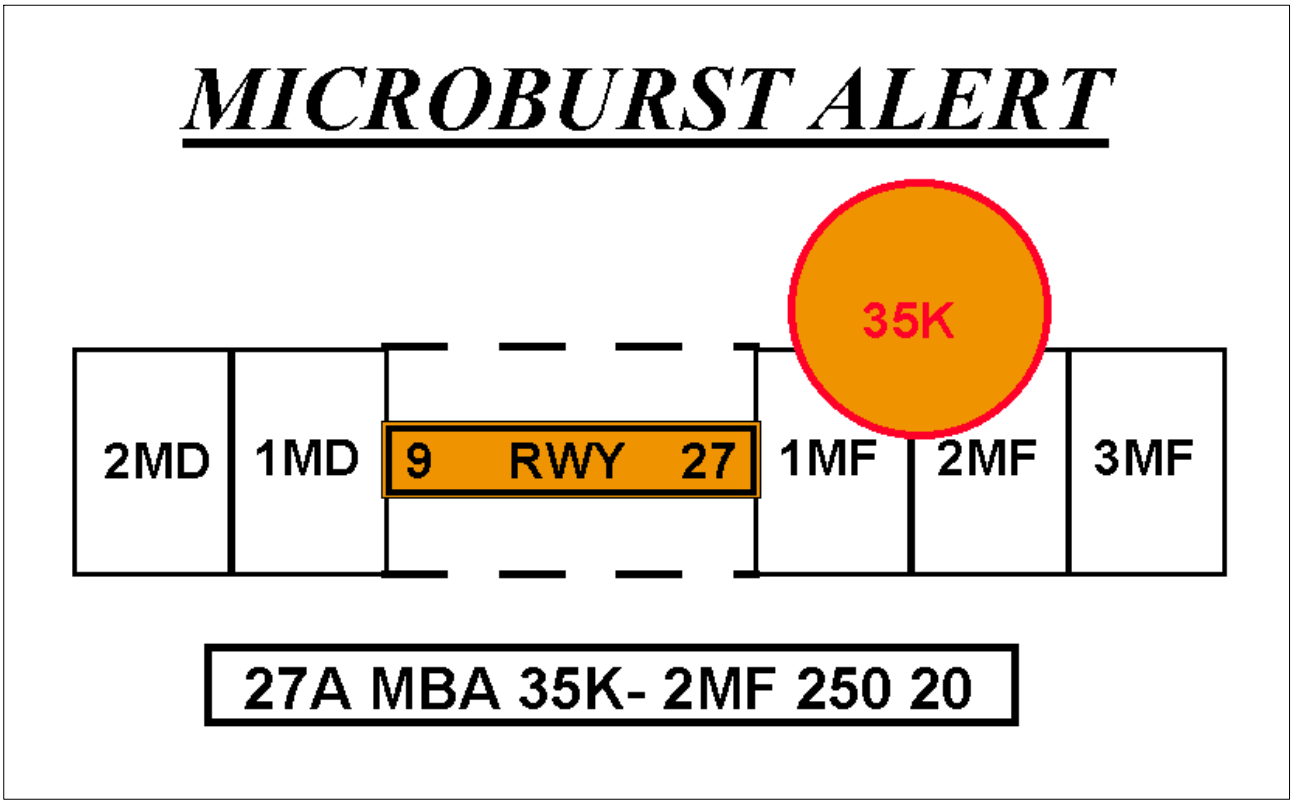


FIG GEN 3.5–14
Weak Microburst Alert

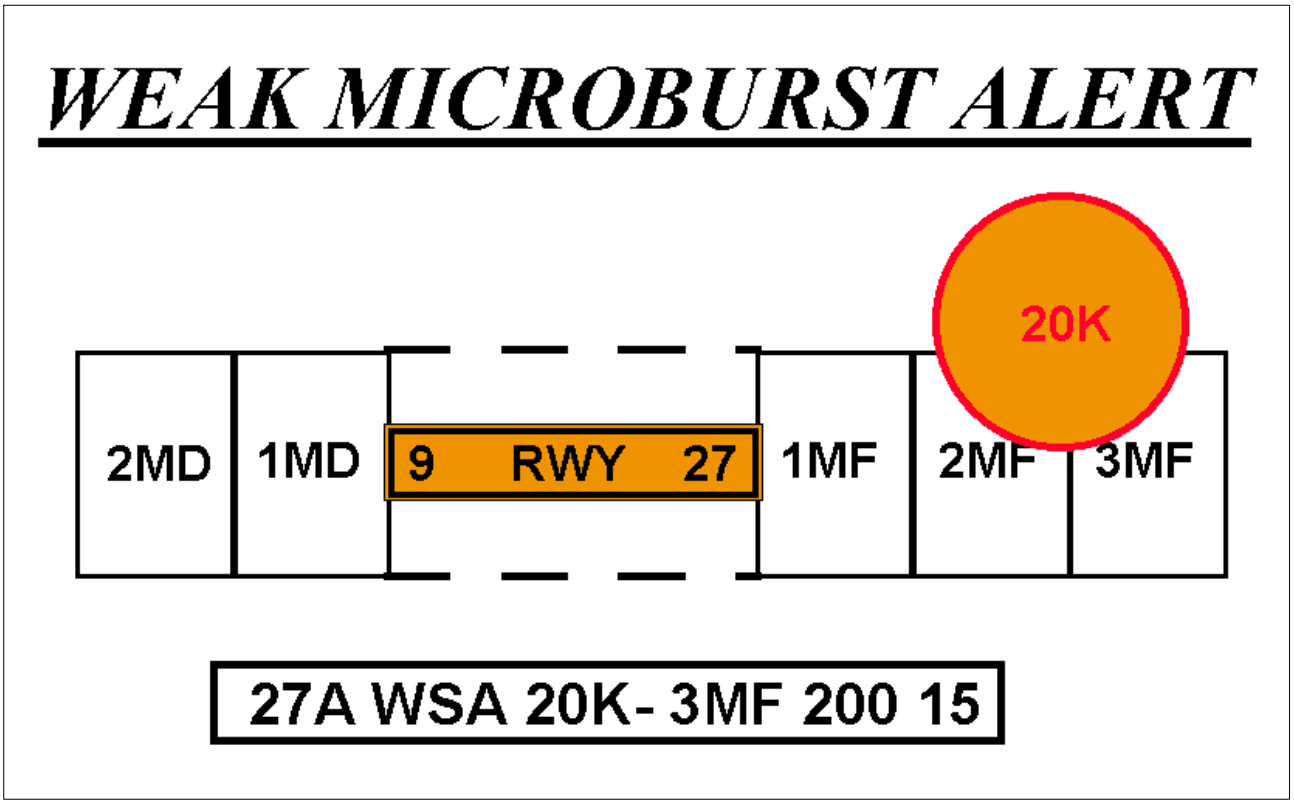
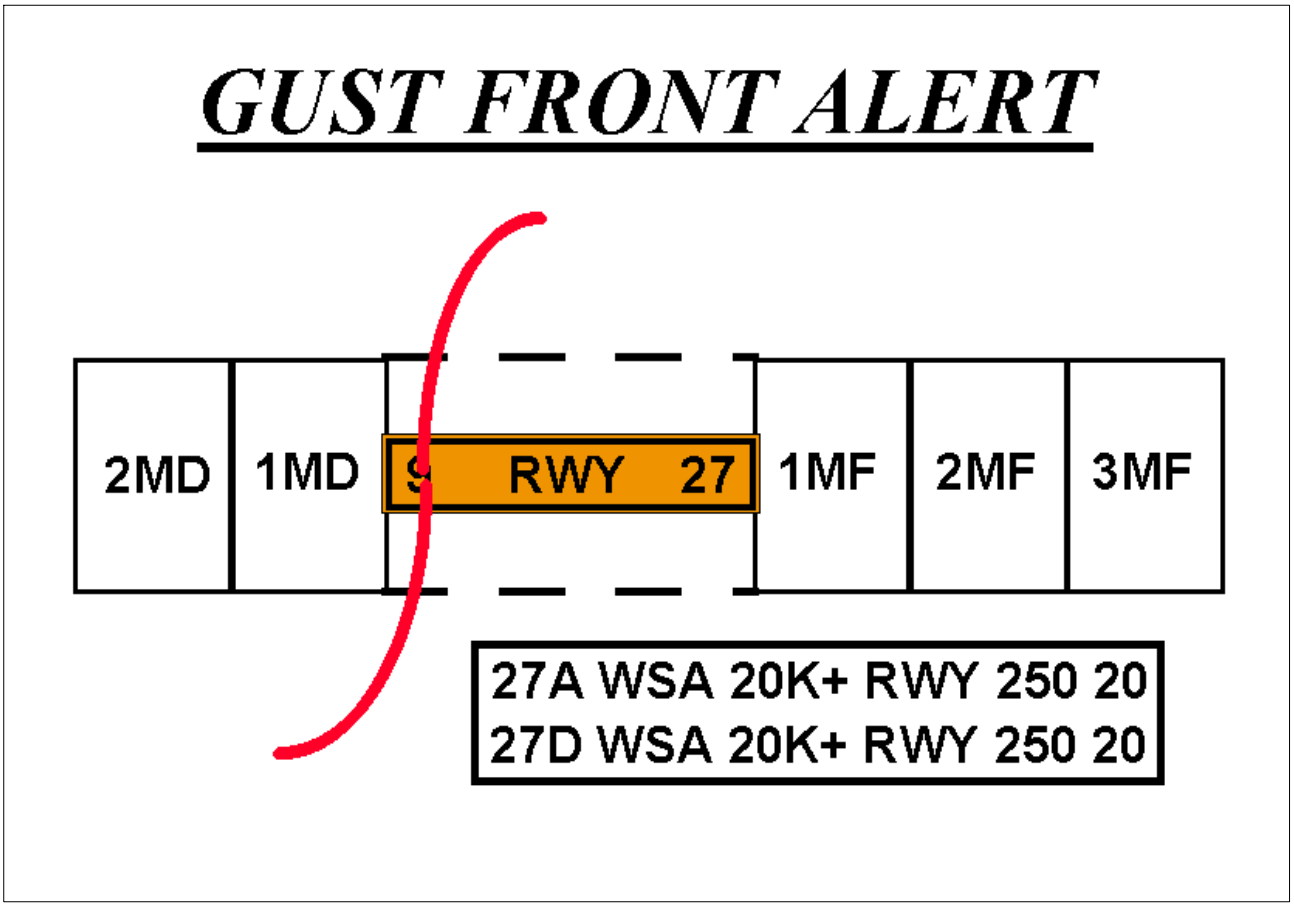


FIG GEN 3.5−15
Gust Front Alert



c) MULTIPLE WIND SHEAR ALERTS

EXAMPLE−
This is what the controller sees on his/her ribbon display in the tower cab.

27A WSA 20K+ RWY 250 20
27D WSA 20K+ RWY 250 20

NOTE−
(See FIG GEN 3.5−15 to see how the TDWR/WSP determines the gust front/wind shear location).

This is what the controller will say when issuing the alert.

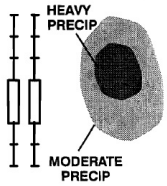
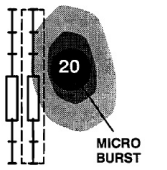
PHRASEOLOGY−
MULTIPLE WIND SHEAR ALERTS.
RUNWAY 27 ARRIVAL, WIND SHEAR ALERT, 20 KT GAIN ON RUNWAY;
RUNWAY 27 DEPARTURE, WIND SHEAR ALERT, 20 KT GAIN ON RUNWAY, WINDS 250 AT 20.

EXAMPLE−
In this example, the controller is advising arriving and departing aircraft that they could encounter a wind shear condition right on the runway due to a gust front (significant change of wind direction) with the possibility of a 20 knot gain in airspeed associated with the gust front. Additionally, the airport surface winds (for the runway in use) are reported as 250 degrees at 20 knots.

24.6.1.8 The Terminal Weather Information for Pilots System (TWIP)

a) With the increase in the quantity and quality of terminal weather information available through TDWR, the next step is to provide this information directly to pilots rather than relying on voice communications from ATC. The National Airspace System (NAS) has long been in need of a means of delivering terminal weather information to the cockpit more efficiently in terms of both speed and accuracy to enhance pilot awareness of weather hazards and reduce air traffic controller workload. With the TWIP capability, terminal weather information, both alphanumerically and graphically, is now available directly to the cockpit for 46 airports in the U.S. NAS. (See FIG GEN 3.5–16.)

FIG GEN 3.5–16
TWIP Image of Convective Weather at MCO International

WEATHER SITUATION	TWIP TEXT MESSAGE
	MCO 1800 TERMINAL WEATHER –STORM(S) 3NM N–E MOD PRECIP 4NM NE HVY PRECIP MOVG W AT 15KT .EXPECTED MOD PRECIP BEGIN 1805
	MCO 1810 TERMINAL WEATHER *MODERATE PRECIP BEGAN 1805 –STORM(S) ARPT ALQDS MOD PRECIP 1NM N–E HVY PRECIP MOVG W AT 15KT .EXPECTED HVY PRECIP BEGIN 1815

b) TWIP products are generated using weather data from the TDWR or the Integrated Terminal Weather System (ITWS). These products can then be accessed by pilots using the Aircraft Communications Addressing and Reporting System (ACARS) data link services. Airline dispatchers can also access this database and send messages to specific aircraft whenever wind shear activity begins or ends at an airport.

c) TWIP products include descriptions and character graphics of microburst alerts, wind shear alerts, significant precipitation, convective activity within 30 NM surrounding the terminal area, and expected weather that will impact airport operations. During inclement weather; i.e., whenever a predetermined level of precipitation or wind shear is detected within 15 miles of the terminal area, TWIP products are updated once each minute for text messages and once every 5 minutes for character graphic messages. During good weather (below the predetermined precipitation or wind shear parameters) each message is updated every 10 minutes. These products are intended to improve the situational awareness of the pilot/flight crew, and to aid in flight planning prior to arriving or departing the terminal area. It is important to understand that, in the context of TWIP, the predetermined levels for inclement versus good weather has nothing to do with the criteria for VFR/MVFR/IFR/LIFR; it only deals with precipitation, wind shears, and microbursts.

TBL GEN 3.5–14

TWIP–Equipped Airports

Airport	Identifier
Andrews AFB, MD	KADW
Hartsfield–Jackson Atlanta Intl Airport	KATL
Nashville Intl Airport	KBNA
Logan Intl Airport	KBOS
Baltimore/Washington Intl Airport	KBWI
Hopkins Intl Airport	KCLE
Charlotte/Douglas Intl Airport	KCLT
Port Columbus Intl Airport	KCMH
Cincinnati/Northern Kentucky Intl Airport	KCVG
Dallas Love Field Airport	KDAL
James M. Cox Intl Airport	KDAY
Ronald Reagan Washington National Airport	KDCA
Denver Intl Airport	KDEN
Dallas–Fort Worth Intl Airport	KDFW
Detroit Metro Wayne County Airport	KDTW
Newark Liberty Intl Airport	KEWR
Fort Lauderdale–Hollywood Intl Airport	KFLL
William P. Hobby Airport	KHOU
Washington Dulles Intl Airport	KIAD
George Bush Intercontinental Airport	KIAH
Wichita Mid–Continent Airport	KICT
Indianapolis Intl Airport	KIND
John F. Kennedy Intl Airport	KJFK

Airport	Identifier
Harry Reid Intl Airport	KLAS
LaGuardia Airport	KLGA
Kansas City Intl Airport	KMCI
Orlando Intl Airport	KMCO
Midway Intl Airport	KMDW
Memphis Intl Airport	KMEM
Miami Intl Airport	KMIA
General Mitchell Intl Airport	KMKE
Minneapolis St. Paul Intl Airport	KMSP
Louis Armstrong New Orleans Intl Airport	KMSY
Will Rogers World Airport	KOKC
O'Hare Intl Airport	KORD
Palm Beach Intl Airport	KPBI
Philadelphia Intl Airport	KPHL
Phoenix Sky Harbor Intl Airport	KPHX
Pittsburgh Intl Airport	KPIT
Raleigh–Durham Intl Airport	KRDU
Louisville Intl Airport	KSDF
Salt Lake City Intl Airport	KSLC
Lambert–St. Louis Intl Airport	KSTL
Tampa Intl Airport	KTPA
Tulsa Intl Airport	KTUL
Luis Munoz Marin Intl Airport	TJSJ

25. PIREPs Relating to Volcanic Ash Activity

25.1 Volcanic eruptions which send ash into the upper atmosphere occur somewhere around the world several times each year. Flying into a volcanic ash cloud can be exceedingly dangerous. At least two B747s have lost all power in all four engines after such an encounter. Regardless of the type aircraft, some damage is almost certain to ensue after an encounter with a volcanic ash cloud. Additionally, studies have shown that volcanic eruptions are the only significant source of large quantities of sulphur dioxide (SO_2) gas at jet-cruising altitudes. Therefore, the detection and subsequent reporting of SO_2 is of significant importance. Although SO_2 is colorless, its presence in the atmosphere should be suspected when a sulphur-like or rotten egg odor is present throughout the cabin.

25.2 While some volcanoes in the U.S. are monitored, many in remote areas are not. These unmonitored volcanoes may erupt without prior warning to the aviation community. A pilot observing a volcanic eruption who has not had previous notification of it may be the only witness to the eruption. Pilots are strongly encouraged to transmit a PIREP regarding volcanic eruptions and any observed volcanic ash clouds or detection of sulphur dioxide (SO_2) gas associated with volcanic activity.

25.3 Pilots should submit PIREPs regarding volcanic activity using the Volcanic Activity Reporting form (VAR) as illustrated in FIG GEN 3.5−31. (If a VAR form is not immediately available, relay enough information to identify the position and type of volcanic activity.)

25.4 Pilots should verbally transmit the data required in items 1 through 8 of the VAR as soon as possible. The data required in items 9 through 16 of the VAR should be relayed after landing, if possible.

26. Thunderstorms

26.1 Turbulence, hail, rain, snow, lightning, sustained updrafts and downdrafts, and icing conditions are all present in thunderstorms. While there is some evidence that maximum turbulence exists at the middle level of a thunderstorm, recent studies show little variation of turbulence intensity with altitude.

26.2 There is no useful correlation between the external visual appearance of thunderstorms and the severity or amount of turbulence or hail within them. Also, the visible thunderstorm cloud is only a portion of a turbulent system whose updrafts and downdrafts often extend far beyond the visible storm cloud. Severe turbulence can be expected up to 20 miles from severe thunderstorms. This distance decreases to about 10 miles in less severe storms. These turbulent areas may appear as a well−defined echo on weather radar.

26.3 Weather radar, airborne or ground−based, will normally reflect the areas of moderate to heavy precipitation. (Radar does not detect turbulence.) The frequency and severity of turbulence generally increases with the areas of highest liquid water content of the storm. NO FLIGHT PATH THROUGH AN AREA OF STRONG OR VERY STRONG RADAR ECHOES SEPARATED BY 20−30 MILES OR LESS MAY BE CONSIDERED FREE OF SEVERE TURBULENCE.

26.4 Turbulence beneath a thunderstorm should not be minimized. This is especially true when the relative humidity is low in any layer between the surface and 15,000 feet. Then the lower altitudes may be characterized by strong out−flowing winds and severe turbulence.

26.5 The probability of lightning strikes occurring to aircraft is greatest when operating at altitudes where temperatures are between −5 C and +5 C. Lightning can strike aircraft flying in the clear in the vicinity of a thunderstorm.

26.6 Current weather radar systems are able to objectively determine precipitation intensity. These precipitation intensity areas are described as “light,” “moderate,” “heavy,” and “extreme.”

REFERENCE−
Pilot/Controller Glossary Term− Precipitation Radar Weather Descriptions.

EXAMPLE−
Alert provided by an ATC facility to an aircraft:
(aircraft identification) EXTREME precipitation between ten o’clock and two o’clock, one five miles. Precipitation area is two five miles in diameter.

EXAMPLE−
Alert provided by an FSS:
(aircraft identification) EXTREME precipitation two zero miles west of Atlanta V−O−R, two five miles wide, moving east at two zero knots, tops flight level three niner zero.

27. Thunderstorm Flying

27.1 Thunderstorm Avoidance. Never regard any thunderstorm lightly, even when radar echoes are of light intensity. Avoiding thunderstorms is the best policy. Following are some Do’s and Don’ts of thunderstorm avoidance:

27.1.1 Don’t land or takeoff in the face of an approaching thunderstorm. A sudden gust front of low−level turbulence could cause loss of control.

27.1.2 Don’t attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence and wind shear under the storm could be disastrous.

27.1.3 Don't attempt to fly under the anvil of a thunderstorm. There is a potential for severe and extreme clear air turbulence.

27.1.4 Don't fly without airborne radar into a cloud mass containing scattered embedded thunderstorms. Scattered thunderstorms not embedded usually can be visually circumnavigated.

27.1.5 Don't trust the visual appearance to be a reliable indicator of the turbulence inside a thunderstorm.

27.1.6 Don't assume that ATC will offer radar navigation guidance or deviations around thunderstorms.

27.1.7 Don't use data-linked weather next generation weather radar (NEXRAD) mosaic imagery as the sole means for negotiating a path through a thunderstorm area (tactical maneuvering).

27.1.8 Do remember that the data-linked NEXRAD mosaic imagery shows where the weather was, not where the weather is. The weather conditions may be 15 to 20 minutes older than the age indicated on the display.

27.1.9 Do listen to chatter on the ATC frequency for Pilot Weather Reports (PIREP) and other aircraft requesting to deviate or divert.

27.1.10 Do ask ATC for radar navigation guidance or to approve deviations around thunderstorms, if needed.

27.1.11 Do use data-linked weather NEXRAD mosaic imagery (for example, Flight Information Service-Broadcast (FIS-B)) for route selection to avoid thunderstorms entirely (strategic maneuvering).

27.1.12 Do advise ATC, when switched to another controller, that you are deviating for thunderstorms before accepting to rejoin the original route.

27.1.13 Do ensure that after an authorized weather deviation, before accepting to rejoin the original route, that the route of flight is clear of thunderstorms.

27.1.14 Do avoid by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo. This is especially true under the anvil of a large cumulonimbus.

27.1.15 Do circumnavigate the entire area if the area has 6/10 thunderstorm coverage.

27.1.16 Do remember that vivid and frequent lightning indicates the probability of a severe thunderstorm.

27.1.17 Do regard as extremely hazardous any thunderstorm with tops 35,000 feet or higher whether the top is visually sighted or determined by radar.

27.1.18 Do give a PIREP for the flight conditions.

27.1.19 Do divert and wait out the thunderstorms on the ground if unable to navigate around an area of thunderstorms.

27.1.20 Do contact Flight Service for assistance in avoiding thunderstorms. Flight Service specialists have NEXRAD mosaic radar imagery and NEXRAD single site radar with unique features such as base and composite reflectivity, echo tops, and VAD wind profiles.

27.2 If you cannot avoid penetrating a thunderstorm, following are some Do's before entering the storm:

27.2.1 Tighten your safety belt, put on your shoulder harness (if installed), if and secure all loose objects.

27.2.2 Plan and hold the course to take the aircraft through the storm in a minimum time.

27.2.3 To avoid the most critical icing, establish a penetration altitude below the freezing level or above the level of −15 C.

27.2.4 Verify that pitot heat is on and turn on carburetor heat or jet engine anti−ice. Icing can be rapid at any altitude and cause almost instantaneous power failure and/or loss of airspeed indication.

27.2.5 Establish power settings for turbulence penetration airspeed recommended in your aircraft manual.

27.2.6 Turn up cockpit lights to highest intensity to lessen danger of temporary blindness from lightning.

27.2.7 If using automatic pilot, disengage Altitude Hold Mode and Speed Hold Mode. The automatic altitude and speed controls will increase maneuvers of the aircraft thus increasing structural stress.

27.2.8 If using airborne radar, tilt the antenna up and down occasionally. This will permit the detection of other thunderstorm activity at altitudes other than the one being flown.

27.3 Following are some Do's and Don'ts during the thunderstorm penetration:

27.3.1 Do keep your eyes on your instruments. Looking outside the cockpit can increase danger of temporary blindness from lightning.

27.3.2 Don't change power settings; maintain settings for the recommended turbulence penetration airspeed.

27.3.3 Do maintain constant attitude. Allow the altitude and airspeed to fluctuate.

27.3.4 Don't turn back once you are in the thunderstorm. A straight course through the storm most likely will get the aircraft out of the hazards most quickly. In addition, turning maneuvers increase stress on the aircraft.

28. Wake Turbulence

28.1 General

28.1.1 Every aircraft generates wake turbulence while in flight. Wake turbulence is a function of an aircraft producing lift, resulting in the formation of two counter−rotating vortices trailing behind the aircraft.

28.1.2 Wake turbulence from the generating aircraft can affect encountering aircraft due to the strength, duration, and direction of the vortices. Wake turbulence can impose rolling moments exceeding the roll−control authority of encountering aircraft, causing possible injury to occupants and damage to aircraft. Pilots should always be aware of the possibility of a wake turbulence encounter when flying through the wake of another aircraft, and adjust the flight path accordingly.

28.2 Vortex Generation

28.2.1 The creation of a pressure differential over the wing surface generates lift. The lowest pressure occurs over the upper wing surface and the highest pressure under the wing. This pressure differential triggers the roll up of the airflow at the rear of the wing resulting in swirling air masses trailing downstream of the wing tips. After the roll up is completed, the wake consists of two counter−rotating cylindrical vortices. (See FIG GEN 3.5−17.) The wake vortex is formed with most of the energy concentrated within a few feet of the vortex core.

28.2.2 More aircraft are being manufactured or retrofitted with winglets. There are several types of winglets, but their primary function is to increase fuel efficiency by improving the lift−to−drag ratio. Studies have shown that winglets have a negligible effect on wake turbulence generation, particularly with the slower speeds involved during departures and arrivals.

28.3 Vortex Strength

28.3.1 Weight, speed, wingspan, and shape of the generating aircraft's wing all govern the strength of the vortex. The vortex characteristics of any given aircraft can also be changed by extension of flaps or other wing configuring devices. However, the vortex strength from an aircraft increases proportionately to an increase in operating weight or a decrease in aircraft speed. Since the turbulence from a "dirty" aircraft configuration hastens wake decay, the greatest vortex strength occurs when the generating aircraft is HEAVY, CLEAN, and SLOW.

28.3.2 Induced Roll

28.3.2.1 In rare instances, a wake encounter could cause catastrophic inflight structural damage to an aircraft. However, the usual hazard is associated with induced rolling moments that can exceed the roll−control authority of the encountering aircraft. During inflight testing, aircraft intentionally flew directly up trailing vortex cores of larger aircraft. These tests demonstrated that the ability of aircraft to counteract the roll imposed by wake vortex depends primarily on the wingspan and counter−control responsiveness of the encountering aircraft. These tests also demonstrated the difficulty of an aircraft to remain within a wake vortex. The natural tendency is for the circulation to eject aircraft from the vortex.

28.3.2.2 Counter−control is usually effective and induced roll minimal in cases where the wing span and ailerons of the encountering aircraft extend beyond the rotational flow field of the vortex. It is more difficult for aircraft with short wing span (relative to the generating aircraft) to counter the imposed roll induced by vortex flow. Pilots of short−span aircraft, even of the high−performance type, must be especially alert to vortex encounters. (See FIG GEN 3.5−18.)

28.4 Vortex Behavior

28.4.1 Trailing vortices have certain behavioral characteristics which can help a pilot visualize the wake location and thereby take avoidance precautions.

28.4.1.1 An aircraft generates vortices from the moment it rotates on takeoff to touchdown, since trailing vortices are a by−product of wing lift. Prior to takeoff or touchdown pilots should note the rotation or touchdown point of the preceding aircraft. (See FIG GEN 3.5−19.)

28.4.1.2 The vortex circulation is outward, upward and around the wing tips when viewed from either ahead or behind the aircraft. Tests with larger aircraft have shown that the vortices remain spaced a bit less than a wingspan apart, drifting with the wind, at altitudes greater than a wingspan from the ground. In view of this, if persistent vortex turbulence is encountered, a slight change of altitude (upward) and lateral position (upwind) should provide a flight path clear of the turbulence.

28.4.1.3 Flight tests have shown that the vortices from larger aircraft sink at a rate of several hundred feet per minute, slowing their descent and diminishing in strength with time and distance behind the generating aircraft. Pilots should fly at or above the preceding aircraft's flight path, altering course as necessary to avoid the area directly behind and below the generating aircraft. (See FIG GEN 3.5−20.) Pilots, in all phases of flight, must remain vigilant of possible wake effects created by other aircraft. Studies have shown that atmospheric turbulence hastens wake breakup, while other atmospheric conditions can transport wake horizontally and vertically.

FIG GEN 3.5−17
Wake Vortex Generation

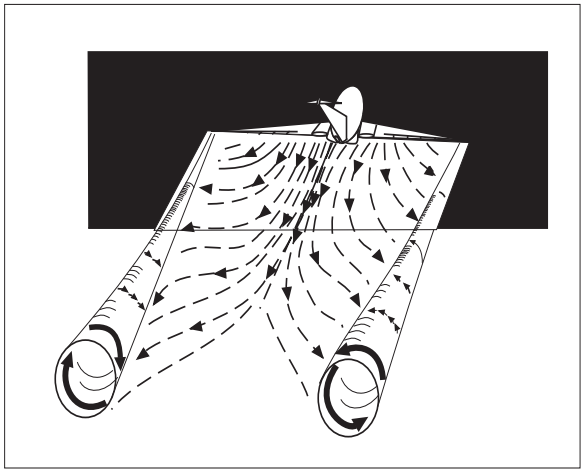


FIG GEN 3.5–18
Wake Encounter Counter Control

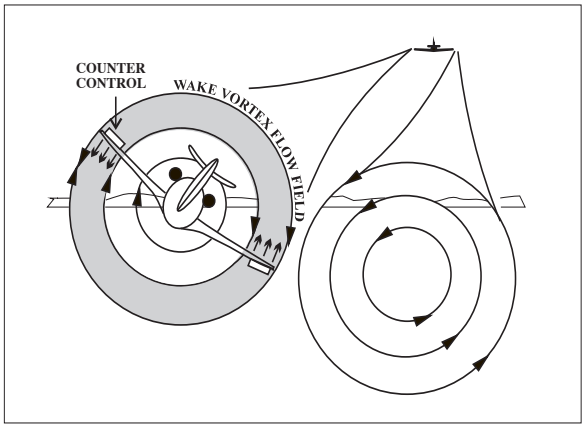


FIG GEN 3.5–19
Wake Ends/Wake Begins

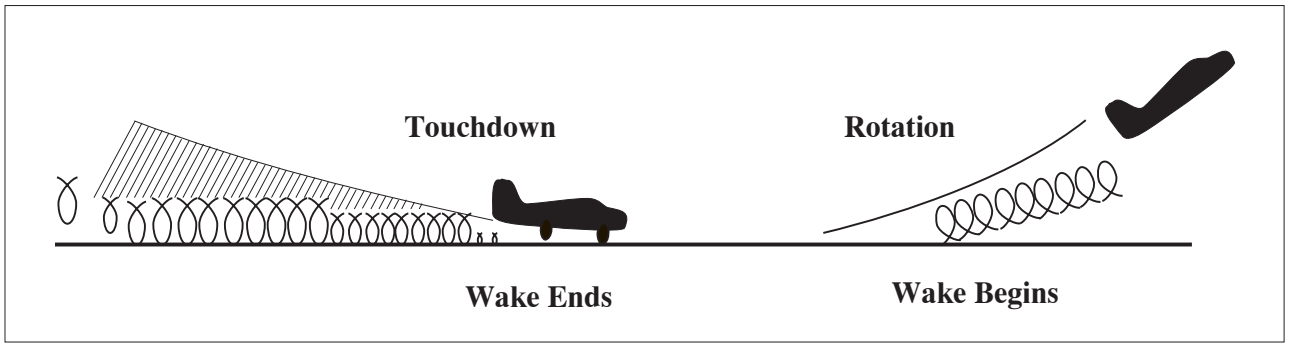


FIG GEN 3.5–20
Vortex Flow Field

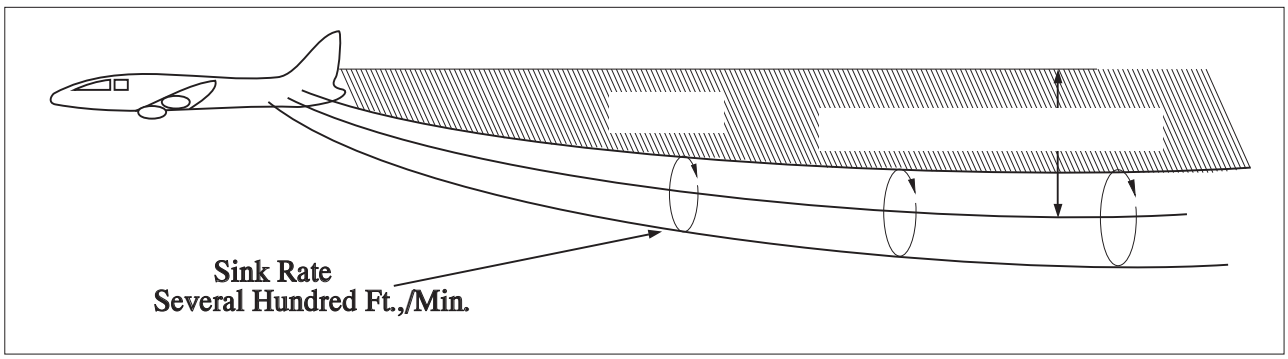
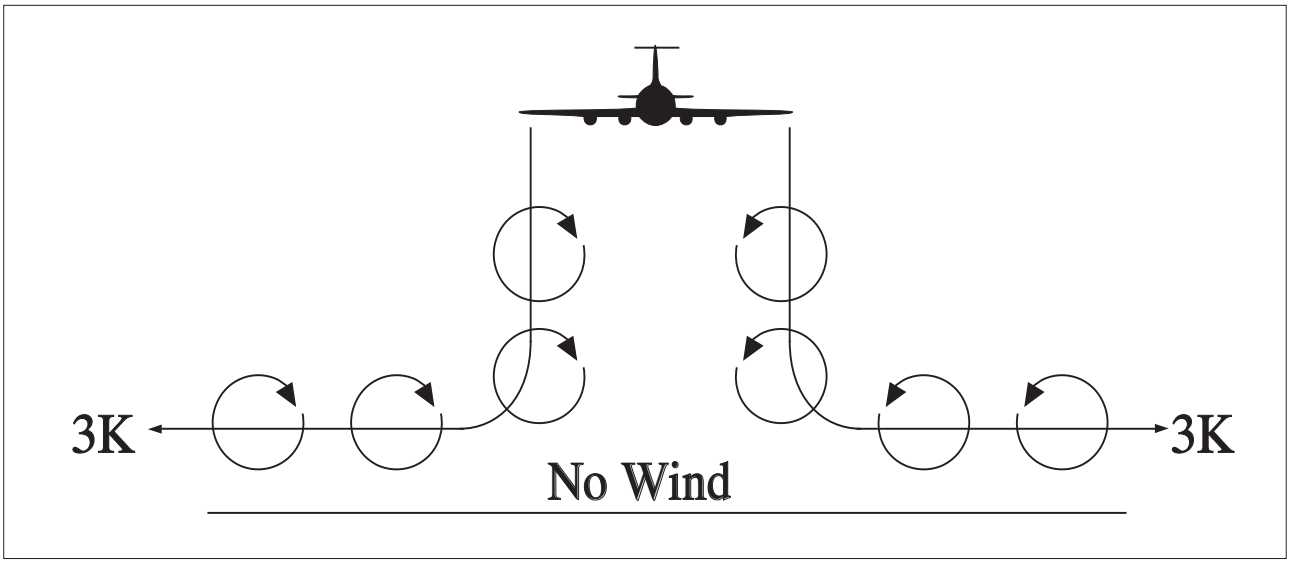


FIG GEN 3.5−21
Vortex Movement Near Ground − No Wind



28.4.1.4 When the vortices of larger aircraft sink close to the ground (within 100 to 200 feet), they tend to move laterally over the ground at a speed of 2 or 3 knots. (See FIG GEN 3.5−21.)

28.4.1.5 Pilots should be alert at all times for possible wake vortex encounters when conducting approach and landing operations. The pilot is ultimately responsible for maintaining an appropriate interval, and should consider all available information in positioning the aircraft in the terminal area, to avoid the wake turbulence created by a preceding aircraft. Test data show that vortices can rise with the air mass in which they are embedded. The effects of wind shear can cause vortex flow field "tilting." In addition, ambient thermal lifting and orographic effects (rising terrain or tree lines) can cause a vortex flow field to rise and possibly bounce.

FIG GEN 3.5−22
Vortex Movement Near Ground − with Cross Winds

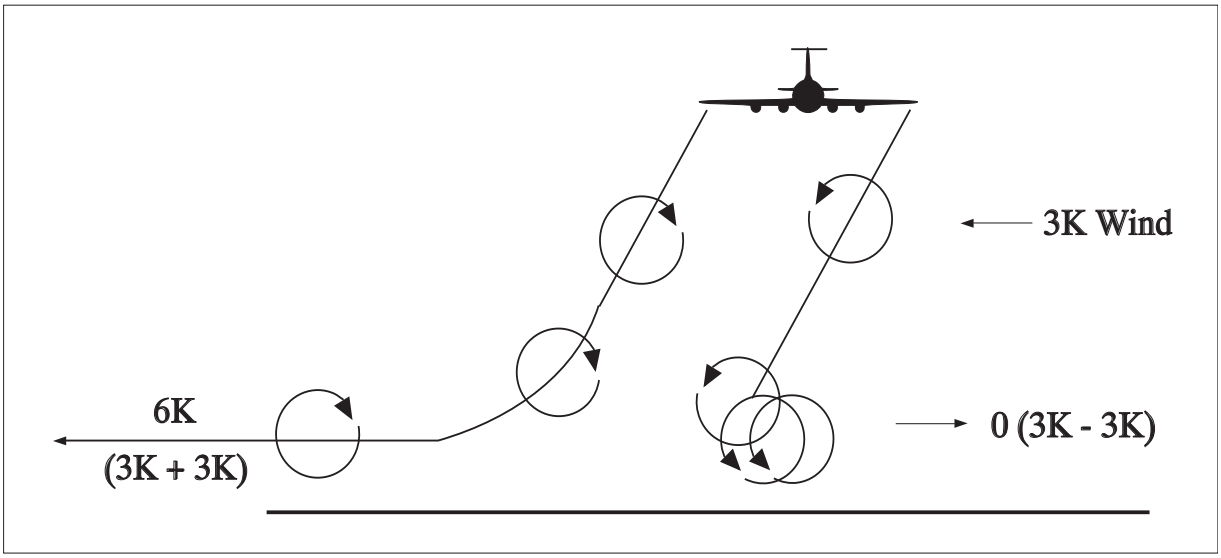
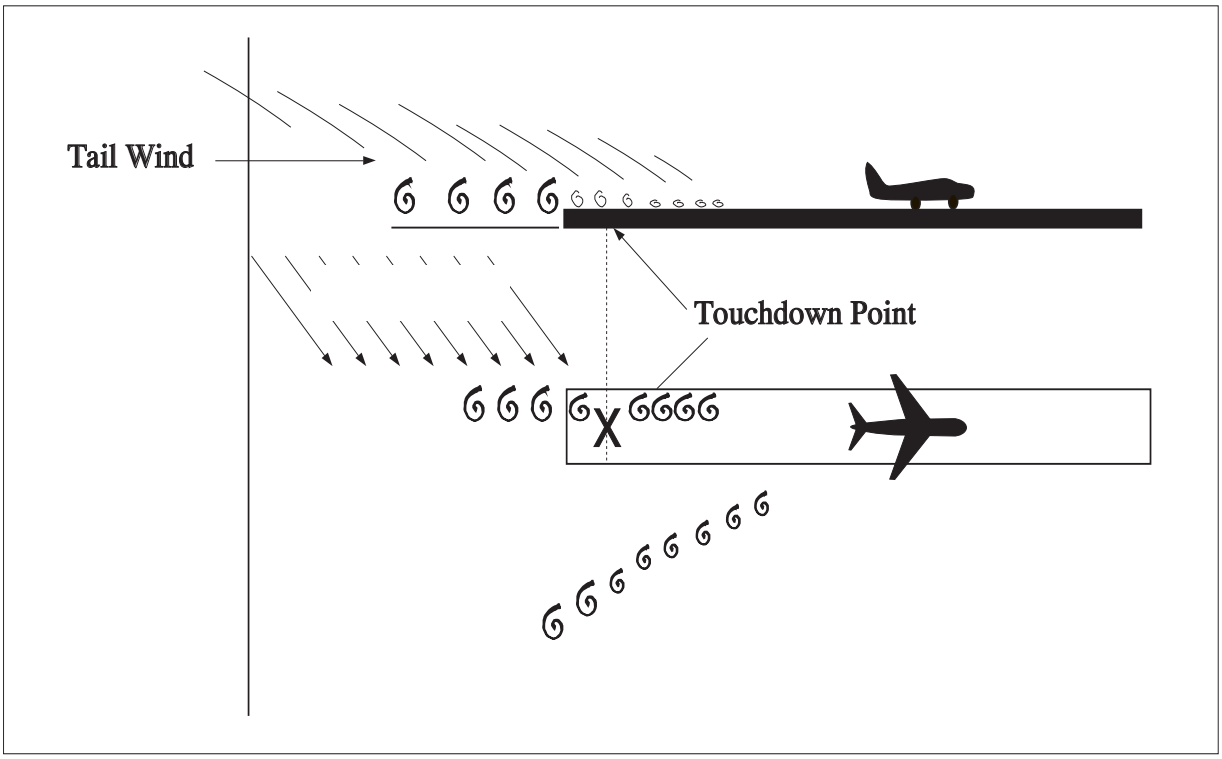


FIG GEN 3.5−23
Vortex Movement in Ground Effect − Tailwind



28.4.2 A crosswind will decrease the lateral movement of the upwind vortex and increase the movement of the downwind vortex. Thus, a light wind with a cross−runway component of 1 to 5 knots could result in the upwind vortex remaining in the touchdown zone for a period of time and hasten the drift of the downwind vortex toward another runway. (See FIG GEN 3.5−22.) Similarly, a tailwind condition can move the vortices of the preceding aircraft forward into the touchdown zone. THE LIGHT QUARTERING TAILWIND REQUIRES MAXIMUM CAUTION. Pilots should be alert to large aircraft upwind from their approach and takeoff flight paths. (See FIG GEN 3.5−23.)

28.5 Operations Problem Areas

28.5.1 A wake turbulence encounter can range from negligible to catastrophic. The impact of the encounter depends on the weight, wingspan, size of the generating aircraft, distance from the generating aircraft, and point of vortex encounter. The probability of induced roll increases when the encountering aircraft's heading is generally aligned with the flight path of the generating aircraft.

28.5.2 AVOID THE AREA BELOW AND BEHIND THE WAKE GENERATING AIRCRAFT, ESPECIALLY AT LOW ALTITUDE WHERE EVEN A MOMENTARY WAKE ENCOUNTER COULD BE CATASTROPHIC.

NOTE−
A common scenario for a wake encounter is in terminal airspace after accepting clearance for a visual approach behind landing traffic. Pilots must be cognizant of their position relative to the traffic and use all means of vertical guidance to ensure they do not fly below the flight path of the wake generating aircraft.

28.5.3 Pilots should be particularly alert in calm wind conditions and situations where the vortices could:

28.5.3.1 Remain in the touchdown area.

28.5.3.2 Drift from aircraft operating on a nearby runway.

28.5.3.3 Sink into the takeoff or landing path from a crossing runway.

28.5.3.4 Sink into the traffic pattern from other airport operations.

28.5.3.5 Sink into the flight path of VFR aircraft operating on the hemispheric altitude 500 feet below.

28.5.4 Pilots should attempt to visualize the vortex trail of aircraft whose projected flight path they may encounter. When possible, pilots of larger aircraft should adjust their flight paths to minimize vortex exposure to other aircraft.

28.6 Vortex Avoidance Procedures

28.6.1 Under certain conditions, airport traffic controllers apply procedures for separating IFR aircraft. If a pilot accepts a clearance to visually follow a preceding aircraft, the pilot accepts responsibility for separation and wake turbulence avoidance. The controllers will also provide to VFR aircraft, with whom they are in communication and which in the tower's opinion may be adversely affected by wake turbulence from a larger aircraft, the position, altitude and direction of flight of larger aircraft followed by the phrase "CAUTION – WAKE TURBULENCE." After issuing the caution for wake turbulence, the airport traffic controllers generally do not provide additional information to the following aircraft unless the airport traffic controllers know the following aircraft is overtaking the preceding aircraft. WHETHER OR NOT A WARNING OR INFORMATION HAS BEEN GIVEN, HOWEVER, THE PILOT IS EXPECTED TO ADJUST AIRCRAFT OPERATIONS AND FLIGHT PATH AS NECESSARY TO PRECLUDE SERIOUS WAKE ENCOUNTERS. When any doubt exists about maintaining safe separation distances between aircraft during approaches, pilots should ask the control tower for updates on separation distance and aircraft groundspeed.

28.6.2 The following vortex avoidance procedures are recommended for the various situations:

28.6.2.1 Landing Behind a Larger Aircraft – Same Runway. Stay at or above the larger aircraft's final approach flight path – note its touchdown point – land beyond it.

28.6.2.2 Landing Behind a Larger Aircraft – When a Parallel Runway is Closer Than 2,500 Feet. Consider possible drift to your runway. Stay at or above the larger aircraft's final approach flight path – note its touchdown point.

28.6.2.3 Landing Behind a Larger Aircraft – Crossing Runway. Cross above the larger aircraft's flight path.

28.6.2.4 Landing Behind a Departing Larger Aircraft – Same Runway. Note the larger aircraft's rotation point – land well prior to rotation point.

28.6.2.5 Landing Behind a Departing Larger Aircraft – Crossing Runway. Note the larger aircraft's rotation point – if past the intersection – continue the approach – land prior to the intersection. If larger aircraft rotates prior to the intersection, avoid flight below the larger aircraft's flight path. Abandon the approach unless a landing is ensured well before reaching the intersection.

28.6.2.6 Departing Behind a Larger Aircraft. Note the larger aircraft's rotation point – rotate prior to larger aircraft's rotation point – continue climb above the larger aircraft's climb path until turning clear of the larger aircraft's wake. Avoid subsequent headings which will cross below and behind a larger aircraft. Be alert for any critical takeoff situation which could lead to a vortex encounter.

28.6.2.7 Intersection Takeoffs – Same Runway. Be alert to adjacent larger aircraft operations, particularly upwind of your runway. If intersection takeoff clearance is received, avoid subsequent headings which will cross below a larger aircraft's path.

28.6.2.8 Departing or Landing After a Larger Aircraft Executing a Low Approach, Missed Approach, Or Touch−and−go Landing. Because vortices settle and move laterally near the ground, the vortex hazard may exist along the runway and in your flight path after a larger aircraft has executed a low approach, missed approach, or a touch−and−go landing, particular in light quartering wind conditions. You should ensure that an interval of at least 2 minutes has elapsed before your takeoff or landing.

28.6.2.9 En Route VFR (Thousand−foot Altitude Plus 500 Feet). Avoid flight below and behind a large aircraft's path. If a larger aircraft is observed above on the same track (meeting or overtaking) adjust your position laterally, preferably upwind.

EXAMPLE−
CIG 020 RY11 − "ceiling two thousand at Runway One One."

29.3.9.9 Variable Cloud Layer. When a layer is varying in sky cover, remarks will show the variability range. If there is more than one cloud layer, the variable layer will be identified by including the layer height.

EXAMPLE−
SCT V BKN − "scattered layer variable to broken."

BKN025 V OVC − "broken layer at two thousand five hundred variable to overcast."

29.3.9.10 Significant Clouds. When significant clouds are observed, they are shown in remarks, along with the specified information as shown below:

a) Cumulonimbus (CB), or Cumulonimbus Mammatus (CBMAM), distance (if known), direction from the station, and direction of movement, if known. If the clouds are beyond 10 miles from the airport, DSNT will indicate distance.

EXAMPLE−
CB W MOV E − "cumulonimbus west moving east."

CBMAM DSNT S − "cumulonimbus mammatus distant south."

b) Towering Cumulus (TCU), location, (if known), or direction from the station.

EXAMPLE−
TCU OHD − "towering cumulus overhead."

TCU W − "towering cumulus west."

c) Altocumulus Castellanus (ACC), Stratocumulus Standing Lenticular (SCSL), Altocumulus Standing Lenticular (ACSL), Cirrocumulus Standing Lenticular (CCSL) or rotor clouds, describing the clouds (if needed), and the direction from the station.

ACC W	"altocumulus castellanus west"
ACSL SW−S	"standing lenticular altocumulus southwest through south"
APRNT ROTOR CLD S	"apparent rotor cloud south"
CCSL OVR MT E	"standing lenticular cirrocumulus over the mountains east"

29.3.10 Temperature/Dew Point. Temperature and dew point are reported in two, two−digit groups in degrees Celsius, separated by a solidus (/). Temperatures below zero are prefixed with an "M." If the temperature is available but the dew point is missing, the temperature is shown followed by a solidus. If the temperature is missing, the group is omitted from the report.

EXAMPLE−
15/08 . . . . . "temperature one five, dew point 8"
00/M02 . . . . . "temperature zero, dew point minus 2"
M05/ . . . . . "temperature minus five, dew point missing"

29.3.11 Altimeter. Altimeter settings are reported in a four−digit format in inches of mercury prefixed with an "A" to denote the units of pressure.

EXAMPLE−
A2995 . . . . . "altimeter two niner niner five"

29.3.12 Remarks. Remarks will be included in all observations, when appropriate. The contraction "RMK" denotes the start of the remarks section of a METAR report.

Except for precipitation, phenomena located within 5 statute miles of the point of observation will be reported as at the station. Phenomena between 5 and 10 statute miles will be reported in the vicinity, "VC." Precipitation not occurring at the point of observation but within 10 statute miles is also reported as in the vicinity, "VC." Phenomena beyond 10 statute miles will be shown as distant, "DSNT." Distances are in statute miles except for

automated lightning remarks which are in nautical miles. Movement of clouds or weather will be indicated by the direction toward which the phenomena is moving.

There are two categories of remarks: Automated, Manual, and Plain Language; and Additive and Automated Maintenance Data.

29.3.12.1 Automated, Manual, and Plain Language Remarks. This group of remarks may be generated from either manual or automated weather reporting stations and generally elaborates on parameters reported in the body of the report. Plain language remarks are only provided by manual stations.

1) Volcanic Eruptions
2) Tornado, Funnel Cloud, Waterspout
3) Type of Automated Station (AO1 or AO2)
4) Peak Wind
5) Wind Shift
6) Tower or Surface Visibility
7) Variable Prevailing Visibility
8) Sector Visibility
9) Visibility at Second Location
10) Dispatch Visual Range
11) Lightning. When lightning is observed at a manual location, the frequency and location is reported. When cloud−to−ground lightning is detected by an automated lightning detection system, such as ALDARS: [a] Within 5 nautical miles (NM) of the Airport Reference Point (ARP), it will be reported as “TS” in the body of the report with no remark; [b] Between 5 and 10 NM of the ARP, it will be reported as “VCTS” in the body of the report with no remark; [c] Beyond 10 but less than 30 NM of the ARP, it will be reported in remarks as “DSNT” followed by the direction from the ARP. ***EXAMPLE−*** *LTG DSNT W or LTG DSNT ALQDS*

12) Beginning/Ending Time of Precipitation
13) Beginning/Ending Time of Thunderstorms
14) Thunderstorm Location; Movement Direction
15) Hailstone Size
16) Virga
17) Variable Ceiling
18) Obscurations
19) Variable Sky Condition
20) Significant Cloud Types
21) Ceiling Height at Second Location
22) Pressure Rising or Falling Rapidly
23) Sea−Level Pressure
24) Aircraft Mishap (not transmitted)
25) No SPECI Reports Taken
26) Snow Increasing Rapidly
27) Other Significant Information

FIG GEN 3.5–24

Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Front)

TAF	KPIT 091730Z 0918/1024 15005KT 5SM HZ FEW020 WS010/31022KT FM091930 30015G25KT 3SM SHRA OVC015 TEMPO 0920/0922 1/2SM +TSRA OVC008CB FM100100 27008KT 5SM SHRA BKN020 OVC040 PROB30 1004/1007 1SM -RA BR FM101015 18005KT 6SM -SHRA OVC020 BECMG 1013/1015 P6SM NSW SKC
NOTE: Users are cautioned to confirm ***DATE*** and ***TIME*** of the TAF. For example FM**10**0000 is 0000Z on the **10th**. Do not confuse with ***1000Z!***	
METAR KPIT 091955Z COR 22015G25KT 3/4SM R28L/2600FT TSRA OVC010CB 18/16 A2992 RMK SLP045 T01820159	

Forecast	Explanation	Report
TAF	Message type: TAF-routine or TAF AMD-amended forecast, METAR-hourly, SPECI-special or TESTM-non-commissioned ASOS report	**METAR**
KPIT	ICAO location indicator	**KPIT**
091730Z	Issuance time: ALL times in UTC "Z", 2-digit date, 4-digit time	**091955Z**
0918/1024	Valid period, either 24 hours or 30 hours. The first two digits of EACH four digit number indicate the date of the valid period, the final two digits indicate the time (valid from 18Z on the 9th to 24Z on the 10th).	
	In U.S. METAR: CORrected ob; or AUTOmated ob for automated report with no human intervention; omitted when observer logs on.	**COR**
15005KT	Wind: 3 digit true-north direction , nearest 10 degrees (or VaRiaBle); next 2-3 digits for speed and unit, KT (KMH or MPS); as needed, Gust and maximum speed; 00000KT for calm; for METAR, if direction varies 60 degrees or more, Variability appended, e.g., 180V260	**22015G25KT**
5SM	Prevailing visibility; in U.S., Statute Miles & fractions; above 6 miles in TAF Plus6SM. (Or, 4-digit minimum visibility in meters and as required, lowest value with direction)	**¾SM**
	Runway Visual Range: R; 2-digit runway designator Left, Center, or Right as needed; "/", Minus or Plus in U.S., 4-digit value, FeeT in U.S., (usually meters elsewhere); 4-digit value Variability 4-digit value (and tendency Down, Up or No change)	**R28L/2600FT**
HZ	Significant present, forecast and recent weather: see table (on back)	**TSRA**
FEW020	Cloud amount, height and type: Sky Clear 0/8, FEW >0/8-2/8, ScaTtered 3/8-4/8, BroKeN 5/8-7/8, OverCast 8/8; 3-digit height in hundreds of ft; Towering Cumulus or CumulonimBus in **METAR**; in **TAF**, only CB. Vertical Visibility for obscured sky and height "VV004". More than 1 layer may be reported or forecast. In automated **METAR** reports only, CleaR for "clear below 12,000 feet"	**OVC 010CB**
	Temperature: degrees Celsius; first 2 digits, temperature "/" last 2 digits, dew-point temperature; Minus for below zero, e.g., M06	**18/16**
	Altimeter setting: indicator and 4 digits; in U.S., A-inches and hundredths; (Q-hectoPascals, e.g., Q1013)	**A2992**
WS010/31022KT	In U.S. **TAF**, non-convective low-level (≤2,000 ft) Wind Shear; 3-digit height (hundreds of ft); "/"; 3-digit wind direction and 2-3 digit wind speed above the indicated height, and unit, KT	

FIG GEN 3.5–25

Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Back)

	In **METAR**, ReMarK indicator & remarks. For example: Sea- Level Pressure in hectoPascals & tenths, as shown: 1004.5 hPa; Temp/ dew-point in tenths °C, as shown: temp. 18.2°C, dew-point 15.9°C	**RMK SLP045 T01820159**
FM091930	FroM: changes are expected at: 2-digit date, 2-digit hour, and 2-digit minute beginning time: indicates significant change. Each FM starts on a new line, indented 5 spaces	
TEMPO 0920/0922	TEMPOrary: changes expected for <1 hour and in total, < half of the period between the 2-digit date and 2-digit hour beginning, and 2-digit date and 2-digit hour ending time	
PROB30 1004/1007	PROBability and 2-digit percent (30 or 40): probable condition in the period between the 2-digit date & 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	
BECMG 1013/1015	BECoMinG: change expected in the period between the 2-digit date and 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	

Table of Significant Present, Forecast and Recent Weather - Grouped in categories and used in the order listed below; or as needed in TAF, No Significant Weather.

Qualifiers
Intensity or Proximity

"-" = Light	**No sign** = Moderate	**"+"** = Heavy

"VC" = Vicinity, but not at aerodrome. In the US METAR, 5 to 10 SM from the point of observation. In the US TAF, 5 to 10 SM from the center of the runway complex. Elsewhere, within 8000m.

Descriptor

BC – Patches	**BL** – Blowing	**DR** – Drifting	**FZ** – Freezing
MI – Shallow	**PR** – Partial	**SH** – Showers	**TS** – Thunderstorm

Weather Phenomena
Precipitation

DZ – Drizzle	**GR** – Hail	**GS** – Small Hail/Snow Pellets	
IC – Ice Crystals	**PL** – Ice Pellets	**RA** – Rain	**SG** – Snow Grains
SN – Snow	**UP** – Unknown Precipitation in automated observations		

Obscuration

BR – Mist (≥5/8SM)	**DU** – Widespread Dust	**FG** – Fog (<5/8SM)	**FU** – Smoke
HZ – Haze	**PY** – Spray	**SA** – Sand	**VA** – Volcanic Ash

Other

DS – Dust Storm	**FC** – Funnel Cloud	**+FC** – Tornado or Waterspout	
PO – Well developed dust or sand whirls		**SQ** – Squall	**SS** – Sandstorm

- Explanations in parentheses "()" indicate different worldwide practices.
- Ceiling is not specified; defined as the lowest broken or overcast layer, or the vertical visibility.
- NWS TAFs exclude BECMG groups and temperature forecasts, NWS TAFS do not use PROB in the first 9 hours of a TAF; NWS METARs exclude trend forecasts. US Military TAFs include Turbulence and Icing groups.

30. Meteorological Broadcasts (ATIS, VHF and LF)

30.1 Automatic Terminal Information Service (ATIS) Broadcasts

30.1.1 These broadcasts are made continuously and include as weather information only the ceiling, visibility, wind, and altimeter setting of the aerodrome at which they are located.

30.2 Navigational Aids Providing Broadcast Services

30.2.1 A compilation of navigational aids over which weather broadcasts are transmitted is not available for this publication. Complete information concerning all navigational aids providing this service is contained in the Chart Supplement U.S. Similar information for the Pacific and Alaskan areas is contained in the Chart Supplements Pacific and Alaska.

TBL GEN 3.5–15
Meteorological Broadcasts (VOLMET)

Name	Call Sign	Frequency	Broadcast	Form	Contents	Emission	Remarks
New York	New York Radio	3485, 6604, 10051, 13270 kHz	H00–05	Aerodrome Forecasts	KDTW Detroit KCLE Cleveland KCVG Cincinnati	Voice	Plain language English
				Hourly Reports	KDTW Detroit KCLE Cleveland KCVG Cincinnati KIND Indianapolis KPIT Pittsburgh		
			H05–10	SIGMET	Oceanic – New York FIR		
				Aerodrome Forecasts	KBGR Bangor KBDL Windsor Locks KCLT Charlotte		
				Hourly Reports	KBGR Bangor KBDL Windsor Locks KORF Norfolk KCLT Charlotte		
			H10–15	Aerodrome Forecasts	KJFK New York KEWR Newark KBOS Boston		
				Hourly Reports	KJFK New York KEWR Newark KBOS Boston KBAL Baltimore KIAD Washington		
			H15–20	SIGMET	Oceanic – Miami FIR/San Juan FIR		
				Aerodrome Forecasts	MXKF Bermuda KMIA Miami KATL Atlanta		
				Hourly Reports	MXKF Bermuda KMIA Miami MYNN Nassau KMCO Orlando KATL Atlanta		
			H30–35	Aerodrome Forecasts	KORD Chicago KMKE Milwaukee KMSP Minneapolis		
				Hourly Reports	KORD Chicago KMKE Milwaukee KMSP Minneapolis KDTW Detroit KBOS Boston		
			E35–40	SIGMET	Oceanic – New York FIR		

Name	Call Sign	Frequency	Broadcast	Form	Contents	Emission	Remarks
				Aerodrome Forecasts	KIND Indianapolis KSTL St. Louis KPIT Pittsburgh		
				Hourly Reports	KIND Indianapolis KSTL St. Louis KPIT Pittsburgh KACY Atlantic City		
			E40–45	Aerodrome Forecasts	KBAL Baltimore KPHL Philadelphia KIAD Washington		
				Hourly Reports	KBAL Baltimore KPHL Philadelphia KIAD Washington KJFK New York KEWR Newark		
			E45–50	SIGMET	Oceanic – Miami FIR/San Juan FIR		
				Aerodrome Forecasts	MYNN Nassau KMCO Orlando		
				Hourly Reports	MXKF Bermuda KMIA Miami MYNN Nassau KMCO Orlando KATL Atlanta KTPA Tampa KPBI West Palm Beach		
All stations operate on A3 emission H24.							
All broadcasts are made 24 hours daily, seven days a week.							

FIG GEN 3.5–26

Key to Decode an ASOS/AWOS (METAR) Observation (Front)

METAR KABC 121755Z AUTO 21016G24KT 180V240 1SM R11/P6000FT -RA BR BKN015 OVC025 06/04 A2990
RMK A02 PK WND 20032/25 WSHFT 1715 VIS 3/4V1 1/2 VIS 3/4 RWY11 RAB07 CIG 013V017 CIG 017 RWY11 PRESFR
SLP125 P0003 6009 T00640036 10066 21012 58033 TSNO $

TYPE OF REPORT	METAR: hourly (scheduled report; SPECI: special (unscheduled) report.	METAR
STATION IDENTIFIER	Four alphabetic characters; ICAO location identifiers.	KABC
DATE/TIME	All dates and times in UTC using a 24-hour clock; two-digit date and four-digit time; always appended with Z to indicate UTC.	121755Z
REPORT MODIFIER	Fully automated report, no human intervention; removed when observer signed-on.	AUTO
WIND DIRECTION AND SPEED	Direction in tens of degrees from true north (first three digits); next two digits: speed in whole knots; as needed Gusts (character) followed by maximum observed speed; always appended with KT to indicate knots; 00000KT for calm; if direction varies by 60° or more a Variable wind direction group is reported.	21016G24KT 108V240
VISIBILITY	Prevailing visibility in statute miles and fractions (space between whole miles and fractions); always appended with SM to indicate statute miles.	1SM
RUNWAY VISUAL RANGE	10-minute RVR value in hundreds of feet; reported if prevailing visibility is ≤ one mile or RVR ≤6000 feet; always appended with FT to indicate feet; value prefixed with M or P to indicate value is lower or higher than the reportable RVR value.	R11/P6000FT
WEATHER PHENOMENA	RA: liquid precipitation that does not freeze; SN: frozen precipitation other than hail; UP: precipitation of unknown type; intensity prefixed to precipitation: light (-), moderate (no sign), heavy (+); FG: fog; FZFG: freezing fog (temperature below 0°C); BR: mist; HZ: haze; SQ: squall; maximum of three groups reported; augmented by observer: FC (funnel cloud/tornado/waterspout); TS(thunderstorm); GR (hail); GS (small hail; <1/4 inch); FZRA (intensity; freezing rain); VA (volcanic ash).	-RA BR
SKY CONDITION	Cloud amount and height: CLR (no clouds detected below 12000 feet); FEW (few); SCT (scattered); BKN (broken); OVC (overcast); followed by 3-digit height in hundreds of feet; or vertical visibility (VV) followed by height for indefinite ceiling.	BKN015 OVC025
TEMPERATURE/DEW POINT	Each is reported in whole degrees Celsius using two digits; values are separated by a solidus; sub-zero values are prefixed with an M (minus).	06/04
ALTIMETER	Altimeter always prefixed with an A indicating inches of mercury; reported using four digits: tens, units, tenths, and hundredths.	A2990

FIG GEN 3.5–27

Key to Decode an ASOS/AWOS (METAR) Observation (Back)

REMARKS IDENTIFIER: RMK	RMK
TORNADIC ACTIVITY: Augmented; report should include TORNADO, FUNNEL CLOUD, or WATERSPOUT, time begin/end, location, movement; e.;g., TORNADO B25 N MOV E.	
TYPE OF AUTOMATED STATION: AO2; automated station with precipitation discriminator.	AO2
PEAK WIND: PK WND dddfff(f)/(hh)mm; direction in tens of degrees, speed in whole knots, and time.	PK WND 20032/25
WIND SHIFT: WSHFT (hh)mm	WSHFT 1715
TOWER OR SURFACE VISIBILITY: TWR VIS vvvvv: visibility reported by tower personnel, e.g., TWR VIS 2; SFC VIS vvvvv: visibility reported by ASOS, e.g., SFC VIS 2.	
VARIABLE PREVAILING VISIBILITY: VIS v_n v_n v_n v_n $Vv_xv_xv_xv_x$ reported if prevailing visibility is <3 miles and variable.	VIS 3/4V1 1/2
VISIBILITY AT SECOND LOCATION: VIS vvvvv [LOC]; reported if different than the reported prevailing visibility in body of report.	VIS 3/4 RWY11
LIGHTNING: [FREQ] LTG [LOC]; when detected the frequency and location is reported, e.g., FRQ LTG NE.	
BEGINNING AND ENDING OF PRECIPITATION AND THUNDERSTORMS: w'w'B(hh)mmE(hh)mm; TSB(hh)mmE(hh)mm	RAB07
VIRGA: Augmented; precipitation not reaching the ground, e.g., VIRGA.	
VARIABLE CEILING HEIGHT: CIG h_n h_n h_n $Vh_xh_xh_x$; reported if ceiling in body of report is <3000 feet and variable.	CIG 013V017
CEILING HEIGHT AT SECOND LOCATION: CIG hhh [LOC]; Ceiling height reported if secondary ceilometer site is different than the ceiling height in the body of the report.	CIG 017 RWY11
PRESSURE RISING OR FALLING RAPIDLY: PRESRR or PRESFR; pressure rising or falling rapidly at time of observation.	PRESFR
SEA-LEVEL PRESSURE: SLPppp; tens, units, and tenths of SLP in hPa.	SLP125
HOURLY PRECIPITATION AMOUNT: Prrrr; in .01 inches since last METAR; a trace is P0000.	P0003
3- AND 6-HOUR PRECIPITATION AMOUNT: 6RRRR; precipitation amount in .01 inches for past 6 hours reported in 00, 06, 12, and 18 UTC observations and for past 3 hours in 03, 09, 15, and 21 UTC observations; a trace is 60000.	60009
24-HOUR PRECIPITATION AMOUNT: $7R_{24}$ R_{24} R_{24} R_{24}; precipitation amount in .01 inches for past 24 hours reported in 12 UTC observation, e.g., 70015.	
HOURLY TEMPERATURE AND DEW POINT: $Ts_nT_aT_aT_aT'_aT'_a$; tenth of degree Celsius; s_n: 1 if temperature below 0° C and 0 if temperature 0°C or higher.	T00640036
6-HOUR MAXIMUM TEMPERATURE: $1s_nT_xT_xT_x$; tenth of degree Celsius; 00, 06, 12, 18 UTC; s_n: 1 if temperature below 0°C and 0 if temperature 0°C or higher.	10066
6-HOUR MINIMUM TEMPERATURE: $2s_nT_nT_nT_n$; tenth of degree Celsius; 00, 06, 12, 18 UTC; s_n: 1 if temperature below 0°C and 0 if temperature 0°C or higher.	21012
24-HOUR MAXIMUM AND MINIMUM TEMPERATURE: $4s_nT_xT_xT_xs_nT_nT_nT_n$; tenth of degree Celsius; reported at midnight local standard time; 1 if temperature below 0°C and 0 if temperature 0°C or higher, e.g., 400461006.	
PRESSURE TENDENCY: 5appp; the character (a) and change in pressure (ppp; tenths of hPa) the past 3 hours.	58033
SENSOR STATUS INDICATORS: RVRNO: RVR missing; PWINO: precipitation identifier information not available; PNO: precipitation amount not available; FZRANO: freezing rain information not available; TSNO: thunderstorm information not available; VISNO [LOC]: visibility at secondary location not available, e.g., VISNO RWY06; CHINO [LOC]: (cloud-height-indicator) sky condition at secondary location not available, e.g., CHINO RWY06.	TSNO
MAINTENANCE CHECK INDICATOR: Maintenance needed on the system.	$

If an element or phenomena does not occur, is missing, or cannot be observed, the corresponding group and space are omitted (body and/or remarks) from that particular report, except for Sea-Level Pressure (SLPppp). SLPNO shall be reported in a METAR when the SLP is not available.

U.S. DEPARTMENT OF TRANSPORTATION • FEDERAL AVIATION ADMINISTRATION • Aviation Weather Directorate, 400 7TH Street, SW, Rooms 8200-8326, Washington, D.C 20591

FIG GEN 3.5–28
NEXRAD Coverage

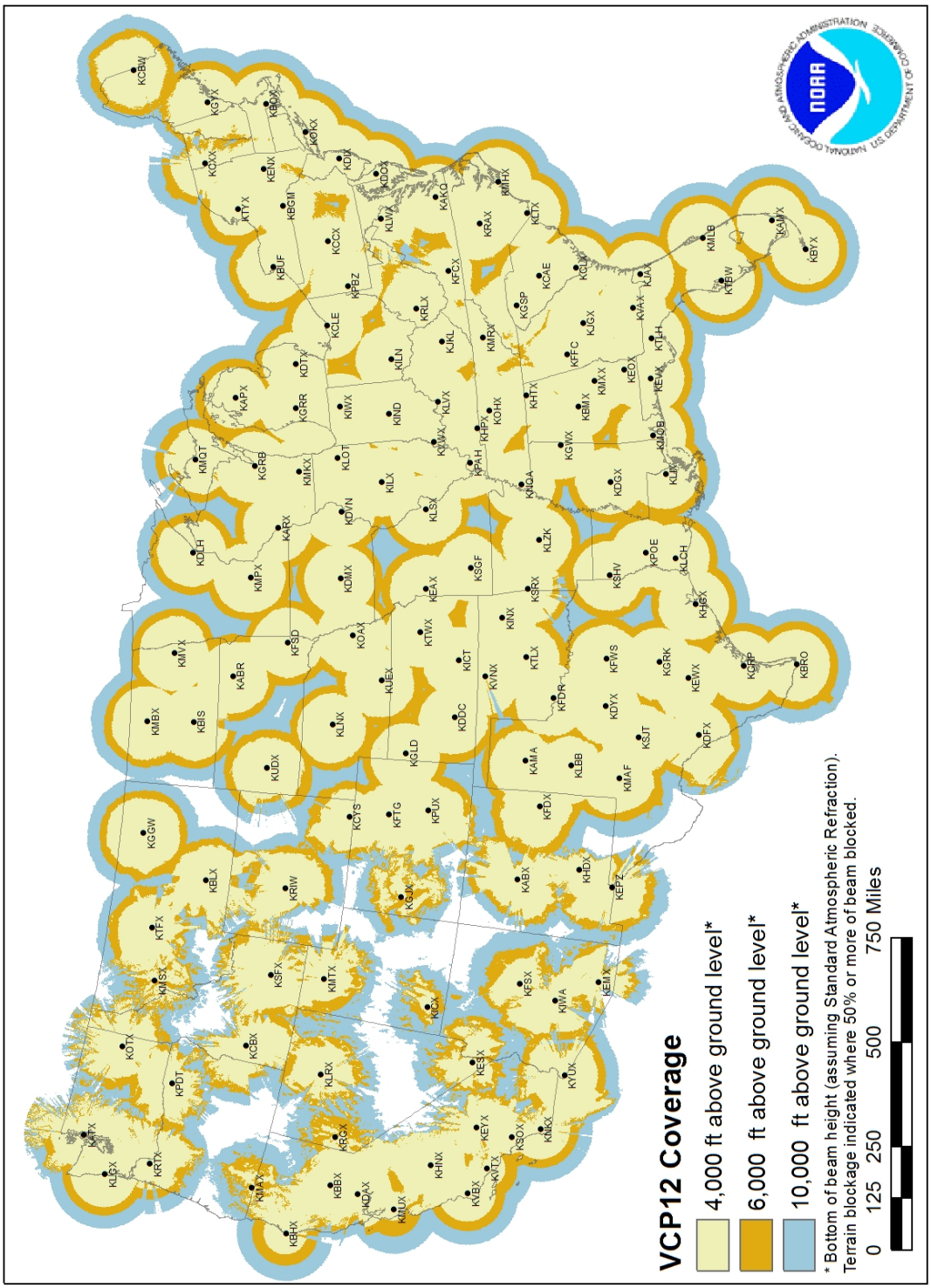


FIG GEN 3.5–29
NEXRAD Coverage

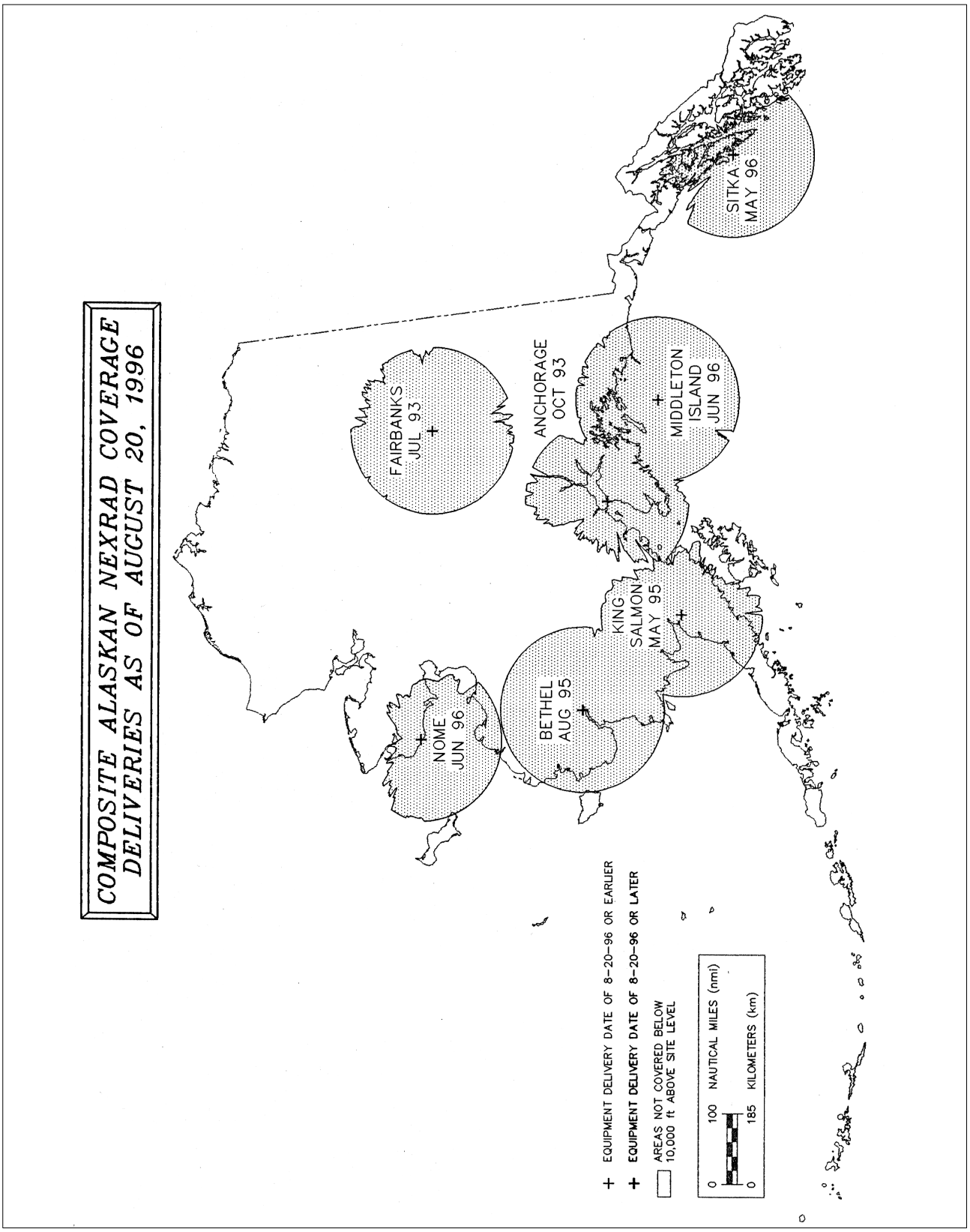


FIG GEN 3.5–30
NEXRAD Coverage

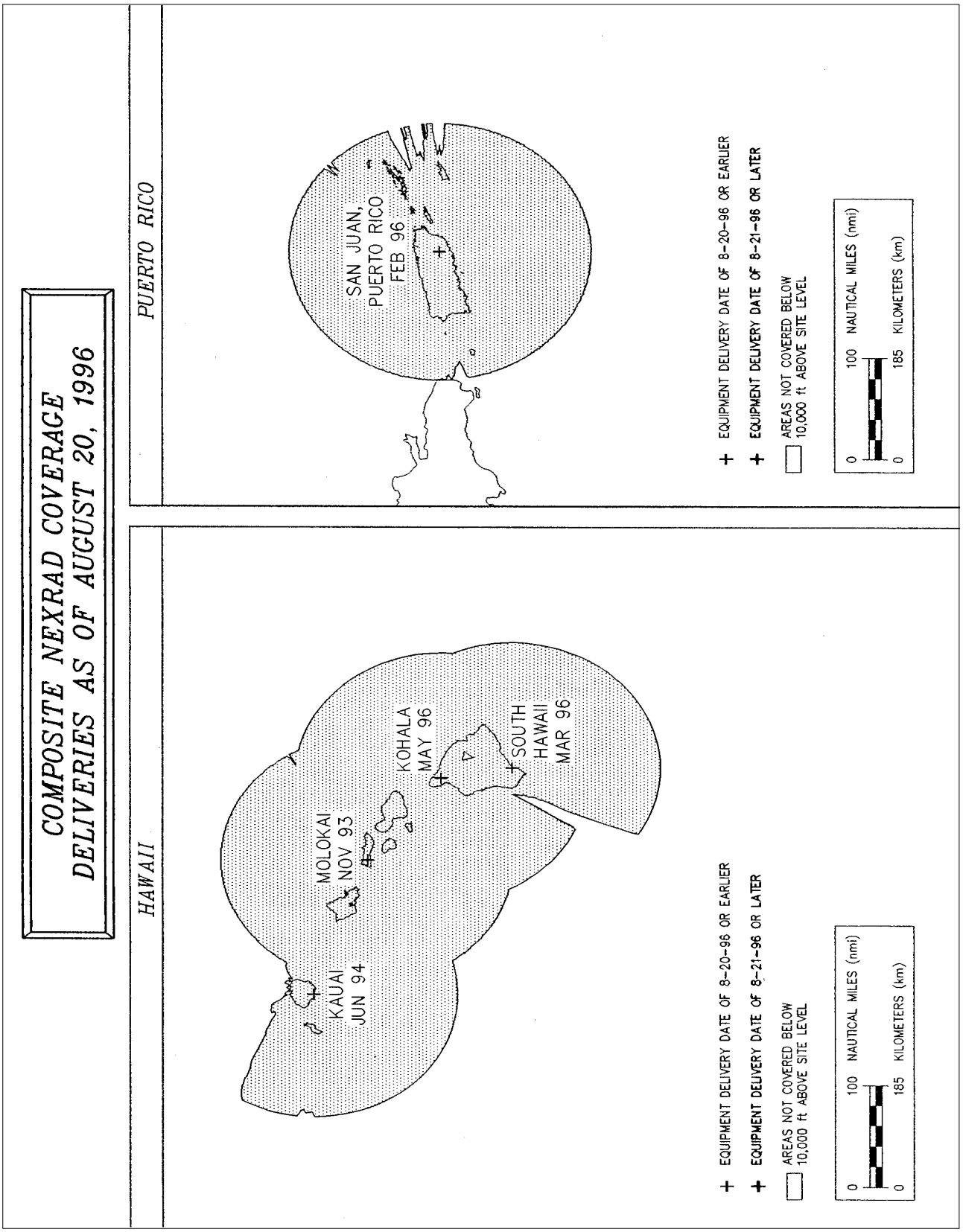


FIG GEN 3.5–31

Volcanic Activity Reporting Form (VAR)

Air–reports are critically important in assessing the hazards which volcanic ash cloud presents to aircraft operations.

OPERATOR:			A/C IDENTIFICATION: (as indicated on flight plan)		
PILOT-IN-COMMAND:					
DEP FROM:	DATE:	TIME; UTC:	ARR AT:	DATE:	TIME; UTC:
ADDRESSEE			AIREP SPECIAL		
Items 1–8 are to be reported immediately to the ATS unit that you are in contact with.					
1) AIRCRAFT IDENTIFICATION			2) POSITION		
3) TIME			4) FLIGHT LEVEL OR ALTITUDE		
5) VOLCANIC ACTIVITY OBSERVED AT (position or bearing, estimated level of ash cloud and distance from aircraft)					
6) AIR TEMPERATURE			7) SPOT WIND		
8) SUPPLEMENTARY INFORMATION SO_2 detected Yes ☐ No ☐ Ash encountered Yes ☐ No ☐			Other _____ (Brief description of activity especially vertical and lateral extent of ash cloud and, where possible, horizontal movement, rate of growth, etc.)		
After landing complete items 9–16 then fax form to: (Fax number to be provided by the meteorological authority based on local arrangements between the meteorological authority and the operator concerned.)					
9) DENSITY OF ASH CLOUD	☐ (a) Wispy		☐ (b) Moderate dense		☐ (c) Very dense
10) COLOUR OF ASH CLOUD	☐ (a) White		☐ (b) Light grey		☐ (c) Dark grey
	☐ (d) Black		☐ (e) Other _____		
11) ERUPTION	☐ (a) Continuous		☐ (b) Intermittent		☐ (c) Not visible
12) POSITION OF ACTIVITY	☐ (a) Summit		☐ (b) Side		☐ (c) Single
	☐ (d) Multiple		☐ (e) Not observed		
13) OTHER OBSERVED FEATURES OF ERUPTION	☐ (a) Lightning		☐ (b) Glow		☐ (c) Large rocks
	☐ (d) Ash fallout		☐ (e) Mushroom cloud		☐ (f) All
14) EFFECT ON AIRCRAFT	☐ (a) Communication		☐ (b) Navigation systems		☐ (c) Engines
	☐ (d) Pitot static		☐ (e) Windscreen		☐ (f) Windows
15) OTHER EFFECTS	☐ (a) Turbulence		☐ (b) St. Elmo's Fire		☐ (c) Other fumes
16) OTHER INFORMATION (Any information considered useful.)					

Date: 07/19/2010

PART 2 – EN ROUTE (ENR)

ENR 0.

ENR 0.1 Preface – Not applicable
ENR 0.2 Record of AIP Amendments – See GEN 0.2–1
ENR 0.3 Record of AIP Supplements – Not applicable

ENR 0.4 Checklist of Pages

PAGE	DATE
PART 2 – EN ROUTE (ENR)	
ENR 0	
0.4–1	20 APR 23
0.4–2	20 APR 23
0.4–3	20 APR 23
0.4–4	20 APR 23
0.6–1	20 APR 23
0.6–2	20 APR 23
ENR 1	
1.1–1	19 MAY 22
1.1–2	19 MAY 22
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1.1–4	19 MAY 22
1.1–5	19 MAY 22
1.1–6	19 MAY 22
1.1–7	19 MAY 22
1.1–8	19 MAY 22
1.1–9	20 APR 23
1.1–10	20 APR 23
1.1–11	20 APR 23
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1.1–101	20 APR 23
1.2–1	19 MAY 22
1.3–1	19 MAY 22
1.4–1	19 MAY 22
1.4–2	19 MAY 22
1.4–3	19 MAY 22
1.4–4	20 APR 23
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1.4–6	20 APR 23
1.4–7	20 APR 23
1.4–8	20 APR 23

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1.4–12	19 MAY 22
1.4–13	19 MAY 22
1.4–14	19 MAY 22
1.4–15	20 APR 23
1.4–16	20 APR 23
1.4–17	20 APR 23
1.4–18	19 MAY 22
1.4–19	20 APR 23
1.5–1	19 MAY 22
1.5–2	19 MAY 22
1.5–3	19 MAY 22
1.5–4	19 MAY 22
1.5–5	19 MAY 22
1.5–6	19 MAY 22
1.5–7	19 MAY 22
1.5–8	19 MAY 22
1.5–9	19 MAY 22
1.5–10	19 MAY 22
1.5–11	19 MAY 22
1.5–12	19 MAY 22
1.5–13	19 MAY 22
1.5–14	19 MAY 22
1.5–15	19 MAY 22
1.5–16	19 MAY 22
1.5–17	19 MAY 22
1.5–18	19 MAY 22
1.5–19	3 NOV 22
1.5–20	19 MAY 22
1.5–21	19 MAY 22
1.5–22	19 MAY 22
1.5–23	19 MAY 22
1.5–24	19 MAY 22
1.5–25	19 MAY 22
1.5–26	19 MAY 22
1.5–27	19 MAY 22
1.5–28	19 MAY 22
1.5–29	19 MAY 22
1.5–30	3 NOV 22
1.5–31	19 MAY 22
1.5–32	19 MAY 22
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1.5–34	19 MAY 22
1.5–35	19 MAY 22
1.5–36	3 NOV 22
1.5–37	3 NOV 22
1.5–38	19 MAY 22
1.5–39	19 MAY 22
1.5–40	19 MAY 22
1.5–41	19 MAY 22

PAGE	DATE
1.5–42	19 MAY 22
1.5–43	19 MAY 22
1.5–44	19 MAY 22
1.5–45	19 MAY 22
1.5–46	19 MAY 22
1.5–47	19 MAY 22
1.5–48	19 MAY 22
1.5–49	19 MAY 22
1.5–50	3 NOV 22
1.5–51	19 MAY 22
1.5–52	19 MAY 22
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1.6–2	19 MAY 22

PAGE	DATE
1.6–3	19 MAY 22
1.6–4	19 MAY 22
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1.8–8	3 NOV 22
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1.10–18	19 MAY 22
1.10–19	19 MAY 22
1.11–1	19 MAY 22
1.11–2	19 MAY 22
1.12–1	19 MAY 22
1.12–2	20 APR 23
1.12–3	20 APR 23
1.12–4	20 APR 23
1.12–5	20 APR 23
1.12–6	20 APR 23
1.12–7	20 APR 23
1.12–8	20 APR 23
1.12–9	20 APR 23

PAGE	DATE
1.12–10	20 APR 23
1.12–11	20 APR 23
1.12–12	20 APR 23
1.12–13	20 APR 23
1.12–14	20 APR 23
1.12–15	19 MAY 22
1.13–1	19 MAY 22
1.14–1	19 MAY 22
1.15–1	19 MAY 22
1.15–2	19 MAY 22
1.15–3	19 MAY 22
1.15–4	19 MAY 22
1.15–5	19 MAY 22
1.15–6	19 MAY 22
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1.15–8	19 MAY 22
1.15–9	19 MAY 22
1.16–1	19 MAY 22
1.16–2	19 MAY 22
1.16–3	19 MAY 22
1.17–1	19 MAY 22
1.17–2	19 MAY 22
1.17–3	19 MAY 22
1.17–4	19 MAY 22
1.17–5	19 MAY 22
1.17–6	19 MAY 22
1.17–7	19 MAY 22
1.17–8	20 APR 23
1.17–9	19 MAY 22
1.17–10	19 MAY 22
1.17–11	19 MAY 22
1.17–12	19 MAY 22
1.17–13	19 MAY 22
ENR 2	
2–1	19 MAY 22
ENR 3	
3.1–1	19 MAY 22
3.2–1	19 MAY 22
3.3–1	20 APR 23
3.4–1	19 MAY 22
3.5–1	20 APR 23
3.5–2	20 APR 23
3.5–3	20 APR 23
3.5–4	20 APR 23
ENR 4	
4.1–1	19 MAY 22
4.1–2	19 MAY 22
4.1–3	19 MAY 22
4.1–4	19 MAY 22
4.1–5	19 MAY 22
4.1–6	19 MAY 22
4.1–7	19 MAY 22
4.1–8	19 MAY 22
4.1–9	19 MAY 22
4.1–10	19 MAY 22
4.1–11	3 NOV 22
4.1–12	3 NOV 22
4.1–13	3 NOV 22
4.1–14	3 NOV 22
4.1–15	3 NOV 22
4.1–16	3 NOV 22
4.1–17	3 NOV 22
4.1–18	3 NOV 22
4.1–19	3 NOV 22
4.1–20	3 NOV 22
4.1–21	3 NOV 22
4.1–22	3 NOV 22
4.1–23	3 NOV 22
4.1–24	3 NOV 22
4.1–25	3 NOV 22
4.1–26	3 NOV 22
4.1–27	3 NOV 22
4.1–28	3 NOV 22
4.1–29	3 NOV 22
4.1–30	3 NOV 22
4.1–31	3 NOV 22
4.1–32	3 NOV 22
4.1–33	3 NOV 22
4.1–34	3 NOV 22
4.1–35	20 APR 23
4.1–36	20 APR 23
4.1–37	20 APR 23
4.1–38	20 APR 23
4.1–39	20 APR 23
4.1–40	20 APR 23
4.2–1	19 MAY 22
ENR 5	
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5.1–2	19 MAY 22
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5.1–4	19 MAY 22
5.1–5	19 MAY 22
5.1–6	19 MAY 22
5.2–1	19 MAY 22
5.2–2	3 NOV 22
5.2–3	3 NOV 22
5.3–1	19 MAY 22
5.4–1	19 MAY 22
5.5–1	19 MAY 22
5.6–1	19 MAY 22
5.6–2	19 MAY 22
5.6–3	19 MAY 22
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5.7–2	19 MAY 22
5.7–3	19 MAY 22
5.7–4	19 MAY 22
5.7–5	3 NOV 22
5.7–6	3 NOV 22
5.7–7	19 MAY 22
5.7–8	19 MAY 22
5.7–9	19 MAY 22
5.7–10	19 MAY 22
5.7–11	19 MAY 22
5.7–12	19 MAY 22
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5.7–14	19 MAY 22
5.7–15	19 MAY 22
5.7–16	20 APR 23
5.7–17	20 APR 23
ENR 6	
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6.2–15	19 MAY 22
6.2–17	19 MAY 22
6.2–18	19 MAY 22
6.2–19	19 MAY 22
6.2–20	19 MAY 22
ENR 7	
7.1–1	19 MAY 22

PAGE	DATE
7.1–2	20 APR 23
7.1–3	19 MAY 22
7.1–4	3 NOV 22
7.1–5	19 MAY 22
7.1–6	19 MAY 22
7.1–7	3 NOV 22
7.1–8	19 MAY 22
7.2–1	19 MAY 22
7.2–2	19 MAY 22
7.2–3	19 MAY 22
7.3–1	19 MAY 22
7.3–2	19 MAY 22
7.3–3	19 MAY 22
7.3–4	19 MAY 22
7.3–5	19 MAY 22
7.4–1	3 NOV 22
7.4–2	3 NOV 22
7.4–3	19 MAY 22
7.4–4	19 MAY 22
7.4–5	3 NOV 22
7.5–1	20 APR 23
7.5–2	20 APR 23
7.5–3	20 APR 23

PAGE	DATE
7.6–1	19 MAY 22
7.6–2	19 MAY 22
7.7–1	19 MAY 22
7.8–1	3 NOV 22
7.8–2	3 NOV 22
7.8–3	19 MAY 22
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7.13–1	19 MAY 22
7.14–1	20 APR 23
ENR 8	
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8.1–2	20 APR 23
8.2–1	20 APR 23
8.2–2	20 APR 23
8.2–3	20 APR 23
8.3–1	20 APR 23
8.3–2	20 APR 23
8.3–3	20 APR 23

PAGE	DATE
8.3–4	20 APR 23
8.3–5	20 APR 23
8.3–6	20 APR 23
8.4–1	20 APR 23
8.4–2	20 APR 23
8.4–3	20 APR 23
8.4–4	20 APR 23
8.4–5	20 APR 23
8.4–6	20 APR 23
8.4–7	20 APR 23
8.4–8	20 APR 23
8.4–9	20 APR 23
8.5–1	20 APR 23
8.5–2	20 APR 23
8.5–3	20 APR 23
8.6–1	20 APR 23
8.7–1	20 APR 23
8.8–1	20 APR 23
8.8–2	20 APR 23
8.8–3	20 APR 23
8.8–4	20 APR 23

ENR 0.5 List of Hand Amendments to the AIP – Not applicable

ENR 0.6 Table of Contents to Part 2

ENR 7. OCEANIC OPERATIONS

ENR 8. UNMANNED AIRCRAFT SYSTEMS (UAS)

numbers preceding the decimal point; e.g., 121.7, "CONTACT GROUND POINT SEVEN." However, if any doubt exists as to what frequency is in use, the pilot should promptly request the controller to provide that information.

6.5 Controllers will normally avoid issuing a radio frequency change to helicopters, known to be single-piloted, which are hovering, air taxiing, or flying near the ground. At times, it may be necessary for pilots to alert ATC regarding single pilot operations to minimize delay of essential ATC communications. Whenever possible, ATC instructions will be relayed through the frequency being monitored until a frequency change can be accomplished. Pilots must promptly advise ATC if they are unable to comply with a frequency change. Also, pilots should advise ATC if they must land to accomplish the frequency change unless it is clear the landing; e.g., on a taxiway or in a helicopter operating area, will have no impact on other air traffic.

7. Traffic Control Light Signals

7.1 The following procedures are used by airport traffic control towers in the control of aircraft, ground vehicles, equipment, and personnel not equipped with radio. These same procedures will be used to control aircraft, ground vehicles, equipment, and personnel equipped with radio if radio contact cannot be established. Airport traffic control personnel use a directive traffic control signal which emits an intense narrow beam of a selected color (either red, white, or green) when controlling traffic by light signals.

7.2 Although the traffic signal light offers the advantage that some control may be exercised over nonradio–equipped aircraft, pilots should be cognizant of the disadvantages which are:

7.2.1 The pilot may not be looking at the control tower at the time a signal is directed toward him/her; and

7.2.2 The directions transmitted by a light signal are very limited since only approval of a pilot's anticipated actions may be transmitted. No supplement or explanatory information may be transmitted except by the use of the "General Warning Signal" which advises the pilot to be on the alert.

7.3 Between sunset and sunrise, a pilot wishing to attract the attention of the control tower should turn on a landing light and taxi the aircraft into a position, clear of the active runway, so that light is visible to the tower. The landing light should remain on until appropriate signals are received from the tower.

TBL ENR 1.1–1

Airport Traffic Control Tower Light Gun Signals

Meaning			
Color and Type of Signal	**Movement of Vehicles, Equipment and Personnel**	**Aircraft on the Ground**	**Aircraft in Flight**
Steady green	Cleared to cross, proceed or go	Cleared for takeoff	Cleared to land
Flashing green	Not applicable	Cleared for taxi	Return for landing (to be followed by steady green at the proper time)
Steady red	STOP	STOP	Give way to other aircraft and continue circling
Flashing red	Clear the taxiway/runway	Taxi clear of the runway in use	Airport unsafe, do not land
Flashing white	Return to starting point on airport	Return to starting point on airport	Not applicable
Alternating red and green	Exercise extreme caution	Exercise extreme caution	Exercise extreme caution

8. Use of Runways/Declared Distances

8.1 Runways are identified by numbers that indicate the nearest 10–degree increment of the azimuth of the runway centerline. For example, where the magnetic azimuth is 183 degrees, the runway designation would be 18; for a magnetic azimuth of 87 degrees, the runway designation would be 9. For a magnetic azimuth ending in the number 5, such as 185, the runway designation could be either 18 or 19. Wind direction issued by the tower is also magnetic and wind velocity is in knots.

NOTE–

1. *At airports with multiple parallel runways whose magnetic azimuths are identical, each runway number will be supplemented by a letter and shown from left to right when viewed from the direction of approach.*

2. *When multiple parallel runways at the same airport are separated by a large distance, such as by a central terminal or several terminals, the runways may be designated as non–parallel runways to avoid pilot confusion.*

REFERENCE–

AC 150/5340–1, Standards for Airport Markings, Para 2.3.5, Characteristics.

8.2 Airport proprietors are responsible for taking the lead in local aviation noise control. Accordingly, they may propose specific noise abatement plans to the FAA. If approved, these plans are applied in the form of Formal or Informal Runway Use Programs for noise abatement purposes.

8.2.1 ATC will assign the runway/s most nearly aligned with the wind when 5 knots or more, or the "calm wind" runway when less than 5 knots unless:

8.2.1.1 Use of another runway is operationally advantageous, or

8.2.1.2 A Runway Use Program is in effect.

NOTE–

Tailwind and crosswind considerations take precedence over delay/capacity considerations, and noise abatement operations/procedures.

REFERENCE–

FAA Order JO 7110.65, Para 3–5–1, Selection.

8.3 If a pilot prefers to use a runway different from that specified, the pilot is expected to advise ATC. ATC may honor such requests as soon as is operationally practicable. ATC will advise pilots when the requested runway is noise sensitive. When use of a runway other than the one assigned is requested, pilot cooperation is encouraged to preclude disruption of traffic flows or the creation of conflicting patterns.

REFERENCE–

FAA Order JO 7110.65, Para 3–5–1, Selection.

8.4 Declared Distances.

8.4.1 Declared distances for a runway represent the maximum distances available and suitable for meeting takeoff and landing distance performance requirements. These distances are determined in accordance with FAA runway design standards by adding to the physical length of paved runway any clearway or stopway and subtracting from that sum any lengths necessary to obtain the standard runway safety areas, runway object free areas, or runway protection zones. As a result of these additions and subtractions, the declared distances for a runway may be more or less than the physical length of the runway as depicted on aeronautical charts and related publications, or available in electronic navigation databases provided by either the U.S. Government or commercial companies.

8.4.2 All 14 CFR Part 139 airports report declared distances for each runway. Other airports may also report declared distances for a runway if necessary to meet runway design standards or to indicate the presence of a clearway or stopway. Where reported, declared distances for each runway end are published in the Chart Supplement U.S. For runways without published declared distances, the declared distances may be assumed to be equal to the physical length of the runway unless there is a displaced landing threshold, in which case the Landing Distance Available (LDA) is shortened by the amount of the threshold displacement.

NOTE–

A symbol **D** *is shown on U.S. Government charts to indicate that runway declared distance information is available (See appropriate Chart Supplement U.S., Alaska, or Pacific).*

8.4.2.1 The FAA uses the following definitions for runway declared distances (See FIG ENR 1.1–5).

REFERENCE–

Pilot/Controller Glossary Terms: "Accelerate–Stop Distance Available," "Landing Distance Available," "Takeoff Distance Available," "Takeoff Run Available," " Stopway," and "Clearway."

a) Takeoff Run Available (TORA) – The runway length declared available and suitable for the ground run of an airplane taking off.

The TORA is typically the physical length of the runway, but it may be shorter than the runway length if necessary to satisfy runway design standards. For example, the TORA may be shorter than the runway length if a portion of the runway must be used to satisfy runway protection zone requirements.

b) Takeoff Distance Available (TODA) – The takeoff run available plus the length of any remaining runway or clearway beyond the far end of the takeoff run available.

The TODA is the distance declared available for satisfying takeoff distance requirements for airplanes where the certification and operating rules and available performance data allow for the consideration of a clearway in takeoff performance computations.

NOTE−
The length of any available clearway will be included in the TODA published in the entry for the Chart Supplement U.S. for that runway end.

c) Accelerate−Stop Distance Available (ASDA) – The runway plus stopway length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff.

The ASDA may be longer than the physical length of the runway when a stopway has been designated available by the airport operator, or it may be shorter than the physical length of the runway if necessary to use a portion of the runway to satisfy runway design standards; for example, where the airport operator uses a portion of the runway to achieve the runway safety area requirement. ASDA is the distance used to satisfy the airplane accelerate−stop distance performance requirements where the certification and operating rules require accelerate−stop distance computations.

NOTE−
The length of any available stopway will be included in the ASDA published in the entry for the Chart Supplement U.S. for that runway end.

d) Landing Distance Available (LDA) − The runway length declared available and suitable for a landing airplane.

The LDA may be less than the physical length of the runway or the length of the runway remaining beyond a displaced threshold if necessary to satisfy runway design standards;for example, where the airport operator uses a portion of the runway to achieve the runway safety area requirement.

Although some runway elements (such as stopway length and clearway length) may be available information, pilots must use the declared distances determined by the airport operator and not attempt to independently calculate declared distances by adding those elements to the reported physical length of the runway.

8.4.2.2 The airplane operating rules and/or the airplane operating limitations establish minimum distance requirements for takeoff and landing and are based on performance data supplied in the Airplane Flight Manual or Pilot's Operating Handbook. The minimum distances required for takeoff and landing obtained either in planning prior to takeoff or in performance assessments conducted at the time of landing must fall within the applicable declared distances before the pilot can accept that runway for takeoff or landing.

8.4.2.3 Runway design standards may impose restrictions on the amount of runway available for use in takeoff and landing that are not apparent from the reported physical length of the runway or from runway markings and lighting. The runway elements of Runway Safety Area (RSA), Runway Object Free Area (ROFA), and Runway Protection Zone (RPZ) may reduce a runway's declared distances to less than the physical length of the runway at geographically constrained airports (See FIG ENR 1.1−6). When considering the amount of runway available for use in takeoff or landing performance calculations, the declared distances published for a runway must always be used in lieu of the runway's physical length.

REFERENCE−
AC 150/5300−13, Airport Design.

8.4.2.4 While some runway elements associated with declared distances may be identifiable through runway markings or lighting (for example, a displaced threshold or a stopway), the individual declared distance limits are not marked or otherwise identified on the runway. An aircraft is not prohibited from operating beyond a

declared distance limit during the takeoff, landing, or taxi operation provided the runway surface is appropriately marked as usable runway (See FIG ENR 1.1−6). The following examples clarify the intent of this paragraph.

REFERENCE−
AIM, Runway Markings, Paragraph 2−3−3.
AC 150/5340−1, Standards for Airport Markings.

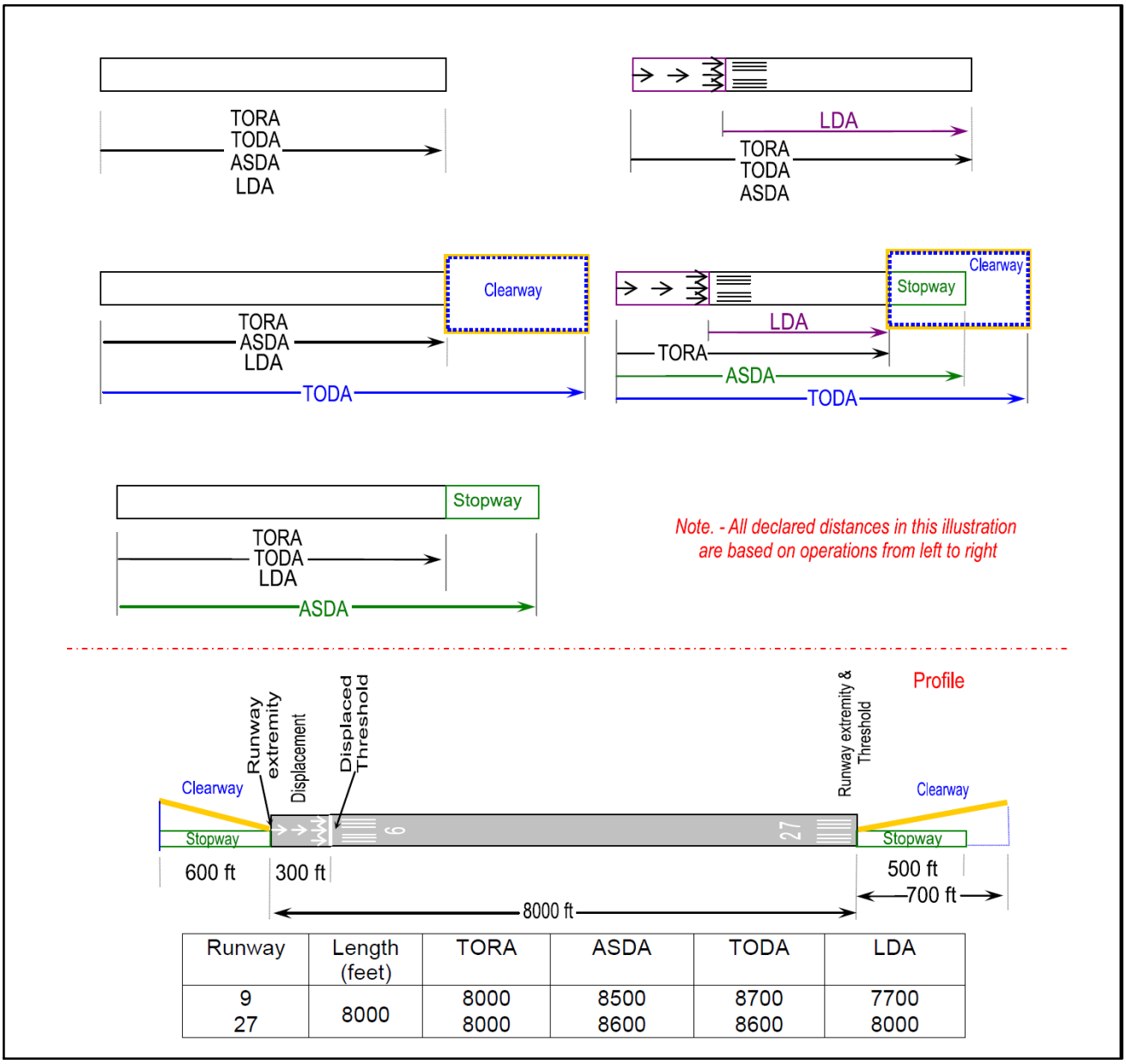
EXAMPLE−

1. *The declared LDA for runway 9 must be used when showing compliance with the landing distance requirements of the applicable airplane operating rules and/or airplane operating limitations or when making a before landing performance assessment. The LDA is less than the physical runway length, not only because of the displaced threshold, but also because of the subtractions necessary to meet the RSA beyond the far end of the runway. However, during the actual landing operation, it is permissible for the airplane to roll beyond the unmarked end of the LDA.*

2. *The declared ASDA for runway 9 must be used when showing compliance with the accelerate−stop distance requirements of the applicable airplane operating rules and/or airplane operating limitations. The ASDA is less than the physical length of the runway due to subtractions necessary to achieve the full RSA requirement. However, in the event of an aborted takeoff, it is permissible for the airplane to roll beyond the unmarked end of the ASDA as it is brought to a full−stop on the remaining usable runway.*

FIG ENR 1.1–5

Declared Distances with Full–Standard Runway Safety Areas, Runway Object Free Areas, and Runway Protection Zones

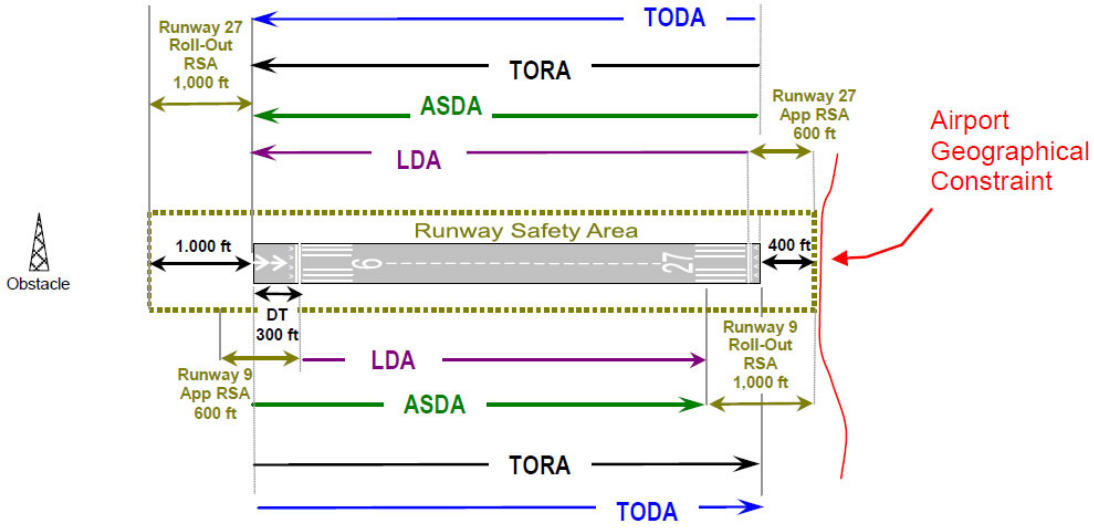


Runway	Length (feet)	TORA	ASDA	TODA	LDA
9 27	8000	8000 8000	8500 8600	8700 8600	7700 8000

FIG ENR 1.1–6

Effects of a Geographical Constraint on a Runway's Declared Distances

Runway 27 operations: Runway 27 threshold displaced to provide the required RSA at the approach end of the runway. As a result, the LDA is reduced 200 ft.



Runway 9 operations: The ASDA is reduced by 600 ft to achieve the required RSA at the roll-out end of the runway. The LDA is reduced by 900 ft because, 1) the 300 ft displaced threshold located at the approach end of the runway (due to an approach obstacle), and 2) as result of the 600 ft of runway needed to achieve the required RSA at the roll-out end of the runway.

Runway	Length (feet)	TORA	TODA	ASDA	LDA
9	8000	8000	8000	7400	7100
27		8000	8000	8000	7800

NOTE–
A runway's RSA begins a set distance prior to the threshold and will extend a set distance beyond the end of the runway depending on the runway's design criteria. If these required lengths cannot be achieved, the ASDA and/or LDA will be reduced as necessary to obtain the required lengths to the extent practicable.

9. Low Level Wind Shear/Microburst Detection Systems

9.1 Low Level Wind Shear Alert System (LLWAS), Terminal Doppler Weather Radar (TDWR), Weather System Processor (WSP), and Integrated Terminal Weather System (ITWS) display information on hazardous wind shear and microburst activity in the vicinity of an airport to air traffic controllers who relay this information to pilots.

9.1.1 LLWAS provides wind shear alert and gust front information but does not provide microburst alerts. The LLWAS is designed to detect low level wind shear conditions around the periphery of an airport. It does not detect wind shear beyond that limitation. Controllers will provide this information to pilots by giving the pilot the airport wind followed by the boundary wind.

EXAMPLE−
Wind shear alert, airport wind 230 at 8, south boundary wind 170 at 20.

9.1.2 LLWAS "network expansion," (LLWAS NE) and LLWAS Relocation/Sustainment (LLWAS−RS) are systems integrated with TDWR. These systems provide the capability of detecting microburst alerts and wind shear alerts. Controllers will issue the appropriate wind shear alerts or microburst alerts. In some of these systems controllers also have the ability to issue wind information oriented to the threshold or departure end of the runway.

EXAMPLE−
Runway 17 arrival microburst alert, 40 knot loss 3 mile final.

NOTE−
Reference GEN 3.5, Paragraph 25, Microbursts.

9.1.3 More advanced systems are in the field or being developed such as ITWS. ITWS provides alerts for microbursts, wind shear, and significant thunderstorm activity. ITWS displays wind information oriented to the threshold or departure end of the runway.

9.1.4 The WSP provides weather processor enhancements to selected Airport Surveillance Radar (ASR)−9 facilities. The WSP provides Air Traffic with detection and alerting of hazardous weather such as wind shear, microbursts, and significant thunderstorm activity. The WSP displays terminal area 6 level weather, storm cell locations and movement, as well as the location and predicted future position and intensity of wind shifts that may affect airport operations. Controllers will receive and issue alerts based on Areas Noted for Attention (ARENA). An ARENA extends on the runway center line from a 3 mile final to the runway to a 2 mile departure.

9.1.5 An airport equipped with the LLWAS, ITWS, or WSP is so indicated in the Chart Supplement U.S. under Weather Data Sources for that particular airport.

10. Braking Action Reports and Advisories

10.1 When available, ATC furnishes pilots the quality of braking action received from pilots. The quality of braking action is described by the terms "good," "good to medium," "medium," "medium to poor," "poor," and "nil." When pilots report the quality of braking action by using the terms noted above, they should use descriptive terms that are easily understood, such as, "braking action poor the first/last half of the runway," together with the particular type of aircraft.

10.2 FICON NOTAMs will provide contaminant measurements for paved runways; however, a FICON NOTAM for braking action will only be used for non−paved runway surfaces, taxiways, and aprons. These NOTAMs are classified according to the most critical term ("good to medium," "medium," "medium to poor," and "poor").

10.2.1 FICON NOTAM reporting of a braking condition for paved runway surfaces is not permissible by Federally Obligated Airports or those airports certificated under 14 CFR Part 139.

10.2.2 A "NIL" braking condition at these airports must be mitigated by closure of the affected surface. Do not include the type of vehicle in the FICON NOTAM.

10.3 When tower controllers receive runway braking action reports which include the terms medium, poor, or nil, or whenever weather conditions are conducive to deteriorating or rapidly changing runway braking conditions, the tower will include on the ATIS broadcast the statement, *"BRAKING ACTION ADVISORIES ARE IN EFFECT."*

10.4 During the time that braking action advisories are in effect, ATC will issue the most recent braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating braking conditions and should request current runway condition information if not issued by controllers. Pilots should also be prepared to provide a descriptive runway condition report to controllers after landing.

11. Runway Condition Reports

11.1 Aircraft braking coefficient is dependent upon the surface friction between the tires on the aircraft wheels and the pavement surface. Less friction means less aircraft braking coefficient and less aircraft braking response.

11.2 Runway condition code (RwyCC) values range from 1 (poor) to 6 (dry). For frozen contaminants on runway surfaces, a runway condition code reading of 4 indicates the level when braking deceleration or directional control is between good and medium.

NOTE–
A RwyCC of "0" is used to delineate a braking action report of NIL and is prohibited from being reported in a FICON NOTAM.

11.3 Airport management should conduct runway condition assessments on wet runways or runways covered with compacted snow and/or ice.

11.3.1 Numerical readings may be obtained by using the Runway Condition Assessment Matrix (RCAM). The RCAM provides the airport operator with data to complete the report that includes the following:

11.3.1.1 Runway(s) in use

11.3.1.2 Time of the assessment

11.3.1.3 Runway condition codes for each zone (touchdown, mid–point, roll–out)

11.3.1.4 Pilot–reported braking action report (if available)

11.3.1.5 The contaminant (for example, wet snow, dry snow, slush, ice, etc.)

11.3.2 Assessments for each zone (see 11.3.1.3) will be issued in the direction of takeoff and landing on the runway, ranging from "1" to "6" to describe contaminated surfaces.

NOTE–
A RwyCC of "0" is used to delineate a braking action report of NIL and is prohibited from being reported in a FICON NOTAM.

11.3.3 When any 1 or more runway condition codes are reported as less than 6, airport management must notify ATC for dissemination to pilots.

11.3.4 Controllers will not issue runway condition codes when all 3 segments of a runway are reporting values of 6.

11.4 When runway condition code reports are provided by airport management, the ATC facility providing approach control or local airport advisory must provide the report to all pilots.

11.5 Pilots should use runway condition code information with other knowledge including aircraft performance characteristics, type, and weight, previous experience, wind conditions, and aircraft tire type (such as bias ply vs. radial constructed) to determine runway suitability.

11.6 The Runway Condition Assessment Matrix identifies the descriptive terms "good," "good to medium," "medium," "medium to poor," "poor," and "nil" used in braking action reports.

REFERENCE–
Advisory Circular AC 91–79A (Revision 1), Mitigating the Risks of a Runway Overrun Upon Landing, Appendix 1.

FIG ENR 1.1–7
Runway Condition Assessment Matrix (RCAM)

Assessment Criteria		Control/Braking Assessment Criteria	
Runway Condition Description	RwyCC	Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	---	---
• Frost • Wet (Includes damp and 1/8 inch depth or less of water) ***1/8 inch (3mm) depth or less of:*** • Slush • Dry Snow • Wet Snow	5	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
-15°C and Colder outside air temperature: • Compacted Snow	4	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (any depth) over Compacted Snow ***Greater than 1/8 inch (3 mm) depth of:*** • Dry Snow • Wet Snow ***Warmer than -15°C outside air temperature:*** • Compacted Snow	3	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch(3 mm) depth of: • Water • Slush	2	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice	1	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	0	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

12. Communications Prior to Departure

12.1 Nontower Controlled Airports

12.1.1 At airports not served by a FSS located on the airport, the pilot in command should broadcast his/her intentions on the prescribed frequency prior to aircraft movement and departure.

12.1.2 At airports served by a FSS located on the airport, the pilot in command should obtain airport advisory service prior to aircraft movement and departure.

12.1.3 Aircraft departing on an IFR clearance must obtain the clearance prior to departure via telephone, the appropriate FSS, or via direct communications with the ATC facility issuing the clearance as appropriate. An IFR clearance does not relieve the pilot from the communication stated above prior to aircraft movement and departure.

12.2 Tower Controlled Airports

12.2.1 Pilots of departing aircraft should communicate with the control tower on the appropriate ground control/clearance delivery frequency prior to starting engines to receive engine start time, taxi, and/or clearance information. Unless otherwise advised by the tower, remain on the frequency during taxiing and run up, then change to local control frequency when ready to request takeoff clearance.

NOTE–
Refer to Automatic Terminal Information Service (ATIS) for continuous broadcast of terminal information.

13. Gate Holding Due to Departure Delays

13.1 Pilots should contact ground control/clearance delivery prior to starting engines as gate hold procedures will be in effect whenever departure delays exceed or are anticipated to exceed 15 minutes. The sequence for departure will be maintained in accordance with initial call up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine startup advisories or new proposed start time if the delay changes.

13.2 The tower controller will consider that pilots of turbine–powered aircraft are ready for takeoff when they reach the runway/warm–up block unless advised otherwise.

14. Taxiing

14.1 General. Approval must be obtained prior to moving an aircraft or vehicle onto the movement area during the hours an airport traffic control tower is in operation.

14.1.1 Always state your position on the airport when calling the tower for taxi instructions.

14.1.2 The movement area is normally described in local bulletins issued by the airport manager or control tower. These bulletins may be found in FSSs, fixed base operators offices, air carrier offices, and operations offices.

14.1.3 The control tower also issues bulletins describing areas where they cannot provide airport traffic control service due to nonvisibility or other reasons.

14.1.4 A clearance must be obtained prior to taxiing on a runway, taking off, or landing during the hours an airport traffic control tower is in operation.

14.1.5 A clearance must be obtained prior to crossing any runway. ATC will issue an explicit clearance for all runway crossings.

14.1.6 When assigned a takeoff runway, ATC will first specify the runway, issue taxi instructions, and state any hold short instructions or runway crossing clearances if the taxi route will cross a runway. This does not authorize the aircraft to “enter” or “cross” the assigned departure runway at any point. In order to preclude misunderstandings in radio communications, ATC will not use the word “cleared” in conjunction with authorization for aircraft to taxi. AIR TRAFFIC CONTROLLERS ARE REQUIRED TO OBTAIN A READBACK FROM THE PILOT OF ALL RUNWAY HOLD SHORT INSTRUCTIONS.

14.1.7 When issuing taxi instructions to any point other than an assigned takeoff runway, ATC will specify the point to taxi to, issue taxi instructions, and state any hold short instructions or runway crossing clearances if the taxi route will cross a runway.

14.1.8 If a pilot is expected to hold short of a runway approach/departure (*Runway XX* APPCH/*Runway XX* DEP) hold area or ILS holding position (see FIG AD 1.1–24, Taxiways Located in Runway Approach Area, in Section AD 1.1, Aerodrome Availability), ATC will issue instructions.

14.1.9 When taxi instructions are received from the controller, pilots should always read back:

14.1.9.1 The runway assignment.

14.1.9.2 Any clearance to enter a specific runway.

14.1.9.3 Any instruction to hold short of a specific runway or line up and wait.

14.1.10 Controllers are required to request a readback of runway hold short assignment when it is not received from the pilot/vehicle.

14.2 ATC clearances or instructions pertaining to taxiing are predicated on known traffic and known physical airport conditions. Therefore, it is important that pilots clearly understand the clearance or instruction. Although an ATC clearance is issued for taxiing purposes, when operating in accordance with the Federal Regulations, it is the responsibility of the pilot to avoid collision with other aircraft. Since "the pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft" the pilot should obtain clarification of any clearance or instruction which is not understood.

14.2.1 Good operating practice dictates that pilots acknowledge all runway crossing, hold short, or takeoff clearances unless there is some misunderstanding, at which time the pilot should query the controller until the clearance is understood. AIR TRAFFIC CONTROLLERS ARE REQUIRED TO OBTAIN FROM THE PILOT A READBACK OF ALL RUNWAY HOLD SHORT INSTRUCTIONS. Pilots operating a single pilot aircraft should monitor only assigned ATC communications after being cleared onto the active runway for departure. Single pilot aircraft should not monitor other than ATC communications until flight from Class D airspace is completed. This same procedure should be practiced from after receipt of the clearance for landing until the landing and taxi activities are complete. Proper effective scanning for other aircraft, surface vehicles, or other objects should be continuously exercised in all cases.

14.2.2 If the pilot is unfamiliar with the airport or for any reason confusion exists as to the correct taxi routing, a request may be made for progressive taxi instructions which include step–by–step routing directions. Progressive instructions may also be issued if the controller deems it necessary due to traffic or field conditions (for example, construction or closed taxiways).

14.3 At those airports where the United States Government operates the control tower and ATC has authorized noncompliance with the requirement for two–way radio communications while operating within Class D airspace, or at those airports where the United States Government does not operate the control tower and radio communications cannot be established, pilots must obtain a clearance by visual light signal prior to taxiing on a runway and prior to takeoff and landing.

14.4 The following phraseologies and procedures are used in radio–telephone communications with aeronautical ground stations.

14.4.1 Request for taxi instructions prior to departure. State your aircraft identification, location, type of operation planned (VFR or IFR), and the point of first intended landing.

EXAMPLE–
Aircraft: *"Washington ground, Beechcraft One Three One Five Niner at hangar eight, ready to taxi, I–F–R to Chicago."*

Tower: *"Beechcraft One Three One Five Niner, Washington ground, runway two seven, taxi via taxiways Charlie and Delta, hold short of runway three three left."*

Aircraft: *"Beechcraft One Three One Five Niner, runway two seven, hold short of runway three three left."*

14.4.2 Receipt of Air Traffic Control Clearance. Air route traffic control clearances are relayed to pilots by airport traffic controllers in the following manner:

EXAMPLE–
Tower: *"Beechcraft One Three One Five Niner, cleared to the Chicago Midway Airport via Victor Eight, maintain eight thousand."*

Aircraft: *"Beechcraft One Three One Five Niner, cleared to the Chicago Midway Airport via Victor Eight, maintain eight thousand."*

NOTE–
Normally, an ATC IFR clearance is relayed to a pilot by the ground controller. At busy locations, however, pilots may be instructed by the ground controller to "contact clearance delivery" on a frequency designated for this purpose. No surveillance or control over the movement of traffic is exercised by this position of operation. (See paragraph 27., ATC Clearances and Aircraft Separation.)

14.4.3 Request for Taxi Instructions After Landing. State your aircraft identification, location, and that you request taxi instructions.

EXAMPLE–
Aircraft: *"Dulles ground, Beechcraft One Four Two Six One clearing runway one right on taxiway echo three, request clearance to Page."*
Tower: *"Beechcraft One Four Two Six One, Dulles ground, taxi to Page via taxiways echo three, echo one, and echo niner."*

or

Aircraft: *"Orlando ground, Beechcraft One Four Two Six One clearing runway one eight left at taxiway bravo three, request clearance to Page."*

Tower: *"Beechcraft One Four Two Six One, Orlando ground, hold short of runway one eight right."*

Aircraft: *"Beechcraft One Four Two Six One, hold short of runway one eight right."*

14.5 During ground operations, jet blast, prop wash, and rotor wash can cause damage and upsets if encountered at close range. Pilots should consider the effects of jet blast, prop wash, and rotor wash on aircraft, vehicles, and maintenance equipment during ground operations.

15. Taxi During Low Visibility

15.1 Pilots and aircraft operators should be constantly aware that during certain low visibility conditions the movement of aircraft and vehicles on airports may not be visible to the tower controller. This may prevent visual confirmation of an aircraft's adherence to taxi instructions.

15.2 Of vital importance is the need for pilots to notify the controller when difficulties are encountered or at the first indication of becoming disoriented. Pilots should proceed with extreme caution when taxiing toward the sun. When vision difficulties are encountered, pilots should immediately inform the controller.

15.3 Advisory Circular 120–57, Low Visibility Operations Surface Movement Guidance and Control System, commonly known as LVOSMGCS (pronounced "LVO SMIGS") describes an adequate example of a low visibility taxi plan for any airport which has takeoff or landing operations in less than 1,200 feet runway visual range (RVR) visibility conditions. These plans, which affect aircrew and vehicle operators, may incorporate additional lighting, markings, and procedures to control airport surface traffic. They will be addressed at two levels; operations less than 1,200 feet RVR to 500 feet RVR and operations less than 500 feet RVR.

NOTE–
Specific lighting systems and surface markings may be found in Paragraph 14, Taxiway Lights, and Paragraph 18, Taxiway Markings, in Section AD 1.1, Aerodrome Availability.

15.4 When low visibility conditions exist, pilots should focus their entire attention on the safe operation of the aircraft while it is moving. Checklists and nonessential communication should be withheld until the aircraft is stopped and the brakes set.

16. Intersection Takeoffs

16.1 In order to enhance airport capacities, reduce taxiing distances, minimize departure delays, and provide for more efficient movement of air traffic, controllers may initiate intersection takeoffs as well as approve them when

the pilot requests. If for ANY reason a pilot prefers to use a different intersection or the full length of the runway or desires to obtain the distance between the intersection and the runway end, THE PILOT IS EXPECTED TO INFORM ATC ACCORDINGLY.

16.2 An aircraft is expected to taxi to (but not onto) the end of the assigned runway unless prior approval for an intersection departure is received from ground control.

16.3 Pilots should state their position on the airport when calling the tower for takeoff from a runway intersection.

EXAMPLE−
Cleveland Tower, Apache Three Seven Two Two Papa, at the intersection of taxiway oscar and runway two three right, ready for departure.

16.4 Controllers are required to separate small aircraft that are departing from an intersection on the same runway (same or opposite direction) behind a large nonheavy aircraft (except B757), by ensuring that at least a 3−minute interval exists between the time the preceding large aircraft has taken off and the succeeding small aircraft begins takeoff roll. The 3−minute separation requirement will also be applied to small aircraft with a maximum certificated takeoff weight of 12,500 pounds or less departing behind a small aircraft with a maximum certificated takeoff weight of more than 12,500 pounds. To inform the pilot of the required 3−minute hold, the controller will state, “Hold for wake turbulence.” If after considering wake turbulence hazards, the pilot feels that a lesser time interval is appropriate, the pilot may request a waiver to the 3−minute interval. To initiate such a request, simply say “Request waiver to 3−minute interval” or a similar statement. Controllers may then issue a takeoff clearance if other traffic permits, since the pilot has accepted the responsibility for wake turbulence separation.

16.5 The 3−minute interval is not required when the intersection is 500 feet or less from the departure point of the preceding aircraft and both aircraft are taking off in the same direction. Controllers may permit the small aircraft to alter course after takeoff to avoid the flight path of the preceding departure.

16.6 A 4−minute interval is mandatory for small, large, and heavy aircraft behind a super aircraft. The 3−minute interval is mandatory behind a heavy aircraft in all cases, and for small aircraft behind a B757.

17. VFR Flights in Terminal Areas

17.1 Use reasonable restraint in exercising the prerogative of VFR flight, especially in terminal areas. The weather minimums and distances from clouds are minimums. Giving yourself a greater margin in specific instances is just good judgment.

17.1.1 Approach Area. Conducting a VFR operation in Class D and E Airspace when the official visibility is 3 or 4 miles is not prohibited, but good judgment would dictate that you keep out of the approach area.

17.1.2 Reduced Visibility. It has always been recognized that precipitation reduces forward visibility. Consequently, although again it may be perfectly legal to cancel your IFR flight plan at any time you can proceed VFR, it is good practice, when precipitation is occurring, to continue IFR operation into a terminal area until you are reasonably close to your destination.

17.1.3 Simulated Instrument Flights. In conducting simulated instrument flights, be sure that the weather is good enough to compensate for the restricted visibility of the safety pilot and your greater concentration on your flight instruments. Give yourself a greater margin when your flight plan lies in or near a busy airway or close to an airport.

18. Low Approach

18.1 A low approach (sometimes referred to as a low pass) is the go−around maneuver following approach. Instead of landing or making a touch−and−go, a pilot may wish to go around (low approach) in order to expedite a particular operation−a series of practice instrument approaches is an example of such an operation. Unless

otherwise authorized by ATC, the low approach should be made straight ahead with no turns or climb made until the pilot has made a thorough visual check for other aircraft in the area.

18.2 When operating within Class D airspace, a pilot intending to make a low approach should contact the tower for approval. This request should be made prior to starting the final approach.

18.3 When operating to an airport within Class E airspace, a pilot intending to make a low approach should, prior to leaving the final approach fix inbound (nonprecision approach) or the outer marker or fix used in lieu of the outer marker inbound (precision approach), so advise the FSS, UNICOM, or make a broadcast as appropriate.

19. Practice Instrument Approaches

19.1 Various air traffic incidents required adoption of measures to achieve more organized and controlled operations where practice instrument approaches are conducted. Practice instrument approaches are considered to be instrument approaches made by either a VFR aircraft not on an IFR flight plan or an aircraft on an IFR flight plan. To achieve this and thereby enhance air safety, it is Air Traffic Operations policy to provide for separation of such operations at locations where approach control facilities are located and, as resources permit, at certain other locations served by ARTCCs or approach control facilities. Pilot requests to practice instrument approaches may be approved by ATC subject to traffic and workload conditions. Pilots should anticipate that in some instances the controller may find it necessary to deny approval or withdraw previous approval when traffic conditions warrant. It must be clearly understood, however, that even though the controller may be providing separation, pilots on VFR flight plans are required to comply with basic visual flight rules (14 CFR Section 91.155). Application of ATC procedures or any action taken by the controller to avoid traffic conflictions does not relieve IFR and VFR pilots of their responsibility to see and avoid other traffic while operating in VFR conditions (14 CFR Section 91.113). In addition to the normal IFR separation minimums (which includes visual separation) during VFR conditions, 500 feet vertical separation may be applied between VFR aircraft and between a VFR aircraft and an IFR aircraft. Pilots not on IFR flight plans desiring practice instrument approaches should always state “practice” when making requests to ATC. Controllers will instruct VFR aircraft requesting an instrument approach to maintain VFR. This is to preclude misunderstandings between the pilot and controller as to the status of the aircraft. If the pilot wishes to proceed in accordance with instrument flight rules, he/she must specifically request and obtain an IFR clearance.

19.2 Before practicing an instrument approach, pilots should inform the approach control facility or the tower of the type of practice approach they desire to make and how they intend to terminate it; i.e., full−stop landing, touch−and−go, or missed/low approach maneuver. This information may be furnished progressively when conducting a series of approaches. Pilots on an IFR flight plan, who have made a series of instrument approaches to full stop landings, should inform ATC when they make their final landing. The controller will control flights practicing instrument approaches so as to ensure that they do not disrupt the flow of arriving and departing itinerant IFR or VFR aircraft. The priority afforded itinerant aircraft over practice instrument approaches is not intended to be so rigidly applied that it causes a grossly inefficient application of services. A minimum delay to itinerant traffic may be appropriate to allow an aircraft practicing an approach to complete that approach.

NOTE−
A clearance to land means that appropriate separation on the landing runway will be ensured. A landing clearance does not relieve the pilot from compliance with any previously issued restriction.

19.3 At airports without a tower, pilots wishing to make practice instrument approaches should notify the facility having control jurisdiction of the desired approach as indicated on the approach chart. All approach control facilities and ARTCCs are required to publish a Letter to Airmen depicting those airports where they provide standard separation to both VFR and IFR aircraft conducting practice instrument approaches.

19.4 The controller will provide approved separation between both VFR and IFR aircraft when authorization is granted to make practice approaches to airports where an approach control facility is located and to certain other airports served by approach control or an ARTCC. Controller responsibility for separation of VFR aircraft begins at the point where the approach clearance becomes effective or when the aircraft enters Class B or TRSA airspace whichever comes first.

19.5 VFR aircraft practicing instrument approaches are not automatically authorized to execute the missed approach procedure. This authorization must be specifically requested by the pilot and approved by the controller. Where ATC procedures require application of IFR separation to VFR aircraft practicing instrument approaches, separation will be provided throughout the procedure including the missed approach. Where no separation services are provided during the practice approach, no separation services will be provided during the missed approach.

19.6 Except in an emergency, aircraft cleared to practice instrument approaches must not deviate from the approved procedure until cleared to do so by the controller.

19.7 At radar approach control locations when a full approach procedure (procedure turn, etc.) cannot be approved, pilots should expect to be vectored to a final approach course for a practice instrument approach which is compatible with the general direction of traffic at that airport.

19.8 When granting approval for a practice instrument approach, the controller will usually ask the pilot to report to the tower prior to or over the final approach fix inbound (nonprecision approaches) or over the outer marker or fix used in lieu of the outer marker inbound (precision approaches).

19.9 When authorization is granted to conduct practice instrument approaches to an airport with a tower but where approved standard separation is not provided to aircraft conducting practice instrument approaches, the tower will approve the practice approach, instruct the aircraft to maintain VFR, and issue traffic information, as required.

19.10 When a pilot notifies an FSS providing Airport Advisory Service of intent to conduct a practice instrument approach and if separation will be provided, he/she will be instructed to contact the appropriate facility on a specified frequency prior to initiating the approach. At airports where separation is not provided, the FSS will acknowledge the message and issue known traffic information but will neither approve or disapprove the approach.

19.11 Pilots conducting practice instrument approaches should be particularly alert for other aircraft operating in the local traffic pattern or in proximity to the airport.

20. Option Approach

20.1 The “Cleared for the Option” procedure will permit an instructor, flight examiner or pilot the option to make a touch–and–go, low approach, missed approach, stop–and–go, or full stop landing. This procedure can be very beneficial in a training situation in that neither the student pilot nor examinee would know what maneuver would be accomplished. The pilot should make a request for this procedure passing the final approach fix inbound on an instrument approach or entering downwind for a VFR traffic pattern. After ATC approval of the option, the pilot should inform ATC as soon as possible of any delay on the runway during their stop-and-go or full stop landing. The advantages of this procedure as a training aid are that it enables an instructor or examiner to obtain the reaction of a trainee or examinee under changing conditions, the pilot would not have to discontinue an approach in the middle of the procedure due to student error or pilot proficiency requirements, and finally it allows more flexibility and economy in training programs. This procedure will only be used at those locations with an operational control tower and will be subject to ATC approval.

21. Communications Release of IFR Aircraft Landing at an Airport Without an Operating Control Tower

21.1 Aircraft operating on an IFR flight plan, landing at an airport without an operating control tower will be advised to change to the airport advisory frequency when direct communication with ATC is no longer required.

22. Pilot Responsibilities When Conducting Land and Hold Short Operations (LAHSO)

22.1 LAHSO is an acronym for “Land And Hold Short Operations.” These operations include landing and holding short of an intersecting runway, an intersecting taxiway, or some other designated point on a runway other than an intersecting runway or taxiway. (See FIG ENR 1.1–8, FIG ENR 1.1–9, FIG ENR 1.1–10.)

22.2 Pilot Responsibilities and Basic Procedures

22.2.1 LAHSO is an air traffic control procedure that requires pilot participation to balance the needs for increased airport capacity and system efficiency, consistent with safety. This procedure can be done safely provided pilots and controllers are knowledgeable and understand their responsibilities. The following paragraphs outline specific pilot/operator responsibilities when conducting LAHSO.

22.2.2 At controlled airports, air traffic may clear a pilot to land and hold short. Pilots may accept such a clearance provided that the pilot–in–command determines that the aircraft can safely land and stop within the Available Landing Distance (ALD). ALD data are published in the special notices section of the Chart Supplement U.S. and in the U.S. Terminal Procedures Publications. Controllers will also provide ALD data upon request. Student pilots or pilots not familiar with LAHSO should not participate in the program.

FIG ENR 1.1–8
Land and Hold Short of an Intersecting Runway

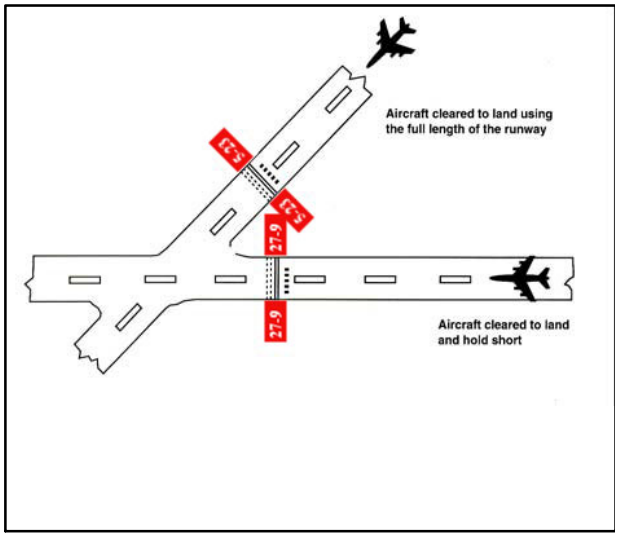
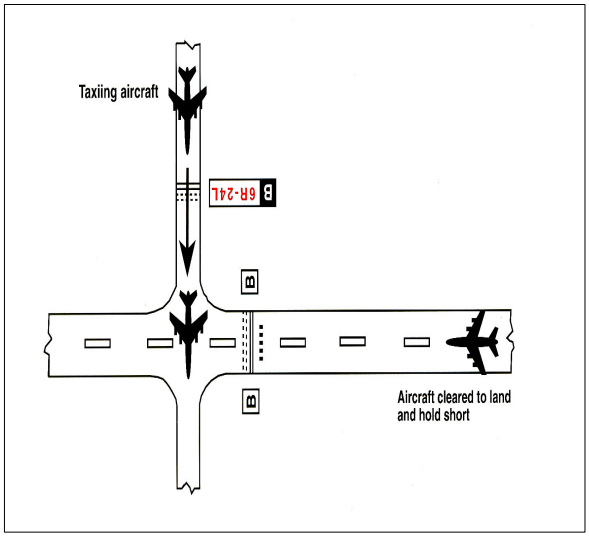


FIG ENR 1.1–9
Land and Hold Short of an Intersecting Taxiway

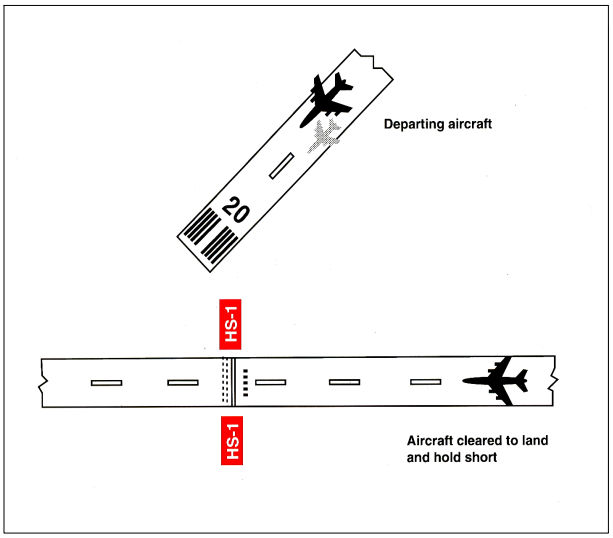


EXAMPLE–
FIG ENR 1.1–10 – Holding short at a designated point may be required to avoid conflicts with the runway safety area/flight path of a nearby runway.

NOTE–
Each figure shows the approximate location of LAHSO markings, signage, and in–pavement lighting when installed.

REFERENCE–
AIP, Part 3 – Aerodromes.

FIG ENR 1.1–10
Land and Hold Short of a Designated Point on a Runway Other Than an Intersecting Runway or Taxiway



22.2.3 The pilot–in–command has the final authority to accept or decline any land and hold short clearance. The safety and operation of the aircraft remain the responsibility of the pilot. Pilots are expected to decline a LAHSO clearance if they determine it will compromise safety.

22.2.4 To conduct LAHSO, pilots should become familiar with all available information concerning LAHSO at their destination airport. Pilots should have, *readily available,* the published ALD and runway slope information for all LAHSO runway combinations at each airport of intended landing. Additionally, knowledge about landing performance data permits the pilot to *readily* determine that the ALD for the assigned runway is sufficient for safe LAHSO. As part of a pilot's preflight planning process, pilots should determine if their destination airport has LAHSO. If so, their preflight planning process should include an assessment of which LAHSO combinations would work for them given their aircraft's required landing distance. Good pilot decision–making is knowing in advance whether one can accept a LAHSO clearance if offered.

22.2.5 For those airplanes flown with two crewmembers, effective intra–cockpit communication between cockpit crewmembers is also critical. There have been several instances where the pilot working the radios accepted a LAHSO clearance but then simply forgot to tell the pilot flying the aircraft.

22.2.6 If, for any reason, such as difficulty in discerning the location of a LAHSO intersection, wind conditions, aircraft condition, etc., the pilot elects to request to land on the full length of the runway, to land on another runway, or to decline LAHSO, a pilot is expected to promptly inform ATC, ideally even before the clearance is issued. A LAHSO clearance, once accepted, must be adhered to, just as any other ATC clearance, unless an amended clearance is obtained or an emergency occurs. A LAHSO clearance does not preclude a rejected landing.

22.2.7 A pilot who accepts a LAHSO clearance should land and exit the runway at the first convenient taxiway (unless directed otherwise) before reaching the hold short point. Otherwise, the pilot must stop and hold at the hold short point. If a rejected landing becomes necessary after accepting a LAHSO clearance, the pilot should maintain safe separation from other aircraft or vehicles, and should promptly notify the controller.

22.2.8 Controllers need a full read back of all LAHSO clearances. Pilots should read back their LAHSO clearance and include the words, "HOLD SHORT OF (RUNWAY/TAXIWAY/OR POINT)" in their

acknowledgment of all LAHSO clearances. In order to reduce frequency congestion, pilots are encouraged to read back the LAHSO clearance without prompting. Don't make the controller have to ask for a read back!

22.3 LAHSO Situational Awareness

22.3.1 Situational awareness is vital to the success of LAHSO. Situational awareness starts with having current airport information in the cockpit, readily accessible to the pilot. (An airport diagram assists pilots in identifying their location on the airport, thus reducing requests for "progressive taxi instructions" from controllers.)

22.3.2 Situational awareness includes effective pilot−controller radio communication. ATC expects pilots to specifically acknowledge and read back all LAHSO clearances as follows:

EXAMPLE−
ATC: *"(Aircraft ID) cleared to land runway six right, hold short of taxiway bravo for crossing traffic (type aircraft)."*
Aircraft: *"(Aircraft ID), wilco, cleared to land runway six right to hold short of taxiway bravo."*
ATC: *"(Aircraft ID) cross runway six right at taxiway bravo, landing aircraft will hold short."*
Aircraft: *"(Aircraft ID), wilco, cross runway six right at bravo, landing traffic (type aircraft) to hold."*

22.3.3 Situational awareness also includes a thorough understanding of the airport markings, signage, and lighting associated with LAHSO. These visual aids consist of a three−part system of yellow hold−short markings, red and white signage and, in certain cases, in−pavement lighting. Visual aids assist the pilot in determining where to hold short. FIG ENR 1.1−8, FIG ENR 1.1−9, FIG ENR 1.1−10 depict how these markings, signage, and lighting combinations will appear once installed. Pilots are cautioned that not all airports conducting LAHSO have installed any or all of the above markings, signage, or lighting.

22.3.4 Pilots should only receive a LAHSO clearance when there is a minimum ceiling of 1,000 feet and 3 statute miles visibility. The intent of having "basic" VFR weather conditions is to allow pilots to maintain visual contact with other aircraft and ground vehicle operations. Pilots should consider the effects of prevailing inflight visibility (such as landing into the sun) and how it may affect overall situational awareness. Additionally, surface vehicles and aircraft being taxied by maintenance personnel may also be participating in LAHSO, especially in those operations that involve crossing an active runway.

23. Exiting the Runway after Landing

23.1 The following procedures must be followed after landing and reaching taxi speed.

23.1.1 Exit the runway without delay at the first available taxiway or on a taxiway as instructed by ATC. Pilots must not exit the landing runway onto another runway unless authorized by ATC. At airports with an operating control tower, pilots should not stop or reverse course on the runway without first obtaining ATC approval.

23.1.2 Taxi clear of the runway unless otherwise directed by ATC. An aircraft is considered clear of the runway when all parts of the aircraft are past the runway edge and there are no restrictions to its continued movement beyond the runway holding position markings. In the absence of ATC instructions, the pilot is expected to taxi clear of the landing runway by taxiing beyond the runway holding position markings associated with the landing runway, even if that requires the aircraft to protrude into or cross another taxiway or ramp area. Once all parts of the aircraft have crossed the runway holding position markings, the pilot must hold unless further instructions have been issued by ATC.

NOTE−
1. *The tower will issue the pilot instructions which will permit the aircraft to enter another taxiway, runway, or ramp area when required.*

2. *Guidance contained in subparagraphs 23.1.1 and 23.1.2 above is considered an integral part of the landing clearance and satisfies the requirement of 14 CFR Section 91.129.*

23.1.3 Immediately change to ground control frequency when advised by the tower and obtain a taxi clearance.

NOTE−
1. *The tower will issue instructions required to resolve any potential conflictions with other ground traffic prior to advising the pilot to contact ground control.*

2. *Ground control will issue taxi clearance to parking. That clearance does not authorize the aircraft to "enter" or "cross" any runways. Pilots not familiar with the taxi route should request specific taxi instructions from ATC.*

24. Hand Signals

FIG ENR 1.1–11
Signalman Directs Towing

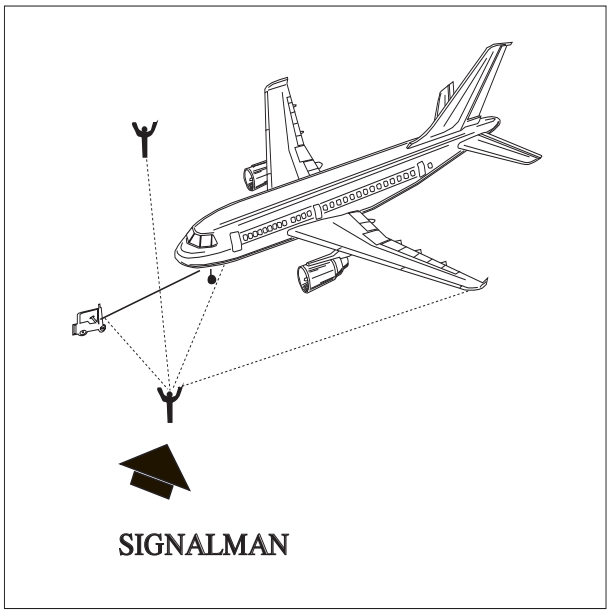


FIG ENR 1.1–12
Signalman's Position

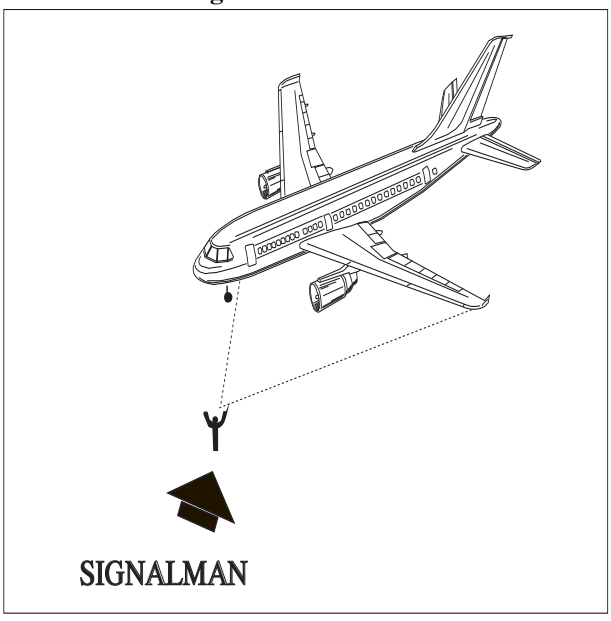


FIG ENR 1.1–13
All Clear
(O.K.)

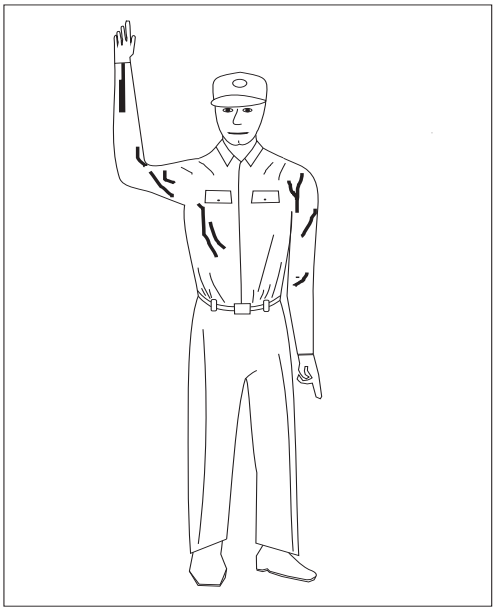


FIG ENR 1.1–14
Start Engine

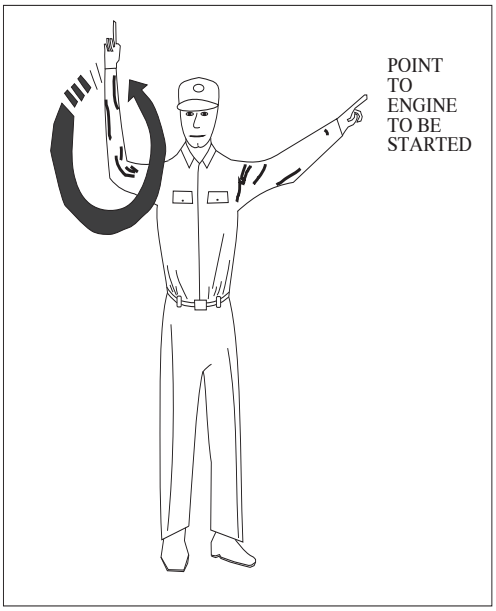


FIG ENR 1.1–15
Pull Chocks

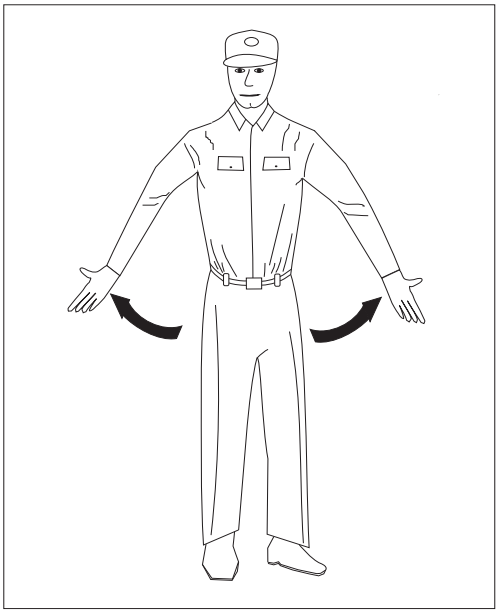


FIG ENR 1.1–16
Proceed Straight Ahead

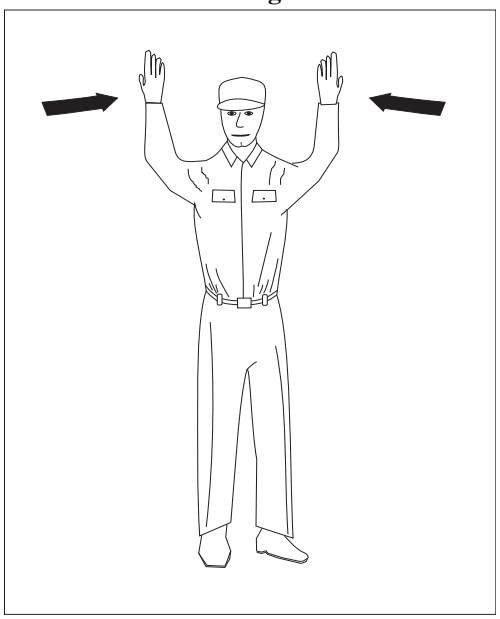


FIG ENR 1.1–17
Left Turn

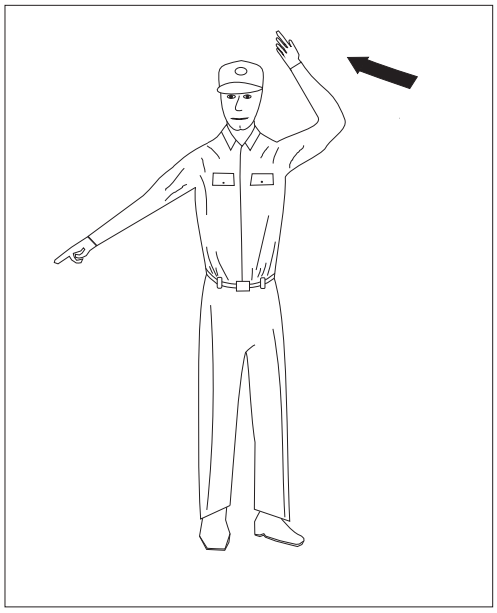


FIG ENR 1.1–18
Right Turn

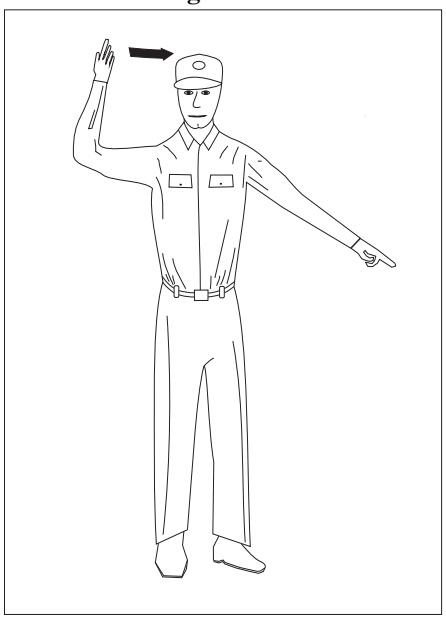


FIG ENR 1.1–19
Slow Down

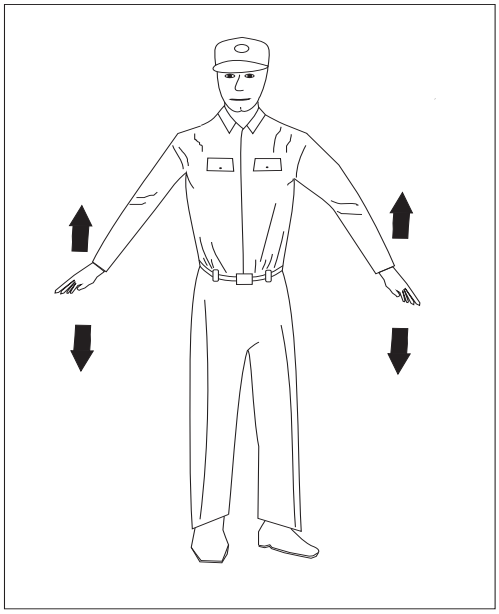


FIG ENR 1.1–20
Flagman Directs Pilot

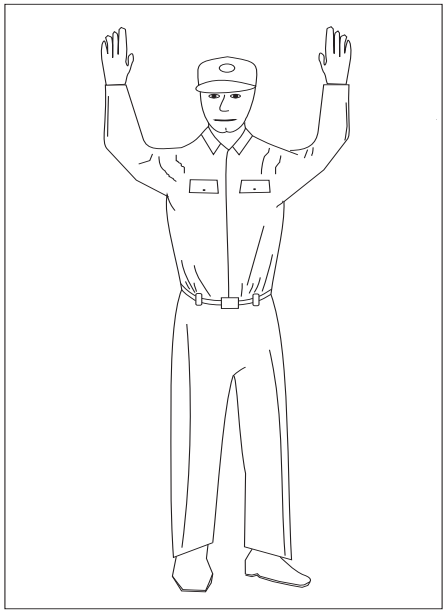


FIG ENR 1.1–21
Insert Chocks

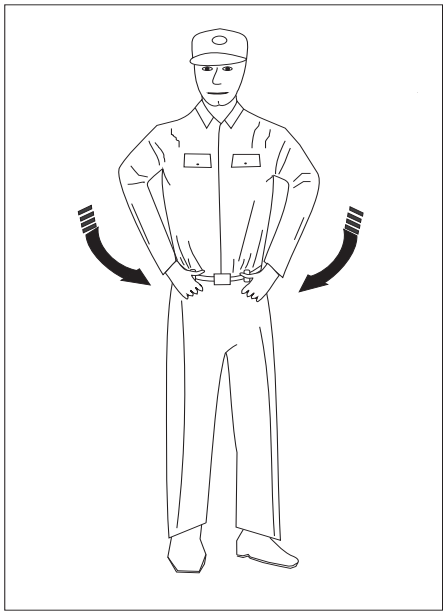


FIG ENR 1.1–22
Cut Engines

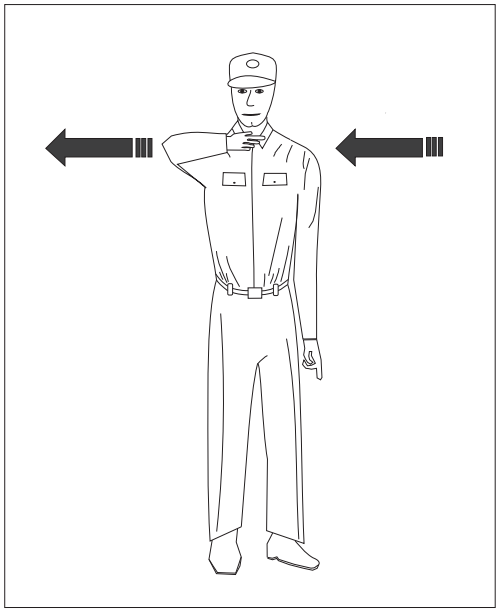


FIG ENR 1.1–23
Night Operation

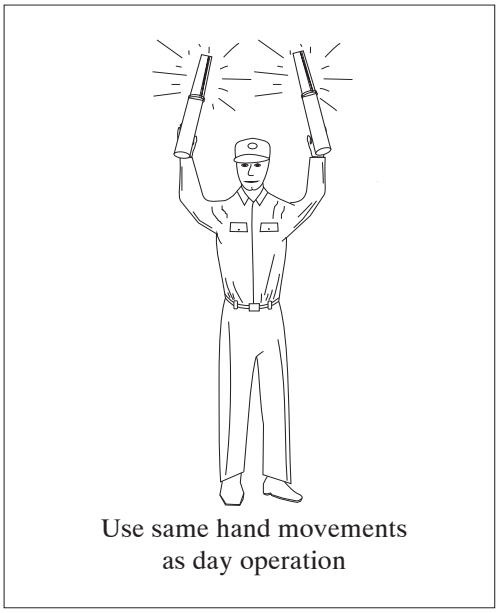
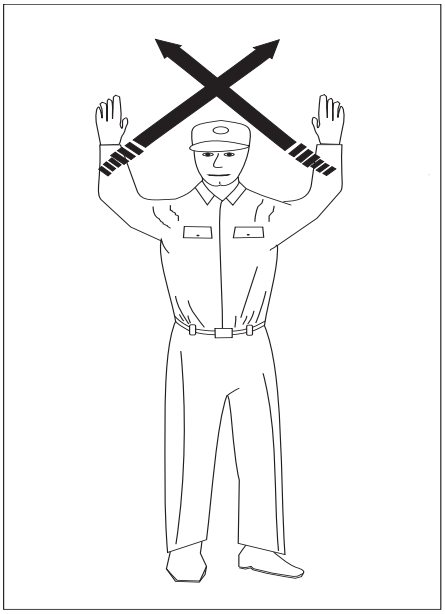


FIG ENR 1.1–24
Stop



25. Use of Aircraft Lights

25.1 Aircraft position lights are required to be lighted on aircraft operated on the surface and in flight from sunset to sunrise. In addition, aircraft equipped with an anti–collision light system are required to operate that light system during all types of operations (day and night). However, during any adverse meteorological conditions, the pilot–in–command may determine that the anti–collision lights should be turned off when their light output would constitute a hazard to safety (14 CFR Section 91.209). Supplementary strobe lights should be turned off on the ground when they adversely affect ground personnel or other pilots, and in flight when there are adverse reflection from clouds.

25.2 An aircraft anti–collision light system can use one or more rotating beacons and/or strobe lights, be colored either red or white, and have different (higher than minimum) intensities when compared to other aircraft. Many aircraft have both a rotating beacon and a strobe light system.

25.3 The FAA has a voluntary pilot safety program, *Operation Lights On*, to enhance the see–and–avoid concept. Pilots are encouraged to turn on their landing lights during takeoff; i.e., either after takeoff clearance has been received or when beginning takeoff roll. Pilots are further encouraged to turn on their landing lights when operating below 10,000 feet, day or night, especially when operating within 10 miles of any airport or in conditions of reduced visibility and in areas where flocks of birds may be expected; i.e., coastal areas, lake areas, around refuse dumps, etc. Although turning on aircraft lights does enhance the see–and–avoid concept, pilots should not become complacent about keeping a sharp lookout for other aircraft. Not all aircraft are equipped with lights, and some pilots may not have their lights turned on. Aircraft manufacturers' recommendations for operation of landing lights and electrical systems should be observed.

25.4 Prop and jet blast forces generated by large aircraft have overturned or damaged several smaller aircraft taxiing behind them. To avoid similar results and in the interest of preventing upsets and injuries to ground personnel from such forces, the FAA recommends that air carriers and commercial operators turn on their rotating beacons anytime their aircraft engines are in operation. General aviation pilots using rotating beacon–equipped aircraft are also encouraged to participate in this program which is designed to alert others to the potential hazard. Since this is a voluntary program, exercise caution and do not rely solely on the rotating beacon as an indication that aircraft engines are in operation.

25.5 Prior to commencing taxi, it is recommended to turn on navigation, position, anti-collision, and logo lights (if equipped). To signal intent to other pilots, consider turning on the taxi light when the aircraft is moving or intending to move on the ground, and turning it off when stopped or yielding to other ground traffic. Strobe lights should not be illuminated during taxi if they will adversely affect the vision of other pilots or ground personnel.

25.6 At the discretion of the pilot-in-command, all exterior lights should be illuminated when taxiing on or across any runway. This increases the conspicuity of the aircraft to controllers and other pilots approaching to land, taxiing, or crossing the runway. Pilots should comply with any equipment operating limitations and consider the effects of landing and strobe lights on other aircraft in their vicinity.

25.7 When entering the departure runway for takeoff or to "line up and wait," all lights, except for landing lights, should be illuminated to make the aircraft conspicuous to ATC and other aircraft on approach. Landing lights should be turned on when takeoff clearance is received or when commencing takeoff roll at an airport without an operating control tower.

26. Flight Inspection/"Flight Check" Aircraft in Terminal Areas

26.1 "Flight Check" is a call sign used to alert pilots and air traffic controllers when an FAA aircraft is engaged in flight inspection/certification of NAVAIDs and flight procedures. Flight check aircraft fly preplanned high/low altitude flight patterns such as grids, orbits, DME arcs, and tracks, including low passes along the full length of the runway to verify NAVAID performance.

26.2 Pilots should be especially watchful and avoid the flight paths of any aircraft using the call sign "Flight Check." These flights will normally receive special handling from ATC. Pilot patience and cooperation in allowing uninterrupted recordings can significantly help expedite flight inspections, minimize costly, repetitive runs, and reduce the burden on the U.S. taxpayer.

27. ATC Clearances and Aircraft Separation

27.1 Clearance

27.1.1 A clearance issued by ATC is predicated on known traffic and known physical airport conditions. An ATC clearance means an authorization by ATC, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified conditions within Classes A, B, C, D, and E airspace. IT IS NOT

AUTHORIZATION FOR A PILOT TO DEVIATE FROM ANY RULE, REGULATION OR MINIMUM ALTITUDE NOR TO CONDUCT UNSAFE OPERATION OF THE AIRCRAFT.

27.1.2 14 CFR Section 91.3(a) states: "The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft." If ATC issues a clearance that would cause a pilot to deviate from a rule or regulation, or in the pilot's opinion, would place the aircraft in jeopardy, IT IS THE PILOT'S RESPONSIBILITY TO REQUEST AN AMENDED CLEARANCE. Similarly, if a pilot prefers to follow a different course of action, such as make a 360–degree turn for spacing to follow traffic when established in a landing or approach sequence, land on a different runway, takeoff from a different intersection, takeoff from the threshold instead of an intersection, or delay operation, THE PILOT IS EXPECTED TO INFORM ATC ACCORDINGLY. When the pilot requests a different course of action, however, the pilot is expected to cooperate so as to preclude the disruption of the traffic flow or the creation of conflicting patterns. The pilot is also expected to use the appropriate aircraft call sign to acknowledge all ATC clearances, frequency changes, or advisory information.

27.1.3 Each pilot who deviates from an ATC clearance in response to a traffic alert and collision avoidance system resolution advisory must notify ATC of that deviation as soon as possible.

27.1.4 When weather conditions permit, during the time an IFR flight is operating, it is the direct responsibility of the pilot to avoid other aircraft since VFR flights may be operating in the same area without the knowledge of ATC, and traffic clearances provide standard separation only between IFR flights.

27.2 Clearance Prefix

A clearance, information, or request for information originated by an ATC facility and relayed to the pilot through an air/ground communication station will be prefixed by "ATC CLEARS," "ATC ADVISES," or "ATC REQUESTS."

27.3 Clearance Items

27.3.1 An ATC clearance normally contains the following:

27.3.1.1 Clearance Limit. The traffic clearance issued prior to departure will normally authorize flight to the airport of intended landing. Many airports and associated NAVAIDs are collocated with the same name and/or identifier, so care should be exercised to ensure a clear understanding of the clearance limit. When the clearance limit is the airport of intended landing, the clearance should contain the airport name followed by the word "airport." Under certain conditions, a clearance limit may be a NAVAID or other fix. When the clearance limit is a NAVAID, intersection, or waypoint and the type is known, the clearance should contain type. Under certain conditions at some locations, a short–range clearance procedure is utilized whereby a clearance is issued to a fix within or just outside the terminal area, and pilots are advised of the frequency on which they will receive the long–range clearance direct from the center controller.

27.3.1.2 Departure Procedure. Headings to fly and altitude restrictions may be issued to separate a departure from other air traffic in the terminal area. Where the volume of traffic warrants, instrument departure procedures (DPs) have been developed. (See ENR 1.5.)

27.3.1.3 Route of Flight

a) Clearances are normally issued for the altitude/flight level and route filed by the pilot. However, due to traffic conditions, it is frequently necessary for ATC to specify an altitude/flight level or route different from that requested by the pilot. In addition, flow patterns have been established in certain congested areas, or between congested areas, whereby traffic capacity is increased by routing all traffic on preferred routes. Information on these flow patterns is available in offices where preflight briefing is furnished or where flight plans are accepted.

b) When required, air traffic clearances include data to assist pilots in identifying radio reporting points. It is the responsibility of a pilot to notify ATC immediately if the radio equipment cannot receive the type of signals the pilot must utilize to comply with the clearance.

27.3.1.4 Altitude Data

a) The altitude/flight level instructions in an ATC clearance normally require that a pilot "MAINTAIN" the altitude/flight level to which the flight will operate when in Classes A, B, C, D, and E airspace. Altitude/flight level changes while en route should be requested prior to the time the change is desired.

b) When possible, if the altitude assigned is different than that requested by the pilot, ATC will inform an aircraft when to expect climb or descent clearance or to request altitude change from another facility. If this has not been received prior to crossing the boundary of the ATC facility's area and assignment at a different flight level is still desired, the pilot should reinitiate the request with the next facility.

c) The term "CRUISE" may be used instead of "MAINTAIN" to assign a block of airspace, to a pilot, from the minimum IFR altitude up to and including the altitude specified in the cruise clearance. The pilot may level off at any intermediate altitude within this block of airspace. Climb/descent within the block is to be made at the discretion of the pilot. However, once the pilot starts descent and verbally reports leaving an altitude in the block, the pilot may not return to that altitude without additional ATC clearance.

27.4 Amended Clearances

27.4.1 Amendments to the initial clearance will be issued at any time an air traffic controller deems such action necessary to avoid possible confliction between aircraft. Clearances will require that a flight "hold" or change altitude prior to reaching the point where standard separation from other IFR traffic would no longer exist.

NOTE–
Some pilots have questioned this action and requested "traffic information" and were at a loss when the reply indicated "no traffic reported." In such cases the controller has taken action to prevent a traffic confliction which would have occurred at a distant point.

27.4.2 A pilot may wish an explanation of the handling of the flight at the time of occurrence; however, controllers are not able to take time from their immediate control duties, nor can they afford to overload the ATC communications channels to furnish explanations. Pilots may obtain an explanation by directing a letter or telephone call to the chief controller of the facility involved.

27.4.3 Pilots have the privilege of requesting a different clearance from that which has been issued by ATC if they feel that they have information which would make another course of action more practicable or if aircraft equipment limitations or company procedures forbid compliance with the clearance issued.

27.4.4 Pilots should pay particular attention to the clearance and not assume that the route and altitude/flight level are the same as requested in the flight plan. It is suggested that pilots make a written report of clearances at the time they are received, and verify, by a repeat back, any portions that are complex or about which a doubt exists. It will be the responsibility of each pilot to accept or refuse the clearance issued.

27.5 Special VFR Clearance

27.5.1 An ATC clearance must be obtained *prior* to operating within a Class B, Class C, Class D, and Class E surface area when the weather is less than that required for VFR flight. A VFR pilot may request and be given a clearance to enter, leave or operate within most Class D and Class E surface areas and some Class B and Class C surface areas in special VFR conditions, traffic permitting, and providing such flight will not delay IFR operations. All special VFR flights must remain clear of clouds. The visibility requirements for Special VFR aircraft (other than helicopters) are:

27.5.1.1 At least one statute mile flight visibility for operations within Classes B, C, D, and E surface areas.

27.5.1.2 At least one statute mile ground visibility if taking off or landing. If ground visibility is not reported at that airport, the flight visibility must be at least one statute mile.

27.5.1.3 The restrictions in subparagraphs 27.5.1.1 and 27.5.1.2 do not apply to helicopters. Helicopters must remain clear of clouds and may operate in Classes B, C, D, and E surface areas with less than one statute mile visibility.

27.5.2 When a control tower is located within a Class B, Class C, and Class D surface area, requests for clearances should be to the tower. If no tower is located within the surface area, a clearance may be obtained from the nearest tower, FSS or ARTCC.

27.5.3 It is not necessary to file a complete flight plan with the request for clearance, but pilots should state their intentions in sufficient detail to permit ATC to fit their flight into the traffic flow. The clearance will not contain a specific altitude as the pilot must remain clear of clouds. The controller may require the pilot to fly at or below a certain altitude due to other traffic, but the altitude specified will permit flight at or above the minimum safe altitude. In addition, at radar locations, flight may be vectored if necessary for control purposes or on pilot request.

NOTE−
The pilot is responsible for obstacle or terrain clearance (reference 14 CFR Section 91.119).

27.5.4 Special VFR clearances are effective within Classes B, C, D, and E surface areas only. ATC does not provide separation after an aircraft leaves Class D surface area on a special VFR clearance.

27.5.5 Special VFR operations by fixed−wing aircraft are prohibited in some Classes B and C surface areas due to the volume of IFR traffic. A list of these Classes B and C surface areas is contained in 14 CFR Part 91, Appendix D, Section 3 and also depicted on Sectional Aeronautical Charts.

27.5.6 ATC provides separation between special VFR flights and between them and other IFR flights.

27.5.7 Special VFR operations by fixed−wing aircraft are prohibited between sunset and sunrise unless the pilot is instrument rated and the aircraft is equipped for IFR flight.

27.5.8 Pilots arriving or departing an uncontrolled airport that has automated weather broadcast capability (ASOS/AWOS) should monitor the broadcast frequency, advise the controller that they have the "one−minute weather," and state intentions prior to operating within the Class B, Class C, Class D, or Class E surface areas.

NOTE−
One−minute weather is the most recent one minute updated weather broadcast received by a pilot from an uncontrolled airport ASOS/AWOS.

28. Pilot Responsibilities Upon Clearance Issuance

28.1 Record ATC Clearance. When conducting an IFR operation, make a written record of your ATC clearance. The specified conditions which are a part of your air traffic clearance may be somewhat different from those included in your flight plan. Additionally, ATC may find it necessary to ADD conditions, such as a particular departure route. The very fact that ATC specifies different or additional conditions means that other aircraft are involved in the traffic situation.

28.2 ATC Clearance/Instruction Readback. Pilots of airborne aircraft should read back *those parts* of ATC clearances and instructions containing altitude assignments, vectors, or runway assignments as a means of mutual verification. The read back of the "numbers" serves as a double check between pilots and controllers and reduces the kinds of communications errors that occur when a number is either "misheard" or is incorrect.

28.2.1 Include the aircraft identification in all readbacks and acknowledgments. This aids controllers in determining that the correct aircraft received the clearance or instruction. The requirement to include aircraft identification in all readbacks and acknowledgments becomes more important as frequency congestion increases and when aircraft with similar call signs are on the same frequency.

EXAMPLE−
"Climbing to Flight Level three three zero, United Twelve" or "November Five Charlie Tango, roger, cleared to land runway nine left."

28.2.2 Read back altitudes, altitude restrictions, and vectors in the same sequence as they are given in the clearance/instruction.

28.2.3 Altitudes contained in charted procedures such as DPs, instrument approaches, etc., should not be read back unless they are specifically stated by the controller.

28.2.4 Initial read back of a taxi, departure or landing clearance should include the runway assignment, including left, right, center, etc. if applicable.

28.3 It is the responsibility of the pilot to accept or refuse the clearance issued.

29. IFR Clearance VFR−On−Top

29.1 A pilot on an IFR flight plan operating in VFR weather conditions, may request VFR−on−top in lieu of an assigned altitude. This would permit pilots to select an altitude or flight level of their choice (subject to any ATC restrictions).

29.2 Pilots desiring to climb through a cloud, haze, smoke, or other meteorological formation and then either cancel their IFR flight plan or operate VFR−on−top may request a climb to VFR−on−top. The ATC authorization must contain either a top report or a statement that no top report is available, and a request to report reaching VFR−on−top. Additionally, the ATC authorization may contain a clearance limit, routing and an alternative clearance if VFR−on−top is not reached by a specified altitude.

29.3 A pilot on an IFR flight plan operating in VFR conditions may request to climb/descend in VFR conditions.

29.4 ATC may not authorize VFR−on−top/VFR conditions operations unless the pilot requests the VFR operation or a clearance to operate in VFR conditions will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA approved noise abatement route or altitude.

29.5 When operating in VFR conditions with an ATC authorization to "maintain VFR−on−top" or "maintain VFR conditions," pilots on IFR flight plans must:

29.5.1 Fly at the appropriate VFR altitude as prescribed in 14 CFR Section 91.159.

29.5.2 Comply with the VFR visibility and distance from cloud criteria in 14 CFR Section 91.155 (Basic VFR Weather Minimums).

NOTE−
See AIP, GEN 1.7, Annex 2, Rules of the Air, for a table showing basic VFR weather minimums.

29.5.3 Comply with instrument flight rules that are applicable to this flight; i.e., minimum IFR altitude, position reporting, radio communications, course to be flown, adherence to ATC clearance, etc. Pilots should advise ATC prior to any altitude change to ensure the exchange of accurate traffic information.

29.6 ATC authorization to "maintain VFR−on−top" is not intended to restrict pilots so that they must operate only above an obscuring meteorological formation (layer). Instead, it permits operation above, below, between layers or in areas where there is no meteorological obscuration. It is imperative that clearance to operate "VFR−on−top/VFR conditions" does not imply cancellation of the IFR flight plan.

29.7 Pilots operating VFR−on−top/VFR conditions may receive traffic information from ATC on other pertinent IFR or VFR aircraft. However, aircraft operating in Class B or Class C airspace and TRSAs must be separated as required by FAA Order JO 7110.65, Air Traffic Control.

NOTE−
When operating in VFR weather conditions, it is the pilot's responsibility to be vigilant so as to see and avoid other aircraft.

30. VFR/IFR Flights

30.1 A pilot departing VFR, either intending to or needing to obtain an IFR clearance en route, must be aware of the position of the aircraft and the relative terrain/obstructions. When accepting a clearance below the minimum en route altitude (MEA)/minimum IFR altitude (MIA)/minimum vector altitude (MVA)/off route obstruction clearance altitude (OROCA), pilots are responsible for their own terrain/obstruction clearance until reaching the MEA/MIA/MVA/OROCA. If the pilots are unable to maintain terrain/obstruction clearance, the controller should be advised and pilots should state their intentions. Pilots are reminded that on composite VFR to IFR flight plan, or on an IFR clearance, while flying unpublished departures via RNAV into uncontrolled airspace, the PIC is responsible for terrain and obstruction clearance until reaching the MEA/MIA/MVA/OROCA.

NOTE–
OROCA is a published altitude which provides 1,000 feet of terrain and obstruction clearance in the US (2,000 feet of clearance in designated mountainous areas). These altitudes are not assessed for NAVAID signal coverage, air traffic control surveillance, or communications coverage, and are published for general situational awareness, flight planning and in–flight contingency use.

31. Adherence to Clearance

31.1 When air traffic clearance has been obtained under either the Visual or Instrument Flight Rules, the pilot in command of the aircraft must not deviate from the provisions thereof unless an amended clearance is obtained. When ATC issues a clearance or instruction, pilots are expected to execute its provisions upon receipt. ATC, in certain situations, will include the word "IMMEDIATELY" in a clearance or instruction to impress urgency of an imminent situation, and expeditious compliance by the pilot is expected and necessary for safety. The addition of a VFR or other restriction; i.e., climb or descent point or time, crossing altitude, etc., does not authorize a pilot to deviate from the route of flight or any other provision of the ATC clearance.

31.2 When a heading is assigned or a turn is requested by ATC, pilots are expected to promptly initiate the turn, to complete the turn, and to maintain the new heading unless issued additional instructions.

31.3 The term "at pilot's discretion" included in the altitude information of an ATC clearance means that ATC has offered the pilot the option to start climb or descent when the pilot wishes, is authorized to conduct the climb or descent at any rate, and to temporarily level off at any intermediate altitude as desired. However, once the aircraft has vacated an altitude, it may not return to that altitude.

31.4 When ATC has not used the term "AT PILOT'S DISCRETION" nor imposed any climb or descent restrictions, pilots should initiate climb or descent promptly on acknowledgement of the clearance. Descend or climb at an optimum rate consistent with the operating characteristics of the aircraft to 1,000 feet above or below the assigned altitude, and then attempt to descend or climb at a rate of between 500 and 1,500 fpm until the assigned altitude is reached. If at anytime the pilot is unable to climb or descend at a rate of at least 500 feet a minute, advise ATC. If it is necessary to level off at an intermediate altitude during climb or descent, advise ATC, except when leveling off at 10,000 feet MSL on descent, or 2,500 feet above airport elevation (prior to entering a Class C or Class D surface area), when required for speed reduction (14 CFR Section 91.117).

NOTE–
Leveling off at 10,000 feet MSL on descent or 2,500 feet above airport elevation (prior to entering a Class C or Class D surface area) to comply with 14 CFR Section 91.117 airspeed restrictions is commonplace. Controllers anticipate this action and plan accordingly. Leveling off at any other time on climb or descent may seriously affect air traffic handling by ATC. Consequently, it is imperative that pilots make every effort to fulfill the above expected actions to aid ATC in safely handling and expediting traffic.

31.5 If the altitude information of an ATC DESCENT clearance includes a provision to "CROSS (fix) AT" or "AT OR ABOVE/BELOW (altitude)," the manner in which the descent is executed to comply with the crossing altitude is at the pilot's discretion. This authorization to descend at pilot's discretion is only applicable to that portion of the flight to which the crossing altitude restriction applies, and the pilot is expected to comply with the crossing altitude as a provision of the clearance. Any other clearance in which pilot execution is optional will so state: "AT PILOT'S DISCRETION."

EXAMPLE–
1. *"United Four Seventeen, descend and maintain six thousand."*

NOTE–
1. *The pilot is expected to commence descent upon receipt of the clearance and to descend at the suggested rates until reaching the assigned altitude of 6,000 feet.*

EXAMPLE–
2. *"United Four Seventeen, descend at pilot's discretion, maintain six thousand."*

NOTE–
2. *The pilot is authorized to conduct descent within the context of the term at pilot's discretion as described above.*

EXAMPLE−

3. *"United Four Seventeen, cross Lakeview V−O−R at or above Flight Level two zero zero, descend and maintain six thousand."*

NOTE−

3. *The pilot is authorized to conduct descent at pilot's discretion until reaching Lakeview VOR and must comply with the clearance provision to cross the Lakeview VOR at or above FL 200. After passing Lakeview VOR, the pilot is expected to descend at the suggested rates until reaching the assigned altitude of 6,000 feet.*

EXAMPLE−

4. *"United Four Seventeen, cross Lakeview V−O−R at six thousand, maintain six thousand."*

NOTE−

4. *The pilot is authorized to conduct descent at pilot's discretion, however, must comply with the clearance provision to cross the Lakeview VOR at 6,000 feet.*

EXAMPLE−

5. *"United Four Seventeen, descend now to Flight Level two seven zero, cross Lakeview V−O−R at or below one zero thousand, descend and maintain six thousand."*

NOTE−

5. *The pilot is expected to promptly execute and complete descent to FL 270 upon receipt of the clearance. After reaching FL 270 the pilot is authorized to descend "at pilot's discretion" until reaching Lakeview VOR. The pilot must comply with the clearance provision to cross Lakeview VOR at or below 10,000 feet. After Lakeview VOR the pilot is expected to descend at the suggested rates until reaching 6,000 feet.*

EXAMPLE−

6. *"United Three Ten, descend now and maintain Flight Level two four zero, pilot's discretion after reaching Flight Level two eight zero."*

NOTE−

6. *The pilot is expected to commence descent upon receipt of the clearance and to descend at the suggested rates until reaching FL 280. At that point, the pilot is authorized to continue descent to FL 240 within the context of the term "at pilot's discretion" as described above.*

31.6 In case emergency authority is used to deviate from the provisions of an ATC clearance, the pilot in command must notify ATC as soon as possible and obtain an amended clearance. In an emergency situation which results in no deviation from the rules prescribed in 14 CFR Part 91 but which requires ATC to give priority to an aircraft, the pilot of such aircraft must, when requested by ATC, make a report within 48 hours of such emergency situation to the manager of that ATC facility.

31.7 The guiding principle is that the last ATC clearance has precedence over the previous ATC clearance. When the route or altitude in a previously issued clearance is amended, the controller will restate applicable altitude restrictions. If altitude to maintain is changed or restated, whether prior to departure or while airborne, and previously issued altitude restrictions are omitted, those altitude restrictions are canceled, including Departure Procedures and Standard Terminal Arrival Route (STAR) altitude restrictions.

EXAMPLE−

1. *A departure flight receives a clearance to destination airport to maintain FL 290. The clearance incorporates a DP which has certain altitude crossing restrictions. Shortly after takeoff, the flight receives a new clearance changing the maintaining FL from 290 to 250. If the altitude restrictions are still applicable, the controller restates them.*

2. *A departing aircraft is cleared to cross Fluky Intersection at or above 3,000 feet, Gordonville VOR at or above 12,000 feet, maintain FL 200. Shortly after departure, the altitude to be maintained is changed to FL 240. If the altitude restrictions are still applicable, the controller issues an amended clearance as follows: "cross Fluky Intersection at or above three thousand, cross Gordonville V−O−R at or above one two thousand, maintain Flight Level two four zero."*

3. *An arriving aircraft is cleared to the destination airport via V45 Delta VOR direct; the aircraft is cleared to cross Delta VOR at 10,000 feet, and then to maintain 6,000 feet. Prior to Delta VOR, the controller issues an amended clearance as follows: "turn right heading one eight zero for vector to runway three six I−L−S approach, maintain six thousand."*

NOTE−

Because the altitude restriction "cross Delta V−O−R at 10,000 feet" was omitted from the amended clearance, it is no longer in effect.

31.8 Pilots of turbojet aircraft equipped with afterburner engines should advise ATC prior to takeoff if they intend to use afterburning during their climb to the en route altitude. Often, the controller may be able to plan traffic to accommodate a high performance climb and allow the aircraft to climb to the planned altitude without restriction.

31.9 If an "expedite" climb or descent clearance is issued by ATC, and the altitude to maintain is subsequently changed or restated without an expedite instruction, the expedite instruction is canceled. Expedite climb/descent normally indicates to the pilot that the approximate best rate of climb/descent should be used without requiring an exceptional change in aircraft handling characteristics. Normally controllers will inform pilots of the reason for an instruction to expedite.

32. IFR Separation Standards

32.1 ATC effects separation of aircraft vertically by assigning different altitudes; longitudinally by providing an interval expressed in time or distance between aircraft on the same, converging, or crossing courses; and laterally by assigning different flight paths.

32.2 Separation will be provided between all aircraft operating on IFR flight plans except during that part of the flight (outside Class B airspace or a TRSA) being conducted on a VFR−on−top/VFR conditions clearance. Under these conditions, ATC may issue traffic advisories, but it is the sole responsibility of the pilot to be vigilant so as to see and avoid other aircraft.

32.3 When radar is employed in the separation of aircraft at the same altitude, a minimum of 3 miles separation is provided between aircraft operating within 40 miles of the radar antenna site, and 5 miles between aircraft operating beyond 40 miles from the antenna site. These minimums may be increased or decreased in certain specific situations.

33. Speed Adjustments

33.1 ATC will issue speed adjustments to pilots of radar−controlled aircraft to achieve or maintain appropriate spacing. If necessary, ATC will assign a speed when approving deviations or radar vectoring off procedures that include published speed restrictions. If no speed is assigned, speed becomes pilot's discretion. However, when the aircraft reaches the end of the STAR, the last published speed on the STAR must be maintained until ATC deletes it, assigns a new speed, issues a vector, assigns a direct route, or issues an approach clearance.

33.2 ATC will express all speed adjustments in terms of knots based on indicated airspeed (IAS) in 5 or 10 knot increments except that at or above FL 240 speeds may be expressed in terms of Mach numbers in 0.01 increments. The use of Mach numbers is restricted to turbojet aircraft with Mach meters.

33.3 Pilots of aircraft in U.S. domestic Class A, B, C, D, and E airspace complying with speed adjustments (published or assigned) should maintain a speed within plus or minus 10 knots or 0.02 Mach number, whichever is less, of the assigned speed.

33.4 Pilots of aircraft in offshore controlled airspace or oceanic controlled airspace must adhere to the ATC assigned airspeed and must request ATC approval before making any change thereto. If it is essential to make an immediate temporary change in the Mach number (e.g., due to turbulence), ATC must be notified as soon as possible. If it is not feasible to maintain the last assigned Mach number during an en route climb or descent due to aircraft performance, advise ATC at the time of the request.

33.5 When ATC assigns speed adjustments, it will be in accordance with the following recommended minimums:

33.5.1 To aircraft operating between FL 280 and 10,000 feet, a speed not less than 250 knots or the equivalent Mach number.

NOTE−
1. *On a standard day the Mach numbers equivalent to 250 knots CAS (subject to minor variations) are:*

FL 240−0.6
FL 250−0.61
FL 260−0.62
FL 270−0.64
FL 280−0.65
FL 290−0.66.

2. *When an operational advantage will be realized, speeds lower than the recommended minima may be applied.*

33.5.2 To arriving turbojet aircraft operating below 10,000 feet, a speed not less than 210 knots, except within 20 flying miles of the airport of intended landing, a speed not less than 170 knots.

33.5.3 To arriving reciprocating engine or turboprop aircraft within 20 flying miles of the runway threshold of the airport of intended landing, a speed not less than 150 knots.

33.5.4 Departures, for turbojet aircraft, a speed not less than 230 knots; for reciprocating engine aircraft, a speed not less than 150 knots.

33.6 When ATC combines a speed adjustment with a descent clearance, the sequence of delivery with the word "then" between, indicates the expected order of execution; i.e., "DESCEND AND MAINTAIN (altitude); THEN, REDUCE SPEED TO (speed)," or "REDUCE SPEED TO (speed); THEN, DESCEND AND MAINTAIN (altitude)."

NOTE−
The maximum speeds below 10,000 feet as established in 14 CFR Section 91.117 still apply. If there is any doubt concerning the manner in which such a clearance is to be executed, request clarification from ATC.

33.7 If ATC determines (before an approach clearance is issued) that it is no longer necessary to apply speed adjustment procedures, they will:

33.7.1 Advise the pilot to "resume normal speed." Normal speed is used to terminate ATC assigned speed adjustments on segments where no published speed restrictions apply. It does not cancel published restrictions on upcoming procedures. This does not relieve the pilot of those speed restrictions which are applicable to 14 CFR Section 91.117.

EXAMPLE−
(An aircraft is flying a SID with no published speed restrictions. ATC issues a speed adjustment and instructs the aircraft where the adjustment ends): "Maintain two two zero knots until BALTR then resume normal speed."

NOTE−
The ATC assigned speed assignment of two two zero knots would apply until BALTR. The aircraft would then resume a normal operating speed while remaining in compliance with 14 CFR Section 91.117.

33.7.2 Instruct pilots to "comply with speed restrictions" when the aircraft is joining or resuming a charted procedure or route with published speed restrictions.

EXAMPLE−
(ATC vectors an aircraft off of a SID to rejoin the procedure at a subsequent waypoint. When instructing the aircraft to resume the procedure, ATC also wants the aircraft to comply with the published procedure speed restrictions): "Resume the SALTY ONE departure. Comply with speed restrictions."

CAUTION−
The phraseology "Descend via/Climb via SID" requires compliance with all altitude and/or speed restrictions depicted on the procedure.

33.7.3 Instruct the pilot to "resume published speed." Resume published speed is issued to terminate a speed adjustment where speed restrictions are published on a charted procedure.

NOTE−
When instructed to "comply with speed restrictions" or to "resume published speed," ATC anticipates pilots will begin adjusting speed the minimum distance necessary prior to a published speed restriction so as to cross the waypoint/fix at the published speed. Once at the published speed, ATC expects pilots will maintain the published speed until additional adjustment is required to comply with further published or ATC assigned speed restrictions or as required to ensure compliance with 14 CFR Section 91.117.

EXAMPLE–
(An aircraft is flying a SID/STAR with published speed restrictions. ATC issues a speed adjustment and instructs the aircraft where the adjustment ends): "Maintain two two zero knots until BALTR then resume published speed."

NOTE–
The ATC assigned speed assignment of two two zero knots would apply until BALTR. The aircraft would then comply with the published speed restrictions.

33.7.4 Advise the pilot to "delete speed restrictions" when either ATC assigned or published speed restrictions on a charted procedure are no longer required.

EXAMPLE–
(An aircraft is flying a SID with published speed restrictions designed to prevent aircraft overtake on departure. ATC determines there is no conflicting traffic and deletes the speed restriction): "Delete speed restrictions."

NOTE–
When deleting published restrictions, ATC must ensure obstacle clearance until aircraft are established on a route where no published restrictions apply. This does not relieve the pilot of those speed restrictions which are applicable to 14 CFR Section 91.117.

33.7.5 Instruct the pilot to "climb via" or "descend via." A climb via or descend via clearance cancels any previously issued speed restrictions and, once established on the depicted departure or arrival, to climb or descend, and to meet all published or assigned altitude and/or speed restrictions.

EXAMPLE–
1. *(An aircraft is flying a SID with published speed restrictions. ATC has issued a speed restriction of 250 knots for spacing. ATC determines that spacing between aircraft is adequate and desires the aircraft to comply with published restrictions): "United 436, Climb via SID."*

2. *(An aircraft is established on a STAR. ATC must slow an aircraft for the purposes of spacing and assigns it a speed of 280 knots. When spacing is adequate, ATC deletes the speed restriction and desires that the aircraft comply with all published restrictions on the STAR): "Gulfstream two three papa echo, descend via the TYLER One arrival."*

NOTE–
1. *In example 1, when ATC issues a "Climb via SID" clearance, it deletes any previously issued speed and/or altitude restrictions. The pilot should then vertically navigate to comply with all speed and/or altitude restrictions published on the SID.*

2. *In example 2, when ATC issues a "Descend via <STAR name> arrival," ATC has canceled any previously issued speed and/or altitude restrictions. The pilot should vertically navigate to comply with all speed and/or altitude restrictions published on the STAR.*

CAUTION–
When descending on a STAR, pilots should not speed up excessively beyond the previously issued speed. Otherwise, adequate spacing between aircraft descending on the STAR that was established by ATC with the previous restriction may be lost.

33.8 Approach clearances supersede any prior speed adjustment assignments, and pilots are expected to make their own speed adjustments as necessary to complete the approach. However, under certain circumstances, it may be necessary for ATC to issue further speed adjustments after approach clearance is issued to maintain separation between successive arrivals. Under such circumstances, previously issued speed adjustments will be restated if that speed is to be maintained or additional speed adjustments are requested. Speed adjustments should not be assigned inside the final approach fix on final or a point 5 miles from the runway, whichever is closer to the runway.

33.9 The pilots retain the prerogative of rejecting the application of speed adjustment by ATC if the minimum safe airspeed for any particular operation is greater than the speed adjustment. IN SUCH CASES, PILOTS ARE EXPECTED TO ADVISE ATC OF THE SPEED THAT WILL BE USED.

33.10 Pilots are reminded that they are responsible for rejecting the application of speed adjustment by ATC if, in their opinion, it will cause them to exceed the maximum indicated airspeed prescribed by 14 CFR Section 91.117(a), (c) and (d). IN SUCH CASES, THE PILOT IS EXPECTED TO SO INFORM ATC. Pilots operating at or above 10,000 feet MSL who are issued speed adjustments which exceed 250 knots IAS and are subsequently cleared below 10,000 feet MSL are expected to comply with 14 CFR Section 91.117(a).

33.11 Speed restrictions of 250 knots do not apply to U.S. registered aircraft operating beyond 12 nautical miles from the coastline within the U.S. Flight Information Region, in Class E airspace below 10,000 feet MSL. However, in airspace underlying a Class B airspace area designated for an airport, or in a VFR corridor designated through such as a Class B airspace area, pilots are expected to comply with the 200 knot speed limit specified in 14 CFR Section 91.117(c).

33.12 For operations in a Class C and Class D surface area, ATC is authorized to request or approve a speed greater than the maximum indicated airspeeds prescribed for operation within that airspace (14 CFR Section 91.117(b)).

NOTE−
Pilots are expected to comply with the maximum speed of 200 knots when operating beneath Class B airspace or in a Class B VFR corridor (14 CFR Section 91.117(c) and (d)).

33.13 When in communication with the ARTCC or approach control facility, pilots should, as a good operating practice, state any ATC assigned speed restriction on initial radio contact associated with an ATC communications frequency change.

34. Runway Separation

34.1 Tower controllers establish the sequence of arriving and departing aircraft by requiring them to adjust flight or ground operation as necessary to achieve proper spacing. They may "HOLD" an aircraft short of the runway to achieve spacing between it and another arriving aircraft; the controller may instruct a pilot to "EXTEND DOWNWIND" in order to establish spacing from another arriving or departing aircraft. At times a clearance may include the word "IMMEDIATE." For example: "CLEARED FOR IMMEDIATE TAKEOFF." In such cases "IMMEDIATE" is used for purposes of air traffic separation. It is up to the pilot to refuse the clearance if, in the pilot's opinion, compliance would adversely affect the operation.

35. Visual Separation

35.1 Visual separation is a means employed by ATC to separate aircraft in terminal areas and en route airspace. There are two methods employed to effect this separation:

35.1.1 The tower controller sees the aircraft involved and issues instructions, as necessary, to ensure that the aircraft avoid each other.

35.1.2 A pilot sees the other aircraft involved and upon instructions from the controller provides separation by maneuvering the aircraft to avoid it. When pilots accept responsibility to maintain visual separation, they must maintain constant visual surveillance and not pass the other aircraft until it is no longer a factor.

NOTE−
Traffic is no longer a factor when during approach phase the other aircraft is in the landing phase of flight or executes a missed approach; and during departure or en route, when the other aircraft turns away or is on a diverging course.

35.2 A pilot's acceptance of instructions to follow another aircraft or provide visual separation from it is an acknowledgment that the pilot will maneuver the aircraft as necessary to avoid the other aircraft or to maintain in−trail separation. In operations conducted behind heavy aircraft, or a small aircraft behind a B757 or other large aircraft, it is also an acknowledgment that the pilot accepts the responsibility for wake turbulence separation. Visual separation is prohibited behind super aircraft.

NOTE−
When a pilot has been told to follow another aircraft or to provide visual separation from it, the pilot should promptly notify the controller if visual contact with the other aircraft is lost or cannot be maintained or if the pilot cannot accept the responsibility for the separation for any reason.

35.3 Scanning the sky for other aircraft is a key factor in collision avoidance. Pilots and copilots (or the right seat passenger) should continuously scan to cover all areas of the sky visible from the cockpit. Pilots must develop an effective scanning technique which maximizes one's visual capabilities. Spotting a potential collision

threat increases directly as more time is spent looking outside the aircraft. One must use timesharing techniques to effectively scan the surrounding airspace while monitoring instruments as well.

35.4 Since the eye can focus only on a narrow viewing area, effective scanning is accomplished with a series of short, regularly spaced eye movements that bring successive areas of the sky into the central visual field. Each movement should not exceed ten degrees, and each area should be observed for at least one second to enable collision detection. Although many pilots seem to prefer the method of horizontal back−and−forth scanning every pilot should develop a scanning pattern that is not only comfortable but assures optimum effectiveness. Pilots should remember, however, that they have a regulatory responsibility (14 CFR Section 91.113) to see and avoid other aircraft when weather conditions permit.

36. Use of Visual Clearing Procedures and Scanning Techniques

36.1 Before Takeoff. Prior to taxiing onto a runway or landing area in preparation for takeoff, pilots should scan the approach areas for possible landing traffic, executing appropriate clearing maneuvers to provide them a clear view of the approach areas.

36.2 Climbs and Descents. During climbs and descents in flight conditions which permit visual detection of other traffic, pilots should execute gentle banks, left and right at a frequency which permits continuous visual scanning of the airspace about them.

36.3 Straight and Level. Sustained periods of straight and level flight in conditions which permit visual detection of other traffic should be broken at intervals with appropriate clearing procedures to provide effective visual scanning.

36.4 Traffic Patterns. Entries into traffic patterns while descending create specific collision hazards and should be avoided.

36.5 Traffic at VOR Sites. All operators should emphasize the need for sustained vigilance in the vicinity of VORs and airway intersections due to the convergence of traffic.

36.6 Training Operations. Operators of pilot training programs are urged to adopt the following practices:

36.6.1 Pilots undergoing flight instruction at all levels should be requested to verbalize clearing procedures (call out, “Clear” left, right, above, or below) to instill and sustain the habit of vigilance during maneuvering.

36.6.2 High−wing Airplane. Momentarily raise the wing in the direction of the intended turn and look.

36.6.3 Low−wing Airplane. Momentarily lower the wing in the direction of the intended turn and look.

36.6.4 Appropriate clearing procedures should precede the execution of all turns including chandelles, lazy eights, stalls, slow flight, climbs, straight and level, spins, and other combination maneuvers.

36.7 Scanning Techniques for Traffic Avoidance.

36.7.1 Pilots must be aware of the limitations inherent in the visual scanning process. These limitations may include:

36.7.1.1 Reduced scan frequency due to concentration on flight instruments or tablets and distraction with passengers.

36.7.1.2 Blind spots related to high-wing and low-wing aircraft in addition to windshield posts and sun visors.

36.7.1.3 Prevailing weather conditions including reduced visibility and the position of the sun.

36.7.1.4 The attitude of the aircraft will create additional blind spots.

36.7.1.5 The physical limitations of the human eye, including the time required to (re)focus on near and far objects, from the instruments to the horizon for example; empty field myopia, narrow field of vision and atmospheric lighting all affect our ability to detect another aircraft.

36.7.2 Best practices to see and avoid:

36.7.2.1 ADS-B In is an effective system to help pilots see and avoid other aircraft. If your aircraft is equipped with ADS-B In, it is important to understand its features and how to use it properly. Many units provide visual and/or audio alerts to supplement the system's traffic display. Pilots should incorporate the traffic display in their normal traffic scan to provide awareness of nearby aircraft. Prior to taxiing onto an airport movement area, ADS-B In can provide advance indication of arriving aircraft and aircraft in the traffic pattern. Systems that incorporate a traffic–alerting feature can help minimize the pilot's inclination to fixate on the display. Refer to ENR 1.1–45.5, ADS-B Limitations.

36.7.2.2 Understand the limitations of ADS-B In. In certain airspace, not all aircraft will be equipped with ADS-B Out or transponders and will not be visible on your ADS-B In display.

36.7.2.3 Limit the amount of time that you focus on flight instruments or tablets.

36.7.2.4 Develop a strategic approach to scanning for traffic. Scan the entire sky and try not to focus straight ahead.

37. Surveillance Systems

37.1 Radar

37.1.1 Capabilities

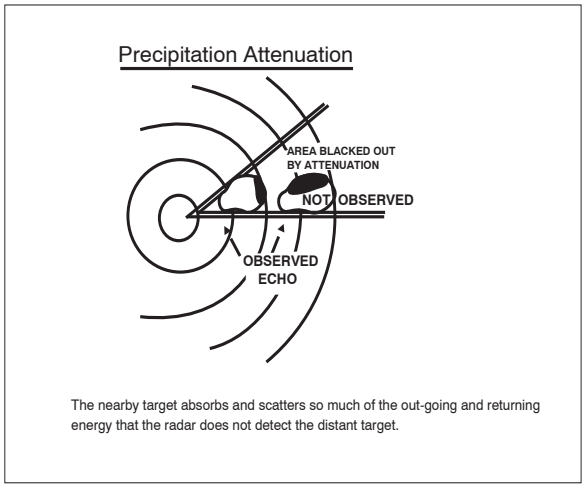
37.1.1.1 Radar is a method whereby radio waves are transmitted into the air and are then received when they have been reflected by an object in the path of the beam. Range is determined by measuring the time it takes (at the speed of light) for the radio wave to go out to the object and then return to the receiving antenna. The direction of a detected object from a radar site is determined by the position of the rotating antenna when the reflected portion of the radio wave is received.

37.1.1.2 More reliable maintenance and improved equipment have reduced radar system failures to a negligible factor. Most facilities actually have some components duplicated – one operating and another which immediately takes over when a malfunction occurs to the primary component.

37.1.2 Limitations

37.1.2.1 It is very important for the aviation community to recognize the fact that there are limitations to radar service and that ATC controllers may not always be able to issue traffic advisories concerning aircraft which are not under ATC control and cannot be seen on radar. (See FIG ENR 1.1–25).

FIG ENR 1.1–25
Limitations to Radar Service



a) The characteristics of radio waves are such that they normally travel in a continuous straight line unless they are:

1) "Bent" by abnormal atmospheric phenomena such as temperature inversions.

2) Reflected or attenuated by dense objects such as heavy clouds, precipitation, ground obstacles, mountains, etc.

3) Screened by high terrain features.

b) The bending of radar pulses, often called anomalous propagation or ducting, may cause many extraneous blips to appear on the radar operator's display if the beam has been bent toward the ground, or may decrease the detection range if the wave is bent upward. It is difficult to solve the effects of anomalous propagation, but using beacon radar and electronically eliminating stationary and slow moving targets by a method called moving target indicator (MTI) usually negate the problem.

c) Radar energy that strikes dense objects will be reflected and displayed on the operator's scope, thereby blocking out aircraft at the same range and greatly weakening or completely eliminating the display of targets at a greater range. Again, radar beacon and MTI are effectively used to combat ground clutter and weather phenomena, and a method of circularly polarizing the radar beam will eliminate some weather returns. A negative characteristic of MTI is that an aircraft flying a speed that coincides with the canceling signal of the MTI (tangential or "blind" speed) may not be displayed to the radar controller.

d) Relatively low altitude aircraft will not be seen if they are screened by mountains or are below the radar beam due to earth curvature. The historical solution to screening has been the installation of strategically placed multiple radars, which has been done in some areas, but ADS−B now provides ATC surveillance in some areas with challenging terrain where multiple radar installations would be impractical.

e) There are several other factors which affect radar control. The amount of reflective surface of an aircraft will determine the size of the radar return. Therefore, a small light airplane or a sleek jet fighter will be more difficult to see on primary radar than a large commercial jet or military bomber. Here again, the use of transponder or ADS−B equipment is invaluable. In addition, all FAA ATC facilities display automatically reported altitude information to the controller from appropriately equipped aircraft.

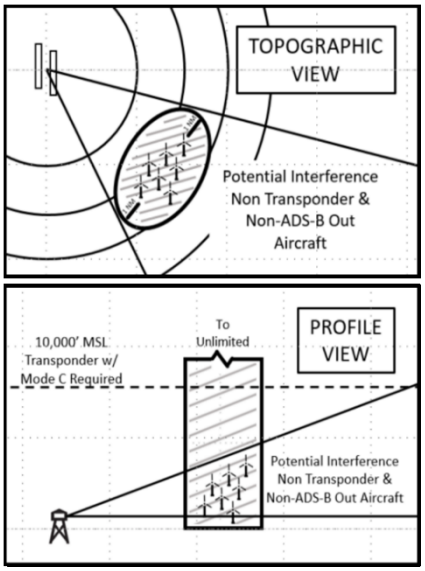
f) At some locations within the ATC en route environment, secondary−radar−only (no primary radar) gap filler radar systems are used to give lower altitude radar coverage between two larger radar systems, each of which provides both primary and secondary radar coverage. ADS−B serves this same role, supplementing both primary and secondary radar. In those geographical areas served by secondary radar only or ADS−B, aircraft without either transponders or ADS−B equipment cannot be provided with radar service. Additionally, transponder or ADS−B equipped aircraft cannot be provided with radar advisories concerning primary targets and ATC radar−derived weather.

g) With regard to air traffic radar reception, wind turbines generally do not affect the quality of air traffic surveillance radar returns for transponder and ADS−B Out equipped aircraft. Air traffic interference issues apply to the search radar and Non−Transponder/Non−ADS−B Out−equipped aircraft.

NOTE−
Generally, one or two wind turbines don't present a significant radar reception loss. A rule of thumb is three (3) or more turbines constitute a wind turbine farm and thus negatively affect the search radar product.

1) Detection loss in the area of a wind turbine farm is substantial. In extreme circumstances, this can extend for more than 1.0 nautical mile (NM) horizontally around the nearest turbine and at all altitudes above the wind turbine farm. (See FIG ENR 1.1−26.)

FIG ENR 1.1−26
Wind Turbine Farm Area of Potential Interference



NOTE−
All aircraft should comply with 14 CFR §91.119(c) "…aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure."

2) To avoid interference, Non−Transponder/Non−ADS−B Out equipped aircraft should avoid flight within 1.0 NM horizontally, at all altitudes, from the wind turbine farms.

3) Because detection loss near and above wind turbine farms for search−only targets causes dropped tracks, erroneous tracks, and can result in loss of separation, it is imperative that Non−Transponder/Non−ADS−B Out equipped aircraft operate at the proper VFR altitudes per the hemispheric rule and utilize see−and−avoid techniques.

4) Pilots should be aware that air traffic controllers cannot provide separation from Non−Transponder/Non−ADS−B Out equipped aircraft in the vicinity of wind turbine farms. See−and−avoid is the pilot's responsibility, as these non−equipped aircraft may not appear on radar and will not appear on Traffic Information Service−Broadcast (TIS−B).

h) The controller's ability to advise a pilot flying on instruments or in visual conditions of the aircraft's proximity to another aircraft will be limited if the unknown aircraft is not observed on radar, if no flight plan information is available, or if the volume of traffic and workload prevent issuing traffic information. First priority is given to establishing vertical, lateral, or longitudinal separation between aircraft flying IFR under the control of ATC.

37.2 Air Traffic Control Radar Beacon System (ATCRBS)

37.2.1 The ATCRBS, sometimes referred to as a secondary surveillance radar, consists of three main components:

37.2.1.1 Interrogator. Primary radar relies on a signal being transmitted from the radar antenna site and for this signal to be reflected or "bounced back" from an object (such as an aircraft). This reflected signal is then displayed as a "target" on the controller's radar scope. In the ATCRBS, the Interrogator, a ground−based radar beacon transmitter−receiver, scans in synchronism with the primary radar and transmits discrete radio signals which repetitiously requests all transponders, on the mode being used, to reply. The replies received are then mixed with the primary returns and both are displayed on the same radar scope.

37.2.1.2 Transponder. This airborne radar beacon transmitter−receiver automatically receives the signals from the interrogator and selectively replies with a specific pulse group (code) only to those interrogations being

received on the mode to which it is set. These replies are independent of, and much stronger than a primary radar return.

37.2.1.3 Radar scope. The radar scope used by the controller displays returns from both the primary radar system and the ATCRBS. These returns, called targets, are what the controller refers to in the control and separation of traffic.

37.2.2 The job of identifying and maintaining identification of primary radar targets is a long and tedious task for the controller. Some of the advantages of ATCRBS over primary radar are:

37.2.2.1 Reinforcement of radar targets.

37.2.2.2 Rapid target identification.

37.2.2.3 Unique display of selected codes.

37.2.3 A part of the ATCRBS ground equipment is the decoder. This equipment enables the controller to assign discrete transponder codes to each aircraft under his/her control. Normally only one code will be assigned for the entire flight. Assignments are made by the ARTCC computer on the basis of the National Beacon Code Allocation Plan. The equipment is also designed to receive Mode C altitude information from the aircraft. See FIG ENR 1.1−27 and FIG ENR 1.1−28 for an illustration of the target symbology depicted on radar scopes in the NAS Stage A (en route), the ARTS III (terminal) Systems, and other nonautomated (broadband) radar systems.

37.3 Surveillance Radar

37.3.1 Surveillance radars are divided into two general categories: Airport Surveillance Radar (ASR) and Air Route Surveillance Radar (ARSR).

37.3.1.1 ASR is designed to provide relatively short range coverage in the general vicinity of an airport and to serve as an expeditious means of handling terminal area traffic through observation of precise aircraft locations on a radar scope. The ASR can also be used as an instrument approach aid.

37.3.1.2 ARSR is a long−range radar system designed primarily to provide a display of aircraft locations over large areas.

37.3.2 Surveillance radars scan through 360 degrees of azimuth and present target information on a radar display located in a tower or center. This information is used independently or in conjunction with other navigational aids in the control of air traffic.

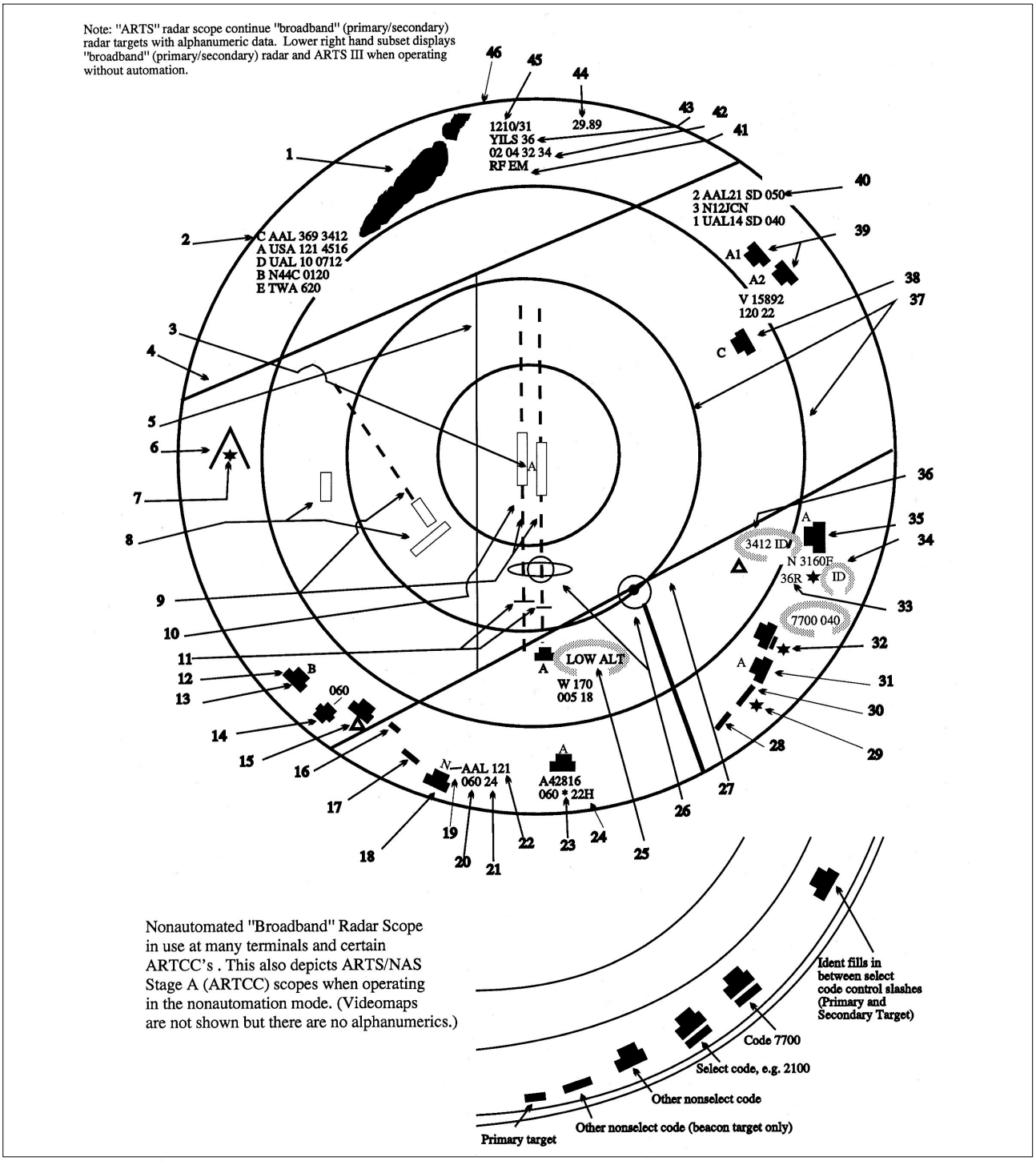
37.4 Precision Approach Radar (PAR)

37.4.1 PAR is designed for use as a landing aid rather than an aid for sequencing and spacing aircraft. PAR equipment may be used as a primary landing aid (See ENR 1.5 for additional information), or it may be used to monitor other types of approaches. It is designed to display range, azimuth, and elevation information.

37.4.2 Two antennas are used in the PAR array, one scanning a vertical plane, and the other scanning horizontally. Since the range is limited to 10 miles, azimuth to 20 degrees, and elevation to 7 degrees, only the final approach area is covered. Each scope is divided into two parts. The upper half presents altitude and distance information, and the lower half presents azimuth and distance.

FIG ENR 1.1–27

ARTS III Radar Scope With Alphanumeric Data



NOTE–

A number of radar terminals do not have ARTS equipment. Those facilities and certain ARTCCs outside the contiguous U.S. would have radar displays similar to the lower right hand subset. ARTS facilities and NAS Stage A ARTCCs, when operating in the nonautomation mode, would also have similar displays and certain services based on automation may not be available.

EXAMPLE–

1. *Areas of precipitation (can be reduced by CP)*

2. *Arrival/departure tabular list*

3. *Trackball (control) position symbol (A)*

4. *Airway (lines are sometimes deleted in part)*

5. *Radar limit line for control*

6. *Obstruction (video map)*

7. *Primary radar returns of obstacles or terrain (can be removed by MTI)*

8. *Satellite airports*

9. *Runway centerlines (marks and spaces indicate miles)*

10. *Primary airport with parallel runways*

11. *Approach gates*

12. *Tracked target (primary and beacon target)*

13. *Control position symbol*

14. *Untracked target select code (monitored) with Mode C readout of 6,000'*

15. *Untracked target without Mode C*

16. *Primary target*

17. *Beacon target only (secondary radar) (transponder)*

18. *Primary and beacon target*

19. *Leader line*

20. *Altitude Mode C readout is 6,000'*
(Note: readouts may not be displayed because of nonreceipt of beacon information, garbled beacon signals, and flight plan data which is displayed alternately with the altitude readout)

21. *Ground speed readout is 240 knots*
(Note: readouts may not be displayed because of a loss of beacon signal, a controller alert that a pilot was squawking emergency, radio failure, etc.)

22. *Aircraft ID*

23. *Asterisk indicates a controller entry in Mode C block. In this case 5,000' is entered and "05" would alternate with Mode C readout.*

24. *Indicates heavy*

25. *"Low ALT" flashes to indicate when an aircraft's predicted descent places the aircraft in an unsafe proximity to terrain.*
(Note: this feature does not function if the aircraft is not squawking Mode C. When a helicopter or aircraft is known to be operating below the lower safe limit, the "low ALT" can be changed to "inhibit" and flashing ceases.)

26. *NAVAIDs*

27. *Airways*

28. *Primary target only*

29. *Nonmonitored. No Mode C (an asterisk would indicate nonmonitored with Mode C)*

30. *Beacon target only (secondary radar based on aircraft transponder)*

31. *Tracked target (primary and beacon target) control position A*

32. *Aircraft is squawking emergency code 7700 and is nonmonitored, untracked, Mode C*

33. *Controller assigned runway 36 right alternates with Mode C readout*
(Note: a three letter identifier could also indicate the arrival is at specific airport)

34. *Ident flashes*

35. *Identing target blossoms*

36. *Untracked target identing on a selected code*

37. *Range marks (10 and 15 miles) (can be changed/ offset)*

38. *Aircraft controlled by center*

39. *Targets in suspend status*

40. *Coast/suspend list (aircraft holding, temporary loss of beacon/target, etc.)*

41. *Radio failure (emergency information)*

42. *Select beacon codes (being monitored)*

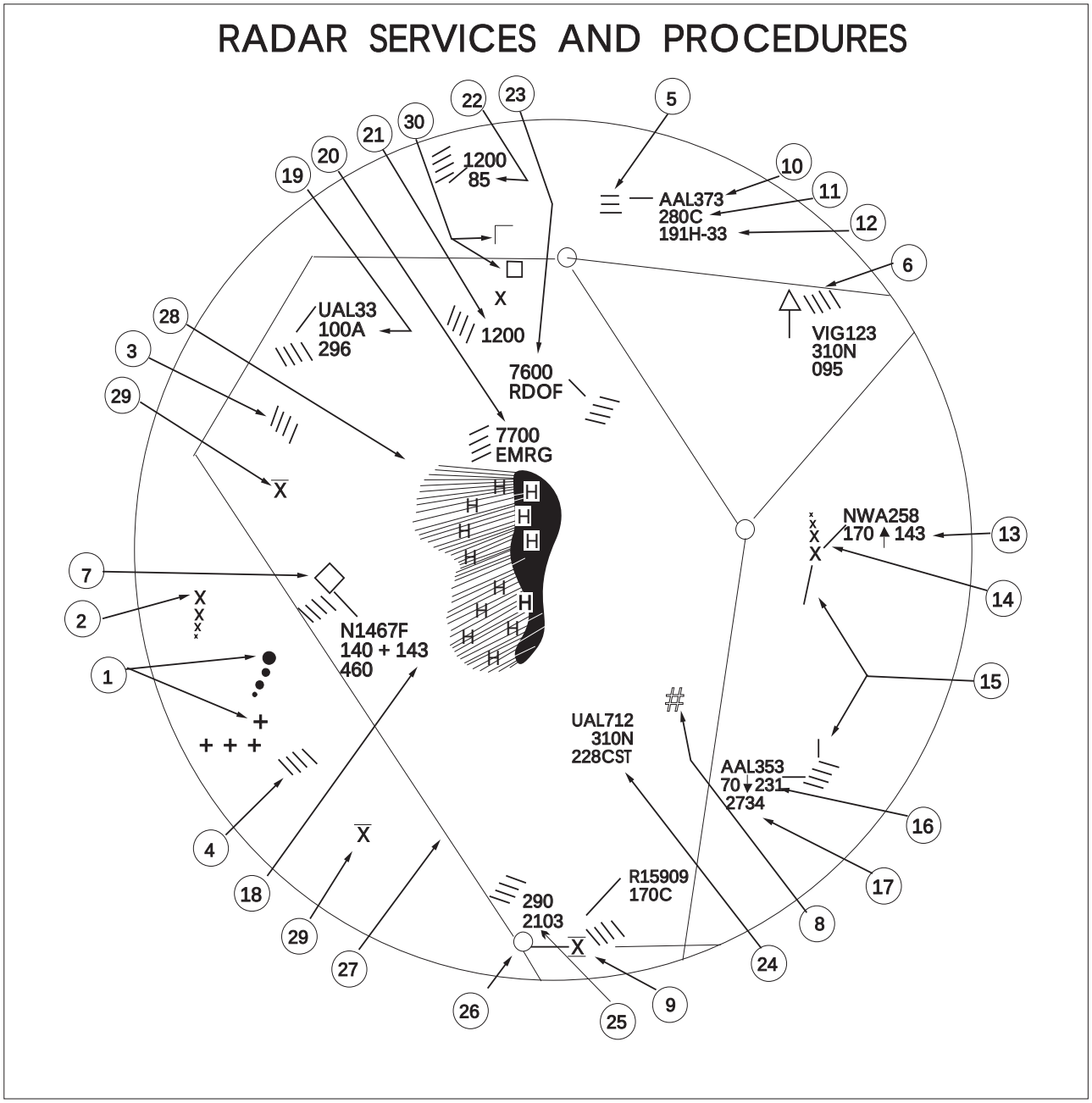
43. *General information (ATIS, runway, approach in use)*

44. *Altimeter setting*

45. *Time*

46. *System data area*

FIG ENR 1.1–28
NAS Stage A Controller's View Plan Display



NOTE–
FIG ENR 1.1–28 illustrates the controller's radar scope (PVD) when operating in the full automation (RDP) mode, which is normally 20 hours per day. When not in automation mode, the display is similar to the broadband mode shown in the ARTS III Radar Scope (FIG ENR 1.1–27). Certain ARTCCs outside the contiguous U.S. also operate in "broadband" mode.

EXAMPLE−
Target symbols:

1. Uncorrelated primary radar target [○] [**+**]

2. Correlated primary radar target [×]
⁎*See note below.*

3. Uncorrelated beacon target [/]

4. Correlated beacon target [\ ]

5. Identing beacon target [≡]

⁎*Note: in Number 2 correlated means the association of radar data with the computer projected track of an identified aircraft.*

Position symbols:

6. Free track (no flight plan tracking) [ ]

7. Flat track (flight plan tracking) [◊]

8. Coast (beacon target lost) [**#**]

9. Present position hold [$\overline{\times}$]

Data block information:

10. Aircraft ident
⁎*See note below.*

11. Assigned altitude FL 280, Mode C altitude same or within ± 200' of assigned altitude.
⁎*See note below.*

12. Computer ID #191, handoff is to sector 33
(0−33 would mean handoff accepted)
⁎*See note below.*

13. Assigned altitude 17,000', aircraft is climbing, Mode C readout was 14,300 when last beacon interrogation was received.

14. Leader line connecting target symbol and data block.

15. Track velocity and direction vector line (projected ahead of target)

16. Assigned altitude 7,000, aircraft is descending, last Mode C readout (or last reported altitude) was 100' above FL 230

17. Transponder code shows in full data block only when different than assigned code

18. Aircraft is 300' above assigned altitude

19. Reported altitude (no Mode C readout) same as assigned. (An "n" would indicate no reported altitude.)

20. Transponder set on emergency Code 7700. (EMRG flashes to attract attention.)

21. Transponder Code 1200 (VFR) with no Mode C

22. Code 1200 (VFR) with Mode C and last altitude readout

23. Transponder set on radio failure Code 7600 (RDOF flashes)

24. Computer ID #228, CST indicates target is in coast status

25. Assigned altitude FL 290, transponder code (these two items constitute a "limited data block")

⁎*Note: numbers 10, 11, and 12 constitute a "full data block"*

Other symbols:

26. Navigational aid

27. Airway or jet route

28. Outline of weather returns based on primary radar. "H" represents areas of high density precipitation which might be thunderstorms. Radial lines indicated lower density precipitation.

29. Obstruction

30. Airports

Major: □
Small: ⌜

37.5 Airport Surface Detection Equipment (ASDE−X)/Airport Surface Surveillance Capability (ASSC)

37.5.1 ASDE−X/ASSC is a multi−sensor surface surveillance system the FAA is acquiring for airports in the United States. This system provides high resolution, short−range, clutter free surveillance information about aircraft and vehicles, both moving and fixed, located on or near the surface of the airport's runways and taxiways under all weather and visibility conditions. The system consists of:

37.5.1.1 A Primary Radar System. ASDE−X/ASSC system coverage includes the airport surface and the airspace 5 miles from the arrival and departure ends of the runway and up to 200 feet above the surface. Typically located on the control tower or other strategic location on the airport, the Primary Radar antenna is able to detect and display aircraft that are not equipped with or have malfunctioning transponders or ADS−B.

37.5.1.2 Interfaces. ASDE−X/ASSC contains an automation interface for flight identification via all automation platforms and interfaces with the terminal radar for position information.

37.5.1.3 ASDE−X/ASSC Automation. A Multi−sensor Data Processor (MSDP) combines all sensor reports into a single target which is displayed to the air traffic controller.

37.5.1.4 Air Traffic Control Tower Display. A high resolution, color monitor in the control tower cab provides controllers with a seamless picture of airport operations on the airport surface.

37.5.2 The combination of data collected from the multiple sensors ensures that the most accurate information about aircraft location is received in the tower, thereby increasing surface safety and efficiency.

37.5.3 The following facilities are operational with ASDE–X:

TBL ENR 1.1–2

BWI	Baltimore Washington International
BOS	Boston Logan International
BDL	Bradley International
MDW	Chicago Midway
ORD	Chicago O'Hare International
CLT	Charlotte Douglas International
DFW	Dallas/Fort Worth International
DEN	Denver International
DTW	Detroit Metro Wayne County
FLL	Fort Lauderdale/Hollywood Intl
MKE	General Mitchell International
IAH	George Bush International
ATL	Hartsfield–Jackson Atlanta Intl
HNL	Honolulu International
JFK	John F. Kennedy International
SNA	John Wayne–Orange County
LGA	LaGuardia
STL	Lambert St. Louis International

LAS	Las Vegas Harry Reid International
LAX	Los Angeles International
SDF	Louisville International
MEM	Memphis International
MIA	Miami International
MSP	Minneapolis St. Paul International
EWR	Newark International
MCO	Orlando International
PHL	Philadelphia International
PHX	Phoenix Sky Harbor International
DCA	Ronald Reagan Washington National
SAN	San Diego International
SLC	Salt Lake City International
SEA	Seattle–Tacoma International
PVD	Theodore Francis Green State
IAD	Washington Dulles International
HOU	William P. Hobby International

37.5.4 The following facilities have been projected to receive ASSC:

TBL ENR 1.1–3

SFO	San Francisco International
CLE	Cleveland–Hopkins International
MCI	Kansas City International
CVG	Cincinnati/Northern Kentucky Intl
PDX	Portland International

MSY	Louis Armstrong New Orleans Intl
PIT	Pittsburgh International
ANC	Ted Stevens Anchorage International
ADW	Joint Base Andrews AFB

37.6 Radar Availability

37.6.1 FAA radar units operate continuously at the locations shown in the Chart Supplement U.S., and their services are available to all pilots, both civil and military. Contact the associated FAA control tower or ARTCC on any frequency guarded for initial instructions, or in an emergency, any FAA facility for information on the nearest radar service.

37.7 Transponder and ADS–B Out Operation

37.7.1 General

37.7.1.1 Pilots should be aware that proper application of transponder and ADS-B operating procedures will provide both VFR and IFR aircraft with a higher degree of safety while operating on the ground and airborne. Transponder/ADS-B panel designs differ; therefore, a pilot should be thoroughly familiar with the operation of their particular equipment to maximize its full potential. ADS-B Out, and transponders with altitude reporting mode turned ON (Mode C or S), substantially increase the capability of surveillance systems to see an aircraft. This provides air traffic controllers, as well as pilots of suitably equipped aircraft (TCAS and ADS-B In),

increased situational awareness and the ability to identify potential traffic conflicts. Even VFR pilots who are not in contact with ATC will be afforded greater protection from IFR aircraft and VFR aircraft that are receiving traffic advisories. Nevertheless, pilots should never relax their visual scanning for other aircraft, and should include the ADS-B In display (if equipped) in their normal traffic scan.

37.7.1.2 ATCRBS is similar to and compatible with military coded radar beacon equipment. Civil Mode A is identical to military Mode 3.

37.7.1.3 Transponder and ADS-B operations on the ground. Civil and military aircraft should operate with the transponder in the altitude reporting mode (consult the aircraft's flight manual to determine the specific transponder position to enable altitude reporting) and ADS-B Out transmissions enabled at all airports, any time the aircraft is positioned on any portion of the airport movement area. This includes all defined taxiways and runways. Pilots must pay particular attention to ATIS and airport diagram notations, General Notes (included on airport charts), and comply with directions pertaining to transponder and ADS-B usage. Generally, these directions are:

a) Departures. Select the transponder mode which allows altitude reporting and enable ADS-B during pushback or taxi-out from parking spot. Select TA or TA/RA (if equipped with TCAS) when taking the active runway.

b) Arrivals. If TCAS equipped, deselect TA or TA/RA upon leaving the active runway, but continue transponder and ADS−B transmissions in the altitude reporting mode. Select STBY or OFF for transponder and ADS−B upon arriving at the aircraft's parking spot or gate.

37.7.1.4 Transponder and ADS-B Operations While Airborne.

a) Unless otherwise requested by ATC, aircraft equipped with an ATC transponder maintained in accordance with 14 CFR Section 91.413 MUST operate with this equipment on the appropriate Mode 3/A code, or other code as assigned by ATC, and with altitude reporting enabled whenever in controlled airspace. If practicable, aircraft SHOULD operate with the transponder enabled in uncontrolled airspace.

b) Aircraft equipped with ADS−B Out MUST operate with this equipment in the transmit mode at all times, unless otherwise requested by ATC.

37.7.1.5 Transponder and ADS−B Operation Under Visual Flight Rules (VFR)

a) Unless otherwise instructed by an ATC facility, adjust transponder/ADS−B to reply on Mode 3/A Code 1200 regardless of altitude.

b) When required to operate their transponder/ADS−B, pilots must always operate that equipment with altitude reporting enabled unless otherwise instructed by ATC or unless the installed equipment has not been tested and calibrated as required by 14 CFR Section 91.217. If deactivation is required, turn off altitude reporting.

c) When participating in a VFR standard formation flight that is not receiving ATC services, only the lead aircraft should operate its transponder and ADS−B Out and squawk code 1203. Once established in formation, all other aircraft should squawk standby and disable ADS−B transmissions.

NOTE−

1. *If the formation flight is receiving ATC services, pilots can expect ATC to direct all non−lead aircraft to STOP Squawk, and should not do so until instructed.*

2. *Firefighting aircraft not in contact with ATC may squawk 1255 in lieu of 1200 while en route to, from , or within the designated firefighting area(s).*

3. *VFR aircraft flying authorized SAR missions for the USAF or USCG may be advised to squawk 1277 in lieu of 1200 while en route to, from, or within the designated search area.*

4. *VFR gliders should squawk 1202 in lieu of 1200.*

REFERENCE−

FAA Order JO 7110.66, National Beacon Code Allocation Plan (NBCAP).

37.7.1.6 A pilot on an IFR flight who elects to cancel the IFR flight plan prior to reaching their destination, should adjust the transponder/ADS−B according to VFR operations.

37.7.1.7 If entering a U.S. OFFSHORE AIRSPACE AREA from outside the U.S., the pilot should advise on first radio contact with a U.S. radar ATC facility that such equipment is available by adding “transponder” or “ADS−B” (if equipped) to the aircraft identification.

37.7.1.8 It should be noted by all users of ATC transponders and ADS−B Out systems that the surveillance coverage they can expect is limited to “line of sight” with ground radar and ADS−B radio sites. Low altitude or aircraft antenna shielding by the aircraft itself may result in reduced range or loss of aircraft contact. Though ADS−B often provides superior reception at low altitudes, poor coverage from any surveillance system can be improved by climbing to a higher altitude.

NOTE−
Pilots should refer to AIP, ENR 1.1 Paragraph 45., Automatic Dependent Surveillance − Broadcast Services (ADS−B) Services, for a complete description of operating limitations and procedures.

37.7.2 Transponder/ADS−B Code Designation

37.7.2.1 For ATC to utilize one of the 4096 discrete codes, a four−digit code designation will be used; for example, code 2102 will be expressed as “TWO ONE ZERO TWO.”

NOTE−
Circumstances may occasionally require ATC to assign a non−discrete code; i.e., a code ending in “00.”

REFERENCE−
FAA Order JO 7110.66, National Beacon Code Allocation Plan (NBCAP).

37.7.3 Automatic Altitude Reporting

37.7.3.1 Most transponders (Modes C and S) and all ADS−B Out systems are capable of automatic altitude reporting. This system converts aircraft altitude in 100−foot increments to coded digital information that is transmitted to the appropriate surveillance facility as well as to ADS−B In and TCAS systems.

37.7.3.2 Adjust the transponder/ADS−B to reply on the Mode 3/A code specified by ATC and with altitude reporting enabled, unless otherwise directed by ATC or unless the altitude reporting equipment has not been tested and calibrated as required by 14 CFR Section 91.217. If deactivation is required by ATC, turn off the altitude reporting feature of your transponder/ADS−B. An instruction by ATC to “STOP ALTITUDE SQUAWK, ALTITUDE DIFFERS BY (number of feet) FEET,” may be an indication that the transmitted altitude information is incorrect, or that the aircraft’s altimeter setting is incorrect. While an incorrect altimeter setting has no effect on the transmitted altitude information, it will cause the aircraft to fly at a true altitude different from the assigned altitude. When a controller indicates that an altitude readout is invalid, the pilot should verify that the aircraft altimeter is set correctly.

NOTE−
Altitude encoders are preset at standard atmospheric pressure. Local altimeter correction is applied by the surveillance facility before the altitude information is presented to ATC.

37.7.3.3 Pilots should report exact altitude or flight level to the nearest hundred foot increment when establishing initial contact with an ATC facility. Exact altitude or flight level reports on initial contact provide ATC with information that is required prior to using automatically reported altitude information for separation purposes. This will significantly reduce altitude verification requests.

37.7.4 IDENT Feature

37.7.4.1 Transponder/ADS−B Out equipment must be operated only as specified by ATC. Activate the “IDENT” feature only when requested by ATC.

37.7.5 Code Changes

37.7.5.1 When making routine code changes, pilots should avoid inadvertent selection of Codes 7500, 7600, or 7700 thereby causing momentary false alarms at automated ground facilities. For example when switching from Code 2700 to Code 7200, switch first to 2200 then 7200, NOT to 7700 and then 7200. This procedure applies to nondiscrete Code 7500 and all discrete codes in the 7600 and 7700 series (i.e., 7600−7677, 7700−7777) which will trigger special indicators in automated facilities. Only nondiscrete Code 7500 will be decoded as the hijack code.

37.7.5.2 Under no circumstances should a pilot of a civil aircraft operate the transponder on Code 7777. This code is reserved for military interceptor operations.

37.7.5.3 Military pilots operating VFR or IFR within restricted/warning areas should adjust their transponders to Code 4000, unless another code has been assigned by ATC.

37.7.6 Mode C Transponder and ADS−B Out Requirements

37.7.6.1 Specific details concerning requirements to carry and operate Mode C transponders and ADS−B Out, as well as exceptions and ATC authorized deviations from those requirements, are found in 14 CFR Sections 91.215, 91.225, and 99.13.

37.7.6.2 In general, the CFRs require aircraft to be equipped with an operable Mode C transponder and ADS−B Out when operating:

a) In Class A, Class B, or Class C airspace areas;

b) Above the ceiling and within the lateral boundaries of Class B or Class C airspace up to 10,000 feet MSL;

c) Class E airspace at and above 10,000 feet MSL within the 48 contiguous states and the District of Columbia, excluding the airspace at and below 2,500 feet AGL;

d) Within 30 miles of a Class B airspace primary airport, below 10,000 feet MSL (commonly referred to as the "Mode C Veil");

e) For ADS−B Out: Class E airspace at and above 3,000 feet MSL over the Gulf of Mexico from the coastline of the United States out to 12 nautical miles.

NOTE−
The airspace described in (e) above is specified in 14 CFR § 91.225 for ADS−B Out requirements. However, 14 CFR § 91.215 does not include this airspace for ATC transponder requirements.

f) Transponder and ADS−B Out requirements do not apply to any aircraft that was not originally certificated with an electrical system, or that has not subsequently been certified with such a system installed, including balloons and gliders. These aircraft may conduct operations without a transponder or ADS−B Out when operating:

1) Outside any Class B or Class C airspace area; and

2) Below the altitude of the ceiling of a Class B or Class C airspace area designated for an airport, or 10,000 feet MSL, whichever is lower.

37.7.6.3 14 CFR Section 99.13 requires all aircraft flying into, within, or across the contiguous U.S. ADIZ be equipped with a Mode C or Mode S transponder. Balloons, gliders, and aircraft not equipped with an engine−driven electrical system are excepted from this requirement.

REFERENCE−
AIP, ENR 1.12, National Security and Interception Procedures.

37.7.6.4 Pilots must ensure that their aircraft transponder/ADS−B is operating on an appropriate ATC−assigned VFR/IFR code with altitude reporting enabled when operating in such airspace. If in doubt about the operational status of either feature of your transponder while airborne, contact the nearest ATC facility or FSS and they will advise you what facility you should contact for determining the status of your equipment.

37.7.6.5 In−flight requests for "immediate" deviation from the transponder requirements may be approved by controllers only for failed equipment, and only when the flight will continue IFR or when weather conditions prevent VFR descent and continued VFR flight in airspace not affected by the CFRs. All other requests for deviation should be made at least 1 hour before the proposed operation by contacting the nearest Flight Service or Air Traffic facility in person or by telephone. The nearest ARTCC will normally be the controlling agency and is responsible for coordinating requests involving deviations in other ARTCC areas.

37.7.6.6 In−flight requests for "immediate" deviation from the ADS−B Out requirements may be approved by ATC only for failed equipment, and may be accommodated based on workload, alternate surveillance

availability, or other factors. All other requests for deviation must be made at least 1 hour before the proposed operation, following the procedures contained in Advisory Circular (AC) 90−114, Automatic Dependent Surveillance−Broadcast Operations.

37.7.7 Cooperative Surveillance Phraseology. Air traffic controllers, both civil and military, will use the following phraseology when referring to operation of cooperative ATC surveillance equipment. Except as noted, the following ATC instructions do not apply to military transponders operating in other than Mode 3/A/C/S.

37.7.7.1 SQUAWK (number). Operate radar beacon transponder/ADS−B on designated code with altitude reporting enabled.

37.7.7.2 IDENT. Engage the "IDENT" feature (military I/P) of the transponder/ADS−B.

37.7.7.3 SQUAWK (number) AND IDENT. Operate transponder/ADS−B on specified code with altitude reporting enabled, and engage the "IDENT" (military I/P) feature.

37.7.7.4 SQUAWK STANDBY. Switch transponder/ADS−B to standby position.

37.7.7.5 SQUAWK NORMAL. Resume normal transponder/ADS−B operation on previously assigned code. (Used after "SQUAWK STANDBY," or by military after specific transponder tests).

37.7.7.6 SQUAWK ALTITUDE. Activate Mode C with automatic altitude reporting.

37.7.7.7 STOP ALTITUDE SQUAWK. Turn off automatic altitude reporting.

37.7.7.8 STOP SQUAWK (Mode in use). Stop transponder and ADS−B Out transmissions, or switch off only specified mode of the aircraft transponder (military).

37.7.7.9 SQUAWK MAYDAY. Operate transponder/ADS−B in the emergency position (Mode A Code 7700 for civil transponder. Mode 3 Code 7700 and emergency feature for military transponder.)

37.7.7.10 SQUAWK VFR. Operate radar beacon transponder/ADS−B on Code 1200 in the Mode A/3, or other appropriate VFR code, with altitude reporting enabled.

37.8 Emergency Operation

37.8.1 When an emergency occurs, the pilot of an aircraft equipped with a coded radar beacon transponder who desires to alert a ground radar facility to an emergency condition and who cannot establish communications without delay with an ATC facility may adjust the transponder to reply on Mode A/3, Code 7700.

37.8.2 Pilots should understand that they may not be within a radar coverage area and that, even if they are, certain radar facilities are not yet equipped to automatically recognize Code 7700 as an emergency signal. Therefore, they should establish radio communications with an ATC facility as soon as possible.

37.9 Radio Failure Operation

37.9.1 Should the pilot of an aircraft equipped with a coded radar beacon transponder experience a loss of two−way radio capability the pilot should:

37.9.1.1 Adjust the transponder to reply on MODE A/3, Code 7600.

37.9.1.2 Understand that the aircraft may not be in an area of radar coverage.

37.9.2 Pilots should understand that they may not be in an area of radar coverage. Also, many radar facilities are not presently equipped to automatically display Code 7600 and will interrogate 7600 only when the aircraft is under direct radar control at the time of radio failure. However, replying on Code 7700 first, increases the probability of early detection of a radio failure condition.

37.10 Radar Services

37.10.1 Safety Alert

37.10.1.1 A safety alert will be issued to pilots of aircraft being controlled by ATC if the controller is aware the aircraft is at an altitude which, in the controller's judgment, places the aircraft in unsafe proximity to terrain,

obstructions, or other aircraft. The provision of this service is contingent upon the capability of the controller to have an awareness of situations involving unsafe proximity to terrain, obstructions, and uncontrolled aircraft. The issuance of a safety alert cannot be mandated, but it can be expected on a reasonable, though intermittent, basis. Once the alert is issued, it is solely the pilot's prerogative to determine what course of action, if any, will be taken. This procedure is intended for use in time critical situations where aircraft safety is in question. Noncritical situations should be handled via the normal traffic alert procedures.

37.10.2 Terrain/Obstruction Alert

37.10.2.1 Controllers will immediately issue an alert to the pilots of aircraft under their control when they recognize that the aircraft is at an altitude which, in their judgment, may be in unsafe proximity to terrain/obstructions. The primary method of detecting unsafe proximity is through Mode C automatic altitude reports.

EXAMPLE–
Low altitude alert Cessna Three Four Juliet, check your altitude immediately. And if the aircraft is not yet on final approach, the MVA (MEA/MIA/MOCA) in your area is six thousand.

37.10.2.2 Most En Route and Terminal radar facilities have an automated function which, if operating, alerts controllers when a tracked Mode C equipped aircraft under their control is below or is predicted to be below a predetermined minimum safe altitude. This function, called Minimum Safe Altitude Warning (MSAW), is designed solely as a controller aid in detecting potentially unsafe aircraft proximity to terrain/obstructions. The radar facility will, when MSAW is operating, provide MSAW monitoring for all aircraft with an operating Mode C altitude encoding transponder that are tracked by the system and are:

a) Operating on a IFR flight plan.

b) Operating VFR and have requested MSAW monitoring.

NOTE–
Pilots operating VFR may request MSAW or monitoring if their aircraft are equipped with Mode C transponders.

EXAMPLE–
Apache Three Three Papa requests MSAW monitoring.

37.10.2.3 Due to the lack of terrain and obstacle clearance data, accurate automation databases may not be available for providing MSAW information to aircraft overflying Mexico and Canada. Air traffic facilities along the United States/Mexico/Canada borders may have MSAW computer processing inhibited where accurate terrain data is not available.

37.10.3 Aircraft Conflict Alert

37.10.3.1 Controllers will immediately issue an alert to the pilots of aircraft under their control if they are aware of an aircraft that is not under their control at an altitude which, in the controller's judgment, places both aircraft in unsafe proximity to each other. With the alert, when feasible, the controller will offer the pilot the position of the traffic if time permits and an alternate course(s) of action. Any alternate course of action the controller may recommend to the pilot will be predicated only on other traffic in the controller's jurisdiction.

EXAMPLE–
American Three, traffic alert, (position of traffic, if time permits), advise you turn right/left heading (degrees) and/or climb/descend to (altitude) immediately.

37.10.4 Radar Traffic Information Service (RTIS)

37.10.4.1 This is a service provided by radar ATC facilities. Pilots receiving this service are advised of any radar target observed on the radar display which may be in such proximity to the position of their aircraft or its intended route of flight that it warrants their attention. This service is not intended to relieve the pilot of the responsibility for continual vigilance to see and avoid other aircraft.

a) Purpose of this Service

1) The issuance of traffic information as observed on a radar display is based on the principle of assisting and advising a pilot that a particular radar target's position and track indicates it may intersect or pass in such

proximity to the intended flight path that it warrants the pilot's attention. This is to alert the pilot to the traffic, to be on the lookout for it, and thereby be in a better position to take appropriate action should the need arise.

2) Pilots are reminded that the surveillance radar used by ATC does not provide altitude information unless the aircraft is equipped with Mode C and the radar facility is capable of displaying altitude information.

b) Provisions of the Service

1) Many factors, such as limitations of the radar, volume of traffic, controller workload, and communications frequency congestion could prevent the controller from providing this service. Controllers possess complete discretion for determining whether they are able to provide or continue to provide this service in a specific case. The controller's reason against providing or continuing to provide the service in a particular case is not subject to question nor need it be communicated to the pilot. In other words, the provision of this service is entirely dependent upon whether controllers believe they are in a position to provide it. Traffic information is routinely provided to all aircraft operating on IFR flight plans except when the pilot declines the service, or the pilot is operating within Class A airspace. Traffic information may be provided to flights not operating on IFR Flight Plans when requested by pilots of such flights.

NOTE−
Radar ATC facilities normally display and monitor both primary and secondary radar as well as ADS−B, except that secondary radar or ADS−B may be used as the sole display source in Class A airspace, and under some circumstances outside of Class A airspace (beyond primary coverage and in en route areas where only secondary and/or ADS−B is available). Secondary radar and/or ADS−B may also be used outside Class A airspace as the sole display source when the primary radar is temporarily unusable or out of service. Pilots in contact with the affected ATC facility are normally advised when a temporary outage occurs; i.e., "primary radar out of service; traffic advisories available on transponder or ADS−B aircraft only." This means simply that only aircraft that have transponders and ADS−B installed and in use will be depicted on ATC displays when the primary and/or secondary radar is temporarily out of service.

2) When receiving VFR radar advisory service, pilots should monitor the assigned frequency at all times. This is to preclude controllers' concern for radio failure of emergency assistance to aircraft under the controller's jurisdiction. VFR radar advisory service does not include vectors away from conflicting traffic unless requested by the pilot. When advisory service is no longer desired, advise the controller before changing frequencies, then change your transponder code to 1200 if applicable. THE, as appropriate, MEA/MVA/MOCA IN YOUR AREA IS (altitude) or if past the final approach fix, THE, as appropriate, MDA/DH (if known) is (altitude). Except in programs where radar service is automatically terminated, the controller will advise the aircraft when radar is terminated.

NOTE−
Participation by VFR pilots in formal programs implemented at certain terminal locations constitutes pilot request. This also applies to participating pilots at those locations where arriving VFR flights are encouraged to make their first contact with the tower on the approach control frequency.

c) Issuance of Traffic Information. Traffic information will include the following concerning a target which may constitute traffic for an aircraft that is:

1) Radar identified.

(a) Azimuth from the aircraft in terms of the twelve hour clock.

(b) When rapidly maneuvering civil test or military aircraft prevent accurate issuance of traffic as in a) above, specify the direction from an aircraft's position in terms of the eight cardinal compass points (N, NE, E, SE, S, SW, W, NW). This method must be terminated at the pilot's request.

(c) Distance from the aircraft in nautical miles.

(d) Direction in which the target is proceeding.

(e) Type of aircraft and altitude if known.

EXAMPLE−
Traffic 10 o'clock, 3 miles, west-bound (type aircraft and altitude, if known, of the observed traffic). The altitude may be

known, by means of Mode C, but not verified with the pilot for accuracy. (To be valid for separation purposes by ATC, the accuracy of Mode C readouts must be verified. This is usually accomplished upon initial entry into the radar system by a comparison of the readout to pilot stated altitude, or the field elevation in the case of continuous readout being received from an aircraft on the airport.) When necessary to issue traffic advisories containing unverified altitude information, the controller will issue the indicated altitude of the aircraft. The pilot may upon receipt of traffic information, request a vector (heading) to avoid such traffic. The vector will be provided to the extent possible as determined by the controller provided the aircraft to be vectored is within the airspace under the jurisdiction of the controller.

2) Not radar identified

(a) Distance and direction with respect to a fix.

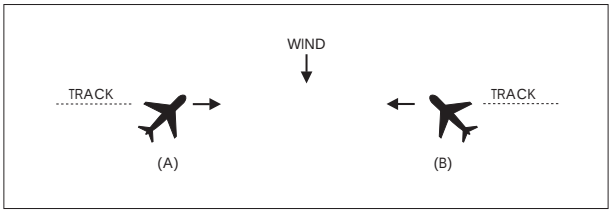
(b) Direction in which the target is proceeding.

(c) Type of aircraft and altitude if known.

EXAMPLE–
T*raffic 8 miles south of the airport northeastbound, (type aircraft and altitude if known).*

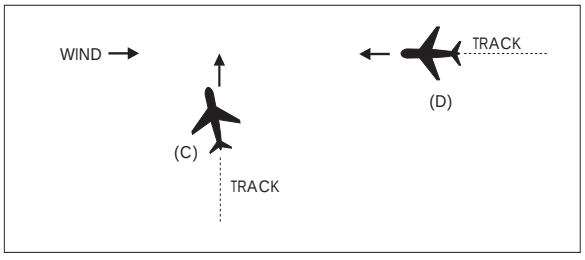
(d) The examples depicted in FIG ENR 1.1–29 and FIG ENR 1.1–30 point out the possible error in the position of this traffic when it is necessary for a pilot to apply drift correction to maintain this track. This error could also occur in the event a change in course is made at the time radar traffic information is issued.

FIG ENR 1.1–29
Induced Error in Position of Traffic



EXAMPLE–
In FIG ENR 1.1–29, traffic information would be issued to the pilot of aircraft "A" as 12 o'clock. The actual position of the traffic as seen by the pilot of aircraft "A" would be one o'clock. Traffic information issued to aircraft "B" would also be given as 12 o'clock, but in this case, the pilot of "B" would see the traffic at 11 o'clock.

FIG ENR 1.1–30
Induced Error in Position of Traffic



EXAMPLE–
In FIG ENR 1.1–30, traffic information would be issued to the pilot of aircraft "C" as two o'clock. The actual position of the traffic as seen by the pilot of aircraft "C" would be three o'clock. Traffic information issued to aircraft "D" would be at an 11 o'clock position. Since it is not necessary for the pilot of aircraft "D" to apply wind correction (CRAB) to remain on track, the actual position of the traffic issued would be correct. Since the radar controller can only observe aircraft track (course) on the radar display, traffic advisories are issued accordingly, and pilots should give due consideration to this fact when looking for reported traffic.

37.11 Radar Assistance to VFR Aircraft

37.11.1 Radar equipped FAA ATC facilities provide radar assistance and navigation service (vectors) to VFR aircraft provided the aircraft can communicate with the facility, are within radar coverage, and can be radar identified.

37.11.2 Pilots should clearly understand that authorization to proceed in accordance with such radar navigational assistance does not constitute authorization for the pilot to violate Federal Aviation Regulations. In effect, assistance provided is on the basis that navigational guidance information issued is advisory in nature and the job of flying the aircraft safely remains with the pilot.

37.11.3 In many cases, controllers will be unable to determine if flight into instrument conditions will result from their instructions. To avoid possible hazards resulting from being vectored into IFR conditions, pilots should keep controllers advised of the weather conditions in which they are operating and along the course ahead.

37.11.4 Radar navigation assistance (vectors) may be initiated by the controller when one of the following conditions exist:

37.11.4.1 The controller suggests the vector and the pilot concurs.

37.11.4.2 A special program has been established and vectoring service has been advertised.

37.11.4.3 In the controller's judgment the vector is necessary for air safety.

37.11.5 Radar navigation assistance (vectors) and other radar derived information may be provided in response to pilot requests. Many factors, such as limitations of radar, volume of traffic, communications frequency, congestion, and controller workload could prevent the controller from providing it. Controllers have complete discretion for determining if they are able to provide the service in a particular case. Their decision not to provide the service in a particular case is not subject to question.

38. Operational Policy/Procedures for Reduced Vertical Separation Minimum (RVSM) in the Domestic U.S., Alaska, Offshore Airspace and the San Juan FIR

38.1 Applicability and RVSM Mandate (Date/Time and Area)

38.1.1 Applicability. The policies, guidance and direction in this section are consistent with the policies and procedures used in Domestic U.S. RVSM Airspace, as specified in the Aeronautical Information Manual, Chapter 4, Section 6. For any oceanic area specific items, see Part II, ENR 7. Oceanic Procedures.

38.1.2 Requirement. The FAA implemented RVSM between flight level (FL) 290−410 (inclusive) in the following airspace: the airspace of the lower 48 states of the United States, Alaska, Atlantic and Gulf of Mexico High Offshore Airspace and the San Juan FIR. RVSM has been implemented worldwide and may be applied in all ICAO Flight Information Regions (FIR).

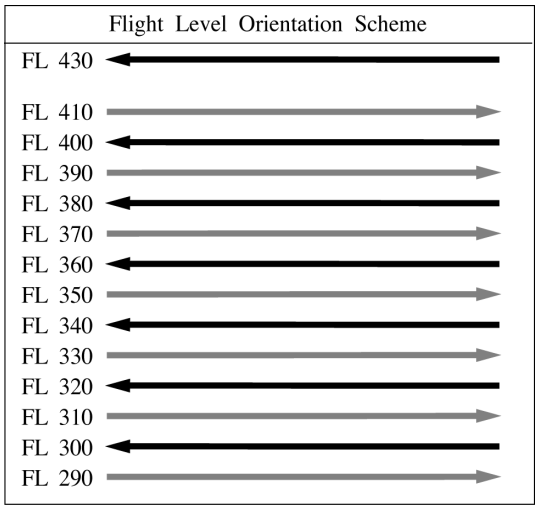
38.1.3 In accordance with 14 CFR Section 91.706, with only limited exceptions, prior to operating in RVSM airspace, operators must comply with the standards of Part 91, Appendix G, and be authorized by the Administrator. If the operator has not been authorized for RVSM operations, or the aircraft is not RVSM compliant, the aircraft will be referred to as "non−RVSM" aircraft. Paragraph 38.10 discusses ATC policies for accommodation of non−RVSM aircraft flown by the Department of Defense, Air Ambulance (MEDEVAC) operators, foreign State governments and aircraft flown for certification and development. Paragraph 38.11, Non−RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off, contains policies for non−RVSM aircraft climbing and descending through RVSM airspace to/from flight levels above RVSM airspace.

38.1.4 Benefits. RVSM enhances ATC flexibility, mitigates conflict points, enhances sector throughput, reduces controller workload and enables crossing traffic. Operators gain fuel savings and operating efficiency benefits by flying at more fuel efficient flight levels and on more user preferred routings.

38.2 Flight Level Orientation Scheme

Altitude assignments for direction of flight follow a scheme of odd altitude assignment for magnetic courses 000−179 degrees and even altitudes for magnetic courses 180−359 degrees for flights up to and including FL 410, as indicated in FIG ENR 1.1−31.

FIG ENR 1.1–31
Flight Level Orientation Scheme



NOTE–
Odd Flight Levels: Magnetic Course 000–179 Degrees Even Flight Levels: Magnetic Course 180–359 Degrees.

38.3 Aircraft and Operator Approval Policy/Procedures, RVSM Monitoring and Databases for Aircraft and Operator Approval

38.3.1 RVSM Authority. 14 CFR Section 91.180 applies to RVSM operations within the U.S. 14 CFR Section 91.706 applies to RVSM operations outside the U.S. Both sections require that the operator obtain authorization prior to operating in RVSM airspace.

38.3.2 Sources of Information. Advisory Circular (AC) 91–85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum (RVSM) Airspace, and the FAA RVSM Website.

38.3.3 TCAS Equipage. TCAS equipage requirements are contained in 14 CFR Sections 121.356, 125.224, 129.18 and 135.189. Part 91 Appendix G does not contain TCAS equipage requirements specific to RVSM, however, Appendix G does require that aircraft equipped with TCAS II and flown in RVSM airspace be modified to incorporate TCAS II Version 7.0 or a later version.

38.3.4 Aircraft Monitoring. Operators are required to participate in the RVSM altitude–keeping performance monitoring program that is appropriate for the type of operation being conducted. The monitoring programs are described in FAA AC 91–85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum Airspace. Monitoring is a quality control program that enables the FAA and other civil aviation authorities to assess the in–service altitude–keeping performance of aircraft and operators.

38.3.5 RVSM Approvals Databases for U.S. operators can be found on the RVSM Documentation Webpage in the “RVSM Approvals” section.

38.4 Flight Planning into RVSM Airspace

38.4.1 Operators that do not file the correct aircraft equipment suffix on the FAA or ICAO Flight Plan may be denied clearance into RVSM airspace. Policies for the FAA Flight Plan are detailed in subparagraph 38.4.3 below. Policies for the ICAO Flight Plan are detailed in subparagraph 38.4.4.

38.4.2 The operator will annotate the equipment block of the FAA or ICAO Flight Plan with an aircraft equipment suffix indicating RVSM capability only after the responsible civil aviation authority has determined that both the operator and its aircraft are RVSM–compliant and has issued RVSM authorization to the operator.

38.4.3 General Policies for FAA Flight Plan Equipment Suffix. Appendix 2, TBL 2–2, allows operators to indicate that the aircraft has both RVSM and Advanced Area Navigation (RNAV) capabilities or has only RVSM capability.

38.4.3.1 The operator will annotate the equipment block of the FAA Flight Plan with the appropriate aircraft equipment suffix from Appendix 2, TBL 2−2 and/or TBL 2−3.

38.4.3.2 Operators can only file one equipment suffix in block 3 of the FAA Flight Plan. Only this equipment suffix is displayed directly to the controller.

38.4.3.3 Aircraft with RNAV Capability. For flight in RVSM airspace, aircraft with RNAV capability, but not Advanced RNAV capability, will file "/W". Filing "/W" will not preclude such aircraft from filing and flying direct routes in en route airspace.

38.4.4 Policy for ICAO Flight Plan Equipment Suffixes.

38.4.4.1 Operators/aircraft that are RVSM−compliant and that file ICAO flight plans will file "/W" in block 10 (Equipment) to indicate RVSM authorization and will also file the appropriate ICAO Flight Plan suffixes to indicate navigation and communication capabilities.

38.4.4.2 Operators/aircraft that file ICAO flight plans that include flight in Domestic U.S. RVSM airspace must file "/W" in block 10 to indicate RVSM authorization.

38.4.5 Importance of Flight Plan Equipment Suffixes. Military users, and civilians who file stereo route flight plans, must file the appropriate equipment suffix in the equipment block of the FAA Form 7233−1, Flight Plan, or DD Form 175, Military Flight Plan, or FAA Form 7233−4, International Flight Plan, or DD Form 1801, DOD International Flight Plan. All other users must file the appropriate equipment suffix in the equipment block of FAA Form 7233−4, International Flight Plan. The equipment suffix informs ATC:

38.4.5.1 Whether or not the operator and aircraft are authorized to fly in RVSM airspace.

38.4.5.2 The navigation and/or transponder capability of the aircraft (e.g., advanced RNAV, Transponder with Mode C).

38.4.6 Significant ATC uses of the flight plan equipment suffix information are:

38.4.6.1 To issue or deny clearance into RVSM airspace.

38.4.6.2 To apply a 2,000 foot vertical separation minimum in RVSM airspace to aircraft that are not authorized for RVSM, but are in one of the limited categories that the FAA has agreed to accommodate. (See paragraphs 38.10, Procedures for Accommodation of Non−RVSM Aircraft, and 38.11, Non−RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off, for policy on limited operation of unapproved aircraft in RVSM airspace).

38.4.7 Improperly changing an aircraft equipment suffix and/or adding "NON-RVSM" in the NOTES or REMARKS section (Field 18) while not removing the "W" from Field 10, will not provide air traffic control with the proper visual indicator necessary to detect Non-RVSM aircraft. To ensure information processes correctly for Non-RVSM aircraft, the "W" in Field 10 must be removed. Entry of information in the NOTES or REMARKS section (Field 18) will not affect the determination of RVSM capability and must not be used to indicate a flight is Non-RVSM.

38.5 Pilot RVSM Operating Practices and Procedures

38.5.1 RVSM Requirement. If either the operator is not authorized for RVSM operations, or the aircraft is not RVSM compliant, the pilot will neither request nor accept a clearance into RVSM airspace unless:

38.5.1.1 The flight is conducted by a non−RVSM DOD, MEDEVAC, certification/development or foreign State (government) aircraft in accordance with Paragraph 38.10, Procedures for Accommodation of Non−RVSM Aircraft.

38.5.1.2 The pilot intends to climb to or descend from FL 430 or above in accordance with Paragraph 38.11, Non−RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off.

38.5.1.3 An emergency situation exists.

38.5.2 Basic RVSM Operating Practices and Procedures. FAA AC 91−85 contains pilot practices and procedures for RVSM. Operators must incorporate RVSM practices and procedures, as supplemented by the applicable paragraphs of this section, into operator training or pilot knowledge programs and operator documents containing RVSM operational policies.

38.5.3 FAA AC 91−85 contains practices and procedures for flight planning, preflight procedures at the aircraft, procedures prior to RVSM airspace entry, inflight (en route) procedures, contingency procedures and post flight.

38.5.4 The following paragraphs either clarify or supplement FAA AC 91−85 practices and procedures.

38.6 Guidance on Severe Turbulence and Mountain Wave Activity (MWA)

38.6.1 Introduction/Explanation

38.6.1.1 The information and practices in this paragraph are provided to emphasize to pilots and controllers the importance of taking appropriate action in RVSM airspace when aircraft experience severe turbulence and/or MWA that is of sufficient magnitude to significantly affect altitude−keeping.

38.6.1.2 Severe Turbulence. Severe turbulence causes large, abrupt changes in altitude and/or attitude usually accompanied by large variations in indicated airspeed. Aircraft may be momentarily out of control. Encounters with severe turbulence must be remedied immediately in any phase of flight. Severe turbulence may be associated with MWA.

38.6.1.3 Mountain Wave Activity (MWA)

a) Significant MWA occurs both below and above the floor of RVSM airspace, FL 290. MWA often occurs in western states in the vicinity of mountain ranges. It may occur when strong winds blow perpendicular to mountain ranges resulting in up and down or wave motions in the atmosphere. Wave action can produce altitude excursions and airspeed fluctuations accompanied by only light turbulence. With sufficient amplitude, however, wave action can induce altitude and airspeed fluctuations accompanied by severe turbulence. MWA is difficult to forecast and can be highly localized and short lived.

b) Wave activity is not necessarily limited to the vicinity of mountain ranges. Pilots experiencing wave activity anywhere that significantly affects altitude−keeping can follow the guidance provided below.

c) Inflight MWA Indicators (Including Turbulence). Indicators that the aircraft is being subjected to MWA are:

1) Altitude excursions and/or airspeed fluctuations with or without associated turbulence.

2) Pitch and trim changes required to maintain altitude with accompanying airspeed fluctuations.

3) Light to severe turbulence depending on the magnitude of the MWA.

38.6.1.4 Priority for Controller Application of Merging Target Procedures

a) Explanation of Merging Target Procedures. As described in subparagraph 38.6.3.3 below, ATC will use "merging target procedures" to mitigate the effects of both severe turbulence and MWA. The procedures in subparagraph 38.6.3.3 have been adapted from existing procedures published in FAA Order JO 7110.65, Air Traffic Control, paragraph 5−1−4, Merging Target Procedures. paragraph 5−1−4 calls for en route controllers to advise pilots of potential traffic that they perceive may fly directly above or below his/her aircraft at minimum vertical separation. In response, pilots are given the option of requesting a radar vector to ensure their radar target will not merge or overlap with the traffic's radar target.

b) The provision of "merging target procedures" to mitigate the effects of severe turbulence and/or MWA is not optional for the controller, but rather is a priority responsibility. Pilot requests for vectors for traffic avoidance when encountering MWA or pilot reports of "Unable RVSM due turbulence or MWA" are considered first priority aircraft separation and sequencing responsibilities. (FAA Order JO 7110.65, paragraph 2−1−2, Duty Priority, states that the controller's first priority is to separate aircraft and issue safety alerts).

c) Explanation of the term "traffic permitting." The contingency actions for MWA and severe turbulence detailed in Paragraph 38.9, Contingency Actions: Weather Encounters and Aircraft System Failures that Occur

After Entry into RVSM Airspace, state that the controller will "vector aircraft to avoid merging targets with traffic at adjacent flight levels, traffic permitting." The term "traffic permitting" is not intended to imply that merging target procedures are not a priority duty. The term is intended to recognize that, as stated in FAA Order JO 7110.65, paragraph 2−1−2, Duty Priority, there are circumstances when the controller is required to perform more than one action and must "exercise their best judgment based on the facts and circumstances known to them" to prioritize their actions. Further direction given is: "That action which is most critical from a safety standpoint is performed first."

38.6.1.5 TCAS Sensitivity. For both MWA and severe turbulence encounters in RVSM airspace, an additional concern is the sensitivity of collision avoidance systems when one or both aircraft operating in close proximity receive TCAS advisories in response to disruptions in altitude hold capability.

38.6.2 Pre−flight tools. Sources of observed and forecast information that can help the pilot ascertain the possibility of MWA or severe turbulence are: Forecast Winds and Temperatures Aloft (FD), Area Forecast (FA), Graphical Turbulence Guidance (GTG), SIGMETs and PIREPs.

38.6.3 Pilot Actions When Encountering Weather (for example, Severe Turbulence or MWA)

38.6.3.1 Weather Encounters Inducing Altitude Deviations of Approximately 200 feet. When the pilot experiences weather induced altitude deviations of approximately 200 feet, the pilot will contact ATC and state "Unable RVSM Due (state reason)" (e.g., turbulence, mountain wave). See contingency actions in paragraph 38.9.

38.6.3.2 Severe Turbulence (including that associated with MWA). When pilots encounter severe turbulence, they should contact ATC and report the situation. Until the pilot reports clear of severe turbulence, the controller will apply merging target vectors to one or both passing aircraft to prevent their targets from merging:

EXAMPLE−
"Yankee 123, FL 310, unable RVSM due severe turbulence."

"Yankee 123, fly heading 290; traffic twelve o'clock, 10 miles, opposite direction; eastbound MD−80 at FL 320" (or the controller may issue a vector to the MD−80 traffic to avoid Yankee 123).

38.6.3.3 MWA. When pilots encounter MWA, they should contact ATC and report the magnitude and location of the wave activity. When a controller makes a merging targets traffic call, the pilot may request a vector to avoid flying directly over or under the traffic. In situations where the pilot is experiencing altitude deviations of 200 feet or greater, the pilot will request a vector to avoid traffic. Until the pilot reports clear of MWA, the controller will apply merging target vectors to one or both passing aircraft to prevent their targets from merging:

EXAMPLE−
"Yankee 123, FL 310, unable RVSM due mountain wave."

"Yankee 123, fly heading 290; traffic twelve o'clock, 10 miles, opposite direction; eastbound MD−80 at FL 320" (or the controller may issue a vector to the MD−80 traffic to avoid Yankee 123).

38.6.3.4 FL Change or Re−route. To leave airspace where MWA or severe turbulence is being encountered, the pilot may request a FL change and/or re−route, if necessary.

38.7 Guidance on Wake Turbulence

38.7.1 Pilots should be aware of the potential for wake turbulence encounters in RVSM airspace. Experience gained since 1997 has shown that such encounters in RVSM airspace are generally moderate or less in magnitude.

38.7.2 Prior to DRVSM implementation, the FAA established provisions for pilots to report wake turbulence events in RVSM airspace using the NASA Aviation Safety Reporting System (ASRS). A "Safety Reporting" section established on the FAA RVSM Documentation webpage provides contacts, forms, and reporting procedures.

38.7.3 To date, wake turbulence has not been reported as a significant factor in DRVSM operations. European authorities also found that reports of wake turbulence encounters did not increase significantly after RVSM

implementation (eight versus seven reports in a ten−month period). In addition, they found that reported wake turbulence was generally similar to moderate clear air turbulence.

38.7.4 Pilot Action to Mitigate Wake Turbulence Encounters

38.7.4.1 Pilots should be alert for wake turbulence when operating:

a) In the vicinity of aircraft climbing or descending through their altitude.

b) Approximately 10−30 miles after passing 1,000 feet below opposite−direction traffic.

c) Approximately 10−30 miles behind and 1,000 feet below same−direction traffic.

38.7.4.2 Pilots encountering or anticipating wake turbulence in DRVSM airspace have the option of requesting a vector, FL change, or if capable, a lateral offset.

NOTE−
1. *Offsets of approximately a wing span upwind generally can move the aircraft out of the immediate vicinity of another aircraft's wake vortex.*

2. *In domestic U.S. airspace, pilots must request clearance to fly a lateral offset. Strategic lateral offsets flown in oceanic airspace do not apply.*

38.8 Pilot/Controller Phraseology

TBL ENR 1.1−4 shows standard phraseology that pilots and controllers will use to communicate in DRVSM operations.

TBL ENR 1.1−4
Pilot/Controller Phraseology

Message	Phraseology
For a controller to ascertain the RVSM approval status of an aircraft:	(call sign) confirm RVSM approved
Pilot indication that flight is RVSM approved	Affirm RVSM
Pilot report of lack of RVSM approval (non−RVSM status). Pilot will report non−RVSM status, as follows: **a.** On the initial call on any frequency in the RVSM airspace and . . . **b.** In all requests for flight level changes pertaining to flight levels within the RVSM airspace and . . . **c.** In all read backs to flight level clearances pertaining to flight levels within the RVSM airspace and . . . **d.** In read back of flight level clearances involving climb and descent through RVSM airspace (FL 290 − 410)	Negative RVSM, (supplementary information, e.g., "Certification flight").
Pilot report of one of the following after entry into RVSM airspace: all primary altimeters, automatic altitude control systems or altitude alerters have failed. (See Paragraph 38.9, Contingency Actions: Weather Encounters and Aircraft System Failures that Occur After Entry into RVSM Airspace). ***NOTE−*** *This phrase is to be used to convey both the initial indication of RVSM aircraft system failure and on initial contact on all frequencies in RVSM airspace until the problem ceases to exist or the aircraft has exited RVSM airspace.*	Unable RVSM Due Equipment
ATC denial of clearance into RVSM airspace	Unable issue clearance into RVSM airspace, maintain FL
*Pilot reporting inability to maintain cleared flight level due to weather encounter. (See Paragraph 38.9, Contingency Actions: Weather Encounters and Aircraft System Failures that Occur after Entry into RVSM Airspace).	*Unable RVSM due (state reason) (e.g., turbulence, mountain wave)
ATC requesting pilot to confirm that an aircraft has regained RVSM−approved status or a pilot is ready to resume RVSM	Confirm able to resume RVSM
Pilot ready to resume RVSM after aircraft system or weather contingency	Ready to resume RVSM

38.9 Contingency Actions: Weather Encounters and Aircraft System Failures that Occur After Entry into RVSM Airspace

TBL ENR 1.1−5 provides pilot guidance on actions to take under certain conditions of aircraft system failure that occur after entry into RVSM airspace and weather encounters. It also describes the expected ATC controller actions in these situations. It is recognized that the pilot and controller will use judgment to determine the action most appropriate to any given situation.

TBL ENR 1.1−5

Contingency Actions: Weather Encounters and Aircraft System Failures that Occur After Entry into RVSM Airspace

Initial Pilot Actions in Contingency Situations
Initial pilot actions when unable to maintain flight level (FL) or unsure of aircraft altitude−keeping capability: •Notify ATC and request assistance as detailed below. •Maintain cleared flight level, to the extent possible, while evaluating the situation. •Watch for conflicting traffic both visually and by reference to TCAS, if equipped**.** •Alert nearby aircraft by illuminating exterior lights (commensurate with aircraft limitations).

Severe Turbulence and/or Mountain Wave Activity (MWA) Induced Altitude Deviations of Approximately 200 feet	
Pilot will:	**Controller will:**
•When experiencing severe turbulence and/or MWA induced altitude deviations of approximately 200 feet or greater, pilot will contact ATC and state "Unable RVSM Due (state reason)" (e.g., turbulence, mountain wave) •If not issued by the controller, request vector clear of traffic at adjacent FLs •If desired, request FL change or re−route •Report location and magnitude of turbulence or MWA to ATC	•Vector aircraft to avoid merging target with traffic at adjacent flight levels, traffic permitting •Advise pilot of conflicting traffic •Issue FL change or re−route, traffic permitting •Issue PIREP to other aircraft
See Paragraph 38.6, Guidance on Severe Turbulence and Mountain Wave Activity (MWA), for detailed guidance.	Paragraph 38.6 explains "traffic permitting."

Mountain Wave Activity (MWA) Encounters – General	
Pilot actions:	**Controller actions:**
•Contact ATC and report experiencing MWA •If so desired, pilot may request a FL change or re−route •Report location and magnitude of MWA to ATC	•Advise pilot of conflicting traffic at adjacent FL •If pilot requests, vector aircraft to avoid merging target with traffic at adjacent RVSM flight levels, traffic permitting •Issue FL change or re−route, traffic permitting •Issue PIREP to other aircraft
See paragraph 38.6 for guidance on MWA.	Paragraph 38.6 explains "traffic permitting."
NOTE− *MWA encounters do not necessarily result in altitude deviations on the order of 200 feet. The guidance below is intended to address less significant MWA encounters.*	

Wake Turbulence Encounters	
Pilot should:	**Controller should:**
•Contact ATC and request vector, FL change or, if capable, a lateral offset	•Issue vector, FL change or lateral offset clearance, traffic permitting
See Paragraph 38.7, Guidance on Wake Turbulence.	Paragraph 38.6 explains "traffic permitting."

"Unable RVSM Due Equipment" Failure of Automatic Altitude Control System, Altitude Alerter or All Primary Altimeters	
Pilot will:	**Controller will:**
•Contact ATC and state "Unable RVSM Due Equipment"	•Provide 2,000 feet vertical separation or appropriate horizontal separation
•Request clearance out of RVSM airspace unless operational situation dictates otherwise	•Clear aircraft out of RVSM airspace unless operational situation dictates otherwise

One Primary Altimeter Remains Operational	
Pilot will:	**Controller will:**
•Cross check stand−by altimeter	•Acknowledge operation with single primary altimeter
•Notify ATC of operation with single primary altimeter	
•If unable to confirm primary altimeter accuracy, follow actions for failure of all primary altimeters	

Transponder Failure	
Pilot will:	**Controller will:**
•Contact ATC and request authority to continue to operate at cleared flight level	•Consider request to continue to operate at cleared flight level
•Comply with revised ATC clearance, if issued	•Issue revised clearance, if necessary
NOTE− *14 CFR Section 91.215 (ATC transponder and altitude reporting equipment and use) regulates operation with the transponder inoperative.*	

38.10 Procedures for Accommodation of Non−RVSM Aircraft

38.10.1 General Policies for Accommodation of Non−RVSM Aircraft

38.10.1.1 The RVSM mandate calls for only RVSM authorized aircraft/operators to fly in designated RVSM airspace with limited exceptions. The policies detailed below are intended exclusively for use by aircraft that the FAA has agreed to accommodate. They are not intended to provide other operators a means to circumvent the normal RVSM approval process.

38.10.1.2 If either the operator is not authorized or the aircraft is not RVSM−compliant, the aircraft will be referred to as a "non−RVSM" aircraft. 14 CFR Section 91.180 and Part 91 Appendix G enable the FAA to authorize a deviation to operate a non−RVSM aircraft in RVSM airspace.

38.10.1.3 Non−RVSM aircraft flights will be handled on a workload permitting basis. The vertical separation standard applied between aircraft not approved for RVSM and all other aircraft must be 2,000 feet.

38.10.1.4 Required Pilot Calls. The pilot of non−RVSM aircraft will inform the controller of the lack of RVSM approval in accordance with the direction provided in Paragraph 38.8, Pilot/Controller Phraseology.

38.10.2 Categories of Non−RVSM Aircraft that may be Accommodated

Subject to FAA approval and clearance, the following categories of non−RVSM aircraft may operate in domestic U.S. RVSM airspace provided they have an operational transponder.

38.10.2.1 Department of Defense (DOD) aircraft.

38.10.2.2 Flights conducted for aircraft certification and development purposes.

38.10.2.3 Active air ambulance flights utilizing a "MEDEVAC" call sign.

38.10.2.4 Aircraft climbing/descending through RVSM flight levels (without intermediate level off) to/from FLs above RVSM airspace (Policies for these flights are detailed in paragraph 38.11, Non−RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off.

38.10.2.5 Foreign State (government) aircraft.

38.10.3 Methods for operators of non−RVSM aircraft to request access to RVSM Airspace. Operators may:

38.10.3.1 LOA/MOU. Enter into a Letter of Agreement (LOA)/Memorandum of Understanding (MOU) with the RVSM facility (the Air Traffic facility that provides air traffic services in RVSM airspace). Operators must comply with LOA/MOU.

38.10.3.2 File−and−Fly. File a flight plan to notify the FAA of their intention to request access to RVSM airspace.

NOTE−
Priority for access to RVSM airspace will be afforded to RVSM compliant aircraft, then File−and−Fly flights.

38.11 Non−RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off

38.11.1 File−and−Fly. Operators of Non−RVSM aircraft climbing to and descending from RVSM flight levels should just file a flight plan.

38.11.2 Non−RVSM aircraft climbing to and descending from flight levels above RVSM airspace will be handled on a workload permitting basis. The vertical separation standard applied in RVSM airspace between non−RVSM aircraft and all other aircraft must be 2,000 feet.

38.11.3 Non−RVSM aircraft climbing to/descending from RVSM airspace can only be considered for accommodation provided:

38.11.3.1 Aircraft is capable of a continuous climb/descent and does not need to level off at an intermediate altitude for any operational considerations and

38.11.3.2 Aircraft is capable of climb/descent at the normal rate for the aircraft.

38.11.4 Required Pilot Calls. The pilot of non−RVSM aircraft will inform the controller of the lack of RVSM approval in accordance with the direction provided in paragraph 38.8, Pilot/Controller Phraseology.

39. Terminal Radar Services for VFR Aircraft

39.1 Basic Radar Service

39.1.1 In addition to the use of radar for the control of IFR aircraft, all commissioned radar facilities provide the following basic radar services for VFR aircraft:

39.1.1.1 Safety alerts.

39.1.1.2 Traffic advisories.

39.1.1.3 Limited radar vectoring (on a workload permitting basis).

39.1.1.4 Sequencing at locations where procedures have been established for this purpose and/or when covered by a letter of agreement.

NOTE−
When the stage services were developed, two basic radar services (traffic advisories and limited vectoring) were identified as "Stage I." This definition became unnecessary and the term "Stage I" was eliminated from use. The term "Stage II" has been eliminated in conjunction with the airspace reclassification, and sequencing services to locations with local procedures and/or letters of agreement to provide this service have been included in basic services to VFR aircraft. These basic services will still be provided by all terminal radar facilities whether they include Class B, C, D, or E airspace. "Stage III" services have been replaced with "Class B" and "Terminal Radar Service Area" service where applicable.

39.1.2 Vectoring service may be provided when requested by the pilot or with pilot concurrence when suggested by ATC.

39.1.3 Pilots of arriving aircraft should contact approach control on the publicized frequency and give their position, altitude, aircraft call sign, type aircraft, radar beacon code (if transponder equipped), destination, and should request traffic information.

39.1.4 Approach control will issue wind and runway, except when the pilot states "have numbers" or this information is contained in the ATIS broadcast and the pilot states that the current ATIS information has been received. Traffic information is provided on a workload permitting basis. Approach control will specify the time or place at which the pilot is to contact the tower on local control frequency for further landing information. Radar service is automatically terminated and the aircraft need not be advised of termination when an arriving VFR aircraft receiving radar services to a tower−controlled airport where basic radar service is provided has landed, or to all other airports, is instructed to change to tower or advisory frequency.

39.1.5 Sequencing for VFR aircraft is available at certain terminal locations (see locations listed in the Chart Supplement U.S.). The purpose of the service is to adjust the flow of arriving VFR and IFR aircraft into the traffic pattern in a safe and orderly manner and to provide radar traffic information to departing VFR aircraft. Pilot participation is urged but is not mandatory. Traffic information is provided on a workload permitting basis. Standard radar separation between VFR or between VFR and IFR aircraft is not provided.

39.1.5.1 Pilots of arriving VFR aircraft should initiate radio contact on the publicized frequency with approach control when approximately 25 miles from the airport at which sequencing services are being provided. On initial contact by VFR aircraft, approach control will assume that sequencing service is requested. After radar contact is established, the pilot may use pilot navigation to enter the traffic pattern or, depending on traffic conditions, approach control may provide the pilot with routings or vectors necessary for proper sequencing with other participating VFR and IFR traffic en route to the airport. When a flight is positioned behind a preceding aircraft and the pilot reports having that aircraft in sight, the pilot will be instructed to follow the preceding aircraft. THE ATC INSTRUCTION TO FOLLOW THE PRECEDING AIRCRAFT DOES NOT AUTHORIZE THE PILOT TO COMPLY WITH ANY ATC CLEARANCE OR INSTRUCTION ISSUED TO THE PRECEDING AIRCRAFT. If other "nonparticipating" or "local" aircraft are in the traffic pattern, the tower will issue a landing sequence. If an arriving aircraft does not want radar service, the pilot should state "NEGATIVE RADAR SERVICE" or make a similar comment, on initial contact with approach control.

39.1.5.2 Pilots of departing VFR aircraft are encouraged to request radar traffic information by notifying ground control, or where applicable, clearance delivery, on initial contact with their request and proposed direction of flight.

EXAMPLE−
Xray ground control, November One Eight Six, Cessna One Seventy Two, ready to taxi, VFR southbound at 2,500, have information bravo and request radar traffic information.

NOTE−
Following takeoff, the tower will advise when to contact departure control.

39.1.5.3 Pilots of aircraft transiting the area and in radar contact/communication with approach control will receive traffic information on a controller workload permitting basis. Pilots of such aircraft should give their position, altitude, aircraft call sign, aircraft type, radar beacon code (if transponder equipped), destination, and/or route of flight.

39.2 Terminal Radar Service Area (TRSA) Service (Radar Sequencing and Separation Service for VFR Aircraft in a TRSA).

39.2.1 This service has been implemented at certain terminal locations. The service is advertised in the Chart Supplement U.S. The purpose of this service is to provide separation between all participating VFR aircraft and all IFR aircraft operating within the airspace defined as the TRSA. Pilot participation is urged but is not mandatory.

39.2.2 If any aircraft does not want the service, the pilot should state "NEGATIVE TRSA SERVICE" or make a similar comment, on initial contact with approach control or ground control, as appropriate.

39.2.3 TRSAs are depicted on sectional aeronautical charts and listed in the Chart Supplement U.S.

39.2.4 While operating within a TRSA, pilots are provided TRSA service and separation as prescribed in this paragraph. In the event of a radar outage, separation and sequencing of VFR aircraft will be suspended as this service is dependent on radar. The pilot will be advised that the service is not available and will be issued wind, runway information, and the time or place to contact the tower. Traffic information will be provided on a workload permitting basis.

39.2.5 Visual separation is used when prevailing conditions permit and it will be applied as follows:

39.2.5.1 When a VFR flight is positioned behind a preceding aircraft and the pilot reports having that aircraft in sight, the pilot will be instructed by ATC to follow the preceding aircraft. THE ATC INSTRUCTION TO FOLLOW THE PRECEDING AIRCRAFT DOES NOT AUTHORIZE THE PILOT TO COMPLY WITH ANY ATC CLEARANCE OR INSTRUCTION ISSUED TO THE PRECEDING AIRCRAFT. Radar service will be continued to the runway.

39.2.5.2 If other "nonparticipating" or "local" aircraft are in the traffic pattern, the tower will issue a landing sequence.

39.2.5.3 Departing VFR aircraft may be asked if they can visually follow a preceding departure out of the TRSA. The pilot will be instructed to follow the other aircraft provided that the pilot can maintain visual contact with that aircraft.

39.2.6 Participating VFR aircraft will be separated from IFR and other participating VFR aircraft by one of the following:

39.2.6.1 500 feet vertical separation.

39.2.6.2 Visual separation.

39.2.6.3 Target resolution (a process to ensure that correlated radar targets do not touch).

39.2.7 Participating pilots operating VFR in a TRSA:

39.2.7.1 Must maintain an altitude when assigned by ATC unless the altitude assignment is to maintain at or below a specified altitude. ATC may assign altitudes for separation that do not conform to 14 CFR Section 91.159. When the altitude assignment is no longer needed for separation or when leaving the TRSA, the instruction will be broadcast, "RESUME APPROPRIATE VFR ALTITUDES." Pilots must then return to an altitude that conforms to 14 CFR Section 91.159 as soon as practicable.

39.2.7.2 When not assigned an altitude, the pilot should coordinate with ATC prior to any altitude change.

39.2.8 Within the TRSA, traffic information on observed but unidentified targets will, to the extent possible, be provided to all IFR and participating VFR aircraft. The pilot will be vectored upon request to avoid the observed traffic, provided the aircraft to be vectored is within the airspace under the jurisdiction of the controller.

39.2.9 Departing aircraft should inform ATC of their intended destination and/or route of flight and proposed cruising altitude.

39.2.10 ATC will normally advise participating VFR aircraft when leaving the geographical limits of the TRSA. Radar service is not automatically terminated with this advisory unless specifically stated by the controller.

39.3 Class C Service. This service provides, in addition to basic radar service, approved separation between IFR and VFR aircraft, and sequencing of VFR arrivals to the primary airport.

39.4 Class B Service. This service provides, in addition to basic radar service, approved separation of aircraft based on IFR, VFR, and/or weight, and sequencing of VFR arrivals to the primary airport(s).

39.5 PILOT RESPONSIBILITY. THESE SERVICES ARE NOT TO BE INTERPRETED AS RELIEVING PILOTS OF THEIR RESPONSIBILITIES TO SEE AND AVOID OTHER TRAFFIC OPERATING IN BASIC VFR WEATHER CONDITIONS, TO ADJUST THEIR OPERATIONS AND FLIGHT PATH AS NECESSARY TO PRECLUDE SERIOUS WAKE ENCOUNTERS, TO MAINTAIN APPROPRIATE TERRAIN AND OBSTRUCTION CLEARANCE, OR TO REMAIN IN WEATHER CONDITIONS EQUAL TO OR BETTER THAN THE MINIMUMS REQUIRED BY 14 CFR SECTION 91.155. WHENEVER COMPLIANCE WITH AN ASSIGNED ROUTE, HEADING AND/OR ALTITUDE IS LIKELY TO COMPROMISE PILOT RESPONSIBILITY RESPECTING TERRAIN AND OBSTRUCTION CLEARANCE, VORTEX EXPOSURE, AND WEATHER MINIMUMS, APPROACH CONTROL SHOULD BE SO ADVISED AND A REVISED CLEARANCE OR INSTRUCTION OBTAINED.

39.6 ATC services for VFR aircraft participating in terminal radar services are dependent on ATC radar. Services for VFR aircraft are not available during periods of radar outages. The pilot will be advised when VFR services are limited or not available.

NOTE–
Class B and Class C airspace are areas of regulated airspace. The absence of ATC radar does not negate the requirement of an ATC clearance to enter Class B airspace or two–way radio contact with ATC to enter Class C airspace.

40. Tower En Route Control (TEC)

40.1 TEC is an ATC program to provide a service to aircraft proceeding to and from metropolitan areas. It links designated approach control areas by a network of identified routes made up of the existing airway structure of the National Airspace System. The FAA has initiated an expanded TEC program to include as many facilities as possible. The program's intent is to provide an overflow resource in the low altitude system which would enhance ATC services. A few facilities have historically allowed turbojets to proceed between certain city pairs, such as Milwaukee and Chicago, via tower en route and these locations may continue this service. However, the expanded TEC program will be applied, generally, for nonturbojet aircraft operating at and below 10,000 feet. The program is entirely within the approach control airspace of multiple terminal facilities. Essentially, it is for relatively short flights. Participating pilots are encouraged to use TEC for flights of 2 hours duration or less. If longer flights are planned, extensive coordination may be required with the multiple complex which could result in unanticipated delays.

40.2 There are no unique requirements upon pilots to use the TEC program. Normal flight plan filing procedures will ensure proper flight plan processing. Pilots should include the acronym "TEC" in the remarks selection of the flight plan when requesting tower en route.

40.3 All approach controls in the system may not operate up to the maximum TEC altitude of 10,000 feet. IFR flight may be planned to any satellite airport in proximity to the major primary airport via the same routing.

41. Services in Offshore Controlled Airspace

41.1 Pilots requesting TEC are subject to the same delay factor at the destination airport as other aircraft in the ATC system. In addition, departure and en route delays may occur depending upon individual facility workload. When a major metropolitan airport is incurring significant delays, pilots in the TEC program may want to consider an alternative airport experiencing no delay.

41.2 Flights which operate between the U.S. 3–mile territorial limit and the adjoining oceanic controlled airspace/flight information region (CTA/FIR) boundaries generally operate in airspace designated by federal regulation as "controlled airspace," or "offshore controlled airspace."

41.3 Within the designated areas ATC radar surveillance, ground based navigational signal coverage, and air/ground communications are capable of supporting air traffic services comparable to those provided over U.S. domestic controlled airspace.

41.4 Pilots should be aware that domestic procedures will be applied in offshore controlled airspace to both VFR and IFR aircraft using ATC services.

42. Pilot/Controller Roles/Responsibilities

42.1 General

42.1.1 The roles and responsibilities of the pilot and controller for effective participation in the ATC system are contained in several documents. Pilot responsibilities are in the Federal Aviation Regulations (Title 14 of the U.S. Code of Federal Regulations) and the air traffic controller's are in FAA Order JO 7110.65, Air Traffic Control, and supplemental FAA directives. Additional and supplemental information for pilots can be found in the current Aeronautical Information Manual, Notices to Air Missions, advisory circulars, and aeronautical charts. Since there are many other excellent publications produced by nongovernment organizations as well as other Government organizations with various updating cycles, questions concerning the latest or most current material can be resolved by cross–checking with the above mentioned documents.

42.1.2 The pilot in command of an aircraft is directly responsible for and is the final authority as to the safe operation of that aircraft. In an emergency requiring immediate action, the pilot in command may deviate from any rule in the General, Subpart A, and Flight Rules, Subpart B, in accordance with 14 CFR Section 91.3.

42.1.3 The air traffic controller is responsible to give first priority to the separation of aircraft and to the issuance of radar safety alerts; second priority to other services that are required, but do not involve separation of aircraft; and third priority to additional services to the extent possible.

42.1.4 In order to maintain a safe and efficient air traffic system, it is necessary that every party fulfill their responsibilities to the fullest.

42.1.5 The responsibilities of the pilot and the controller intentionally overlap in many areas providing a degree of redundancy. Should one or the other fail in any manner, this overlapping responsibility is expected to compensate, in many cases, for failures that may affect safety.

42.1.6 The following, while not intended to be all inclusive, is a brief listing of pilot and controller responsibilities for some commonly used procedures or phases of flight. More detailed explanations are contained in the appropriate Federal Aviation Regulations, Advisory Circulars, and similar publications. The information provided here is an overview of the principles involved and is not meant as an interpretation of the rules nor is it intended to extend or diminish responsibilities.

42.2 Air Traffic Clearance

42.2.1 Pilot

42.2.1.1 Acknowledges receipt and understanding of an ATC clearance.

42.2.1.2 Reads back any hold short of runway instructions issued by ATC.

42.2.1.3 Requests clarification or amendment, as appropriate, any time a clearance is not fully understood, or considered unacceptable from a safety standpoint.

42.2.1.4 Promptly complies with an air traffic clearance upon receipt, except as necessary to cope with an emergency. Advises ATC as soon as possible and obtains an amended clearance if deviation is necessary.

NOTE–
A clearance to land means that appropriate separation on the landing runway will be ensured. A landing clearance does not relieve the pilot from compliance with any previously issued altitude crossing restriction.

42.2.2 Controller

42.2.2.1 Issues appropriate clearances for the operation being, or to be, conducted in accordance with established criteria.

42.2.2.2 Assigns altitudes in IFR clearances that are at or above the minimum IFR altitudes in Classes A, B, C, D, and E airspace.

42.2.2.3 Ensures acknowledgements by the pilot for issued information, clearance, or instructions.

42.2.2.4 Ensures that readbacks by the pilot of altitude, heading, or other items are correct. If incorrect, distorted, or incomplete, makes corrections as appropriate.

42.3 Contact Approach

42.3.1 Pilot

42.3.1.1 This approach must be requested by the pilot and is made in lieu of a standard or special instrument approach.

42.3.1.2 By requesting the contact approach, the pilot indicates that the flight is operating clear of clouds, has at least 1 mile flight visibility, and can reasonably expect to continue to the destination airport in those conditions.

42.3.1.3 Be aware that while conducting a contact approach, the pilot assumes responsibility for obstruction clearance.

42.3.1.4 Advises ATC immediately if you are unable to continue the contact approach or if you encounter less than 1 mile flight visibility.

42.3.1.5 Be aware that, if radar service is being received, it may automatically terminate when the pilot is told to contact the tower. “Radar service terminated” is used by ATC to inform a pilot that he/she will no longer be provided any of the services that could be received while in radar contact.

REFERENCE–
The Pilot/Controller Glossary is published in the Aeronautical Information Manual (AIM) and FAA Orders JO 7110.10, Flight Services, and JO 7110.65, Air Traffic Control.

42.3.2 Controller

42.3.2.1 Issues clearance for contact approach only when requested by the pilot. Does not solicit the use of this procedure.

42.3.2.2 Before issuing clearance, ascertains that reported ground visibility at destination airport is at least 1 mile.

42.3.2.3 Provides approved separation between aircraft cleared for contact approach and other IFR or special VFR aircraft. When using vertical separation, does not assign a fixed altitude but clears the aircraft at or below an altitude which is at least 1,000 feet below any IFR traffic but not below minimum safe altitudes prescribed in 14 CFR Section 91.119.

42.3.2.4 Issues alternative instructions if, in the controller’s judgment, weather conditions may make completion of the approach impractical.

42.4 Instrument Approach

42.4.1 Pilot

42.4.1.1 Be aware that the controller issues clearance for approach based only on known traffic.

42.4.1.2 Follows the procedures as shown on the instrument approach chart including all restrictive notations, such as:

a) Procedure not authorized at night.

b) Approach not authorized when local area altimeter not available.

c) Procedure not authorized when control tower not in operation.

d) Procedure not authorized when glide slope not used.

e) Straight–in minimums not authorized at night.

f) Radar required.

g) The circling minimums published on the instrument approach chart provide adequate obstruction clearance. The pilot should not descend below the circling altitude until the aircraft is in a position to make final descent for landing. Sound judgment and knowledge of the pilot's and the aircraft's capabilities are the criteria for a pilot to determine the exact maneuver in each instance since airport design and the aircraft position, altitude, and airspeed must all be considered. (See ENR 1.5, Paragraph 11.6, Circling Minimums.)

42.4.1.3 Upon receipt of an approach clearance while on an unpublished route or being radar vectored:

a) Complies with the minimum altitude for IFR.

b) Maintains last assigned altitude until established on a segment of a published route or Instrument Approach Procedure (IAP), at which time published altitudes apply.

42.4.1.4 There are currently two temperature limitations that may be published in the notes box of the middle briefing strip on an instrument approach procedure (IAP). The two published temperature limitations are:

a) A temperature range limitation associated with the use of Baro–VNAV that may be published on an United States PBN IAP titled RNAV (GPS) or RNAV (RNP); and/or

b) A Cold Temperature Airport (CTA) limitation designated by a snowflake ICON and temperature in Celsius (C) that is published on every IAP for the airfield.

42.4.1.5 Any planned altitude correction for the intermediate and/or missed approach holding segments must be coordinated with ATC. Pilots do not have to advise ATC of a correction in the final segment.

REFERENCE–
AIP, Section ENR 1.8, Cold Temperature Barometric Altimeter Errors, Setting Procedures, and Cold Temperature Airports (CTA).

42.4.2 Controller

42.4.2.1 Issues an approach clearance based on known traffic.

42.4.2.2 Issues an IFR approach clearance only after aircraft is established on a segment of published route or IAP; or assigns an appropriate altitude for the aircraft to maintain until so established.

42.5 Missed Approach

42.5.1 Pilot

42.5.1.1 Executes a missed approach when one of the following conditions exist:

a) Arrival at the missed approach point (MAP) or the decision height (DH) and visual reference to the runway environment is insufficient to complete the landing.

b) Determines that a safe approach or landing is not possible (see ENR 1.5 paragraph 27.8).

c) Instructed to do so by ATC.

42.5.1.2 Advises ATC that a missed approach will be made. Include the reason for the missed approach unless initiated by ATC.

42.5.1.3 Complies with the missed approach instructions for the IAP being executed from the MAP, unless other missed approach instructions are specified by ATC.

42.5.1.4 If executing a missed approach prior to reaching the MAP, fly the lateral navigation path of the instrument procedure to the MAP. Climb to the altitude specified in the missed approach procedure, except when a maximum altitude is specified between the final approach fix (FAF) and the MAP. In that case, comply with the maximum altitude restriction. Note, this may require a continued descent on the final approach.

42.5.1.5 Cold Temperature Airports (CTA) are designated by a snowflake ICON and temperature in Celsius (C) that are published in the notes box of the middle briefing strip on an instrument approach procedure (IAP). Pilots should apply a cold temperature correction to the final missed approach holding altitude when the reported temperature is at or below the CTA temperature limitation, if applicable. Pilots must inform ATC of the correction.

REFERENCE–
AIP, Section ENR 1.8, Cold Temperature Barometric Altimeter Errors, Setting Procedures, and Cold Temperature Airports (CTA).

42.5.1.6 Following a missed approach, requests clearance for specific action; i.e., another approach, hold for improved conditions, proceed to an alternate airport, etc.

42.5.2 Controller

42.5.2.1 Issues an approved alternate missed approach procedure if it is desired that the pilot execute a procedure other than as depicted on the instrument approach chart.

42.5.2.2 May vector a radar identified aircraft executing a missed approach when operationally advantageous to the pilot or the controller.

42.5.2.3 In response to the pilot's stated intentions, issues a clearance to an alternate airport, to a holding fix, or for reentry into the approach sequence, as traffic conditions permit.

42.6 Vectors

42.6.1 Pilot

42.6.1.1 Promptly complies with headings and altitudes assigned to you by the controller.

42.6.1.2 Questions any assigned heading or altitude believed to be incorrect.

42.6.1.3 If operating VFR and compliance with any radar vector or altitude would cause a violation of any Federal Aviation Regulation, advises ATC and obtain a revised clearance or instruction.

42.6.2 Controller

42.6.2.1 Vectors aircraft in Class A, B, C, D, and E airspace:

a) For separation.

b) For noise abatement.

c) To obtain an operational advantage for the pilot or the controller.

42.6.2.2 Vectors aircraft in Class A, B, C, D, E, and G airspace when requested by the pilot.

42.6.2.3 Except where authorized for radar approaches, radar departures, special VFR, or when operating in accordance with vectors below minimum altitude procedures, vector IFR aircraft at or above minimum vectoring altitudes.

42.6.2.4 May vector aircraft off assigned procedures. When published altitude or speed restrictions are included, controllers must assign an altitude, or if necessary, a speed.

42.6.2.5 May vector VFR aircraft, not at an ATC assigned altitude, at any altitude. In these cases, terrain separation is the pilot's responsibility.

42.7 Speed Adjustments

42.7.1 Pilot (In U.S. Domestic Class A, B, C, D, and E airspace)

42.7.2 Except as stated in paragraphs 42.7.5 and 42.7.6, advises ATC anytime the true airspeed at cruising level varies or is expected to vary by plus or minus 10 knots or 0.02 Mach number, whichever is less, of the filed true airspeed.

42.7.3 Complies with speed adjustments from ATC unless:

42.7.3.1 Except as stated in paragraphs 42.7.5 and 42.7.6, advises ATC anytime the true airspeed at cruising level varies or is expected to vary by plus or minus 10 knots or 0.02 Mach number, whichever is less, of the filed true airspeed.

42.7.3.2 Complies with speed adjustments from ATC unless:

a) The minimum or maximum safe airspeed for any particular operation is greater or less than the requested airspeed. In such cases, advises ATC.

b) Operating at or above 10,000 feet MSL on an ATC assigned SPEED ADJUSTMENT of more than 250 knots IAS and subsequent clearance is received for descent below 10,000 feet MSL. In such cases, pilots are expected to comply with 14 CFR Section 97.117(a).

42.7.4 Controller (In U.S. Domestic Class A, B, C, D, and E Airspaces)

42.7.4.1 Assigns aircraft to speed adjustments when necessary, but not as a substitute for good vectoring technique.

42.7.4.2 Adheres to the restrictions of FAA Order JO 7110.65, Air Traffic Control, as to when speed adjustment procedures may be applied.

42.7.4.3 Avoids speed adjustments requiring alternate decreases and increases.

42.7.4.4 Assigns speed adjustments to a specified IAS knots/Mach number or to increase or decrease speed utilizing increments of 5 knots or multiples thereof.

42.7.4.5 Terminates ATC-assigned speed adjustments when no longer required by issuing further instructions to pilots in the following manner:

a) Advises pilots to "resume normal speed" when the aircraft is on a heading, random routing, charted procedure, or route without published speed restrictions.

b) Instructs pilots to "comply with speed restrictions" when the aircraft is joining or resuming a charted procedure or route with published speed restrictions.

CAUTION–
The phraseology "Climb via SID" requires compliance with all altitude and/or speed restrictions depicted on the procedure.

c) Instructs pilots to "resume published speed" when aircraft are cleared via a charted instrument flight procedure that contains published speed restrictions.

d) Advises aircraft to "delete speed restrictions" when ATC assigned or published speed restrictions on a charted procedure are no longer required.

e) Clears pilots for approach without restating previously issued speed adjustments.

42.7.4.6 Gives due consideration to aircraft capabilities to reduce speed while descending.

42.7.5 Pilot (In Oceanic Class A and E Airspace)

42.7.5.1 If ATC has not assigned an airspeed, advises ATC anytime the true airspeed at cruising level varies or is expected to vary by ±10 knots or 0.02 Mach number, whichever is less, of the filed true airspeed.

42.7.5.2 If ATC has assigned an airspeed, aircraft must adhere to the ATC assigned airspeed and must request ATC approval before making any change thereto. If it is essential to make an immediate temporary change in the Mach number (e.g., due to turbulence), ATC must be notified as soon as possible. If it is not feasible, due to aircraft performance, to maintain the last assigned Mach number during an en route climb or descent, advises ATC at the time of the request.

42.7.6 Controller (In Oceanic Class A and E Airspace)

42.7.6.1 Assigns airspeed when necessary for separation of aircraft to comply with 14 CFR, ICAO regulations and procedures, or letters of agreement.

42.8 Traffic Advisories (Traffic Information)

42.8.1 Pilot

42.8.1.1 Acknowledges receipt of traffic advisories.

42.8.1.2 Informs controller if traffic is in sight.

42.8.1.3 Advises ATC if a vector to avoid traffic is desired.

42.8.1.4 Does not expect to receive radar traffic advisories on all traffic. Some aircraft may not appear on the radar display. Be aware that the controller may be occupied with high priority duties and unable to issue traffic information for a variety of reasons.

42.8.1.5 Advises controller if service is not desired.

42.8.2 Controller

42.8.2.1 Issues radar traffic to the maximum extent consistent with higher priority duties except in Class A airspace.

42.8.2.2 Provides vectors to assist aircraft to avoid observed traffic when requested by the pilot.

42.8.2.3 Issues traffic information to aircraft in Class D airspace for sequencing purposes.

42.8.2.4 Controllers are required to issue traffic advisories to each aircraft operating on intersecting or nonintersecting converging runways where projected flight paths will cross.

42.9 Safety Alert

42.9.1 Pilot

42.9.1.1 Initiates appropriate action if a safety alert is received from ATC.

42.9.1.2 Be aware that this service is not always available and that many factors affect the ability of the controller to be aware of a situation in which unsafe proximity to terrain, obstructions, or another aircraft may be developing.

42.9.2 Controller

42.9.2.1 Issues a safety alert if aware an aircraft under their control is at an altitude which, in the controller's judgment, places the aircraft in unsafe proximity to terrain, obstructions, or another aircraft. Types of safety alerts are:

a) Terrain/Obstruction Alerts. Immediately issued to an aircraft under their control if aware the aircraft is at an altitude believed to place the aircraft in unsafe proximity to terrain/obstruction.

b) Aircraft Conflict Alerts. Immediately issued to an aircraft under their control if aware of an aircraft not under their control at an altitude believed to place the aircraft in unsafe proximity to each other. With the alert, they offer the pilot an alternative if feasible.

42.9.2.2 Discontinues further alerts if informed by the pilot action is being taken to correct the situation or that the other aircraft is in sight.

42.10 See and Avoid

42.10.1 Pilot

42.10.1.1 When meteorological conditions permit, regardless of type of flight plan or whether or not under control of a radar facility, the pilot is responsible to see and avoid other traffic, terrain, or obstacles.

42.10.2 Controller

42.10.2.1 Provides radar traffic information to radar identified aircraft operating outside positive control airspace on a workload permitting basis.

42.10.2.2 Issues a safety advisory to an aircraft under their control if aware the aircraft is at an altitude believed to place the aircraft in unsafe proximity to terrain, obstructions or other aircraft.

42.11 Visual Approach

42.11.1 Pilot

42.11.1.1 If a visual approach is not desired, advises ATC.

42.11.1.2 Complies with controller's instructions for vectors toward the airport of intended landing or to a visual position behind a preceding aircraft.

42.11.1.3 The pilot must, at all times, have either the airport or the preceding aircraft in sight. After being cleared for a visual approach, proceed to the airport in a normal manner or follow the preceding aircraft. Remain clear of clouds while conducting a visual approach.

42.11.1.4 If the pilot accepts a visual approach clearance to visually follow a preceding aircraft, you are required to establish a safe landing interval behind the aircraft you were instructed to follow. You are responsible for wake turbulence separation.

42.11.1.5 Advise ATC immediately if the pilot is unable to continue following the preceding aircraft, cannot remain clear of clouds, needs to climb, or loses sight of the airport.

42.11.1.6 In the event of a go–around, the pilot is responsible to maintain terrain and obstruction avoidance until reaching an ATC assigned altitude if issued.

42.11.1.7 Be aware that radar service is automatically terminated, without being advised by ATC, when the pilot is instructed to change to advisory frequency.

42.11.1.8 Be aware that there may be other traffic in the traffic pattern and the landing sequence may differ from the traffic sequence assigned by the approach control or ARTCC.

42.11.2 Controller

42.11.2.1 Does not clear an aircraft for a visual approach unless reported weather at the airport is ceiling at or above 1,000 feet and visibility is 3 miles or greater. When weather is not available for the destination airport, informs the pilot and does not initiate a visual approach to that airport unless there is reasonable assurance that descent and flight to the airport can be made visually.

42.11.2.2 Issues visual approach clearance when the pilot reports sighting either the airport or a preceding aircraft which is to be followed.

42.11.2.3 Provides separation except when visual separation is being applied by the pilot.

42.11.2.4 Continues flight following and traffic information until the aircraft has landed or has been instructed to change to advisory frequency.

42.11.2.5 For all aircraft, inform the pilot when the preceding aircraft is a heavy. Inform the pilot of a small aircraft when the preceding aircraft is a B757. Visual separation is prohibited behind super aircraft.

42.11.2.6 When weather is available for the destination airport, does not initiate a vector for a visual approach unless the reported ceiling at the airport is 500 feet or more above the MVA and visibility is 3 miles or more. If vectoring weather minima are not available but weather at the airport is ceiling at or above 1,000 feet and visibility of 3 miles or greater, visual approaches may still be conducted.

42.11.2.7 Informs the pilot conducting the visual approach of the aircraft class when pertinent traffic is known to be a heavy aircraft.

42.12 Visual Separation

42.12.1 Pilot

42.12.1.1 Acceptance of instructions to follow another aircraft or to provide visual separation from it is an acknowledgment that the pilot will maneuver the aircraft as necessary to avoid the other aircraft or to maintain in–trail separation. Pilots are responsible to maintain visual separation until flight paths (altitudes and/or courses) diverge.

42.12.1.2 If instructed by ATC to follow another aircraft or to provide visual separation from it, promptly notify the controller if you lose sight of that aircraft, are unable to maintain continued visual contact with it, or cannot accept the responsibility for your own separation for any reason.

42.12.1.3 The pilot also accepts responsibility for wake turbulence separation under these conditions.

42.12.2 Controller Applies Visual Separation Only:

42.12.2.1 Within the terminal area when a controller has both aircraft in sight or by instructing a pilot who sees the other aircraft to maintain visual separation from it.

42.12.2.2 Pilots are responsible to maintain visual separation until flight paths (altitudes and/or courses) diverge.

42.12.2.3 Within en route airspace when aircraft are on opposite courses and one pilot reports having seen the other aircraft and that the aircraft have passed each other.

42.13 VFR−on−top

42.13.1 Pilot

42.13.1.1 This clearance must be requested by the pilot on an IFR flight plan, and if approved, allows the pilot the choice to select (subject to any ATC restrictions) an altitude or flight level in lieu of an assigned altitude.

NOTE−
1. *VFR−on−top is not permitted in certain airspace areas, such as Class A airspace, certain restricted areas, etc. Consequently, IFR flights operating VFR−on−top will avoid such airspace.*

2. *See paragraph 32. of this section, IFR Separation Standards; GEN 3.3, Paragraph 6, Position Reporting; and GEN 3.3, Paragraph 7, Additional Reports.*

42.13.1.2 By requesting a VFR−on−top clearance, the pilot assumes the sole responsibility to be vigilant so as to see and avoid other aircraft and to:

a) Fly at the appropriate VFR altitude as prescribed in 14 CFR Section 91.159.

b) Comply with the VFR visibility and distance from clouds criteria in 14 CFR Section 91.155 (Basic VFR Weather Minimums).

c) Comply with instrument flight rules that are applicable to this flight; i.e., minimum IFR altitudes, position reporting, radio communications, course to be flown, adherence to ATC clearance, etc.

d) Advise ATC prior to any altitude change to ensure the exchange of accurate traffic information.

42.13.2 Controller

42.13.2.1 May clear an aircraft to maintain VFR−on−top if the pilot of an aircraft on an IFR flight plan requests the clearance.

42.13.2.2 Informs the pilot of an aircraft cleared to climb to VFR−on−top the reported height of the tops or that no top report is available; issues an alternate clearance if necessary; and once the aircraft reports reaching VFR−on−top, reclears the aircraft to maintain VFR−on−top.

42.13.2.3 Before issuing clearance, ascertains that the aircraft is not in or will not enter Class A airspace.

42.14 Instrument Departures

42.14.1 Pilot

42.14.1.1 Prior to departure, considers the type of terrain and other obstructions on or in the vicinity of the departure airport.

42.14.1.2 Determines if obstruction avoidance can be maintained visually or that the departure procedure should be followed.

42.14.1.3 Determines whether an obstacle departure procedure (ODP) and/or DP is available for obstruction avoidance. One option may be a Visual Climb Over Airport (VCOA). Pilots must advise ATC as early as possible of the intent to fly the VCOA prior to departure.

42.14.1.4 At airports where instrument approach procedures have not been published, hence no published departure procedure, determines what action will be necessary and takes such action that will assure a safe departure.

42.14.2 Controller

42.14.2.1 At locations with airport traffic control service, when necessary, specifies direction of takeoff, turn, or initial heading to be flown after takeoff, consistent with published departure procedures (DP) or diverse vector areas (DVA), where applicable.

42.14.2.2 At locations without airport traffic control service but within Class E surface area, when necessary to specify direction of takeoff/turn or initial heading to be flown, obtains pilot's concurrence that the procedure will allow him/her to comply with local traffic patterns, terrain, and obstruction avoidance.

42.14.2.3 When the initial heading will take the aircraft off an assigned procedure (for example, an RNAV SID with a published lateral path to a waypoint and crossing restrictions from the departure end of runway), the controller will assign an altitude to maintain with the initial heading.

42.14.2.4 Includes established departure procedures as part of the air traffic control clearance when pilot compliance is necessary to ensure separation.

42.14.2.5 At locations with both SIDs and DVAs, ATC will provide an amended departure clearance to cancel a previously assigned SID and subsequently utilize a DVA or vice versa. The amended clearance will be provided to the pilot in a timely manner so that the pilot may confirm adequate climb performance exists to determine if the amended clearance is acceptable, and brief the changes in advance of entering the runway.

42.14.2.6 At locations with a DVA, ATC is not permitted to utilize a SID and DVA concurrently.

42.15 Minimum Fuel Advisory

42.15.1 Pilot

42.15.1.1 Advises ATC of your "minimum fuel" status when your fuel supply has reached a state where, upon reaching destination, you cannot accept any undue delay.

42.15.1.2 Be aware that this is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur.

42.15.1.3 On initial contact the term "minimum fuel" should be used after stating call sign.

EXAMPLE–
Salt Lake Approach, United 621, "minimum fuel."

42.15.1.4 Be aware a minimum fuel advisory does not imply a need for traffic priority.

42.15.1.5 If the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, you should declare an emergency due to low fuel, and report the fuel remaining in minutes.

42.15.2 Controller

42.15.2.1 When an aircraft declares a state of "minimum fuel," relay this information to the facility to whom control jurisdiction is transferred.

42.15.2.2 Be alert for any occurrence which might delay the aircraft.

43. Traffic Alert and Collision Avoidance System (TCAS I & II)

43.1 TCAS I provides proximity warning only, to assist the pilot in the visual acquisition of intruder aircraft. No recommended avoidance maneuvers are provided nor authorized as a direct result of a TCAS I warning. It is intended for use by smaller commuter aircraft holding 10 to 30 passenger seats, and general aviation aircraft.

43.2 TCAS II provides traffic advisories (TA) and resolution advisories (RA). Resolution advisories provide recommended maneuvers in a vertical direction (climb or descend only) to avoid conflicting traffic. Transport category aircraft, and larger commuter and business aircraft holding 31 passenger seats or more, are required to be TCAS II equipped.

43.2.1 When a TA occurs, attempt to establish visual contact with the traffic but do not deviate from an assigned clearance based only on TA information.

43.2.2 When an RA occurs, pilots should respond immediately to the RA displays and maneuver as indicated unless doing so would jeopardize the safe operation of the flight, or the flight crew can ensure separation with the help of definitive visual acquisition of the aircraft causing the RA.

43.2.3 Each pilot who deviates from an ATC clearance in response to an RA must notify ATC of that deviation as soon as practicable, and notify ATC when clear of conflict and returning to their previously assigned clearance.

43.3 Deviations from rules, policies, or clearances should be kept to the minimum necessary to satisfy an RA. Most RA maneuvering requires minimum excursion from assigned altitude.

43.4 The serving IFR air traffic facility is not responsible to provide approved standard IFR separation to an IFR aircraft, from other aircraft, terrain, or obstructions after an RA maneuver until one of the following conditions exists:

43.4.1 The aircraft has returned to its assigned altitude and course.

43.4.2 Alternate ATC instructions have been issued.

43.4.3 A crew member informs ATC that the TCAS maneuver has been completed.

NOTE−
TCAS does not alter or diminish the pilot's basic authority and responsibility to ensure safe flight. Since TCAS does not respond to aircraft which are not transponder equipped or aircraft with a transponder failure, TCAS alone does not ensure safe separation in every case. At this time, no air traffic service nor handling is predicated on the availability of TCAS equipment in the aircraft.

44. Traffic Information Service (TIS)

44.1 Introduction

The Traffic Information Service (TIS) provides information to the cockpit via data link, that is similar to VFR radar traffic advisories normally received over voice radio. Among the first FAA−provided data services, TIS is intended to improve the safety and efficiency of "see and avoid" flight through an automatic display that informs the pilot of nearby traffic and potential conflict situations. This traffic display is intended to assist the pilot in visual acquisition of these aircraft. TIS employs an enhanced capability of the terminal Mode S radar system, which contains the surveillance data, as well as the data link required to "uplink" this information to suitably−equipped aircraft (known as a TIS "client"). TIS provides estimated position, altitude, altitude trend, and ground track information for up to 8 intruder aircraft within 7 NM horizontally, +3,500 and −3,000 feet vertically of the client aircraft (see FIG ENR 1.1−32, TIS Proximity Coverage Volume). The range of a target reported at a distance greater than 7 NM only indicates that this target will be a threat within 34 seconds and does not display a precise distance. TIS will alert the pilot to aircraft (under surveillance of the Mode S radar) that are estimated to be within 34 seconds of potential collision, regardless of distance or altitude. TIS surveillance data is derived from the same radar used by ATC; this data is uplinked to the client aircraft on each radar scan (nominally every 5 seconds).

44.2 Requirements

44.2.1 In order to use TIS, the client and any intruder aircraft must be equipped with the appropriate cockpit equipment and fly within the radar coverage of a Mode S radar capable of providing TIS. Typically, this will be within 55 NM of the sites depicted in FIG ENR 1.1−33, Terminal Mode S Radar Sites. ATC communication is not a requirement to receive TIS, although it may be required by the particular airspace or flight operations in which TIS is being used.

FIG ENR 1.1–32
TIS Proximity Coverage Volume

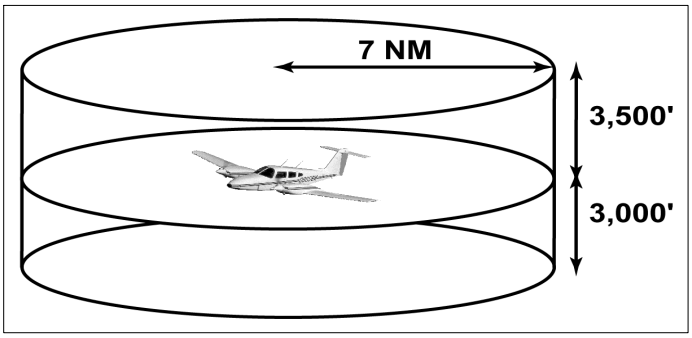


FIG ENR 1.1–33
Terminal Mode S Radar Sites

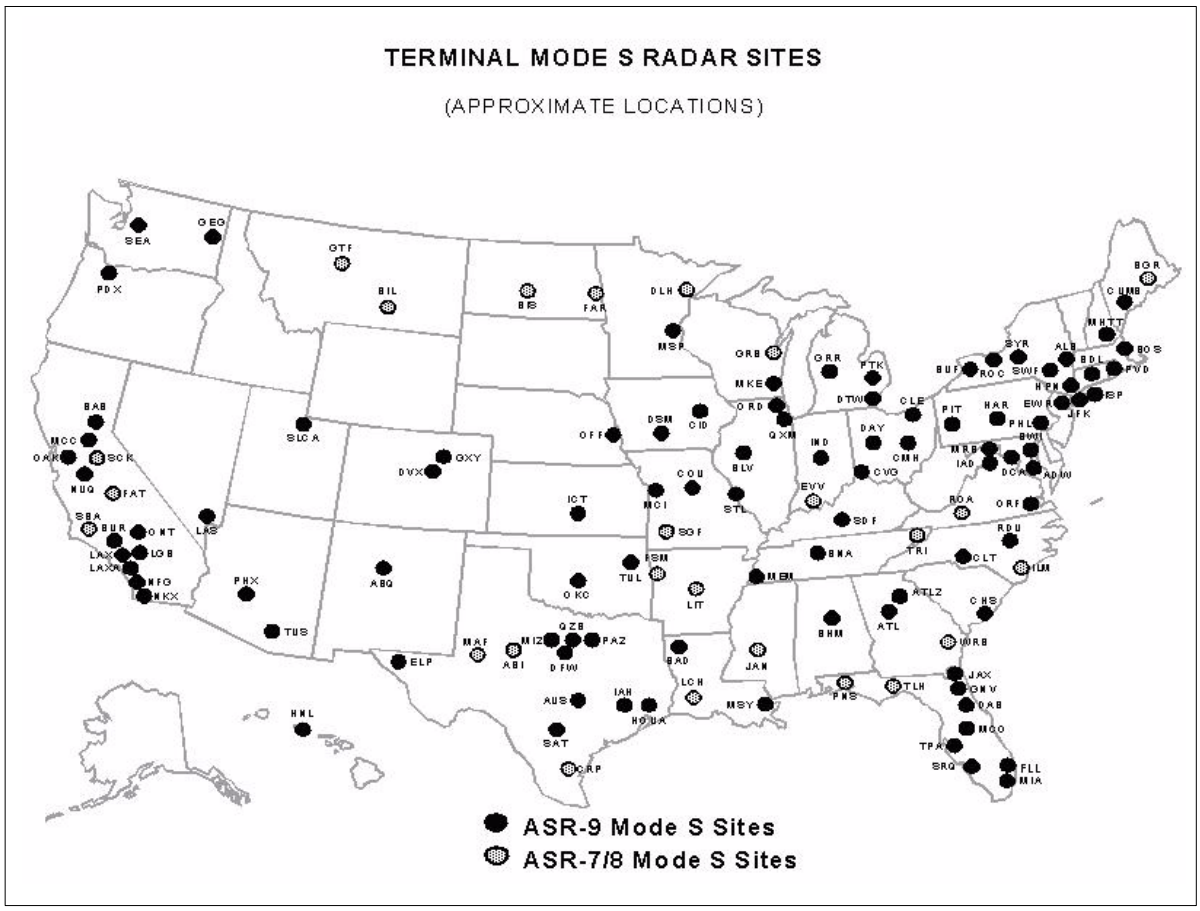
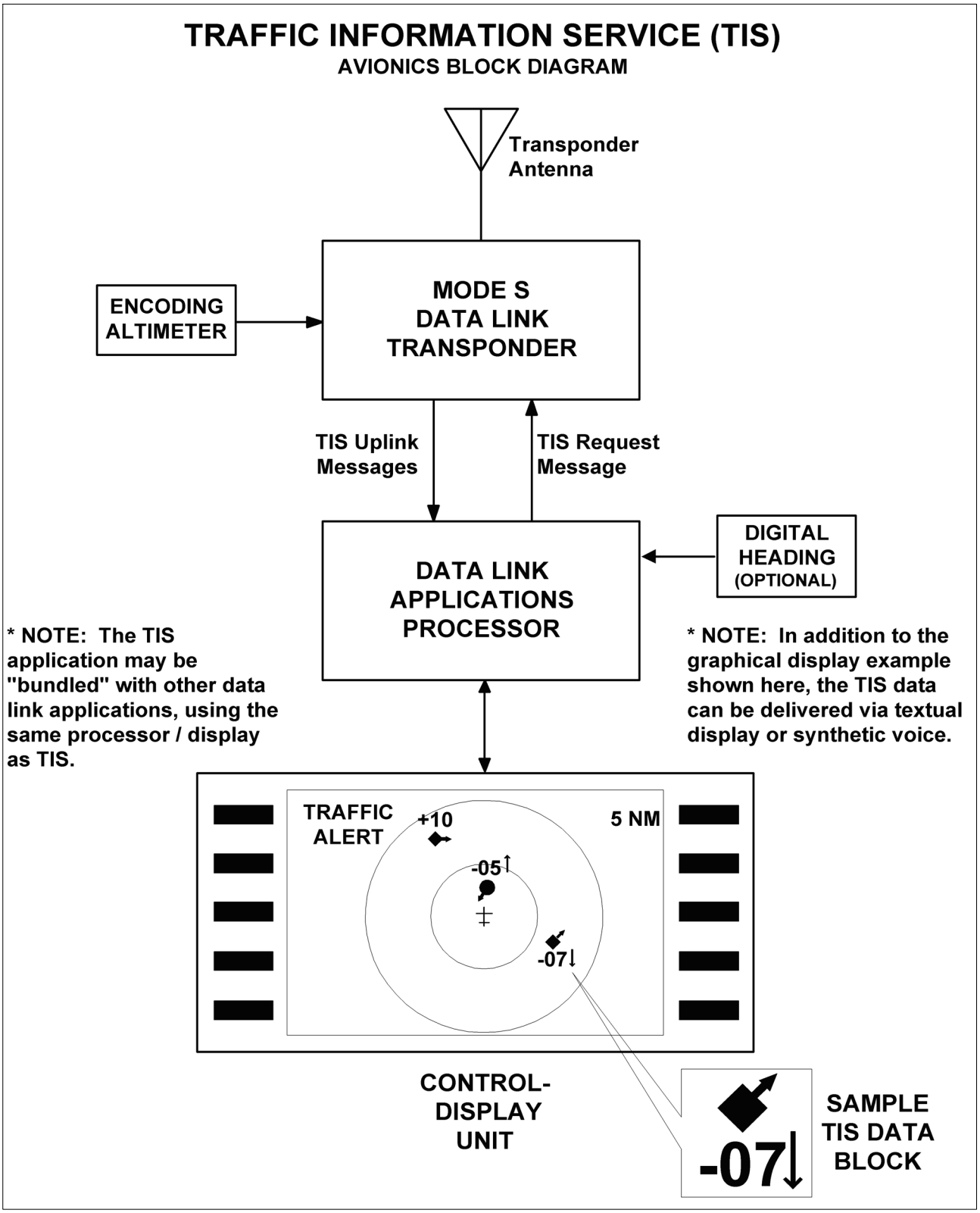


FIG ENR 1.1–34
Traffic Information Service (TIS)
Avionics Block Diagram



44.2.2 The cockpit equipment functionality required by a TIS client aircraft to receive the service consists of the following (refer to FIG ENR 1.1−34):

44.2.2.1 Mode S data link transponder with altitude encoder.

44.2.2.2 Data link applications processor with TIS software installed.

44.2.2.3 Control−display unit.

44.2.2.4 Optional equipment includes a digital heading source to correct display errors caused by “crab angle” and turning maneuvers.

NOTE−
Some of the above functions will likely be combined into single pieces of avionics, such as subparagraphs 44.2.2.1 and 44.2.2.2.

44.2.3 To be visible to the TIS client, the intruder aircraft must, at a minimum, have an operating transponder (Mode A, C or S). All altitude information provided by TIS from intruder aircraft is derived from Mode C reports, if appropriately equipped.

44.2.4 TIS will initially be provided by the terminal Mode S systems that are paired with ASR−9 digital primary radars. These systems are in locations with the greatest traffic densities, thus will provide the greatest initial benefit. The remaining terminal Mode S sensors, which are paired with ASR−7 or ASR−8 analog primary radars, will provide TIS pending modification or relocation of these sites. See FIG ENR 1.1−33, Terminal Mode S Radar Sites, for site locations. There is no mechanism in place, such as NOTAMs, to provide status update on individual radar sites since TIS is a nonessential, supplemental information service.

The FAA also operates en route Mode S radars (not illustrated) that rotate once every 12 seconds. These sites will require additional development of TIS before any possible implementation. There are no plans to implement TIS in the en route Mode S radars at the present time.

44.3 Capabilities

44.3.1 TIS provides ground−based surveillance information over the Mode S data link to properly equipped client aircraft to aid in visual acquisition of proximate air traffic. The actual avionics capability of each installation will vary and the supplemental handbook material must be consulted prior to using TIS. A maximum of eight (8) intruder aircraft may be displayed; if more than eight aircraft match intruder parameters, the eight “most significant” intruders are uplinked. These “most significant” intruders are usually the ones in closest proximity and/or the greatest threat to the TIS client.

44.3.2 TIS, through the Mode S ground sensor, provides the following data on each intruder aircraft:

44.3.2.1 Relative bearing information in 6−degree increments.

44.3.2.2 Relative range information in 1/8 NM to 1 NM increments (depending on range).

44.3.2.3 Relative altitude in 100−foot increments (within 1,000 feet) or 500−foot increments (from 1,000−3,500 feet) if the intruder aircraft has operating altitude reporting capability.

44.3.2.4 Estimated intruder ground track in 45−degree increments.

44.3.2.5 Altitude trend data (level within 500 fpm or climbing/descending >500 fpm) if the intruder aircraft has operating altitude reporting capability.

44.3.2.6 Intruder priority as either a “traffic advisory” or “proximate” intruder.

44.3.3 When flying from surveillance coverage of one Mode S sensor to another, the transfer of TIS is an automatic function of the avionics system and requires no action from the pilot.

44.3.4 There are a variety of status messages that are provided by either the airborne system or ground equipment to alert the pilot of high priority intruders and data link system status. These messages include the following:

44.3.4.1 Alert. Identifies a potential collision hazard within 34 seconds. This alert may be visual and/or audible, such as a flashing display symbol or a headset tone. A target is a threat if the time to the closest approach

in vertical and horizontal coordinates is less than 30 seconds and the closest approach is expected to be within 500 feet vertically and 0.5 nautical miles laterally.

44.3.4.2 TIS Traffic. TIS traffic data is displayed.

44.3.4.3 Coasting. The TIS display is more than 6 seconds old. This indicates a missing uplink from the ground system. When the TIS display information is more than 12 seconds old, the "No Traffic" status will be indicated.

44.3.4.4 No Traffic. No intruders meet proximate or alert criteria. This condition may exist when the TIS system is fully functional or may indicate "coasting" between 12 and 59 seconds old (see paragraph 44.3.4.3 above).

44.3.4.5 TIS Unavailable. The pilot has requested TIS, but no ground system is available. This condition will also be displayed when TIS uplinks are missing for 60 seconds or more.

44.3.4.6 TIS Disabled. The pilot has not requested TIS or has disconnected from TIS.

44.3.4.7 Good−bye. The client aircraft has flown outside of TIS coverage.

NOTE−
Depending on the avionics manufacturer implementation, it is possible that some of these messages will not be directly available to the pilot.

44.3.5 Depending on avionics system design, TIS may be presented to the pilot in a variety of different displays, including text and/or graphics. Voice annunciation may also be used, either alone or in combination with a visual display. FIG ENR 1.1−34, Traffic Information Service (TIS), Avionics Block Diagram, shows an example of a TIS display using symbology similar to the Traffic Alert and Collision Avoidance System (TCAS) installed on most passenger air carrier/commuter aircraft in the U.S. The small symbol in the center represents the client aircraft and the display is oriented "track up," with the 12 o'clock position at the top. The range rings indicate 2 and 5 NM. Each intruder is depicted by a symbol positioned at the approximate relative bearing and range from the client aircraft. The circular symbol near the center indicates an "alert" intruder and the diamond symbols indicate "proximate" intruders.

44.3.6 The inset in the lower right corner of FIG ENR 1.1−34, Traffic Information Service (TIS), Avionics Block Diagram, shows a possible TIS data block display. The following information is contained in this data block:

44.3.6.1 The intruder, located approximately four o'clock, three miles, is a "proximate" aircraft and currently not a collision threat to the client aircraft. This is indicated by the diamond symbol used in this example.

44.3.6.2 The intruder ground track diverges to the right of the client aircraft, indicated by the small arrow.

44.3.6.3 The intruder altitude is 700 feet less than or below the client aircraft, indicated by the "−07" located under the symbol.

44.3.6.4 The intruder is descending >500 fpm, indicated by the downward arrow next to the "−07" relative altitude information. The absence of this arrow when an altitude tag is present indicates level flight or a climb/descent rate less than 500 fpm.

NOTE−
If the intruder did not have an operating altitude encoder (Mode C), the altitude and altitude trend "tags" would have been omitted.

44.4 Limitations

44.4.1 TIS is NOT intended to be used as a collision avoidance system and does not relieve the pilot's responsibility to "see and avoid" other aircraft (see Paragraph 42.10, See and Avoid). TIS must not be used for avoidance maneuvers during IMC or other times when there is no visual contact with the intruder aircraft. TIS provides proximity warning only, to assist the pilot in the visual acquisition of intruder aircraft. It is intended for use by aircraft in which TCAS is not required. Avoidance maneuvers are neither provided nor authorized, as a direct result of a TIS intruder display or TIS alert.

44.4.2 TIS does not alter or diminish the pilot's basic authority and responsibility to ensure safe flight. Since TIS does not respond to aircraft which are not transponder equipped, aircraft with a transponder failure, or aircraft out of radar coverage, TIS alone does not ensure safe separation in every case.

44.4.3 At this time, no air traffic service nor handling is predicated on the availability of TIS equipment in the aircraft.

44.4.4 While TIS is a useful aid to visual traffic avoidance, it has some system limitations that must be fully understood to ensure proper use. Many of these limitations are inherent in secondary radar surveillance. In other words, the information provided by TIS will be no better than that provided to ATC. Other limitations and anomalies are associated with the TIS predictive algorithm.

44.4.4.1 Intruder Display Limitations. TIS will only display aircraft with operating transponders installed. TIS relies on surveillance of the Mode S radar, which is a "secondary surveillance" radar similar to the ATCRBS described in paragraph 37.2, Air Traffic Control Radar Beacon System (ATCRBS).

44.4.4.2 TIS Client Altitude Reporting Requirement. Altitude reporting is required by the TIS client aircraft in order to receive TIS. If the altitude encoder is inoperative or disabled, TIS will be unavailable, as TIS requests will not be honored by the ground system. As such, TIS requires altitude reporting to determine the Proximity Coverage Volume as indicated in FIG ENR 1.1−32. TIS users must be alert to altitude encoder malfunctions, as TIS has no mechanism to determine if client altitude reporting is correct. A failure of this nature will cause erroneous and possibly unpredictable TIS operation. If this malfunction is suspected, confirmation of altitude reporting with ATC is suggested.

44.4.4.3 Intruder Altitude Reporting. Intruders without altitude reporting capability will be displayed without the accompanying altitude tag. Additionally, nonaltitude reporting intruders are assumed to be at the same altitude as the TIS client for alert computations. This helps to ensure that the pilot will be alerted to all traffic under radar coverage, but the actual altitude difference may be substantial. Therefore, visual acquisition may be difficult in this instance.

44.4.4.4 Coverage Limitations. Since TIS is provided by ground−based, secondary surveillance radar, it is subject to all limitations of that radar. If an aircraft is not detected by the radar, it cannot be displayed on TIS. Examples of these limitations are as follows:

a) TIS will typically be provided within 55 NM of the radars depicted in FIG ENR 1.1−33, Terminal Mode S Radar Sites. This maximum range can vary by radar site and is always subject to "line of sight" limitations; the radar and data link signals will be blocked by obstructions, terrain, and curvature of the earth.

b) TIS will be unavailable at low altitudes in many areas of the country, particularly in mountainous regions. Also, when flying near the "floor" of radar coverage in a particular area, intruders below the client aircraft may not be detected by TIS.

c) TIS will be temporarily disrupted when flying directly over the radar site providing coverage if no adjacent site assumes the service. A ground−based radar, similar to a VOR or NDB, has a zenith cone, sometimes referred to as the cone of confusion or cone of silence. This is the area of ambiguity directly above the station where bearing information is unreliable. The zenith cone setting for TIS is 34 degrees: any aircraft above that angle with respect to the radar horizon will lose TIS coverage from that radar until it is below this 34 degree angle. The aircraft may not actually lose service in areas of multiple radar coverage since an adjacent radar will provide TIS. If no other TIS−capable radar is available, the "Good−bye" message will be received and TIS terminated until coverage is resumed.

44.4.4.5 Intermittent Operations. TIS operation may be intermittent during turns or other maneuvering, particularly if the transponder system does not include antenna diversity (antenna mounted on the top and bottom of the aircraft). As in subparagraph 44.4.4.4 above, TIS is dependent on two−way, "line of sight" communications between the aircraft and the Mode S radar. Whenever the structure of the client aircraft comes between the transponder antenna (usually located on the underside of the aircraft) and the ground−based radar antenna, the signal may be temporarily interrupted.

44.4.4.6 TIS Predictive Algorithm. TIS information is collected one radar scan prior to the scan during which the uplink occurs. Therefore, the surveillance information is approximately 5 seconds old. In order to present the intruders in a "real time" position, TIS uses a "predictive algorithm" in its tracking software. This algorithm uses track history data to extrapolate intruders to their expected positions consistent with the time of display in the cockpit. Occasionally, aircraft maneuvering will cause this algorithm to induce errors in the TIS display. These errors primarily affect relative bearing information; intruder distance and altitude will remain relatively accurate and may be used to assist in "see and avoid." Some of the more common examples of these errors are as follows:

a) When client or intruder aircraft maneuver excessively or abruptly, the tracking algorithm will report incorrect horizontal position until the maneuvering aircraft stabilizes.

b) When a rapidly closing intruder is on a course that crosses the client at a shallow angle (either overtaking or head on) and either aircraft abruptly changes course within ¼ NM, TIS will display the intruder on the opposite side of the client than it actually is.

These are relatively rare occurrences and will be corrected in a few radar scans once the course has stabilized.

44.4.4.7 Heading/Course Reference. Not all TIS aircraft installations will have onboard heading reference information. In these installations, aircraft course reference to the TIS display is provided by the Mode S radar. The radar only determines ground track information and has no indication of the client aircraft heading. In these installations, all intruder bearing information is referenced to ground track and does not account for wind correction. Additionally, since ground−based radar will require several scans to determine aircraft course following a course change, a lag in TIS display orientation (intruder aircraft bearing) will occur. As in subparagraph 44.4.4.6 above, intruder distance and altitude are still usable.

44.4.4.8 Closely−Spaced Intruder Errors. When operating more than 30 NM from the Mode S sensor, TIS forces any intruder within 3/8 NM of the TIS client to appear at the same horizontal position as the client aircraft. Without this feature, TIS could display intruders in a manner confusing to the pilot in critical situations (for example, a closely−spaced intruder that is actually to the right of the client may appear on the TIS display to the left). At longer distances from the radar, TIS cannot accurately determine relative bearing/distance information on intruder aircraft that are in close proximity to the client.

Because TIS uses a ground−based, rotating radar for surveillance information, the accuracy of TIS data is dependent on the distance from the sensor (radar) providing the service. This is much the same phenomenon as experienced with ground−based navigational aids, such as a VOR. As distance from the radar increases, the accuracy of surveillance decreases. Since TIS does not inform the pilot of distance from the Mode S radar, the pilot must assume that any intruder appearing at the same position as the client aircraft may actually be up to 3/8 NM away in any direction. Consistent with the operation of TIS, an alert on the display (regardless of distance from the radar) should stimulate an outside visual scan, intruder acquisition, and traffic avoidance based on outside reference.

44.5 Reports of TIS Malfunctions

44.5.1 Users of TIS can render valuable assistance in the early correction of malfunctions by reporting their observations of undesirable performance. Reporters should identify the time of observation, location, type and identity of aircraft, and describe the condition observed; the type of transponder processor, and software in use can also be useful information. Since TIS performance is monitored by maintenance personnel rather than ATC, it is suggested that malfunctions be reported by radio or telephone to the nearest Flight Service Station (FSS) facility.

NOTE−
TIS operates at only those terminal Mode S radar sites depicted in FIG ENR 1.1−33. Though similar in some ways, TIS is not related to TIS−B (Traffic Information Service−Broadcast).

45. Automatic Dependent Surveillance−Broadcast (ADS−B) Services

45.1 Introduction

45.1.1 Automatic Dependent Surveillance–Broadcast (ADS–B) is a surveillance technology deployed throughout the NAS (see FIG ENR 1.1–35). The ADS–B system is composed of aircraft avionics and a ground infrastructure. Onboard avionics determine the position of the aircraft by using the GNSS and transmit its position along with additional information about the aircraft to ground stations for use by ATC and other ADS–B services. This information is transmitted at a rate of approximately once per second.
(See FIG ENR 1.1–36 and FIG ENR 1.1–37.)

45.1.2 In the United States, ADS–B equipped aircraft exchange information on one of two frequencies: 978 or 1090 MHz. The 1090 MHz frequency is also associated with Mode A, C, and S transponder operations. 1090 MHz transponders with integrated ADS–B functionality extend the transponder message sets with additional ADS–B information. This additional information is known as an "extended squitter" message and is referred to as 1090ES. ADS–B equipment operating on 978 MHz is known as the Universal Access Transceiver (UAT).

45.1.3 ADS–B avionics can have the ability to both transmit and receive information. The transmission of ADS–B information from an aircraft is known as ADS–B Out. The receipt of ADS–B information by an aircraft is known as ADS–B In. All aircraft operating within the airspace defined in 14 CFR § 91.225 are required to transmit the information defined in § 91.227 using ADS–B Out avionics.

45.1.4 In general, operators flying at 18,000 feet and above (Class A airspace) are required to have 1090ES equipment. Those that do not fly above 18,000 may use either UAT or 1090ES equipment. (Refer to 14 CFR §§ 91.225 and 91.227.) While the regulations do not require it, operators equipped with ADS–B In will realize additional benefits from ADS–B broadcast services: Traffic Information Service – Broadcast (TIS–B) (paragraph 46.) and Flight Information Service – Broadcast (FIS–B) (paragraph 47.).

FIG ENR 1.1–35
ADS–B, TIS–B, and FIS–B:
Broadcast Services Architecture

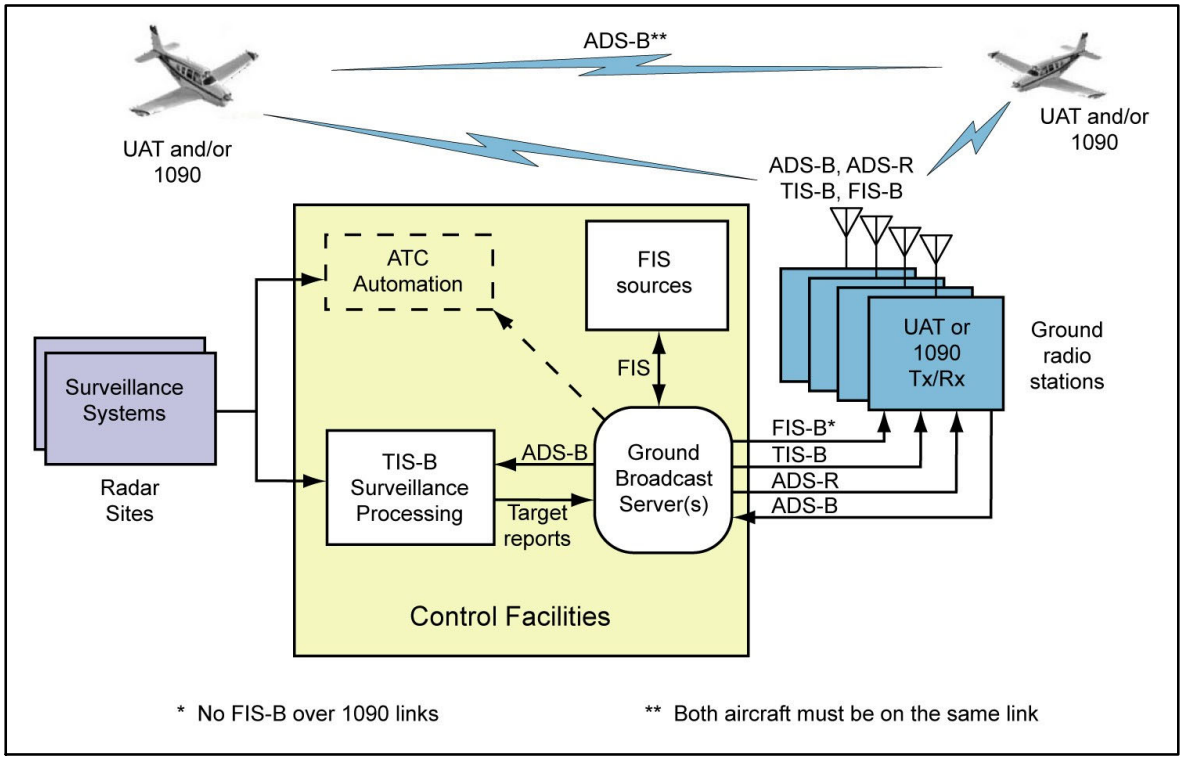


FIG ENR 1.1−36
En Route − ADS−B/ADS−R/TIS−B/FIS−B Service Ceilings/Floors

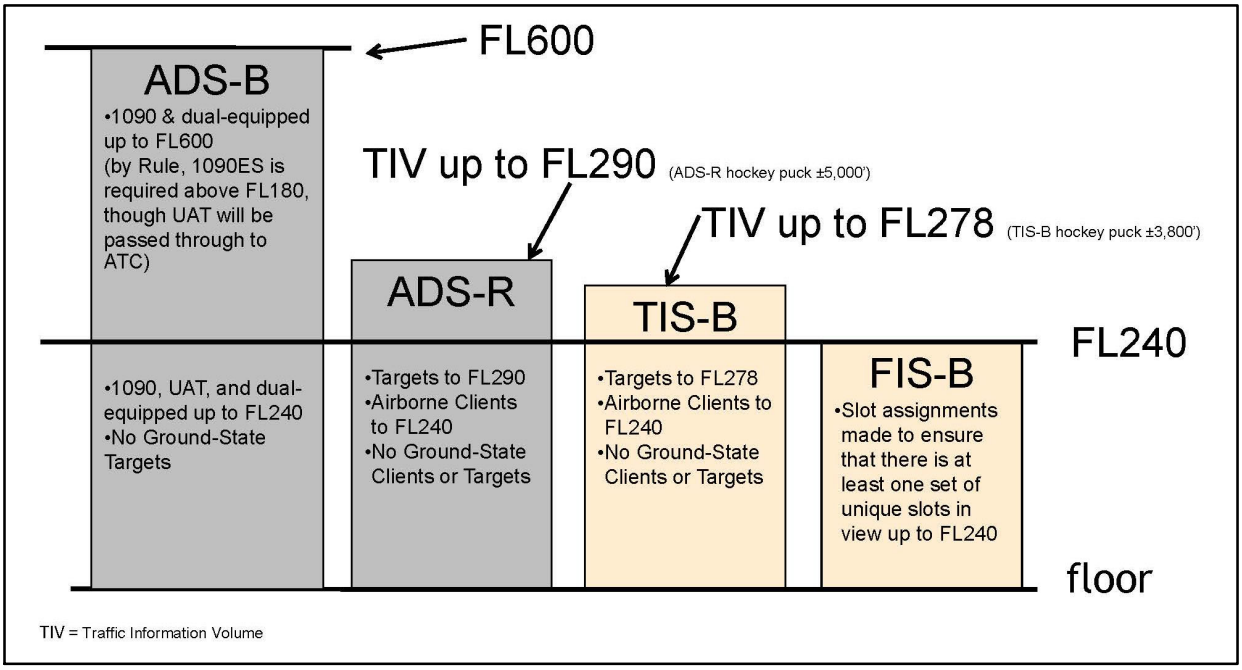
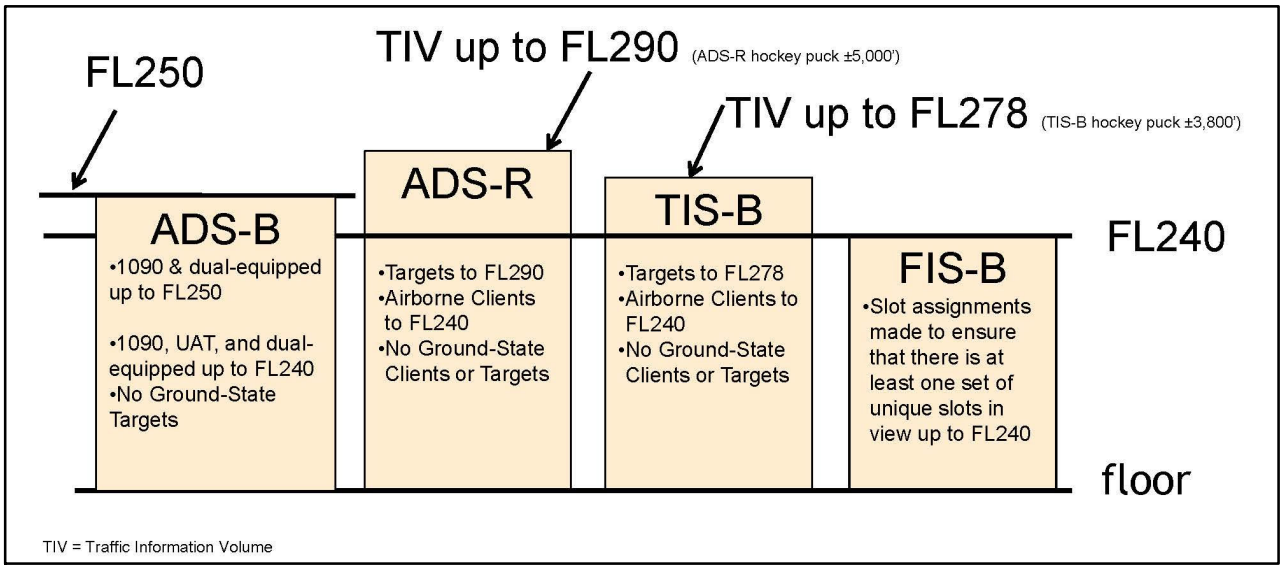


FIG ENR 1.1−37
Terminal − ADS−B/ADS−R/TIS−B/FIS−B Service Ceilings/Floors



45.2 ADS−B Certification and Performance Requirements

ADS−B equipment may be certified as a surveillance source for air traffic separation services using ADS−B Out. ADS−B equipment may also be certified for use with ADS−B In advisory services that enable appropriately equipped aircraft to display traffic and flight information. Refer to the aircraft's flight manual supplement or Pilot Operating Handbook for the capabilities of a specific aircraft installation.

45.3 ADS−B Capabilities and Procedures

45.3.1 ADS−B enables improved surveillance services, both air−to−air and air−to−ground, especially in areas where radar is ineffective due to terrain or where it is impractical or cost prohibitive. Initial NAS applications

of air−to−air ADS−B are for "advisory" use only, enhancing a pilot's visual acquisition of other nearby equipped aircraft either when airborne or on the airport surface. Additionally, ADS−B will enable ATC and fleet operators to monitor aircraft throughout the available ground station coverage area.

45.3.2 One of the data elements transmitted by ADS−B is the aircraft's Flight Identification (FLT ID). The FLT ID is comprised of a maximum of seven alphanumeric characters and must correspond to the aircraft identification filed in the flight plan. For airline and commuter aircraft, the FLT ID is usually the company name and flight number (for example, AAL3432), and is typically entered into the avionics by the flight crew during preflight. For general aviation (GA), if aircraft avionics allow dynamic modification of the FLT ID, the pilot can enter it prior to flight. However, some ADS−B avionics require the FLT ID to be set to the aircraft registration number (for example, N1234Q) by the installer and cannot be changed by the pilot from the cockpit. In both cases, the FLT ID must correspond to the aircraft identification filed in its flight plan.

ATC automation systems use the transmitted ADS−B FLT ID to uniquely identify each aircraft within a given airspace, and to correlate it to its filed flight plan for the purpose of providing surveillance and separation services. If the FLT ID and the filed aircraft identification are not identical, a Call Sign Mis−Match (CSMM) is generated and ATC automation systems may not associate the aircraft with its filed flight plan. In this case, air traffic services may be delayed or unavailable until the CSMM is corrected. Consequently, it is imperative that flight crews and GA pilots ensure the FLT ID entry correctly matches the aircraft identification filed in their flight plan.

45.3.3 Each ADS−B aircraft is assigned a unique ICAO address (also known as a 24−bit address) that is broadcast by the ADS−B transmitter. This ICAO address is programmed at installation. Should multiple aircraft broadcast the same ICAO address while transiting the same ADS−B Only Service Volume, the ADS−B network may be unable to track the targets correctly. If radar reinforcement is available, tracking will continue. If radar is unavailable, the controller may lose target tracking entirely on one or both targets. Consequently, it is imperative that the ICAO address entry is correct.

45.3.4 Aircraft that are equipped with ADS−B avionics on the UAT datalink have a feature that allows them to broadcast an anonymous 24−bit ICAO address. In this mode, the UAT system creates a randomized address that does not match the actual ICAO address assigned to the aircraft. The UAT anonymous 24−bit address feature may only be used when the operator has not filed an IFR flight plan and is not requesting ATC services. In the anonymity mode, the aircraft's beacon code must be set to 1200 and, depending on the manufacturer's implementation, the aircraft FLT ID might not be transmitted. Pilots should be aware that while in UAT anonymity mode, they will not be eligible to receive ATC separation and flight following services, and may not benefit from enhanced ADS−B search and rescue capabilities.

45.3.5 ADS−B systems integrated with the transponder will automatically set the applicable emergency status when 7500, 7600, or 7700 are entered into the transponder. ADS−B systems not integrated with the transponder, or systems with optional emergency codes, will require that the appropriate emergency code is entered through a pilot interface. ADS−B is intended for inflight and airport surface use. Unless otherwise directed by ATC, transponder/ADS−B systems should be turned "on" and remain "on" whenever operating in the air or on the airport surface movement area.

45.4 ATC Surveillance Services using ADS−B − Procedures and Recommended Phraseology

Radar procedures, with the exceptions found in this paragraph, are identical to those procedures prescribed for radar in the AIP.

45.4.1 Preflight:

If ATC services are anticipated when either a VFR or IFR flight plan is filed, the aircraft identification (as entered in the flight plan) must be entered as the FLT ID in the ADS−B avionics as described in paragraph 45.3.2.

45.4.2 Inflight:

When requesting surveillance services while airborne, pilots must disable the anonymous feature, if so equipped, prior to contacting ATC. Pilots must also ensure that their transmitted ADS−B FLT ID matches the aircraft identification as entered in their flight plan.

45.4.3 Aircraft with an Inoperative/Malfunctioning ADS−B Transmitter:

45.4.3.1 ATC will inform the flight crew when the aircraft's ADS−B transmitter appears to be inoperative or malfunctioning:

PHRASEOLOGY−
YOUR ADS−B TRANSMITTER APPEARS TO BE INOPERATIVE/MALFUNCTIONING. STOP ADS−B TRANSMISSIONS.

45.4.3.2 ATC will inform the flight crew if it becomes necessary to turn off the aircraft's ADS−B transmitter.

PHRASEOLOGY−
STOP ADS−B TRANSMISSIONS.

45.4.3.3 Other malfunctions and considerations: Loss of automatic altitude reporting capabilities (encoder failure) will result in loss of ATC altitude advisory services.

45.4.4 Procedures for Accommodation of Non−ADS−B Equipped Aircraft:

45.4.4.1 Pilots of aircraft not equipped with ADS−B may only operate outside airspace designated as ADS−B airspace in 14 CFR §91.225. Pilots of unequipped aircraft wishing to fly any portion of a flight in ADS−B airspace may seek a deviation from the regulation to conduct operations without the required equipment. Direction for obtaining this deviation are available in Advisory Circular 90−114.

45.4.4.2 While air traffic controllers can identify which aircraft are ADS−B equipped and which are not, there is no indication if a non−equipped pilot has obtained a preflight authorization to enter ADS−B airspace. Situations may occur when the pilot of a non−equipped aircraft, without an authorization to operate in ADS−B airspace receives an ATC−initiated in−flight clearance to fly a heading, route, or altitude that would penetrate ADS−B airspace. Such clearances may be for traffic, weather, or simply to shorten the aircraft's route of flight. When this occurs, the pilot should acknowledge and execute the clearance, but must advise the controller that they are not ADS−B equipped and have not received prior authorization to operate in ADS−B airspace. The controller, at their discretion, will either acknowledge and proceed with the new clearance, or modify the clearance to avoid ADS−B airspace. In either case, the FAA will normally not take enforcement action for non−equipage in these circumstances.

NOTE−
Pilots operating without ADS−B equipment must not request route or altitude changes that will result in an incursion into ADS−B airspace except for safety of flight; for example, weather avoidance. Unequipped aircraft that have not received a pre−flight deviation authorization will only be considered in compliance with regulation if the amendment to flight is initiated by ATC.

EXAMPLE−
1. ***ATC:*** *"November Two Three Quebec, turn fifteen degrees left, proceed direct Bradford when able, rest of route unchanged."*
Aircraft: *"November Two Three Quebec, turning fifteen degrees left, direct Bradford when able, rest of route unchanged. Be advised, we are negative ADS−B equipment and have not received authorization to operate in ADS−B airspace."*
ATC*: "November Two Three Quebec, roger"*
or
"November Two Three Quebec, roger, turn twenty degrees right, rejoin Victor Ten, rest of route unchanged."

2. ***ATC:*** *"November Four Alpha Tango, climb and maintain one zero thousand for traffic."*
Aircraft: *"November Four Alpha Tango, leaving eight thousand for one zero thousand. Be advised, we are negative ADS−B equipment and have not received authorization to operate in ADS−B airspace."*
ATC: *"November Four Alpha Tango, roger"*
or
"November Four Alpha Tango, roger, cancel climb clearance, maintain eight thousand."

REFERENCE−
Federal Register Notice, Volume 84, Number 62, dated April 1, 2019

45.5 ADS−B Limitations

45.5.1 The ADS−B cockpit display of traffic is NOT intended to be used as a collision avoidance system and does not relieve the pilot's responsibility to "see and avoid" other aircraft. (See Paragraph 42.10, See and Avoid).

ADS−B provides proximity warning only to assist the pilot in the visual acquisition of other aircraft. ADS−B must not be used for avoidance maneuvers during IMC or other times when there is no visual contact with the intruder aircraft. No avoidance maneuvers are provided or authorized, as a direct result of an ADS−B display or an ADS−B alert.

45.5.2 ADS−B does not alter or diminish the pilot's basic authority and responsibility to ensure safe flight. ADS−B only displays aircraft that are ADS−B equipped; therefore, aircraft that are not ADS−B equipped or aircraft that are experiencing an ADS−B failure will not be displayed. ADS−B alone does not ensure safe separation.

45.5.3 Presently, no air traffic services or handling is predicated on the availability of an ADS−B cockpit display. A "traffic−in−sight" reply to ATC must be based on seeing an aircraft out−the−window, NOT on the cockpit display.

45.6 Reports of ADS−B Malfunctions

Users of ADS−B can provide valuable assistance in the correction of malfunctions by reporting instances of undesirable system performance. Since ADS−B performance is monitored by maintenance personnel rather than ATC, report malfunctions to the nearest Flight Service Station (FSS) facility by radio or telephone, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

45.6.1 Condition observed;

45.6.2 Date and time of observation;

45.6.3 Altitude and location of observation;

45.6.4 Type and call sign of the aircraft; and

45.6.5 Type and software version of avionics system.

46. Traffic Information Service−Broadcast (TIS−B)

46.1 Introduction

TIS−B is the broadcast of ATC derived traffic information to ADS−B equipped (1090ES or UAT) aircraft from ground radio stations. The source of this traffic information is derived from ground−based air traffic surveillance sensors. TIS−B service will be available throughout the NAS where there are both adequate surveillance coverage from ground sensors and adequate broadcast coverage from ADS−B ground radio stations. The quality level of traffic information provided by TIS−B is dependent upon the number and type of ground sensors available as TIS−B sources and the timeliness of the reported data. (See FIG ENR 1.1−36 and FIG ENR 1.1−37.)

46.2 TIS−B Requirements

In order to receive TIS−B service, the following conditions must exist:

46.2.1 Aircraft must be equipped with an ADS−B transmitter/receiver or transceiver, and a cockpit display of traffic information (CDTI).

46.2.2 Aircraft must fly within the coverage volume of a compatible ground radio station that is configured for TIS−B uplinks. (Not all ground radio stations provide TIS−B due to a lack of radar coverage or because a radar feed is not available).

46.2.3 Aircraft must be within the coverage of and detected by at least one ATC radar serving the ground radio station in use.

46.3 TIS−B Capabilities

46.3.1 TIS−B is intended to provide ADS−B equipped aircraft with a more complete traffic picture in situations where not all nearby aircraft are equipped with ADS−B Out. This advisory−only application is intended to enhance a pilot's visual acquisition of other traffic.

46.3.2 Only transponder−equipped targets (i.e., Mode A/C or Mode S transponders) are transmitted through the ATC ground system architecture. Current radar siting may result in limited radar surveillance coverage at lower altitudes near some airports, with subsequently limited TIS−B service volume coverage. If there is no radar coverage in a given area, then there will be no TIS−B coverage in that area.

46.4 TIS−B Limitations

46.4.1 TIS−B is NOT intended to be used as a collision avoidance system and does not relieve the pilot's responsibility to "see and avoid" other aircraft, in accordance with 14CFR §91.113b. TIS−B must not be used for avoidance maneuvers during times when there is no visual contact with the intruder aircraft. TIS−B is intended only to assist in the visual acquisition of other aircraft.

NOTE−
No aircraft avoidance maneuvers are authorized as a direct result of a TIS−B target being displayed in the cockpit.

46.4.2 While TIS−B is a useful aid to visual traffic avoidance, its inherent system limitations must be understood to ensure proper use.

46.4.2.1 A pilot may receive an intermittent TIS−B target of themselves, typically when maneuvering (e.g., climbing turns) due to the radar not tracking the aircraft as quickly as ADS−B.

46.4.2.2 The ADS−B−to−radar association process within the ground system may at times have difficulty correlating an ADS−B report with corresponding radar returns from the same aircraft. When this happens the pilot may see duplicate traffic symbols (i.e., "TIS−B shadows") on the cockpit display.

46.4.2.3 Updates of TIS−B traffic reports will occur less often than ADS−B traffic updates. TIS−B position updates will occur approximately once every 3−13 seconds depending on the type of radar system in use within the coverage area. In comparison, the update rate for ADS−B is nominally once per second.

46.4.2.4 The TIS−B system only uplinks data pertaining to transponder−equipped aircraft. Aircraft without a transponder will not be displayed as TIS−B traffic.

46.4.2.5 There is no indication provided when any aircraft is operating inside or outside the TIS−B service volume, therefore it is difficult to know if one is receiving uplinked TIS−B traffic information.

46.4.3 Pilots and operators are reminded that the airborne equipment that displays TIS−B targets is for pilot situational awareness only and is not approved as a collision avoidance tool. Unless there is an imminent emergency requiring immediate action, any deviation from an air traffic control clearance in response to perceived converging traffic appearing on a TIS−B display must be approved by the controlling ATC facility before commencing the maneuver, except as permitted under certain conditions in 14CFR §91.123. Uncoordinated deviations may place an aircraft in close proximity to other aircraft under ATC control not seen on the airborne equipment and may result in a pilot deviation or other incident.

46.5 Reports of TIS−B Malfunctions

Users of TIS−B can provide valuable assistance in the correction of malfunctions by reporting instances of undesirable system performance. Since TIS−B performance is monitored by maintenance personnel rather than ATC, report malfunctions to the nearest Flight Service Station (FSS) facility by radio or telephone, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

46.5.1 Condition observed;

46.5.2 Date and time of observation;

46.5.3 Altitude and location of observation;

46.5.4 Type and call sign of the aircraft; and

46.5.5 Type and software version of avionics system.

47. Flight Information Service− Broadcast (FIS−B)

47.1 Introduction.

FIS−B is a ground broadcast service provided through the ADS−B Services network over the 978 MHz UAT data link. The FAA FIS−B system provides pilots and flight crews of properly equipped aircraft with a cockpit display of certain aviation weather and aeronautical information. FIS−B reception is line−of−sight within the service volume of the ground infrastructure. (See FIG ENR 1.1−36 and FIG ENR 1.1−37.)

47.2 Weather Products Provided by FIS−B.

FIS-B does not replace a preflight weather briefing from a source listed in GEN 3.5, paragraph 3.5, FAA Weather Services, or inflight updates from an FSS or ATC. FIS-B information may be used by the pilot for the safe conduct of flight and aircraft movement; however, the information should not be the only source of weather or aeronautical information. A pilot should be particularly alert and understand the limitations and quality assurance issues associated with individual products. This includes graphical representation of next generation weather radar (NEXRAD) imagery and Notices to Air Missions (NOTAM)/temporary flight restrictions (TFR).

REFERENCE−
AIP, ENR 3.5 Paragraph 7, Flight Information Services (FIS).
Advisory Circular AC 00−63, "Use of Cockpit Displays of Digital Weather and Aeronautical Information"

47.3 Reports of FIS−B Malfunctions.

Users of FIS−B can provide valuable assistance in the correction of malfunctions by reporting instances of undesirable system performance. Since FIS−B performance is monitored by maintenance personnel rather than ATC, report malfunctions to the nearest Flight Service Station (FSS) facility by radio or telephone, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

47.3.1 Condition observed;

47.3.2 Date and time of observation;

47.3.3 Altitude and location of observation;

47.3.4 Type and call sign of the aircraft; and

47.3.5 Type and software version of avionics system.

TBL ENR 1.1–6

FIS–B Over UAT Product Update and Transmission Intervals

Product	Update Interval[1]	Transmission Interval (95%)[2]	Basic Product
AIRMET	As Available	5 minutes	Yes
AWW/WW	As Available, then at 15 minute intervals for 1 hour	5 minutes	No
Ceiling	As Available	10 minutes	No
Convective SIGMET	As Available, then at 15 minute intervals for 1 hour	5 minutes	Yes
D–ATIS	As Available	1 minute	No
Echo Top	5 minutes	5 minutes	No
METAR/SPECI	1 minute (where available), As Available otherwise	5 minutes	Yes
MRMS NEXRAD (CONUS)	2 minutes	15 minutes	Yes
MRMS NEXRAD (Regional)	2 minutes	2.5 minutes	Yes
NOTAMs–D/FDC	As Available	10 minutes	Yes
NOTAMs–TFR	As Available	10 minutes	Yes
PIREP	As Available	10 minutes	Yes
SIGMET	As Available, then at 15 minute intervals for 1 hour	5 minutes	Yes
SUA Status	As Available	10 minutes	Yes
TAF/AMEND	6 Hours (±15 minutes)	10 minutes	Yes
Temperature Aloft	12 Hours (±15 minutes)	10 minutes	Yes
TWIP	As Available	1 minute	No
Winds aloft	12 Hours (±15 minutes)	10 minutes	Yes
Lightning strikes [3]	5 minutes	5 minutes	Yes
Turbulence [3]	1 minute	15 minutes	Yes
Icing, Forecast Potential (FIP) [3]	60 minutes	15 minutes	Yes
Cloud tops [3]	30 minutes	15 minutes	Yes
1 Minute AWOS [3]	1 minute	10 minutes	No
Graphical–AIRMET [3]	As Available	5 minutes	Yes
Center Weather Advisory (CWA) [3]	As Available	10 minutes	Yes
Temporary Restricted Areas (TRA)	As Available	10 minutes	Yes
Temporary Military Operations Areas (TMOA)	As Available	10 minutes	Yes

[1] The Update Interval is the rate at which the product data is available from the source.

[2] The Transmission Interval is the amount of time within which a new or updated product transmission must be completed (95%) and the rate or repetition interval at which the product is rebroadcast (95%).

[3] The transmission and update intervals for the expanded set of basic meteorological products may be adjusted based on FAA and vendor agreement on the final product formats and performance requirements.

NOTE−

1. *Details concerning the content, format, and symbols of the various data link products provided should be obtained from the specific avionics manufacturer.*

2. *NOTAM−D and NOTAM−FDC products broadcast via FIS−B are limited to those issued or effective within the past 30 days.*

48. Automatic Dependent Surveillance−Rebroadcast (ADS−R)

48.1 Introduction.

ADS−R is a datalink translation function of the ADS−B ground system required to accommodate the two separate operating frequencies (978 MHz and 1090 ES). The ADS−B system receives the ADS−B messages transmitted on one frequency and ADS−R translates and reformats the information for rebroadcast and use on the other frequency. This allows ADS−B In equipped aircraft to see nearby ADS−B Out traffic regardless of the operating link of the other aircraft. Aircraft operating on the same ADS−B frequency exchange information directly and do not require the ADS−R translation function. (See FIG ENR 1.1−36 and FIG ENR 1.1−37.)

48.2 Reports of ADS−R Malfunctions.

Users of ADS–R can provide valuable assistance in the correction of malfunctions by reporting instances of undesirable system performance. Since ADS–R performance is monitored by maintenance personnel rather than ATC, report malfunctions to the nearest Flight Service Station (FSS) facility by radio or telephone, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

48.2.1 Condition observed;

48.2.2 Date and time of observation;

48.2.3 Altitude and location of observation;

48.2.4 Type and call sign of the aircraft; and

48.2.5 Type and software version of avionics system.

49. Heavy Traffic Around Military Fields

49.1 Pilots are advised to exercise vigilance when in close proximity to most military airports. These airports may have jet aircraft traffic patterns extending up to 2,500 feet above the surface. In addition, they may have an unusually heavy concentration of jet aircraft operating within a 25−nautical mile radius and from the surface to all altitudes. The precautionary note also applies to the larger civil airports.

TBL ENR 1.4–1

Basic VFR Weather Minimums

Airspace	Flight Visibility	Distance from Clouds
Class A	Not Applicable	Not Applicable
Class B	3 statute miles	Clear of Clouds
Class C	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class D	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class E Less than 10,000 feet MSL	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
At or above 10,000 feet MSL	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal
Class G 1,200 feet or less above the surface (regardless of MSL altitude). For aircraft other than helicopters:		
Day, except as provided in 14 CFR § 91.155(b)	1 statute mile	Clear of clouds
Night, except as provided in 14 CFR § 91.155(b)	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
For helicopters:		
Day	½ statute mile	Clear of clouds
Night, except as provided in §91.155(b)	1 statute mile	Clear of clouds
More than 1,200 feet above the surface but less than 10,000 feet MSL.		
Day	1 statute mile	500 feet below 1,000 feet above 2,000 feet horizontal
Night	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
More than 1,200 feet above the surface and at or above 10,000 feet MSL.	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal

TBL ENR 1.4–2

VFR Cruising Altitudes and Flight Levels

If your magnetic course (ground track) is:	And you are more than 3,000 feet above the surface but below 18,000 feet MSL, fly:	And you are above 18,000 feet MSL to FL 290, fly:
0° to 179°	Odd thousands MSL, plus 500 feet (3,500; 5,500; 7,500, etc.)	Odd Flight Levels plus 500 feet (FL 195; FL 215; FL 235, etc.)
180° to 359°	Even thousands MSL, plus 500 feet (4,500; 6,500; 8,500, etc.)	Even Flight Levels plus 500 feet (FL 185; FL 205; FL 225, etc.)

2. Controlled Airspace

2.1 General

2.1.1 Controlled Airspace. A generic term that covers the different classification of airspace (Class A, Class B, Class C, Class D, and Class E airspace) and defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. (See FIG ENR 1.4–1 for Airspace Classes). Airspace classes are pronounced in the ICAO phonetics for clarification. The term "class" may be dropped when referring to airspace in pilot/controller communications.

2.1.2 IFR Requirements. IFR operations in any class of controlled airspace requires that a pilot must file an IFR flight plan and receive an appropriate ATC clearance.

2.1.3 IFR Separation. Standard IFR separation is provided to all aircraft operating under IFR in controlled airspace.

2.1.4 VFR Requirements. It is the responsibility of the pilot to insure that ATC clearance or radio communication requirements are met prior to entry into Class B, Class C, or Class D airspace. The pilot retains this responsibility when receiving ATC radar advisories. (See 14 CFR Part 91.)

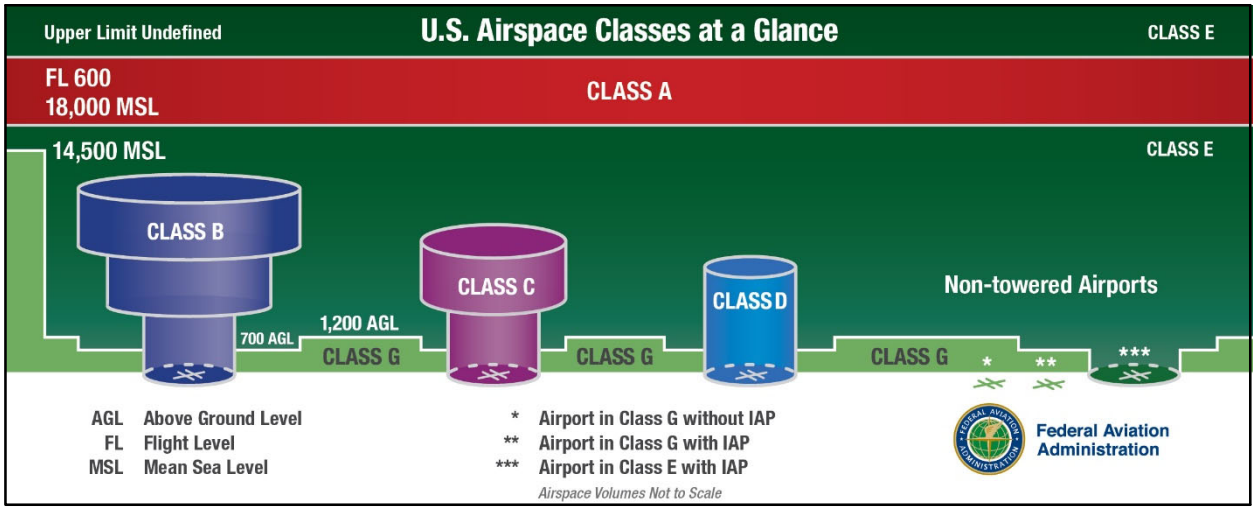
REFERENCE–
14 CFR Part 91.

2.1.5 Traffic Advisories. Traffic advisories will be provided to all aircraft as the controller's work situation permits.

2.1.6 Safety Alerts. Safety Alerts are mandatory services and are provided to ALL aircraft. There are two types of Safety Alerts, Terrain/Obstruction Alert and Aircraft Conflict/Mode Intruder Alert.

2.1.6.1 Terrain/Obstruction Alert. A Terrain/Obstruction Alert is issued when, in the controller's judgment, an aircraft's altitude places it in unsafe proximity to terrain and/or obstructions.

FIG ENR 1.4–1
Airspace Classes



2.1.6.2 Aircraft Conflict/Mode C Intruder Alert. An Aircraft Conflict/Mode C Intruder Alert is issued if the controller observes another aircraft which places it in an unsafe proximity. When feasible, the controller will offer the pilot an alternative course of action.

2.1.7 Ultralight Vehicles. No person may operate an ultralight vehicle within Class A, Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from the ATC facility having jurisdiction over that airspace. (See 14 CFR Part 103.)

2.1.8 Unmanned Free Balloons. Unless otherwise authorized by ATC, no person may operate an unmanned free balloon below 2,000 feet above the surface within the lateral boundaries of Class B, Class C, Class D, or Class E airspace designated for an airport. (See 14 CFR Part 101.)

2.1.9 Parachute Jumps. No person may make a parachute jump, and no pilot in command may allow a parachute jump to be made from that aircraft, in or into Class A, Class B, Class C, or Class D airspace without, or in violation of, the terms of an ATC authorization issued by the ATC facility having jurisdiction over the airspace. (See 14 CFR Part 105.)

2.2 Class A Airspace

2.2.1 Definition. Generally, that airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles off the coast of the 48 contiguous States and Alaska; and designated international airspace beyond 12 nautical miles off the coast of the 48 contiguous States and Alaska within areas of domestic radio navigational signal or ATC radar coverage, and within which domestic procedures are applied.

2.2.2 Operating Rules and Pilot/Equipment Requirements. Unless otherwise authorized, all persons must operate their aircraft under IFR.

REFERENCE−
14 CFR Section 71.33, Sections 91.167 through 91.193, Sections 91.215 through 91.217, and Sections 91.225 through 91.227.

2.2.3 Charts. Class A airspace is not specifically charted.

2.3 Class B Airspace

2.3.1 Definition. Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of IFR operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspace areas resemble upside−down wedding cakes), and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds."

2.3.2 Operating Rules and Pilot/Equipment Requirements. Regardless of weather conditions, an ATC clearance is required prior to operating within Class B airspace. Pilots should not request a clearance to operate within Class B airspace unless the requirements of 14 CFR Sections 91.131, 91.215, and 91.225 are met. Included among these requirements are:

2.3.2.1 Unless otherwise authorized by ATC, aircraft must be equipped with an operable two−way radio capable of communicating with ATC on appropriate frequencies for that Class B airspace.

2.3.2.2 No person may take off or land a civil aircraft at the following primary airports within Class B airspace unless the pilot in command holds at least a private pilot certificate:

a) Andrews Air Force Base, MD.

b) Atlanta Hartsfield Airport, GA.

c) Boston Logan Airport, MA.

d) Chicago O'Hare Intl. Airport, IL.

e) Dallas/Fort Worth Intl. Airport, TX.

f) Los Angeles Intl. Airport, CA.

g) Miami Intl. Airport, FL.

h) Newark Intl. Airport, NJ.

i) New York Kennedy Airport, NY.

j) New York La Guardia Airport, NY.

k) Ronald Reagan Washington National Airport, DC.

l) San Francisco Intl. Airport, CA.

2.3.2.3 No person may take off or land a civil aircraft at an airport within Class B airspace or operate a civil aircraft within Class B airspace unless:

a) The pilot in command holds at least a private pilot certificate; or

b) The pilot−in−command holds a recreational pilot certificate and has met the requirements of 14 CFR Section 61.101; or

c) The pilot−in−command holds a sport pilot certificate and has met the requirements of 14 CFR Section 61.325; or

d) The aircraft is operated by a student pilot:

1) Who seeks a private pilot certificate and has met the requirements of 14 CFR Section 61.95.

2) Who seeks a recreational pilot or sport pilot certificate and has met the requirements of 14 CFR Section 61.94.

2.3.2.4 Unless otherwise authorized by ATC, each person operating a large turbine engine−powered airplane to or from a primary airport must operate at or above the designated floors while within the lateral limits of Class B airspace.

2.3.2.5 Unless otherwise authorized by ATC, each aircraft must be equipped as follows:

a) For IFR operations, an operable VOR or TACAN receiver or an operable and suitable RNAV system; and

b) For all operations, a two−way radio capable of communications with ATC on appropriate frequencies for that area.

c) Unless otherwise authorized by ATC, an operable radar beacon transponder with automatic altitude reporting capability and operable ADS−B Out equipment.

NOTE−
ATC may, upon notification, immediately authorize a deviation from the altitude reporting equipment requirement; however, a request for a deviation from the 4096 transponder equipment requirement must be submitted to the controlling ATC facility at least one hour before the proposed operation. A request for a deviation from the ADS−B equipage requirement must be submitted using the FAA's automated web authorization tool at least one hour but not more than 24 hours before the proposed operation. (See ENR 1.1, Paragraph 37.7, Transponder Operation).

2.3.2.6 Mode C Veil

a) The airspace within 30 nautical miles of an airport listed in Appendix D, Section 1 of 14 CFR Part 91 (generally primary airports within Class B airspace areas), from the surface upward to 10,000 feet mean seal level (MSL). Unless otherwise authorized by air traffic control, aircraft operating within this airspace must be equipped with operable radar beacon transponder with automatic altitude reporting capability and operable ADS−B Out equipment.

b) However, aircraft that were not originally certificated with an engine−driven electrical system or that have not subsequently been certified with a system installed may conduct operations within a Mode C veil provided the aircraft remains outside Class A, B or C airspace; and below the altitude of the ceiling of a Class B or Class C airspace area designated for an airport or 10,000 feet MSL, whichever is lower.

2.3.3 Charts. Class B airspace is charted on Sectional Charts, IFR En Route Low Altitude Charts, and Terminal Area Charts.

2.3.4 Flight Procedures

2.3.4.1 Flights. Aircraft within Class B airspace are required to operate in accordance with current IFR procedures. A clearance for a visual approach to a primary airport is not authorization for turbine powered airplanes to operate below the designated floors of the Class B airspace.

2.3.4.2 VFR Flights

a) Arriving aircraft must obtain an ATC clearance prior to entering Class B airspace and must contact ATC on the appropriate frequency, and in relation to geographical fixes shown on local charts. Although a pilot may be operating beneath the floor of the Class B airspace on initial contact, communications with ATC should be established in relation to the points indicated for spacing and sequencing purposes.

b) Departing aircraft require a clearance to depart Class B airspace and should advise the clearance delivery position of their intended altitude and route of flight. ATC will normally advise VFR aircraft when leaving the geographical limits of the Class B airspace. Radar service is not automatically terminated with this advisory unless specifically stated by the controller.

c) Aircraft not landing or departing the primary airport may obtain an ATC clearance to transit the Class B airspace when traffic conditions permit and provided the requirements of 14 CFR Section 91.131 are met. Such VFR aircraft are encouraged, to the extent possible, to operate at altitudes above or below the Class B airspace or transit through established VFR corridors. Pilots operating in VFR corridors are urged to use frequency 122.750 MHz for the exchange of aircraft position information.

2.3.5 ATC Clearances and Separation. An ATC clearance is required to enter and operate within Class B airspace. VFR pilots are provided sequencing and separation from other aircraft while operating within Class B airspace. (See ENR 1.1, Paragraph 39., Terminal Radar Service for VFR Aircraft.)

NOTE−
Separation and sequencing of VFR will be suspended in the event of a power outage as this service is dependent on radar. The pilot will be advised that the service is not available and issued wind, runway information, and the time or place to contact the tower.

2.3.5.1 VFR aircraft are separated from all VFR/IFR aircraft which weigh 19,000 pounds or less by a minimum of:

a) Target resolution; or

b) 500 feet vertical separation; or

c) Visual separation.

2.3.5.2 VFR aircraft are separated from all VFR/IFR aircraft which weigh more than 19,000 and turbojets by no less than:

a) $1\ ^1/_2$ miles lateral separation; or

b) 500 feet vertical separation; or

c) Visual separation.

2.3.5.3 This program is not to be interpreted as relieving pilots of their responsibilities to see and avoid other traffic operating in basic VFR weather conditions, to adjust their operations and flight path as necessary to preclude serious wake encounters, to maintain appropriate terrain and obstruction clearance, or to remain in weather conditions equal to or better than the minimums required by 14 CFR Section 91.155. Approach control should be advised and a revised clearance or instruction obtained when compliance with an assigned route, heading, and/or altitude is likely to compromise pilot responsibility with respect to terrain and obstruction clearance, vortex exposure, and weather minimums.

2.3.5.4 ATC may assign altitudes to VFR aircraft that do not conform to 14 CFR Section 91.159. “RESUME APPROPRIATE VFR ALTITUDES” will be broadcast when the altitude assignment is no longer needed for separation or when leaving Class B airspace. Pilots must return to an altitude that conforms to 14 CFR Section 91.159.

2.3.5.5 Proximity Operations. VFR aircraft operating in proximity to Class B airspace are cautioned against operating too closely to the boundaries, especially where the floor of the Class B airspace is 3,000 feet or less above the surface or where VFR cruise altitudes are at or near the floor of higher levels. Observance of this

precaution will reduce the potential for encountering an aircraft operating at the altitudes of Class B floors. Additionally, VFR aircraft are encouraged to utilize the VFR Planning Chart as a tool for planning flight in proximity to Class B airspace. Charted VFR Flyway Planning charts are published on the back of the existing VFR Terminal Area Charts.

2.4 Class C Airspace

2.4.1 Definition. Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C airspace area is individually tailored, the airspace usually consists of a surface area with a 5 NM radius, and an outer area with a 10 NM radius that extends no lower than 1,200 feet up to 4,000 feet above the airport elevation.

2.4.2 Outer Area. Class C airspace areas have a procedural (nonregulatory) Outer Area. Normally this area is 20 NM from the primary Class C airspace airport. Its vertical limit extends from the lower limits of radio/radar coverage up to the ceiling of the approach control's delegated airspace, excluding the Class C airspace itself, and other airspace as appropriate. (This outer area is not charted.)

2.4.3 Charts. Class C airspace is charted on Sectional Charts, IFR En Route Low Altitude, and Terminal Area Charts where appropriate.

2.4.4 Operating Rules and Pilot Equipment Requirements

2.4.4.1 Pilot Certification. No specific certification required.

2.4.4.2 Equipment

a) Two-way radio.

b) Unless otherwise authorized by ATC, an operable radar beacon transponder with automatic altitude reporting capability and operable ADS−B Out equipment.

1) Within the 48 contiguous states and the District of Columbia at and above 10,000 feet MSL, excluding the airspace at and below 2,500 feet above the surface, and

2) At and above 3,000 feet MSL over the Gulf of Mexico from the coastline of the United States out to 12 nautical miles.

NOTE−
See Section ENR 1.1, paragraph 37.7, Transponder/ADS−B Operation, subparagraph 37.7.6 for Mode C Transponder Requirements and ENR 1.1, paragraph 45, for ADS−B requirements for operating above Class C airspace.

c) Arrival or Through Flight Entry Requirements. Two−way radio communication must be established with the ATC facility providing ATC services prior to entry and thereafter maintain those communications while in Class C airspace. Pilots of arriving aircraft should contact the Class C airspace ATC facility on the publicized frequency and give their position, altitude, radar beacon code, destination, and request Class C service. Radio contact should be initiated far enough from the Class C airspace boundary to preclude entering Class C airspace before two−way radio communications are established.

NOTE−
1. *If the controller responds to a radio call with, "(aircraft callsign) standby," radio communications have been established and the pilot can enter the Class C airspace.*

2. *If workload or traffic conditions prevent immediate provision of Class C services, the controller will inform the pilot to remain outside the Class C airspace until conditions permit the services to be provided.*

3. *It is important to understand that if the controller responds to the initial radio call without using the aircraft identification, radio communications have not been established and the pilot may not enter the Class C airspace.*

4. *Class C airspace areas have a procedural Outer Area. Normally this area is 20 NM from the primary Class C airspace airport. Its vertical limit extends from the lower limits of radio/radar coverage up to the ceiling of the approach control's delegated airspace, excluding the Class C airspace itself, and other airspace as appropriate. (This outer area is not charted.)*

5. *Pilots approaching an airport with Class C service should be aware that if they descend below the base altitude of the 5 to 10 mile shelf during an instrument or visual approach, they may encounter non−transponder/non−ADS−B VFR aircraft.*

EXAMPLE−

1. *[Aircraft callsign] "remain outside the Class Charlie airspace and standby."*

2. *"Aircraft calling Dulles approach control, standby."*

d) Departures from:

1) A primary or satellite airport with an operating control tower. Two−way radio communications must be established and maintained with the control tower, and thereafter as instructed by ATC while operating in Class C airspace.

2) A satellite airport without an operating control tower. Two−way radio communications must be established as soon as practicable after departing with the ATC facility having jurisdiction over the Class C airspace.

e) Aircraft Speed. Unless otherwise authorized or required by ATC, no person may operate an aircraft at or below 2,500 feet above the surface within 4 nautical miles of the primary airport of a Class C airspace area at an indicated airspeed of more than 200 knots (230 mph).

2.4.5 Air Traffic Services. When two−way radio communications and radar contact are established, all VFR aircraft are:

2.4.5.1 Sequenced to the primary airport.

2.4.5.2 Provided Class C services within the Class C airspace and the Outer Area.

2.4.5.3 Provided basic radar services beyond the outer area on a workload permitting basis. This can be terminated by the controller if workload dictates.

2.4.6 Aircraft Separation. Separation is provided within the Class C airspace and the Outer Area after two−way radio communications and radar contact are established. VFR aircraft are separated from IFR aircraft within the Class C airspace by any of the following:

2.4.6.1 Visual separation.

2.4.6.2 500 feet vertical separation.

2.4.6.3 Target resolution.

2.4.6.4 Wake turbulence separation will be provided to all aircraft operating:

a) Behind and less than 1,000 feet below super or heavy aircraft,

b) To small aircraft operating behind and less than 500 feet below B757 aircraft, and

c) To small aircraft following a large aircraft on final approach.

NOTE−

1. *Separation and sequencing of VFR aircraft will be suspended in the event of a radar outage as this service is dependent on radar. The pilot will be advised that the service is not available and issued wind, runway information, and the time or place to contact the tower.*

2. *Pilot participation is voluntary within the outer area and can be discontinued within the outer area at the pilots request. Class C services will be provided in the outer area unless the pilot requests termination of the service.*

3. *Some facilities provide Class C services only during published hours. At other times, terminal IFR radar service will be provided. It is important to note that the communications and transponder/ADS−B requirements are dependent on the class of airspace established outside of the published hours.*

2.4.7 Secondary Airports

2.4.7.1 In some locations, Class C airspace may overlie the Class D surface area of a secondary airport. In order to allow that control tower to provide service to aircraft, portions of the overlapping Class C airspace may be

procedurally excluded when the secondary airport tower is in operation. Aircraft operating in these procedurally excluded areas will only be provided airport traffic control services when in communication with the secondary airport tower.

2.4.7.2 Aircraft proceeding inbound to a satellite airport will be terminated at a sufficient distance to allow time to change to the appropriate tower or advisory frequency. Class C services to these aircraft will be discontinued when the aircraft is instructed to contact the tower or change to advisory frequency.

2.4.7.3 Aircraft departing secondary controlled airports will not receive Class C services until they have been radar identified and two−way communications have been established with the Class C airspace facility.

2.4.7.4 This program is not to be interpreted as relieving pilots of their responsibilities to see and avoid other traffic operating in basic VFR weather conditions, to adjust their operations and flight path as necessary to preclude serious wake encounters, to maintain appropriate terrain and obstruction clearance, or to remain in weather conditions equal to or better than the minimums required by 14 CFR Section 91.155. Approach control should be advised and a revised clearance or instruction obtained when compliance with an assigned route, heading, and/or altitude is likely to compromise pilot responsibility with respect to terrain and obstruction clearance, vortex exposure, and weather minimums.

2.4.8 Class C Airspace Areas By State

These states currently have designated Class C airspace areas that are depicted on sectional charts. Pilots should consult current sectional charts and NOTAMs for the latest information on services available. Pilots should be aware that some Class C airspace underlies or is adjacent to Class B airspace. (See TBL ENR 1.4−3.)

TBL ENR 1.4−3

Class C Airspace Areas by State

State/City	Airport
ALABAMA	
Birmingham	Birmingham−Shuttlesworth International
Huntsville	International−Carl T Jones Fld
Mobile	Regional
ALASKA	
Anchorage	Ted Stevens International
ARIZONA	
Davis−Monthan	AFB
Tucson	International
ARKANSAS	
Fayetteville (Springdale)	Northwest Arkansas Regional
Little Rock	Adams Field
CALIFORNIA	
Beale	AFB
Burbank	Bob Hope
Fresno	Yosemite International
Monterey	Peninsula
Oakland	Metropolitan Oakland International
Ontario	International
Riverside	March AFB
Sacramento	International
San Jose	Norman Y. Mineta International
Santa Ana	John Wayne/Orange County
Santa Barbara	Municipal
COLORADO	
Colorado Springs	Municipal
CONNECTICUT	
Windsor Locks	Bradley International
FLORIDA	
Daytona Beach	International
Fort Lauderdale	Hollywood International
Fort Myers	SW Florida Regional
Jacksonville	International
Orlando	Sanford International
Palm Beach	International
Pensacola	NAS
Pensacola	Regional
Sarasota	Bradenton International
Tallahassee	Regional
Whiting	NAS
GEORGIA	
Savannah	Hilton Head International
HAWAII	
Kahului	Kahului
IDAHO	
Boise	Air Terminal
ILLINOIS	
Champaign	Urbana U of Illinois−Willard
Chicago	Midway International
Moline	Quad City International
Peoria	Greater Peoria Regional
Springfield	Abraham Lincoln Capital
INDIANA	
Evansville	Regional
Fort Wayne	International
Indianapolis	International
South Bend	Regional
IOWA	
Cedar Rapids	The Eastern Iowa
Des Moines	International
KANSAS	
Wichita	Mid−Continent
KENTUCKY	
Lexington	Blue Grass
Louisville	International−Standiford Field
LOUISIANA	
Baton Rouge	Metropolitan, Ryan Field
Lafayette	Regional
Shreveport	Barksdale AFB
Shreveport	Regional
MAINE	
Bangor	International
Portland	International Jetport
MICHIGAN	
Flint	Bishop International
Grand Rapids	Gerald R. Ford International
Lansing	Capital City
MISSISSIPPI	
Columbus	AFB
Jackson	Jackson−Evers International
MISSOURI	
Springfield	Springfield−Branson National
MONTANA	
Billings	Logan International
NEBRASKA	
Lincoln	Lincoln
Omaha	Eppley Airfield
Offutt	AFB
NEVADA	
Reno	Reno/Tahoe International
NEW HAMPSHIRE	
Manchester	Manchester
NEW JERSEY	
Atlantic City	International
NEW MEXICO	
Albuquerque	International Sunport
NEW YORK	
Albany	International
Buffalo	Niagara International
Islip	Long Island MacArthur
Rochester	Greater Rochester International
Syracuse	Hancock International

State/City	Airport
NORTH CAROLINA	
Asheville	Regional
Fayetteville	Regional/Grannis Field
Greensboro	Piedmont Triad International
Pope	AFB
Raleigh	Raleigh−Durham International
OHIO	
Akron	Akron−Canton Regional
Columbus	Port Columbus International
Dayton	James M. Cox International
Toledo	Express
OKLAHOMA	
Oklahoma City	Will Rogers World
Tinker	AFB
Tulsa	International
OREGON	
Portland	International
PENNSYLVANIA	
Allentown	Lehigh Valley International
PUERTO RICO	
San Juan	Luis Munoz Marin International
RHODE ISLAND	
Providence	Theodore Francis Green State
SOUTH CAROLINA	
Charleston	AFB/International
Columbia	Metropolitan
Greer	Greenville−Spartanburg International
Myrtle Beach	Myrtle Beach International
Shaw	AFB
TENNESSEE	
Chattanooga	Lovell Field
Knoxville	McGhee Tyson
Nashville	International

State/City	Airport
TEXAS	
Abilene	Regional
Amarillo	Rick Husband International
Austin	Austin−Bergstrom International
Corpus Christi	International
Dyess	AFB
El Paso	International
Harlingen	Valley International
Laughlin	AFB
Lubbock	Preston Smith International
Midland	International
San Antonio	International
VERMONT	
Burlington	International
VIRGIN ISLANDS	
St. Thomas	Charlotte Amalie Cyril E. King
VIRGINIA	
Richmond	International
Norfolk	International
Roanoke	Regional/Woodrum Field
WASHINGTON	
Point Roberts	Vancouver International
Spokane	Fairchild AFB
Spokane	International
Whidbey Island	NAS, Ault Field
WEST VIRGINIA	
Charleston	Yeager
WISCONSIN	
Green Bay	Austin Straubel International
Madison	Dane County Regional−Traux Field
Milwaukee	General Mitchell International

2.5 Class D Airspace

2.5.1 Definition. Generally, Class D airspace extends upward from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures.

2.5.1.1 Class D surface areas may be designated as full-time or part-time. Part-time Class D effective times are published in the Chart Supplement U.S.

2.5.1.2 Part−time Class D surface areas may default to either a Class E surface area or Class G airspace. When a part−time Class D surface area defaults to Class G, the surface area airspace becomes Class G up to, but not including, the overlying controlled airspace. Normally, the overlying controlled airspace is the Class E transition area airspace that begins at either 700 feet or 1200 feet AGL. This may be determined by consulting the applicable VFR Sectional or Terminal Area Charts.

2.5.2 Operating Rules and Pilot Equipment Requirements

2.5.2.1 Pilot Certification. No specific certification required.

2.5.2.2 Equipment. Unless otherwise authorized by ATC, an operable two−way radio is required.

2.6.5.5 Federal Airways and Low−altitude RNAV Routes. Federal airways and low−altitude RNAV routes are Class E airspace areas and, unless otherwise specified, they extend upward from 1,200 feet AGL to, but not including,18,000 feet MSL. Federal airways consist of L/MF airways (colored Federal airways) and VOR Federal airways. L/MF airways are green, red, amber, and blue. VOR Federal airways are classified as Domestic, Alaskan, and Hawaiian. Low−altitude RNAV routes include T−routes and helicopter RNAV routes (TK−routes).

2.6.5.6 Offshore Airspace Areas. There are Class E airspace areas that extend upward from a specified altitude to, but not including, 18,000 feet MSL and are designated as offshore airspace areas. These areas provide controlled airspace beyond 12 nautical miles from the coast of the U.S. in those areas where there is a requirement to provide IFR en route ATC services and within which the U.S. is applying domestic procedures.

2.6.6 Separation for VFR Aircraft. No separation services are provided to VFR aircraft.

3. Class G Airspace

3.1 General

Class G airspace (uncontrolled) is that portion of airspace that has not been designated as Class A, Class B, Class C, Class D, or Class E airspace.

3.2 VFR Requirements

Rules governing VFR flight have been adopted to assist the pilot in meeting his/her responsibility to see and avoid other aircraft. Minimum flight visibility and distance from clouds required for VFR flight are contained in 14 CFR Section 91.155. (See TBL ENR 1.4−1 for a tabular presentation of these rules).

3.3 IFR Requirements

3.3.1 Title 14 CFR specifies the pilot and aircraft equipment requirements for IFR flight. Pilots are reminded that in addition to altitude or flight level requirements, 14 CFR Section 91.177 includes a requirement to remain at least 1,000 feet (2,000 feet in designated mountainous terrain) above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown.

3.3.2 IFR Altitudes. (See TBL ENR 1.4−4.)

4. Other Airspace Areas

4.1 Airport Advisory/Information Services

4.1.1 There are two advisory type services available at selected airports. Airports offering these services are listed in the Chart Supplement U.S. and the published service hours may be changed by NOTAM D.

4.1.1.1 Local Airport Advisory (LAA) service is available only in Alaska and is operated within 10 statute miles of an airport where a control tower is not operating but where a FSS is located on the airport. At such locations, the FSS provides a complete local airport advisory service to arriving and departing aircraft. During periods of fast changing weather the FSS will automatically provide Final Guard as part of the service from the time the aircraft reports “on−final” or “taking−the−active−runway” until the aircraft reports “on−the−ground” or “airborne.”

NOTE−
Current FAA policy, when requesting remote ATC services, requires that a pilot monitor the automated weather broadcast at the landing airport prior to requesting ATC services. The FSS automatically provides Final Guard, when appropriate, during LAA operations. Final Guard is a value added wind/altimeter monitoring service, which provides an automatic wind and altimeter check during active weather situations when the pilot reports on−final or taking the active runway. During the landing or take−off operation when the winds or altimeter are actively changing the FSS will blind broadcast significant changes when the specialist believes the change might affect the operation. Pilots should acknowledge the first wind/altimeter check but due to cockpit activity no acknowledgement is expected for the blind broadcasts. It is prudent for a pilot to report on−the−ground or airborne to end the service.

TBL ENR 1.4–4
IFR Altitudes
Class G Airspace

If your magnetic course (ground track) is:	And you are below 18,000 feet MSL, fly:
0° to 179°	Odd thousands MSL, (3,000; 5,000; 7,000, etc.)
180° to 359°	Even thousands MSL, (2,000; 4,000; 6,000, etc.)

4.1.1.2 Remote Airport Information Service (RAIS) is provided in support of short term special events like small to medium fly–ins. The service is advertised by NOTAM D only. The FSS will not have access to a continuous readout of the current winds and altimeter; therefore, RAIS does not include weather and/or Final Guard service. However, known traffic, special event instructions, and all other services are provided.

NOTE–
The airport authority and/or manager should request RAIS support on official letterhead directly with the manager of the FSS that will provide the service at least 60 days in advance. Approval authority rests with the FSS manager and is based on workload and resource availability.

REFERENCE–
See GEN 3.3, Air Traffic Services, Paragraph 9.2, Traffic Advisory Practices at Airports Without Operating Control Towers.

4.1.1.3 It is not mandatory that pilots participate in the Airport Advisory programs. Participation enhances safety for everyone operating around busy GA airports; therefore, everyone is encouraged to participate and provide feedback that will help improve the program.

4.2 Published VFR Routes. Published VFR routes for transitioning around, under, and through complex airspace such as Class B airspace were developed through a number of FAA and industry initiatives. All of the following terms; i.e., "VFR Flyway," "VFR Corridor," "Class B Airspace VFR Transition Route," and "Terminal Area VFR Route" have been used when referring to the same or different types of routes or airspace. The following paragraphs identify and clarify the functionality of each type of route, and specify where and when an ATC clearance is required.

4.2.1 VFR Flyways

4.2.1.1 VFR Flyways and their associated Flyway Planning charts were developed from the recommendations of a National Airspace Review Task Group. A VFR Flyway is defined as a general flight path not defined as a specific course, for use by pilots in planning flights into, out of, through, or near complex terminal airspace to avoid Class B airspace. An ATC clearance is NOT required to fly these routes.

4.2.1.2 VFR Flyways are depicted on the reverse side of some of the VFR Terminal Area Charts (TAC), commonly referred to as Class B airspace charts. Eventually all TACs will include a VFR Flyway Planning Chart. These charts identify VFR flyways designed to help VFR pilots avoid major controlled traffic flows. They may further depict multiple VFR routings throughout the area which may be used as an alternative to flight within Class B airspace. The ground references provide a guide for improved visual navigation. These routes are not intended to discourage requests for VFR operations within Class B airspace but are designed solely to assist pilots in planning for flights under and around busy Class B airspace without actually entering Class B airspace.

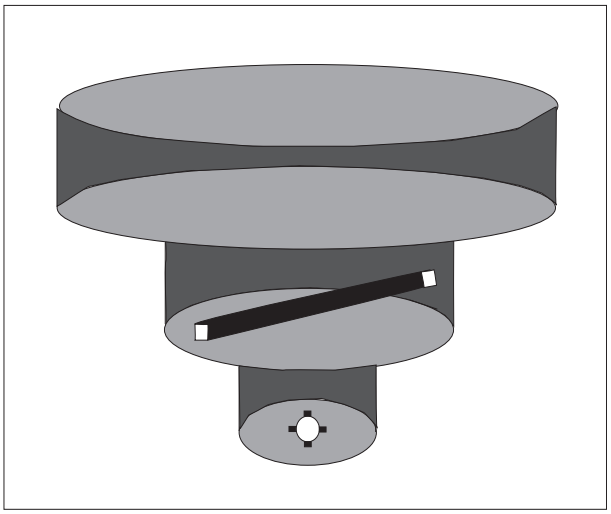
4.2.1.3 It is very important to remember that these suggested routes are not sterile of other traffic. The entire Class B airspace, and the airspace underneath it, may be heavily congested with many different types of aircraft. Pilot adherence to VFR rules must be exercised at all times. Further, when operating beneath Class B airspace, communications must be established and maintained between your aircraft and any control tower while transiting the Class B, Class C, and Class D surface areas of those airports under Class B Airspace.

4.2.2 VFR Corridors

4.2.2.1 The design of a few of the first Class B airspace areas provided a corridor for the passage of uncontrolled traffic. A VFR corridor is defined as airspace through Class B airspace, with defined vertical and lateral boundaries, in which aircraft may operate without an ATC clearance or communication with air traffic control.

4.2.2.2 These corridors are, in effect, a “hole” through Class B airspace. (See FIG ENR 1.4−2.) A classic example would be the corridor through the Los Angeles Class B airspace, which has been subsequently changed to Special Flight Rules airspace (SFR). A corridor is surrounded on all sides by Class B airspace and does not extend down to the surface like a VFR Flyway. Because of their finite lateral and vertical limits, and the volume of VFR traffic using a corridor, extreme caution and vigilance must be exercised.

FIG ENR 1.4−2
Class B Airspace



4.2.2.3 Because of the heavy traffic volume and the procedures necessary to efficiently manage the flow of traffic, it has not been possible to incorporate VFR corridors in the development or modifications of Class B airspace in recent years.

4.2.3 Class B Airspace VFR Transition Routes

4.2.3.1 To accommodate VFR traffic through certain Class B airspace, such as Seattle, Phoenix, and Los Angeles, Class B Airspace VFR Transition Routes were developed. A Class B Airspace VFR Transition Route is defined as a specific flight course depicted on a Terminal Area Chart (TAC) for transiting a specific Class B airspace. These routes include specific ATC assigned altitudes, and pilots must obtain an ATC clearance prior to entering Class B airspace on the route.

4.2.3.2 These routes, as depicted in FIG ENR 1.4−3, are designed to show the pilot where to position his/her aircraft outside of, or clear of, the Class B airspace where an ATC clearance can normally be expected with minimal or no delay. Until ATC authorization is received, pilots must remain clear of Class B airspace. On initial contact, pilots should advise ATC of their position, altitude, route name desired, and direction of flight. After a clearance is received, the pilot must fly the route as depicted and, most importantly, adhere to ATC instructions.

4.3 Terminal Radar Service Area (TRSA)

4.3.1 Background. The terminal radar service areas (TRSA) were originally established as part of the Terminal Radar Program at selected airports. TRSAs were never controlled airspace from a regulatory standpoint because the establishment of TRSAs were never subject to the rulemaking process; consequently, TRSAs are not contained in 14 CFR Part 71 nor are there any TRSA operating rules in Part 91. Part of the Airport Radar Service Area (ARSA) program was to eventually replace all TRSAs. However, the ARSA requirements became relatively stringent, and it was subsequently decided that TRSAs would have to meet ARSA criteria before they would be converted. TRSAs do not fit into any of the U.S. Airspace Classes; therefore, they will continue to be non−Part 71 airspace areas where participating pilots can receive additional radar services which have been redefined as TRSA Service.

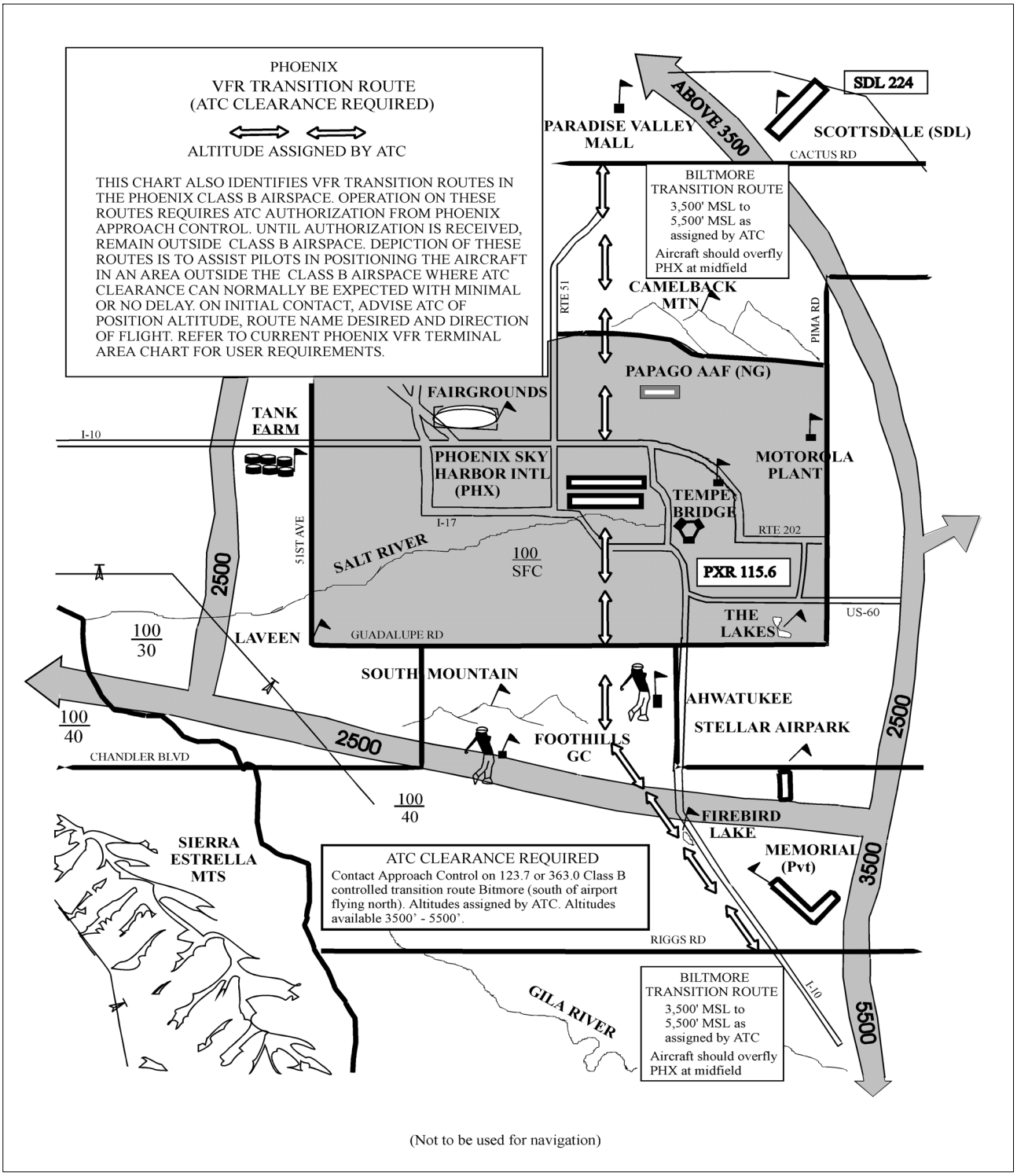
4.3.2 TRSA Areas. The primary airport(s) within the TRSA become(s) Class D airspace. The remaining portion of the TRSA overlies other controlled airspace which is normally Class E airspace beginning at 700 or 1,200 feet and established to transition to/from the en route/terminal environment.

4.3.3 Participation. Pilots operating under VFR are encouraged to contact the radar approach control and avail themselves of the TRSA Services. However, participation is voluntary on the part of the pilot. See ENR 1.1, paragraph 39.2, for details and procedures.

4.3.4 Charts. TRSAs are depicted on VFR sectional and terminal area charts with a solid black line and altitudes for each segment. The Class D portion is charted with a blue segmented line.

FIG ENR 1.4–3

VFR Transition Route



ENR 1.12 National Security and Interception Procedures

1. National Security

1.1 National security in the control of air traffic is governed by 14 Code of Federal Regulations (CFR) Part 99, *Security Control of Air Traffic*.

1.2 National Security Requirements

1.2.1 Pursuant to 14 CFR 99.7, Special Security Instructions, each person operating an aircraft in an Air Defense Identification Zone (ADIZ) or Defense Area must, in addition to the applicable rules of Part 99, comply with special security instructions issued by the FAA Administrator in the interest of national security, pursuant to agreement between the FAA and the Department of Defense (DOD), or between the FAA and a U.S. Federal security or intelligence agency.

1.2.2 In addition to the requirements prescribed in this section, national security requirements for aircraft operations to or from, within, or transiting U.S. territorial airspace are in effect pursuant to 14 CFR 99.7; 49 United States Code (USC) 40103, Sovereignty and Use of Airspace; and 49 USC 41703, Navigation of Foreign Civil Aircraft. Aircraft operations to or from, within, or transiting U.S. territorial airspace must also comply with all other applicable regulations published in 14 CFR.

1.2.3 Due to increased security measures in place at many areas and in accordance with 14 CFR 91.103, *Preflight Action*, prior to departure, pilots must become familiar with all available information concerning that flight. Pilots are responsible to comply with 14 CFR 91.137 (Temporary flight restrictions in the vicinity of disaster/hazard areas), 91.138 (Temporary flight restrictions in national disaster areas in the State of Hawaii), 91.141 (Flight restrictions in the proximity of the Presidential and other parties), and 91.143 (Flight limitation in the proximity of space flight operations) when conducting flight in an area where a temporary flight restrictions area is in effect, and should check appropriate NOTAMs during flight planning. In addition, NOTAMs may be issued for National Security Areas (NSA) that temporarily prohibit flight operations under the provisions of 14 CFR 99.7.

REFERENCE–
AIP ENR 5.1, Paragraph 2.1, National Security Areas.
AIP ENR 5.1, Paragraph 2.2, Temporary Flight Restrictions.

1.2.4 Noncompliance with the national security requirements for aircraft operations contained in this section may result in denial of flight entry into U.S. territorial airspace or ground stop of the flight at a U.S. airport.

1.2.5 Pilots of aircraft that do not adhere to the procedures in the national security requirements for aircraft operations contained in this section may be intercepted, and/or detained and interviewed by federal, state, or local law enforcement or other government personnel.

1.3 Definitions

1.3.1 *Air Defense Identification Zone (ADIZ)* means an area of airspace over land or water, in which the ready identification, location, and control of all aircraft (except Department of Defense and law enforcement aircraft) is required in the interest of national security.

1.3.2 *Defense Area* means any airspace of the contiguous U.S. that is not an ADIZ in which the control of aircraft is required for reasons of national security.

1.3.3 *U.S. territorial airspace,* for the purposes of this section, means the airspace over the U.S., its territories, and possessions, and the airspace over the territorial sea of the U.S., which extends 12 nautical miles from the baselines of the U.S., determined in accordance with international law.

1.3.4 *To U.S. territorial airspace* means any flight that enters U.S. territorial airspace after departure from a location outside of the U.S., its territories or possessions, for landing at a destination in the U.S., its territories or possessions.

1.3.5 *From U.S. territorial airspace* means any flight that exits U.S. territorial airspace after departure from a location in the U.S., its territories or possessions, and lands at a destination outside the U.S., its territories or possessions.

1.3.6 *Within U.S. territorial airspace* means any flight departing from a location inside of the U.S., its territories or possessions, which operates en route to a location inside the U.S., its territories or possessions.

1.3.7 *Transit or transiting U.S. territorial airspace* means any flight departing from a location outside of the U.S., its territories or possessions, which operates in U.S. territorial airspace en route to a location outside the U.S., its territories or possessions without landing at a destination in the U.S., its territories or possessions.

1.3.8 *Aeronautical facility*, for the purposes of this section, means a communications facility where flight plans or position reports are normally filed during flight operations.

1.4 ADIZ Requirements

1.4.1 To facilitate early identification of all aircraft in the vicinity of U.S. airspace boundaries, Air Defense Identification Zones (ADIZ) have been established. All aircraft must meet certain requirements to facilitate early identification when operating into, within, and across an ADIZ, as described in 14 CFR 99. (See FIG ENR 1.12−1.)

1.4.2 Requirements for aircraft operations are as follows:

1.4.2.1 Transponder Requirements. Unless otherwise authorized by ATC, each aircraft conducting operations into, within, or across the contiguous U.S. ADIZ must be equipped with an operable radar beacon transponder. The transponder must be turned on and squawking a discrete beacon code assigned by ATC or issued by FSS and displaying the aircraft altitude. Use of beacon code 1200 is not authorized. Use of the Universal Access Transceiver (UAT) anonymity mode is not authorized.

a) For air defense purposes, aircraft equipped with an operable 1090es (DO−260b) ADS−B system operating outbound across the contiguous U.S. ADIZ may also be identified by the ICAO aircraft address (otherwise known as the aircraft Mode S code). Therefore, use of a privacy ICAO aircraft address by outbound aircraft is not authorized.

b) Pilots of outbound VFR aircraft must squawk a discrete beacon code assigned by ATC or issued by FSS.

c) Nothing in this section changes the ADS−B OUT requirements of 14 CFR 91.225.

REFERENCE−
14 CFR 99.13, Transponder−On Requirements.
14 CFR 91.225, Automatic Dependent Surveillance−Broadcast (ADS−B) Out equipment and use.

1.4.2.2 Two−way Radio. In accordance with 14 CFR 99.9, *Radio Requirements*, any person operating in an ADIZ must maintain two−way radio communication with an appropriate aeronautical facility. For two−way radio communications failure, follow instructions contained in 14 CFR 99.9.

1.4.2.3 Flight Plan. In accordance with 14 CFR 99.11, Flight Plan Requirements, and 14 CFR 99.9, except as specified in subparagraph 1.4.5, no person may operate an aircraft into, within, or from a departure point within an ADIZ, unless the person files, activates, and closes a flight plan with an appropriate aeronautical facility, or is otherwise authorized by air traffic control as follows:

a) Pilots must file an Instrument Flight Rules (IFR) flight plan or file a Defense Visual Flight Rules (DVFR) flight plan containing the time and point of ADIZ penetration;

b) The pilot must activate the DVFR flight plan with U.S. Flight Service and set the aircraft transponder to the assigned discrete beacon code prior to entering the ADIZ;

c) The IFR or DVFR aircraft must depart within 5 minutes of the estimated departure time contained in the flight plan, except for (d) below;

d) If the airport of departure within the Alaskan ADIZ has no facility for filing a flight plan, the flight plan must be filed immediately after takeoff or when within range of an appropriate aeronautical facility;

e) State aircraft (U.S. or foreign) planning to operate through an ADIZ should enter ICAO Code M in Item 8 of the flight plan to assist in identification of the aircraft as a state aircraft.

1.4.3 Position Reporting Before Penetration of ADIZ.

In accordance with 14 CFR 99.15, *Position Reports*, before entering the ADIZ, the pilot must report to an appropriate aeronautical facility as follows:

1.4.3.1 IFR flights in controlled airspace. The pilot must maintain a continuous watch on the appropriate frequency and report the time and altitude of passing each designated reporting point or those reporting points specified or requested by ATC, except that while the aircraft is under radar control, only the passing of those reporting points specifically requested by ATC need be reported. (See 14 CFR 91.183(a), IFR Communications.)

1.4.3.2 DVFR flights and IFR flights in uncontrolled airspace:

a) The time, position, and altitude at which the aircraft passed the last reporting point before penetration and the estimated time of arrival over the next appropriate reporting point along the flight route;

b) If there is no appropriate reporting point along the flight route, the pilot reports at least 15 minutes before penetration: the estimated time, position, and altitude at which the pilot will penetrate; or

c) If the departure airport is within an ADIZ or so close to the ADIZ boundary that it prevents the pilot from complying with (a) or (b) above, the pilot must report immediately after departure: the time of departure, the altitude, and the estimated time of arrival over the first reporting point along the flight route.

1.4.3.3 Foreign civil aircraft. If the pilot of a foreign civil aircraft that intends to enter the U.S. through an ADIZ cannot comply with the reporting requirements in subparagraphs 1.4.3.1 or 1.4.3.2 above, as applicable, the pilot must report the position of the aircraft to the appropriate aeronautical facility not less than 1 hour and not more than 2 hours average direct cruising distance from the U.S.

1.4.4 Land−Based ADIZ. Land−Based ADIZ are activated and deactivated over U.S. metropolitan areas as needed, with dimensions, activation dates and other relevant information disseminated via NOTAM. Pilots unable to comply with all NOTAM requirements must remain clear of Land−Based ADIZ. Pilots entering a Land−Based ADIZ without authorization or who fail to follow all requirements risk interception by military fighter aircraft.

1.4.5 Exceptions to ADIZ requirements.

1.4.5.1 Except for the national security requirements in paragraph 1.2, transponder requirements in subparagraph 1.4.2.1, and position reporting in subparagraph 1.4.3, the ADIZ requirements in 14 CFR Part 99 described in this section do not apply to the following aircraft operations pursuant to Section 99.1(b), Applicability:

a) Within the 48 contiguous States or within the State of Alaska, on a flight which remains within 10 NM of the point of departure;

b) Operating at true airspeed of less than 180 knots in the Hawaii ADIZ or over any island, or within 12 NM of the coastline of any island, in the Hawaii ADIZ;

c) Operating at true airspeed of less than 180 knots in the Alaska ADIZ while the pilot maintains a continuous listening watch on the appropriate frequency; or

d) Operating at true airspeed of less than 180 knots in the Guam ADIZ.

1.4.5.2 An FAA air route traffic control center (ARTCC) may exempt certain aircraft operations on a local basis in concurrence with the DOD or pursuant to an agreement with a U.S. Federal security or intelligence agency. (See 14 CFR 99.1 for additional information.)

1.4.6 A VFR flight plan filed inflight makes an aircraft subject to interception for positive identification when entering an ADIZ. Pilots are therefore urged to file the required DVFR flight plan either in person or by telephone prior to departure when able.

1.5 Civil Aircraft Operations To or From U.S. Territorial Airspace

1.5.1 Civil aircraft, except as described in subparagraph 1.5.2 below, are authorized to operate to or from U.S. territorial airspace if in compliance with all of the following conditions:

1.5.1.1 File and are on an active flight plan (IFR, VFR, or DVFR);

1.5.1.2 Are equipped with an operational transponder with altitude reporting capability, and continuously squawk an ATC assigned transponder code;

1.5.1.3 Maintain two−way radio communications with ATC;

1.5.1.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2;

1.5.1.5 Comply with all applicable U.S. Customs and Border Protection (CBP) requirements, including Advance Passenger Information System (APIS) requirements (see subparagraph 1.5.3 below for CBP APIS information), in accordance with 19 CFR Part 122, Air Commerce Regulations; and

1.5.1.6 Are in receipt of, and are operating in accordance with, an FAA routing authorization if the aircraft is registered in a U.S. State Department−designated special interest country or is operating with the ICAO three letter designator (3LD) of a company in a country listed as a U.S. State Department−designated special interest country, unless the operator holds valid FAA Part 129 operations specifications. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization. (See paragraph 1.11 for FAA routing authorization information).

1.5.2 Civil aircraft registered in the U.S., Canada, or Mexico with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less that are operating without an operational transponder, and/or the ability to maintain two−way radio communications with ATC, are authorized to operate to or from U.S. territorial airspace over Alaska if in compliance with all of the following conditions:

1.5.2.1 Depart and land at an airport within the U.S. or Canada;

1.5.2.2 Enter or exit U.S. territorial airspace over Alaska north of the fifty−fourth parallel;

1.5.2.3 File and are on an active flight plan;

1.5.2.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2;

1.5.2.5 Squawk 1200 if VFR and equipped with a transponder; and

1.5.2.6 Comply with all applicable U.S. CBP requirements, including APIS requirements (see paragraph 1.5.3 below for CBP APIS information), in accordance with 19 CFR Part 122, Air Commerce Regulations.

1.5.3 CBP APIS Information. Information about U.S. CBP APIS requirements is available at http://www.cbp.gov.

1.6 Civil Aircraft Operations Within U.S. Territorial Airspace

1.6.1 Civil aircraft with a maximum certificated takeoff gross weight less than or equal to 100,309 pounds (45,500 kgs) are authorized to operate within U.S. territorial airspace in accordance with all applicable regulations and VFR in airport traffic pattern areas of U.S. airports near the U.S. border, except for those described in subparagraph 1.6.2 below.

1.6.2 Civil aircraft with a maximum certificated takeoff gross weight less than or equal to 100,309 pounds (45,500 kgs) and registered in a U.S. State Department−designated special interest country or operating with the ICAO 3LD of a company in a country listed as a U.S. State Department−designated special interest country, unless the operator holds valid FAA Part 129 operations specifications, must operate within U.S. territorial airspace in accordance with the same requirements as civil aircraft with a maximum certificated takeoff gross weight greater than 100,309 pounds (45,500 kgs), as described in subparagraph 1.6.3 below.

1.6.3 Civil aircraft with a maximum certificated takeoff gross weight greater than 100,309 pounds (45,500 kgs) are authorized to operate within U.S. territorial airspace if in compliance with all of the following conditions:

1.6.3.1 File and are on an active flight plan (IFR or VFR);

1.6.3.2 Equipped with an operational transponder with altitude reporting capability, and continuously squawk an ATC assigned transponder code;

1.6.3.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.6.3.4 Maintain two−way radio communications with ATC;

1.6.3.5 Aircraft not registered in the U.S. must operate under an approved Transportation Security Administration (TSA) aviation security program (see paragraph 1.10 for TSA aviation security program information) or in accordance with an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information), except as authorized in 1.6.3.7 below;

1.6.3.6 Are in receipt of, and are operating in accordance with an FAA routing authorization and an FAA/TSA airspace waiver if the aircraft is registered in a U.S. State Department−designated special interest country or is operating with the ICAO 3LD of a company in a country listed as a U.S. State Department−designated special interest country, unless the operator holds valid FAA Part 129 operations specifications. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization. (See paragraph 1.11 for FAA routing authorization information.); and

1.6.3.7 Aircraft not registered in the U.S., when conducting post−maintenance, manufacturer, production, or acceptance flight test operations, are exempt from the requirements in 1.6.3.5 above if all of the following requirements are met:

a) A U.S. company must have operational control of the aircraft;

b) An FAA−certificated pilot must serve as pilot in command;

c) Only crewmembers are permitted onboard the aircraft; and

d) "Maintenance Flight" is included in the remarks section of the flight plan.

1.7 Civil Aircraft Operations Transiting U.S. Territorial Airspace

1.7.1 Civil aircraft (except those operating in accordance with subparagraphs 1.7.2, 1.7.3, 1.7.4, or 1.7.5) are authorized to transit U.S. territorial airspace if in compliance with all of the following conditions:

1.7.1.1 File and are on an active flight plan (IFR, VFR, or DVFR);

1.7.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.1.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.7.1.4 Maintain two−way radio communications with ATC;

1.7.1.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2;

1.7.1.6 Are operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation security program information) or are operating with and in accordance with an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information), if:

a) The aircraft is not registered in the U.S.; or

b) The aircraft is registered in the U.S. and its maximum takeoff gross weight is greater than 100,309 pounds (45,500 kgs);

1.7.1.7 Are in receipt of, and are operating in accordance with, an FAA routing authorization if the aircraft is registered in a U.S. State Department−designated special interest country or is operating with the ICAO 3LD of

a company in a country listed as a U.S. State Department−designated special interest country, unless the operator holds valid FAA Part 129 operations specifications. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization. (See paragraph 1.11 for FAA routing authorization information.)

1.7.2 Civil aircraft registered in Canada or Mexico, and engaged in operations for the purposes of air ambulance, firefighting, law enforcement, search and rescue, or emergency evacuation are authorized to transit U.S. territorial airspace within 50 NM of their respective borders with the U.S., with or without an active flight plan, provided they have received and continuously transmit an ATC−assigned transponder code.

1.7.3 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less are authorized to transit U.S. territorial airspace if in compliance with all of the following conditions:

1.7.3.1 File and are on an active flight plan (IFR, VFR, or DVFR) that enters U.S. territorial airspace directly from any of the countries listed in this subparagraph 1.7.3. Flights that include a stop in a non−listed country prior to entering U.S. territorial airspace must comply with the requirements prescribed by subparagraph 1.7.1 above, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information);

1.7.3.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.3.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.7.3.4 Maintain two−way radio communications with ATC; and

1.7.3.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.7.4 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight greater than 100,309 pounds (45,500 kgs) must comply with the requirements in subparagraph 1.7.1, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information).

1.7.5 Civil aircraft registered in the U.S., Canada, or Mexico with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less that are operating without an operational transponder and/or the ability to maintain two−way radio communications with ATC, are authorized to transit U.S. territorial airspace over Alaska if in compliance with all of the following conditions:

1.7.5.1 Enter and exit U.S. territorial airspace over Alaska north of the fifty−fourth parallel;

1.7.5.2 File and are on an active flight plan;

1.7.5.3 Squawk 1200 if VFR and equipped with a transponder; and

1.7.5.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8 Foreign State Aircraft Operations

1.8.1 Foreign state aircraft are authorized to operate in U.S. territorial airspace if in compliance with all of the following conditions:

1.8.1.1 File and are on an active IFR flight plan;

1.8.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.8.1.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.8.1.4 Maintain two−way radio communications with ATC;

1.8.1.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8.2 Diplomatic Clearances. Foreign state aircraft may operate to or from, within, or in transit of U.S. territorial airspace only when authorized by the U.S. State Department by means of a diplomatic clearance, except as described in subparagraph 1.8.9 below.

1.8.2.1 Information about diplomatic clearances is available on the U.S. State Department website at https://www.state.gov/diplomatic-aircraft-clearance-procedures-for-foreign-state-aircraft-to-operate-in-united-states-national-airspace/.

1.8.2.2 A diplomatic clearance may be initiated by contacting the U.S. State Department via email at DCAS@state.gov or via phone at (202) 453−8390.

NOTE−
A diplomatic clearance is not required for foreign state aircraft operations that transit U.S. controlled oceanic airspace but do not enter U.S. territorial airspace. (See subparagraph 1.8.4 for flight plan information.)

1.8.3 An FAA routing authorization for state aircraft operations of special interest countries listed in subparagraph 1.11.2 is required before the U.S. State Department will issue a diplomatic clearance for such operations. (See paragraph 1.11 for FAA routing authorizations information).

1.8.4 Foreign state aircraft operating with a diplomatic clearance must navigate U.S. territorial airspace on an active IFR flight plan, unless specifically approved for VFR flight operations by the U.S. State Department in the diplomatic clearance.

NOTE−
Foreign state aircraft operations to or from, within, or transiting U.S. territorial airspace; or transiting any U.S. controlled oceanic airspace, should enter ICAO code M in Item 8 of the flight plan to assist in identification of the aircraft as a state aircraft.

1.8.5 A foreign aircraft that operates to or from, within, or in transit of U.S. territorial airspace while conducting a state aircraft operation is not authorized to change its status as a state aircraft during any portion of the approved, diplomatically cleared itinerary.

1.8.6 A foreign aircraft described in subparagraph 1.8.5 above may operate from or within U.S. territorial airspace as a civil aircraft operation, once it has completed its approved, diplomatically cleared itinerary, if the aircraft operator is:

1.8.6.1 A foreign air carrier that holds valid FAA Part 129 operations specifications; and

1.8.6.2 Is in compliance with all other requirements applied to foreign civil aircraft operations from or within U.S. territorial airspace. (See paragraphs 1.5 and 1.6.)

1.8.7 Foreign state aircraft operations are not authorized to or from Ronald Reagan Washington National Airport (KDCA).

1.8.8 Foreign state aircraft operating with a U.S. Department of State issued Diplomatic Clearance Number in the performance of official missions are authorized to deviate from the Automatic Dependent Surveillance−Broadcast (ADS−B) Out requirements contained in 14 CFR §§ 91.225 and 91.227. All foreign state aircraft and/or operators associated with Department of Defense missions should contact their respective offices for further information on handling. Foreign state aircraft not associated with Department of Defense should coordinate with Department of State through the normal diplomatic clearance process.

1.8.9 Diplomatic Clearance Exceptions. State aircraft operations on behalf of the governments of Canada and Mexico conducted for the purposes of air ambulance, firefighting, law enforcement, search and rescue, or emergency evacuation are authorized to transit U.S. territorial airspace within 50 NM of their respective borders with the U.S., with or without an active flight plan, provided they have received and continuously transmit an ATC assigned transponder code. State aircraft operations on behalf of the governments of Canada and Mexico

conducted under this subparagraph 1.8.9 are not required to obtain a diplomatic clearance from the U.S. State Department.

1.9 FAA/TSA Airspace Waivers

1.9.1 Operators may submit requests for FAA/TSA airspace waivers at https://waivers.faa.gov by selecting "international" as the waiver type.

1.9.2 Information regarding FAA/TSA airspace waivers can be found at: http://www.tsa.gov/for−industry/general−aviation or can be obtained by contacting TSA at (571) 227−2071.

1.9.3 All existing FAA/TSA waivers issued under previous FDC NOTAMS remain valid until the expiration date specified in the waiver, unless sooner superseded or rescinded.

1.10 TSA Aviation Security Programs

1.10.1 Applicants for U.S. air operator certificates will be provided contact information for TSA aviation security programs by the U.S. Department of Transportation during the certification process.

1.10.2 For information about applicable TSA security programs:

1.10.2.1 U.S. air carriers and commercial operators must contact their TSA Principal Security Specialist (PSS); and

1.10.2.2 Foreign air carriers must contact their International Industry Representative (IIR).

1.11 FAA Flight Routing Authorizations

1.11.1 Information about FAA routing authorizations for U.S. State Department−designated special interest country flight operations to or from, within, or transiting U.S. territorial airspace is available by country at:

1.11.1.1 FAA website: http://www.faa.gov/air_traffic/publications/us_restrictions/; or

1.11.1.2 Phone by contacting the FAA System Operations Support Center (SOSC) at (202) 267−8115.

1.11.2 Special Interest Countries. The U.S. State Department−designated special interest countries are Cuba, Iran, The Democratic People's Republic of Korea (North Korea), The People's Republic of China, The Russian Federation, Sudan, and Syria.

NOTE−
FAA flight routing authorizations are not required for aircraft registered in Hong Kong, Taiwan, or Macau.

1.11.3 Aircraft operating with the ICAO 3LD assigned to a company or entity from a country listed as a State Department−designated special interest country and holding valid FAA Part 129 operations specifications do not require FAA flight routing authorization.

1.11.4 FAA routing authorizations will only be granted for IFR operations. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization.

1.12 Emergency Security Control of Air Traffic (ESCAT)

1.12.1 During defense emergency or air defense emergency conditions, additional special security instructions may be issued in accordance with 32 CFR Part 245, Plan for the Emergency Security Control of Air Traffic (ESCAT).

1.12.2 Under the provisions of 32 CFR Part 245, the military will direct the action to be taken in regard to landing, grounding, diversion, or dispersal of aircraft in the defense of the U.S. during emergency conditions.

1.12.3 At the time a portion or all of ESCAT is implemented, ATC facilities will broadcast appropriate instructions received from the Air Traffic Control System Command Center (ATCSCC) over available ATC frequencies. Depending on instructions received from the ATCSCC, VFR flights may be directed to land at the nearest available airport, and IFR flights will be expected to proceed as directed by ATC.

1.12.4 Pilots on the ground may be required to file a flight plan and obtain an approval (through FAA) prior to conducting flight operation.

2. Interception Procedures

2.1 General

2.1.1 In conjunction with the FAA, Air Defense Sectors monitor air traffic and could order an intercept in the interest of national security or defense. Intercepts during peacetime operations are vastly different from those conducted under increased states of readiness. The interceptors may be fighters or rotary wing aircraft. The reasons for aircraft intercept include, but are not limited to:

2.1.1.1 Identify an aircraft.

2.1.1.2 Track an aircraft.

2.1.1.3 Inspect an aircraft.

2.1.1.4 Divert an aircraft.

2.1.1.5 Establish communications with an aircraft.

2.1.2 All aircraft operating in US national airspace are highly encouraged to maintain a listening watch on VHF/UHF guard frequencies (121.5 or 243.0 MHz). If subjected to a military intercept, it is incumbent on civilian aviators to understand their responsibilities and to comply with ICAO standard signals relayed from the intercepting aircraft. Specifically, aviators are expected to contact air traffic control without delay (if able) on the local operating frequency or on VHF/UHF guard. Noncompliance may result in the use of force.

2.1.3 When specific information is required (i.e., markings, serial numbers, etc.) the interceptor pilot(s) will respond only if, in their judgment, the request can be conducted in a safe manner. Intercept procedures are described in some detail in the paragraphs below. In all situations, the interceptor pilot will consider safety of flight for all concerned throughout the intercept procedure. The interceptor pilot(s) will use caution to avoid startling the intercepted crew or passengers and understand that maneuvers considered normal for interceptor aircraft may be considered hazardous to other aircraft.

2.2 Fighter Intercept Phases (See FIG ENR 1.12−2)

2.2.1 Approach Phase

2.2.1.1 As standard procedure, intercepted aircraft are approached from behind. Typically, interceptor aircraft will be employed in pairs; however, it is not uncommon for a single aircraft to perform the intercept operation. Safe separation between interceptors and intercepted aircraft is the responsibility of the intercepting aircraft and will be maintained at all times.

2.2.2 Identification Phase

2.2.2.1 Interceptor aircraft will initiate a controlled closure toward the aircraft of interest, holding at a distance no closer than deemed necessary to establish positive identification and to gather the necessary information. The interceptor may also fly past the intercepted aircraft while gathering data at a distance considered safe based on aircraft performance characteristics.

2.2.3 Post Intercept Phase

2.2.3.1 An interceptor may attempt to establish communications via standard ICAO signals. In time-critical situations where the interceptor is seeking an immediate response from the intercepted aircraft or if the intercepted aircraft remains non-compliant to instruction, the interceptor pilot may initiate a divert maneuver. In this maneuver, the interceptor flies across the intercepted aircraft's flight path (minimum 500 feet separation and commencing from slightly below the intercepted aircraft altitude) in the general direction the intercepted aircraft is expected to turn. The interceptor will rock its wings (daytime) or flash external lights/select afterburners (night) while crossing the intercepted aircraft's flight path. The interceptor will roll out in the direction the intercepted aircraft is expected to turn before returning to verify the aircraft of interest is complying. The intercepted aircraft is expected to execute an immediate turn to the direction of the intercepting aircraft. If the aircraft of interest does not comply, the interceptor may conduct a second climbing turn across the intercepted

aircraft's flight path (minimum 500 feet separation and commencing from slightly below the intercepted aircraft altitude) while expending flares as a warning signal to the intercepted aircraft to comply immediately and to turn in the direction indicated and to leave the area. The interceptor is responsible to maintain safe separation during these and all intercept maneuvers. Flight safety is paramount.

NOTE–

1. *NORAD interceptors will take every precaution to preclude the possibility of the intercepted aircraft experiencing jet wash/wake turbulence; however, there is a potential that this condition could be encountered.*

2. *During night/IMC, the intercept will be from below flight path.*

FIG ENR 1.12–1

Air Defense Identification Zone Boundaries
Designated Mountainous Areas

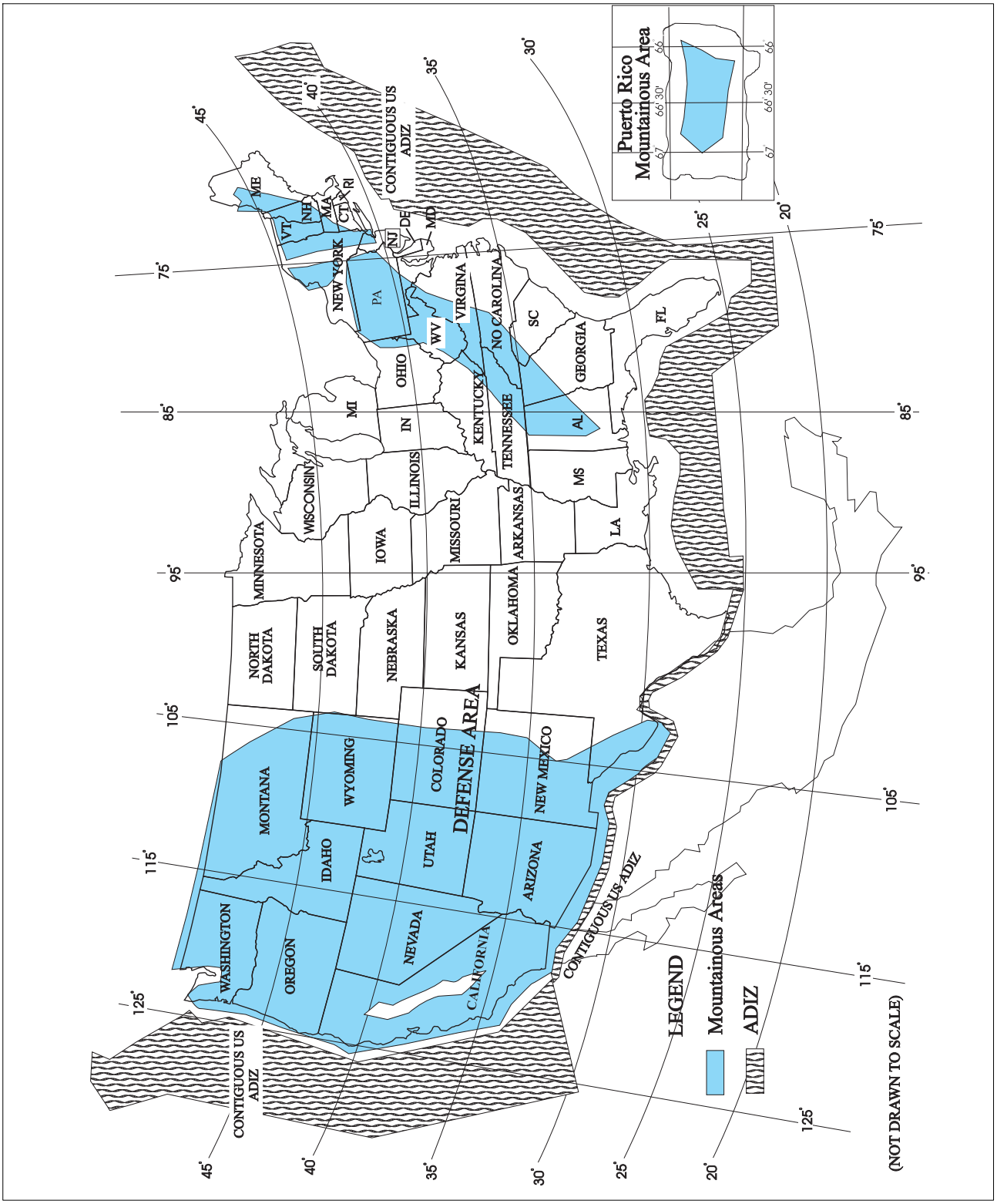
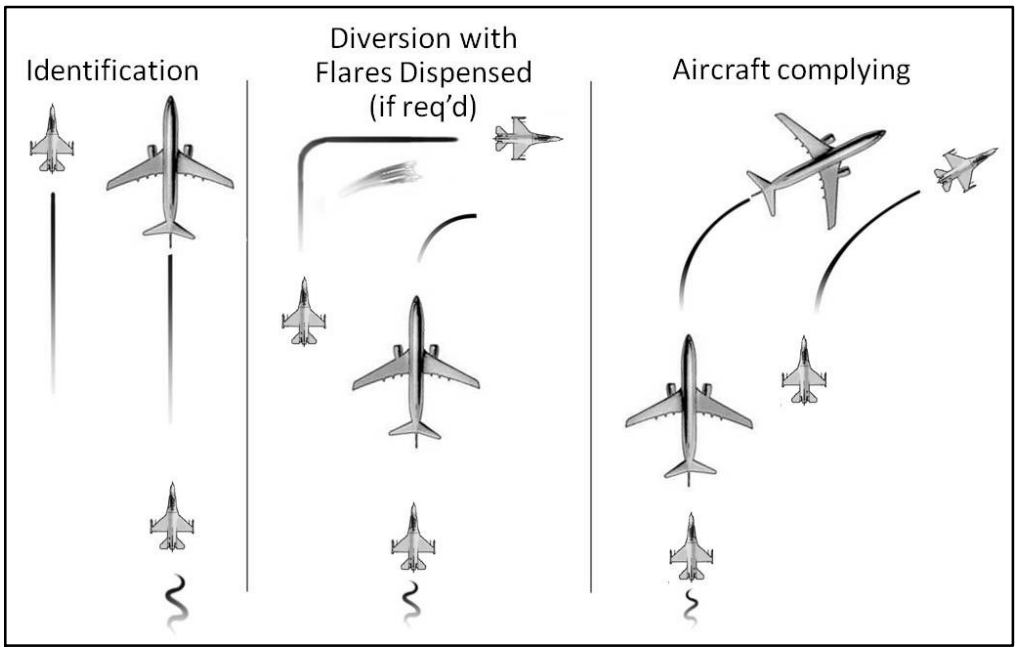


FIG ENR 1.12−2
Intercept Procedures



2.3 Helicopter Intercept Phases (See FIG ENR 1.12−3)

2.3.1 Approach Phase

2.3.1.1 Aircraft intercepted by helicopter may be approached from any direction, although the helicopter should close for identification and signaling from behind. Generally, the helicopter will approach off the left side of the intercepted aircraft. Safe separation between the helicopter and the unidentified aircraft will be maintained at all times.

2.3.2 Identification Phase

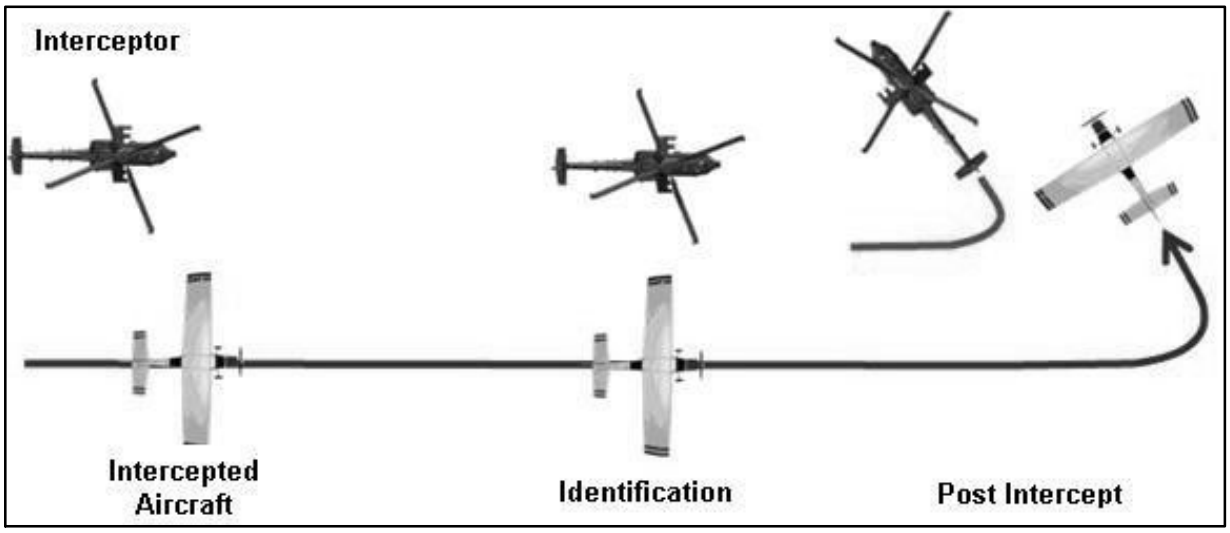
2.3.2.1 The helicopter will initiate a controlled closure toward the aircraft of interest, holding at a distance no closer than deemed necessary to establish positive identification and gather the necessary information. The intercepted pilot should expect the interceptor helicopter to take a position off his left wing slightly forward of abeam.

2.3.3 Post Intercept Phase

2.3.3.1 Visual signaling devices may be used in an attempt to communicate with the intercepted aircraft. Visual signaling devices may include, but are not limited to, LED scrolling signboards or blue flashing lights. If compliance is not obtained through the use of radios or signaling devices, standard ICAO intercept signals (TBL ENR 1.12−1) may be employed. In order to maintain safe aircraft separation, it is incumbent upon the pilot of the intercepted aircraft not to fall into a trail position (directly behind the helicopter) if instructed to follow the helicopter. This is because the helicopter pilot may lose visual contact with the intercepted aircraft.

NOTE−
Intercepted aircraft must not follow directly behind the helicopter thereby allowing the helicopter pilot to maintain visual contact with the intercepted aircraft and ensuring safe separation is maintained.

FIG ENR 1.12–3
Helicopter Intercept Procedures



2.3.4 Summary of Intercepted Aircraft Actions

2.3.4.1 An intercepted aircraft must, without delay:

a) Adhere to instructions relayed through the use of visual devices, visual signals, and radio communications from the intercepting aircraft.

b) Attempt to establish radio communications with the intercepting aircraft or with the appropriate air traffic control facility by making a general call on guard frequencies (121.5 or 243.0 MHz), giving the identity, position, and nature of the flight.

c) If transponder equipped, select Mode 3/A Code 7700 unless otherwise instructed by air traffic control.

NOTE–
If instruction received from any agency conflicts with that given by the intercepting aircraft through visual or radio communications, the intercepted aircraft must seek immediate clarification.

d) Continue to comply with interceptor aircraft signals and instructions until positively released.

2.4 Interception Signals (See TBL ENR 1.12–1 and TBL ENR 1.12–2)

2.5 Visual Warning System (VWS)

2.5.1 The VWS signal consists of highly-focused red and green colored laser lights designed to illuminate in an alternating red and green signal pattern. These lasers may be directed at specific aircraft suspected of making unauthorized entry into the Washington, DC Special Flight Rules Area (DC SFRA) proceeding on a heading or flight path that may be interpreted as a threat or that operate contrary to the operating rules for the DC SFRA. The beam is neither hazardous to the eyes of pilots/aircrew or passengers, regardless of altitude or distance from the source nor will the beam affect aircraft systems.

2.5.1.1 If you are communicating with ATC, and this signal is directed at your aircraft, you are required to contact ATC and advise that you are being illuminated by a visual warning system.

2.5.1.2 If this signal is directed at you, and you are not communicating with ATC, you are advised to turn to the most direct heading away from the center of the DC SFRA as soon as possible. Immediately contact ATC on an appropriate frequency, VHF Guard 121.5 or UHF Guard 243.0, and provide your aircraft identification, position, and nature of the flight. Failure to follow these procedures may result in interception by military aircraft. Further noncompliance with interceptor aircraft or ATC may result in the use of force.

2.5.1.3 Pilots planning to operate aircraft in or near the DC SFRA are to familiarize themselves with aircraft intercept procedures. This information applies to all aircraft operating within the DC SFRA including DOD, Law

Enforcement, and aircraft engaged in aeromedical operations and does not change procedures established for reporting unauthorized laser illumination as published in FAA Advisory Circulars and Notices.

REFERENCE–
CFR 91.161

2.5.1.4 More details including a video demonstration of the VWS are available from the following FAA website: www.faasafety.gov/VisualWarningSystem/VisualWarning.htm.

TBL ENR 1.12–1
Intercepting Signals

INTERCEPTING SIGNALS **Signals initiated by intercepting aircraft and responses by intercepted aircraft** **(as set forth in ICAO Annex 2-Appendix 1, 2.1)**				
Series	**INTERCEPTING Aircraft Signals**	**Meaning**	**INTERCEPTED Aircraft Responds**	**Meaning**
1	DAY–Rocking wings from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft and, after acknowledgement, a slow level turn, normally to the left, on to the desired heading. NIGHT-Same and, in addition, flashing navigational lights at irregular intervals. *NOTE 1–Meteorological conditions or terrain may require the intercepting aircraft to take up a position slightly above and ahead of, and to the right of, the intercepted aircraft and to make the subsequent turn to the right.* *NOTE 2–If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race–track patterns and to rock its wings each time it passes the intercepted aircraft.*	You have been intercepted. Follow me.	AEROPLANES: DAY–Rocking wings and following. NIGHT–Same and, in addition, flashing navigational lights at irregular intervals. HELICOPTERS: DAY or NIGHT–Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.
2	DAY or NIGHT–An abrupt break–away maneuver from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	AEROPLANES: DAY or NIGHT-Rocking wings. HELICOPTERS: DAY or NIGHT–Rocking aircraft.	Understood, will comply.
3	DAY–Circling aerodrome, lowering landing gear and overflying runway in direction of landing or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. NIGHT–Same and, in addition, showing steady landing lights.	Land at this aerodrome.	AEROPLANES: DAY–Lowering landing gear, following the intercepting aircraft and, if after overflying the runway landing is considered safe, proceeding to land. NIGHT–Same and, in addition, showing steady landing lights (if carried). HELICOPTERS: DAY or NIGHT-Following the intercepting aircraft and proceeding to land, showing a steady landing light (if carried).	Understood, will comply.

perform RF turns, scalable RNP, and parallel offset flight path generation. Higher continuity (such as dual systems) may be required for certain oceanic and remote continental airspace. Other "advanced" options for use in the en route environment (such as fixed radius transitions and Time of Arrival Control) are optional in the U.S. Typically, an aircraft eligible for A−RNP will also be eligible for operations comprising: RNP APCH, RNP/RNAV 1, RNP/RNAV 2, RNP 4, and RNP/RNAV 10. A−RNP allows for scalable RNP lateral navigation values (either 1.0 or 0.3) in the terminal environment. Use of these reduced lateral accuracies will normally require use of the aircraft's autopilot and/or flight director. See the latest AC 90−105 for more information on A−RNP, including NavSpec bundling options, eligibility determinations, and operations approvals.

NOTE−
A−RNP eligible aircraft are NOT automatically eligible for RNP AR APCH or RNP AR DP operations, as RNP AR eligibility requires a separate determination process and special FAA authorization.

e) RNP 1. RNP 1 requires a lateral accuracy value of 1 for arrival and departure in the terminal area, and the initial and intermediate approach phase when used on conventional procedures with PBN segments (for example, an ILS with a PBN feeder, IAF, or missed approach). RF turn capability is optional in RNP 1 eligibility. This means that your aircraft may be eligible for RNP 1 operations, but you may not fly an RF turn unless RF turns are also specifically listed as a feature of your avionics suite.

f) RNP 2. RNP 2 will apply to both domestic and oceanic/remote operations with a lateral accuracy value of 2.

g) RNP 4. RNP 4 will apply to oceanic and remote operations only with a lateral accuracy value of 4. RNP 4 eligibility will automatically confer RNP 10 eligibility.

h) RNP 10. The RNP 10 NavSpec applies to certain oceanic and remote operations with a lateral accuracy of 10. In such airspace, the RNAV 10 NavSpec will be applied, so any aircraft eligible for RNP 10 will be deemed eligible for RNAV 10 operations. Further, any aircraft eligible for RNP 4 operations is automatically qualified for RNP 10/ RNAV 10 operations. (See also the latest AC 91−70, Oceanic and Remote Continental Airspace Operations, for more information on oceanic RNP/RNAV operations.)

i) RNP 0.3. The RNP 0.3 NavSpec requires a lateral accuracy value of 0.3 for all authorized phases of flight. RNP 0.3 is not authorized for oceanic, remote, or the final approach segment. Use of RNP 0.3 by slow−flying fixed−wing aircraft is under consideration, but the RNP 0.3 NavSpec initially will apply only to rotorcraft operations. RF turn capability is optional in RNP 0.3 eligibility. This means that your aircraft may be eligible for RNP 0.3 operations, but you may not fly an RF turn unless RF turns are also specifically listed as a feature of your avionics suite.

NOTE−
On terminal procedures or en route charts, do not confuse a charted RNP value of 0.30, or any standard final approach course segment width of 0.30, with the NavSpec title "RNP 0.3." Charted RNP values of 0.30 or below should contain two decimal places (for example, RNP 0.15, or 0.10, or 0.30) whereas the NavSpec title will only state "RNP 0.3."

2.2.1.2 Application of Standard Lateral Accuracy Values. U.S. standard lateral accuracy values typically used for various routes and procedures supporting RNAV operations may be based on use of a specific navigational system or sensor such as GPS, or on multi−sensor RNAV systems having suitable performance.

2.2.1.3 Depiction of PBN Requirements. In the U.S., PBN requirements like Lateral Accuracy Values or NavSpecs applicable to a procedure will be depicted on affected charts and procedures. In the U.S., a specific procedure's Performance−Based Navigation (PBN) requirements will be prominently displayed in separate, standardized notes boxes. For procedures with PBN elements, the "PBN box" will contain the procedure's NavSpec(s); and, if required: specific sensors or infrastructure needed for the navigation solution, any additional or advanced functional requirements, the minimum RNP value, and any amplifying remarks. Items listed in this PBN box are REQUIRED to fly the procedure's PBN elements. For example, an ILS with an RNAV missed approach would require a specific capability to fly the missed approach portion of the procedure. That required capability will be listed in the PBN box. The separate Equipment Requirements box will list ground−based equipment and/or airport specific requirements. On procedures with both PBN elements and ground−based equipment requirements, the PBN requirements box will be listed first. (See FIG ENR 1.5−17.)

2.3 Other RNP Applications Outside the U.S. The FAA and ICAO member states have led initiatives in implementing the RNP concept to oceanic operations. For example, RNP−10 routes have been established in the northern Pacific (NOPAC) which has increased capacity and efficiency by reducing the distance between tracks to 50 NM. (See AIP Section ENR 7.4.)

2.4 Aircraft and Airborne Equipment Eligibility for RNP Operations. Aircraft eligible for RNP operations will have an appropriate entry including special conditions and limitations in its AFM, avionics manual, or a supplement. Operators of aircraft not having specific RNP eligibility statements in the AFM or avionics documents may be issued operational approval including special conditions and limitations for specific RNP eligibilities.

NOTE−
Some airborne systems use Estimated Position Uncertainty (EPU) as a measure of the current estimated navigational performance. EPU may also be referred to as Actual Navigation Performance (ANP) or Estimated Position Error (EPE).

TBL ENR 1.17−1
U.S. Standard RNP Levels

RNP Level	Typical Application	Primary Route Width (NM) − Centerline to Boundary
0.1 to 1.0	RNP AR Approach Segments	0.1 to 1.0
0.3 to 1.0	RNP Approach Segments	0.3 to 1.0
1	Terminal and En Route	1.0
2	En Route	2.0
4	Oceanic/remote areas where performance−based horizontal separation is applied.	4.0
10	Oceanic/remote areas where performance−based horizontal separation is applied.	10.0

3. Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes

3.1 Discussion. This paragraph sets forth policy, while providing operational and airworthiness guidance regarding the suitability and use of RNAV systems when operating on, or transitioning to, conventional, non−RNAV routes and procedures within the U.S. National Airspace System (NAS):

3.1.1 Use of a suitable RNAV system as a Substitute Means of Navigation when a Very−High Frequency (VHF) Omni−directional Range (VOR), Distance Measuring Equipment (DME), Tactical Air Navigation (TACAN), VOR/TACAN (VORTAC), VOR/DME, Non−directional Beacon (NDB), or compass locator facility including locator outer marker and locator middle marker is out−of−service (that is, the navigation aid (NAVAID) information is not available); an aircraft is not equipped with an Automatic Direction Finder (ADF) or DME; or the installed ADF or DME on an aircraft is not operational. For example, if equipped with a suitable RNAV system, a pilot may hold over an out−of−service NDB.

3.1.2 Use of a suitable RNAV system as an Alternate Means of Navigation when a VOR, DME, VORTAC, VOR/DME, TACAN, NDB, or compass locator facility including locator outer marker and locator middle marker is operational and the respective aircraft is equipped with operational navigation equipment that is compatible with conventional navaids. For example, if equipped with a suitable RNAV system, a pilot may fly a procedure or route based on operational VOR using that RNAV system without monitoring the VOR.

NOTE−
1. *Additional information and associated requirements are available in Advisory Circular 90-108 titled "Use of Suitable RNAV Systems on Conventional Routes and Procedures."*

ENR 3.3 Area Navigation (RNAV) Routes

1. Area Navigation (RNAV) Routes

1.1 Published RNAV routes, including Q−routes, T−routes, and Y−routes, can be flight planned for use by aircraft with RNAV capability, subject to any limitations or requirements noted on en route charts, in applicable Advisory Circulars, NOTAMs, etc. RNAV routes are normally depicted in blue on aeronautical charts and are identified by the letter "Q," "T," or "Y" followed by the airway number (for example, Q13, T205, and Y280). Published RNAV routes are RNAV 2 except when specifically charted as RNAV 1. Unless otherwise specified, these routes require system performance currently met by GPS, GPS/WAAS, or DME/DME/IRU RNAV systems that satisfy the criteria discussed in AC 90−100A, U.S. Terminal and En Route Area Navigation (RNAV) Operations.

1.1.1 Q−routes are available for use by RNAV equipped aircraft between 18,000 feet MSL and FL 450 inclusive. Q−routes are depicted on En Route High Altitude Charts.

NOTE−
Aircraft in Alaska may only operate on GNSS Q-routes with GPS (TSO-C129 (as revised) or TSO-C196 (as revised)) equipment while the aircraft remains in Air Traffic Control (ATC) radar surveillance or with GPS/WAAS which does not require ATC radar surveillance.

1.1.2 T−routes are available for use by GPS or GPS/WAAS equipped aircraft from 1,200 feet above the surface (or in some instances higher) up to but not including 18,000 feet MSL. T−routes are depicted on En Route Low Altitude Charts.

NOTE−
Aircraft in Alaska may only operate on GNSS T-routes with GPS/WAAS (TSO-C145 (as revised) or TSO-C146 (as revised)) equipment.

1.2 Unpublished RNAV routes are direct routes, based on area navigation capability, between waypoints defined in terms of latitude/longitude coordinates, degree−distance fixes, or offsets from established routes/airways at a specified distance and direction. Radar monitoring by ATC is required on all unpublished RNAV routes, except for GNSS−equipped aircraft cleared via filed published waypoints recallable from the aircraft's navigation database.

1.3 Y−routes generally run in U.S. offshore airspace, however operators can find some Y−routes over southern Florida. Pilots must use GPS for navigation and meet RNAV 2 performance requirements for all flights on Y−routes. Operators can find additional Y−route requirements in ENR 7.10.

ENR 3.5 Other Routes

1. Airways and Route Systems

1.1 Three fixed route systems are established for air navigation purposes. They are the Federal airway system (consisting of VOR and L/MF routes), the jet route system, and the RNAV route system. To the extent possible, these route systems are aligned in an overlying manner to facilitate transition between each.

2. VOR and L/MF System

2.1 The VOR and L/MF (nondirectional radio beacons) Airway System consists of airways designated from 1,200 feet above the surface (or in some instances higher) up to but not including 18,000 feet MSL. These airways are depicted on IFR Enroute Low Altitude Charts.

NOTE–
The altitude limits of a victor airway should not be exceeded except to effect transition within or between route structures.

2.2 Except in Alaska, the VOR airways are: predicated solely on VOR or VORTAC navigation aids; depicted in black on aeronautical charts; and identified by a "V" (Victor) followed by the airway number (for example, V12).

NOTE–
Segments of VOR airways in Alaska are based on L/MF navigation aids and charted in brown instead of black on en route charts.

2.3 A segment of an airway which is common to two or more routes carries the numbers of all the airways which coincide for that segment. When such is the case, pilots filing a flight plan need to indicate only that airway number for the route filed.

NOTE–
A pilot who intends to make an airway flight, using VOR facilities, will simply specify the appropriate "victor" airway(s) in the flight plan. For example, if a flight is to be made from Chicago to New Orleans at 8,000 feet, using omniranges only, the route may be indicated as "departing from Chicago–Midway, cruising 8,000 feet via Victor 9 to Moisant International." If flight is to be conducted in part by means of L/MF navigation aids and in part on omniranges, specifications of the appropriate airways in the flight plan will indicate which types of facilities will be used along the described routes, and, for IFR flight, permit ATC to issue a traffic clearance accordingly. A route may also be described by specifying the station over which the flight will pass but in this case since many VORs and L/MF aids have the same name, the pilot must be careful to indicate which aid will be used at a particular location. This will be indicated in the route of flight portion of the flight plan by specifying the type of facility to be used after the location name in the following manner: Newark L/MF, Allentown VOR.

2.4 With respect to position reporting, reporting points are designed for VOR Airway Systems. Flights using Victor airways will report over these points unless advised otherwise by ATC.

2.5 The L/MF airways (colored airways) are predicated solely on L/MF navigation aids and are depicted in brown on aeronautical charts and are identified by color name and number; e.g., Amber One. Green and Red airways are plotted east and west. Amber and Blue airways are plotted north and south.

CAUTION–
Use of adjacently located LF/VHF airways and routes – many locations just outside the contiguous 48 states have two separate airway structures. One structure is made up from VORs and the other from L/MF NAVAIDs (nondirectional radio beacons). In some instances, the different routes appear to overlie each other. The NAVAIDs are sometimes depicted so close to each other that they will have the appearance of being collocated, or nearly so. Substituting a VOR radial for a nondirectional radio beacon bearing could, in many circumstances, cause an excessive "off course" navigational error. Strict adherence to the color coding of the route structure and NAVAID in use should be maintained. Chart procedures provide an excellent means of route differentiation through the use of color which is defined and explained in the legend.

2.6 The use of TSO–C145 (as revised) or TSO–C146 (as revised) GPS/WAAS navigation systems is allowed in Alaska as the only means of navigation on published air traffic service (ATS) routes, including those Victor,

T−Routes, and colored airway segments designated with a second minimum en route altitude (MEA) depicted in blue and followed by the letter G at those lower altitudes. The altitudes so depicted are below the minimum reception altitude (MRA) of the land−based navigation facility defining the route segment, and guarantee standard en route obstacle clearance and two−way communications. Air carrier operators requiring operations specifications are authorized to conduct operations on those routes in accordance with FAA operations specifications.

3. Jet Route System

3.1 The jet route system consists of jet routes established from 18,000 feet MSL to FL 450 inclusive.

3.2 These routes are depicted on En Route High Altitude Charts. Jet routes are depicted in black on aeronautical charts and are identified by a "J" (Jet) followed by the airway number; e.g., J12. Jet routes, as VOR airways, are predicated solely on VOR or VORTAC navigation facilities (except in Alaska).

NOTE−
Segments of jet routes in Alaska are based on L/MF navigation aids and are charted in brown color instead of black on en route charts.

3.3 With respect to position reporting, reporting points are designated for Jet Route Systems. Flights using jet routes will report over these points unless otherwise advised by ATC.

4. Radar Vectors

4.1 Controllers may vector aircraft within CONTROLLED AIRSPACE for separation purposes, noise abatement considerations, when an operational advantage will be realize by the pilot or the controller, or when requested by the pilot. Vectors outside of CONTROLLED AIRSPACE will be provided only on pilot request. Pilots will be advised as to what the vector is to achieve when the vector is controller initiated and will take the aircraft off a previously assigned nonradar route. To the extent possible, aircraft operating on RNAV routes will be allowed to remain on their own navigation.

5. Changeover Points (COPs)

5.1 COPs are prescribed for Federal airways, jet routes, area navigation routes, or other direct routes for which an minimum en route altitude (MEA) is designated under 14 CFR Part 95. The COP is a point along the route or airway segment between two adjacent navigation facilities or waypoints where changeover navigation guidance should occur. At this point, the pilot should change navigation receiver frequency from the station behind the aircraft to the station ahead.

5.2 The COP is normally located midway between the navigation facilities for straight route segments, or at the intersection of radials or courses forming a dogleg in the case of dogleg route segments. When the COP is NOT located at the midway point, aeronautical charts will depict the COP location and give the mileage to the radio aids.

5.3 COPs are established for the purpose of preventing loss of navigation guidance, to prevent frequency interference from other facilities, and to prevent use of different facilities by different aircraft in the same airspace. Pilots are urged to observe COPs to the fullest extent.

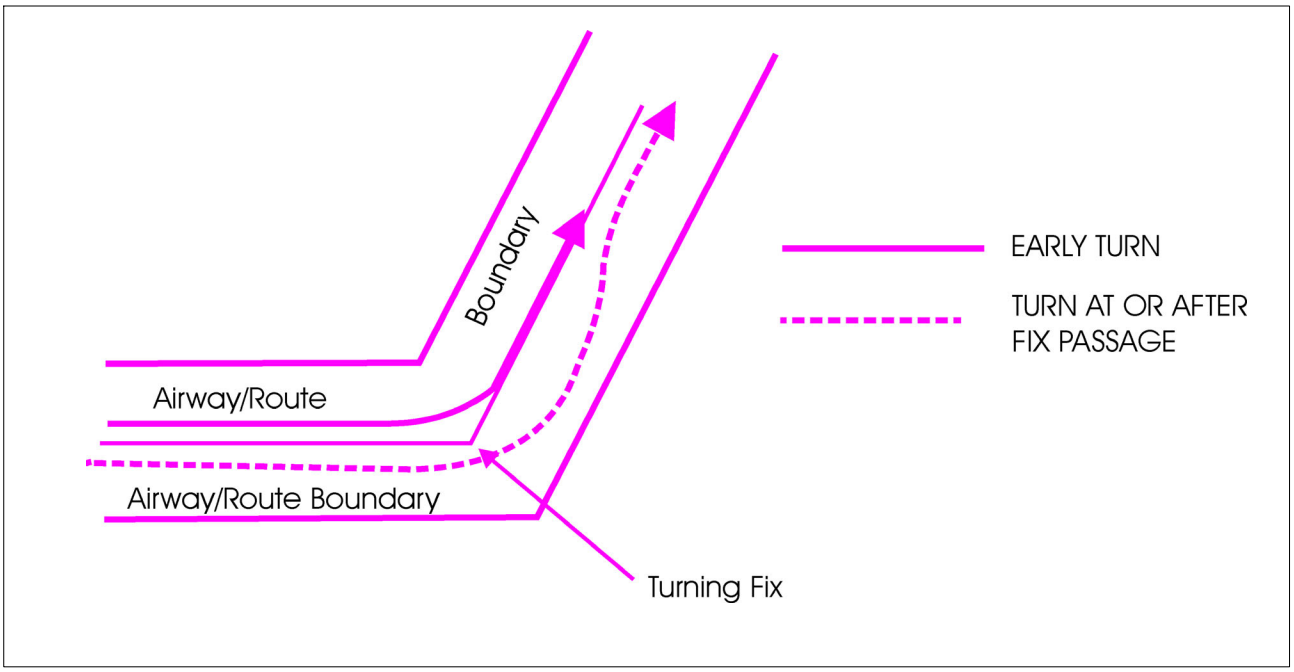
6. Airway or Route Course Changes

6.1 Pilots of aircraft are required to adhere to airways/routes being flown. Special attention must be given to this requirement during course changes. Each course change consists of variables that make the technique applicable in each case a matter only the pilot can resolve. Some variables which must be considered are turn radius, wind effect, airspeed, degree of turn, and cockpit instrumentation. An early turn, as illustrated in FIG ENR 3.5−1, is one method of adhering to airways/routes. The use of any available cockpit instrumentation, such as distance measuring equipment, may be used by the pilot to lead the turn when making course changes. This is consistent

with the intent of 14 CFR Section 91.181 which requires pilots to operate along the centerline of an airway and along the direct course between navigational aids or fixes.

6.2 Turns which begin at or after fix passage may exceed airway/route boundaries. FIG ENR 3.5–1 contains an example flight track depicting this, together with an example of an early turn.

FIG ENR 3.5–1
Adhering to Airways or Routes



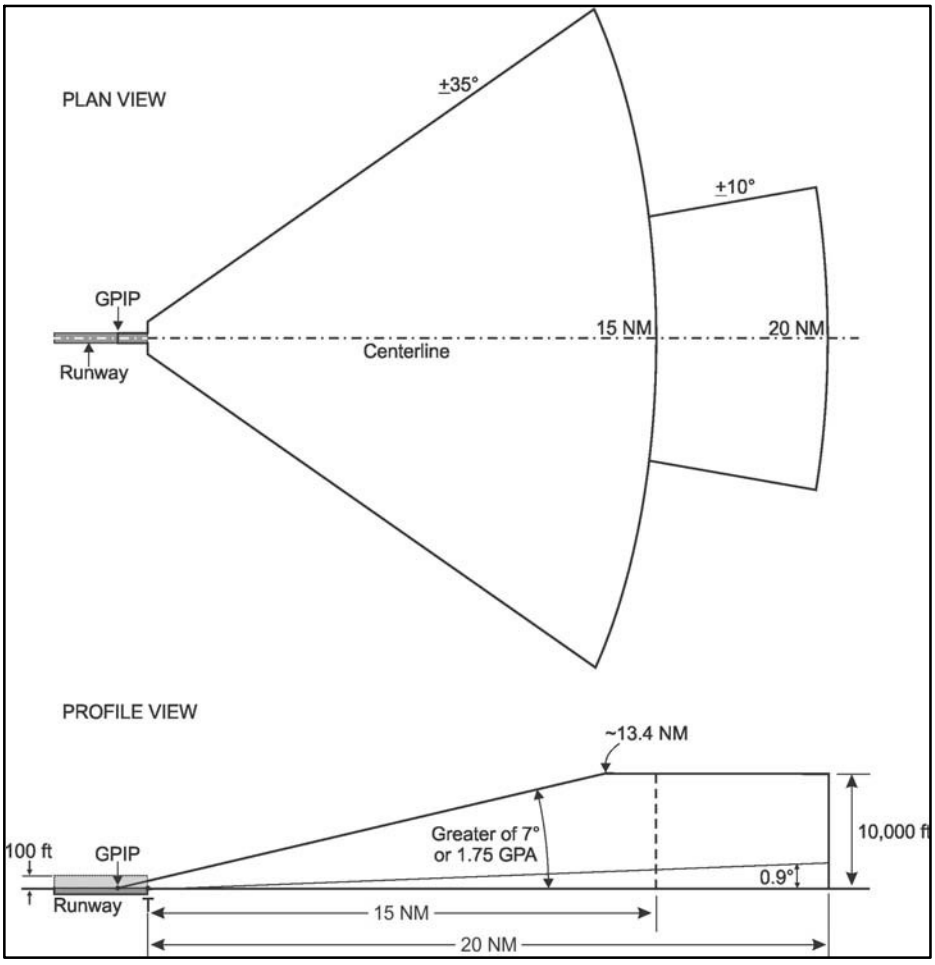
6.3 Without such actions, as leading a turn, aircraft operating in excess of 290 knots true airspeed (TAS) can exceed the normal airway/route boundaries depending on the amount of course change required, wind direction and velocity, the character of the turn fix, (DME, overhead navigation aid, or intersection), and the pilot's technique in making a course change. For example, a flight operating at 17,000 feet MSL with a TAS of 400 knots, a 25 degree bank, and a course change of more than 40 degrees would exceed the width of the airway/route; i.e., 4 nautical miles each side of centerline. However, in the airspace below 18,000 feet MSL, operations in excess of 290 knots TAS are not prevalent and the provision of additional IFR separation in all course change situations for the occasional aircraft making a turn in excess of 290 knots TAS creates an unacceptable waste of airspace and imposes a penalty upon the preponderance of traffic which operates at low speeds. Consequently, the FAA expects pilots to lead turns and take other actions they consider necessary during the course changes to adhere as closely as possible to the airways or route being flown.

7. Minimum Turning Altitude (MTA)

7.1 Due to increased airspeeds at 10,000 ft MSL or above, the published minimum enroute altitude (MEA) may not be sufficient for obstacle clearance when a turn is required over a fix, NAVAID, or waypoint. In these instances, an expanded area in the vicinity of the turn point is examined to determine whether the published MEA is sufficient for obstacle clearance. In some locations (normally mountainous), terrain/obstacles in the expanded search area may necessitate a higher minimum altitude while conducting the turning maneuver. Turning fixes requiring a higher minimum turning altitude (MTA) will be denoted on government charts by the minimum crossing altitude (MCA) icon ("x" flag) and an accompanying note describing the MTA restriction. An MTA restriction will normally consist of the air traffic service (ATS) route leading to the turn point, the ATS route leading from the turn point, and the required altitude; e.g., MTA V330 E TO V520 W 16000. When an MTA is applicable for the intended route of flight, pilots must ensure they are at or above the charted MTA not later than

the turn point and maintain at or above the MTA until joining the centerline of the ATS route following the turn point. Once established on the centerline following the turning fix, the MEA/MOCA determines the minimum altitude available for assignment. An MTA may also preclude the use of a specific altitude or a range of altitudes during a turn. For example, the MTA may restrict the use of 10,000 through 11,000 ft MSL. In this case, any altitude greater than 11,000 ft MSL is unrestricted, as are altitudes less than 10,000 ft MSL provided MEA/MOCA requirements are satisfied.

FIG ENR 4.1–4
GLS Standard Approach Service Volume



19. Precision Approach Systems Other than ILS and GLS

19.1 General

Approval and use of precision approach systems other than ILS and GLS require the issuance of special instrument approach procedures.

19.2 Special Instrument Approach Procedure

19.2.1 Special instrument approach procedures must be issued to the aircraft operator if pilot training, aircraft equipment, and/or aircraft performance is different than published procedures. Special instrument approach procedures are not distributed for general public use. These procedures are issued to an aircraft operator when the conditions for operations approval are satisfied.

19.2.2 General aviation operators requesting approval for special procedures should contact the local Flight Standards District Office to obtain a letter of authorization. Air carrier operators requesting approval for use of special procedures should contact their Certificate Holding District Office for authorization through their Operations Specification.

19.3 Special Category I Differential GPS (SCAT–I DGPS)

19.3.1 The SCAT–I DGPS is designed to provide approach guidance by broadcasting differential correction to GPS.

19.3.2 SCAT−I DGPS procedures require aircraft equipment and pilot training.

19.3.3 Ground equipment consists of GPS receivers and a VHF digital radio transmitter. The SCAT−I DGPS detects the position of GPS satellites relative to GPS receiver equipment and broadcasts differential corrections over the VHF digital radio.

19.3.4 Category I Ground Based Augmentation System (GBAS) will displace SCAT−I DGPS as the public−use service.

20. Area Navigation

20.1 General

20.1.1 Area Navigation (RNAV) provides enhanced navigational capability to the pilot. RNAV equipment can compute the airplane position, actual track and ground speed and then provide meaningful information relative to a route of flight selected by the pilot. Typical equipment will provide the pilot with distance, time, bearing and crosstrack error relative to the selected "TO" or "active" waypoint and the selected route. Several navigational systems with different navigational performance characteristics are capable of providing area navigational functions. Present day RNAV includes INS, VOR/DME, and GPS systems. Modern multi−sensor systems can integrate one or more of the above systems to provide a more accurate and reliable navigational system. Due to the different levels of performance, area navigational capabilities can satisfy different levels of required navigation performance (RNP).

20.2 RNAV Operations Incorporating RNP

20.2.1 During the past four decades, domestic and international air navigation have been conducted using a system of airways and instrument procedures based upon ground−based navigational systems such as NDB, VOR, and ILS. Reliance on ground−based navigational systems has served the aviation community well, but often results in less than optimal routes or instrument procedures and an inefficient use of airspace. With the widespread deployment of RNAV systems and the advent of GPS−based navigation, greater flexibility in defining routes, procedures, and airspace design is now possible with an associated increase in flight safety. To capitalize on the potential of RNAV systems, both the FAA and International Civil Aviation Organization (ICAO) are affecting a shift toward a new standard of navigation and airspace management called RNP.

20.2.2 Navigational systems are typically described as being sensor specific, such as a VOR or ILS system. By specifying airspace requirements as RNP, various navigation systems or combination of systems may be used as long as the aircraft can achieve the RNP. RNP is intended to provide a single performance standard that can be used and applied by aircraft and aircraft equipment manufacturers, airspace planners, aircraft certification and operations, pilots and controllers, and international aviation authorities. RNP can be applied to obstacle clearance or aircraft separation requirements to ensure a consistent application level.

20.2.3 ICAO has defined RNP values for the four typical navigation phases of flight: oceanic, en route, terminal, and approach. The RNP applicable to a selected airspace, route, or procedure is designated by it's RNP Level or Type. As defined in the Pilot/Controller Glossary, the RNP Level or Type is a value typically expressed as a distance, in nautical miles, from the procedure, route or path within which an aircraft would typically operate. RNP applications also provide performance to protect against larger errors at some multiple of RNP level (e.g., twice the RNP level).

20.3 Standard RNP Levels

20.3.1 U.S. standard values supporting typical RNP airspace are as specified in TBL ENR 4.1−6 below. Other RNP levels as identified by ICAO, other states and the FAA may also be used.

TBL ENR 4.1−6
U.S. Standard RNP Levels

RNP Level	Typical Application
.3	Approach
1	Departure, Terminal
2	En Route

20.3.1.1 Application of Standard RNP Levels. U.S. standard levels of RNP typically used for various routes and procedures supporting RNAV operations may be based on use of a specific navigational system or sensor such as GPS, or on multi−sensor RNAV systems having suitable performance. New RNAV routes and procedures will be FAA's first public use procedures to include a specified RNP level. These procedures are being developed based on earth referenced navigation and do not rely on conventional ground−based navigational aids. Unless otherwise noted on affected charts or procedures, depiction of a specified RNP level will not preclude the use of other airborne RNAV navigational systems.

20.3.1.2 Depiction of Standard RNP Levels. The applicable RNP level will be depicted on affected charts and procedures. For example, an RNAV departure procedure may contain a notation referring to eligible aircraft by equipment suffix and a phrase "or RNP−1.0." A typical RNAV approach procedure may include a notation referring to eligible aircraft by specific navigation sensor(s), equipment suffix, and a phrase "or RNP−0.3." Specific guidelines for the depiction of RNP levels will be provided through chart bulletins and accompany affected charting changes.

20.4 Aircraft and Airborne Equipment Eligibility for RNP Operations. Aircraft meeting RNP criteria will have an appropriate entry including special conditions and limitations, if any, in its Aircraft/Rotorcraft Flight Manual (AFM), or supplement. RNAV installations with AFM−RNP certification based on GPS or systems integrating GPS are considered to meet U.S. standard RNP levels for all phases of flight. Aircraft with AFM−RNP certification without GPS may be limited to certain RNP levels, or phases of flight. For example, RNP based on DME/DME without other augmentation may not be appropriate for phases of flight outside the certified DME service volume. Operators of aircraft not having specific AFM−RNP certification may be issued operational approval including special conditions and limitations, if any, for specific RNP levels. Aircraft navigation systems eligible for RNP airspace will be indicated on charts, or announced through other FAA media such as NOTAMs and chart bulletins.

20.5 Understanding RNP Operations. Pilots should have a clear understanding of the aircraft requirements for operation in a given RNP environment, and advise ATC if an equipment failure or other malfunction causes the aircraft to lose its ability to continue operating in the designated RNP airspace. When a pilot determines a specified RNP level cannot be achieved, he/she should be prepared to revise the route, or delay the operation until an appropriate RNP level can be ensured. Some airborne systems use terms other than RNP to indicate the current level of performance. Depending on the airborne system implementation, this may be displayed, and referred to, as actual navigation performance (ANP), estimate of position error (EPE), or other.

20.6 Other RNP Applications Outside the U.S. The FAA, in cooperation with ICAO member states has led initiatives in implementing the RNP concept to oceanic operations. For example, RNP−10 routes have been established in the Northern Pacific (NOPAC) which has increased capacity and efficiency by reducing the distance between tracks to 50 NM. Additionally, the FAA has assisted those U.S. air carriers operating in Europe where the routes have been designated as RNP−5. TBL ENR 4.1−7 below, shows examples of current and future RNP levels of airspace.

TBL ENR 4.1−7
RNP Levels Supported for International Operations

RNP Level	Typical Application
4	Oceanic/remote areas where performance−based horizontal separation is applied
5	European Basic RNAV (B−RNAV)
10	Oceanic/remote areas where performance−based horizontal separation is applied

20.7 RNAV and RNP Operations

20.7.1 Pilot

20.7.1.1 If unable to comply with the requirements of an RNAV or RNP procedure, pilots must advise air traffic control as soon as possible. For example, "N1234, failure of GPS system, unable RNAV, request amended clearance."

20.7.1.2 Pilots are not authorized to fly a published RNAV or RNP procedure (instrument approach, departure, or arrival procedure) unless it is retrievable by the procedure name from the current aircraft navigation database and conforms to the charted procedure. The system must be able to retrieve the procedure by name from the aircraft navigation database, not just as a manually entered series of waypoints.

20.7.1.3 Whenever possible, RNAV routes (Q− or T−route) should be extracted from the database in their entirety, rather than loading RNAV route waypoints from the database into the flight plan individually. However, selecting and inserting individual, named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted.

20.7.1.4 Pilots must not change any database waypoint type from a fly−by to fly−over, or vice versa. No other modification of database waypoints or the creation of user−defined waypoints on published RNAV or RNP procedures is permitted, except to:

a) Change altitude and/or airspeed waypoint constraints to comply with an ATC clearance/ instruction.

b) Insert a waypoint along the published route to assist in complying with ATC instruction, example, "Descend via the WILMS arrival except cross 30 north of BRUCE at/or below FL 210." This is limited only to systems that allow along−track waypoint construction.

20.7.1.5 Pilots of FMS−equipped aircraft, who are assigned an RNAV DP or STAR procedure and subsequently receive a change of runway, transition or procedure, must verify that the appropriate changes are loaded and available for navigation.

20.7.1.6 For RNAV 1 DPs and STARs, pilots must use a CDI, flight director and/or autopilot, in lateral navigation mode. Other methods providing an equivalent level of performance may also be acceptable.

20.7.1.7 For RNAV 1 DPs and STARs, pilots of aircraft without GPS, using DME/DME/IRU, must ensure the aircraft navigation system position is confirmed, within 1,000 feet, at the start point of take−off roll. The use of an automatic or manual runway update is an acceptable means of compliance with this requirement. Other methods providing an equivalent level of performance may also be acceptable.

20.7.1.8 For procedures or routes requiring the use of GPS, if the navigation system does not automatically alert the flight crew of a loss of GPS, the operator must develop procedures to verify correct GPS operation.

20.7.1.9 RNAV terminal procedures (DP and STAR) may be amended by ATC issuing radar vectors and/or clearances direct to a waypoint. Pilots should avoid premature manual deletion of waypoints from their active "legs" page to allow for rejoining procedures.

20.7.1.10 RAIM Prediction: If TSO−C129 equipment is used to solely satisfy the RNAV and RNP requirement, GPS RAIM availability must be confirmed for the intended route of flight (route and time). If RAIM is not available, pilots need an approved alternate means of navigation.

REFERENCE−
AIP, ENR 1.10, Para 11.3, RNAV and RNP Operations.

20.7.1.11 Definition of "established" for RNAV and RNP operations: An aircraft is considered to be established on-course during RNAV and RNP operations anytime it is within 1 times the required accuracy for the segment being flown. For example, while operating on a Q-Route (RNAV 2), the aircraft is considered to be established on-course when it is within 2 nm of the course centerline.

NOTE−
Pilots must be aware of how their navigation system operates, along with any AFM limitations, and confirm that the aircraft's lateral deviation display (or map display if being used as an allowed alternate means) is suitable for the accuracy of the segment being flown. Automatic scaling and alerting changes are appropriate for some operations. For example, TSO-C129 systems change within 30 miles of destination and within 2 miles of FAF to support approach operations. For some navigation systems and operations, manual selection of scaling will be necessary.
(a) *Pilots flying FMS equipped aircraft with barometric vertical navigation (Baro-VNAV) may descend when the aircraft is established on-course following FMS leg transition to the next segment. Leg transition normally occurs at the turn bisector for a fly-by waypoint (reference paragraph 1-2-1 for more on waypoints). When using full automation, pilots should monitor the aircraft to ensure the aircraft is turning at appropriate lead times and descending once established on-course.*

(b) *Pilots flying TSO-C129 navigation system equipped aircraft without full automation should use normal lead points to begin the turn. Pilots may descend when established on-course on the next segment of the approach.*

21. NAVAID Identifier Removal During Maintenance

21.1 During periods of routine or emergency maintenance, coded identification (or code and voice, where applicable) is removed from certain FAA NAVAIDs. Removal of the identification serves as warning to pilots that the facility is officially off the air for tune−up or repair and may be unreliable even though intermittent or constant signals are received.

NOTE−
During periods of maintenance, VHF ranges may radiate a T−E−S−T code (− ● ●●● −).

NOTE−
DO NOT attempt to fly a procedure that is NOTAMed out of service even if the identification is present. In certain cases, the identification may be transmitted for short periods as part of the testing.

22. User Reports Requested on NAVAID Outages

22.1 Users of the National Airspace System (NAS) can render valuable assistance in the early correction of NAVAID malfunctions or GNSS problems and are encouraged to report their observations of undesirable avionics performance. Although NAVAIDs are monitored by electronic detectors, adverse effects of electronic interference, new obstructions or changes in terrain near the NAVAID can exist without detection by the ground monitors. Some of the characteristics of malfunction or deteriorating performance which should be reported are: erratic course or bearing indications; intermittent, or full, flag alarm; garbled, missing or obviously improper coded identification; poor quality communications reception; or, in the case of frequency interference, an audible hum or tone accompanying radio communications or NAVAID identification. GNSS problems are often characterized by navigation degradation or service loss indications. For instance, pilots conducting operations in areas where there is GNSS interference may be unable to use GPS for navigation, and ADS−B may be unavailable for surveillance. Radio frequency interference may affect both navigation for the pilot and surveillance by the air traffic controller. Depending on the equipment and integration, either an advisory light or message may alert the pilot. Air traffic controllers monitoring ADS−B reports may stop receiving ADS−B position messages and associated aircraft tracks.

22.2 Malfunctioning, faulty, inappropriately installed, operated, or modified GPS re−radiator systems, intended to be used for aircraft maintenance activities, have resulted in unintentional disruption of aviation GPS receivers. This type of disruption could result in unflagged, erroneous position−information output to primary flight displays/indicators and to other aircraft and air traffic control systems. Since Receiver Autonomous Integrity

Monitoring (RAIM) is only partially effective against this type of disruption (effectively a “signal spoofing”), the pilot may not be aware of any erroneous navigation indications; ATC may be the only means available to identify these disruptions and detect unexpected aircraft positions while monitoring aircraft for IFR separation.

22.3 Pilots encountering navigation error events should transition to another source of navigation and request amended clearances from ATC as necessary.

22.4 Pilots are encouraged to submit detailed reports of NAVAID or GPS anomaly as soon as practical. Pilot reports of navigation error events should contain the following information:

22.4.1 Date and time the anomaly was observed, and NAVAID ID (or GPS).

22.4.2 Location of the aircraft at the time the anomaly started and ended (e.g., latitude/longitude or bearing/distance from a reference point),

22.4.3 Heading, altitude, type of aircraft (make/model/call sign).

22.4.4 Type of avionics/receivers in use (e.g., make/model/software series or version).

22.4.5 Number of satellites being tracked, if applicable.

22.4.6 Description of the position/navigation/timing condition observed; and duration of the event.

22.4.7 Consequences/operational impact(s) of the NAVAID or GPS loss.

22.4.8 Actions taken to mitigate the anomaly and/or remedy provided by the ATC facility.

22.4.9 Post flight pilot/maintenance actions taken.

22.5 Pilots operating an aircraft in controlled airspace under IFR shall comply with CFR § *91.187* and promptly report as soon as practical to ATC any malfunctions of navigational equipment occurring in−flight; pilots should submit initial reports:

22.5.1 Immediately, by radio to the controlling ATC facility or FSS.

22.5.2 By telephone to the nearest ATC facility controlling the airspace where the disruption was experienced.

22.5.3 Additionally, GPS problems should be reported, post flight, by Internet via the GPS Anomaly Reporting Form at http://www.faa.gov/air_traffic/nas/gps_reports/.

22.6 To minimize ATC workload, GPS interference/outages associated with known testing NOTAMs should NOT be reported in−flight to ATC in detail; EXCEPT when:

22.6.1 GPS degradation is experienced outside the NOTAMed area.

22.6.2 Pilot observes any unexpected consequences (e.g., equipment failure, suspected spoofing, failure of other aircraft systems not identified in AFM, such as TAWS).

23. Radio Communications and Navigation Facilities

23.1 A complete listing of air traffic radio communications facilities and frequencies and radio navigation facilities and frequencies are contained in the Chart Supplement U.S. Similar information for the Pacific and Alaskan areas is contained in the Chart Supplements Pacific and Alaska.

no visual references enhances this illusion. Just because you have a good visual reference does not mean that it's safe to continue. There may be snow−covered terrain not visible in the direction that you are traveling. Getting caught in a no visual reference situation can be fatal.

15.9 Flying Around a Lake.

15.9.1 When flying along lakeshores, use them as a reference point. Even if you can see the other side, realize that your depth perception may be poor. It is easy to fly into the surface. If you must cross the lake, check the altimeter frequently and maintain a safe altitude while you still have a good reference. Don't descend below that altitude.

15.9.2 The same rules apply to seemingly flat areas of snow. If you don't have good references, avoid going there.

15.10 Other Traffic. Be on the look out for other traffic in the area. Other aircraft may be using your same reference point. Chances are greater of colliding with someone traveling in the same direction as you, than someone flying in the opposite direction.

15.11 Ceilings. Low ceilings have caught many pilots off guard. Clouds do not always form parallel to the surface, or at the same altitude. Pilots may try to compensate for this by flying with a slight bank and thus creating a descending turn.

15.12 Glaciers. Be conscious of your altitude when flying over glaciers. The glaciers may be rising faster than you are climbing.

16. Operations in Ground Icing Conditions

16.1 The presence of aircraft airframe icing during takeoff, typically caused by improper or no deicing of the aircraft being accomplished prior to flight has contributed to many recent accidents in turbine aircraft. The General Aviation Joint Steering Committee (GAJSC) is the primary vehicle for government−industry cooperation, communication, and coordination on GA accident mitigation. The Turbine Aircraft Operations Subgroup (TAOS) works to mitigate accidents in turbine accident aviation. While there is sufficient information and guidance currently available regarding the effects of icing on aircraft and methods for deicing, the TAOS has developed a list of recommended actions to further assist pilots and operators in this area.

16.1.1 While the efforts of the TAOS specifically focus on turbine aircraft, it is recognized that their recommendations are applicable to and can be adapted for the pilot of a small, piston powered aircraft too.

16.2 The following recommendations are offered:

16.2.1 Ensure that your aircraft's lift−generating surfaces are COMPLETELY free of contamination before flight through a tactile (hands on) check of the critical surfaces when feasible. Even when otherwise permitted, operators should avoid smooth or polished frost on lift−generating surfaces as an acceptable preflight condition.

16.2.2 Review and refresh your cold weather standard operating procedures.

16.2.3 Review and be familiar with the Airplane Flight Manual (AFM) limitations and procedures necessary to deal with icing conditions prior to flight, as well as in flight.

16.2.4 Protect your aircraft while on the ground, if possible, from sleet and freezing rain by taking advantage of aircraft hangars.

16.2.5 Take full advantage of the opportunities available at airports for deicing. Do not refuse deicing services simply because of cost.

16.2.6 Always consider canceling or delaying a flight if weather conditions do not support a safe operation.

16.3 If you haven't already developed a set of Standard Operating Procedures for cold weather operations, they should include:

16.3.1 Procedures based on information that is applicable to the aircraft operated, such as AFM limitations and procedures;

16.3.2 Concise and easy to understand guidance that outlines best operational practices;

16.3.3 A systematic procedure for recognizing, evaluating and addressing the associated icing risk, and offer clear guidance to mitigate this risk;

16.3.4 An aid (such as a checklist or reference cards) that is readily available during normal day−to−day aircraft operations.

16.4 There are several sources for guidance relating to airframe icing, including: http://aircrafticing.grc.nasa.gov/index.html.

16.4.1 Advisory Circular (AC) 91−74, Pilot Guide, Flight in Icing Conditions.

16.4.2 AC 135−17, Pilot Guide Small Aircraft Ground Deicing.

16.4.3 AC 135−9, FAR Part 135 Icing Limitations.

16.4.4 AC 120−60, Ground Deicing and Anti−icing Program.

16.4.5 AC 135−16, Ground Deicing and Anti−icing Training and Checking.

16.5 The FAA Approved Deicing Program Updates is published annually as a Flight Standards Information Bulletin for Air Transportation and contains detailed information on deicing and anti−icing procedures and holdover times. It may be accessed at the following website by selecting the current year's information bulletins: https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/deicing/.

17. Avoid Flight in the Vicinity of Exhaust Plumes (Smoke Stacks and Cooling Towers)

17.1 Flight Hazards Exist Around Exhaust Plumes. Exhaust plumes are defined as visible or invisible emissions from power plants, industrial production facilities, or other industrial systems that release large amounts of vertically directed unstable gases (effluent). High temperature exhaust plumes can cause significant air disturbances such as turbulence and vertical shear. Other identified potential hazards include, but are not necessarily limited to: reduced visibility, oxygen depletion, engine particulate contamination, exposure to gaseous oxides, and/or icing. Results of encountering a plume may include airframe damage, aircraft upset, and/or engine damage/failure. These hazards are most critical during low altitude flight in calm and cold air, especially in and around approach and departure corridors or airport traffic areas.

Whether plumes are visible or invisible, the total extent of their turbulent affect is difficult to predict. Some studies do predict that the significant turbulent effects of an exhaust plume can extend to heights of over 1,000 feet above the height of the top of the stack or cooling tower. Any effects will be more pronounced in calm stable air where the plume is very hot and the surrounding area is still and cold. Fortunately, studies also predict that any amount of crosswind will help to dissipate the effects. However, the size of the tower or stack is not a good indicator of the predicted effect the plume may produce. The major effects are related to the heat or size of the plume effluent, the ambient air temperature, and the wind speed affecting the plume. Smaller aircraft can expect to feel an effect at a higher altitude than heavier aircraft.

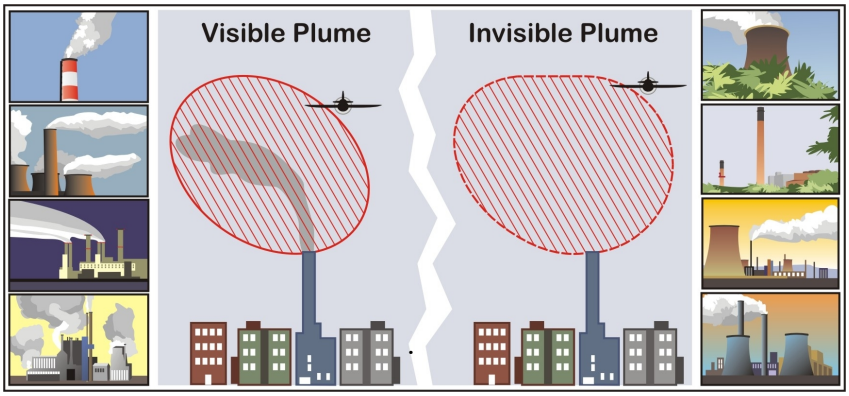
17.2 When able, a pilot should steer clear of exhaust plumes by flying on the upwind side of smokestacks or cooling towers. When a plume is visible via smoke or a condensation cloud, remain clear and realize a plume may have both visible and invisible characteristics. Exhaust stacks without visible plumes may still be in full operation, and airspace in the vicinity should be treated with caution. As with mountain wave turbulence or clear air turbulence, an invisible plume may be encountered unexpectedly. Cooling towers, power plant stacks, exhaust fans, and other similar structures are depicted in FIG ENR 5.7−2.

Pilots are encouraged to exercise caution when flying in the vicinity of exhaust plumes. Pilots are also encouraged to reference the Chart Supplement U.S. where amplifying notes may caution pilots and identify the location of structure(s) emitting exhaust plumes.

The best available information on this phenomenon must come from pilots via the PIREP reporting procedures. All pilots encountering hazardous plume conditions are urgently requested to report time, location, and intensity

(light, moderate, severe, or extreme) of the element to the FAA facility with which they are maintaining radio contact. If time and conditions permit, elements should be reported according to the standards for other PIREPs and position reports see GEN 3.5, paragraph 22. PIREPS Relating to Turbulence).

FIG ENR 5.7–2
Plumes



18. Space Launch and Reentry Area

Locations where commercial space launch and/or reentry operations occur. Hazardous operations occur in space launch and reentry areas, and for pilot awareness, a rocket–shaped symbol is used to depict them on sectional aeronautical charts. These locations may have vertical launches from launch pads, horizontal launches from runways, and/or reentering vehicles coming back to land. Because of the wide range of hazards associated with space launch and reentry areas, pilots are expected to check NOTAMs for the specific area prior to flight to determine the location and lateral boundaries of the associated hazard area, and the active time. NOTAMs may include terms such as “rocket launch activity,” “space launch,” or “space reentry,” depending upon the type of operation. Space launch and reentry areas are not established for amateur rocket operations conducted per 14 CFR Part 101.

FIG ENR 5.7–3
Space Launch and Reentry Area Depicted on a Sectional Chart

ENR 7. Oceanic Operations

ENR 7.1 General Procedures

1. IFR/VFR Operations

1.1 Flights in oceanic airspace must be conducted under Instrument Flight Rule (IFR) procedures when operating:

1.1.1 Between sunset and sunrise.

1.1.2 At or above Flight Level (FL) 055 when operating within the New York, Oakland, and Anchorage Oceanic Flight Information Regions (FIRs).

1.1.3 Above FL180 when operating within the Miami and Houston FIRs and in the San Juan Control Area. Flights between the east coast of the U.S., and Bermuda or Caribbean terminals, and traversing the New York FIR at or above 5,500 feel MSL should be especially aware of this requirement.

1.1.4 At or above FL230 when operating within the Anchorage Arctic FIR.

1.2 San Juan CTA/FIR VFR Traffic.

1.2.1 All VFR aircraft entering and departing the San Juan FIR/CTA will provide San Juan Radio with an ICAO flight plan. All aircraft must establish two–way communications with San Juan Radio on 126.7, 122.2, 123.65, or 255.4.

1.2.2 Communication can also be established by transmitting on 122.1 and receive using the appropriate VOR frequency for Borinquen (BQN), Mayaguez (MAZ), Ponce (PSE), and St. Croix (COY). For St. Thomas (STT), transmit on 123.6 and receive on the VOR frequency. If unable to contact San Juan Radio, the pilot is responsible for notifying adjacent ATS units and request that a position report be relayed to San Juan Radio for search and rescue purposes and flight following.

NOTE–
This is in accordance with ICAO Doc 4444, Part II, paragraphs 14.1.1, 14.1.4; Part VI, paragraphs 1.2.1, 2.2.2; Annex 11, chapter 6, paragraphs 6.1.2.1, 5.1.1, 5.2.1, 5.2.2, 5.2.2.3, 5.3.2.4, 5.4.1.

1.3 Non–RVSM aircraft are not permitted in RVSM airspace unless they meet the criteria of excepted aircraft and are previously approved by the ATS unit having authority for the airspace. In addition to those aircraft listed in ENR 1.1, General Rules, paragraph 38, Operational Policy/Procedures for Reduced Vertical Separation Minimum (RVSM) in the Domestic U.S., Alaska, Offshore Airspace, and the San Juan FIR, the following aircraft operating within oceanic and offshore airspace are excepted:

1.3.1 Aircraft being initially delivered to the State of Registry or Operator.

1.3.2 Aircraft that was formerly RVSM–approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval.

1.3.3 Aircraft being utilized for mercy or humanitarian purposes.

NOTE–
These exceptions are accommodated on a workload or traffic–permitting basis.

2. Flight Plan Filing Requirements

NOTE–
In addition to the following guidance, operators must also consult current Notices to Air Missions (NOTAMs) and chart supplements (Supplement Alaska, Supplement Pacific) to gain a complete understanding of requirements. NOTAMs and supplements may contain guidance that is short term and/or short notice – i.e., having immediate effect.

2.1 If you are eligible for oceanic 50 NM lateral separation:

2.1.1 PBN/A1 or PBN/L1 in Field 18.

2.1.2 R in Field 10a.

2.1.3 See FAA Advisory Circular (AC) 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace, for guidance on RNP 10 (RNAV 10) authorization.

2.2 If you are eligible for oceanic 50 NM longitudinal and lateral separation:

2.2.1 PBN/A1 or PBN/L1 in Field 18.

2.2.2 P2 in Field 10a.

2.2.3 D1 in Field 10b.

2.2.4 (J5, J6, or J7) and R in Field 10a.

2.2.5 SUR/RSP180 in Field 18.

2.2.6 See FAA Advisory Circular 90–117, Data Link Communications, for guidance on Required Communication Performance (RCP) and Required Surveillance Performance (RSP) authorization.

2.2.7 See FAA Advisory Circular 90-105 for guidance on RNP 10 (RNAV 10) authorization.

2.3 If you are eligible for 23 NM lateral or 30 NM longitudinal separation:

2.3.1 PBN/L1 in Field 18.

2.3.2 P2 in Field 10a.

2.3.3 D1 in Field 10b.

2.3.4 (J5, J6, or J7) and R in Field 10a.

2.3.5 SUR/RSP180 in Field 18.

2.3.6 See FAA Advisory Circular 90–117 for guidance on RCP and RSP authorization.

2.3.7 See FAA Advisory Circular 90-105 for guidance on RNP 4 authorization.

2.4 Oakland Oceanic FIR

2.4.1 In accordance with ICAO Doc 4444, flight plans with routes entering the Oakland Oceanic FIR (KZAK) must contain, among the estimated elapsed times (EET) in Field 18, an entry point for KZAK and an estimated time. It is not mandatory to file the boundary crossing point in Field 15 of the route of flight, but it is permitted.

2.4.2 The use of CPDLC and ADS–C in the Oakland Oceanic FIR (KZAK) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZAK and the aircraft will not be able to connect.

2.5 New York Oceanic FIR

2.5.1 The use of CPDLC and ADS–C in the New York Oceanic FIR (KZWY) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZWY and the aircraft will not be able to connect.

3. Flight Plan Addressing

3.1 In an effort to eliminate erroneous or duplicate flight plans that may be received from diverse locations, and to increase the safety of flight, operators must adhere to the following procedures when filing flight plans for departing flights from foreign aerodromes entering the United States National Airspace System:

ENR 7.5 Operational Policy Performance−Based Navigation (PBN) and Performance−Based Communication and Surveillance (PBCS)

1. Introduction

1.1 Distance−based longitudinal separation minima using Automatic Dependent Surveillance−Contract (ADS−C) is implemented in Oakland Oceanic airspace as specified in TBL ENR 7.5−1.

TBL ENR 7.5−1
Minima

Minima				
Standard	**RNP**	**RCP**	**RSP**	**Maximum ADS−C Periodic Reporting Interval**
50 NM	10	240	180	27 minutes
50 NM	4	240	180	32 minutes
30 NM	4	240	180	14 minutes

1.2 Distance−based longitudinal separation minima using ADS−C is implemented in the Anchorage Oceanic and New York Oceanic airspace as specified in TBL ENR 7.5−2.

TBL ENR 7.5−2
Minima

Minima				
Standard	**RNP**	**RCP**	**RSP**	**Maximum ADS−C Periodic Reporting Interval**
50 NM	10	240	180	27 minutes
50 NM	4	240	180	32 minutes
30 NM	4	240	180	10 minutes

1.3 Aircraft Future Air Navigation System (FANS) 1/A communications, navigation and surveillance (CNS) capabilities, interfaced with Advanced Technology and Oceanic Procedures (ATOP), are required for ADS−C distance based separation to be applied.

NOTE−
1. *ADS−C distance based separation standards may not be applied to aircraft utilizing High Frequency Data Link (HFDL).*

2. *ADS−C distance based separation is not currently authorized in the Anchorage Arctic FIR.*

1.4 23 NM lateral separation is applied between RNP 4 aircraft capable of RSP 180 and RCP 240 with ADS−C waypoint change event and 5 NM lateral deviation event contracts established.

2. Application

2.1 Oakland, New York and Anchorage ARTCCs will apply the following policies to the use of ADS−C distance based separation:

2.1.1 The separation will be applied to pairs of suitably equipped pairs of aircraft;

2.1.2 Published ATS routes and other tracks (e.g., PACOTS) will continue to be laterally separated by a minimum of 50 NM;

2.1.3 Minimum ADS−C based longitudinal separation between RNP 4 eligible aircraft and RNP 10 eligible aircraft is 50 NM; and

2.1.4 Lateral and longitudinal separation standards applied between RNP 10 and non−RNP 10 aircraft remains unchanged.

3. Aircraft and Operator Eligibility for Performance−Based Separation

3.1 The aircraft and operator must be authorized by the State of the Operator or the State of Registry, as appropriate, for 50 NM: at a minimum, RNP 4 or RNAV 10, RCP 240, and RSP 180; and for 30 NM: at a minimum, RNP 4, RCP 240, and RSP 180 operations;

3.2 The aircraft must be equipped with a minimum of two approved long range navigation systems that will enable the aircraft to maintain RNP 4 for the duration of flight in the applicable airspace;

3.3 The aircraft must be equipped with a FANS1/A package (or equivalent) that includes satellite Controller Pilot Data Link Communication (CPDLC) and ADS−C that meet the standards of RTCA Document 258, Interoperability Requirements for ATS Applications Using ARINC 622 Data Communications;

3.4 Satellite CPDLC communications and ADS−C surveillance must be conducted in accordance with the ICAO Global Operational Data Link Document (GOLD), as amended, and maintained for the duration of the flight in the applicable Pacific FIRs; and

3.5 Pilots and, if applicable, dispatchers must be trained on policies and procedures applicable to ADS−C distance based separation, including the use of Satellite CPDLC and ADS−C in Pacific oceanic airspace.

3.6 Operators should use the ICAO GOLD to develop policy and procedures for CPDLC and ADS−C operations.

3.6.1 Operators must use one of the following documents to develop policy and procedures for RNP 4 operations:

3.6.1.1 FAA Advisory Circular (AC) 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace;

3.6.1.2 Australian Civil Aviation Safety Authority (CASA) Advisory Circular 91U3(0); or

3.6.1.3 ICAO Performance−Based Navigation (PBN) Manual (ICAO Document 9613), Volume II, Part C, Chapter 1.

3.6.1.4 ICAO Performance−Based Communication and Surveillance (PBCS) Manual (ICAO Doc 9869).

4. Flight Planning Requirements

See ENR 7.1, paragraph 2, Flight Plan Filing Requirements.

NOTE−
Other than the flight plan requirements discussed in ENR 7.1, Paragraph 2, Flight Plan Filing Requirements, application of distance based separation does not affect operator planning processes or procedures for filing flight plans. Operators that have filed and flown User Preferred Routes (UPRs) may continue to do so.

5. In−Flight Contingency Actions/ Procedures and Emphasis on Situational Awareness

5.1 Pilots should be aware that ADS−C distance based separation can be applied to their aircraft. They should use all available tools to maintain an awareness of other aircraft in their proximity in case an inflight contingency occurs (e.g., aircraft or ATC system malfunction).

5.2 Pilots must advise ATC of a loss of CPDLC and/or ADS−C capability or an inability to continue to meet RNP 4. ATC will transition the aircraft to another form of separation as expeditiously as possible.

5.3 If there is a known malfunction of the CPDLC or ADS−C system, ATC will contact aircraft and transition the aircraft to another form of separation as expeditiously as possible.

5.4 Pilots should use the guidance in ENR 7.3, Special Procedures for In−Flight Contingencies in Oceanic Airspace. This reflects current ICAO guidance calling for a 5 NM track offset when unable to obtain ATC clearance prior to executing maneuvers for contingencies such as rapid descent, turn back, or diversion. This is of particular importance for aircraft to which 30 NM separation can be applied.

5.5 Pilots are required to maneuver (deviate) around convective weather on a regular basis in the course of Pacific operations. The enhanced CNS requirements and capabilities aid pilots and controllers in situations where aircraft are required to maneuver around convective weather. For weather avoidance maneuvers in areas where ADS−C distance based separation is applied, operators should emphasize the following items in pilot training programs:

5.5.1 Pilots should not assume the ATOP system will automatically quickly detect significant changes to the aircraft flight path. Unlike radar, the ATOP system does not receive aircraft position updates in real−time. Aircraft position is updated to the ATOP system at intervals of up to 27 minutes. Controllers may change the update intervals as the situation warrants.

5.5.2 It is imperative that pilots keep ATC advised via CPDLC (or HF voice, if necessary) of their intentions (including significant airspeed changes) during the initial weather avoidance maneuver and any subsequent maneuvers to avoid convective weather.

5.5.3 Pilots must be aware that other aircraft could be approximately 30 NM ahead or behind on the same track, and inform ATC expeditiously of changes to flight path or airspeed that could erode longitudinal separation.

5.5.4 Pilots must be familiar with ENR 7.3, Special Procedures for In−Flight Contingencies in Oceanic Airspace.

NOTE−
In particular, pilots should be aware of the provision to climb or descend 300 feet (depending on the direction of flight and direction of deviation from track) to mitigate the chance of conflict with other aircraft when forced to deviate without a clearance.

5.5.5 It is recommended that ACAS be operational for aircraft to which 30 NM separation can be applied. ACAS provides a valuable tool to alert the pilot to the presence and proximity of nearby aircraft in weather deviation situations.

5.5.6 In accordance with ICAO Document 4444, pilots are reminded that, regardless of the magnitude of a deviation from assigned route, whenever possible, clearance should be requested in advance from ATC. Prior coordination with ATC will help prevent the aircraft generating unnecessary alerts to ATC for lateral deviation events.

NOTE−
This does not apply to SLOP.

5.5.7 Operators should consider adopting guidance for pilots to use heading mode to maneuver around areas of convective weather. Use of heading mode will prevent transmission of unnecessary lateral deviation event alerts that some flight management systems (FMS) automatically transmit to ATC when the FMS automatic lateral offset feature is used for weather avoidance. It should be emphasized that, when using heading mode, pilots should monitor cross track and heading and return to track when weather avoidance maneuvering is complete.

5.5.8 Aircraft navigation errors and system malfunctions will be monitored and documented. Operators should cooperate in follow up investigation of these events.

ENR 7.11 Atlantic High Offshore Airspace Offshore Routes Supporting Florida Airspace Optimization

1. Introduction

1.1 On 27 October 2005, nine new directional offshore Class I area navigation (RNAV) Atlantic Routes (ARs) were established between Florida and northeastern US airport pairs. These routes support the Florida Airspace Optimization project and are designed to relieve traffic congestion and reduce in–trail delays. The nine new offshore RNAV routes, designated AR15, AR16, AR17, AR18, AR19, AR21, AR22, AR23 and AR24, were established between FL240 and FL600 inclusive.

1.2 None of the waypoints will be compulsory reporting points since the new and revised routes are entirely within radar coverage.

1.3 Southbound routes include AR15, AR17, AR19, and AR22, while northbound routes include AR16 and AR18. AR23, AR24 are bidirectional.

1.4 Air traffic control services for these routes in offshore airspace is provided by Washington, Jacksonville and Miami ARTCCs.

2. Filing Routes

2.1 Flights departing from and landing at airports within the domestic U.S. should file to conform with the appropriate Preferred IFR Routes listed in the Airport Facility Directories. International traffic southbound from the Wilmington VORTAC/Dixon NDB (ILM/DIW) area filing over MCLAW, FUNDI, Fish Hook NDB (FIS), or CANOA should file AR17. International traffic southbound from the ILM/DIW area filing over Freeport VOR (ZFP) or URSUS should file AR23 or AR24. Traffic originating south of Miami, Florida, filing over the ILM/DIW area should file AR16, AR18, AR23 or AR24.

3. RNAV Equipment Eligibility

3.1 In accordance with 14 CFR Parts 91.511, 121.351, 125.203, and 135.165 (as applicable), an approved Long–Range Navigation System is required for operation on these RNAV routes. Operators must not flight plan or operate on these routes unless their aircraft are equipped with RNAV systems approved for IFR navigation and the pilots are qualified to operate them. Approved GPS IFR units and inertial navigation systems meeting the guidance below provide acceptable performance.

3.2 Aircraft are eligible to operate on these routes provided that the Airplane Flight Manual or FAA approved documentation indicates that the navigation system installation has received airworthiness approval in accordance with one or more of the following:

3.2.1 AC 20–138, as amended (Multi–Sensor Navigation System Approval);

3.2.2 AC 20–138, as amended (GPS approval);

3.2.3 AC 90–100, Annex 2, as amended (U.S. Terminal and En Route RNAV Operations); and/or

3.2.4 Title 14 CFR Part 121 Appendix G (INS).

4. Operational Requirements and Procedures

4.1 Operators filing or accepting clearance for these RNAV routes are certifying that the crews and equipment are qualified to conduct RNAV operations.

4.2 Operators must be responsible for navigating along route centerline, as defined by aircraft navigation systems. Strategic Lateral Offset Procedures used in oceanic airspace are not applicable on these routes.

4.3 The pilot must notify ATC of any loss of navigation capability that affects the aircraft ability to navigate the routes.

4.4 ATC will provide radar separation for these routes. In the event of loss of radar, ATC will advise the aircraft and apply appropriate separation.

4.5 INS or IRS Limitation. While operating on these AR routes, aircraft equipped with Inertial Navigation Systems (INS) or Inertial Reference Systems (IRS) that cannot receive automatic position (for example, DME/DME) updates for the entire length of the route, are limited to 1.0 consecutive hour of un–updated operation. This one hour time period starts when the INS or IRS is placed in the navigation mode, and applies en route between automatic position updates. Systems performing updating after the pilot has manually selected the navigation aid are considered to have “automatic update” capability. If an aircraft is unable to conduct an update in accordance with the above guidance, the pilot must notify ATC and ATC will then provide radar vectors and/or other ATC services.

4.6 Some AR routes are co–designated Y routes, e.g., AR3/Y307. The route filed in the flight plan governs the navigation equipment and performance requirements. Filing for Y307 on a route designated AR3/Y307 for example, requires the aircraft to be equipped with GNSS and flown with RNAV 2 performance on that route, in accordance with section ENR 7.10.

ENR 7.14 Gulf of Mexico RNAV Routes Q100, Q102, and Q105

1. Introduction

The three Q routes over the northern portion of the Gulf of Mexico, Q100, Q102, and Q105, have different navigation equipment requirements and are not the same as the RNAV Q routes over the continental United States. Operators flying any of the three routes require aircraft equipped with a long–range navigation system, as defined in 14 CFR Part 1, § 1.1. Operators may not rely on ground–based navigation aids alone for operations on the three Gulf Q routes.

2. Operational Requirements

2.1 For U.S. commercial operators, i.e., those operating under 14 CFR Parts 91 subpart K, 121, 125, and 135, navigation systems acceptable for flying the Gulf Q routes are those incorporating GPS and/or inertial systems inputs, and authorized in their Operations Specification/Management Specification/Letter of Authorization B034. For operators flying under part 91, an acceptable long–range navigation system is one approved for IFR navigation and incorporating GPS and/or inertial system inputs. Operators' Airplane Flight Manual, Pilot Operating Handbook, avionics manual, or other manufacturer–provided documentation should reference AC 20–138 as the source of guidance for airworthiness approval of applicable positioning and navigation systems.

2.2 Pilots should fly the route centerlines at all times and must notify Air Traffic Control (ATC) of any loss of navigation capability that affects the aircraft's ability to track the route centerline. Pilots must not use Strategic Lateral Offset Procedures (SLOP) on the three Gulf Q routes.

2.3 Aircraft without GPS–based RNAV capability that are relying on inertial navigation systems to fly the three Gulf Q routes are limited to 1.5 consecutive hours between inertial position updates (e.g., a DME update of the inertial navigation system). Timing of the 1.5–hour limit begins when automatic updates of the inertial navigation system are no longer available or immediately following the flight crew's manual inertial system position update.

2.4 Routes Q100 and Q102 are co–designated Y280 and Y290 respectively. The route filed in the flight plan governs the navigation equipment and performance requirements. Filing for Y280 on the route designated Q100/Y280 requires the aircraft to be equipped with GNSS and flown with RNAV 2 performance on that route, in accordance with section ENR 7.10.

NOTE–
ATC normally provides radar monitoring along the three Gulf Q routes. Pilots can expect ATC to advise them when radar monitoring is unavailable and to adjust aircraft separation as necessary.

ENR 8. Unmanned Aircraft Systems (UAS)

ENR 8.1 General

1. General

1.1 UAS operations are governed by the Code of Federal Regulations (CFR) and the United States Code (USC). The type of operation, purpose of the flight, and weight of the UAS all factor into the specific rule that governs UAS operations.

1.1.1 14 CFR Part 107, Small Unmanned Aircraft Systems. Examples of 14 CFR Part 107 operations include commercial aerial photography, commercial aerial survey, other operations for hire, and operations that are not conducted purely for pleasure/recreation. These operations will be referred to as Part 107 operations in ENR 8, Unmanned Aircraft Systems (UAS). Part 107 operations are limited to small UAS (sUAS) weighing less than 55 pounds.

1.1.2 USC 44809, Exception for Limited Recreational Operations of Unmanned Aircraft, Operations. Recreational flyers operate UAS for pleasure or recreation. These operations will be referred to as Recreational Flyer operations in ENR 8, Unmanned Aircraft Systems (UAS). Recreational flyers typically operate UAS or model aircraft, also called radio–controlled (RC) aircraft. Recreational flyers operating UAS weighing more than 55 pounds may operate in compliance with standards and limitations developed by a CBO and from fixed sites, which are described in ENR 8.4, subparagraph 1.3.1, Fixed Sites.

1.1.3 CFR Part 91, UAS Operations. 14 CFR Part 91 operations include public UAS, and civil UAS 55 pounds or more Maximum Gross Operating Weight (MGOW). These operations will be referred to as Part 91 UAS operations in ENR 8, Unmanned Aircraft Systems (UAS). For more information on public UAS operations, the requirements for qualification as a public operator, and how aircraft and pilots are certified, refer to AC 00–1.1, Public Aircraft Operations, Manned and Unmanned.

NOTE–
14 CFR Part 91 operations can include UAS weighing less than 55lbs.

REFERENCE–
14 CFR Part 107, Small Unmanned Aircraft Systems.
49 USC 44809, Exception for Limited Recreational Operations of Unmanned Aircraft.
FAA Order JO 7210.3, Chapter 5, Section 5, 14 CFR Part 91, UAS Operations.
AC 00–1.1 Public Aircraft Operations, Manned and Unmanned.

2. Access to the National Airspace System (NAS) for UAS Operators

2.1 UAS operations must be integrated into the NAS while maintaining existing operational capacity and safety without introducing an unacceptable level of risk to airspace users or persons and property on the ground. The FAA is committed to striking the appropriate regulatory and oversight balance to ensure that American innovation is able to thrive without compromising the safest, most efficient aerospace system in the world.

2.2 UAS operators can access the NAS in multiple ways. Generally, UAS weighing less than 55 pounds MGOW are permitted to operate within Visual Line Of Sight (VLOS) up to 400 feet Above Ground Level (AGL) in Class G airspace. Operations within controlled airspace require specific authorization from Air Traffic Control (ATC).

2.2.1 Part 107 sUAS operators can request airspace authorizations via Low Altitude Authorization and Notification Capability (LAANC) or DroneZone to fly within Class B, Class C, and Class D or within the lateral boundaries of the surface area of Class E airspace designated for an airport. Operations within controlled airspace can be readily approved in accordance with the altitude values indicated on the corresponding UAS Facility Map (UASFM). The UASFM values indicate the maximum altitude at which a sUAS operation can be approved

without any further coordination with the respective ATC facility. Part 107 remote pilots and operators may request "further coordination" for an airspace authorization to operate above UASFM values, up to 400 feet AGL. See ENR 8.4, subparagraph 2.1, for further information regarding Part 107 operations.

NOTE−
Emergency airspace authorizations for Special Government Interest (SGI) UAS operations will be addressed in ENR 8.8, paragraph 5.

2.2.2 Recreational Flyer Operations. Recreational flyers may operate in controlled and uncontrolled airspace under specific conditions. In Class B, C, D or the surface area of Class E airspace designated for an airport. The operator must obtain an ATC authorization prior to operating. In Class G airspace, the aircraft must be flying not more than 400 feet AGL and comply with all airspace restrictions and prohibitions. Recreational flyers may operate at an FAA−recognized fixed site above 400 feet AGL with an FAA−approved letter of agreement with the appropriate ATC authority or up to UASFM altitudes in controlled airspace with an airspace authorization obtained through LAANC.

2.2.3 Part 91 UAS Operations. Public UAS, and civil UAS 55 pounds or more MGOW operate under 14 CFR Part 91, UAS operations. Public UAS operators and civil, non−recreational UAS weighing 55 pounds or more MGOW are provided NAS access by compliance with certain parts of 14 CFR Part 21, experimental certificates, and 14 CFR Part 91, UAS Operations. Part 91 UAS operators require a COA to operate within the NAS. Specific geographic/altitude limitations are prescribed in the COA. Additional pilot and aircraft requirements are applicable to Part 91 UAS operations. See ENR 8.3, Large UAS (MGOW 55 Pounds or More), and ENR 8.4, paragraph 3., Airspace Access for PAO, for further information on Part 91 UAS operations.

REFERENCE−
14 CFR Section 21.191, Experimental Certificates.
FAA Order JO 7210.3, Chapter 5, Section 5, 14 CFR Part 91, UAS Operations.

ENR 8.2 Small Unmanned Aircraft System (sUAS)

1. Part 107 sUAS and Recreational Flyers

1.1 Part 107 UAS. A regulatory first step for civil non–recreational UAS operations. To fly under 14 CFR Part 107, the UAS must weigh less than 55 pounds and the operator (called a remote pilot) must pass a knowledge test. Also, the UAS must be registered. Part 107 enabled the vast majority of routine sUAS operations, allowing flight within VLOS while maintaining flexibility to accommodate future technological innovations. Part 107 allows sUAS operations for many different purposes without requiring airworthiness certification, exemptions, or a COA for Class G airspace access. Part 107 includes the opportunity for individuals to request waivers for certain provisions of the rules, for example, Beyond Visual Line Of Sight (BVLOS). Part 107 also has specific restrictions which are not subject to waiver, such as the prohibition of the carriage or transport of Hazardous Materials (HAZMAT).

1.2 Recreational Flyer UAS:

1.2.1 The FAA considers recreational UAS to be aircraft that fall within the statutory and regulatory definitions of an aircraft, in that they are devices that are used or intended to be used for flight in the air. As aircraft, these devices generally are subject to FAA oversight and enforcement.

REFERENCE–
49 USC 40102, Definitions.
14 CFR Part 1, Definitions and Abbreviations.

1.2.2 Recreational aircraft may operate in Class G airspace where the aircraft is flown from the surface to not more than 400 feet AGL, and the operator must comply with all airspace restrictions and prohibitions. The only exception to this altitude restriction in Class G airspace is at FAA–recognized fixed sites and sanctioned events, with specifically approved procedures for flights above 400 feet AGL.

NOTE–
Higher altitude airspace authorizations for Recreational Flyers are obtained through the FAA's DroneZone website at: https://faadronezone.faa.gov/#/.

1.2.3 The Recreational UAS Safety Test (TRUST) module was developed in consultation with multiple UAS stakeholders and through interested party feedback. TRUST is available electronically, has no minimum age limit, and is provided by volunteer test administrators, vetted by the FAA. See ENR 8.5, paragraph 1., UAS Pilot Certification and Requirements for Part 107 and Recreational Flyers, for further information on TRUST. Additional information regarding TRUST is available at the FAA's The Recreational UAS Safety Test website.

NOTE–
The FAA's The Recreational UAS Safety Test website may be viewed at: https://www.faa.gov/uas/recreational_fliers/knowledge_test_updates/.

1.2.4 Recreational UAS weighing more than .55 lbs must be registered. This can be done electronically through the FAA's DroneZone website. Owners must then label all aircraft with their assigned registration number on the exterior of their aircraft so that the registration can be clearly seen and read from a reasonable distance. For more information on registering UAS See ENR 8.2, paragraph 2., Registration Requirements, for more information on registering UAS.

NOTE–
The FAA's DroneZone website may be viewed at: https://faadronezone.faa.gov/#/ .

2. Registration Requirements

2.1 Nearly all UAS flown in the NAS are required to be registered in the FAA aircraft registration database. UAS weighing 55 pounds MGOW or more must be registered under 14 CFR Part 47, Aircraft Registration, while UAS less than 55 pounds may be registered under the FAA's newer 14 CFR Part 48 online system.

NOTE−
The FAA's Aircraft Registration Unmanned Aircraft (UA) website may be viewed at: https://www.faa.gov/licenses_certificates/air craft_certification/air craft_registry/UA/.

REFERENCE−
14 CFR Part 47, Aircraft Registration.

2.2 Registering UAS under 14 CFR Part 47. For those UAS, which do not meet the weight stipulations for registration under 14 CFR Part 48, registration is accomplished under 14 CFR Part 47. 14 CFR Part 47 registration will result in an "N"−number like those assigned to manned aircraft. To learn more about the process and to register a UAS under Part 47, see the FAA's Aircraft Registration Unmanned Aircraft (UA) website. If desired by the owner, any UAS may be registered under 14 CFR Part 47.

NOTE−
The FAA's Aircraft Registration Unmanned Aircraft (UA) website may be viewed at: https://www.faa.gov/licenses_certificates/air craft_certification/air craft_registry/UA/.

2.3 Registering UAS under 14 CFR Part 48. For most operators of sUAS (those UAS weighing less than 55 pounds MGOW), registration under 14 CFR Part 48, Registration and Marking Requirements for Small UA, will be most expedient and the least expensive. 14 CFR Part 48 registrants are those UAS flyers operating under either of the following statutes:

2.3.1 Part 107. Under the provisions of Part 107, all UAS must be registered regardless of weight. Operations under Part 107 are generally those involving commerce, but can be for recreation as well.

2.3.2 Recreational Flyers. UAS that are flown exclusively for recreational purposes must be registered if they weigh 0.55 pounds (250 grams) or more.

NOTE−
1. *If you are not sure what kind of a drone flyer you are, refer to the FAA's User Identification Tool at: https://www.faa.gov/uas/getting_started/user_identification_tool/, or visit the FAA Getting Started webpage at: https://www.faa.gov/uas/getting_started/.*

2. *Registrations cannot be transferred between 14 CFR Part 107 UAS and 49 USC 44809 UAS.*

REFERENCE−
14 CFR Part 48, Registration and Marking Requirements for Small Unmanned Aircraft.

2.4 How to Register a UAS under 14 CFR Part 48:

2.4.1 To register a UAS online under Part 48, refer to the FAA's DroneZone website. When registering a UAS online under Part 48, you will need to select registration in either Part 107 or the exception for recreational flyers.

2.4.2 Registration fees for Part 107 registration are per sUAS, and the registration is valid for three years. Each Part 107 registered sUAS will receive a different number. Recreational flyer registration fees are per UAS and valid for three years, but the same registration number can be applied to any UAS in the registrant's ownership. The recreational flyer will receive one registration number that can be used for all UAS flown by that person. In order to register, a person must be 13 years of age or older and be a U. S. citizen or legal permanent resident. If the owner is less than 13 years of age, another person 13 years of age or older must register the UAS and that person must be a U.S. citizen or legal permanent resident.

2.4.3 An FAA registration certificate will be issued after UAS registration. The registration certificate (either paper copy or digital copy) must be available for inspection during all flight operations. If an individual other than the registered owner operates a UAS the registration certificate (either paper copy or digital copy) must also be available for inspection during all flight operations. Federal law requires registered UAS operators, if asked, to show their certificate of registration to any federal, state, or local law enforcement officer. Failure to register a UAS that requires registration may result in regulatory and criminal penalties. The FAA may assess civil penalties up to $27,500.

NOTE−
The FAA's DroneZone website may be viewed at: https://faadronezone.faa.gov/#/.

2.5 Labeling a UAS with a Registration Number. All UAS requiring registration must be marked with a registration number before being flown. The UAS registration number can be applied to the aircraft by

engraving, a permanent label, or written on with a permanent marker. The registration number must be visible and on the outside surface of the UAS.

ENR 8.3 Large UAS (MGOW 55 Pounds Or More)

1. Large Public UAS Operations

1.1 Large public UAS may have wingspans as large as commercial airliners, and may operate in and out of public/military dual–use airfields. Due to the high altitudes at which these UAS routinely operate, and the means through which they reach and vacate operating altitude, encounters with manned or low–altitude unmanned traffic are rare.

1.2 Public users operating as "public aircraft" retain the responsibility to determine airworthiness and pilot qualifications. Aircraft certification and operating rules apply to the entire UAS, including the aircraft itself, the flight crew with their associated qualifications, the control station, and command and control links.

NOTE–
Large UAS operating in controlled airspace generally communicate on radio frequencies or through an ATC–to–PIC ground communications link assigned to that sector, terminal area, or control tower. The UAS PIC is required to comply with all ATC instructions and uses standard phraseology per FAA Order JO 7110.65, Air Traffic Control, and this manual.

REFERENCE–
49 USC 40102, Definitions.
49 USC 40125, Qualifications for Public Aircraft Status.
FAA Order JO 7110.65, Air Traffic Control.
AIP, ENR 8.4, Para 3, Airspace Access for PAO.

1.3 Operating Characteristics of Large Public UAS. To illustrate the sizes and performance of large public UAS, consider the DoD UAS classification system. The categories (see FIG ENR 8.3–1) are separated based on MGOW, normal operating altitude, and flying speed. These classifications do not apply to non–DoD civil aircraft. Generally, Groups 1 through 3 UAS will operate on and above military bases, in restricted or prohibited airspace. For this reason, these smaller tactical public aircraft will rarely be encountered by civil pilots. Groups 4 and 5 are the largest of DoD UAS, weighing over 1,320 pounds, and operating at all speeds and altitudes. Group 4 aircraft operate at all altitudes, usually below 18,000 feet MSL. Group 5 aircraft typically operate well above 18,000 feet MSL. UAS in Groups 4 and 5 require airfields with specially approved surfaces to safely operate. For specifications and descriptions of the aircraft types that the DoD operates, refer to military service fact sheets.

NOTE–
1. *The category chart does not specify the actual high gross weights at which some DoD UAS actually operate. For instance, the RQ–4 Global Hawk regularly operates at approximately 32,000 pounds.*

2. *JP 3–30, III 31, Joint Publication 3–30, provides the UAS Categorization Chart and may be reviewed at: https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_30.pdf?ver=2019–09–04–142255–657.*

3. *These websites provide unclassified descriptions, performance, and specifications of the varied UAS in the DoD's large category fleet: USAF Fact Sheets at https://www.af.mil/About-Us/Fact-Sheets/ and USN Fact Files at https://www.navy.mil/Resources/Fact-Files/.*

FIG ENR 8.3–1
DoD UAS Categories

Unmanned Aircraft Systems Categorization Chart

UA Category	Maximum Gross Takeoff Weight (lbs)	Normal Operating Altitude (ft)	Speed (KIAS)	Representative UAS
Group 1	0-20	< 1200 AGL	100 kts	WASP III, TACMAV RQ-14A/B, Buster, Nighthawk, RQ-11B, FPASS, RQ16A, Pointer, Aqua/Terra Puma
Group 2	21-55	< 3500 AGL	< 250	ScanEagle, Silver Fox, Aerosonde
Group 3	< 1320	< 18,000 MSL	< 250	RQ-7B Shadow, RQ-15 Neptune, XPV-1 Tern, XPV-2 Mako
Group 4	> 1320		Any Airspeed	MQ-5B Hunter, MQ-8B Fire Scout, MQ-1C Gray Eagle, MQ-1A/B/C Predator
Group 5	> 1320	> 18,000 MSL	Any Airspeed	MQ-9 Reaper, RQ-4 Global Hawk, RQ-4N Triton

Legend

AGL	above ground level	lbs	pounds
FPASS	force protection aerial surveillance system	MSL	mean sea level
ft	feet	TACMAV	tactical micro air vehicle
KIAS	knots indicated airspeed	UA	unmanned aircraft
kts	knots	UAS	unmanned aircraft system

1.4 Large Public UAS Engineering Characteristics and Operating Areas:

1.4.1 Large public UAS may be sharing airspace with civil aircraft in the NAS. A wide variety of aircraft performance, voice radio communications, command and control link architecture, and operating procedures exists throughout the DoD and other large public UAS enterprises. For example, Group 4 DoD aircraft, such as the MQ–1 Predator and MQ–9 Reaper, are typically propeller–driven with propulsion units that are internal combustion piston– or turbine–powered. The largest public UAS include single–engine jet aircraft such as the RQ–4 Global Hawk and MQ–4C Triton.

1.4.2 VLOS and BVLOS link systems provide command and control for these large UAS operations. Voice communication capability in the largest public UAS is far more extensive than in the smaller aircraft. Many UAS

are limited to a single voice radio transmitter and receiver system for control inside airspace managed by and/or delegated to the DoD.

1.4.3 Many of the larger public UAS are equipped with transponders to assist ATC with position and tracking information. These UAS usually operate under IFR under positive ATC control and will tend to be found at very high altitudes; not likely to be encountered by civil aircraft operators. Launch and recovery operations will be likewise under positive ATC control and these UAS will be separated from any other known aircraft traffic. Encounters with low–altitude sUAS, being flown in uncontrolled airspace or under low–altitude controlled airspace authorizations, are therefore unlikely. In accordance with 14 CFR Part 91.215(e)(2), ATC Transponder and Altitude Reporting Equipment and Use, no person may operate an unmanned aircraft under Part 91 with a transponder on unless: (1) the operation is conducted under a flight plan and the person operating the unmanned aircraft maintains two–way communications with ATC; or (2) the use of a transponder is otherwise authorized by the Administrator.

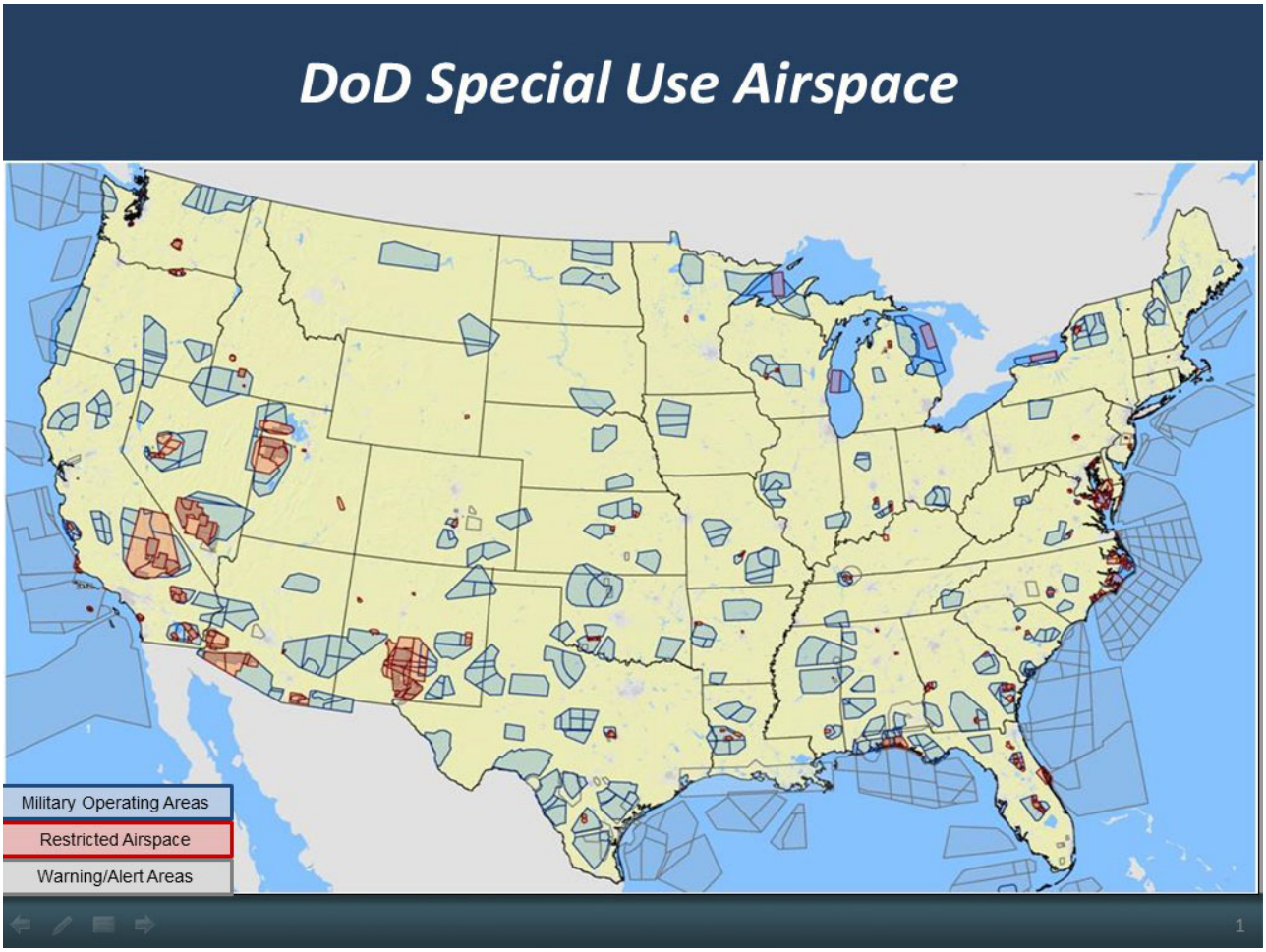
NOTE–
In accordance with 14 CFR Section 107.52, ATC Transponder Equipment Prohibition, unless otherwise authorized by the Administrator, no person may operate a sUAS under Part 107 with a transponder on.

REFERENCE–
14 CFR Section 91.215 ATC Transponder and Altitude Reporting Equipment and Use.
14 CFR Section 107.52, ATC Transponder Equipment Prohibition.

1.5 Large Public UAS Launch, Recovery, and Operating Areas:

1.5.1 Large public UAS operations are widespread, they are also carefully managed to ensure enhanced safety for other NAS users. For this reason, DoD UAS operate in many types of special use airspace. See FIG ENR 8.3–2 for examples of Special Use Airspace (SUA) used by DoD UAS.

FIG ENR 8.3−2
DoD Special Use Airspace



1.5.2 Temporary Flight Restrictions (TFRs) are issued for the surrounding UAS operating locations and allow for the launch and recovery of larger UAS. Once outside of the terminal environment, DoD UAS utilize the full range of SUA, including a Military Operating Areas (MOA), restricted areas, warning areas, and alert areas to conduct their missions.

2. Exemptions under 49 USC 44807, Special Authority for Certain Unmanned Systems

2.1 Exemptions are granted to UAS operations which are permitted in accordance with Public Law 115−254, 49 USC 44807, Special Authority for Certain Unmanned Aircraft Systems. The Secretary of Transportation has determined that certain UAS are eligible to operate in the NAS without possessing the airworthiness certification normally required under 49 USC 44807. 49 USC 44807 permits the FAA to use a risk−based approach to determine whether an airworthiness certificate is required for a UAS to operate. Exemptions are generally requested by civil (non−public) UAS operators who fly UAS weighing 55 pounds or more, and thus cannot fly under 14 CFR Part 107. For civil UAS operations conducted under 49 USC 44807 of PL 115−254, the Secretary has determined that specific requirements necessary for safe operation can often be addressed in the form of grants of exemption(s). Operators who desire this regulatory relief must petition the FAA for exemption in accordance with 14 CFR Part 11 and the guidance provided on the FAA's Section 44807, Special Authority for Certain Unmanned Systems website. Examples of petitions that have been granted to conduct civil UAS operations include the following activities:

2.1.1 Closed−set motion picture and television filming.

2.1.2 Agricultural survey and spraying.

2.1.3 Aerial photography.

2.1.4 Land survey and inspection.

2.1.5 Inspection of structures.

2.1.6 Search and Rescue (SAR) operations.

NOTE–
Civil agricultural spraying operations will also require a 14 CFR Part 137 certificate; see ENR 8.4, paragraph 5, Airspace Access for 14 CFR Part 135 and 14 CFR Part 137.

2.2 Exemption Application. Petitioners seeking a grant of exemption should fill out an online application on the public docket located on the FAA's regulations.gov website.

REFERENCE–
49 USC 44807, Special Authority for Certain Unmanned Aircraft Systems.

NOTE–
The FAA's Section 44807: Special Authority for Certain Unmanned Systems website may be reviewed at: https://www.faa.gov/uas/advanced_operations/certification/section_44807/. The FAA's Regulations.gov website may be reviewed at: https://www.faa.gov/regulations_policies/faa_regulations.

3. Emerging Large UAS Civil Operations

3.1 Large civil UAS operations in the NAS are presently considered those UAS weighing 55 pounds or more with or without aircraft airworthiness certification, along with their control stations and radio links operating under 14 CFR Part 91. Examples of current large UAS civil operators include agricultural spraying and operation as radio/telephone airborne relays. Future large UAS operations will include carriage of cargo and passengers, and long–endurance aircraft, staying aloft for extended periods of time.

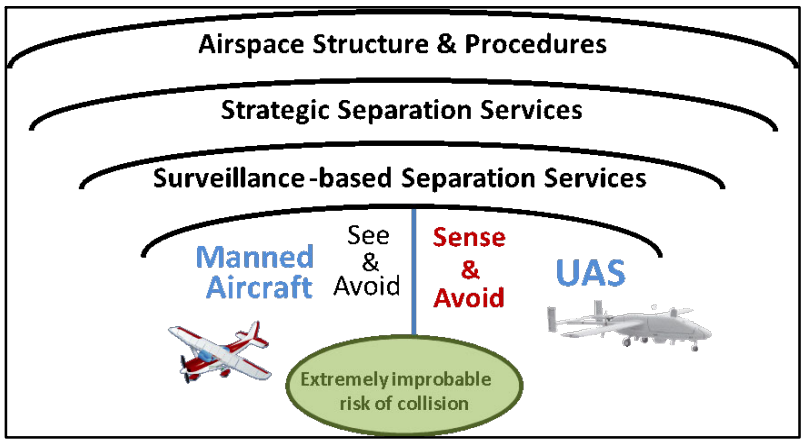
NOTE–
Large is only used as a term to differentiate from those UAS weighing less than 55 pounds. Large UAS is not an FAA–recognized category of aircraft.

3.1.1 Large UAS must meet performance, equipage requirements, and adhere to relevant procedures commensurate with the airspace in which the UAS is operating.

3.1.2 Absent an onboard pilot, large UAS are unable to "see and avoid" other aircraft, as required by regulations governing the general operation of aircraft in the NAS under Title 14 CFR Section 91.111, Operating Near other Aircraft, and 14 CFR Section 91.113, Right of Way Rules: Except Water Operations. As a result, they cannot use on board visual observation to remain "well clear" of other aircraft and avoid collisions. Therefore, an alternate means of compliance is required to remain well clear of other aircraft, surface obstacles, and avoid collisions.

3.1.3 FIG ENR 8.3–3, A Layered Approach for Collision Avoidance, illustrates the different layers used to keep aircraft safely separated, beginning with airspace classification and design, then ending with the responsibility of the pilot to prevent collisions.

FIG ENR 8.3–3
A Layered Approach for Collision Avoidance



3.2 Transition to Full Integration into the NAS. Over time, full integration of large UAS operations in the NAS will be achieved. Current large UAS operations will continue to be dependent on COAs, the issuance of NOTAMs, and possibly other measures (e.g., chase plane, segregated airspace) as currently used for accommodated operations. This integration is evolving with UAS technology advances, FAA regulatory changes, NAS automation, communications improvements, and evolving use cases and demand.

NOTE–
Transponder equipped UAS, during lost link events, if capable, will squawk secondary surveillance radar (SSR)/Transponder code 7400. If the UAS is not programmed for use of SSR code 7400, then code 7600 may be used.

3.3 Large Civil Operations. The following are examples of test and evaluation operations being conducted with large civil and commercial UAS: cargo delivery, infrastructure inspection, surveillance, firefighting, environmental observation, signal relay, and atmospheric sampling.

ENR 8.4 Airspace Access for UAS

1. Recreational Flyers

1.1 Advisory Circular 91–57, Exception for Limited Recreational Operations of Unmanned Aircraft, provides guidance for recreational flyers. Failure of a recreational flyer to adhere to any of the requirements for recreational status under 14 USC 44809 will result in the flight being considered 14 CFR Part 107 by the FAA, which may result in greater penalties if the operator is found operating in an unsafe manner. Recreational flyers may only operate under the statutory exception if they adhere to all of the conditions listed in the statute.

REFERENCE–
AC 91–57, Exception for Limited Recreational Operations of Unmanned Aircraft.
49 USC 44809, Exception for Limited Recreational Operations of Unmanned Aircraft.
14 CFR Part 107, Small Unmanned Aircraft Systems.

1.2 Operations in Class G airspace. Flights in Class G airspace will be the most common environment for many recreational flyers. The upper limit of recreational UAS operations in Class G airspace is 400 feet AGL. When operating in Class G airspace, the recreational flyer must follow the set of safety guidelines outlined and developed by a recognized Community Based Organization (CBO).

1.3 Operations in controlled airspace or uncontrolled airspace above 400 feet AGL. If a recreational flyer desires to operate in class B, C, or D airspace, or within the lateral boundaries of the surface area of class E airspace designated for an airport, or in class G airspace above 400 feet, the operator must obtain prior authorization from the Administrator or designee before operating. For the recreational flyer wishing to enter controlled airspace, there are two basic routes:

1.3.1 Fixed sites are flying sites specifically authorized by the FAA, and are posted at the FAA's interactive map on the UAS Data Delivery System (UDDS). On the map, small blue circles depict the location of these sites in controlled airspace, and the altitude limits imposed on those sites. The altitude restrictions are derived from the UASFM which form the basic structure of LAANC and its operating procedures. Recreational flyers can access site–specific information by clicking on the blue circle.

NOTE–
These sites have existing letters of agreement or authorization (LOA) with the FAA. For the CBO to operate in controlled airspace, an airspace authorization agreement between the CBO and the FAA must be in place. Certain sites may have access restrictions or other operating limitations, which are available from the site sponsor.

1.3.2 By request, through the LAANC Application. LAANC provides the recreational pilot with access, when permissible, to controlled airspace at or below posted UASFM altitudes in near–real time. LAANC also gives the recreational flyer the ability to stay notified of airspace restrictions and prohibitions. See ENR 8.8, paragraph 7., of this chapter for information on downloading the LAANC application.

1.4 CBO Sanctioned Events. Sanctioned events, also called sponsored events are generally of short duration and take place at an existing fixed site or temporary fixed site established specifically for the event.

1.4.1 CBO's requesting a sanctioned or sponsored event authorization within Class B, C, D, or within the lateral boundaries of the surface area of Class E airspace designated for an airport are obligated to make the location known to the FAA Administrator. Mutually agreed–upon operating procedures must be established with the event organizer. This is accomplished through a fixed site application in DroneZone.

1.4.2 CBO operations and events occurring at 400 feet AGL and below in Class G airspace do not require FAA review, approval or authorization. CBO's intending to conduct events in Class G airspace that may exceed 400 feet AGL must contact the FAA for further information.

2. 14 CFR Part 107 and Waivers to 14 CFR Part 107

2.1 14 CFR Part 107 was the first rule dedicated to UAS operations. It was designed to provide a path for integration into the NAS for sUAS, flown under VLOS, and operated for non–recreational purposes. Part 107

allows remote pilots to fly for recreation. Part 107 grants certain flight permissions and altitudes in excess of those provided under 49 USC 44809, The Exception for Limited Recreational Operations of UAS, in view of the greater vetting required for 14 CFR Part 107 certification. Eligibility requirements to fly under 14 CFR Part 107, are listed in 14 CFR Section 107.61, Eligibility.

NOTE–
The Administrator may issue a certificate of waiver authorizing a deviation from 14 CFR Section 107.31, Visual Line of Sight Aircraft Operation, if the operation can safely be conducted under the terms of a certificate of waiver.

REFERENCE–
14 CFR Part 107, sUAS.
14 CFR Section 107.61, Eligibility.
14 CFR Section 107.31, Visual Line of Sight Aircraft Operation.

2.2 Operations in class G airspace. Part 107 remote pilots may fly in class G airspace up to 400 feet AGL, and within 400 feet of a structure without prior coordination with ATC. Other limitations for Part 107 operators are described in 14 CFR Section 107.51, Operating Limitations for sUAS.

REFERENCE–
14 CFR Section 107.51, Operating Imitations for Small Unmanned Aircraft.

2.3 Operations in controlled airspace through LAANC. LAANC gives the remote pilot the ability to obtain near real–time airspace authorization within UASFM altitudes and stay notified of airspace restrictions and prohibitions. See ENR 8.8, paragraph 7., Resources for UAS Operators, for information on downloading LAANC.

2.4 Waivers to 14 CFR Part 107:

2.4.1 A waiver is an official document issued by the FAA which approves certain operations of UAS outside the limitations of a regulation. These waivers allow UAS pilots to deviate from certain rules under 14 CFR Part 107 by demonstrating they can still fly safely using alternative methods or safety mitigations. 14 CFR Part 107 rules which can be waived are listed in 14 CFR Section 107.205, List of Regulations Subject to Waiver. Any subpart of 14 CFR Part 107 rule which is not specifically listed in 14 CFR Section 107.205, such as the §107.36 prohibition on the carriage or transport of HAZMAT, is not subject to waiver, and would require an exemption under 14 CFR Part 11, General Rulemaking Procedures. See ENR 8.3, paragraph 2, Exemptions Under 49 USC 44807: Special Authority for Certain Unmanned Systems, for guidance on requesting exemptions.

2.4.2 To request a 14 CFR Part 107 waiver, refer to the FAA's Part 107 Waiver website.

NOTE–
The FAA's Part 107 wavier website may be viewed at: https://www.faa.gov/uas/commercial_operators/part_107_waivers/.

REFERENCE–
14 CFR Section 107.205, List of Regulations Subject to Waiver.
14 CFR 11, General Rulemaking Procedures.

3. Airspace Access for Public Aircraft Operations (PAOs)

3.1 General requirements for PAO status. Governmental entities, as defined by federal law 49 USC 40102(a)(41), Definitions, can fly as a public aircraft operation as long as the flight meets the definition of a governmental function 49 USC 40125, Qualifications for Public Aircraft Status. Public aircraft are an aircraft owned and operated by the government of a state, the District of Columbia, or a territory or possession of the United States, or a political subdivision of one of these governments, except as provided in 49 USC 40125(b), Qualifications for Public Aircraft Status. Public aircraft can also be aircraft exclusively leased for at least 90 continuous days by the government of a state, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments, except as provided in 49 USC 40125(b), Qualifications for Public Aircraft Status.

NOTE–
1. *The term "government function" refers to one of several activities undertaken by a government, such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transportation of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geopolitical resource management*

2. *An operation "for the public good" does not necessarily meet the criteria for a public operation. For example, most volunteer fire departments in the United States will not qualify as PAOs.*

3. *Public safety organizations often conduct operations under 14 CFR Part 107, as well as public aircraft operations.*

REFERENCE−
49 USC 40102, Definitions.
49 USC 40125, Qualifications for Pubic Aircraft Status.

3.2 A PAO is conducted under certain 14 CFR Part 91, UAS Operations Rules, with a COA granted to allow access to the NAS. A PAO COA allows blanket UAS operations in Class G airspace throughout the entire continental United States, including operations at night with appropriate lighting and training, for the duration of the COA. Waivers and/or authorizations to the COA can permit operations beyond the basic COA. Operating as a PAO requires adherence to specific conditions as directed in the COA. Operations under the public aircraft statute cannot include purposes that are not governmental functions. For example, a police UAS flying without remuneration to obtain footage for a department promotional video would not be a governmental function.

3.3 COA Application Process:

3.3.1 Public Declaration Letter (PDL). The first step in getting a PAO COA is to be recognized as an authorized government agency by submitting a PDL that shows the organization is indeed a governmental entity as defined by federal law. FAA general counsel reviews this letter, which is usually issued by a city, county or state attorney. Federal agencies are deemed to be governmental entities without submitting a PDL.

3.3.2 COA Request. If formally recognized as a governmental entity under federal law, entities are given access to the COA Application Process System (CAPS) or DroneZone, where a request for a PAO COA may be submitted. Operating as a PAO requires you to adhere to specific conditions as directed in your COA. Remember that an aircraft described in subparagraph (a), (b), (c), or (d) of 49 USC 40102(a)(41), Definitions, does not qualify as a public aircraft under such section when the aircraft is used for commercial purposes (e.g., performing a non−governmental function).

REFERENCE−
AC 00−1.1, Public Aircraft Operations—Manned and Unmanned.
49 USC 40102, Definitions.

4. 14 CFR Part 89 Remote Identification and FAA−Recognized Identification Areas (FRIAs)

4.1 Background:

4.1.1 Remote identification (RID) of UAS is crucial to UAS integration.

4.1.2 RID is the ability of a UAS in flight to provide identification and location information that can be received by other parties.

4.1.3 RID allows the FAA, national security agencies, law enforcement, and others to distinguish compliant airspace users from those potentially posing a safety or security risk. It helps these agencies find the control station when a UAS appears to be flying unsafely or where it is prohibited.

4.2 Remote ID Rule:

4.2.1 14 CFR Part 89, Remote Identification (RID) of Unmanned Aircraft, will require most UAS operating in U.S. airspace to have RID capability. UAS not equipped with RID capability will be limited to operating in specific FAA−approved geographic locations, such as FRIA.

REFERENCE−
14 CFR Part 89, Remote Identification of Unmanned Aircraft.

4.2.2 There are three ways UAS pilots will be able to meet the identification requirements of the RID rule: Standard RID, RID Broadcast Module, and FRIAs.

4.2.2.1 Standard RID. Only standard RID UAS may be manufactured after the September 16, 2022, rule effective date. Unmanned aircraft broadcast the RID message elements directly from the unmanned aircraft from takeoff to shut down. Message elements include: (1) A unique identifier to establish the identity of the unmanned

aircraft; (2) an indication of the unmanned aircraft latitude, longitude, geometric altitude, and velocity; (3) an indication of the control station latitude, longitude, and geometric altitude; (4) a time mark; and (5) an emergency status indication. Operators may choose whether to use the serial number of the unmanned aircraft or a session ID (e.g., an alternative form of identification that provides additional privacy to the operator) as the unique identifier.

4.2.2.2 RID Broadcast Modules. A UAS can be equipped with a RID broadcast module that broadcasts message elements from takeoff to shutdown. Message elements include: (1) The serial number of the broadcast module assigned by the producer; (2) an indication of the latitude, longitude, geometric altitude, and velocity of the unmanned aircraft; (3) an indication of the latitude, longitude, and geometric altitude of the unmanned aircraft takeoff location; and (4) a time mark.

4.2.2.3 FAA–Recognized Identification Area:

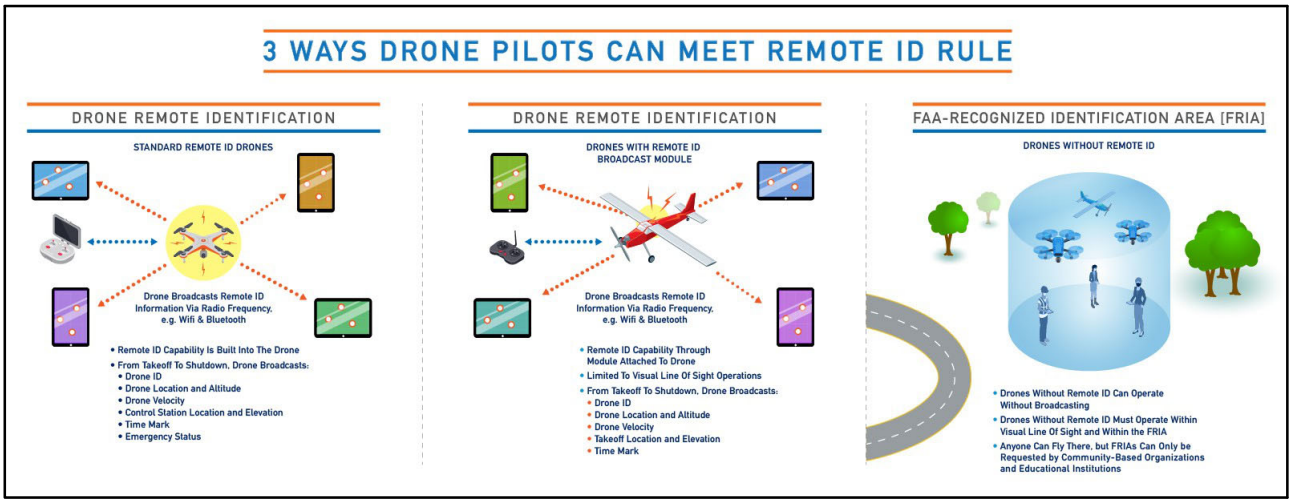
a) An FAA–Recognized Identification Area (FRIA) is a defined geographic area where persons can operate UAS without remote identification, provided they maintain visual line of sight. Organizations eligible to request establishment of a FRIA include CBOs recognized by the FAA and educational institutions. The latter group includes primary and secondary educational institutions, trade schools, colleges, and universities.

b) To operate in a FRIA according to the 14 CFR Part 89, RID of unmanned aircraft, operators must be physically located within the boundaries of the FRIA, must only operate drones within those boundaries, and must operate within visual line of site (VLOS) at all times. UAS equipped with RID broadcast capability must broadcast continuously even while operating within or transiting a FRIA.

REFERENCE–
14 CFR Part 89, Remote Identification of Unmanned Aircraft.

c) FIG ENR 8.4–1 illustrates the three ways UAS operators can comply with the new RID Rule.

FIG ENR 8.4–1
RID Paths to Compliance



5. Airspace Access for 14 CFR Part 135 and 14 CFR Part 137

5.1 14 CFR Part 135, Operating Requirements: Commuter and on Demand Operations and Rules Governing Persons on Board Such Aircraft:

5.1.1 Civil operators of UAS may conduct commercial package delivery BVLOS, or may transport HAZMAT on an interstate basis (crossing state boundaries), only under 14 CFR Part 135. These types of operations are prohibited for UAS operating under 14 CFR Part 107, sUAS. Legally, these operations must be conducted under 14 CFR Part 91, UAS operations, in accordance with an air carrier certificate issued under 14 CFR Part 135, and an exemption from certain federal aviation regulations granted under 14 CFR Part 11, general rulemaking procedures.

REFERENCE−
14 CFR Part 135, Operating Requirements: Commuter and on Demand Operations and Rules Governing Persons on Board Such Aircraft.
14 CFR Part 107, Small Unmanned Aircraft Systems.
14 CFR Part 11, General Rulemaking Procedures.
FAA Order JO 7210.3, Chapter 5, Section 5, 14 CFR Part 91, UAS Operations.

5.1.2 Generally, UAS cannot comply with certain 14 CFR regulations originally written for a manned aircraft environment and therefore require relief. UAS operators obtain relief from the requirements of these regulations through exemptions, waivers, and deviations. The relief document lists conditions and limitations that provide a level of safety at least equal to the rule from which relief is needed. Additionally, UAS operators must obtain a Certificate of Waiver or Authorization (COA) from the FAA Air Traffic Organization (ATO). Applicants for 14 CFR Part 135 certification should begin the process by contacting their local FAA Flight Standards District Office (FSDO).

NOTE−
Examples of such regulations include requirements for the provision of seat belts for aircrew and passengers, on−board carriage of an aircraft manual, etc.

5.1.2.1 Application for a 14 CFR Part 135 certificate. Application for a 14 CFR Part 135 air carrier certificate for UAS operations uses the same process as that for manned 14 CFR Part 135 applicants. For information on how to apply for an air carrier certificate issued under 14 CFR Part 135, see the FAA 14 CFR Part 135 Air Carrier and Operator Certification website.

NOTE−
The FAA 14 CFR Part 135 Air Carrier and Operator Certification website may be reviewed at: https://www.faa.gov/licenses_certificates/airline_certification/135_certification/.

5.1.2.2 Advisory Circular 120−49A, Parts 121 and 135 Certification, is available to aid an applicant in Part 135 certification.

REFERENCE−
AC 120−49, Parts 121 and 135 Certification.

5.1.2.3 Exemptions and COAs. Additional information on how to petition for an exemption and obtain a COA is available on the FAA Advanced Operations website.

NOTE−
The FAA's Advanced Operations website may be reviewed at: https://www.faa.gov/uas/advanced_operations/.

5.2 14 CFR Part 137, Agricultural Aircraft Operations:

5.2.1 Civil and public operators of UAS may conduct agricultural aircraft operations as defined in 14 CFR Part 137.3, Definition of Terms. These operations must be conducted in accordance with an agricultural aircraft operator certificate issued under 14 CFR Part 137, and an exemption from certain federal aviation regulations granted under 14 CFR Part 11, General Rulemaking Procedures. Operators of sUAS weighing less than 55 pounds MGOW may conduct agricultural aircraft operations under 14 CFR Part 107, sUAS, and 14 CFR Part 137. Operators of large UAS weighing 55 pounds or more MGOW may conduct agricultural aircraft operations under 14 CFR Parts 91, UAS operations, and 14 CFR Part 137.

REFERENCE−
14 CFR Part 137, Agricultural Aircraft Operations.
14 CFR Part 11, General Rulemaking Procedures.
14 CFR Part 107, Small Unmanned Aircraft Systems.
FAA Order JO 7210.3, Chapter 5, Section 5, 14 CFR Part 91, UAS Operations.

5.2.2 Generally, as is the case with 14 CFR Part 135 standard cargo operations, UAS cannot comply with certain 14 CFR regulations, and therefore require relief. For example, sUAS require relief from carriage of hazardous material (§107.36), aircraft certification (§137.19(d)), carriage of agricultural aircraft operator certificate (§137.33(a)), and, for large UAS, certain aircraft airworthiness requirements (14 CFR Parts 21 and 91). UAS operators obtain relief from the requirements of these regulations through an exemption. The exemption lists conditions and limitations which provide a level of safety at least equal to that provided by the rule. Additionally, large UAS operators must obtain a COA from the FAA ATO.

5.2.2.1 Obtaining an exemption for 14 CFR Part 137 operations. For additional information on how to petition for an exemption and obtain a COA, go to the FAA's Advanced Operations website.

NOTE−
The FAA's Advanced Operations website may be viewed at: https://www.faa.gov/uas/advanced_operations/.

5.2.2.2 Advisory Circular 137−1, Certification Process for Agricultural Aircraft Operators, provides additional information on how to apply for an agricultural aircraft operator certificate issued under 14 CFR Part 137.

REFERENCE−
AC 137.1, Certification Process for Agricultural Aircraft Operation.

5.3 Hazardous Materials (HAZMAT):

5.3.1 A hazardous material (also known as HAZMAT) or dangerous goods, is any substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce. See definition of HAZMAT in the Pilot/Controller Glossary. For example, lithium batteries, dry ice, and aerosol whipped cream are considered dangerous goods. These products may seem harmless, however, when transported by air they can be very dangerous. Vibrations, static electricity, temperature and pressure variations can cause items to leak, generate toxic fumes, start a fire, or even explode if these products are not packaged and handled properly. More detailed information is located on the FAA's What are Dangerous Goods website.

NOTE−
The FAA's What are Dangerous Goods website may be viewed at: https://www.faa.gov/hazmat/what_is_hazmat/.

5.3.2 The carriage/transportation of hazardous materials under 14 CFR Part 107, sUAS, is strictly prohibited at all times, and is not subject to waiver. In order to transport hazardous materials, UAS operators must follow the 14 CFR Part 135 certification regulatory path and must develop dangerous goods training programs and manuals as part of the 14 CFR Part 135 Air Carrier and Operator Certificates process, described on the FAA website and ENR 8.4, subparagraph 5.1, 14 CFR Part 135, Operating Requirements. A brief description of applicable regulations as they apply to UAS is found on the FAA's UAS website.

NOTE−
The FAA's Unmanned Aircraft System (UAS) website may be viewed at:
https://www.faa.gov/hazmat/air_carriers/operations/dr ones/.

REFERENCE−
14 CFR Part 107, Small Unmanned Aircraft Systems.
14 CFR Part 135, Operating Requirements: Commuter and on Demand Operations and Rules Governing Persons on Board Such Aircraft.

6. Airspace Restrictions to Flight

6.1 General. The NAS extends from the ground to above 60,000 feet MSL and includes various classifications of airspace, both uncontrolled and controlled. sUAS remote pilots and recreational flyers are generally permitted access to uncontrolled airspace without special permission. All access to controlled airspace whether by manned or unmanned aircraft must be granted by ATC.

NOTE−
1. *While the NAS is divided into controlled and uncontrolled airspace, users must remember that all airspace is regulated, and certain rules apply throughout the NAS.*

2. *Recreational flyers are limited to 400 feet AGL in Class G airspace.*

6.2 Controlled Airspace is a generic term that covers the different classification of airspace (Class A, Class B, Class C, Class D, and Class E airspace) and defined dimensions within which air traffic control services can be provided to Instrument Flight Rules (IFR) flights and to Visual Flight Rules (VFR) flights, in accordance with the airspace classification.

6.3 Special Use Airspace (SUA). SUA consists of that airspace where flight activities must be confined because of their nature, or where limitations are imposed upon aircraft operations that are not a part of those activities, or both. These areas are generally depicted on aeronautical charts and will be indicated on the B4UFly and LAANC applications for UAS.

6.4 Temporary Flight Restrictions:

6.4.1 Temporary Flight Restrictions (TFRs) are non−permanent airspace restrictions created to protect persons and property in the air or on the surface from an existing or imminent hazard associated with an incident on the

surface, when the presence of low flying aircraft would magnify, alter, spread, or compound that hazard (14 CFR Section 91.137(a)(1)). TFRs can exist to protect aircraft from hazards, and also to protect people/objects on the ground from aircraft hazards. Examples of TFRs include natural disaster areas especially forest fires and floods, congested flight areas, the area around spacecraft launches and recoveries, certain stadium sporting events, and the security of national public figures.

6.4.2 UAS operators should be aware that substantial fines and penalties can be levied on UAS remote pilots or recreational flyers violating a TFR.

6.5 Special Restrictions over Critical Infrastructure:

6.5.1 Operating a UAS over our nation's critical infrastructure such as power grids, nuclear reactors, transportation centers, political or military sites, etc., can potentially create risk to people on the ground and also to fixed site facilities and associated infrastructure. To address security concerns, Public Law 114−190 and 115−254 mandated a process that would allow applicants to petition the FAA for restrictions from unmanned aircraft overflying their property.

6.5.2 Special Security Instructions under 14 CFR Part 99.7 of the public laws allow the FAA to prohibit the operation of aircraft in certain airspace, in the interest of national security. The 14 CFR Part 99.7 interim solution prohibits UAS over approved fixed site facilities and limits the fixed site facilities to Federal owned sites UAS operations may be approved under the SGI process.

6.5.3 UAS remote pilots and recreational flyers must carefully consider the need to fly over critical infrastructure and determine the legality of doing so, infractions may result in significant fines and legal actions.

NOTE−
For a list of critical infrastructure sites, see https://www.cisa.gov/critical-infrastructure-sectors.

REFERENCE−
Public Law 114−190, FAA Extension, Safety, and Security Act of 2016
Public Law 115−254, FAA Reauthorization Act of 2018.
14 CFR Section 99.7, Special Security Instructions.

6.6 Special Flight Rules Area (SFRA). SFRAs are airspaces of defined dimensions, above land areas or territorial waters, wherein the flight of aircraft is subject to special rules, as established after the September 11, 2001 attacks. Examples include the Washington, DC, Los Angeles, and Hudson River SFRAs. All aircraft are highly regulated within SFRAs. The inner area of some SFRAs, the Flight Restricted Zone (FRZ) is very highly restricted and prohibits all but previously vetted aircrew and aircraft from entering. Refer to VFR Sectional Charts or the FAA's Restricted Airspace website for information on specific airspace limitations and instructions for requesting entry.

NOTE−
The FAA's Restricted Airspace website may be viewed at: https://www.faa.gov/newsroom/restricted-airspace-0.

6.7 There can be certain local restrictions to airspaces. While the FAA is designated by federal law to be the regulator of the NAS, some state and local authorities may also restrict access to local airspace. UAS pilots should be aware of these local rules.

6.8 Other Restrictions & Provisions:

6.8.1 Flight over or near natural habitat or nature preserves. See ENR 8.8, paragraph 6., Environmental Best Practices, for a discussion of UAS flight restrictions over or near wildlife.

6.8.2 No Drone Zones is an FAA concept and outreach to promote safe and responsible use of UAS. The effort assists landowners (private and public) with designating their land off−limits for UAS take−offs and landings. The idea behind the outreach is to allow landowners who wish to avoid interactions on their property with UAS to state this preference in advance of UAS take−offs or landings. No Drone Zones do not apply to airspace. Generally speaking, for a No Drone Zone in a public place to be legally enforceable, there must exist underlying authority (ordinance, law, etc.). If the property in question is privately owned, the landowner's right to designate no UAS use is enforceable through trespass law.

6.8.3 Flight over or near people and manned aircraft. In general, UAS remote pilots and recreational flyers should avoid flying over or near people or manned aircraft operations, and in any manner that could be construed as reckless or dangerous. See ENR 8.8, paragraph 3., Precautions: Flight Over or Near People, Manned Aircraft, and Night Operations, for specific information on flight over or near people.

6.8.4 Correctional Institutions. Flight over some federal prisons is restricted under 14 CFR Section 99.7, Special Security Instructions. Flight near other correctional institutions may be prohibited by other federal, state or local statutes. ENR 8.4, subparagraph 6.5, Special Restrictions over Critical Infrastructure, contains additional information regarding restrictions over critical infrastructure.

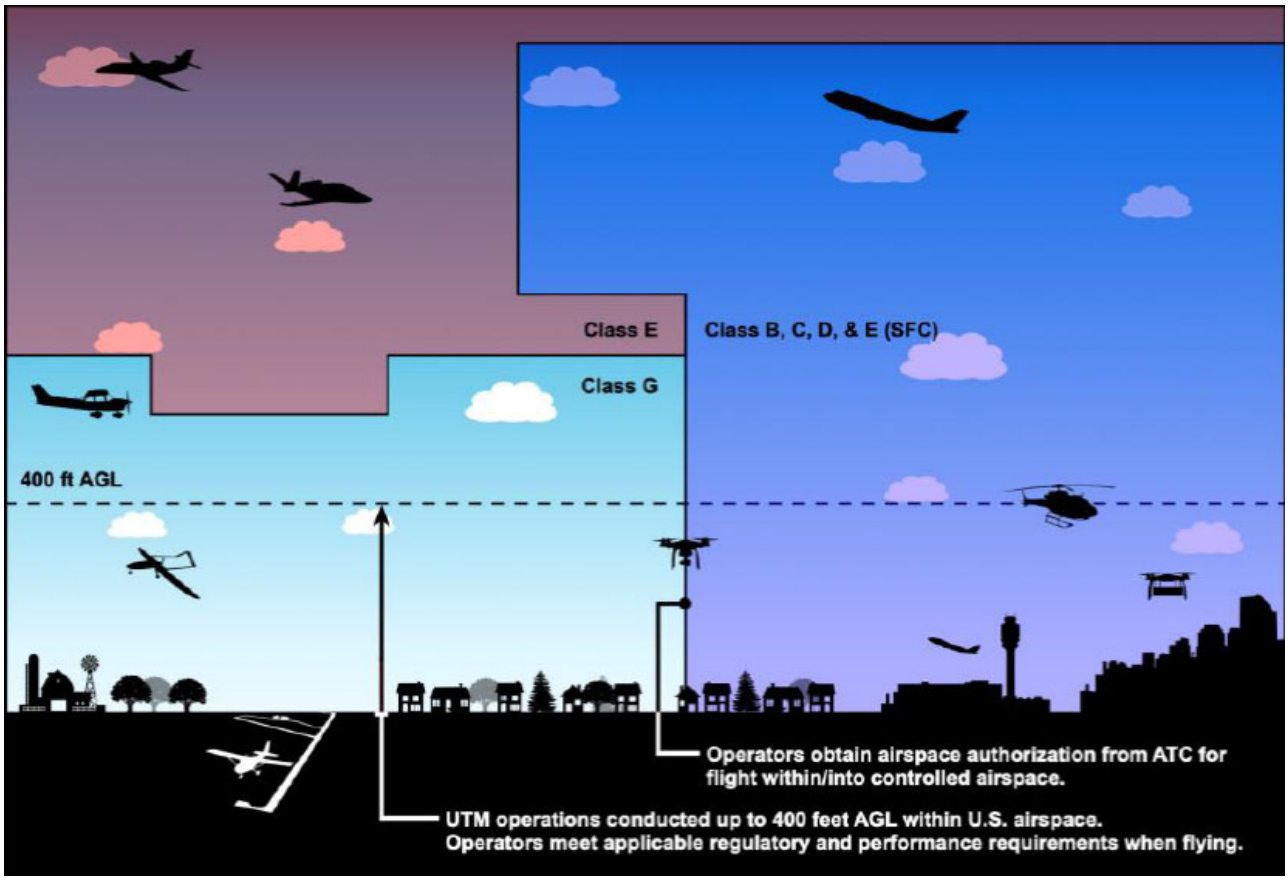
REFERENCE−
14 CFR Section 99.7, Special Security Instructions.

7. UAS Traffic Management (UTM)

7.1 UTM Operations. UTM is predicated on layers of information sharing and data exchange amongst a range of stakeholders including UAS operators, service providers, and the FAA to achieve safe operations. Operators share their flight intent with each other and coordinate to de−conflict and safely separate trajectories. The primary means of communication and coordination between operators, the FAA, and other stakeholders is through a distributed information network, rather than between pilots and air traffic controllers via traditional voice communications. The FAA makes real−time airspace constraints available to UAS operators, who are responsible for managing their own operations safely within these constraints without receiving ATC services from the FAA. However, the FAA does have access to applicable UTM operational information as necessary.

7.2 UAS operators not receiving ATC separation services are required to participate in UTM at some level using applicable services to meet the performance requirements of their operations. See FIG ENR 8.4−2 for UTM in the context of Air Traffic Management operations. The number and type of services required varies based on the type and location of the intended operation and the associated communication, navigation, surveillance (CNS), and other operational needs.

FIG ENR 8.4–2
UTM Operations in Context of Airspace Classes



7.3 Stakeholders in UTM:

7.3.1 FAA, the federal authority over aircraft operations in all airspace, and the regulator and oversight authority for civil aircraft operations in the NAS.

7.3.2 Operator, the person or entity responsible for the overall management of their operation. The operator meets regulatory responsibilities, plans flight/operations, shares operation intent information, and safely conducts operations using all available information.

7.3.3 Remote pilot–in–command (RPIC), the person responsible for the safe conduct of each UAS flight. An individual may serve as both the operator and the RPIC.

7.3.4 Other stakeholders (e.g., public safety and general public), can access information and/or utilize UTM services via the USS Network.

ENR 8.5 UAS Pilot Testing, Certification and Responsibilities

1. UAS Pilot Certification and Requirements for Part 107 Pilots and Recreational Flyers

1.1 General:

1.1.1 Part 107 Operations. Any person who operates a civil sUAS in the NAS, for any operation that is not for recreational/pleasure purposes, must have a UAS pilot's certificate (also called the "Part 107 Certificate") with a Small Unmanned Aircraft System Rating.

1.1.2 Recreational Flyer Operations. A person who is flying a sUAS for recreational/pleasure purposes in the NAS must have taken and passed TRUST, as required by 14 USC 44809.

1.2 Eligibility for Testing:

1.2.1 Part 107 operations. Applicants must be at least 16 years of age and be able to speak and understand English. For further information on Part 107 testing see the FAA's website, Become a Drone Pilot.

NOTE–
The FAA's Become a Drone Pilot website may be viewed at:
https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/.

1.2.2 Recreational Flyer Operations. There are no minimum age or other eligibility requirements for a recreational UAS pilot to take TRUST.

1.3 Initial Testing for Certification:

1.3.1 Part 107 Operations:

1.3.1.1 Current 14 CFR Part 61 Certificate Holder (Online Training). A person who holds a Part 61 manned pilot certificate (other than a student pilot certificate), and who has a current flight review, as per 14 CFR Section 61.56, may complete online training that is offered by the FAA to obtain their 14 CFR Part 107, in lieu of taking the Initial Knowledge Test. However, a Part 61 certificate holder may also take the sUAS Initial Aeronautical Knowledge Test for certification.

1.3.1.2 Non 14 CFR Part 61 certificate holder, or 14 CFR Part 61 certificate holder lacking currency (Initial Aeronautical Knowledge Test). A person who does not hold a 14 CFR Part 61 manned pilot certificate and/or they do not have a current flight review must take the Initial Aeronautical Knowledge Test at an FAA designated Knowledge Testing Center to obtain their sUAS Certificate.

1.3.2 Recreational Flyer Operations. Any person who flies a UA for recreational use under 49 USC 44809 must take and pass TRUST. See the FAA website, The Recreational UAS Safety Test (TRUST).

NOTE–
A current 14 CFR Part 107 sUAS certificate holder may fly recreationally under that part, but must adhere entirely to 14 CFR Part 107 rules and requirements. If a Part 107 sUAS certificate holder wishes to fly under 49 USC 44809, they must take and pass TRUST.

NOTE–
The FAA's website, The Recreational UAS Safety Test (TRUST), may be viewed at:
https://www.faa.gov/uas/recreational_flyers/knowledge_test_updates.

1.4 Recurrent Training (Testing) Requirements:

1.4.1 Part 107 operations:

1.4.1.1 To exercise the privileges of a sUAS certificate that was issued under 14 CFR Part 107, a person must maintain currency. Therefore, the FAA requires that a person take a recurrent course within 24 months from the month the Initial Aeronautical Knowledge Test was passed, or the online training was completed.

1.4.1.2 Recurrent training (online training) is found at the FAA's Become a Drone Pilot website.

NOTE−
The FAA's Become a Drone Pilot website may be viewed at: https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/.

1.4.2 Recreational Operations. TRUST is taken on a once−and−done basis; no recurrent testing is required.

1.5 Pre−Test Training Requirements:

1.5.1 Part 107 Operations:

1.5.1.1 No documented pre−test training is required under Part 107 to take the Initial Aeronautical Knowledge Test. However, the FAA Remote Pilot Small Unmanned Aircraft Systems Study Guide is an excellent resource.

NOTE−
To view the FAA Remote Pilot − Small Unmanned Aircraft Systems Study Guide see: https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/remote_pilot_study_guide.pdf.

1.5.1.2 Initial Aeronautical Knowledge Test subject areas. The testing topics for the sUAS Knowledge Test can be found in 14 CFR Section 107.73, Knowledge and Training.

REFERENCE−
14 CFR Section 107.73, Knowledge and Training.

1.5.1.3 Part 107 online training. This online training may be used by those who hold a 14 CFR Part 61 pilot certificate (not including a student pilot certificate) seeking 14 CFR Part 107 remote pilot certification. A person who holds a 14 CFR Part 61 pilot certificate must also show, at the time of certification, a current Flight Review as per 14 CFR Section 61.56.

1.5.2 Recreational Flyer Operations. No pre−test training is necessary to complete TRUST.

1.6 Endorsements and re−testing. Neither the Part 107 Initial Aeronautical Knowledge Test nor the Recreational TRUST have any requirements for flight instructor endorsements prior to testing. A person who fails the Initial Aeronautical Knowledge Test must wait 14 calendar days before they may retake the test. TRUST may be retaken at any time.

1.7 Registering to Take the Part 107 sUAS Initial Aeronautical Knowledge Test:

1.7.1 Before a person can take the sUAS Initial Aeronautical Knowledge Test at an FAA−recognized testing center, that person must obtain an FAA Tracking Number (FTN). To obtain an FTN a person must create an account in the Integrated Airman Certification and Rating Application (IACRA) system. For detailed instructions on how to obtain an FTN, see the FAA's, Airman Certificate Testing Service (ACTS) Contract Briefing.

NOTE−
Any person who has any FAA Airman Certificate will already have an FTN.

NOTE−
The FAA's Airman Certificate Testing Service (ACTS) Contract Briefing, may be viewed at: https://www.youtube.com/watch?v=ETLsH8BruBM .

1.7.2 Once an applicant has a FTN, they will go to the testing vendor's website and register for the test. The FAA's testing vendor is PSI Services LLC.

NOTE−
The PSI Services LLC website may be viewed at: https://candidate.psiexams.com/.

1.8 Applying for a 14 CFR Part 107 sUAS Certificate. The FAA's Become a Drone Pilot website has instructions on how to obtain the 14 CFR Part 107 Pilot Certificate, following testing or online training completion.

NOTE−
The Become a Drone Pilot website may be viewed at: https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/.

1.9 Registering to take the Part 107 sUAS Initial Aeronautical Knowledge Test:

1.9.1 A person who holds a sUAS Certificate is afforded all of the privileges of the certificate. This includes the ability to operate at night and over people without a waiver, under certain conditions. See ENR 8.8, paragraph 3, Precautions: Flight Over or Near People, Manned Aircraft, and Night Operations, for further information on these operations.

1.9.2 Any remote pilot who holds a 14 CFR Part 107 sUAS certificate issued prior to April 6, 2021, must take the updated recurrent training (online training) to operate at night or over people.

2. Pilot Certification and Requirements for Public Aircraft Operations (PAOs)

2.1 When operating as a PAO, the operator is required to train and the agency will self–certify pilots as competent to safely operate in the NAS.

2.2 For more information and best practices on pilot certification and training within the framework of a PAO, refer to AC 00–1.1, Public Aircraft Operations—Manned and Unmanned.

REFERENCE–
AC 00–1.1, Public Aircraft Operations—Manned and Unmanned.

3. Pilot Certification for 14 CFR Part 135, Part 137, and Large Civil UAS

3.1 Pilot certification for 14 CFR Part 135. Currently, FAA regulations require a commercial pilot certificate for 14 CFR Part 135 Remote PICs.

3.2 Pilot certification for 14 CFR Part 137. For civil UAS agricultural aircraft operations, the 14 CFR Section 137.19(b) & (c) requirement (that the pilot hold a private or commercial pilot certificate) is exempted; only a 14 CFR Part 107 pilot certificate is required. This policy pertains to all UAS regardless of weight. However, all civil pilots conducting agricultural aircraft operations must satisfactorily pass the knowledge and skill test of 14 CFR Section 137.19(e) and 14 CFR Section 137.41(b) or (c).

3.3 Pilot certification for other large civil UAS. Requirements for future large civil UAS operations will be addressed in future rulemaking.

4. Foreign Pilot Certification

4.1 Part 107 Operations:

4.1.1 Foreign national holding a U.S. issued 14 CFR Part 61 certificate. Foreign nationals are eligible for a sUAS certificate in the same way that a U.S. citizen is eligible.

4.1.2 Foreign national not holding a U.S. issued 14 CFR Part 61 certificate. A foreign national who does not hold a U.S. issued 14 CFR Part 61 certificate, must take and pass the Initial Aeronautical Knowledge Test to obtain a sUAS Pilot Certificate in order to operate in the NAS.

4.2 Recreational Flyer Operations. A foreign national is required to have passed TRUST to fly a UAS recreationally under 49 USC 44809 in the United States.

4.3 Security vetting. All applicants, regardless of nationality, must pass a Transportation Security Administration (TSA) Security Threat Analysis (STA) before the FAA will issue a temporary or permanent Pilot's Certificate, under Part 107.

4.4 Bi–lateral agreements. Currently, the United States does not have any bi–lateral agreements with any other countries that would allow the issuance of a U.S. sUAS certificate that is based on a foreign UAS Pilot's Certificate.

ENR 8.6 Advanced Air Mobility

1. General

1.1 Advanced Air Mobility (AAM) is a rapidly–emerging, new sector of the aerospace industry which aims to safely and efficiently integrate highly automated aircraft into the NAS. AAM is not a single technology, but rather a collection of new and emerging technologies being applied to the aviation transportation system, particularly in new aircraft types. Notional AAM use–cases include Urban Air Mobility (UAM), Regional Air Mobility (RAM), public services, large cargo delivery, and private or recreational vehicles.

1.2 UAM and RAM are subsets of AAM activities occurring in urban environments.

ENR 8.7 UAS Operations on Airports

1. UAS Operations on Airports

1.1 Larger public and civil UAS operate from military, civilian, and dual–use airports with set protocols and agreements with local ATC, often operate under IFR.

1.2 sUAS operations on airports require coordination with the airport operator and respective air traffic control facility, Spectrum, the FAA Regional Airport District Office, or the State Department of Aviation, where applicable. Due to the complex nature of these operations, requests for on–airport operations within controlled airspace must be submitted via DroneZone for coordination with the air traffic control facility. On–airport operation requests are evaluated on a case–by–case basis due to the inherent risks associated with operating in close proximity to areas frequented by manned aircraft.

NOTE–
The FAA's DroneZone website may be viewed at: https://faadronezone.faa.gov/#/ .

ENR 8.8 Other Information and Best Practices

1. Best Practices for UAS Operations

Responsibility of the UAS pilot. Just as is the case with a manned aircraft, the UAS remote pilot or recreational flyer is responsible for the safe operation of their unmanned aircraft. The remote pilot or recreational flyer must ensure that they are physically ready to fly and knowledgeable of the flight to be performed to include operational parameters, UAS limitations, local weather, and applicable flight rules; that the UAS itself is mechanically ready.

2. UAS Operations and Air Traffic Control (ATC)

Coordination and/or communication of airspace authorizations between UAS pilots or operators and ATC are handled within the airspace access processes (e.g., LAANC, DroneZone, CAPS). They are not coordinated extemporaneously and verbally between the UAS operator and ATC. Any requirements for coordination and/or communication between UAS operator and ATC will be contained in individual COAs, which may include operational waivers, development of LOAs, and through other application processes which allow access to controlled airspace. Any air traffic services provided to sUAS operations shall be based upon the type of airspace authorization issued, along with the mitigations and limitations included in that authorization.

NOTE–
1. *Small UAS operators should not contact ATC directly by radio or telephone for purposes of airspace access. Also, the use of an aviation radio frequency by the RPIC of a sUAS may constitute a violation of Federal Communications Commission rules. Remote pilots of larger UAS—which are usually under positive control by ATC and flying under Instrument Flight Rules—are an exception to this guideline.*

2. *Small UAS operators are encouraged to monitor local CTAF radio traffic when operating on or near an airport, for situational awareness.*

3. Precautions: Flight Over or Near People, Vehicles, Manned Aircraft, and Night Operations

3.1 Flight over or near people or vehicles:

3.1.1 Remote pilots and recreational flyers should carefully consider the hazards of flight operations over or near people. 14 CFR Part 107, Subpart D, operations over human beings, allows certain Operations Over People (OOP) and vehicles, based upon four different operational categories of UA weight and construction, and the likely severity of injury to people on the ground, in the case of contact. Part 107 operators may request a waiver to these restrictions.

3.1.2 Part 91 remote pilots may refer to restrictions and permissions, regarding flight over people, in their respective COAs.

3.1.3 Recreational flyers should consider the safety of other persons when flying. 49 USC 44809(a)(2), Exception for Limited Recreational Operations of Unmanned Aircraft, requires recreational flyers to operate in accordance with the safety guidelines of an accepted CBO; these guidelines will usually include safety precautions for flight near people.

3.1.4 For further information on the rules for flying over people or vehicles, see ENR 8.4, paragraph 6., Airspace Restrictions to Flight.

REFERENCE–
14 CFR Part 107, Subpart D, Operations Over Human Beings.
49 USC 44809(a)(2), Exception for Limited Recreational Operations of Unmanned Aircraft.

3.2 Flight in the Vicinity of Manned Aircraft:

3.2.1 The pilot of any unmanned aircraft operation retains the ultimate responsibility to avoid manned aircraft traffic. UAS operators should remember that manned aircraft may fly below 400 feet AGL; examples include

helicopters, agricultural aircraft, light civil aircraft, and military aircraft. UAS pilots must ensure they have unblocked visual access to both their UAS and the airspace around it; not seeing a manned aircraft due to blocked line of sight does not absolve the UAS pilot from responsibility for avoidance.

NOTE–
Military aircraft routinely fly low and at very high speeds on low–level Military Training Routes (MTRs). MTR locations can be viewed on the VFR sectional charts. The B4UFly app will also alert the UAS pilot to the location of nearby MTRs.

3.2.2 Should public safety or emergency responder aircraft (e.g., police, fire suppression, helicopter emergency medical services) operations be interfered with by UAS, substantial fines can be levied on the UAS operators involved. Enforcement actions can include revocation or suspension of a pilot certificate, and up to a $20,000 civil penalty per violation.

3.3 Night Operations:

3.3.1 Night operations are permitted under 14 CFR Parts 91, 14 CFR Part 107, and Section 44809. However, requirements for meteorological visibility, and for the operator or visual observer (VO) to maintain VLOS with the UAS at all times, should be considered; see ENR 8.5, subparagraph 1.9.

3.3.2 14 CFR Section 107.29, Operation at Night, requirements include initial pilot training and equipment such as an anti–collision light which is visible for at least three statute miles, with a flash rate sufficient to avoid a collision.

3.3.3 Part 91 operators civil and PAO should refer to their specific COAs for any further instructions or limitations on night flight.

REFERENCE–
14 CFR Part 107.29, Operation at Night.

4. Accidents and Incidents: UAS Operator Responsibilities

4.1 Reporting responsibility. A drone crash or malfunction, irrespective of which flight rules govern the flight, may trigger a reporting requirement to either the FAA, the NTSB, or both. The NTSB reporting requirements listed in 49 CFR 830.5, immediate notification, are separate and distinct from the FAA reporting requirements. All UAS flyers operating in the NAS recreational, civil, and public are encouraged to read and follow NTSB reporting requirements should they experience a crash or malfunction that meets NTSB criteria and triggers NTSB reporting. See NTSB Reporting Requirements and ENR 8.8, subparagraph 4.2, below. A COA issued to Part 91 civil and public operators will contain specific incident/accident reporting requirements for the operator.

4.1.1 Part 107 Operations. Part 107 operators have a reporting requirement described in 14 CFR Section 107.9, Accident Reporting. A remote pilot in command is required to report any sUAS crash that causes serious injury or loss of consciousness, or property damage other than to the UAS of over $500. Property damage refers to any property that is not part of the UA System or attached to the UAS.

4.1.2 Recreational Flyer Operations. Recreational flyers fully complying with the exception listed in 49 USC 44809 are not required to report crashes to the FAA. However, this does not alleviate the recreational flyer from the requirement to report the crash to the NTSB if the crash meets the NTSB reporting requirements.

4.1.3 Part 91 Operations. Part 91 operators typically flown by public aircraft operators, civil aircraft operators, or civil operators flying FAA type certificated UAS have unique reporting requirements delineated in the terms and conditions of their certificate of waiver/authorization and must comply with those specific requirements.

4.2 NTSB Reporting Requirements. The NTSB defines a UAS accident as an occurrence associated with the operations of any public or civil UAS that takes place between the time that the system is activated with the purpose of flight and the time that the system is deactivated at the conclusion of its mission, in which any person suffers death or serious injury, or the UAS holds an airworthiness certificate and sustains substantial damage. In the case of a midair collision involving a UAS, any midair collision must be reported.

REFERENCE–
14 CFR 830.5, Immediate Notification.
14 CFR Section 107.9, Accident Reporting.

5. Emergency UAS Authorizations Through Special Government Interest (SGI) Airspace Waivers

5.1 Background. UAS are used by public safety agencies to respond to emergencies. The SGI process is for any Part 107 or Part 91 operator that either due to time limitations, airspace restrictions or emergency situations that requires expedited authorization by contacting the system operations support center (SOSC) at 9–ATOR–HQ–SOSC@faa.gov.

5.2 The SGI process, depending on the nature of the operation, can be completed in a matter of minutes. This process enables response to an emergency with UAS in an expeditious manner.

5.3 Public Safety organizations may apply for expedited airspace authorizations through the SGI process. The SGI process is defined in FAA Order JO 7210.3, Facility Operation and Administration.

REFERENCE–
FAA Order JO 7210.3, Facility Operation And Administration,

5.4 Additional information regarding SGI authorizations can be located at the FAA's Emergency Situations webpage.

NOTE–
The FAA's Emergency Situations website may be reviewed at: https://www.faa.gov/uas/advanced_operations/emer gency_situations/.

6. Environmental Best Practices

6.1 Unmanned aircraft operate in a similar environment to manned aircraft. Since most UAS operations are conducted at low altitude, hazards, risks and potential environment factors may be encountered on a more frequent basis. In addition to the Bird Hazards, Flight over National Refuges, Parks, and Forests, the following factors must also be considered:

6.1.1 Flight Near Protected Conservation Areas. UAS, if misused, can have devastating impacts on protected wildlife. UAS operators may check for conservation area airspace restrictions on the B4UFLY mobile app.

6.1.2 Flight(s) Near Noise Sensitive Areas. Consider the following:

6.1.2.1 UAS operations and flight paths should be planned to avoid prolonged or repetitive flight at low altitude near noise sensitive areas.

6.1.2.2 As described in FAA Order 1050.1, Environmental Impact: Policies and Procedures, an area is "noise sensitive" if noise interferes with any normal activities associated with the area's use.

REFERENCE–
FAA Order 1050.1, Environmental Impact: Policies and Procedures.

6.1.2.3 To the extent consistent with FAA safety requirements, operators should observe best practices developed by the National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, and National Oceanic and Atmospheric Administration when operating above areas administered by those agencies. The National Park Service provides additional guidance at their Unmanned Aircraft Systems website.

NOTE–
The National Park Service, Unmanned Aircraft Systems website may be viewed at: https://www.nps.gov/subjects/sound/uas.htm.

6.2 Some bird species have shown the potential to attack UAS that approach their nesting and hunting areas too closely. The type of birds that are most likely to attack sUAS are raptors such as hawks, eagles, and falcons. However, gulls, geese, and crows have also been known to attack UAS. Aggressive bird attacks may damage UAS propellers or other critical equipment, and may result in sudden loss of power or engine failure. Remote pilots and recreational flyers should consider reviewing engine–out procedures, especially when operating near high bird concentrations.

7. Resources for UAS Operators

7.1 FAA.GOV/UAS. The FAA UAS website, www.faa.gov/uas, is the central point for information about FAA UAS rules, regulations, and safety best practices.

7.2 FAA DroneZone. The FAA DroneZone is the Agency's portal for registering drones, requesting Part 107 airspace authorizations and waivers, registering as a CBO, requesting fixed sites, and other tasks.

7.3 Local FAA Offices. Flight Standards District Offices (FSDOs), can be the best in−person source for UAS information. A list of FSDOs in the United States is at https://www.faa.gov/about/office_org/field_offices/fsdo/all_fsdos/.

7.4 Aeronautical Information. The FAA provides aeronautical information to NAS users, including UAS pilots, through a variety of methods including publications like this manual, other publications, Advisory Circulars (ACs), charts, website and mobile applications, etc. Check https://www.faa.gov/air_traffic/flight_info/aeronav/ for these items.

7.5 The UAS Support Center. For general question or comment about UAS or drones, the FAA's Support Center is available at 844−FLY−MY−UA or UASHelp@faa.gov.

7.6 Clubs and Associations. Local UAS recreational clubs, CBO organizations, and business associations are excellent resources for information and updates on flying in the local region.

7.7 LAANC. LAANC is the Low Altitude Authorization and Notification Capability, a collaboration between FAA and industry. It automates the application and approval process for airspace authorizations. Using applications developed by an FAA−approved UAS service supplier (USS) you can apply for an airspace authorization at over 600 airports. Download the free LAANC app at https://www.faa.gov/uas/programs_partnerships/data_exchange/.

7.8 B4UFLY. The B4UFLY mobile application is a partnership between the FAA and Kittyhawk. The app helps recreational flyers know whether it is safe to fly their drone, as well as increases their situational awareness. Download the free B4UFly app at https://www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/.

7.9 Weather Sources. Aviation weather services (such as https://www.aviationweather.gov/) are generally targeted towards manned aviation, the FAA is currently working on UAS−specific weather applications.

7.10 NOTAM. The Notices to Air Missions (NOTAM) system, like aviation weather sources, remains primarily predicated on manned aviation needs. However, the system provides continual updates on all aviation activity to include UAS flight activities which have been input to the FAA, as well as airport status. The NOTAM system will be of greatest use to larger UAS activities, UAS en route operations in controlled airspace, and those flying to or from airports. NOTAM, temporary flight restrictions (TFRs), and aircraft safety alerts can be accessed at https://www.faa.gov/pilots/safety/notams_tfr/.

PART 3 – AERODROMES (AD)

AD 0.

AD 0.1 Preface – Not applicable
AD 0.2 Record of AIP Amendments – See GEN 0.2–1
AD 0.3 Record of AIP Supplements – Not applicable

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APPENDIX

Appendix 1–1	20 APR 23
1 through 438	N/A
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Appendix 2–3	19 MAY 22
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Appendix 2–23	20 APR 23

AD 0.5 List of Hand Amendments to the AIP – Not applicable

AD 1. AERODROMES – INTRODUCTION

AD 1.1 Aerodrome Availability

1. General Regulations Concerning Airport Use

1.1 International arrivals with scheduled passenger service are not permitted to land at any aerodrome not listed in this AIP except in cases of real emergency or where special permission has been granted.

1.2 The conditions under which aircraft may land, be parked, housed or otherwise dealt with at U.S. aerodromes is under the control of the aerodrome owner/operator. Conditions and fees pertaining to landing, parking, or storing are variable from aerodrome to aerodrome and are not published in the U.S. AIP.

1.3 In the United States, some telecommunication companies launched 5G services on January 19, 2022, using frequencies in a portion of the radio spectrum called the C–band. These frequencies can be close to those used by radio altimeters, an important piece of safety equipment in aircraft. The 5G deployment involves a new combination of power levels, frequencies, proximity to flight operations, and other factors. The FAA requires that radio altimeters are accurate and reliable, and therefore imposes restrictions on flight operations using certain types of radio altimeter equipment. These safety restrictions are posted in a 5G C–Band Domestic Notice, and could affect flight schedules and operations. All operators (domestic and international) must comply with the guidance and restrictions provided in this Domestic Notice.

2. Landings Made Elsewhere Than at International Aerodromes

2.1 Permission to land at airports other than "international" and "landing rights" airports may be obtained in some limited cases; however, advance arrangements (preferably in writing) must be made with the U.S. Customs office nearest the airport of intended arrival (see GEN 1). Advance notice of arrival is required as usual. Pilots should be aware that mileage and per diem costs may be accrued in addition to any overtime charges if applicable.

2.2 If an emergency landing is made elsewhere than at an international aerodrome or a designated alternate aerodrome, the pilot in command must report the landing as promptly as possible by telephone or the most convenient means to the nearest Customs office. He/she should keep all merchandise or baggage in a segregated place and should not permit any passenger or crewmember to depart the place of arrival or mingle with the public without official permission, unless it is necessary for preservation of life, health, or property.

3. Traffic of Persons and Vehicles on Aerodromes

3.1 The grounds of each aerodrome are divided into two zones:

3.1.1 A public zone comprising the part of the aerodrome open to the public; and

3.1.2 A restricted zone comprising the rest of the aerodrome.

3.2 Movement of Persons

3.2.1 Access to the restricted zone is authorized only under conditions prescribed by the rules governing the aerodrome as established by the officials responsible for aerodrome security.

3.2.2 The customs, security, immigration and health inspection offices and areas, and the premises assigned to transit traffic are normally accessible only to passengers, to staff members of the responsible authorities or airlines, and to authorized persons in pursuit of their duties.

3.2.3 The movement of persons having access to the restricted zone of the aerodrome is subject to the conditions prescribed by applicable air traffic and by the security regulations laid down by the person responsible for the management of the aerodrome.

3.3 Movement of Vehicles

3.3.1 The movement of vehicles in the restricted zone is strictly limited to vehicles driven or used by persons having official permission.

3.3.2 Drivers of vehicles, of whatever type, driving within the confines of the aerodrome, must respect the direction of traffic, the traffic signs, and the posted speed limits and generally comply with the provisions of the highway code and with instructions given by the competent authorities.

4. General Information and Aerodrome Lighting and Marking

4.1 Aerodrome lighting information is contained in paragraphs 12. through 16. Information on aerodrome marking aids and signs is contained in paragraph 17.

4.2 Designated international U.S. aerodromes with scheduled passenger service in large aircraft and certain airports designated as alternate service aerodromes are listed in , Aerodromes.

5. Aerodrome Administration

5.1 The administration of all airports is the responsibility of the aerodrome owner.

5.2 Ownership of aerodromes in the U.S. is vested in three different groups: the Federal Government, non–Federal governments, and private organizations or individuals. It is the policy of the U.S. Federal Government to have its aerodromes comply with ICAO Standards and Recommended Practices. Exceptions are noted as differences below and in GEN 1.7. Aerodromes owned by non–Federal governments and private organizations or individuals are encouraged to comply with International Standards and Recommended Practices in part through the regulation of aircraft operations into the aerodromes and in part through agreements under which Federal aid is made available for aerodrome development or improvement. Further compliance is by voluntary action on the part of the aerodrome owner.

6. Conditions of Availability

6.1 An aerodrome which is open for public use may be used by a particular aircraft upon consideration of the meteorological conditions existing at the time and provided that the aircraft's performance and load classification (runway weight–bearing classification) is consistent with the physical characteristics of the aerodrome.

6.2 Civil Use of Military Fields

6.2.1 Except at joint–use airfields, U.S. Army, Air Force, Navy, Marine Corps, and Coast Guard airfields are available for use by civil aircraft only with prior permission or in an emergency. An approved civil aircraft landing permit is required for use at all except Coast Guard airfields. With minor exceptions, authority to use military airfields is granted only to aircraft on official government business.

6.2.2 An application for a permit must be submitted to the appropriate military department a minimum of 30 days prior to the first intended landing. A permit application consists of Department of Defense Forms DD Form 2400, Civil Aircraft Certificate of Insurance; DD Form 2401, Civil Aircraft Landing Permit; and DD Form 2402, Hold Harmless Agreement.

6.2.3 Forms and instructions can be obtained from the following addresses.

Army:	Director, USAASA ATTN: MOAS–AS Building 1466 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060–5582 Telephone: (703) 806–4864
Air Force:	HQ USAF/XOO–CA 1480 Air Force Pentagon, Room 4D1010 Washington DC 20330–1480 Telephone: (703) 697–5967
Navy/ Marine Corps:	Commander Naval Facilities Engineering Command, Code 141JB 200 Stovall Street, Room 10N45 Alexandria, VA 22332–2300 Telephone: (703) 325–0475

At Coast Guard airfields, prior permission must be requested from the commanding officer of the airfield to be used.

7. Applicable ICAO Documents

ICAO Standards and Recommended Practices contained in Annex 14 are applied with the exceptions noted in GEN 1.7, Differences from ICAO Standards, Recommended Practices and Procedures.

8. Maintenance of Aerodrome Movement Areas

8.1 It is the responsibility of the relevant aerodrome authority to maintain the aerodrome in a satisfactory condition.

8.2 Clearance of snow and measurement of snow, ice, standing water, braking action, etc., and the reporting of such pavement conditions is within the responsibility of the aerodrome authority.

9. Dissemination of Information on the Condition of Paved Surface

9.1 Information on surface condition of runways, taxiways and aprons will be published, when available and when necessary.

9.2 At aerodromes where an ATS unit is established, if a runway is affected by standing water, snow, slush or ice during the approach of an aircraft for landing, and such conditions are notified by the aerodrome management to the ATS unit, such conditions will be made available to the aircraft.

10. Rescue and Fire Fighting Facilities

10.1 Adequate rescue and fire–fighting vehicles, equipment and personnel are provided at aerodromes available for international commercial air transport.

10.2 Temporary interruptions to rescue and fire–fighting service, or non–availability of such services, are made known by NOTAM.

10.3 Certificated Aerodromes (14 CFR Part 139)

Aerodromes serving certain air carriers under 14 CFR Part 139 are indicated by a CFR Index which relates to the availability of crash, fire, and rescue equipment. (See TBL AD 1.1−1.)

11. Bird Concentrations in the Vicinity of Aerodromes

11.1 Animal and bird notices are not normally published in aerodrome remarks. Pilots should be aware that animals and birds are frequently found in the vicinity of aerodromes and should exercise due caution. However, selected bird notices may be published, but only after approval by the appropriate Regional Bird Hazard Group.

TBL AD 1.1−1
14 CFR PART 139 CERTIFICATED AIRPORTS

Indexes and Fire Fighting and Rescue Equipment Requirements

Airport Index	Required Number of Vehicles	Aircraft Length	Agent & Water for Foam
A	1	< 90’	500# DC or 450# DC + 100 gal H_20
B	1 or 2	≥ 90’ & < 126’	Index A + 1500 gal H_20
C	2 or 3	≥ 126’ & < 159’	Index A + 3000 gal H_20
D	3	≥ 159’ & < 200’	Index A + 4000 gal H_20
E	3	≥ 200’	Index A + 6000 gal H_20
> Greater Than; < Less Than; ≥ Equal To or Greater Than; H_20 Water; DC Dry Chemical			
NOTE− Vehicle and capacity requirements for airports holding limited operating certificates are determined on a case−by−case basis.			

12. Airport Lighting Aids

12.1 Approach Light Systems (ALS)

12.1.1 Approach light systems provide the basic means for transition from instrument flight to visual flight for landing. Operational requirements dictate the sophistication and configuration of the approach light system for a particular runway.

12.1.2 Approach light systems are a configuration of signal lights starting at the landing threshold and extending into the approach area a distance of 2400−3000 feet for precision instrument runways and 1400−1500 feet for nonprecision instrument runways. Some systems include sequenced flashing lights which appear to the pilot as a ball of light traveling towards the runway at high speed (twice each second).

12.2 Visual Glideslope Indicators

12.2.1 Visual Approach Slope Indicator (VASI)

12.2.1.1 The VASI is a system of lights so arranged to provide visual descent guidance information during the approach to a runway. These lights are visible from 3−5 miles during the day and up to 20 miles or more at night. The visual glide path of the VASI provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 4 NM from the runway threshold. Descent, using the VASI, should not be initiated until the aircraft is visually aligned with the runway. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the VASI may be offset from the extended runway centerline. This will be noted in the Chart Supplement U.S. and/or applicable Notices to Air Missions (NOTAM).

12.2.1.2 VASI installations may consist of either 2, 4, 6, 12, or 16 light units arranged in bars referred to as near, middle, and far bars. Most VASI installations consist of 2 bars, near and far, and may consist of 2, 4, or 12 light

units. Some airports have VASIs consisting of three bars, near, middle, and far, which provide an additional visual glide path to accommodate high cockpit aircraft. This installation may consist of either 6 or 16 light units. VASI installations consisting of 2, 4, or 6 lights units are located on one side of the runway, usually the left. Where the installation consists of 12 or 16 light units, the light units are located on both sides of the runway.

12.2.1.3 Two−bar VASI installations provide one visual glide path which is normally set at 3 degrees. Three−bar VASI installations provide two visual glide paths. The lower glide path is provided by the near and middle bars and is normally set at 3 degrees while the upper glide path, provided by the middle and far bars, in normally $^1/_4$ degree higher. This higher glide path is intended for use only by high cockpit aircraft to provide a sufficient threshold crossing height. Although normal glide path angles are three degrees, angles at some locations may be as high as 4.5 degrees to give proper obstacle clearance. Pilots of high performance aircraft are cautioned that use of VASI angles in excess of 3.5 degrees may cause an increase in runway length required for landing and rollout.

12.2.1.4 The basic principle of the VASI is that of color differentiation between red and white. Each light unit projects a beam of light having a white segment in the upper part of the beam and red segment in the lower part of the beam. The light units are arranged so that the pilot using the VASIs during an approach will see the combination of lights shown below.

12.2.1.5 For 2−BAR VASI (4 light units), see FIG AD 1.1−2.

12.2.1.6 For 3−BAR VASI (6 light units), see FIG AD 1.1−3.

12.2.1.7 For other VASI configurations, see FIG AD 1.1−4.

12.2.2 Precision Approach Path Indicator (PAPI). The precision approach path indicator (PAPI) uses light units similar to the VASI but are installed in a single row of either two or four light units. These lights are visible from about 5 miles during the day and up to 20 miles at night. The visual glide path of the PAPI typically provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 3.4 NM from the runway threshold. Descent, using the PAPI, should not be initiated until the aircraft is visually aligned with the runway. The row of light units is normally installed on the left side of the runway and the glide path indications are as depicted. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the PAPI may be offset from the extended runway centerline. This will be noted in the Chart Supplement U.S. and/or applicable NOTAMs. (See FIG AD 1.1−5.)

12.2.3 Tri−color Systems. Tri−color visual approach slope indicators normally consist of a single light unit, projecting a three−color visual approach path into the final approach area of the runway upon which the indicator is installed. The below glide path indication is red, the above glide path indication is amber, and the on glide path indication is green. These types of indicators have a useful range of approximately $^1/_2$ to 1 mile during the day and up to 5 miles at night depending upon the visibility conditions. (See FIG AD 1.1−6.)

12.2.4 Pulsating Systems. Pulsating visual approach slope indicators normally consist of a single light unit projecting a two−color visual approach path into the final approach area of the runway upon which the indicator is installed. The on glide path indication may be a steady white light or alternating RED and WHITE light. The slightly below glide path indication is a steady red light. If the aircraft descends further below the glide path, the red light starts to pulsate. The above glide path indication is a pulsating white light. The pulsating rate increases as the aircraft gets further above or below the desired glide slope. The useful range of the system is about four miles during the day and up to ten miles at night. (See FIG AD 1.1−7.)

12.2.5 Alignment of Elements Systems. Alignment of elements systems are installed on some small general aviation airports and are a low cost system consisting of painted plywood panels, normally black and white or fluorescent orange. Some of these systems are lighted for night use. The useful range of these systems is approximately $^3/_4$ mile. To use the system the pilot positions the aircraft so the elements are in alignment. The glide path indications are shown in FIG AD 1.1−8.

12.3 Runway End Identifier Lights (REIL)

12.3.1 REILs are installed at many airfields to provide rapid and positive identification of the approach end of a particular runway. The system consists of a pair of synchronized flashing lights, one of which is located laterally on each side of the runway threshold facing the approach area. They are effective for:

12.3.1.1 Identification of a runway surrounded by a preponderance of other lighting.

12.3.1.2 Identification of a runway which lacks contrast with surrounding terrain.

12.3.1.3 Identification of a runway during reduced visibility.

12.4 Runway Edge Light Systems

12.4.1 Runway edge lights are used to outline the edges of runways during periods of darkness or restricted visibility conditions. These light systems are classified according to the intensity or brightness they are capable of producing: they are the High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and the Low Intensity Runway Lights (LIRL). The HIRL and MIRL systems have variable intensity controls; whereas, the LIRLs normally have one intensity setting.

12.4.2 The runway edge lights are white; except on instrument runways, yellow replaces white on the last 2,000 feet or half the runway length, whichever is less, to form a caution zone for landings.

12.4.3 The lights marking the ends of the runway emit red light toward the runway to indicate the end of the runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft.

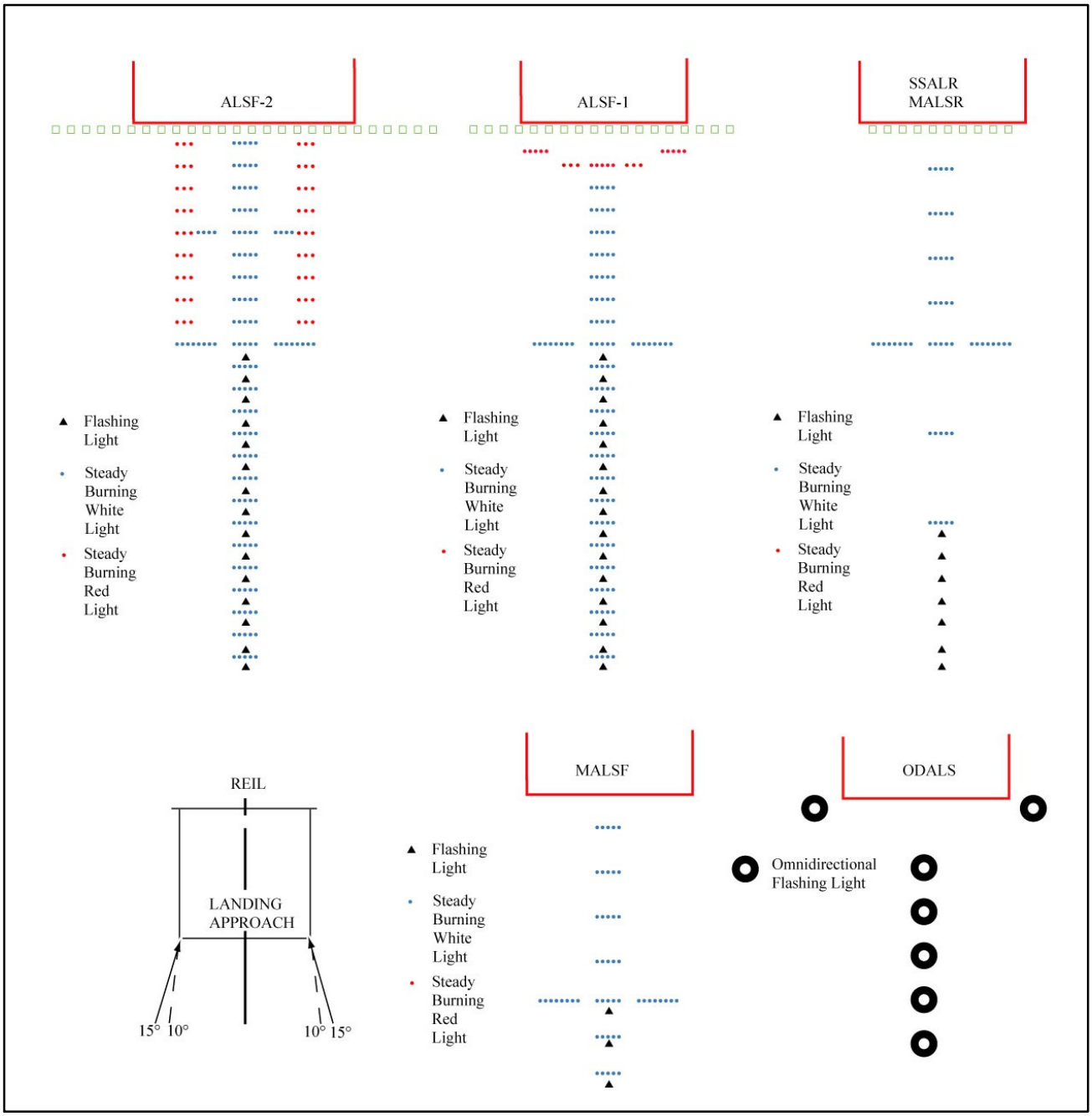
12.5 In−Runway Lighting

12.5.1 Runway Centerline Lighting System (RCLS). Runway centerline lights are installed on some precision approach runways to facilitate landing under adverse visibility conditions. They are located along the runway centerline and are spaced at 50−foot intervals. When viewed from the landing threshold, the runway centerline lights are white until the last 3,000 feet of the runway. The white lights begin to alternate with red for the next 2,000 feet, and for the last 1,000 feet of the runway, all centerline lights are red.

12.5.2 Touchdown Zone Lights (TDZL). Touchdown zone lights are installed on some precision approach runways to indicate the touchdown zone when landing under adverse visibility conditions. They consist of two rows of transverse light bars disposed symmetrically about the runway centerline. The system consists of steady−burning white lights which start 100 feet beyond the landing threshold and extend to 3,000 feet beyond the landing threshold or to the midpoint of the runway, whichever is less.

FIG AD 1.1–1

Precision & Nonprecision Configurations



NOTE–

Civil ALSF–2 may be operated as SSALR during favorable weather conditions.

FIG AD 1.1–2
2-Bar VASI

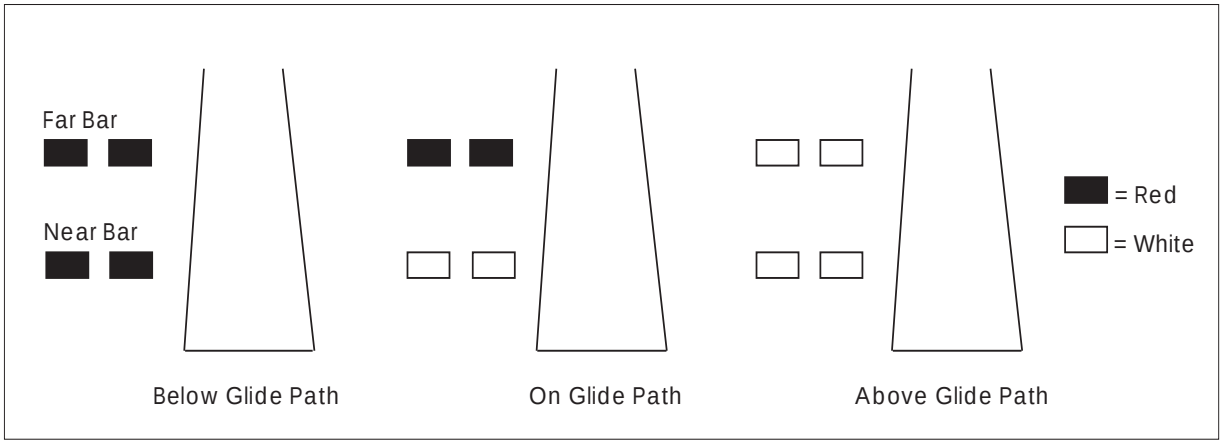


FIG AD 1.1–3
3-Bar VASI

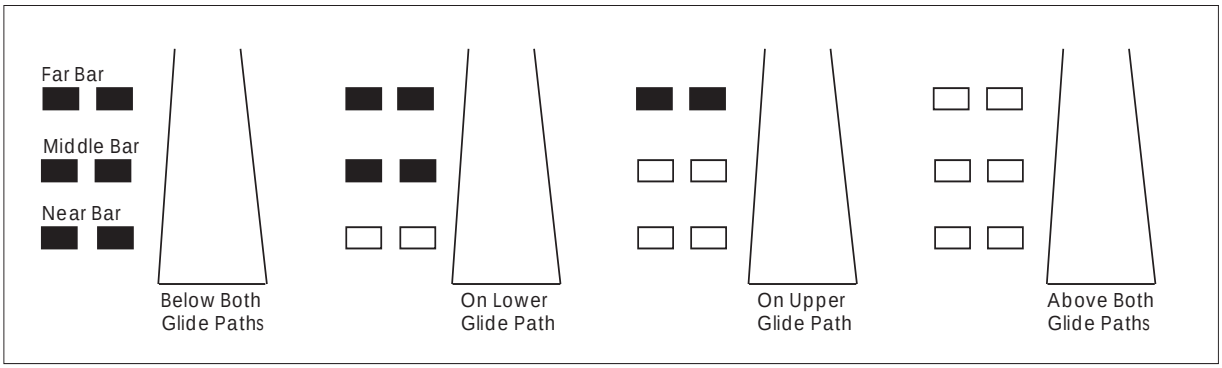


FIG AD 1.1–4
VASI Variations

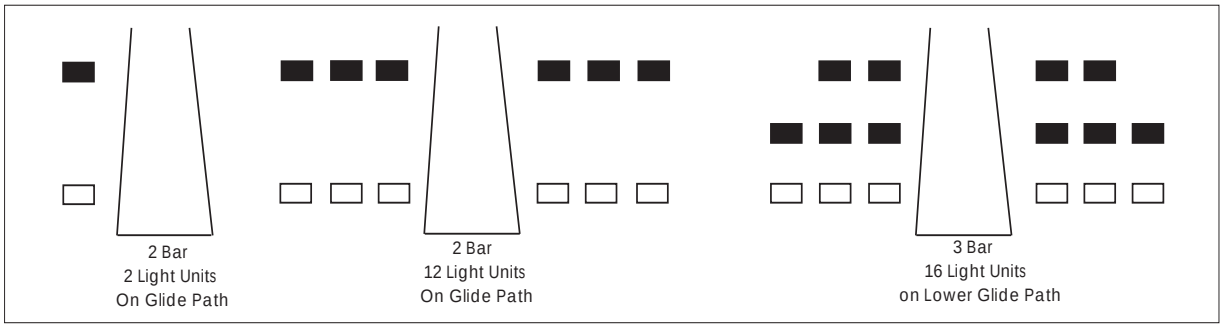


FIG AD 1.1–5

Precision Approach Path Indicator (PAPI)

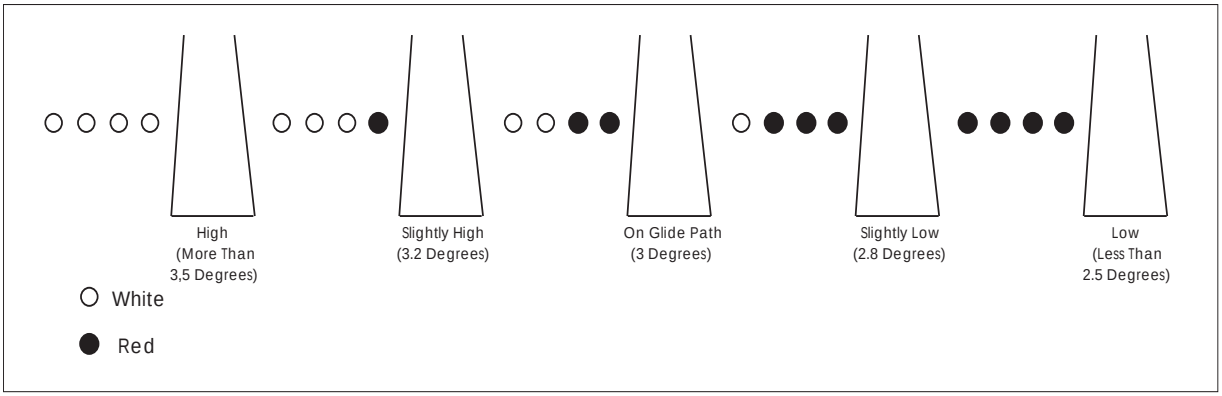
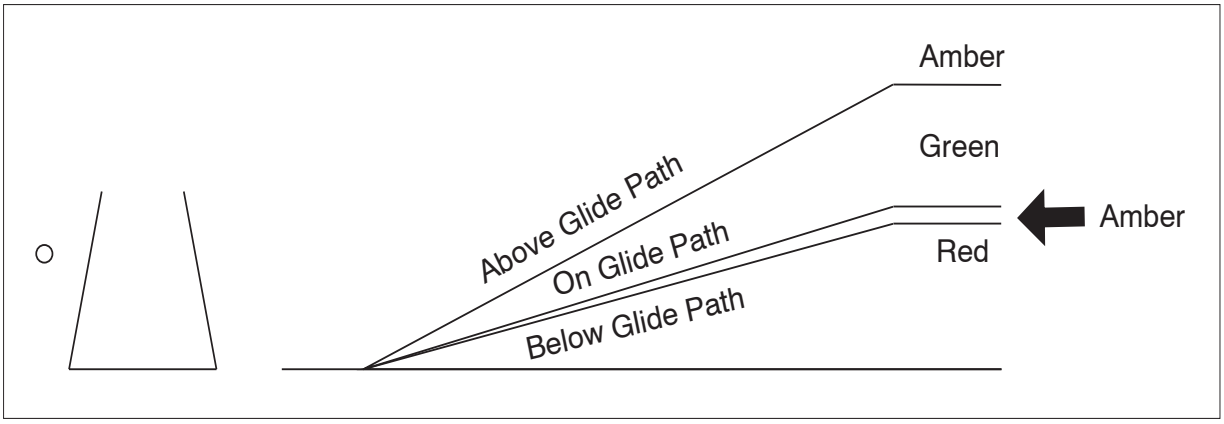


FIG AD 1.1–6

Tri-Color Visual Approach Slope Indicator

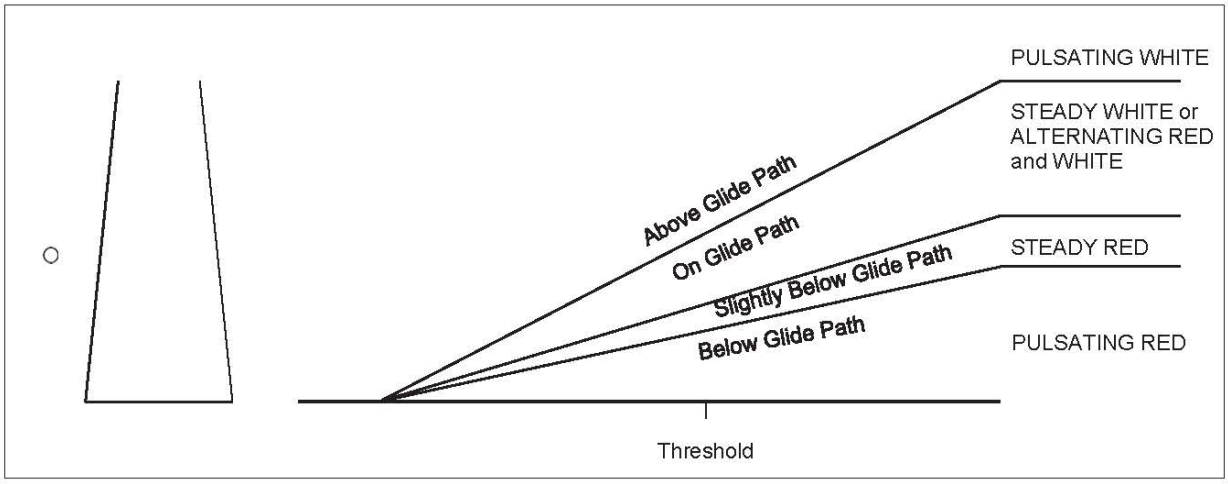


NOTE–

1. *Since the tri-color VASI consists of a single light source which could possibly be confused with other light sources, pilots should exercise care to properly locate and identify the light signal.*

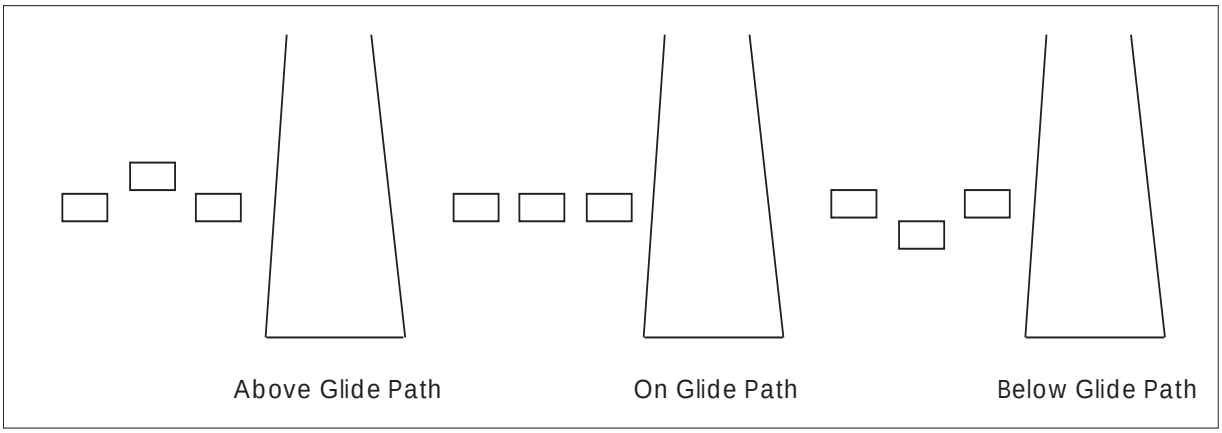
2. *When the aircraft descends from green to red, the pilot may see a dark amber color during the transition from green to red.*

FIG AD 1.1−7
Pulsating Visual Approach Slope Indicator



NOTE−
Since the PVASI consists of a single light source which could possibly be confused with other light sources, pilots should exercise care to properly locate and identify the light signal.

FIG AD 1.1−8
Alignment of Elements



12.5.3 Taxiway Centerline Lead−Off Lights. Taxiway centerline lead−off lights provide visual guidance to persons exiting the runway. They are color−coded to warn pilots and vehicle drivers that they are within the runway environment or instrument landing system (ILS) critical area, whichever is more restrictive. Alternate green and yellow lights are installed, beginning with green, from the runway centerline to one centerline light position beyond the runway holding position or ILS critical area holding position.

12.5.4 Taxiway Centerline Lead−On Lights. Taxiway centerline lead−on lights provide visual guidance to persons entering the runway. These “lead−on” lights are also color−coded with the same color pattern as lead−off lights to warn pilots and vehicle drivers that they are within the runway environment or instrument landing system (ILS) critical area, whichever is more conservative. The fixtures used for lead−on lights are bidirectional, i.e., one side emits light for the lead−on function while the other side emits light for the lead−off function. Any fixture that emits yellow light for the lead−off function must also emit yellow light for the lead−on function. (See FIG AD 1.1−12.)

12.5.5 Land and Hold Short Lights. Land and hold short lights are used to indicate the hold short point on certain runways which are approved for Land and Hold Short Operations (LAHSO). Land and hold short lights

consist of a row of pulsing white lights installed across the runway at the hold short point. Where installed, the lights will be on anytime LAHSO is in effect. These lights will be off when LAHSO is not in effect.

REFERENCE−
AIP, ENR 1.1, Para 22, Pilot Responsibilities When Conducting Land and Hold Short Operations (LAHSO).

12.6 Runway Status Light (RWSL) System

12.6.1 Introduction: RWSL is a fully automated system that provides runway status information to pilots and surface vehicle operators to clearly indicate when it is unsafe to enter, cross, or takeoff from a runway. The RWSL system processes information from surveillance systems and activates Runway Entrance Lights (REL) and Takeoff Hold Lights (THL) in accordance with the position and velocity of the detected surface traffic and approach traffic. REL and THL are in−pavement light fixtures that are directly visible to pilots and surface vehicle operators. RWSL is an independent safety enhancement that does not substitute for or convey an ATC clearance. Clearance to enter, cross, takeoff from, or operate on a runway must still be received from ATC. Although ATC has limited control over the system, personnel do not directly use and may not be able to view light fixture activations and deactivations during the conduct of daily ATC operations.

12.6.2 Runway Entrance Lights (REL): The REL system is composed of flush mounted, in-pavement, unidirectional light fixtures that are parallel to and focused along the taxiway centerline and directed toward the pilot at the hold line. An array of REL lights include the first light at the hold line followed by a series of evenly spaced lights to the runway edge; one additional light at the runway centerline is in line with the last two lights before the runway edge (see FIG AD 1.1−9 and FIG AD 1.1−10). When activated, the red lights indicate that there is high speed traffic on the runway or there is an aircraft on final approach within the activation area.

12.6.2.1 REL Operating Characteristics − Departing Aircraft: When a departing aircraft reaches a site adaptable speed of approximately 30 knots, all taxiway intersections with REL arrays along the runway ahead of the aircraft will illuminate (see FIG AD 1.1−9. As the aircraft approaches an REL equipped taxiway intersection, the lights at that intersection extinguish approximately 3 to 4 seconds before the aircraft reaches it. This allows controllers to apply “anticipated separation” to permit ATC to move traffic more expeditiously without compromising safety. After the aircraft is declared “airborne” by the system, all REL lights associated with this runway will extinguish.

12.6.2.2 REL Operating Characteristics − Arriving Aircraft: When an aircraft on final approach is approximately 1 mile from the runway threshold, all sets of taxiway REL light arrays that intersect the runway illuminate. The distance is adjustable and can be configured for specific operations at particular airports. Lights extinguish at each equipped taxiway intersection approximately 3 to 4 seconds before the aircraft reaches it to apply anticipated separation until the aircraft has slowed to approximately 80 knots (site adjustable parameter). Below 80 knots, all arrays that are not within 30 seconds of the aircraft’s forward path are extinguished. Once the arriving aircraft slows to approximately 34 knots (site adjustable parameter), it is declared to be in a taxi state, and all lights extinguish.

12.6.2.3 What a pilot would observe: A pilot at or approaching the hold line to a runway will observe RELs illuminate and extinguish in reaction to an aircraft or vehicle operating on the runway, or an arriving aircraft operating less than 1 mile from the runway threshold.

12.6.2.4 When a pilot observes the red lights of the REL, that pilot will stop at the hold line or remain stopped. The pilot will then contact ATC for resolution if the clearance is in conflict with the lights. Should pilots note illuminated lights under circumstances when remaining clear of the runway is impractical for safety reasons (for example, aircraft is already on the runway), the crew should proceed according to their best judgment while understanding the illuminated lights indicate the runway is unsafe to enter or cross. Contact ATC at the earliest possible opportunity.

12.6.3 Takeoff Hold Lights (THL) : The THL system is composed of flush mounted, in-pavement, unidirectional light fixtures in a double longitudinal row aligned either side of the runway centerline lighting. Fixtures are focused toward the arrival end of the runway at the “line up and wait” point. THLs extend for 1,500 feet in front of the holding aircraft starting at a point 375 feet from the departure threshold (see FIG AD 1.1−11).

Illuminated red lights provide a signal, to an aircraft in position for takeoff or rolling, that it is unsafe to takeoff because the runway is occupied or about to be occupied by another aircraft or ground vehicle. Two aircraft, or a surface vehicle and an aircraft, are required for the lights to illuminate. The departing aircraft must be in position for takeoff or beginning takeoff roll. Another aircraft or a surface vehicle must be on or about to cross the runway.

12.6.3.1 THL Operating Characteristics – Departing Aircraft:

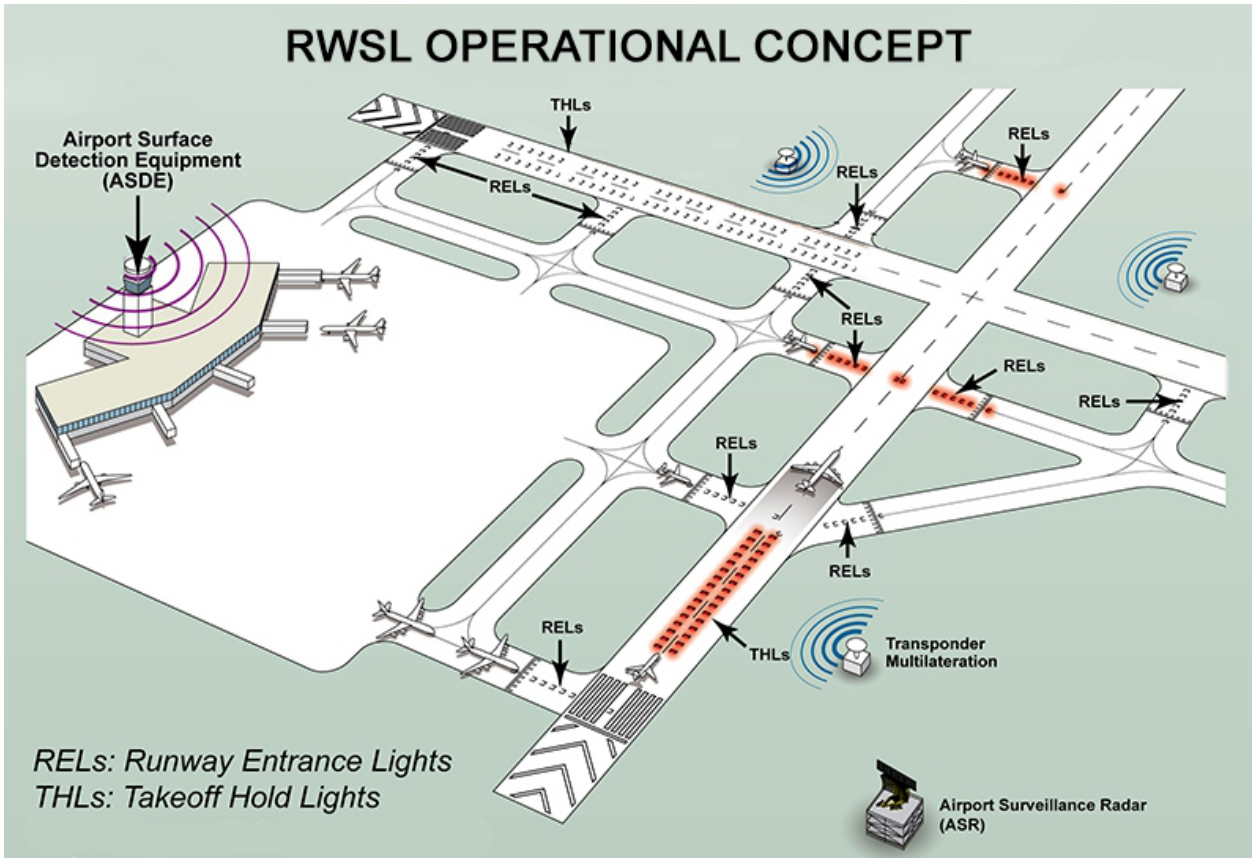
THLs will illuminate for an aircraft in position for departure or departing when there is another aircraft or vehicle on the runway or about to enter the runway (see FIG AD 1.1–9.) Once that aircraft or vehicle exits the runway, the THLs extinguish. A pilot may notice lights extinguish prior to the downfield aircraft or vehicle being completely clear of the runway but still moving. Like RELs, THLs have an “anticipated separation” feature.

NOTE–
When the THLs extinguish, this is not clearance to begin a takeoff roll. All takeoff clearances will be issued by ATC.

12.6.3.2 What a pilot would observe: A pilot in position to depart from a runway, or has begun takeoff roll, will observe THLs illuminate in reaction to an aircraft or vehicle on the runway or entering or crossing it. Lights will extinguish when the runway is clear. A pilot may observe several cycles of illumination and extinguishing depending on the amount of crossing traffic.

12.6.3.3 When a pilot observes the red light of the THLs, the pilot should safely stop if it’s feasible or remain stopped. The pilot must contact ATC for resolution if any clearance is in conflict with the lights. Should pilots note illuminated lights while in takeoff roll and under circumstances when stopping is impractical for safety reasons, the crew should proceed according to their best judgment while understanding the illuminated lights indicate that continuing the takeoff is unsafe. Contact ATC at the earliest possible opportunity.

FIG AD 1.1–9
Runway Status Light System



12.6.4 Pilot Actions

12.6.4.1 When operating at airports with RWSL, pilots will operate with the transponder/ADS−B "On" when departing the gate or parking area until it is shut down upon arrival at the gate or parking area. This ensures interaction with the FAA surveillance systems such as ASDE-X/Airport Surface Surveillance Capability (ASSC) which provide information to the RWSL system.

12.6.4.2 Pilots must always inform the ATCT when they have stopped due to an RWSL indication that is in conflict with ATC instructions. Pilots must request clarification of the taxi or takeoff clearance.

12.6.4.3 Never cross over illuminated red lights. Under normal circumstances, RWSL will confirm the pilot's taxi or takeoff clearance previously issued by ATC. If RWSL indicates that it is unsafe to takeoff from, land on, cross, or enter a runway, immediately notify ATC of the conflict and re-confirm the clearance.

12.6.4.4 Do not proceed when lights have extinguished without an ATC clearance. RWSL verifies an ATC clearance, it does not substitute for an ATC clearance.

12.6.5 ATC Control of RWSL System:

12.6.5.1 Controllers can set in−pavement lights to one of five (5) brightness levels to assure maximum conspicuity under all visibility and lighting conditions. REL and THL subsystems may be independently set.

12.6.5.2 System lights can be disabled should RWSL operations impact the efficient movement of air traffic or contribute, in the opinion of the ATC Manager, to unsafe operations. Whenever the system or a component is disabled, a NOTAM must be issued, and the Automatic Terminal Information System (ATIS) must be updated.

12.7 Control of Lighting Systems

12.7.1 Operation of approach light systems and runway lighting is controlled by the control tower (ATCT). At some locations the FSS may control the lights where there is no control tower in operation.

12.7.2 Pilots may request that lights be turned on or off. Runway edge lights, in−pavement lights and approach lights also have intensity controls which may be varied to meet the pilot's request. Sequenced flashing lights may be turned on and off. Some sequenced flashing system also have intensity control.

12.8 Pilot Control of Airport Lighting

12.8.1 Radio control of lighting is available at selected airports to provide airborne control of lights by keying the aircraft's microphone. Control of lighting system is often available at locations without specified hours for lighting or where there is no control tower or FSS, or when the control tower or FSS is closed (locations with a part−time tower or FSS). All lighting systems which are radio controlled at an airport, whether on a single runway or multiple runways, operate on the same radio frequency. (See TBL AD 1.1−2 and TBL AD 1.1−3.)

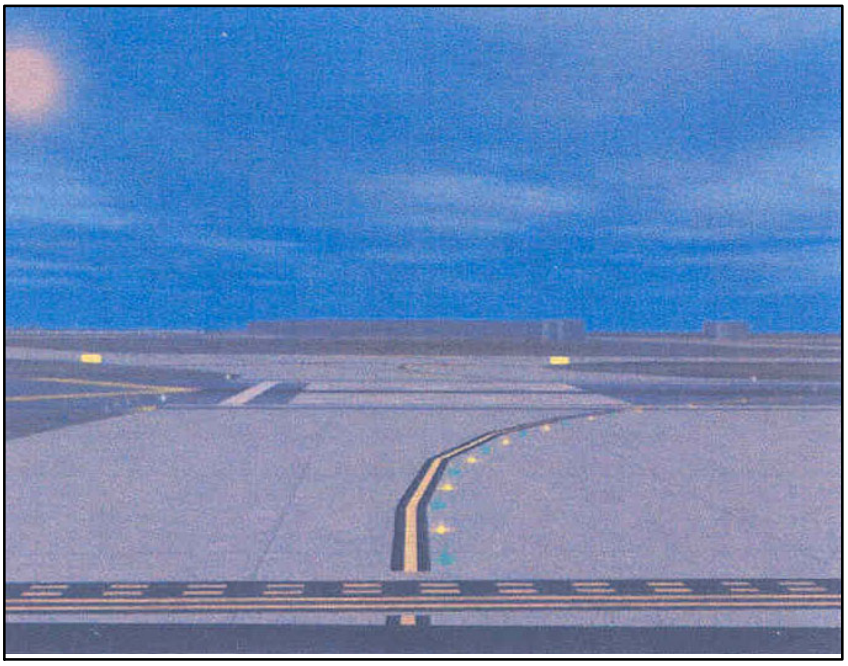
12.8.2 With FAA approved systems, various combinations of medium intensity approach lights, runway lights, taxiways lights, VASI and/or REIL may be activated by radio control. On runways with both approach lighting and runway lighting (runway edge lights, taxiway lights, etc.) systems, the approach lighting system takes precedence for air−to−ground radio control over the runway lighting system which is set at a predetermined intensity step, based on expected visibility conditions. Runways without approach lighting may provide radio controlled intensity adjustments of runway edge lights. Other lighting systems, including VASI, REIL, and taxiway lights, may be either controlled with the runway edge lights or controlled independently of the runway edge lights.

12.8.3 The control system consists of a 3−step control responsive to 7, 5, and/or 3 microphone clicks. This 3−step control will turn on lighting facilities capable of either 3−step, 2−step or 1−step operation. The 3−step and 2−step lighting facilities can be altered in intensity, while the 1−step cannot. All lighting is illuminated for a period of 15 minutes from the most recent time of activation and may not be extinguished prior to end of the 15−minute period (except for 1−step and 2−step REILs which may be turned off when desired by keying the mike 5 or 3 times, respectively).

FIG AD 1.1–10
Runway Entrance Lights

FIG AD 1.1–11
Takeoff Hold Lights

FIG AD 1.1–12
Taxiway Lead–On Light Configuration



TBL AD 1.1–2
Runways With Approach Lights

Lighting System	Number of Intensity Steps	Status During Nonuse Period	Intensity Step Selected Per Number of Mike Clicks		
			3 Clicks	5 Clicks	7 Clicks
Approach Lights (Med. Int.)	2	Off	Low	Low	High
Approach Lights (Med. Int.)	3	Off	Low	Med	High
MIRL	3	Off or Low	◆	◆	◆
HIRL	5	Off or Low	◆	◆	◆
VASI	2	Off	✯	✯	✯

NOTES: ◆Predetermined intensity step.
✯Low intensity for night use. High intensity for day use as determined by photocell control.

TBL AD 1.1–3
Runways Without Approach Lights

Lighting System	Number of Intensity Steps	Status During Nonuse Period	Intensity Step Selected Per Number of Mike Clicks		
			3 Clicks	5 Clicks	7 Clicks
MIRL	3	Off or Low	Low	Med.	High
HIRL	5	Off or Low	Step 1 or 2	Step 3	Step 5
LIRL	1	Off	On	On	On
VASI✯	2	Off	◆	◆	◆
REIL✯	1	Off	Off	On / Off	On
REIL✯	3	Off	Low	Med.	High
NOTES: ◆Low intensity for night use. High intensity for day use as determined by photocell control. ✯The control of VASI and/or REIL may be independent of other lighting systems.					

12.8.4 Suggested use is to always initially key the mike 7 times; this assures that all controlled lights are turned on to the maximum available intensity. If desired, adjustment can then be made, where the capability is provided, to a lower intensity (or the REIL turned off) by keying 5 and/or 3 times. Due to the close proximity of airports using the same frequency, radio controlled lighting receivers may be set at a low sensitivity requiring the aircraft to be relatively close to activate the system. Consequently, even when lights are on, always key mike as directed when overflying an airport of intended landing or just prior to entering the final segment of an approach. This will assure the aircraft is close enough to activate the system and a full 15 minutes lighting duration is available. Approved lighting systems may be activated by keying the mike (within 5 seconds) as indicated in TBL AD 1.1–4.

TBL AD 1.1–4
Radio Control System

Key Mike	Function
7 times within 5 seconds	Highest intensity available
5 times within 5 seconds	Medium or lower intensity (Lower REIL or REIL-off)
3 times within 5 seconds	Lowest intensity available (Lower REIL or REIL-off)

12.8.5 The Chart Supplement U.S. contains the types of lighting, runway, and the frequency that is used to activate the system for all public use airports with FAA standard systems. Airports with instrument approach procedures include data on the approach chart identifying the light system(s), the runway on which they are installed, and the frequency that is used to activate the system(s).

NOTE–
Although the CTAF is used to activate the lights at many airports, other frequencies may also be used. The appropriate frequency for activating the lights on the airport is provided in the Chart Supplement U.S. and the standard instrument approach procedures publications. It is not identified on the sectional charts.

12.8.6 Where the airport is not served by an instrument approach procedure, it may have either the standard FAA approach control system or an independent type system of different specification installed by the airport sponsor. The Chart Supplement U.S. contains descriptions of pilot–controlled lighting systems for each airport having other than FAA approved systems, and explains the type lights, method of control, and operating frequency in clear text.

13. Airport/Heliport Beacons

13.1 Airport and heliport beacons have a vertical light distribution to make them most effective from one to ten degrees above the horizon; however, they can be seen well above and below this peak spread. The beacon may be an omnidirectional capacitor-discharge device, or it may rotate at a constant speed which produces the visual effect of flashes at regular intervals. Flashes may be one or two colors alternately. The total number of flashes are:

13.1.1 24 to 30 per minute for beacons marking airports, landmarks, and points on Federal airways.

13.1.2 30 to 45 per minute for beacons marking heliports.

13.2 The colors and color combinations of beacons are:

13.2.1 White and Green−Lighted land airport.

13.2.2 *Green alone−Lighted land airport.

13.2.3 White and Yellow−Lighted water airport.

13.2.4 *Yellow alone−Lighted water airport.

13.2.5 Green, Yellow, and White−Lighted heliport.

NOTE−
**Green alone or yellow alone is used only in connection with a white-and-green or white-and-yellow beacon display, respectively.*

13.3 Military airport beacons flash alternately white and green, but are differentiated from civil beacons by dual−peaked (two quick) white flashes between the green flashes.

13.4 In Class B, C, D, and E surface areas, operation of the airport beacon during the hours of daylight indicates that the ground visibility is less than 3 miles and/or the ceiling is less than 1,000 feet. An ATC clearance in accordance with 14 CFR Part 91 is required for landing, takeoff and flight in the traffic pattern. Pilots should not rely solely on the operation of the airport beacon to indicate if weather conditions are IFR or VFR. At locations with control towers, when controls are in the tower, ATC personnel turn the beacon on. At many airports, the airport beacon is turned on by a photoelectric cell or time clocks and ATC personnel cannot control it. There is no regulatory requirement for daylight operation, and it is the pilot's responsibility to comply with proper pre−flight planning in accordance with 14 CFR Section 91.103.

14. Taxiway Lights

14.1 Taxiway Edge Lights. Taxiway edge lights are used to outline the edges of taxiways during periods of darkness or restricted visibility conditions. These fixtures emit blue light.

NOTE−
At most major airports these lights have variable intensity settings and may be adjusted at pilot request or when deemed necessary by the controller.

14.2 Taxiway Centerline Lights. Taxiway centerline lights are used to facilitate ground traffic under low visibility conditions. They are located along the taxiway centerline in a straight line on straight portions, on the centerline of curved portions, and along designated taxiing paths in portions of runways, ramps, and apron areas. Taxiway centerline lights are steady burning and emit green light.

14.3 Clearance Bar Lights. Clearance bar lights are installed at holding positions on taxiways in order to increase the conspicuity of the holding position in low visibility conditions. They may also be installed to indicate the location of an intersecting taxiway during periods of darkness. Clearance bars consist of three in−pavement, steady−burning yellow lights.

14.4 Runway Guard Lights. Runway guard lights are installed at taxiway/runway intersections. They are primarily used to enhance the conspicuity of taxiway/runway intersections during low visibility conditions, but

may be used in all weather conditions. Runway guard lights consist of either a pair of elevated flashing yellow lights installed on either side of the taxiway, or a row of in-pavement yellow lights installed across the entire taxiway, at the runway holding position marking.

NOTE−
Some airports may have a row of three or five in−pavement yellow lights installed at taxiway/runway intersections. They should not be confused with clearance bar lights described in paragraph 14.3 above.

14.5 Stop Bar Lights. Stop bar lights, when installed, are used to confirm the ATC clearance to enter or cross the active runway in low visibility conditions (below 1,200 feet Runway Visual Range). A stop bar consists of a row of red, unidirectional, steady−burning in-pavement lights installed across the entire taxiway at the runway holding position, and elevated steady−burning red lights on each side. A controlled stop bar is operated in conjunction with the taxiway centerline lead-on lights which extend from the stop bar toward the runway. Following the ATC clearance to proceed, the stop bar is turned off and the lead-on lights are turned on. The stop bar and lead-on lights are automatically reset by a sensor or backup timer.

CAUTION−
Pilots should never cross a red illuminated stop bar, even if an ATC clearance has been given to proceed onto or across the runway.

NOTE−
If after crossing a stop bar, the taxiway centerline lead−on lights inadvertently extinguish, pilots should hold their position and contact ATC for further instructions.

15. Air Navigation and Obstruction Lighting

15.1 Aeronautical Light Beacons

15.1.1 An aeronautical light beacon is a visual NAVAID displaying flashes of white and/or colored light to indicate the location of an airport, a heliport, a landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction. The light used may be a rotating beacon or one or more flashing lights. The flashing lights may be supplemented by steady burning lights of lesser intensity.

15.1.2 The color or color combination display by a particular beacon and/or its auxiliary lights tell whether the beacon is indicating a landing place, landmark, point of the Federal airways, or an obstruction. Coded flashes of the auxiliary lights, if employed, further identify the beacon site.

15.2 Code Beacons and Course Lights

15.2.1 Code Beacons. The code beacon, which can be seen from all directions, is used to identify airports and landmarks. The code beacon flashes the three− or four−character airport identifier in International Morse Code six to eight times per minute. Green flashes are displayed for land airports while yellow flashes indicate water airports.

15.2.2 Course Lights. The course light, which can be seen clearly from only one direction, is used only with rotating beacons of the Federal Airway System; two course lights, back to back, direct coded flashing beams of light in either direction along the course of airway.

NOTE−
Airway beacons are remnants of the "lighted" airways which antedated the present electronically equipped federal airways system. Only a few of those beacons exist today to mark airway segments in remote mountain areas. Flashes in Morse code identify the beacon site.

15.3 Obstruction Lights

15.3.1 Obstructions are marked/lighted to warn airmen of their presence during daytime and nighttime conditions. They may be marked/lighted in any of the following combinations:

15.3.1.1 Aviation Red Obstruction Lights. Flashing aviation red beacons (20 to 40 flashes per minute) and steady burning aviation red lights during nighttime operation. Aviation orange and white paint is used for daytime marking.

15.3.1.2 Medium Intensity Flashing White Obstruction Lights. Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 500 feet (153 m) AGL or less in height, other methods of marking and lighting the structure may be omitted. Aviation orange and white paint is always required for daytime marking on structures exceeding 500 feet (153 m) AGL. This system is not normally installed on structures less than 200 feet (61 m) AGL.

15.3.1.3 High Intensity White Obstruction Lights. Flashing high intensity white lights during daytime with reduced intensity for twilight and nighttime operation. When this type system is used, the marking of structures with red obstruction lights and aviation orange and white paint may be omitted.

15.3.1.4 Dual Lighting. A combination of flashing aviation red beacons and steady burning aviation red lights for nighttime operation and flashing high intensity white lights for daytime operation. Aviation orange and white paint may be omitted.

15.3.1.5 Catenary Lighting. Lighted markers are available for increased night conspicuity of high−voltage (69KV or higher) transmission line catenary wires. Lighted markers provide conspicuity both day and night.

15.3.2 Medium intensity omnidirectional flashing white lighting system provides conspicuity both day and night on catenary support structures. The unique sequential/simultaneous flashing light system alerts pilots of the associated catenary wires.

15.3.3 High intensity flashing white lights are being used to identify some supporting structures of overhead transmission lines located across rivers, chasms, gorges, etc. These lights flash in a middle, top, lower light sequence at approximately 60 flashes per minute. The top light is normally installed near the top of the supporting structure, while the lower light indicates the approximate lower portion of the wire span. The lights are beamed towards the companion structure and identify the area of the wire span.

15.3.4 High intensity flashing white lights are also employed to identify tall structures, such as chimneys and towers, and obstructions to air navigation. The lights provide a 360 degree coverage about the structure at 40 flashes per minute and consist of from one to seven levels of lights depending upon the height of the structure. Where more than one level is used, the vertical banks flash simultaneously.

15.4 LED Lighting Systems

15.4.1 Certain light−emitting diode (LED) lighting systems fall outside the combined visible and near−infrared spectrum of night vision goggles (NVGs) and thus will not be visible to a flightcrew using NVGs.

15.4.2 The FAA changed specifications for LED−based red obstruction lights to make them visible to pilots using certain NVG systems, however, other colors may not be visible.

15.4.3 It is recommended that air carriers/operators—including Part 91 operators—who utilize NVGs incorporate procedures into manuals and/or standard operating procedures (SOPs) requiring periodic, unaided scanning when operating at low altitudes and when performing a reconnaissance of landing areas.

16. Runway Lead−in Light System (RLLS)

16.1 The lead−in lighting system consists of a series of flashing lights installed at or near ground level to describe the desired course to a runway or final approach. Each group of lights is positioned and aimed so as to be conveniently sighted and followed from the approaching aircraft under conditions at or above approach minimums under consideration. The system may be curved, straight, or combination thereof, as required. The lead−in lighting system may be terminated at any approved approach lighting system, or it may be terminated at a distance from the landing threshold which is compatible with authorized visibility minimums permitting visual reference to the runway environment.

16.2 The outer portion uses groups of lights to mark segments of the approach path beginning at a point within easy visual range of a final approach fix. These groups are spaced close enough together (approximately one mile) to give continuous lead−in guidance. A group consists of at least three flashing lights in a linear or cluster

configuration and may be augmented by steady burning lights where required. When practicable, groups flash in sequence toward runways. Each system is designed to suit local conditions and to provide the visual guidance intended. The design of all RLLS is compatible with the requirements of U.S. Standards for Terminal Instrument Procedures (TERPS) where such procedures are applied for establishing instrument minimums.

17. Airport Marking Aids and Signs

17.1 General

17.1.1 Airport pavement markings and signs provide information that is useful to a pilot during takeoff, landing, and taxiing.

17.1.2 Uniformity in airport markings and signs from one airport to another enhances safety and improves efficiency. Pilots are encouraged to work with the operators of the airports they use to achieve the marking and sign standards described in this section.

17.1.3 Pilots who encounter ineffective, incorrect, or confusing markings or signs on an airport should make the operator of the airport aware of the problem. These situations may also be reported under the Aviation Safety Reporting Program as described in ENR 1.16. Pilots may also report these situations to the FAA regional airports division.

17.1.4 The markings and signs described in this section reflect the current FAA recommended standards.

REFERENCE–
AC 150/5340–1, Standards for Airport Markings.
AC 150/5340–18, Standards for Airport Sign Systems.

17.2 Airport Pavement Markings

17.2.1 General. For the purpose of this section, the airport pavement markings have been grouped into the four areas:

17.2.1.1 Runway Markings.

17.2.1.2 Taxiway Markings.

17.2.1.3 Holding Position Markings.

17.2.1.4 Other Markings.

17.2.2 Marking Colors. Markings for runways are white. Markings defining the landing area on a heliport are also white except for hospital heliports which use a red “H” on a white cross. Markings for taxiways, areas not intended for use by aircraft (closed and hazardous areas), and holding positions (even if they are on a runway) are yellow.

17.3 Runway Markings

17.3.1 General. There are three types of markings for runways: visual, nonprecision instrument, and precision instrument. TBL AD 1.1–5 identifies the marking elements for each type of runway, and TBL AD 1.1–6 identifies runway threshold markings.

17.3.2 Runway Designators. Runway numbers and letters are determined from the approach direction. The runway number is the whole number nearest one–tenth the magnetic azimuth of the centerline of the runway, measured clockwise from the magnetic north. The letters differentiate between left (L), right (R), or center (C) parallel runways, as applicable:

17.3.2.1 For two parallel runways “L” “R.”

17.3.2.2 For three parallel runways “L” “C” “R.”

17.3.3 Runway Centerline Marking. The runway centerline identifies the center of the runway and provides alignment guidance during takeoff and landing. The centerline consists of a line of uniformly spaced stripes and gaps.

17.3.4 Runway Aiming Point Marking. The aiming point marking serves as a visual aiming point for a landing aircraft. These two rectangular markings consist of a broad white stripe located on each side of the runway centerline and approximately 1,000 feet from the landing threshold, as shown in FIG AD 1.1−13, Precision Instrument Runway Markings.

17.3.5 Runway Touchdown Zone Markers. The touchdown zone markings identify the touchdown zone for landing operations and are coded to provide distance information in 500 feet (150 m) increments. These markings consist of groups of one, two, and three rectangular bars symmetrically arranged in pairs about the runway centerline as shown in FIG AD 1.1−13. For runways having touchdown zone markings on both ends, those pairs of markings which extend to within 900 feet (270 m) of the midpoint between the thresholds are eliminated.

TBL AD 1.1−5
Runway Marking Elements

Marking Element	Visual Runway	Nonprecision Instrument Runway	Precision Instrument Runway
Designation	X	X	X
Centerline	X	X	X
Threshold	X[1]	X	X
Aiming Point	X[2]	X	X
Touchdown Zone			X
Side Stripes			X

[1]On runways used, or intended to be used, by international commercial transports.

[2]On runways 4,000 feet (1200 m) or longer used by jet aircraft.

TBL AD 1.1−6
Number of Runway Threshold Stripes

Runway Width	Number of Stripes
60 feet (18 m)	4
75 feet (23 m)	6
100 feet (30 m)	8
150 feet (45 m)	12
200 feet (60 m)	16

17.3.6 Runway Side Stripe Marking. Runway side stripes delineate the edges of the runway. They provide a visual contrast between the runway and the abutting terrain or shoulders. Side stripes consist of continuous white stripes located on each side of the runway. (See FIG AD 1.1−17.)

17.3.7 Runway Shoulder Markings. Runway shoulder stripes may be used to supplement runway side stripes to identify pavement areas contiguous to the runway sides that are not intended for use by aircraft. Runway shoulder stripes are yellow. (See FIG AD 1.1−15.)

17.3.8 Runway Threshold Markings. Runway threshold markings come in two configurations. They consist of either eight longitudinal stripes of uniform dimensions disposed symmetrically about the runway centerline (as shown in FIG AD 1.1−13) or the number of stripes is related to the runway width as indicated in TBL AD 1.1−6. A threshold marking helps identify the beginning of the runway that is available for landing. In some instances, the landing threshold may be relocated or displaced.

17.3.8.1 Relocation of a Threshold. Sometimes construction, maintenance, or other activities require the threshold to be relocated towards the rollout end of the runway. (See FIG AD 1.1−16.) When a threshold is relocated, it closes not only a set portion of the approach end of a runway, but also shortens the length of the opposite direction runway. In these cases, a NOTAM should be issued by the airport operator identifying the

portion of the runway that is closed (for example, 10/28 W 900 CLSD). Because the duration of the relocation can vary from a few hours to several months, methods identifying the new threshold may vary. One common practice is to use a ten−foot wide white threshold bar across the width of the runway. Although the runway lights in the area between the old threshold and new threshold will not be illuminated, the runway markings in this area may or may not be obliterated, removed, or covered.

17.3.8.2 Displaced Threshold. A displaced threshold is a threshold located at a point on the runway other than the designated beginning of the runway. Displacement of a threshold reduces the length of runway available for landings. The portion of runway behind a displaced threshold is available for takeoffs in either direction and landings from the opposite direction. A ten−foot wide white threshold bar is located across the width of the runway at the displaced threshold. White arrows are located along the centerline in the area between the beginning of the runway and displaced threshold. White arrowheads are located across the width of the runway just prior to the threshold bar, as shown in FIG AD 1.1−17.

NOTE−
Airport operator. When reporting the relocation or displacement of a threshold, the airport operator should avoid language which confuses the two.

17.3.9 Demarcation Bar. A demarcation bar delineates a runway with a displaced threshold from a blast pad, stopway, or taxiway that precedes the runway. A demarcation bar is 3 feet (1 m) wide and yellow, since it is not located on the runway. (See FIG AD 1.1−18.)

17.3.10 Chevrons. These markings are used to show pavement areas aligned with the runway that are unusable for landing, takeoff, and taxiing. Chevrons are yellow. (See FIG AD 1.1−19).

17.3.11 Runway Threshold Bar. A threshold bar delineates the beginning of the runway that is available for landing when the threshold has been relocated or displaced. A threshold bar is 10 feet (3 m) in width and extends across the width of the runway, as shown in FIG AD 1.1−17.

18. Taxiway Markings

18.1 General. All taxiways should have centerline markings and runway holding position markings whenever they intersect a runway. Taxiway edge markings are present whenever there is a need to separate the taxiway from a pavement that is not intended for aircraft use or to delineate the edge of the taxiway. Taxiways may also have shoulder markings and holding position markings for Instrument Landing System (ILS) critical areas and taxiway/taxiway intersection markings.

REFERENCE−
AD 1.1, Paragraph 19. Holding Position Markings.

18.2 Taxiway Centerline.

18.2.1 Normal Centerline. The taxiway centerline is a single continuous yellow line, 6 inches (15 cm) to 12 inches (30 cm) in width. This provides a visual cue to permit taxiing along a designated path. Ideally, the aircraft should be kept centered over this line during taxi. However, being centered on the taxiway centerline does not guarantee wingtip clearance with other aircraft or other objects.

18.2.2 Enhanced Centerline. At some airports, mostly the larger commercial service airports, an enhanced taxiway centerline will be used. The enhanced taxiway centerline marking consists of a parallel line of yellow dashes on either side of the normal taxiway centerline. The taxiway centerlines are enhanced for a maximum of 150 feet prior to a runway holding position marking. The purpose of this enhancement is to warn the pilot that he/she is approaching a runway holding position marking and should prepare to stop unless he/she has been cleared onto or across the runway by ATC. (See FIG AD 1.1−20.)

18.3 Taxiway Edge Markings. Taxiway edge markings are used to define the edge of the taxiway. They are primarily used when the taxiway edge does not correspond with the edge of the pavement. There are two types of markings depending upon whether the aircraft is supposed to cross the taxiway edge:

18.3.1 Continuous Markings. These consist of a continuous double yellow line, with each line being at least 6 inches (15 cm) in width spaced 6 inches (15 cm) apart. They are used to define the taxiway edge from the shoulder or some other abutting paved surface not intended for use by aircraft.

18.3.2 Dashed Markings. These markings are used when there is an operational need to define the edge of a taxiway or taxilane on a paved surface where the adjoining pavement to the taxiway edge is intended for use by aircraft (for example, an apron). Dashed taxiway edge markings consist of a broken double yellow line, with each line being at least 6 inches (15 cm) in width, spaced 6 inches (15 cm) apart (edge to edge). These lines are 15 feet (4.5 m) in length with 25−foot (7.5 m) gaps. (See FIG AD 1.1−21.)

18.4 Taxi Shoulder Markings. Taxiways, holding bays, and aprons are sometimes provided with paved shoulders to prevent blast and water erosion. Although shoulders may have the appearance of full strength pavement, they are not intended for use by aircraft and may be unable to support an aircraft. Usually the taxiway edge marking will define this area. Where conditions exist such as islands or taxiway curves that may cause confusion as to which side of the edge stripe is for use by aircraft, taxiway shoulder markings may be used to indicate the pavement is unusable. Taxiway shoulder markings are yellow. (See FIG AD 1.1−22.)

18.5 Surface Painted Taxiway Direction Signs. Surface painted taxiway direction signs have a yellow background with a black inscription. These signs are provided when it is not possible to provide taxiway direction signs at intersections or when it is necessary to supplement such signs. These markings are located adjacent to the centerline with signs indicating turns to the left being on the left side of the taxiway centerline, and signs indicating turns to the right being on the right side of the centerline. (See FIG AD 1.1−23.)

18.6 Surface Painted Location Signs. Surface painted location signs have a black background with a yellow inscription. When necessary, these markings are used to supplement location signs located along side the taxiway and assist the pilot in confirming the designation of the taxiway on which the aircraft is located. These markings are located on the right side of the centerline. (See FIG AD 1.1−23.)

18.7 Geographic Position Markings. These markings are located at points along low visibility taxi routes designated in the airport's Surface Movement Guidance Control System (SMGCS) plan. They are used to identify the location of taxiing aircraft during low visibility operations. Low visibility operations are those that occur when the runway visible range (RVR) is below 1,200 feet (360 m). They are positioned to the left of the taxiway centerline in the direction of taxiing. (See FIG AD 1.1−24.) The geographic position marking is a circle comprised of an outer black ring contiguous to a white ring with a pink circle in the middle. When installed on asphalt or other dark−colored pavements, the white ring and the black ring are reversed (i.e., the white ring becomes the outer ring and the black ring becomes the inner ring). It is designated with either a number or a number and letter. The number corresponds to the consecutive position of the marking on the route.

19. Holding Position Markings

19.1 Runway Holding Position Markings. For runways, these markings indicate where aircraft MUST STOP when approaching a runway. They consist of four yellow lines, two solid and two dashed, spaced six or twelve inches apart, and extending across the width of the taxiway or runway. The solid lines are always on the side where the aircraft must hold. There are three locations where runway holding position markings are encountered.

19.1.1 Runway Holding Position Markings on Taxiways. These markings identify the locations on a taxiway where aircraft MUST STOP when a clearance has not been issued to proceed onto the runway. Generally, runway holding position markings also identify the boundary of the runway safety area (RSA) for aircraft exiting the runway. Runway holding position markings are shown in FIG AD 1.1−25 and FIG AD 1.1−28. When instructed by ATC, "*Hold short of Runway XX*," the pilot MUST STOP so that no part of the aircraft extends beyond the runway holding position marking. When approaching runways at airports with an operating control tower, pilots must not cross the runway holding position marking without ATC clearance. Pilots approaching runways at airports without an operating control tower must ensure adequate separation from other aircraft, vehicles, and pedestrians prior to crossing the holding position markings. An aircraft exiting a runway is not clear of the runway until all parts of the aircraft have crossed the applicable holding position marking.

NOTE−
Runway holding position markings identify the beginning of an RSA, and a pilot MUST STOP to get clearance before crossing (at airports with operating control towers).

REFERENCE−
ENR 1.1, Paragraph 23, Exiting the Runway After Landing.

19.1.2 Runway Holding Position Markings on Runways. These markings identify the locations on runways where aircraft MUST STOP. These markings are located on runways used by ATC for Land And Hold Short Operations (for example, see FIG ENR 1.1−8) and Taxiing operations. For taxiing operations, the pilot MUST STOP prior to the holding position markings unless explicitly authorized to cross by ATC. A sign with a white inscription on a red background is located adjacent to these holding position markings. (See FIG AD 1.1−26.) The holding position markings are placed on runways prior to the intersection with another runway, or some designated point. Pilots receiving and accepting instructions "*Cleared to land Runway XX, hold short of Runway YY*" from ATC must either exit Runway XX prior to the holding position markings, or stop at the holding position markings prior to Runway YY. Otherwise, pilots are authorized to use the entire landing length of the runway and disregard the holding position markings.

19.1.3 Holding Position Markings on Taxiways Located in Runway Approach Areas. These markings are used at some airports where it is necessary to hold an aircraft on a taxiway located in the approach or departure area of a runway so that the aircraft does not interfere with the operations on that runway. This marking is collocated with the runway approach/departure area holding position sign. When specifically instructed by ATC, "*Hold short of Runway XX approach or Runway XX departure area,*" the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. (See Paragraph 21.2.2, Runway Approach Area Holding Position Sign, and FIG AD 1.1−27, Taxiways Located in Runway Approach Area.)

19.2 Holding Position Markings for Instrument Landing System (ILS). Holding position markings for ILS critical areas consist of two yellow solid lines spaced two feet apart connected by pairs of solid lines spaced ten feet apart extending across the width of the taxiway as shown in FIG AD 1.1−28. A sign with an inscription in white on a red background is located adjacent to these hold position markings. When instructed by ATC to hold short of the ILS critical area, pilots MUST STOP so that no part of the aircraft extends beyond the holding position marking. When approaching the holding position marking, pilots must not cross the marking without ATC clearance. The ILS critical area is not clear until all parts of the aircraft have crossed the applicable holding position marking.

REFERENCE−
ENR 4.1, Paragraph 6, Instrument Landing System (ILS).

19.3 Holding Position Markings for Intersecting Taxiways Holding position markings for intersecting taxiways consist of a single dashed line extending across the width of the taxiway as shown in FIG AD 1.1−29. They are located on taxiways where ATC holds aircraft short of a taxiway intersection. When instructed by ATC, "*Hold short of Taxiway XX,*" the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. When the marking is not present, the pilot MUST STOP the aircraft at a point which provides adequate clearance from an aircraft on the intersecting taxiway.

19.4 Surface Painted Holding Position Signs. Surface painted holding position signs have a red background with a white inscription and supplement the signs located at the holding position. This type of marking is normally used where the width of the holding position on the taxiway is greater than 200 feet (60 m). It is located to the left side of the taxiway centerline on the holding side and prior to the holding position marking. (See FIG AD 1.1−23.)

20. Other Markings

20.1 Vehicle Roadway Markings. The vehicle roadway markings are used when necessary to define a pathway for vehicle operations on or crossing areas that are also intended for aircraft. These markings consist of a white solid line to delineate each edge of the roadway and a dashed line to separate lanes within the edges of the roadway. In lieu of the solid lines, zipper markings may be used to delineate the edges of the vehicle roadway. (See FIG AD 1.1−30.) Details of the zipper markings are shown in FIG AD 1.1−31.

20.2 VOR Receiver Checkpoint Markings. The VOR receiver checkpoint marking allows the pilot to check aircraft instruments with navigational aid signals. It consists of a painted circle with an arrow in the middle; the

arrow is aligned in the direction of the checkpoint azimuth. This marking, and an associated sign, is located on the airport apron or taxiway at a point selected for easy access by aircraft but where other airport traffic is not to be unduly obstructed. (See FIG AD 1.1−32.)

NOTE−
The associated sign contains the VOR station identification letter and course selected (published) for the check, the words "VOR check course," and DME data (when applicable). The color of the letters and numerals are black on a yellow background.

EXAMPLE−
VOR SIGN
DCA 176−356
VOR check course
DME XXX

20.3 Nonmovement Area Boundary Markings.

These markings delineate the movement area; i.e., area under ATC. These markings are yellow and located on the boundary between the movement and nonmovement area. The nonmovement area boundary markings consist of two yellow lines (one solid and one dashed) 6 inches (15 cm) in width. The solid line is located on the nonmovement area side, while the dashed yellow line is located on the movement area side. The nonmovement boundary marking area is shown in FIG AD 1.1−33.

20.4 Marking and Lighting of Permanently Closed Runways and Taxiways. For runways and taxiways which are permanently closed, the lighting circuits will be disconnected. The runway threshold, runway designation, and touchdown markings are obliterated and yellow crosses are placed at each end of the runway and at 1,000 foot intervals. (See FIG AD 1.1−34.)

20.5 Temporarily Closed Runways and Taxiways. To provide a visual indication to pilots that a runway is temporarily closed, crosses are placed on the runway only at each end of the runway. The crosses are yellow in color. (See FIG AD 1.1−34.)

20.5.1 A raised lighted yellow cross may be placed on each runway end in lieu of the markings described in paragraph 20.5 to indicate the runway is closed.

20.5.2 A visual indication may not be present depending on the reason for the closure, duration of the closure, airfield configuration, and the existence and the hours of operation of an airport traffic control tower. Pilots should check NOTAMs and the Automated Terminal Information System (ATIS) for local runway and taxiway closure information.

20.5.3 Temporarily closed taxiways are usually treated as hazardous areas, in which no part of an aircraft may enter, and are blocked with barricades. However, as an alternative, a yellow cross may be installed at each entrance to the taxiway.

20.6 Helicopter Landing Areas. The markings illustrated in FIG AD 1.1−35 are used to identify the landing and takeoff area at a public use heliport and hospital heliport. The letter "H" in the markings is oriented to align with the intended direction of approach. FIG AD 1.1−35 also depicts the markings for a closed airport.

20.7 Airport Signs. There are six types of signs installed on airfields: mandatory instruction signs, location signs, direction signs, destination signs, information signs, and runway distance remaining signs. The characteristics and use of these signs are discussed below.

REFERENCE−
Advisory Circular−150/5340−18, Standards for Airport Sign Systems.

21. Mandatory Instruction Signs

21.1 These signs have a red background with a white inscription and are used to denote:

21.1.1 An entrance to a runway or critical area.

21.1.2 Areas where an aircraft is prohibited from entering.

21.2 Typical mandatory signs and applications are:

21.2.1 Runway Holding Position Sign. This sign is located at the holding position on taxiways that intersect a runway or on runways that intersect other runways. The inscription on the sign contains the designation of the intersecting runway, as shown in FIG AD 1.1–36. The runway numbers on the sign are arranged to correspond to the respective runway threshold. For example, "15–33" indicates that the threshold for Runway 15 is to the left and the threshold for Runway 33 is to the right.

21.2.1.1 On taxiways that intersect the beginning of the takeoff runway, only the designation of the takeoff runway may appear on the sign (as shown in FIG AD 1.1–37) while all other signs will have the designation of both runway directions.

21.2.1.2 If the sign is located on a taxiway that intersects the intersection of two runways, the designations for both runways will be shown on the sign along with arrows showing the approximate alignment of each runway, as shown in FIG AD 1.1–38. In addition to showing the approximate runway alignment, the arrow indicates the direction to the threshold of the runway whose designation is immediately next to the arrow.

21.2.2 Runway Approach Area Holding Position Sign. At some airports, it is necessary to hold an aircraft on a taxiway located in the approach or departure area for a runway so that the aircraft does not interfere with operations on that runway. In these situations, a sign with the designation of the approach end of the runway followed by a "dash" (–) and letters "APCH" will be located at the holding position on the taxiway. Holding position markings in accordance with Paragraph 19. Holding Position Markings, will be located on the taxiway pavement. An example of this sign is shown in FIG AD 1.1–39. In this example, the sign may protect the approach to Runway 15 and/or the departure for Runway 33.

21.2.3 ILS Critical Area Holding Position Sign. At some airports, when the instrument landing system is being used, it is necessary to hold an aircraft on a taxiway at a location other than the holding position described in Paragraph 19. Holding Position Markings. In these situations, the holding position sign for these operations will have the inscription "ILS" and be located adjacent to the holding position marking on the taxiway described in paragraph 19. An example of this sign is shown in FIG AD 1.1–40.

21.2.4 No Entry Sign. This sign, shown in FIG AD 1.1–41, prohibits an aircraft from entering an area. Typically, this sign would be located on a taxiway intended to be used in only one direction or at the intersection of vehicle roadways with runways, taxiways or aprons where the roadway may be mistaken as a taxiway or other aircraft movement surface.

NOTE–
Holding position signs provide the pilot with a visual cue as to the location of the holding position marking.

REFERENCE–
AD 1.1, Paragraph 19. Holding Position Markings.

22. Location Signs

Location signs are used to identify either a taxiway or runway on which the aircraft is located. Other location signs provide a visual cue to pilots to assist them in determining when they have exited an area. The various location signs are described below.

22.1 Taxiway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1–42. The inscription is the designation of the taxiway on which the aircraft is located. These signs are installed along taxiways either by themselves or in conjunction with direction signs or runway holding position signs. (See FIG AD 1.1–43 and FIG AD 1.1–47.)

22.2 Runway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1–44. The inscription is the designation of the runway on which the aircraft is located. These signs are intended to complement the information available to pilots through their magnetic compass and typically are installed where the proximity of two or more runways to one another could cause pilots to be confused as to which runway they are on.

22.3 Runway Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the pavement holding position marking, as shown in FIG AD 1.1–45. This sign, which faces the runway and is visible to the pilot exiting the runway, is located adjacent to the holding position marking on the pavement. The sign is intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the runway."

22.4 ILS Critical Area Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the ILS pavement holding position marking, as shown in FIG AD 1.1–46. This sign is located adjacent to the ILS holding position marking on the pavement and can be seen by pilots leaving the critical area. The sign is intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the ILS critical area."

23. Direction Signs

23.1 Direction signs have a yellow background with a black inscription. The inscription identifies the designation(s) of the intersecting taxiway(s) leading out of intersection that a pilot would normally be expected to turn onto or hold short of. Each designation is accompanied by an arrow indicating the direction of the turn.

23.2 Except as noted in subparagraph 23.5, each taxiway designation shown on the sign is accompanied by only one arrow. When more than one taxiway designation is shown on the sign, each designation and its associated arrow is separated from the other taxiway designations by either a vertical message divider or a taxiway location sign as shown in FIG AD 1.1–47.

23.3 Direction signs are normally located on the left prior to the intersection. When used on a runway to indicate an exit, the sign is located on the same side of the runway as the exit. FIG AD 1.1–48 shows a direction sign used to indicate a runway exit.

23.4 The taxiway designations and their associated arrows on the sign are arranged clockwise starting from the first taxiway on the pilot's left. (See FIG AD 1.1–47.)

23.5 If a location sign is located with the direction signs, it is placed so that the designations for all turns to the left will be to the left of the location sign; the designations for continuing straight ahead or for all turns to the right would be located to the right of the location sign. (See FIG AD 1.1–47.)

23.6 When the intersection is comprised of only one crossing taxiway, it is permissible to have two arrows associated with the crossing taxiway, as shown in FIG AD 1.1–49. In this case, the location sign is located to the left of the direction sign.

24. Destination Signs

24.1 Destination signs also have a yellow background with a black inscription indicating a destination on the airport. These signs always have an arrow showing the direction of the taxiing route to that destination. FIG AD 1.1–50 is an example of a typical destination sign. When the arrow on the destination sign indicates a turn, the sign is located prior to the intersection.

24.2 Destinations commonly shown on these types of signs include runways, aprons, terminals, military areas, civil aviation areas, cargo areas, international areas, and fixed base operators. An abbreviation may be used as the inscription on the sign for some of these destinations.

24.3 When the inscription for two or more destinations having a common taxiing route are placed on a sign, the destinations are separated by a "dot" (●) and one arrow would be used, as shown in FIG AD 1.1–51. When the inscription on a sign contains two or more destinations having different taxiing routes, each destination will be accompanied by an arrow and will be separated from the other destinations on the sign with a vertical black message divider as shown in FIG AD 1.1–52.

25. Information Signs

25.1 Information signs have a yellow background with a black inscription. They are used to provide the pilot with information on such things as areas that cannot be seen from the control tower, applicable radio frequencies, and noise abatement procedures. The airport operator determines the need, size, and location for these signs.

26. Runway Distance Remaining Signs

26.1 Runway distance remaining signs have a black background with a white numeral inscription and may be installed along one or both side(s) of the runway. The number on the signs indicates the distance (in thousands of feet) of landing runway remaining. The last sign (i.e., the sign with the numeral "1") will be located at least 950 feet from the runway end. FIG AD 1.1−53 shows an example of a runway distance remaining sign.

27. Aircraft Arresting Systems

27.1 Certain airports are equipped with a means of rapidly stopping military aircraft on a runway. This equipment, normally referred to as EMERGENCY ARRESTING GEAR, generally consists of pendant cables supported over the runway surface by rubber "donuts." Although most devices are located in the overrun areas, a few of these arresting systems have cables stretched over the operational areas near the ends of a runway.

27.2 Arresting cables which cross over a runway require special markings on the runway to identify the cable location. These markings consist of 10 feet diameter solid circles painted "identification yellow," 30 feet on center, perpendicular to the runway centerline across the entire runway width. Additional details are contained in AC 150/5220−9, Aircraft Arresting Systems for Joint Civil/Military Airports.

NOTE−
Aircraft operations on the runway are not restricted by the installation of aircraft arresting devices.

27.3 Engineered Materials Arresting Systems (EMAS). EMAS, which is constructed of high energy−absorbing materials of selected strength, is located in the safety area beyond the end of the runway. EMAS will be marked with yellow chevrons. EMAS is designed to crush under the weight of commercial aircraft and will exert deceleration forces on the landing gear. These systems do not affect the normal landing and takeoff of airplanes. More information concerning EMAS is in FAA Advisory Circular AC 150/5220−22, Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns. (See FIG AD 1.1−54.)

NOTE−
EMAS may be located as close as 35 feet beyond the end of the runway. Aircraft and ground vehicles should never taxi or drive across the EMAS or beyond the end of the runway if EMAS is present.

28. Security Identification Display Area (SIDA)

28.1 Security Identification Display Areas (SIDA) are limited access areas that require a badge issued in accordance with procedures in 49 CFR Part 1542. A SIDA can include the Air Operations Area (AOA), e.g., aircraft movement area or parking area, or a Secured Area, such as where commercial passengers enplane. The AOA may not be a SIDA, but a Secured Area is always a SIDA. Movement through or into a SIDA is prohibited without authorization and proper identification being displayed. If you are unsure of the location of a SIDA, contact the airport authority for additional information. Airports that have a SIDA will have a description and map detailing boundaries and pertinent features available. (See FIG AD 1.1−55.)

28.2 Pilots or passengers without proper identification that are observed entering a SIDA may be reported to the Transportation Security Administration (TSA) or airport security and may be subject to civil and criminal fines and prosecution. Pilots are advised to brief passengers accordingly. Report suspicious activity to the TSA by calling AOPA's Airport Watch Program, 866−427−3287. 49 CFR 1540 requires each individual who holds an airman certificate, medical certificate, authorization, or license issued by the FAA to present it for inspection upon a request from TSA.

FIG AD 1.1–13
Precision Instrument Runway Markings

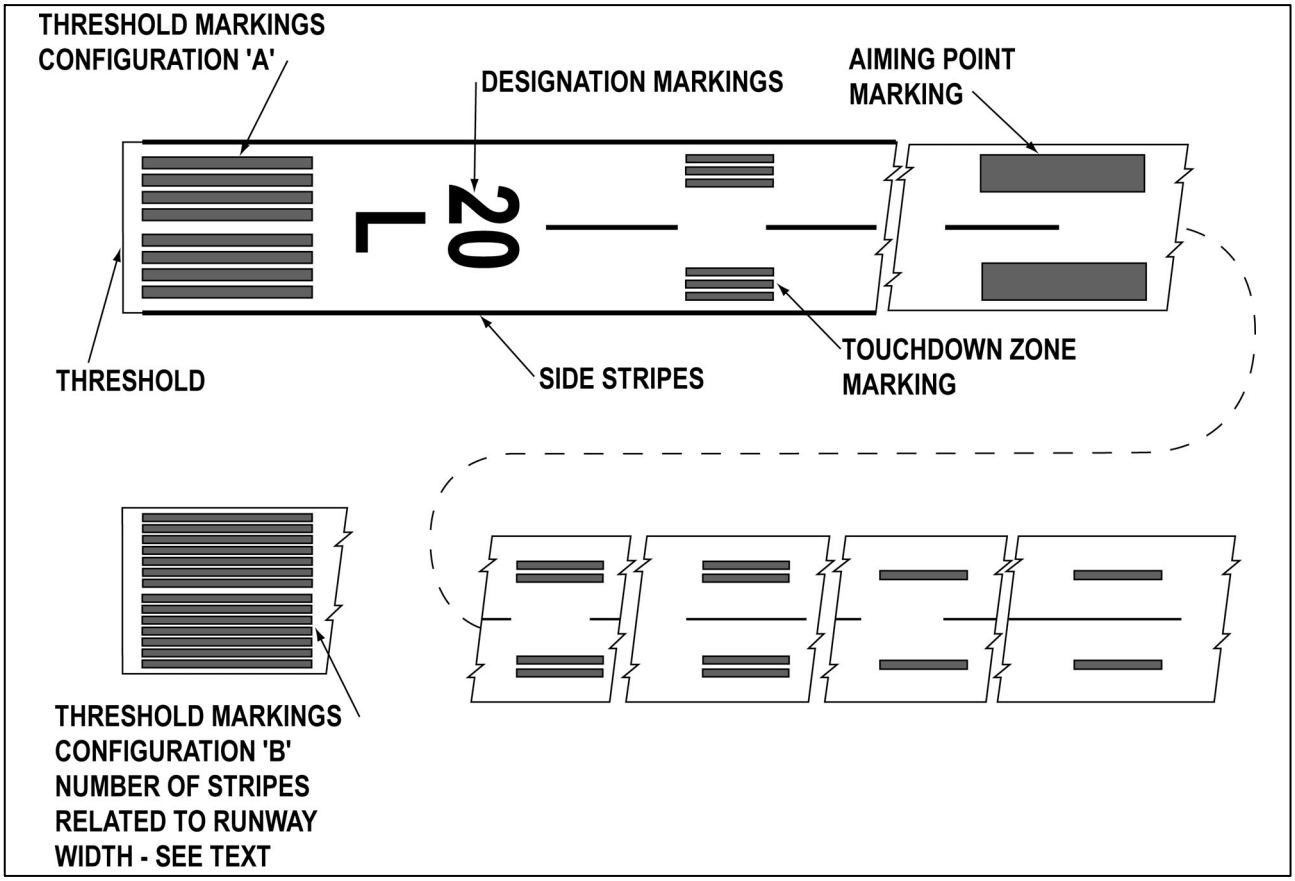


FIG AD 1.1–14
Nonprecision Instrument Runway and Visual Runway Markings

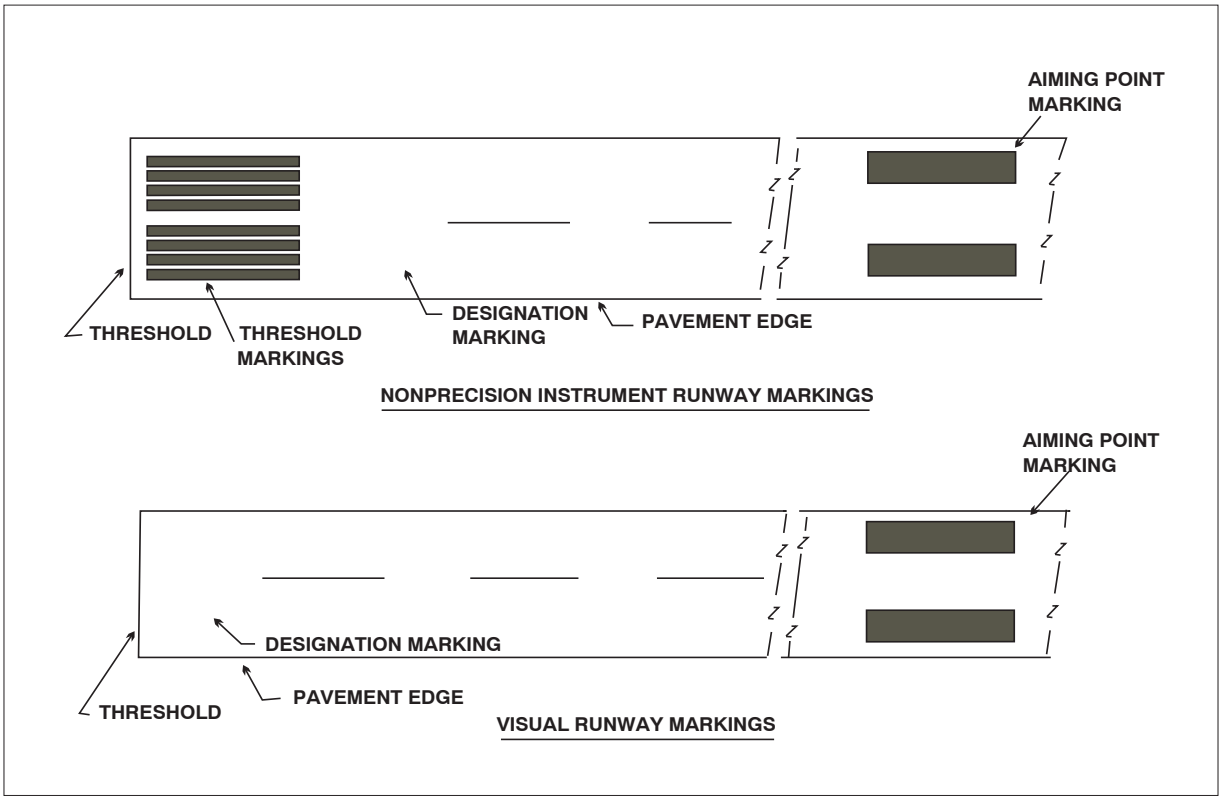


FIG AD 1.1–15
Runway Shoulder Markings

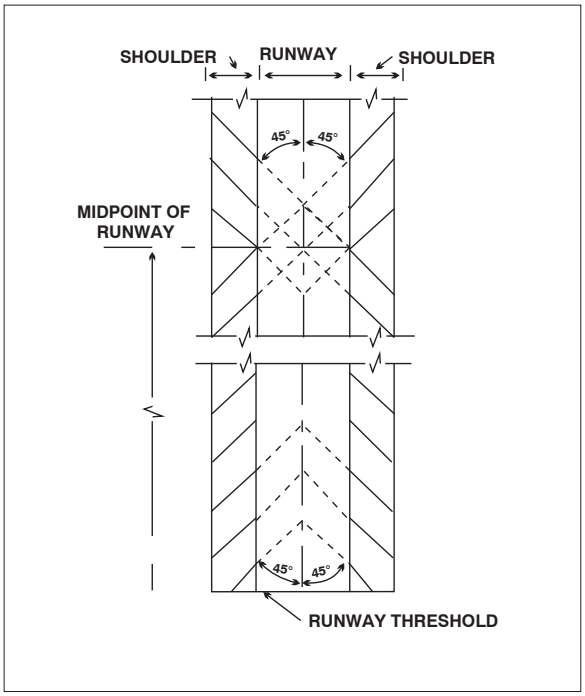


FIG AD 1.1–16

Relocation of a Threshold with Markings for Taxiway Aligned with Runway

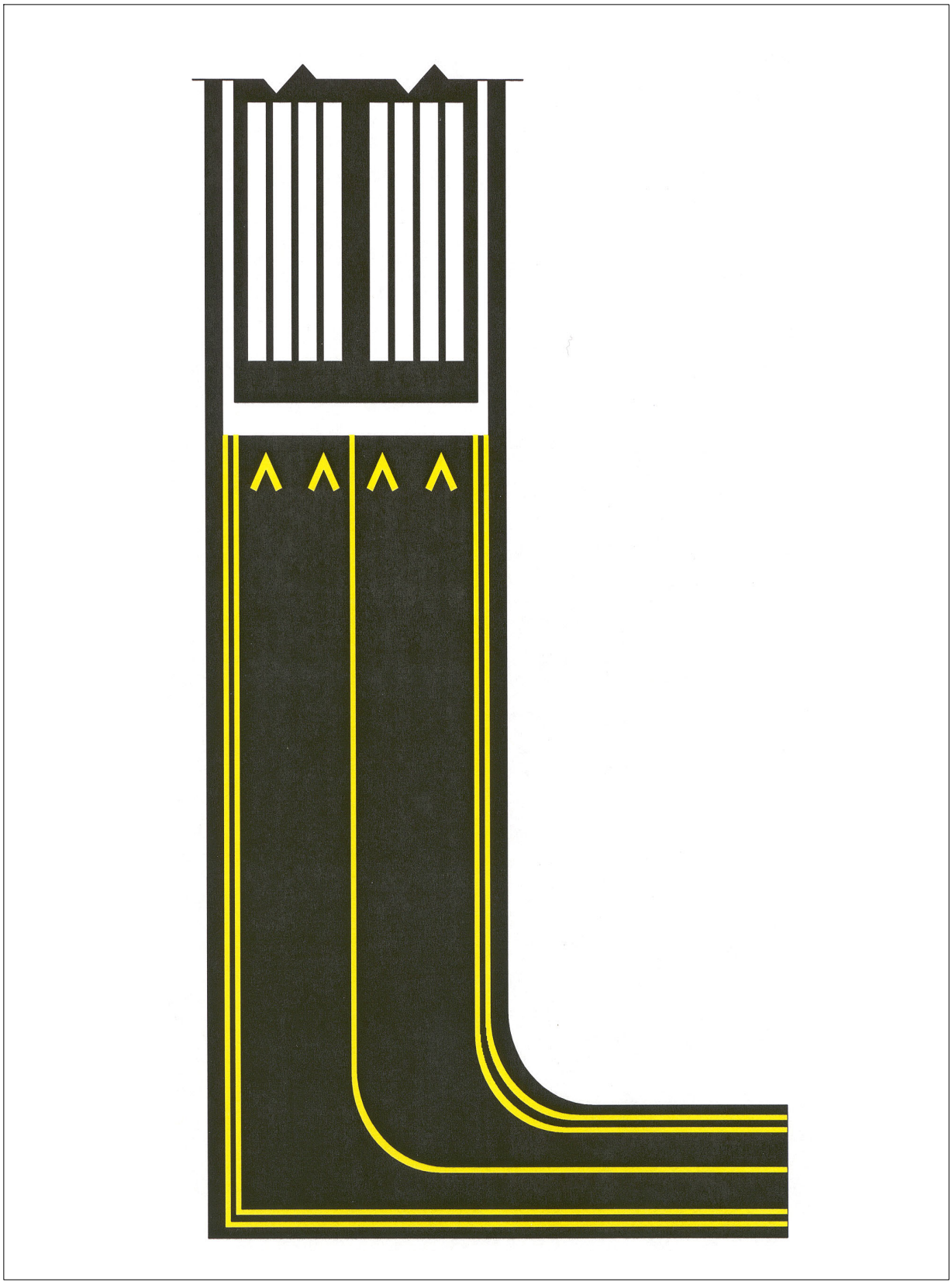


FIG AD 1.1–17
Displaced Threshold Markings

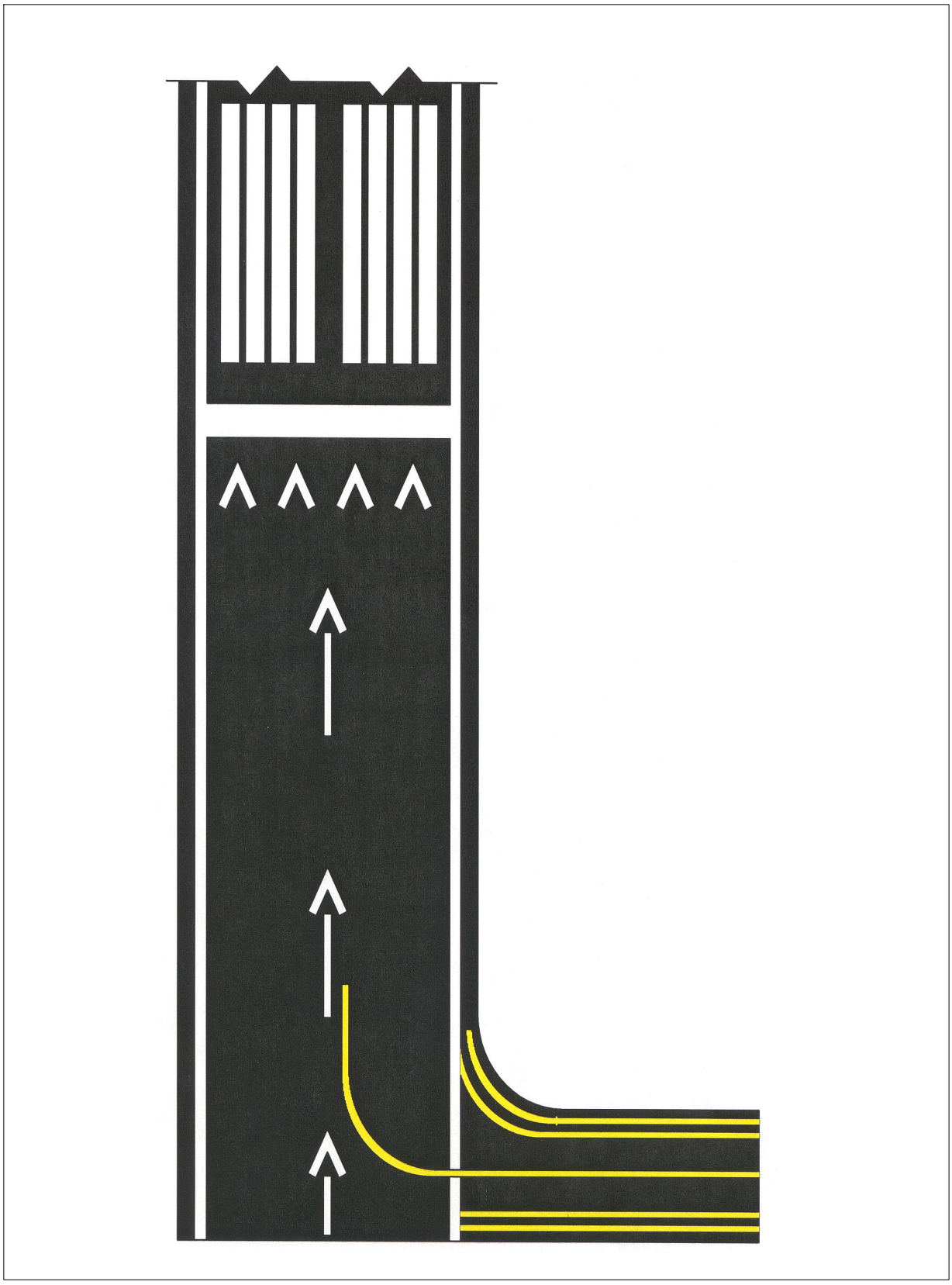


FIG AD 1.1–18

Markings for Blast Pad or Stopway or Taxiway Preceding a Displaced Threshold

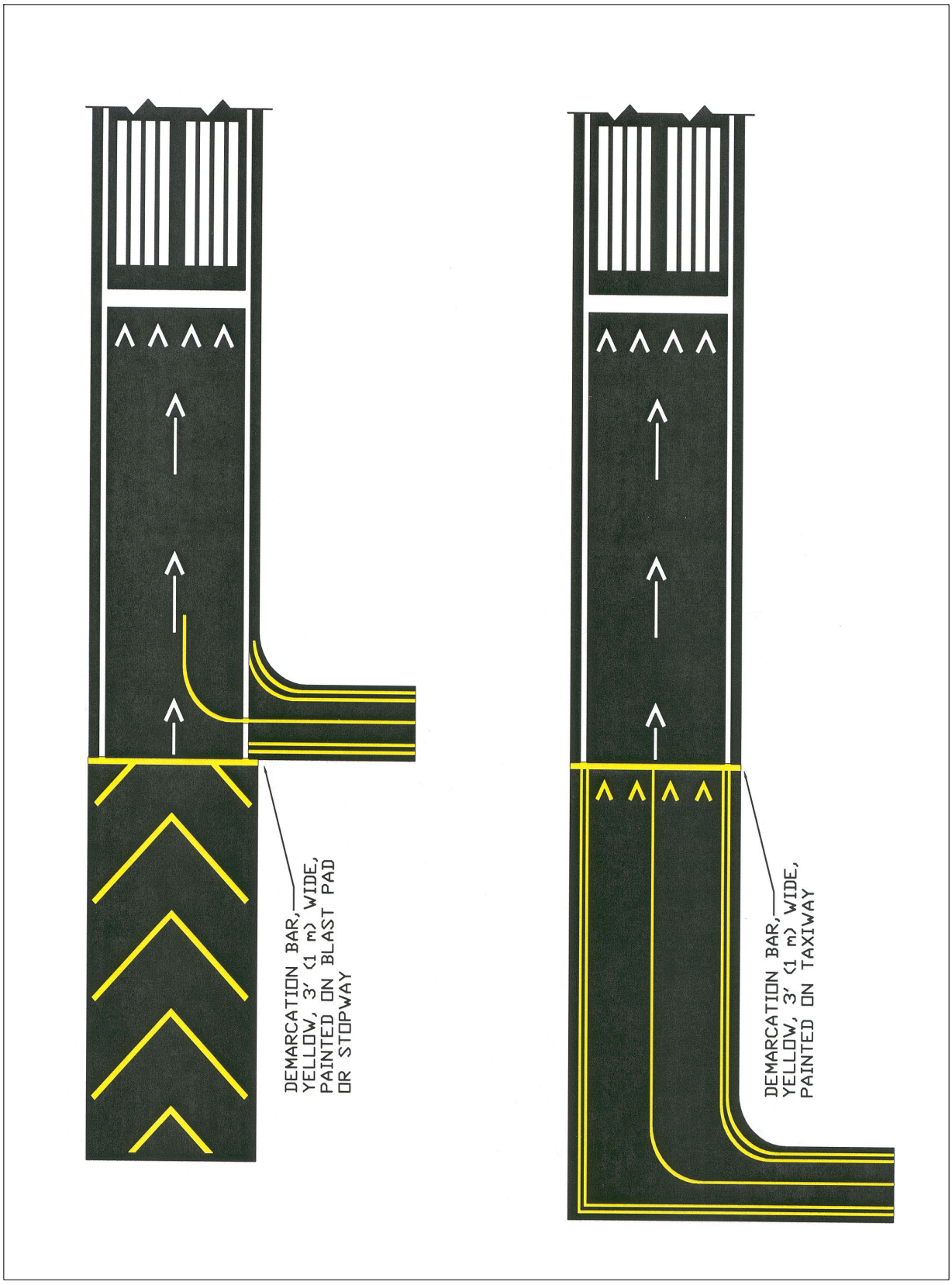


FIG AD 1.1–19

Markings for Blast Pads and Stopways

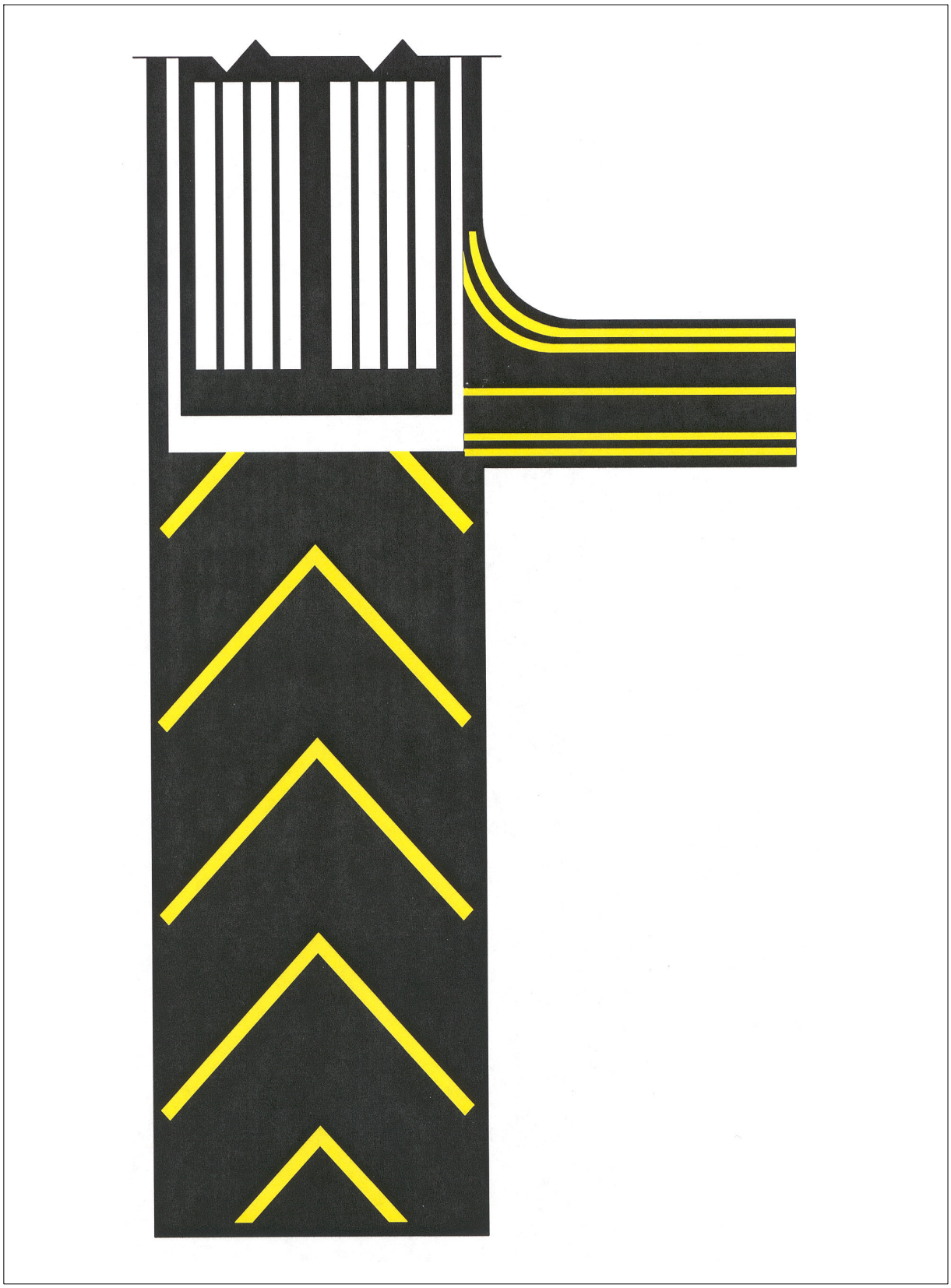


FIG AD 1.1–20
Enhanced Taxiway Centerline

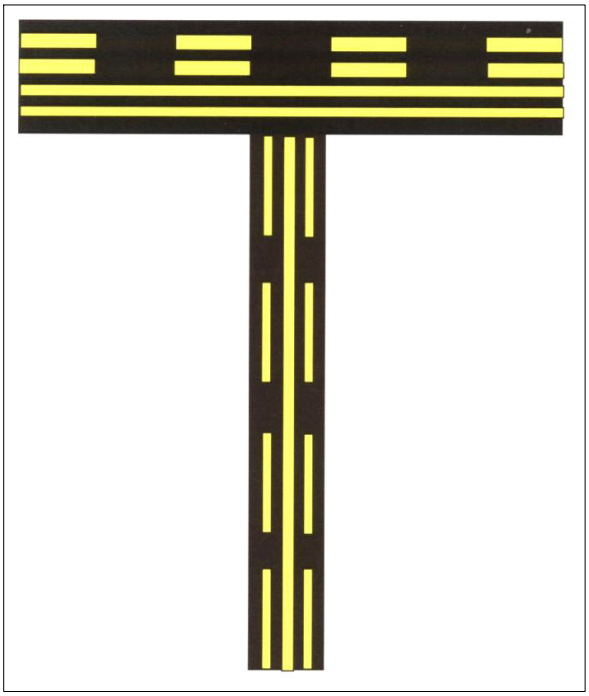


FIG AD 1.1–21
Dashed Markings

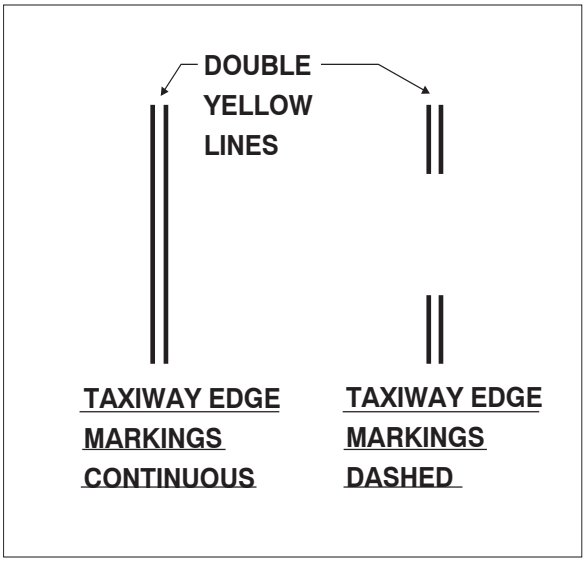


FIG AD 1.1–22
Taxi Shoulder Markings

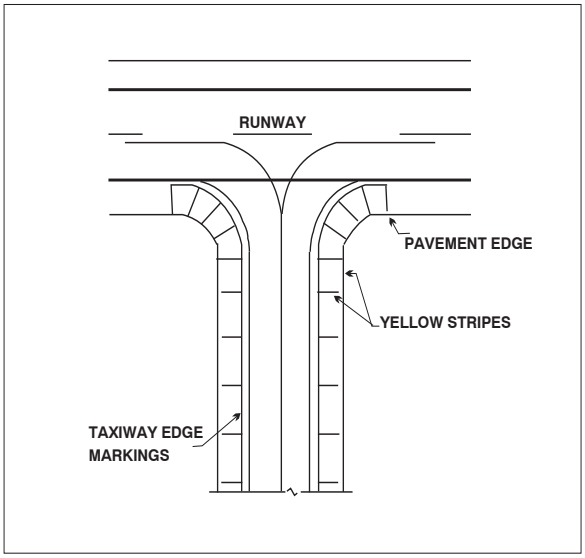


FIG AD 1.1–23
Surface Painted Signs

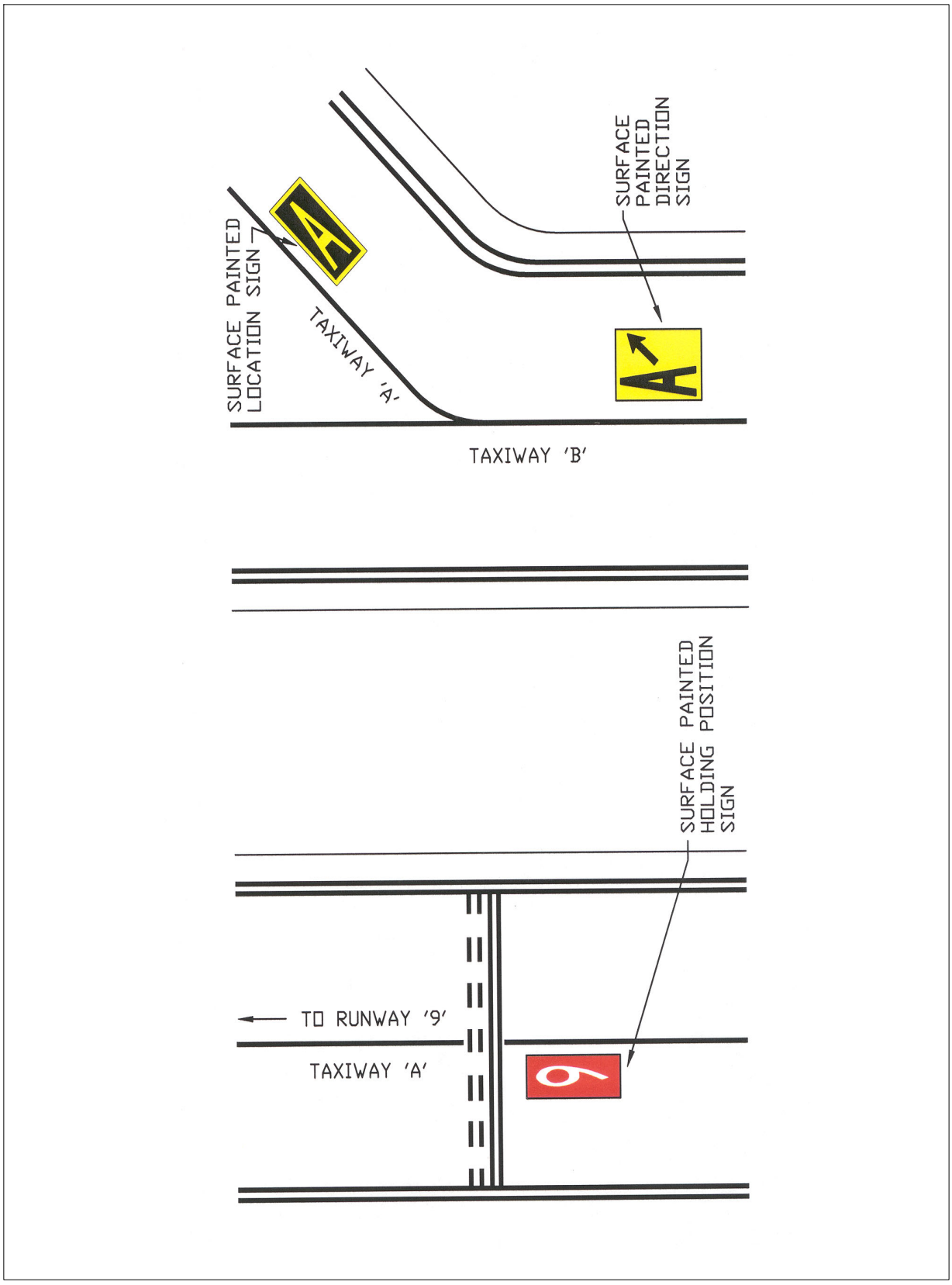


FIG AD 1.1–24
Geographic Position Markings

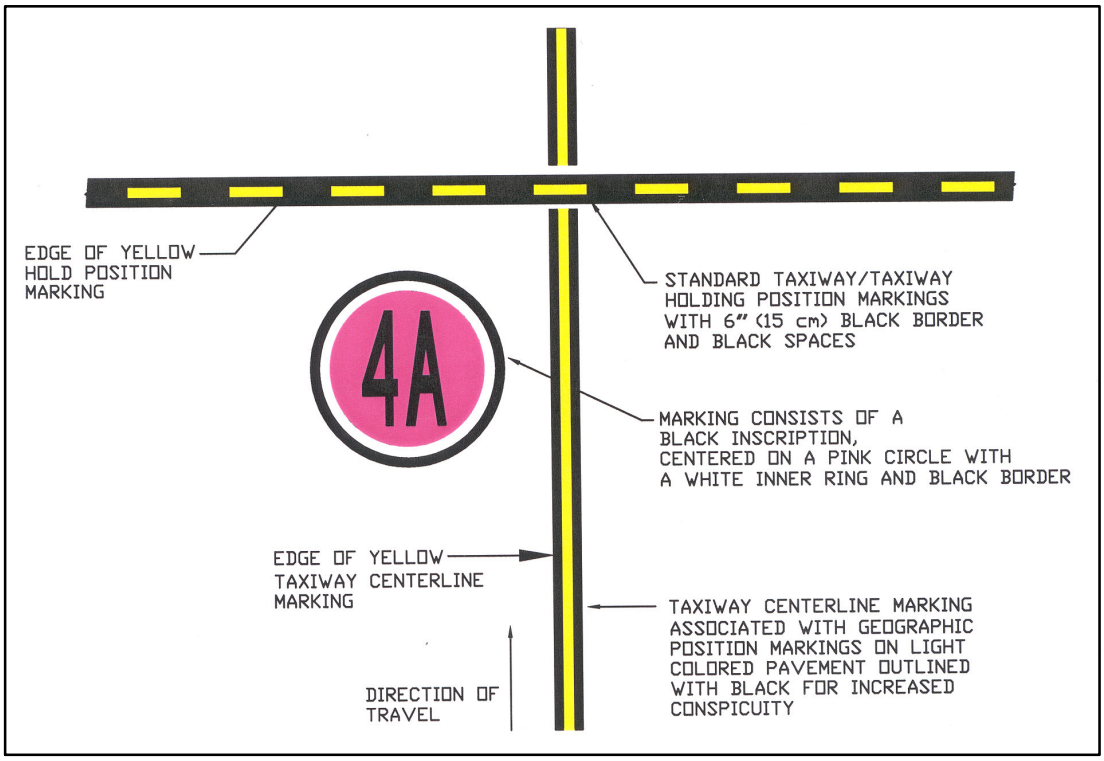


FIG AD 1.1–25
Runway Holding Position Markings on Taxiway

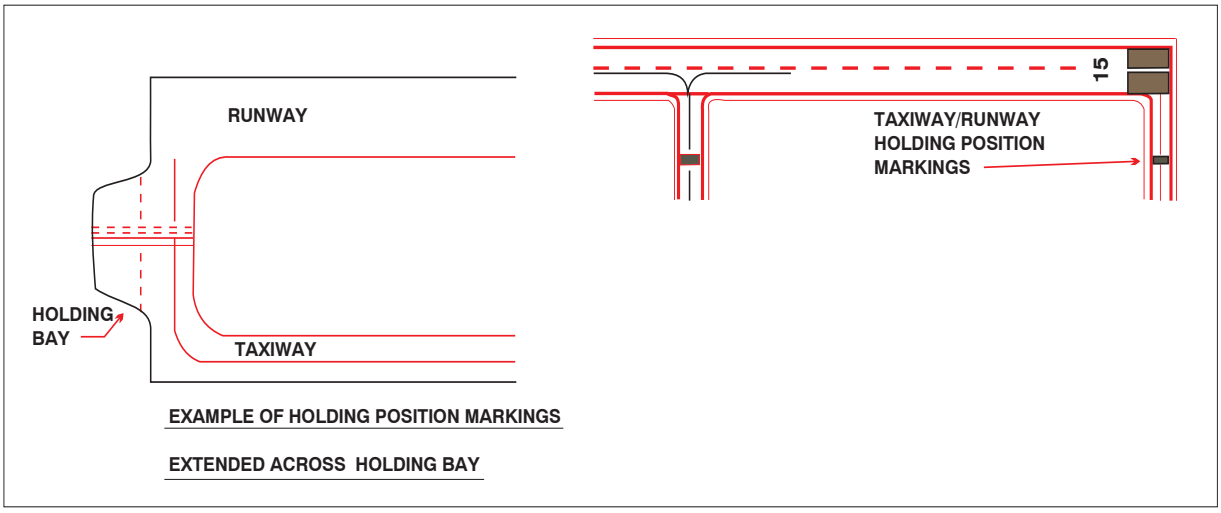


FIG AD 1.1–26
Runway Holding Position Markings on Runways

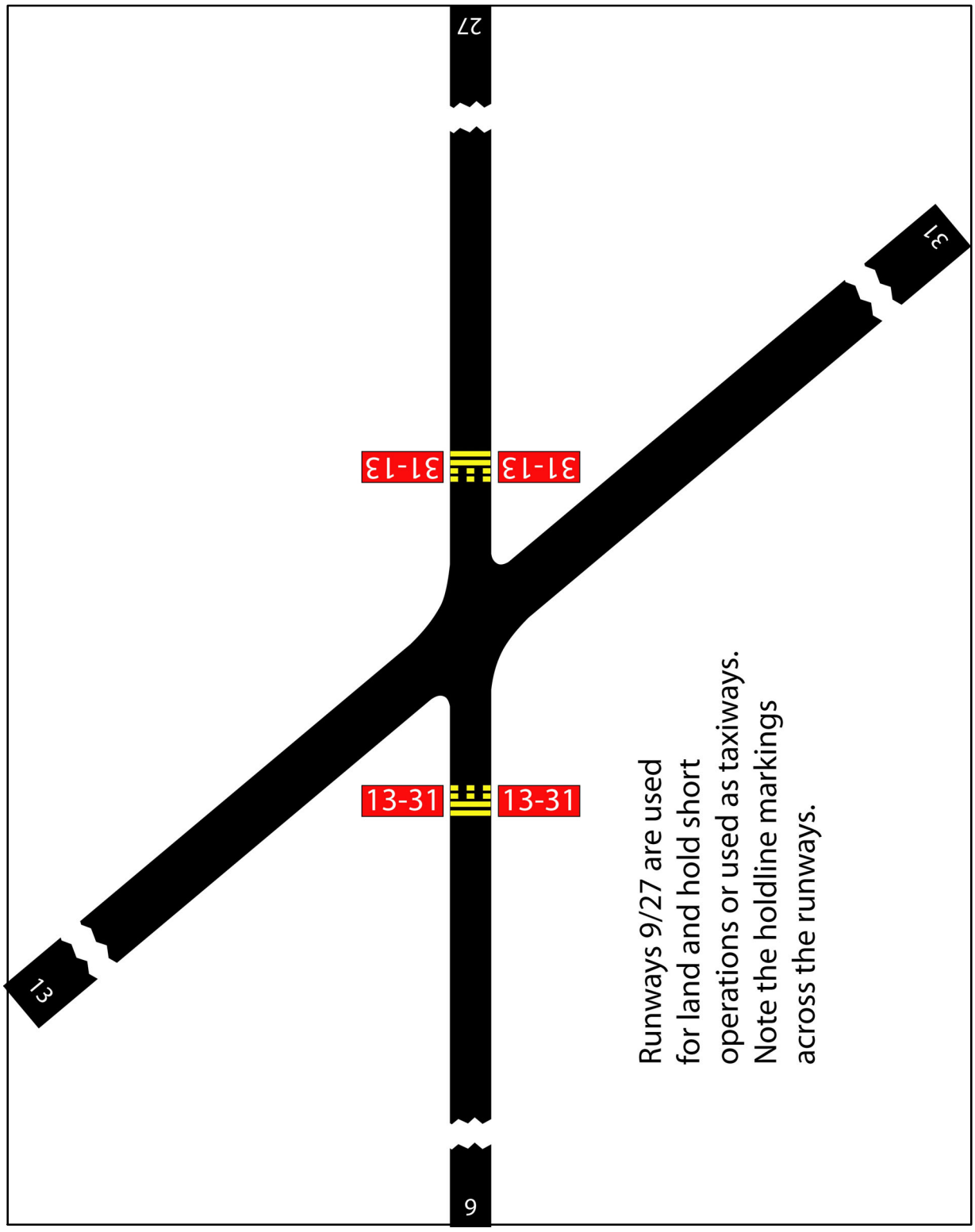


FIG AD 1.1–27

Taxiways Located in Runway Approach Area

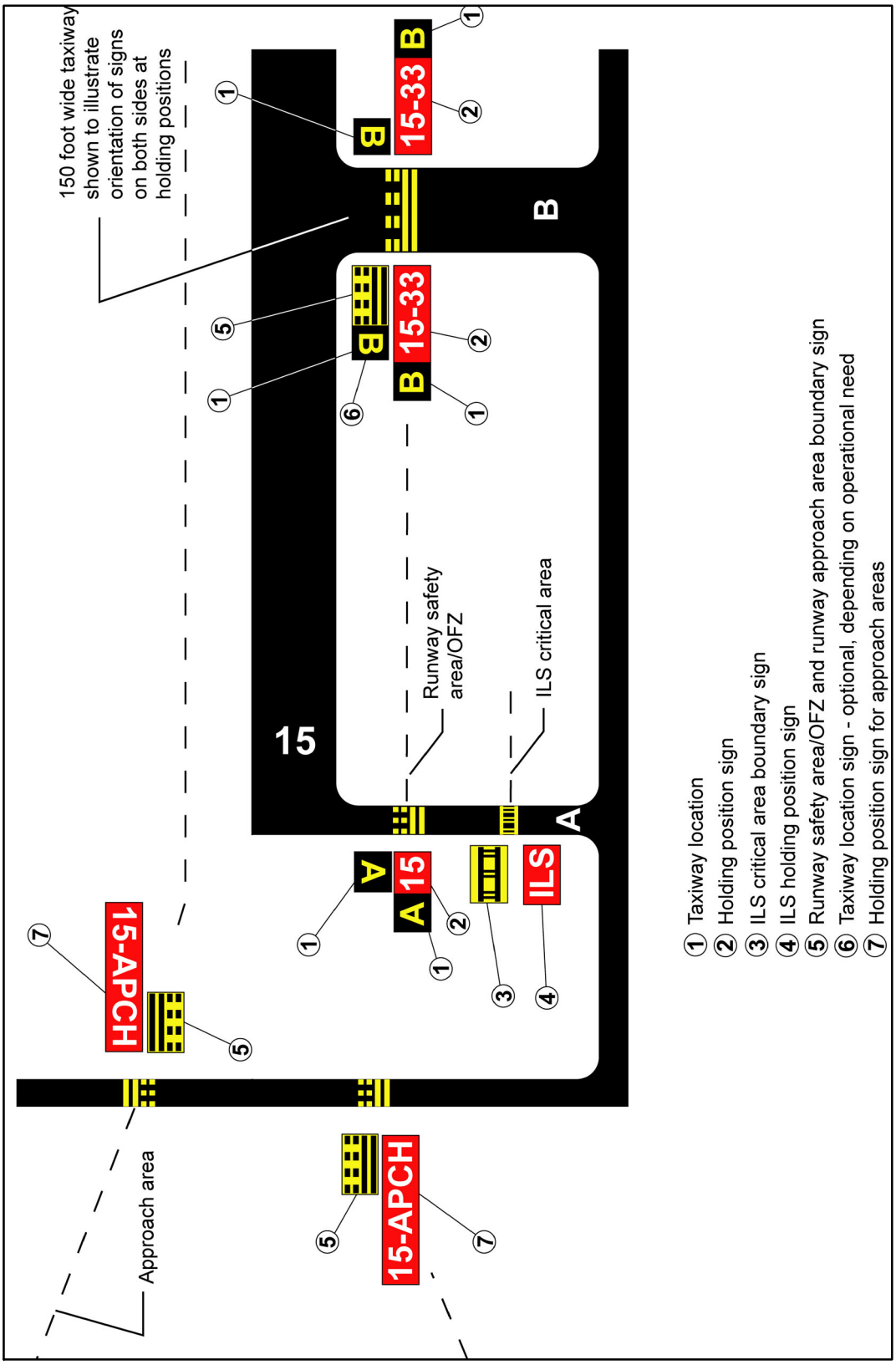


FIG AD 1.1–28

Holding Position Markings: ILS Critical Area

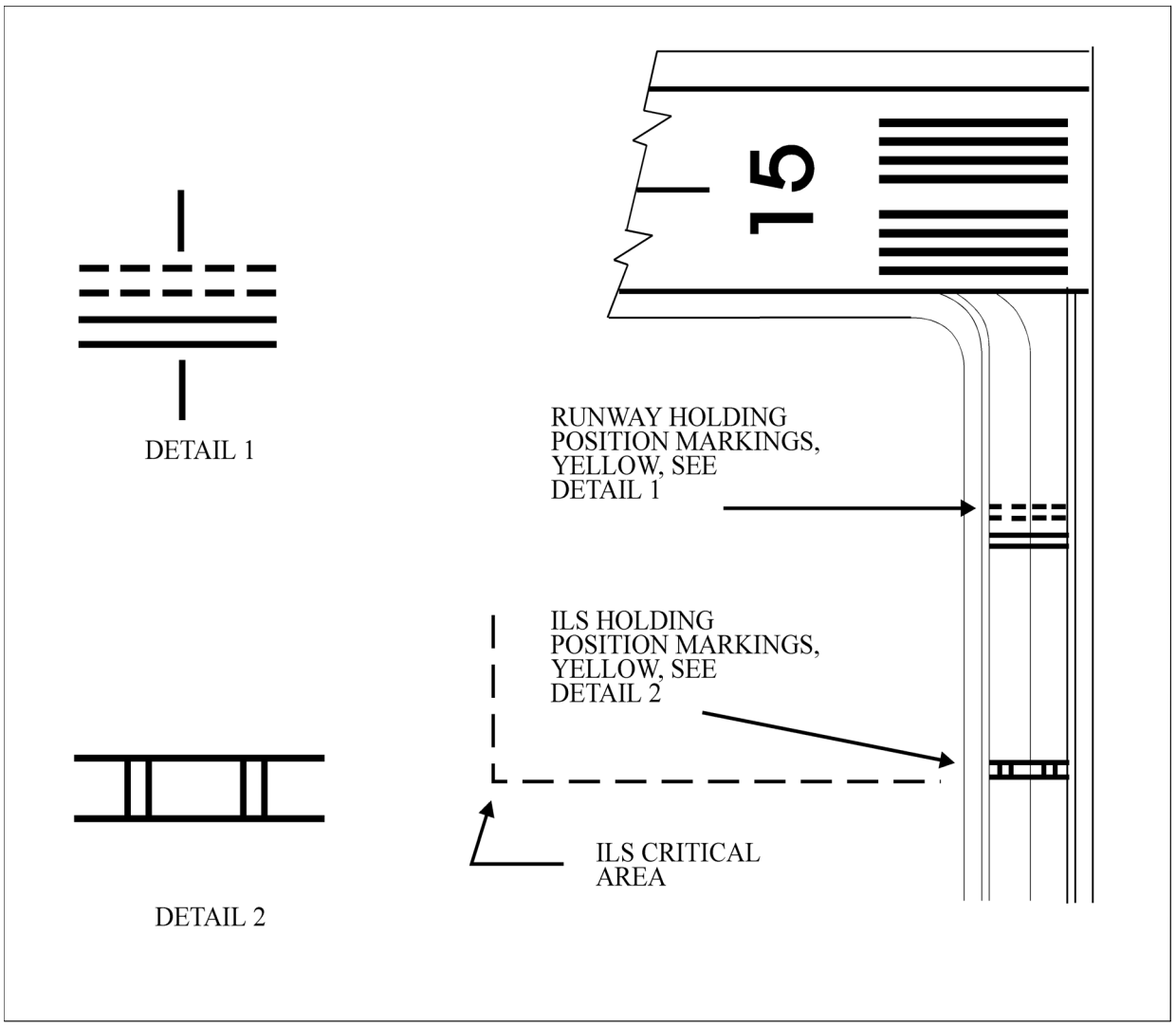


FIG AD 1.1–29

Holding Position Markings: Taxiway/Taxiway Intersections

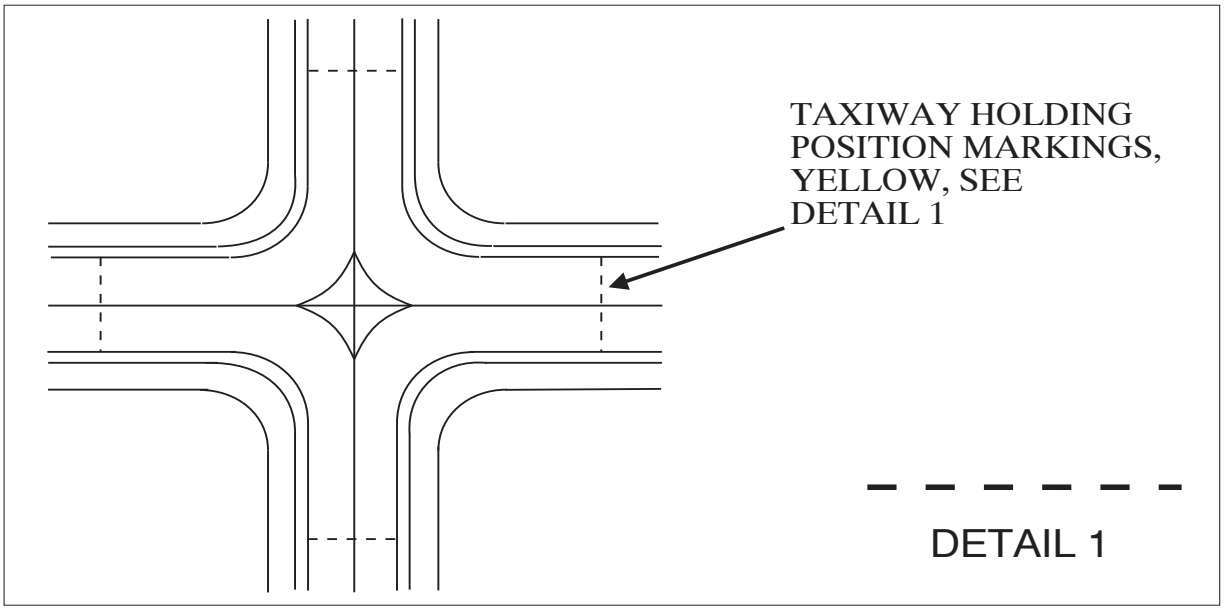


FIG AD 1.1–30

Vehicle Roadway Markings

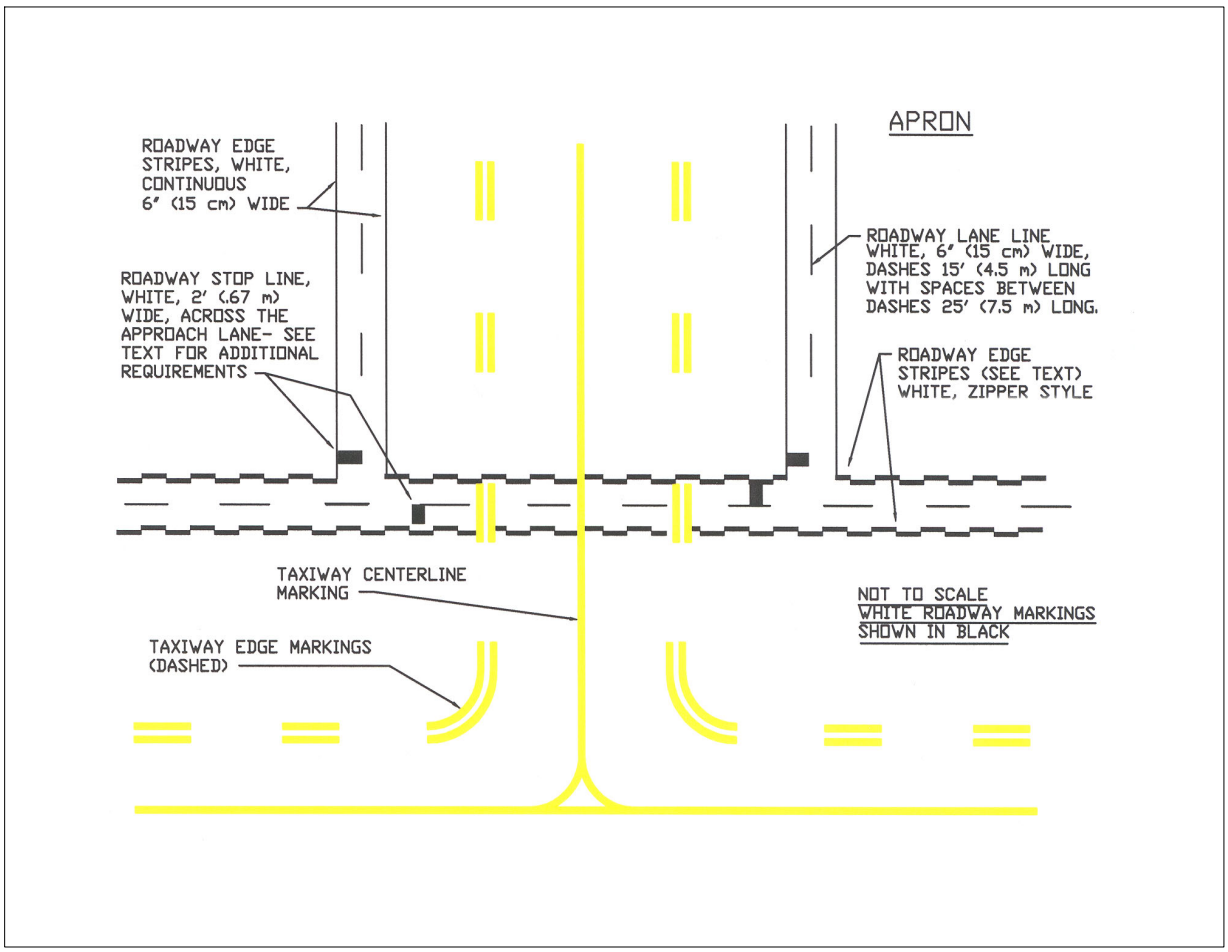


FIG AD 1.1–31
Roadway Edge Stripes, White, Zipper Style

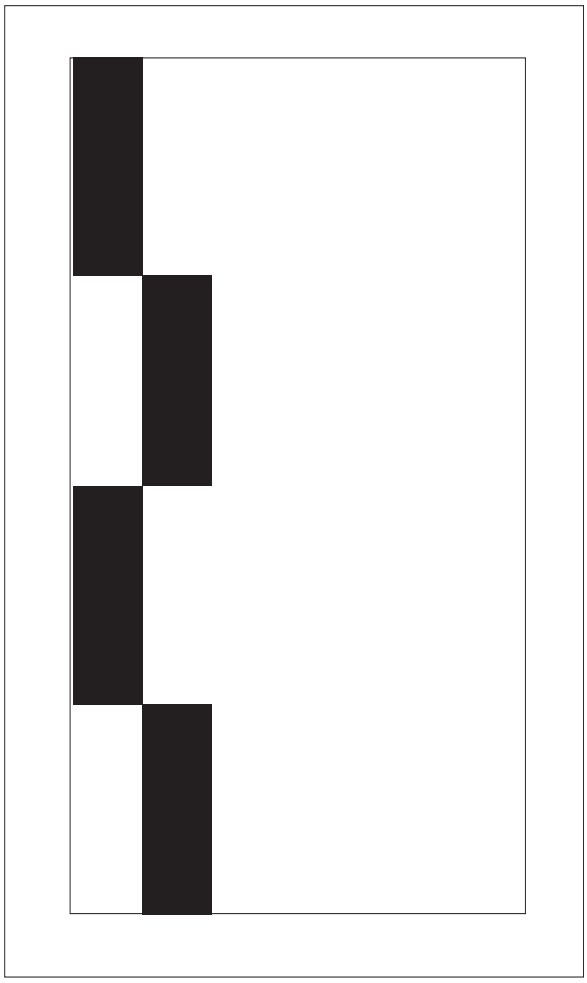


FIG AD 1.1–32
Ground Receiver Checkpoint Markings

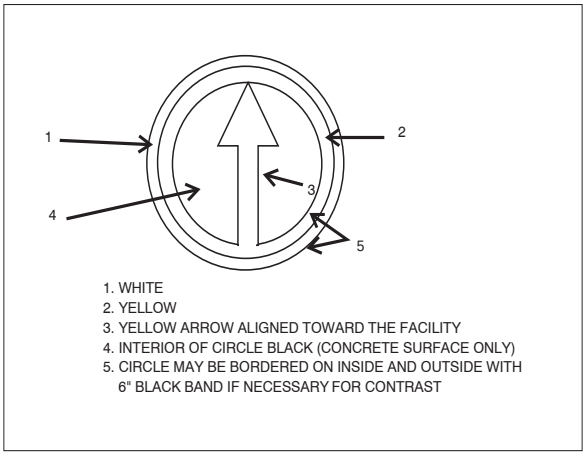


FIG AD 1.1–33
Nonmovement Area Boundary Markings

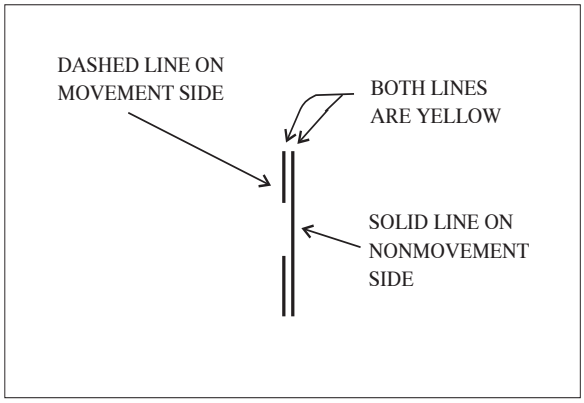


FIG AD 1.1–34
Closed or Temporarily Closed Runway and Taxiway Markings

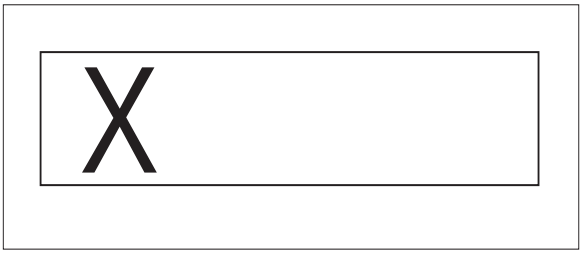


FIG AD 1.1–35
Helicopter Landing Areas

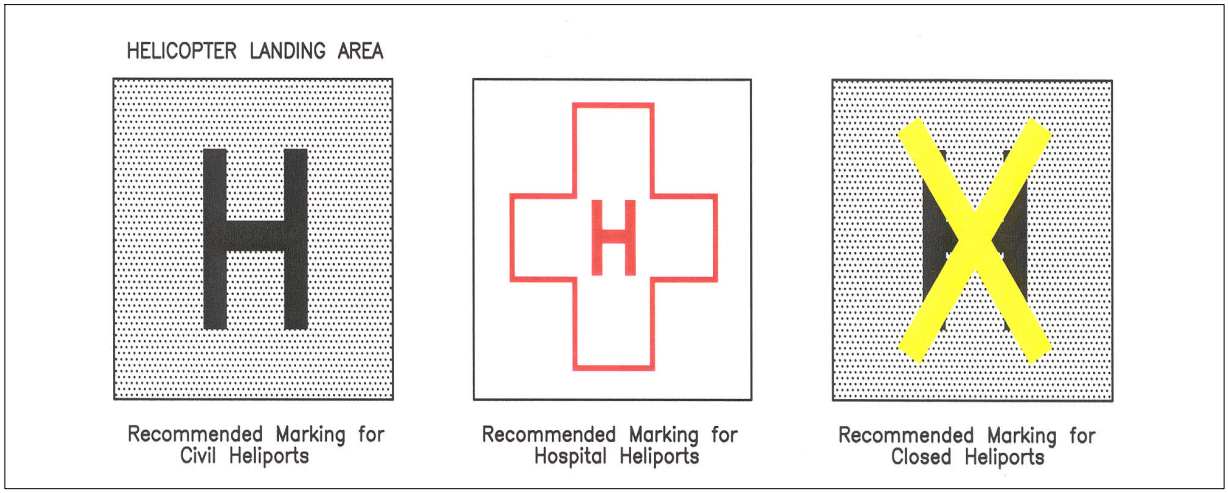


FIG AD 1.1–36
Runway Holding Position Sign

FIG AD 1.1–37
Holding Position Sign at Beginning of Takeoff Runway

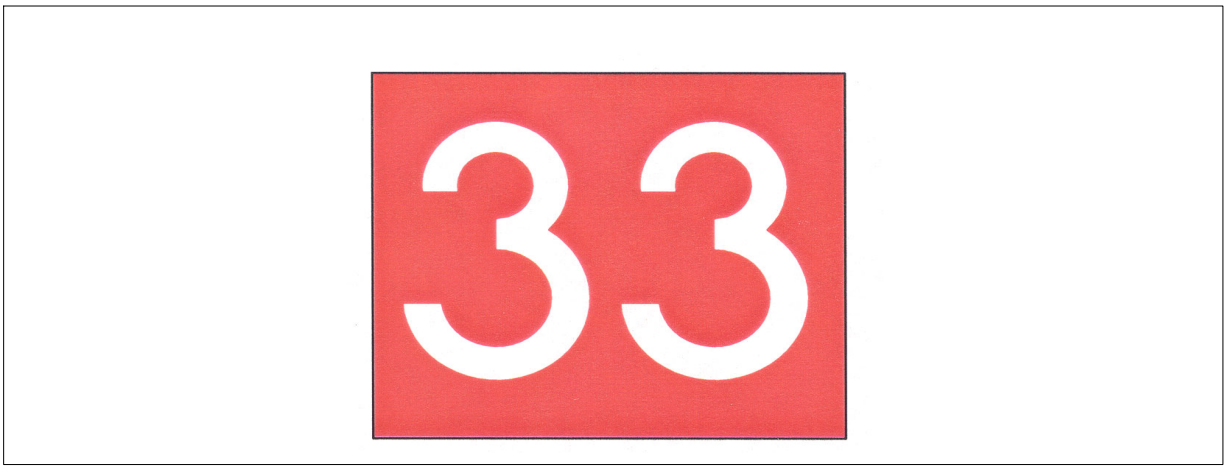


FIG AD 1.1–38

Holding Position Sign for a Taxiway that Intersects the Intersection of Two Runways

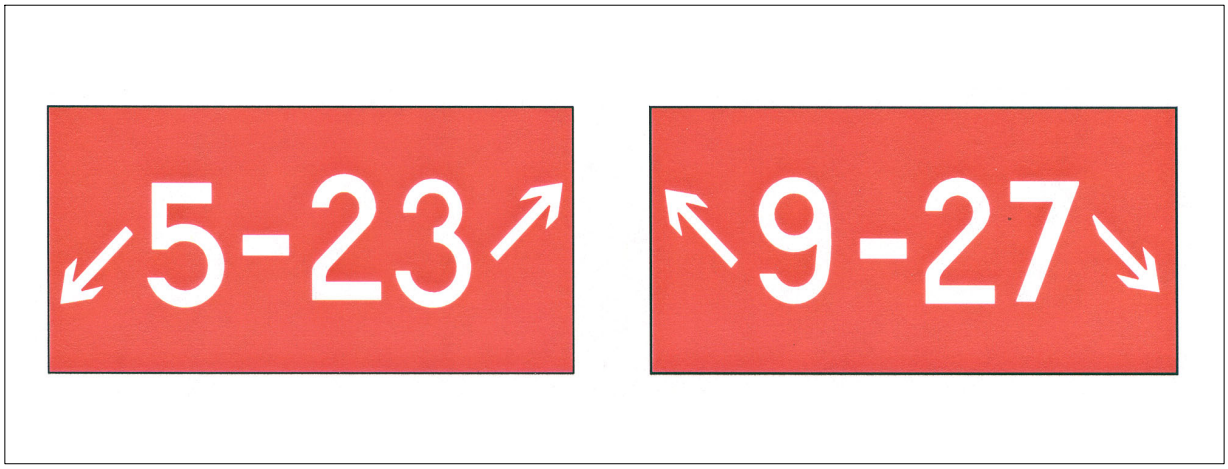


FIG AD 1.1–39

Holding Position Sign for a Runway Approach Area

FIG AD 1.1–40

Holding Position Sign for ILS Critical Area

FIG AD 1.1–41
Sign Prohibiting Aircraft Entry into an Area

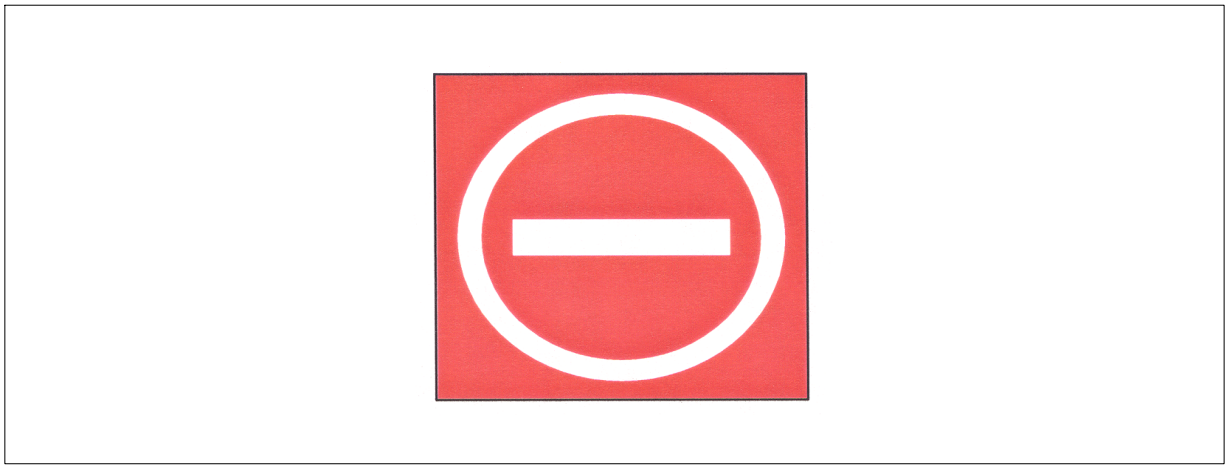


FIG AD 1.1–42
Taxiway Location Sign

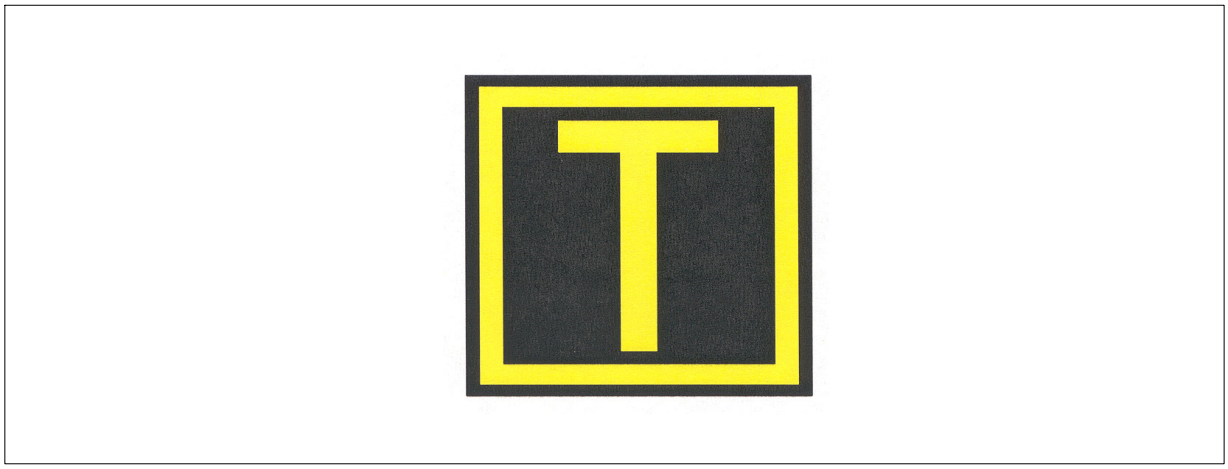


FIG AD 1.1–43
Taxiway Location Sign Collocated with Runway Holding Position Sign

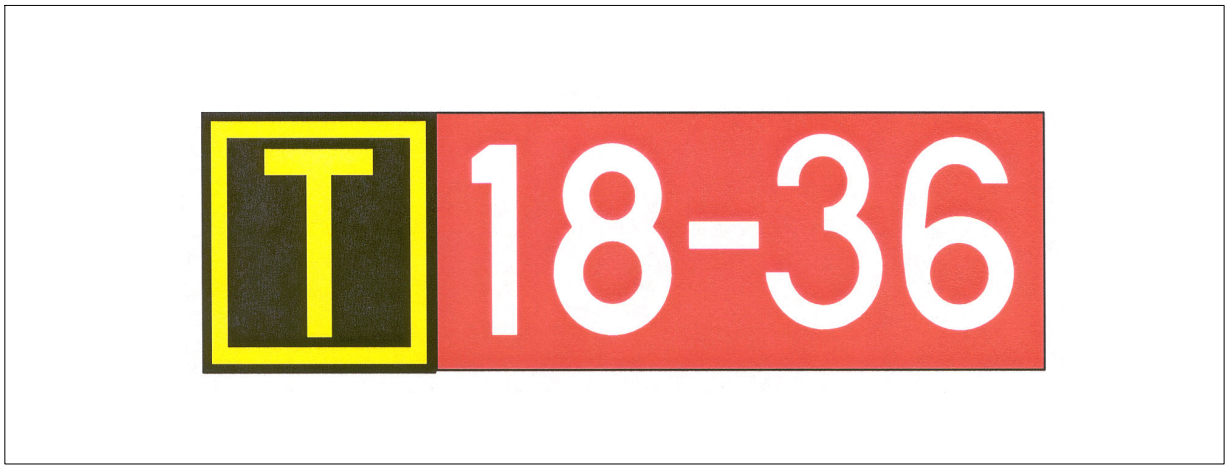


FIG AD 1.1–44
Runway Location Sign

FIG AD 1.1–45
Runway Boundary Sign

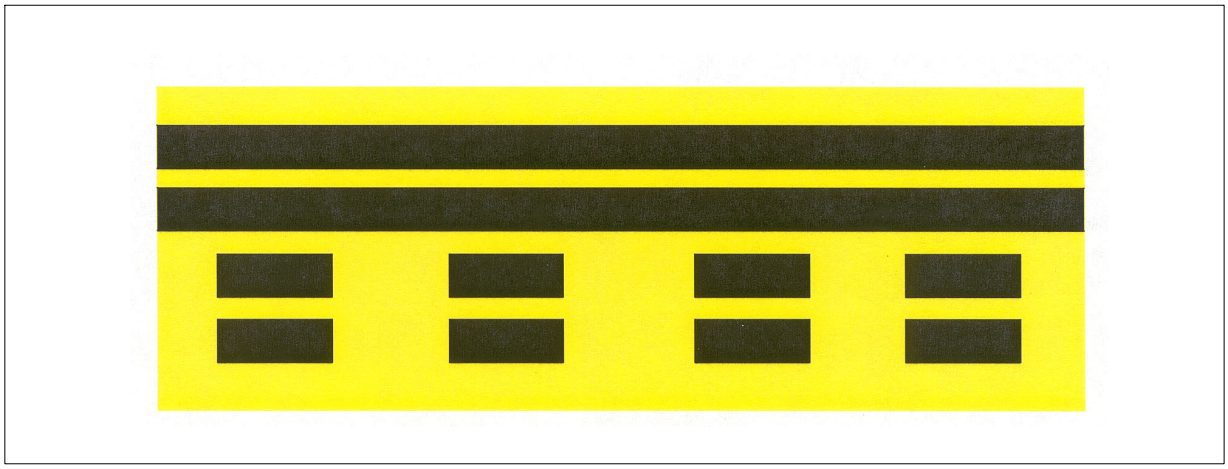


FIG AD 1.1–46
ILS Critical Area Boundary Sign

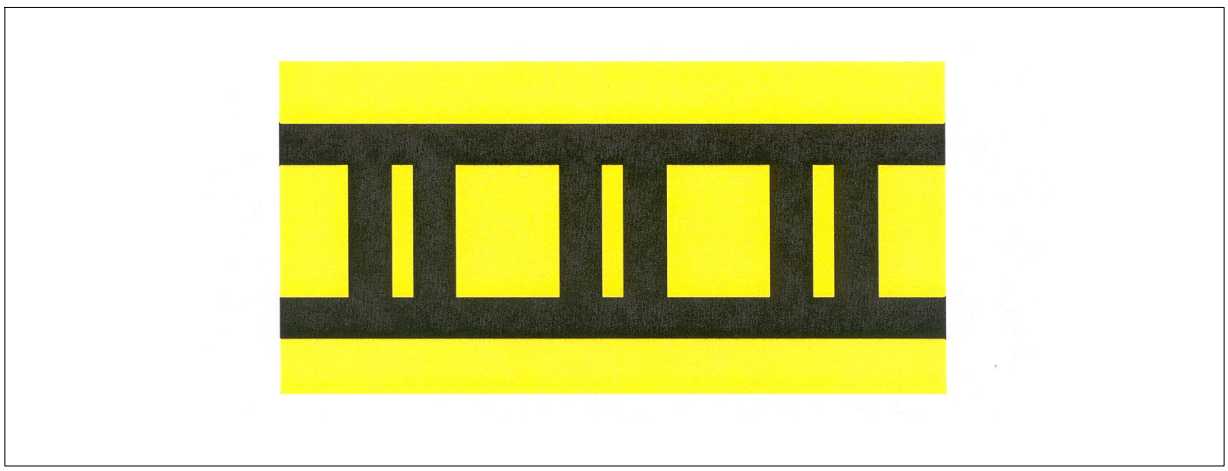


FIG AD 1.1–47

Direction Sign Array with Location Sign on Far Side of Intersection

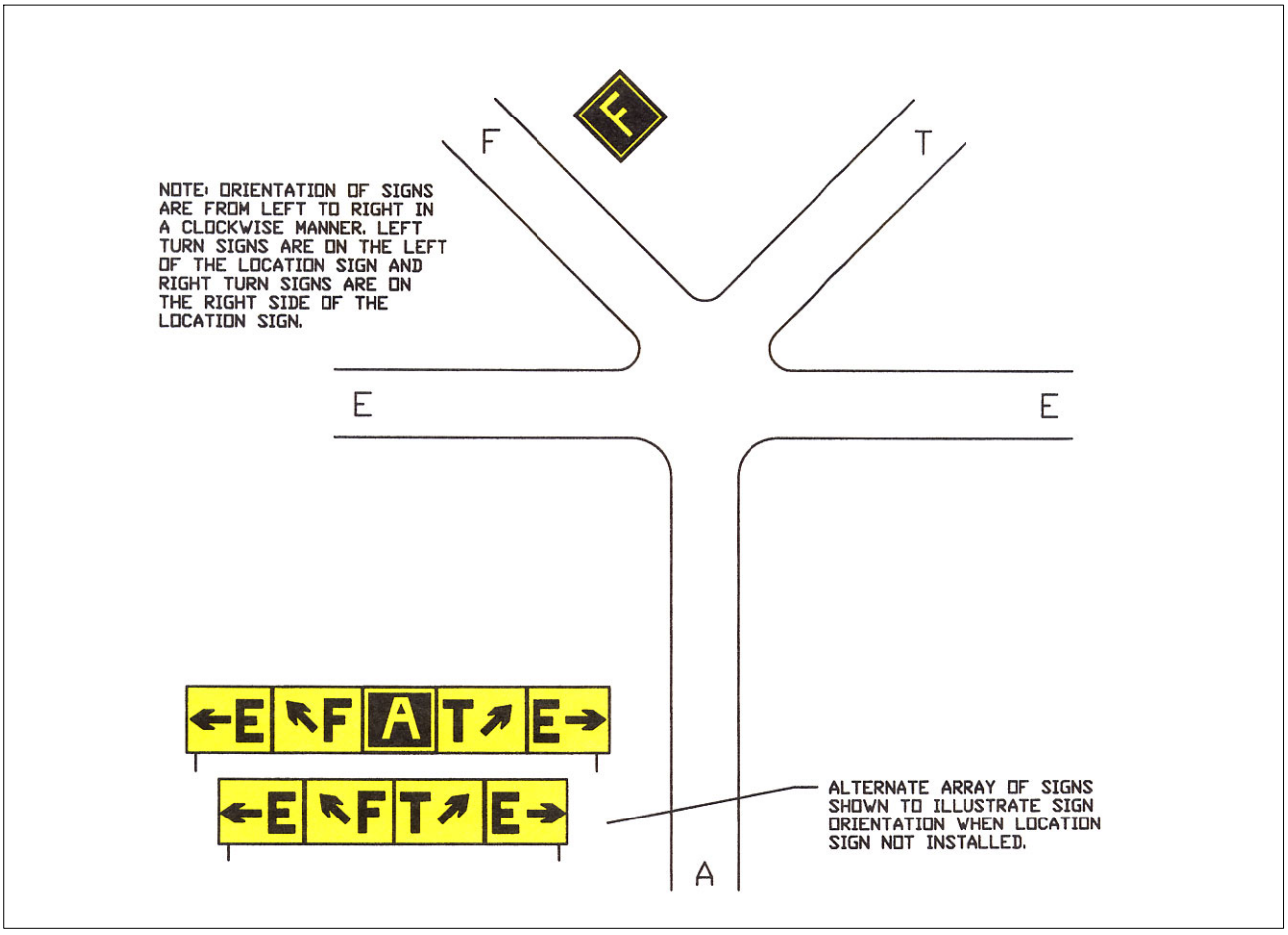


FIG AD 1.1–48

Direction Sign for Runway Exit

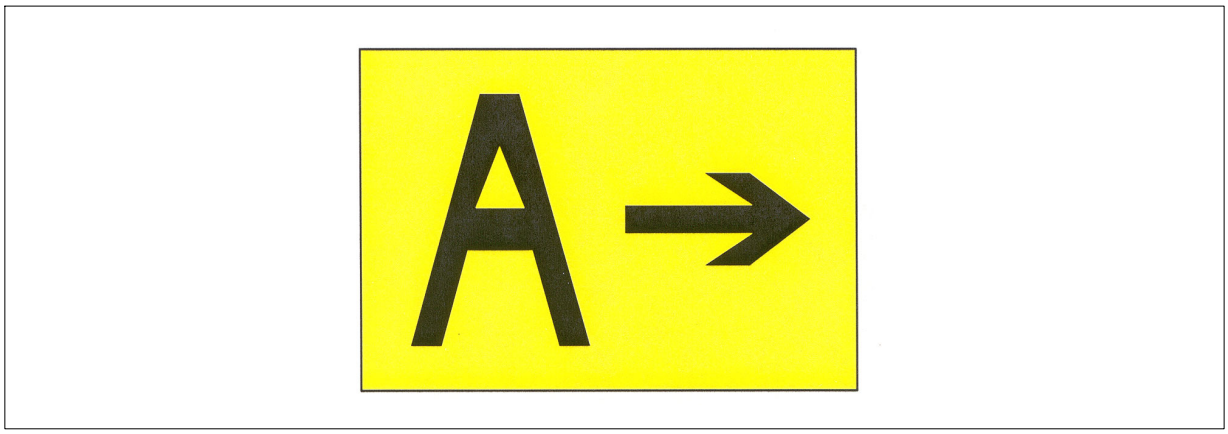


FIG AD 1.1–49
Direction Sign Array for Simple Intersection

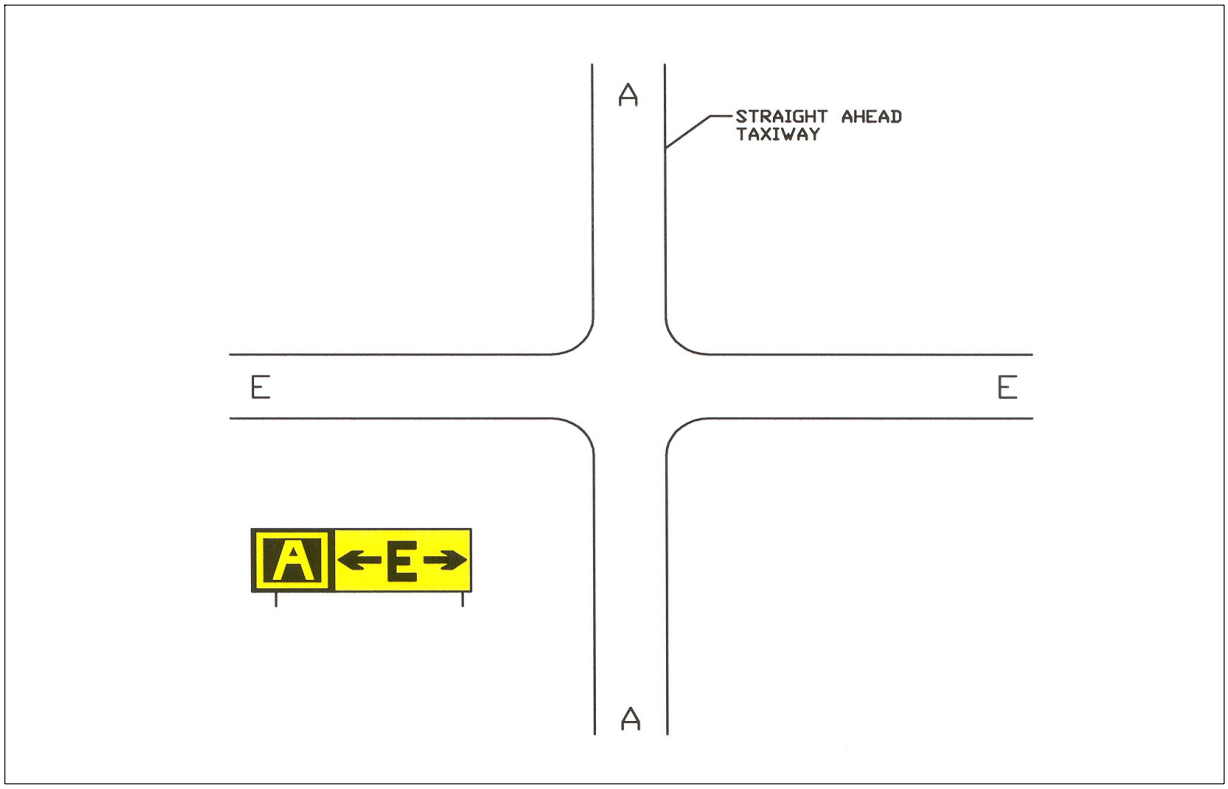


FIG AD 1.1–50
Destination Sign for Military Area

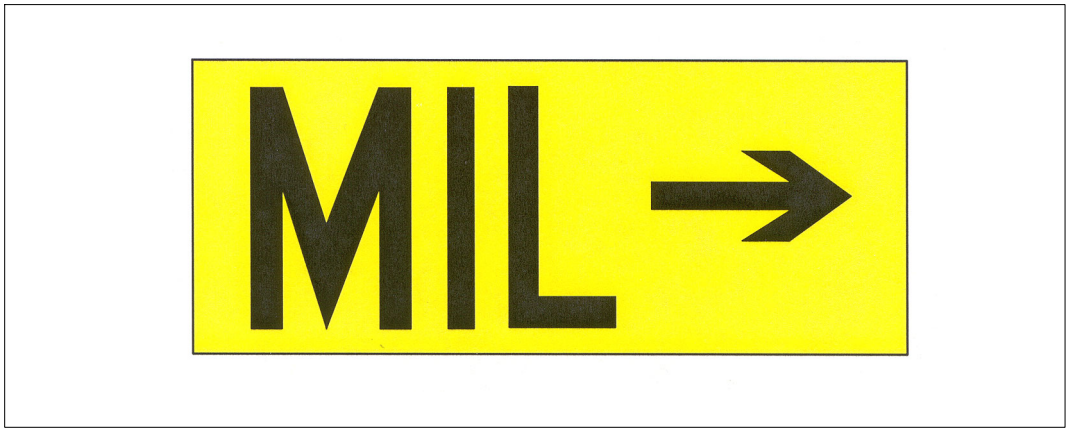


FIG AD 1.1–51
Destination Sign for Common Taxiing Route to Two Runways

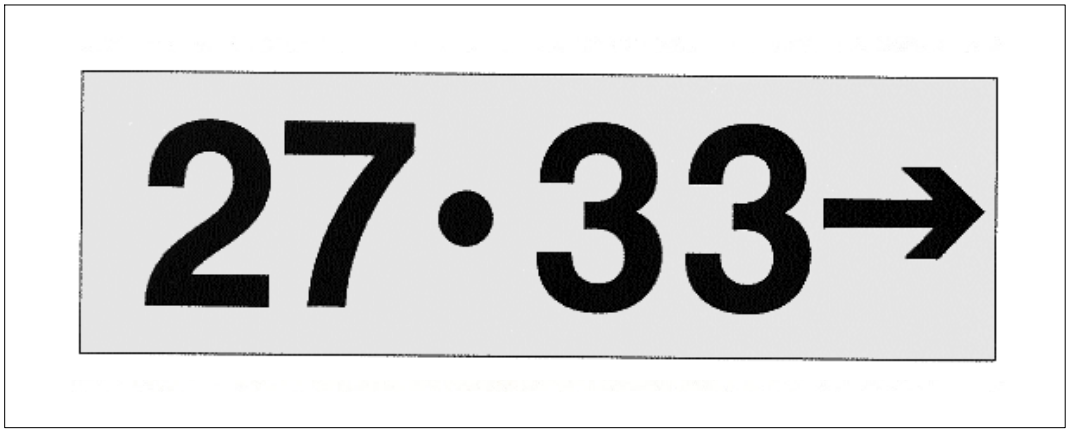


FIG AD 1.1–52
Destination Sign for Different Taxiing Routes to Two Runways

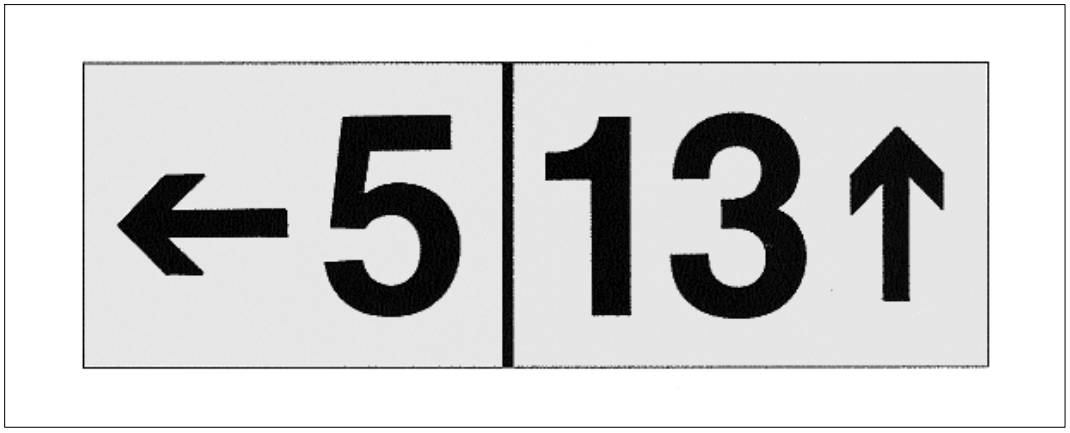


FIG AD 1.1–53
Runway Distance Remaining Sign Indicating 3,000 feet of Runway Remaining

FIG AD 1.1–54
Engineered Materials Arresting System (EMAS)

FIG AD 1.1–55
Sample SIDA Warning Sign

AD 2. AERODROMES

1. The following is a partial list of U.S. airports designated to serve international operations. This list contains U.S. airports with scheduled passenger service in large aircraft and certain airports designated as alternate service airports. Omitted from this list are designated general aviation airports, airports with scheduled cargo but no scheduled passenger service, and certain airports having international service in commuter–type aircraft.

ICAO ID	Location	Airport Name	Designation
Alaska			
PANC	Anchorage	Ted Stevens Anchorage International	Regular
PAED	Anchorage	Elmendorf AFB	Alternate
PACD	Cold Bay	Cold Bay	Alternate
PAEI	Fairbanks	Eielson AFB	Alternate
PAFA	Fairbanks	Fairbanks International	Regular
PAJN	Juneau	Juneau International	Regular
PAKN	King Salmon	King Salmon	Alternate
American Samoa			
NSTU	Pago Pago	Pago Pago International	Regular
Arizona			
KPHX	Phoenix	Phoenix Sky Harbor International	Regular
KTUS	Tucson	Tucson International	Regular
California			
KFAT	Fresno	Fresno Yosemite International	Alternate
KLAX	Los Angeles	Los Angeles International	Regular
KOAK	Oakland	Metropolitan Oakland International	Regular
KONT	Ontario	Ontario International	Alternate
KPMD	Palmdale	Palmdale Regional/ USAF Plant 42	Alternate
KSMF	Sacramento	Sacramento International	Alternate
KSAN	San Diego	San Diego International	Regular
KSFO	San Francisco	San Francisco International	Regular
KSJC	San Jose	San Jose Norman Y. Mineta International	Regular
KSCK	Stockton	Stockton Metropolitan	Alternate
Colorado			
KDEN	Denver	Denver International	Regular
KPUB	Pueblo	Pueblo Memorial	Alternate

ICAO ID	Location	Airport Name	Designation
Connecticut			
KBDL	Windsor Locks	Bradley International	Regular
District of Columbia			
KIAD	Washington	Washington Dulles International	Regular
Florida			
KFLL	Fort Lauderdale	Fort Lauderdale–Hollywood International	Regular
KRSW	Fort Myers	Southwest Florida International	Regular
KMIA	Miami	Miami International	Regular
KMCO	Orlando	Orlando International	Regular
KTPA	Tampa	Tampa International	Regular
KPBI	West Palm Beach	Palm Beach International	Regular
Georgia			
KATL	Atlanta	Hartsfield – Jackson Atlanta International	Regular
Guam			
PGUM	Agana	Guam International	Regular
PGUA	Guam Island	Andersen AFB	Alternate
Hawaii			
PHTO	Hilo	Hilo International	Alternate
PHNL	Honolulu	Honolulu International	Regular
PHOG	Kahului	Kahului	Regular
Illinois			
KORD	Chicago	Chicago–O'Hare International	Regular
Indiana			
KIND	Indianapolis	Indianapolis International	Regular
Kansas			
KICT	Wichita	Wichita Mid–Continent	Alternate
Kentucky			
KCVG	Covington	Cincinnati/Northern Kentucky International	Regular

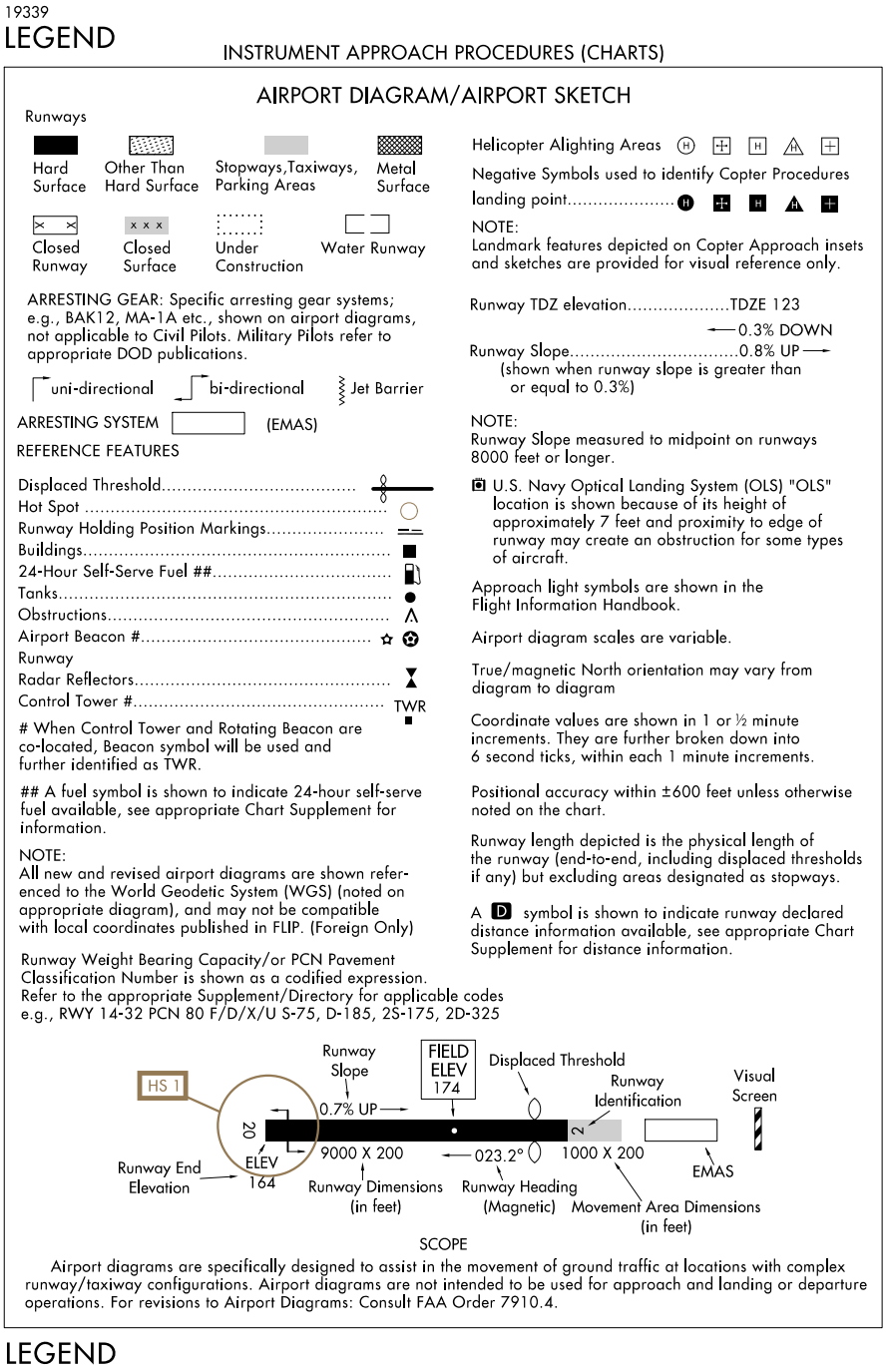
ICAO ID	Location	Airport Name	Designation
Louisiana			
KMSY	New Orleans	Louis Armstrong New Orleans International	Regular
Maine			
KBGR	Bangor	Bangor International	Alternate
Maryland			
KBWI	Baltimore	Baltimore–Washington International Thurgood Marshall	Regular
Massachusetts			
KBOS	Boston	General Edward Lawrence Logan International	Regular
Michigan			
KDTW	Detroit	Detroit Metropolitan Wayne County	Regular
Minnesota			
KMSP	Minneapolis	Minneapolis–St. Paul International (Wold–Chamberlain)	Regular
Missouri			
KMCI	Kansas City	Kansas City International	Regular
KSTL	St. Louis	Lambert–St. Louis International	Regular
Nevada			
KLAS	Las Vegas	Harry Reid International	Regular
KRNO	Reno	Reno/Tahoe International	Regular
New Jersey			
KEWR	Newark	Newark Liberty International	Regular
New York			
KJFK	New York	John F. Kennedy International	Regular
KIAG	Niagara Falls	Niagara Falls International	Alternate
KSYR	Syracuse	Syracuse Hancock International	Regular
North Carolina			
KCLT	Charlotte	Charlotte/Douglas International	Regular
KRDU	Raleigh–Durham	Raleigh–Durham International	Regular
Northern Mariana Islands			
PGSN	Saipan Island	Francisco C. Ada/Saipan International	Regular

ICAO ID	Location	Airport Name	Designation
Ohio			
KCLE	Cleveland	Cleveland–Hopkins International	Regular
KCMH	Columbus	Port Columbus International	Regular
Oregon			
KPDX	Portland	Portland International	Regular
Pennsylvania			
KPHL	Philadelphia	Philadelphia International	Regular
KPIT	Pittsburgh	Pittsburgh International	Regular
Puerto Rico			
TJMZ	Mayaguez	Eugenio Maria De Hostos	Regular
TJSJ	San Juan	Luis Munoz Marin International	Regular
Tennessee			
KMEM	Memphis	Memphis International	Regular
KBNA	Nashville	Nashville International	Regular
Texas			
KDFW	Dallas	Dallas–Fort Worth International	Regular
KELP	El Paso	El Paso International	Regular
KIAH	Houston	George Bush Intercontinental/ Houston	Regular
KLRD	Laredo	Laredo International	Regular
KSAT	San Antonio	San Antonio International	Regular
Utah			
KSLC	Salt Lake City	Salt Lake City International	Regular
Virgin Islands			
TIST	Charlotte Amalie St. Thomas	Cyril E King	Regular
TISX	Christiansted St. Croix	Henry E Rohlsen	Regular
Washington			
KPAE	Everett	Snohomish County (Paine Field)	Alternate
KSEA	Seattle	Seattle–Tacoma International	Regular
KGEG	Spokane	Spokane International	Alternate
Wisconsin			
KMKE	Milwaukee	General Mitchell International	Regular

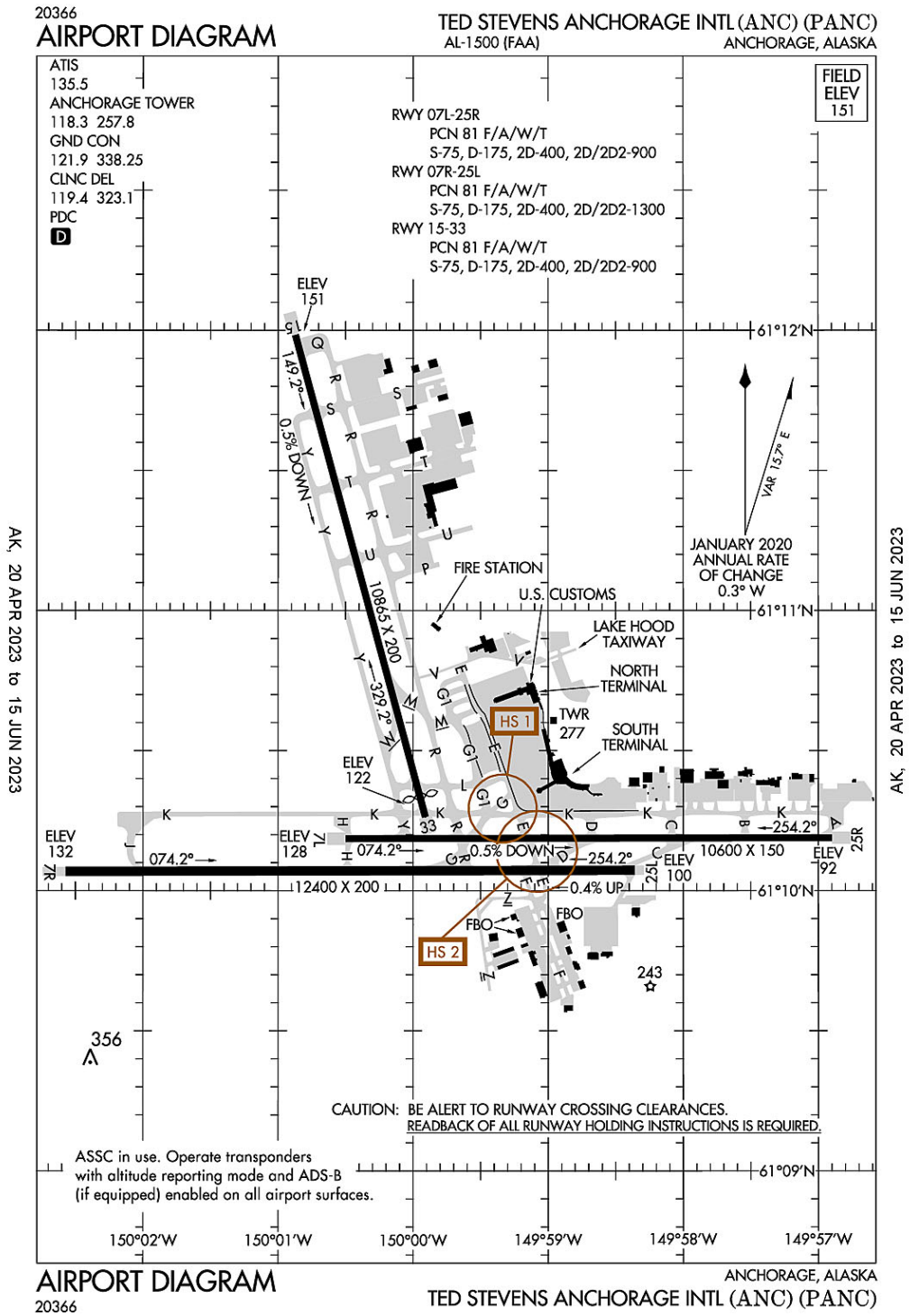
1.1 Diagrams of these airports, arranged alphabetically by state and in the order listed above, are on the pages following. The most up–to–date diagrams of these and other U.S. airports are in the Terminal Procedures Publication (TPP). For additional information on these airports, see the Chart Supplement U.S.

1.2 Public sales of the Chart Supplement U.S. and TPP are available through a network of FAA approved print providers. A listing of products, dates of latest editions, and print providers is available on the AIS website at: http://www.faa.gov/air_traffic/flight_info/aeronav.

Instrument Approach Procedures (Charts) Airport Diagram/Airport Sketch



Anchorage, Alaska
Ted Stevens Anchorage International
ICAO Identifier PANC



Anchorage, AK
Ted Stevens Anchorage Intl
ICAO Identifier PANC

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 61–10–26.705N / 149–59–53.295W

2.2.2 From City: 4 miles SW of ANCHORAGE, AK

2.2.3 Elevation: 151.4 ft

2.2.5 Magnetic Variation: 16E (2020)

2.2.6 Airport Contact: CRAIG CAMPBELL
BOX 196960
ANCHORAGE, AK 99519 (907–266–2600)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100,100LL,A,A1

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 4/1/2005

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 07L

2.12.2 True Bearing: 90

2.12.3 Dimensions: 10600 ft x 150 ft

2.12.4 PCN: 81 F/A/W/T

2.12.5 Coordinates: 61–10–11.1539N / 150–0–29.9998W

2.12.6 Threshold Elevation: 127.6 ft

2.12.6 Touchdown Zone Elevation: 128.2 ft

2.12.1 Designation: 25R

2.12.2 True Bearing: 270

2.12.3 Dimensions: 10600 ft x 150 ft

2.12.4 PCN: 81 F/A/W/T

2.12.5 Coordinates: 61–10–11.3202N / 149–56–53.8826W

2.12.6 Threshold Elevation: 91.5 ft

2.12.6 Touchdown Zone Elevation: 91.8 ft

2.12.1 Designation: 07R

2.12.2 True Bearing: 90

2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−4.1216N / 150−2−34.3367W
2.12.6 Threshold Elevation: 131.7 ft
2.12.6 Touchdown Zone Elevation: 131.7 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−4.3722N / 149−58−21.535W
2.12.6 Threshold Elevation: 100.4 ft
2.12.6 Touchdown Zone Elevation: 114.6 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 165
2.12.3 Dimensions: 10865 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−11−59.03N / 150−0−52.31W
2.12.6 Threshold Elevation: 151.3 ft
2.12.6 Touchdown Zone Elevation: 151.4 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 345
2.12.3 Dimensions: 10865 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−15.75N / 149−59−54.49W
2.12.6 Threshold Elevation: 121.7 ft
2.12.6 Touchdown Zone Elevation: 120.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 10600 ft
2.13.3 Take−off Distance Available: 10600 ft
2.13.4 Accelerate−Stop Distance Available: 10600 ft
2.13.5 Landing Distance Available: 10600 ft

2.13.1 Designation: 25R
2.13.2 Take−off Run Available: 10600 ft
2.13.3 Take−off Distance Available: 10600 ft
2.13.4 Accelerate−Stop Distance Available: 10600 ft
2.13.5 Landing Distance Available: 10600 ft

2.13.1 Designation: 07R
2.13.2 Take–off Run Available: 10900 ft
2.13.3 Take–off Distance Available: 10900 ft
2.13.4 Accelerate–Stop Distance Available: 10900 ft
2.13.5 Landing Distance Available: 12400 ft

2.13.1 Designation: 25L
2.13.2 Take–off Run Available: 12400 ft
2.13.3 Take–off Distance Available: 12400 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 15
2.13.2 Take–off Run Available: 10865 ft
2.13.3 Take–off Distance Available: 10865 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 33
2.13.2 Take–off Run Available: 10865 ft
2.13.3 Take–off Distance Available: 11965 ft
2.13.4 Accelerate–Stop Distance Available: 10865 ft
2.13.5 Landing Distance Available: 10400 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15
2.14.2 Approach Lighting System: MALSF

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61–10–14.0636N / 149–56–33.0327W
2.19.6 Site Elevation: 105.5 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61–10–13.93N / 150–0–9.62W
2.19.6 Site Elevation: 122.8 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61–10–11.3329N / 149–56–32.6534W
2.19.6 Site Elevation: 84.7 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61–10–2.0211N / 149–57–58.3996W
2.19.6 Site Elevation: 112 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61–10–8.1823N / 150–2–12.4572W
2.19.6 Site Elevation: 124.9 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61–10–4.3906N / 149–57–55.495W
2.19.6 Site Elevation: 97.7 ft

2.19.1 ILS Type: DME for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61–10–0.0069N / 149–59–40.3379W
2.19.6 Site Elevation: 134.7 ft

2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61–11–46.76N / 150–0–54.42W
2.19.6 Site Elevation: 151.3 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61–9–59.9158N / 149–59–45.6352W
2.19.6 Site Elevation: 120.9 ft

General Remarks:
NON–RADIO NIGHT OPS NA; NON–PARROT OPS 1 HR PPR; NON–RADIO OPS PPR; MUST PRVD ETA & REMAIN WI 15 MIN – ATCT 907–271–2700 WKDAYS 0730–1600; AFT HR & HOL – FAA 907–271–5936.

COMPASS CLBR PAD N/A.

BIRDS INVOF ARPT SPRING – FALL.

TWY V, SCTY GATE E OF TWY E – PCL 121.75 5 TIMES; TWY H–2, LAKESHORE TWY GATES – PCL 121.75 3 TIMES; IF INOP ALLOW 30 SEC RESET & NOTIFY LHD OPS – 907–266–2600.

PTNS OF TWY K BTN TWY H & J NOT VIS FM ATCT.

PPR FOR GND TIME GTR THAN 4 HR AT ARPT CTL SPOTS; APVL REQ 48 HR PRIOR TO DEP FOR ANC – GATE MGMT 907 266–2633 OR EMAIL: DOT.AIA.OPS.GATEMANAGEMENT@ALASKA.GOV.

TSNT MIL PPR.

NOISE SENSITIVE AREA IN EFCT; FOR INFO – AMGR

TWY V RSTRD TO 12500 LB OR LESS; SUBJECT TO JET BLAST WEST OF TWY E.

RWY 25L HAS 200 FT BLAST PAD.

ASSC IN USE; OPR PARROT WITH ALT RPRTG MODE & ADS–B IF EQUIPPED ENABLED ON ARPT SFCS.

489 FT UNLGTD TWR 2.5 MI NE.

TBJT/TURBOFAN DEPG RWY 7R/7L DURG RWY 15/33 CLOSURE EMPLOY FAA CLOSE–IN NADP OR ICAO PROC B NADP WHEN SAFETY PMTS.

EXITING PAPA RAMP PARKING SPOTS P1/2/3, USE MIN THRUST REQ DUE TO JET BLAST HAZARD ON PAPA RAMP AND TWY UNIFORM.

ANCHORAGE WX CAMERA AVBL ON INTERNET AT HTTPS://WEATHERCAMS.FAA.GOV.

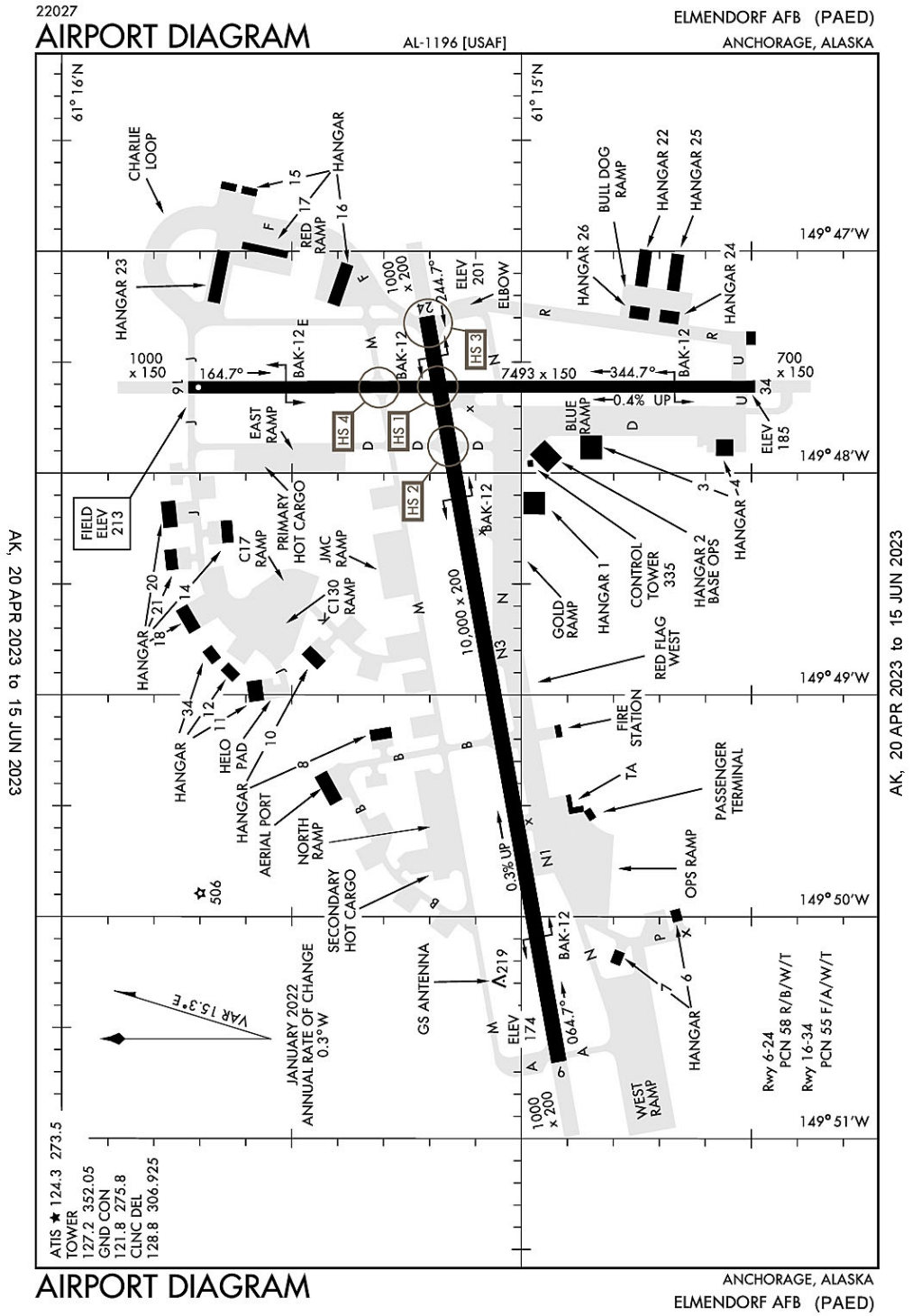
RIGHT TURN OUT OF RAMP PRKG R–2 THRU R–4 NA.

FLT PLANNING IN ANCHORAGE BOWL AREA − RCO 122.55.

FAA RAMP PPR WITH ANC FIFO MON−FRI 0600−1430 − 135.85 OR 907−271−2414 OR AVN 405−954−9780.

WSO − 907−266−5105.

Anchorage, Alaska
Elmendorf AFB
ICAO Identifier PAED



Anchorage, AK
Elmendorf AFB
ICAO Identifier PAED

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 61−15−4.8715N / 149−48−23.4924W
2.2.2 From City: 3 miles NE of ANCHORAGE, AK
2.2.3 Elevation: 213 ft
2.2.5 Magnetic Variation: 18E (2015)
2.2.6 Airport Contact: AIRFIELD MGR
300SS/DOFJ
ELMENDORF AFB, AK 99506 (907−552−2444)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: J8
2.4.5 Hangar Space:
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06
2.12.2 True Bearing: 80
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61−14−55.08N / 149−50−39.34W
2.12.6 Threshold Elevation: 174.5 ft
2.12.6 Touchdown Zone Elevation: 174.5 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 260
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61−15−12.16N / 149−47−18.02W
2.12.6 Threshold Elevation: 201.3 ft
2.12.6 Touchdown Zone Elevation: 201.3 ft

2.12.1 Designation: 16
2.12.2 True Bearing: 180
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61−15−43.43N / 149−47−36.52W
2.12.6 Threshold Elevation: 212.5 ft
2.12.6 Touchdown Zone Elevation: 212.4 ft

2.12.1 Designation: 34
2.12.2 True Bearing: 360
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61−14−29.64N / 149−47−36.57W
2.12.6 Threshold Elevation: 184.9 ft
2.12.6 Touchdown Zone Elevation: 194.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 24
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 16
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 34
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 18E
2.19.2 ILS Identification: EDF
2.19.5 Coordinates: 61−15−1.2N / 149−50−17W
2.19.6 Site Elevation: 169.2 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 18E
2.19.2 ILS Identification: EDF
2.19.5 Coordinates: 61−15−14.33N / 149−46−52.29W
2.19.6 Site Elevation: 212.3 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 18E
2.19.2 Navigation Aid Identification: EDF
2.19.5 Coordinates: 61−15−18.03N / 149−46−9.03W
2.19.6 Site Elevation: 226.2 ft

General Remarks:

DURING VMC DEPS/MISSED APCHS/GO AROUNDS; ACFT SHALL MAINTAIN AT OR BLW 1200 FT MLS UNTIL DEP END OF RWY 06.

RWY 34 HAS A 500 FT DISPLACED THLD ALLOWING 7993 FT USABLE FOR TKFS (RWY 34 TKFS ONLY). ACFT REQG TO USE THE ADDITIONAL 500 FT FOR RWY 34 TKF MUST CTC ATC.

EXTENSIVE SVC DELAY FOR FUEL.

CAUTION: UNLIT TERRAIN 0 FT AGL/341 FT MSL, 1909 FT PRIOR TO THLD, 1914 FT RIGHT OF COURSE.

TRAN ALERT ACFT SVC LTD TO POL SERVICING, INTAKE INSPECTIONS, MAGNETIC CHIP DETECTOR INSPECTIONS AND EOR INSPECTIONS.

QUIET HR 0630−1400Z WKDAYS; 0630−1600Z WKEND & HOLS, AMC ACFT EXEMPT.

PREVENTIVE MAINT: TACAN WED AND FRI 1600−1700Z; ILS TUE AND THR 1500−1700Z; PAR SAT−SUN 1800−2000Z; ASR SAT−SUN 2000−2200.

FREQUENT ACTIVITY IN R2203; WHEN UNABLE TO AVOID, CTC ATCT.

LIMITED MAINTENANCE CAPABILITIES ON WKEND.

JOAP & LOW & HIGH PRESURE NITROGEN SERVICING FURNISHED DURING NORMAL DUTY HOURS, OTR TIMES ON REQUEST.

UNLESS PARTICIPATING IN MAJCOM SPONSORED EXER AT ELMENDORF; DEPLOYED OR STAGED UNITS MUST CTC 3 WG SCHEDULING AT DSN 317−552−2406 OR C907−552−2406 AS EARLY AS POSSIBLE TO COORD LOCAL AREA ORIENTATION BRIEFING, MAINT SPONSORSHIP IF APPLICABLE, AND SUBMIT VISITING UNIT REQUEST FORM FOR 3 OG/CC APVL PRIOR TO LCL AREA OPS.

OIL: O−123, O−128, O−133, O−148, O−156, JOAP.

ACFT UNABLE TO MEET R2203 DEP RSTRNS ADVISE ATC PRIOR TO DEP; CONSIDER DEP RWY 24. SEE ATC NOTES IN GIANT REPORT.

HGR SPACE & WARM STORAGE EXTREMELY LMTD OCT−MAY.

RCR/RSC RWY 06/24 & 16/34 & FLD RCR CTC ATCT. RWY COND CODE & FICON NOT RPTD.

CHANGE JET AIRCRAFT STARTING UNITS (JASU) TO, (A/M32A−86), MC−1A), (MC−2A), (AM32A−60A). (AM32−95)150 +/−5 LBS/MIN (2055 +/−68CFM) AT 51 +/−02 PSIA. LASS 150 +/−5 LBS/MIN @ 49 +/−2 PSIA.

IF EXP TO USE RWY 16 FOR DEP OR RWY 34 FOR LDG SEE JBER CARTEE AIRSPACE DESCRIPTION IN NOTICES SEC OF THIS SUPPLEMENT.

ACFT REQUIRING CABLES DE−RIGGED MUST CTC BASE OPS 24 HR PRIOR TO ARR OR MAKE REQ PRIOR TO PPR BEING ISSUED.

ALL FTR ACFT ON ARR EXPECT REDUCED SEPARATION; SAME TYPE ACFT AND DAY 3000 FT; DISSIMILAR ACFT AND/OR NIGHT 6000 FT; AHEAD/BEHIND FORMATION LDG−6000 FT.

ALL NON−AMC ACFT RQR 732 AMS MAINT/SVC MAY EXPERIENCE LOGISTICAL DELAYS DUE TO MISSION NECESSITIES.

SPECIAL AIR TRAFFIC RULES FAR PART 93, SEE REGULATORY NOTICES IN THE SUPPLEMENT.

FLUID: PRESAIR, DE−ICE, NITROGEN−LHNIT.

NORMAL BARRIER CONFIGURATION DUR FTR FLY WINDOW LEAVES 5675 FT BTN CABLES ON RWY 06/24, OUTSIDE OF FTR FLY WINDOWS THERE IS 7658 FT BTN CABLES.

RWY 34 DEPARTURES FOR ACFT WITH WINGSPANS GREATER THAN 98 FT RQR PRIOR COORD WITH AMC, ATC TWR, OR ALD MGT.

DV SPOTS 1 AND 3 LTD TO ACFT WITH WINGSPANS OF 136 FT OR LESS.

ALL VIP ACFT CTC BASE OPS 30 MIN PRIOR TO ARR ON PTD 372.2 OR 134.1 OR C907−552−2107.

UNITS DEPLOYING TO, STAGING OUT OF, OR FLYING LCL SORTIES AT ELMENDORF AFB MUST DEPLOY WITH MAINT PERS REQUIRED TO COMPLETE OPS TO INCLUDE DE−ICE QUALIFIED CREWMEMBERS DUR COLD WX OPS.

ANY DEPLOYED OR STAGED ACFT WILL NOT RCV TA SUPPORT BYD INITIAL BLOCK IN.

C17/C130 OVERT LIGHTS AVBL ON RWY 16/34. C17/C130 COVERT LIGHTS AVBL ON RWY 16.

NO SIGNS ACCOMPANYING HOLD SHORT LINES ON INTERSECTING RWYS.

CAUTION: MOOSE ON & INVOF RWY.

LNDG RWY 16 NOT RCMND FOR JET ACFT EXCPT DURG DAY VFR DUE OBSTRN 337 FT MSL LCTD 1950 FT FM THR & 574 FT W OF CNGRLN.

WX OPR H24; DSN 317−552−4903/4397, C907−552−4903/4397. AUGMENTED SFC VIS RSTD E−SW BY BLDG.

IFF SVC AVBL.

CAUTION: NUMEROUS ACFT WILL BE OPR IFR BETWEEN 1500−2000 MSL FROM BGQ 092/10 INTO R2203 TO EDF 320/07 INVOF BIG LAKE, PALMER, BIRCHWOOD, GOOSEBAY AND WASILLA, AK., MON−SAT 0300−0800Z++, AND TUES AND THU 1800−2200Z++.

CAUTION: WHEN RWY 16 VGSI INOP, STR−IN TO RWY 16 ONLY AUTHORIZED AT NIGHT WITH MAJCOM A3 APVL.

RWY 16/34 RWY DIST REMAINING (RDR) SIGNS NOT LCTD IN CORRECT LCTN. AT RWY 16 − 2 RDR 2487 FT OF RWY REMAINING. AT RWY 16 −1 RDR 1487 FT OF RWY REMAINING.

ACFT WITH WINGSPANS OF 145 FT OR GREATER MAY EXPERIENCE REDUCED WINGTIP CLNC DOWN TO 25 FT WHEN FIGHTER ACFT ARE LCTD IN NORTHERNMOST ELBOW EOR SPOT. TWY N FM RWY 16/34 TO TWY R RSTRD TO FIGHTER ACFT ONLY WHEN ACFT ARE STAGED IN ELBOW EOR. TWY N FM RWY 16/34 TO TWY R UNUSABLE WHEN FIGHTER ACFT STAGED IN SOUTHERNMOST ELBOW EOR SPOT.

NOTICE: A RIDGE EXTENDING FROM APPROXIMATELY 260−020 DEGS ONE TO TWO MILES FROM THE TOWER PREVENTS OBSERVATION OF FOG OVER KNIK ARM. VISIBILITY MAY DROP RAPIDLY AS FOG POURS OVER RIDGE.

CAUTION: RWY 16/34, USE EXTREME CAUTION TO AVOID FALLING BLW GP TO RWY 34. DECREASED OBST CLNC ON APCH END OF RWY 34. SEVERAL TREES EXCEED 2.5 DEG, 40:1, OR PAPI CLNC PLANES, OR FALL ONLY 30 FT BLW STD FLT PATH OF LDG ACFT.

AFLD MGMT DOES NOT HAVE COMSEC STORAGE AVBL, FOR COMSEC STORAGE CTC COMMAND POST DSN 317−552−3000.

AMC ACFT ON AN AMC ASGN MSN CAN EXP TO HAVE MAINT SVC ACCOMPLISHED BY 732 AMS.

ALL ACFT MAINTAIN IDLE POWER ON OUTBOARD ENG WHILE TAXIING.

NVD OPS ON RWY 16/34 & RWY 06/24 MON−FRI FROM 0400−1000Z++.

JOAP, JOINT OIL ANALYSIS PROGRAM AVBL. LHNIT, LOW & HIGH PRESSURE NITROGEN SERVICING AVBL. DE−ICE, TYPE 1 DE−ICE LIFTOFF P−88; TYPE 4 ANTI−ICE CLARIANT SAFEWING MP−LAUNCH.

EAST RAMP HOT SPOT 19 LTD; 20K LBS N.E.W. CAT 1.1, AND 10K LBS N.E.W. CAT 1.2. COMPENSATORY MEASURES REQ FOR 1.1 N.E.W. >5K LBS AND 1.2 N.E.W. >8.8K LBS. COORDINATE ACFT PARKING WITH 732 AMS AND AFLD MGR. FOR BLDG EVAC CTC 907−552−2577.

PPRS WILL BE ISSUED NO EARLIER THAN 7 DAYS PRIOR TO ARR.

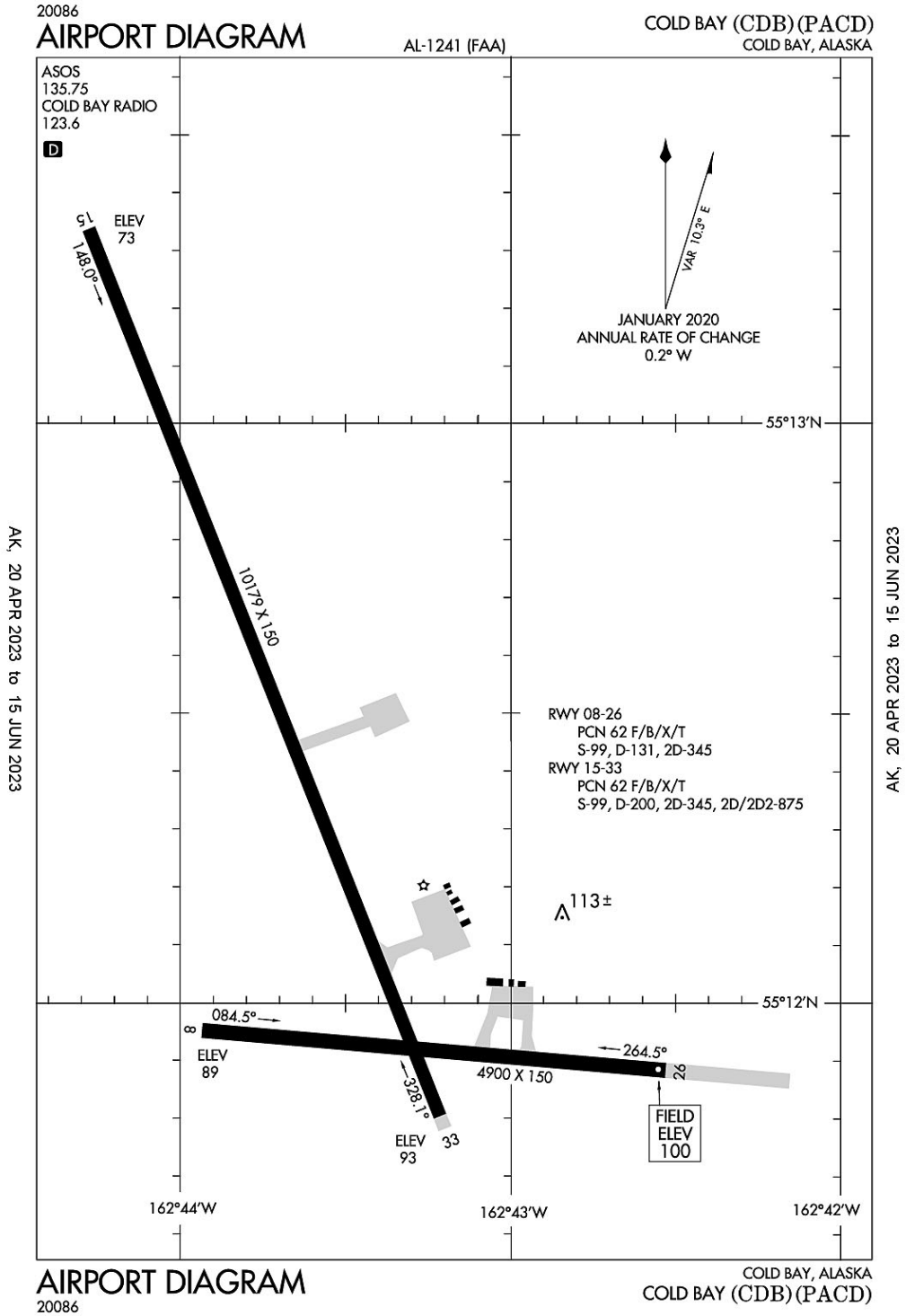
ACFT REQUIRING CUSTOMS AND AG INSPECTIONS ARE RQR TO CTC BASE OPS NO LATER THAN 90 MIN PRIOR TO ARR.

PPR REQUIRED FOR ALL NON JBER ASSIGNED ACFT EXCEPT NON−EXPLOSIVE LADEN AMCC ACFT UNLESS CONDUCTING LCL TRNG.

SUBMIT ALL PPR REQUESTS UTILIZING THE PAED PPR REQUEST FORM LOCATED IN THE PAED GIANT REPORT STIF TO BASEOPS3@US.AF.MIL NO EARLIER THAN 30 DAYS PRIOR AND NO LATER THAN 48 HOURS PRIOR TO ARRIVAL TO BEGIN COORDINATION FOR PPR.

TWYS N2 & N5 PERM CLOSED.

Cold Bay, Alaska
Cold Bay
ICAO Identifier PACD



Cold Bay, AK
Cold Bay
ICAO Identifier PACD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 55−12−21.3N / 162−43−34.5W
2.2.2 From City: 0 miles N of COLD BAY, AK
2.2.3 Elevation: 99.5 ft
2.2.5 Magnetic Variation: 12E (2015)
2.2.6 Airport Contact: HAROLD KREMER
BOX 97
COLD BAY, AK 99571 (907−532−5000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, MON − SAT Days, 0700 − 1800 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 4/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 95
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−57.1589N / 162−43−56.7308W
2.12.6 Threshold Elevation: 88.9 ft
2.12.6 Touchdown Zone Elevation: 95.2 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 275
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−53.1425N / 162−42−32.588W
2.12.6 Threshold Elevation: 99.5 ft
2.12.6 Touchdown Zone Elevation: 99.5 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 158
2.12.3 Dimensions: 10179 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−13−20.4998N / 162−44−16.4235W
2.12.6 Threshold Elevation: 72.5 ft
2.12.6 Touchdown Zone Elevation: 75 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 338
2.12.3 Dimensions: 10179 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−47.2428N / 162−43−11.707W
2.12.6 Threshold Elevation: 93.3 ft
2.12.6 Touchdown Zone Elevation: 93.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 4900 ft
2.13.3 Take−off Distance Available: 4900 ft
2.13.4 Accelerate−Stop Distance Available: 4900 ft
2.13.5 Landing Distance Available: 4900 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 4900 ft
2.13.3 Take−off Distance Available: 4900 ft
2.13.4 Accelerate−Stop Distance Available: 4900 ft
2.13.5 Landing Distance Available: 4900 ft

2.13.1 Designation: 15
2.13.2 Take−off Run Available: 10180 ft
2.13.3 Take−off Distance Available: 10180 ft
2.13.4 Accelerate−Stop Distance Available: 10180 ft
2.13.5 Landing Distance Available: 10180 ft

2.13.1 Designation: 33
2.13.2 Take−off Run Available: 10180 ft
2.13.3 Take−off Distance Available: 10180 ft
2.13.4 Accelerate−Stop Distance Available: 10180 ft
2.13.5 Landing Distance Available: 10180 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 12E
2.19.2 ILS Identification: CDB
2.19.5 Coordinates: 55–13–12.7692N / 162–44–3.6464W
2.19.6 Site Elevation: 71 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 12E
2.19.2 ILS Identification: CDB
2.19.5 Coordinates: 55–11–40.9813N / 162–43–7.3592W
2.19.6 Site Elevation: 95.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 10E
2.19.2 Navigation Aid Identification: CDB
2.19.5 Coordinates: 55–16–2.2606N / 162–46–26.3866W
2.19.6 Site Elevation: 98.5 ft

General Remarks:
PERSONNEL & EQUIP ON RWY.

SNOW, ICE REMOVAL & ARPT HAZ RPRTG DURG DUTY HR UNLESS PRIOR ARNGMT IN WRITING – AMGR.

ARPT SAND LRGR GRADE THAN FAA RCMDD/SEE AC150/5200–30.

NWS BALLOON LAUNCH FAC LCTD ON ARPT; SEE INSIDE BACK COVER FOR DETAILS.

WX CAMERA AVBL – HTTPS://WEATHERCAMS.FAA.GOV

NO CUSTOMS AVBL; 24–48 HR WRITTEN PPR FOR FOREIGN ARR RFLG STOPS – FAX 907–271–2684 OR 907–271–2686.

UNLGTD TWR 0.4 NM N; UNLGTD TWR 0.9 NM S; UNLGTD TWR 4.8 NM NW.

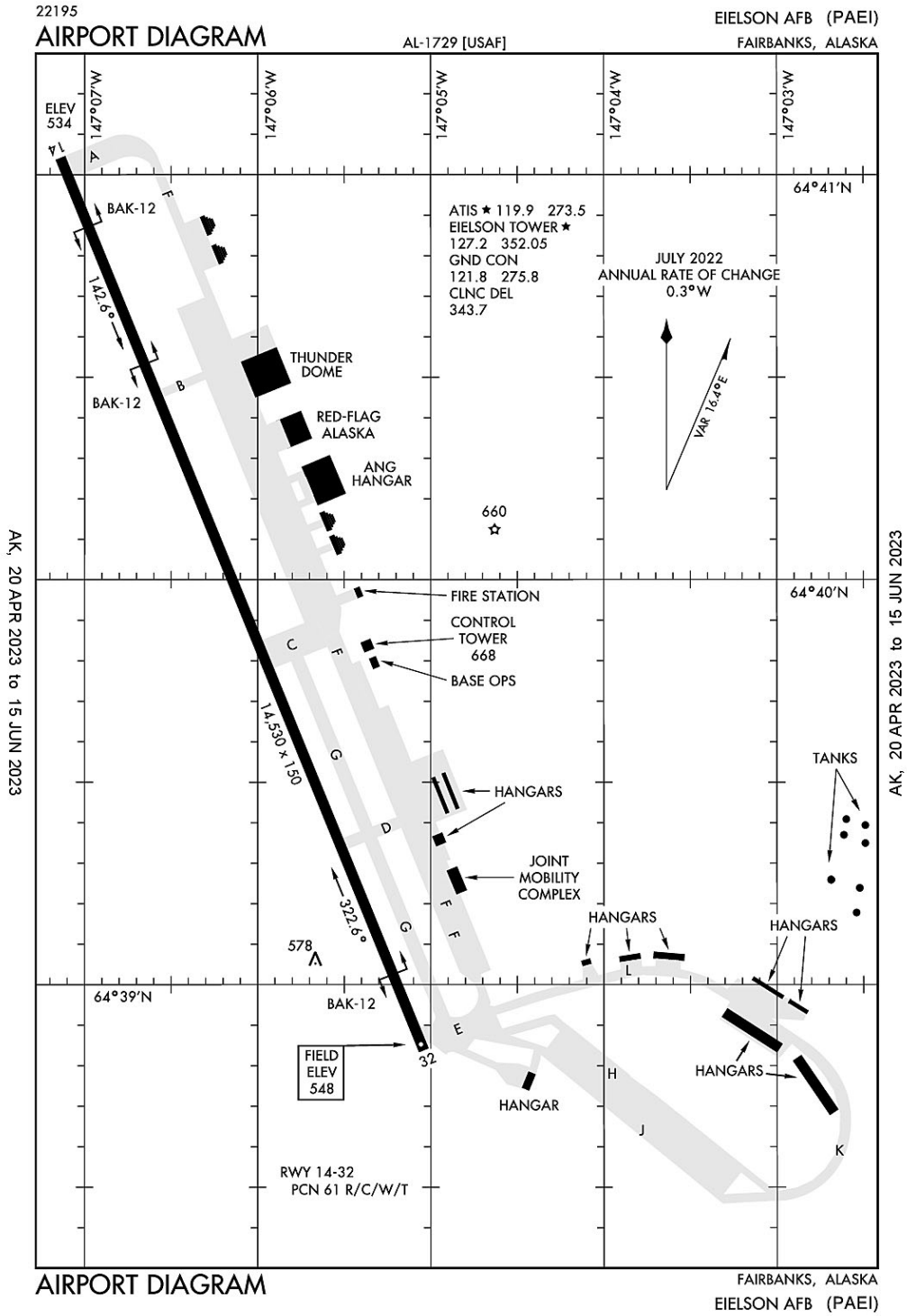
BRAKELOCK TURNS NA.

ROTG BCN UNMON WHEN FSS UNMANNED.

CFR INDEX B; MAY BE REDUCED FOR ACFT LESS THAN 90 FT.

BIRDS INVOF ALL RWY APCH ENDS.

Fairbanks, Alaska
Eielson AFB
ICAO Identifier PAEI



Fairbanks, AK
Eielson AFB
ICAO Identifier PAEI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 64−39−56.32N / 147−6−5.18W
2.2.2 From City: 17 miles SE of FAIRBANKS, AK
2.2.3 Elevation: 547.5 ft
2.2.5 Magnetic Variation: 19E (2015)
2.2.6 Airport Contact: CHIEF AIRFIELD MANAGEMENT
343 CSG/OTM
EIELSON AFB, AK 99702 (907−377−3201)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 1600−0800Z++ Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types:
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 32
2.12.2 True Bearing: 339
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 61 R/C/W/T
2.12.5 Coordinates: 64−38−49.48N / 147−5−5.85W
2.12.6 Threshold Elevation: 547.5 ft
2.12.6 Touchdown Zone Elevation: 547.5 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 159
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 61 R/C/W/T
2.12.5 Coordinates: 64−41−3.14N / 147−7−4.52W
2.12.6 Threshold Elevation: 533.9 ft
2.12.6 Touchdown Zone Elevation: 536.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 32
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 14
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 32
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 14. Magnetic variation: 19E
2.19.2 ILS Identification: EIL
2.19.5 Coordinates: 64−40−51.59N / 147−7−6.54W
2.19.6 Site Elevation: 532 ft

2.19.1 ILS Type: Localizer for runway 14. Magnetic variation: 19E
2.19.2 ILS Identification: EIL
2.19.5 Coordinates: 64−38−33.05N / 147−4−51.27W
2.19.6 Site Elevation: 548 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 19E
2.19.2 ILS Identification: EAF
2.19.5 Coordinates: 64−38−58.93N / 147−5−25.28W
2.19.6 Site Elevation: 540 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic variation: 19E
2.19.2 ILS Identification: EAF
2.19.5 Coordinates: 64−41−22.13N / 147−7−21.41W
2.19.6 Site Elevation: 528 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 19E
2.19.2 Navigation Aid Identification: EIL
2.19.5 Coordinates: 64−39−13.67N / 147−5−38.21W
2.19.6 Site Elevation: 542.4 ft

General Remarks:
SEE AP1 SUP RMKS: BASE OPS COMSEC RESPONSIBILITY NA; LTD SECRET & COMSEC STORAGE AVBL. TOP SECRET & COMSEC INFO − COMMAND POST D317−377−1500.

ALASKA ANG 168TH AREFS OPS − D317−377−8800/C907−377−8800. ANG OPS H24 − D317−377−1861/3201.

AIR TERM & GND HANDLING SVC 1630−0030Z++ WKDAY; PPR OR EXP DELAY − AFLD MGMT.

EXTSV FUEL DELAYS DURG RED FLAG ALASKA EXER APR–OCT.

CARGO & ACR CTC COMMAND POST 3 HR PRIOR & 30 MIN PROIR TO LNDG.

MAINT OPS CNTR PPR 48 HR FM ETA – D317–377–1205. DEPLOYED OR STAGED ACFT TA SUPPORT NA BYD INITIAL BLOCK IN/FINAL BLOCK OUT; EXC MAJCOM EXER AT EIELSON. UHF PREF PAT FREQ.

FAIRBANKS FSS – 474–0137. FLT ADZY OR RSTRD & MIL OPRG AREA STATUS – EIELSON RANGE CTL SUAIS RADIO 125.3 OR 1–800–758–8723.

AVOID SMALL ARMS RANGE 2.5 NM E OF RWY 32 END; WKEND 1700–0100Z++; SFC – 3500 FT AGL.

CRYPTO MTRL TSNT CREW NOT AVBL. VIP 30 MIN PPR WITH CHOCK TIME – AFLD MGMT. LTD FLEET SVC. NO POTABLE WATER.

PRIME KNGHT NOT AVBL.

CTN: NSTD LGT; 2000 FT RWY EDGE LGT BTN D – C TWY; 12 FT FM RWY EDGE.

UNMNT WHEN PAEI ATCT CLSD. WX H24 – D317–377–3140/1160 FM 1600–0800Z–; 0800–1600Z– COMD POST D317–377–1500. SVC PRIORITY FOR TO LCL FLYING SKED.

PTNS OF APRON O ROW & S RAMP NOT VIS FROM TWR.

PMSV: METRO BLW 3000 FT RECEPTION FM 300–090 LTD BYD 15 NM; BLW 15000 FT LTD BYD 75 NM; NOT LTD WI 100 NM AT 20000 FT.

FICON & RWY COND CODE NOT RPRTD.

BASH PHASE II APR, MAY, AUG & SEP. GULLS, DUCKS & GEESE POSE HAZARD WHEN STANDING WATER ON FLD. RPT BIRD & ANIMAL STRIKES INVOF ARPT TO AFLD MGMT – D317–377–186, PTD OR 354 FW/SE D317–377–4110.

N & S BARRIER RUNOUT REDUCED TO 950 FT.

EIELSON AFB IS A 1 MOG STATION.

ARFF STATUS CRITICAL LVL OF SVC (CLS) 62% FOR USAF CAT 10; REDUCED LVL OF SVC (RLS) 81% FOR USAF CAT 9.

TSNT BRIEFING AFT OPS HR – 17TH OWS AT JOINT BASE PEARL HARBOR–HICKAM D315–449–8333/7950/C808–449–8333/7950 OR D315–448–3809/C808–448–3809.

BIRD WATCH COND MOD LCL PAT LTD TO MIN RQR WITH OG/CC APVL; TGL, FORMATION TKOF/LNDG NA; LOW APCH LTD TO 300 FT AGL. BIRD WATCH COND SVR; TKOF, PAT & LNDG NA EXC EMERG.

FONE PATCH THRU 354 FW/CP – 907–377–1500/FMQ19 907–377–5846.

AUGMENTATION CAPABLE 1600–0800Z–. DURG WX STN EVAC – WX SQDN AT NR ABV. ALT WX LCTN VSBY LTD.

PPR 5 DAYS – 24 HR PRIOR TO ARR – ARFLD MGMT D317–377–1861/C907–377–1861. PPR GOOD +/– 30 MIN ARR TIME; COORD PPR AFT TIME BY FONE OR PPR CNLD. EXP ARR TIME RSTRN EXC AIR EVAC & DV CODE 7 & UP.

MOOSE ON & INVOF RWY.

CONTINGENCY OPS − AMGR.

NO ENG RUNNING ON LOAD/OFF LOAD. ERO SVC AVBL FOR AMC ACFT.

LOOP TWY E OF CORROSION HANGAR 1348 THRU 4/8 BAY AREA RSTRD TO WINGSPAN 45 FT OR LESS.

TRAN ALERT: TSNT MAINT LTD TO F16 SVCG UPON AIRCREW REQ. F16 THRU FLIGHT/BPO/PREFLIGHT INSP NA.

PACAF FTR ARR EXP RDCD RWY SEP; SIMILAR TYPE/DAY − 3000 FT; DISSIMILAR TYPE, NGT, WET RWY, BHND FRMN OR RCR LESS THAN 17 − 6000 FT; FTR LDG BHND NON FTR − 9000 FT; RCR VALIDATED AS COND WARRANT.

TRANS ALERT SVC 0700−0000 MON−FRI EXP HOL; AFT HR PPR − BASOPS.

QUIET HR 0700−1500Z−; TKOF, LDG, LO APCH, OR TGL NA; EXC OG/ CC APVL. UNCTLD TKOF/LDG NA.

CTN: FIRE HYDRANTS 64 FT NE OF TWY H CNTLN.

RADIO/NAV/WX RMRKS − (F) 1500−0700Z ++ DAILY.

PAEW ON RWY WHEN TWR UNMANNED.

VHF PTD FREQ UNMNT.

MIL FLUID DE−ICE AVBL; ANTI ICE UNAVBL.

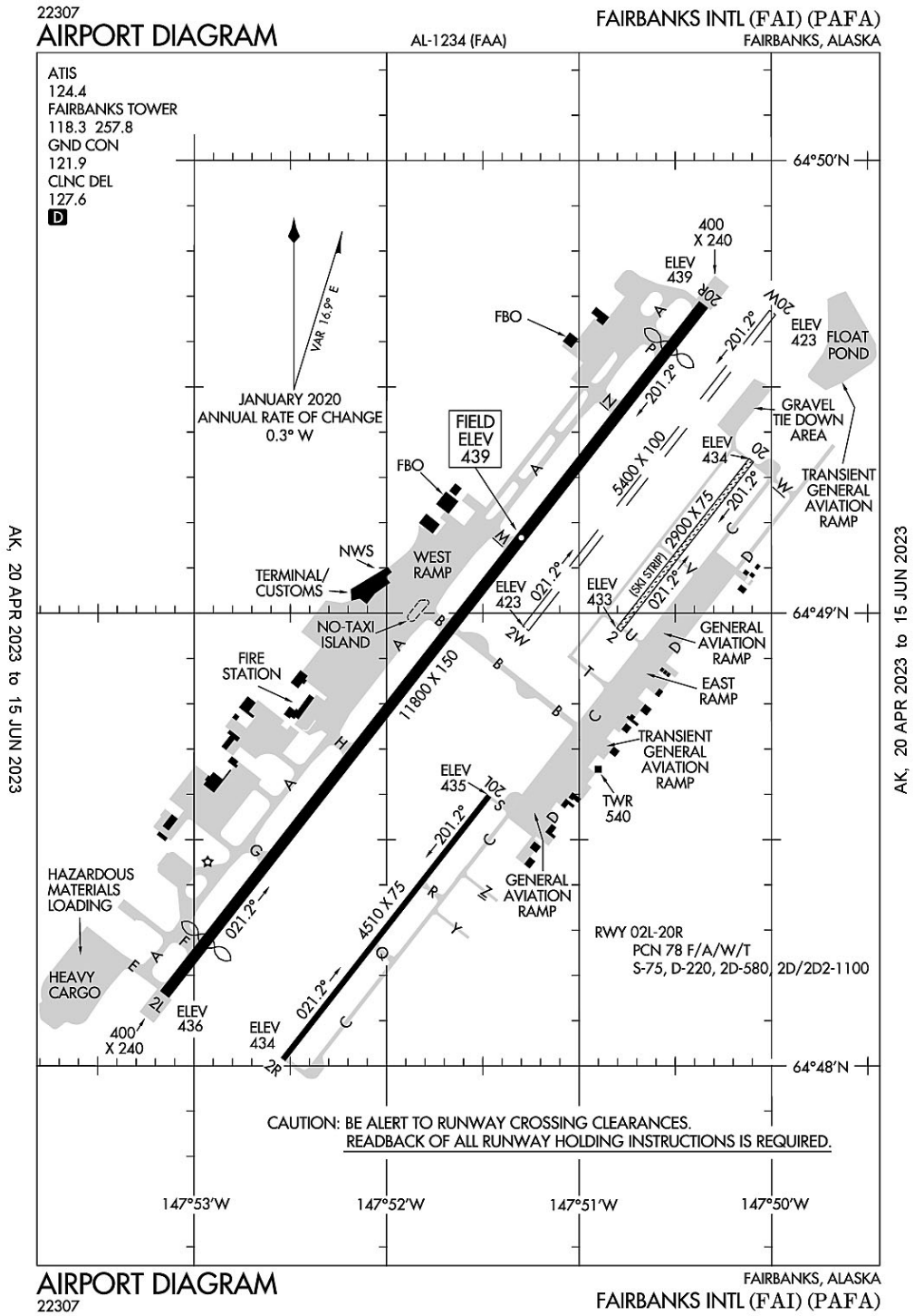
FILE FLT PLAN 2 HR BFR DEP. ARR RQR CUSTOMS 1.5 HR PPR − COMMAND POST. U.S. IMMIGRATION SVC NOT AVBL.

OVHD TFC PAT ALT 2000 FT MSL; RECTANGULAR TFC PAT ALT 1500 FT MSL.

RWY 14/32 BAK−12 DEP END CABLES IN RAISED POSITION; BAK−12 AER 14/32 AVBL WITH 20 MIN PRIOR NOTICE. NORTH BARRIER RUNOUT REDUCED TO 950 FT, HOOK EQUIPPPED ACFT BE ALERT.

ARPT OPR 1600−0800Z++.

Fairbanks, Alaska
Fairbanks International
ICAO Identifier PAFA



Fairbanks, AK
Fairbanks Intl
ICAO Identifier PAFA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 64−48−55.28N / 147−51−24W
2.2.2 From City: 3 miles SW of FAIRBANKS, AK
2.2.3 Elevation: 439 ft
2.2.5 Magnetic Variation: 15E (2025)
2.2.6 Airport Contact: ANGIE SPEAR
6450 AIRPORT WAY − SUITE 1
FAIRBANKS, AK 99709 (907−474−2500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 3/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 38
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−48−57.8002N / 147−50−47.5998W
2.12.6 Threshold Elevation: 433 ft
2.12.6 Touchdown Zone Elevation: 434.6 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 218
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−49−20.2644N / 147−50−6.2715W
2.12.6 Threshold Elevation: 433.6 ft
2.12.6 Touchdown Zone Elevation: 434.6 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 38
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−48−9.4756N / 147−53−9.1838W
2.12.6 Threshold Elevation: 435.6 ft
2.12.6 Touchdown Zone Elevation: 438.6 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 218
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−49−40.9108N / 147−50−21.1293W
2.12.6 Threshold Elevation: 438.9 ft
2.12.6 Touchdown Zone Elevation: 439 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 38
2.12.3 Dimensions: 4510 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−48−0.8616N / 147−52−32.2332W
2.12.6 Threshold Elevation: 433.5 ft
2.12.6 Touchdown Zone Elevation: 433.8 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 218
2.12.3 Dimensions: 4510 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−48−35.8092N / 147−51−28.0275W
2.12.6 Threshold Elevation: 434.5 ft
2.12.6 Touchdown Zone Elevation: 434.5 ft

2.12.1 Designation: 20W
2.12.2 True Bearing: 218
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−49−39.8349N / 147−49−59.6293W
2.12.6 Threshold Elevation: 423.4 ft
2.12.6 Touchdown Zone Elevation: 423.4 ft

2.12.1 Designation: 02W
2.12.2 True Bearing: 38
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 64−48−58.0039N / 147−51−16.5892W
2.12.6 Threshold Elevation: 423.4 ft
2.12.6 Touchdown Zone Elevation: 423.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 02
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 20
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft

2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 02L
2.13.2 Take–off Run Available: 11800 ft
2.13.3 Take–off Distance Available: 12800 ft
2.13.4 Accelerate–Stop Distance Available: 11800 ft
2.13.5 Landing Distance Available: 11050 ft

2.13.1 Designation: 20R
2.13.2 Take–off Run Available: 11800 ft
2.13.3 Take–off Distance Available: 12800 ft
2.13.4 Accelerate–Stop Distance Available: 11800 ft
2.13.5 Landing Distance Available: 11050 ft

2.13.1 Designation: 02R
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 20L
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 20W
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 02W
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 02L
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 02R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 02W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P (360–179)
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (360–179)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (180–359)
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (180–359)
2.14.3 Channel: 363.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S
2.14.3 Channel: 119.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 124.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 127.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/S
2.14.3 Channel: 327.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TRSA (180–359)
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TRSA (360–179)
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TRSA (360–179)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TRSA (180–359)
2.14.3 Channel: 363.2
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 02L. Magnetic variation: 15E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64–49–50.7376N / 147–50–15.0194W
2.19.6 Site Elevation: 434.8 ft

2.19.1 ILS Type: Glide Slope for runway 02L. Magnetic variation: 15E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64–48–21.0041N / 147–52–36.2974W

2.19.6 Site Elevation: 431.4 ft

2.19.1 ILS Type: Inner Marker for runway 02L. Magnetic variation: 15E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64–48–7.6611N / 147–53–12.5267W
2.19.6 Site Elevation: 429.8 ft

2.19.1 ILS Type: Localizer for runway 02L. Magnetic variation: 15E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64–49–49.8419N / 147–50–4.688W
2.19.6 Site Elevation: 438.1 ft

2.19.1 ILS Type: DME for runway 20R. Magnetic variation: 15E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64–48–2.289N / 147–53–30.754W
2.19.6 Site Elevation: 430 ft

2.19.1 ILS Type: Glide Slope for runway 20R. Magnetic variation: 15E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64–49–24.4215N / 147–50–39.7123W
2.19.6 Site Elevation: 434.3 ft

2.19.1 ILS Type: Localizer for runway 20R. Magnetic variation: 15E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64–48–1.4733N / 147–53–23.8771W
2.19.6 Site Elevation: 429.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 21E
2.19.2 Navigation Aid Identification: FAI
2.19.5 Coordinates: 64–48–0.2537N / 148–0–43.1132W
2.19.6 Site Elevation: 1526.4 ft

General Remarks:
WATERLANE IS CONTROLLED; CTC ATCT ON FREQ 118.3 FOR APPROVAL. WATERLANE THRESHOLD BUOYS ARE 500 FROM N AND S SHORES AND MARK WATERLANE. STEP TAXI PROHIBITED OUTSIDE OF WATERLANE. EAST OF WATERLANE IS UNCONTROLLED; AIRCRAFT MAY TAXI IN THIS AREA AT PILOT DISCRETION. RECOMMEND CTC CLNC DEL AS SOON AS PRACTICAL AFTER ENG START. SFC FROZEN IN WINTER, NOT MONITORED. LIMITED TRANSIENT FLOAT PLANE PARKING AVBL CTC 907–455–4571. MIGRATORY BIRDS IN THE VICINITY OF ARPT DURING SPRING THRU FALL.

ALL RWY HOLD LINES OBSCURED OCTOBER 1 THRU APRIL 1.

WX CAMERA AVBL ON INTERNET AT HTTPS://WEATHERCAMS.FAA.GOV.

NWS WEATHER BALLOON LAUNCH SITE 2000 FEET WEST OF MIDFIELD RUNWAY 02L/20R. LAUNCHES ARE TWICE DAILY AT 1100 AND 2300 HOURS UTC.

MILITARY CONTRACT FUEL AVBL.

FOR AVBLTY OF SUMMER GRAVEL STRIP RWY 02/20 AND WINTER SKI STRIP RWY 02/20 CONSULT LOCAL NOTAMS AND CTC TWR PRIOR TO ARRIVAL /DEPARTURE.

TWY B SECURITY GATE BETWEEN RWY 02L/20R AND TWY CHARLIE KEY 121.75 5 TIMES TO ACTIVATE. IF TWY B GATE INOPERATIVE, WAIT 30 SECONDS TO RESET AND TRY AGAIN. IF UNSUCCESSFUL, NOTIFY FAI OPS, 907−451−2300

COMPASS ROSE NOT CALIBRATED.

FOR TRANSIENT HELICOPTER PARKING CALL ARPT OPS 907−451−2300.

RWY 02R/20L & RWY GRVL/SKI 02/20 NOT AVBL FOR SCHEDULED OR UNSCHEDULED ACR OPNS WITH MORE THAN 30 PSGR SEATS.

FOR FLIGHTS IN MOAS EAST OF FAIRBANKS RECOMMEND CONTACTING EIELSON RANGR CONTROL ON 125.3/126.3 OR CALL 1−800−758−8723 FOR INFORMATION ON MILITARY ACTIVITES.

ATCT LOCATED AT 64−48−39.438N 147−50−55.722W, ELEVATION 538 FT MSL.

BE ALERT FOR SNOW REMOVAL EQUIPMENT OPNS FM 1 OCT TO 15 MAY.

TRANSIENT PARKING EAST RAMP FOR ACFT WITH WINGSPAN LESS THAN 79 FT. NO TRANSIENT ACFT PARKING ON WEST RAMP, CTC APT OPS 907−451−2300 FOR INFO & MEDIVAC PARKING.

PPR FOR MIL ACFT UTILIZING HEAVY CARGO OR TRML APN, CTC APRT OPS

NOISE ABATEMENT PROCEDURES IN EFECT FM 2200−0800 ALL LARGE ACFT, TURBINE ENGINE, AND HEAVY ACFT UTILIZE RWY 02L FOR ARRS AND RWY 20R FOR DEPS WHEN WIND IS NOT AN OPERATIOINAL FACTOR. CTC APRT OPNS FOR ENGINE RUN−UP LOCATIONS.

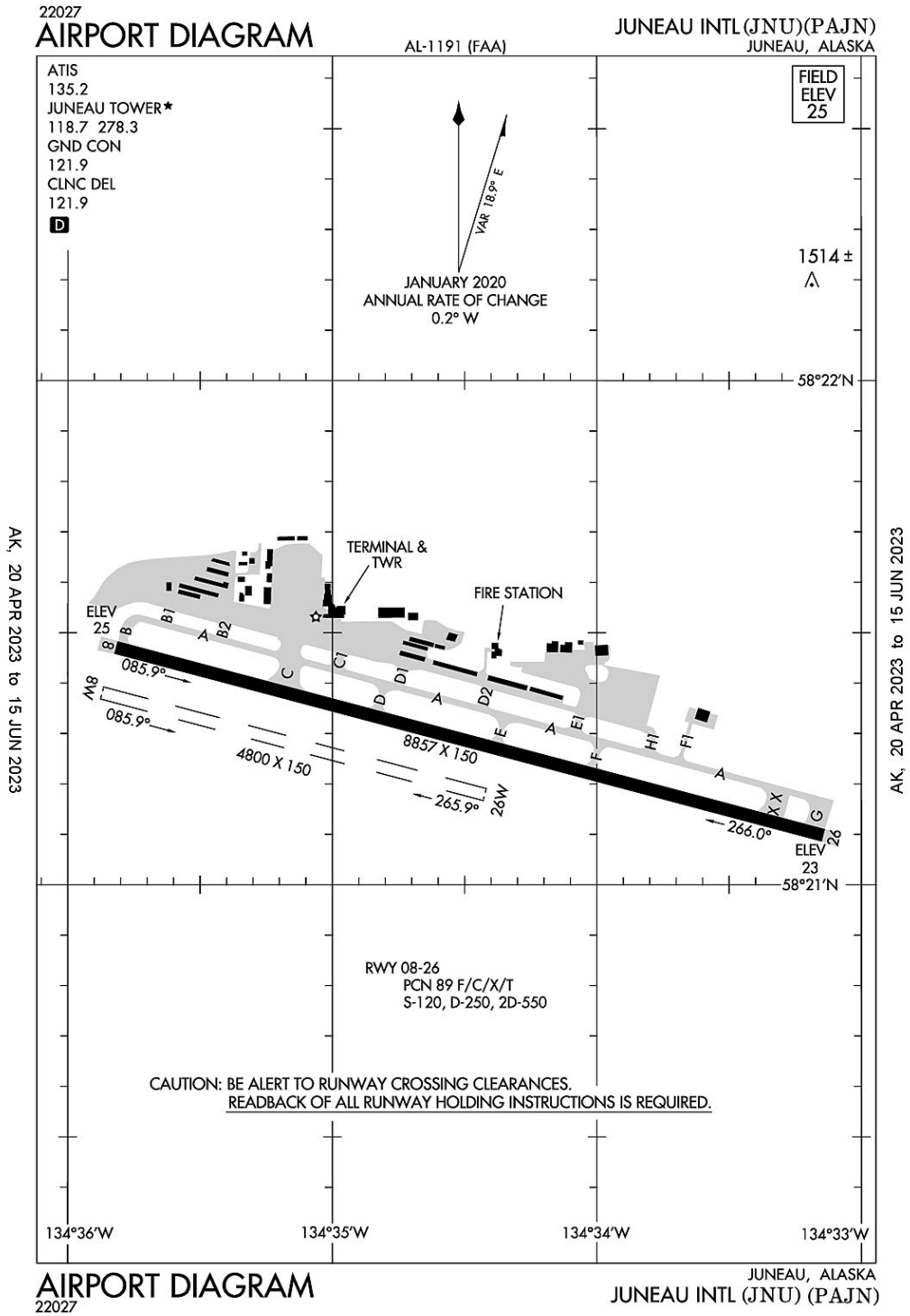
N/S TAXIWAY (TWY A) IS WEST AND PARALLEL TO RWY 02L/20R. BE ALERT TO AVOID LANDING ON TAXIWAY.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −32C.

SEE ADDITIONAL PAGES UNDER NOTICES FOR TRSA AND FAIRBANKS AREA INFORMATION.

RWY 02R/20L IS LIMITED FOR USE BY ACFT DESIGN GROUP B II, ACFT OR SMALLER.

Juneau, Alaska
Juneau International
ICAO Identifier PAJN



Juneau, AK
Juneau Intl
ICAO Identifier PAJN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 58−21−16.9625N / 134−34−42.4939W
2.2.2 From City: 7 miles NW of JUNEAU, AK
2.2.3 Elevation: 25.3 ft
2.2.5 Magnetic Variation: 20E (2015)
2.2.6 Airport Contact: PATTY WAHTO
1873 SHELL SIMMONS DR, SUITE 200
JUNEAU, AK 99801 (907−789−7821)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 4/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 105
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58−21−28.25N / 134−35−49.09W
2.12.6 Threshold Elevation: 25 ft
2.12.6 Touchdown Zone Elevation: 25 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 285
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58−21−5.88N / 134−33−8.63W
2.12.6 Threshold Elevation: 23.4 ft
2.12.6 Touchdown Zone Elevation: 23.4 ft

2.12.1 Designation: 08W
2.12.2 True Bearing:
2.12.3 Dimensions: 4800 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 58−21−22.82N / 134−35−52.23W
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 26W
2.12.2 True Bearing:
2.12.3 Dimensions: 4800 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 58–21–10.71N / 134–34–25.26W
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take–off Run Available: 8857 ft
2.13.3 Take–off Distance Available: 8857 ft
2.13.4 Accelerate–Stop Distance Available: 8457 ft
2.13.5 Landing Distance Available: 8457 ft

2.13.1 Designation: 26
2.13.2 Take–off Run Available: 8857 ft
2.13.3 Take–off Distance Available: 8857 ft
2.13.4 Accelerate–Stop Distance Available: 8457 ft
2.13.5 Landing Distance Available: 8457 ft

2.13.1 Designation: 08W
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 26W
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: V2L

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−31.0221N / 134−38−10.216W
2.19.6 Site Elevation: 179.8 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−32.035N / 134−38−10.3944W
2.19.6 Site Elevation: 165 ft

2.19.1 ILS Type: Outer Marker for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−33.5717N / 134−41−58.0236W
2.19.6 Site Elevation: 57.9 ft

General Remarks:
FOR LCL CALL TO JUNEAU FSS CALL 907−789−7380.

TRANSIENT DOCK AVBL FOR PUBLIC USE FOR UP TO SIX ACFT, SW CORNER.

RY 08/26 SAND USED TO ENHANCE RY FRICTION MAY NOT MEET FAA SPECS.

TPA 1500 AGL FOR LARGE TURBINE ACFT; 1000 FT AGL FOR FIXED WING ACFT; 500 FT AGL FOR HELICOPTERS.

APRON TERMINAL RAMP CLSD TO ROTORCRAFT. APRON US CUSTOMS RAMP CLSD TO ACFT WITH WINGSPAN MORE THAN 79 FT INTL ACFT WITH WINGSPAN MORE THAN 79 FT AND ALL INTL ROTORCRAFT USE E−1 RAMP (NTL GUARD RAMP).

WILDLIFE & BIRDS ON & INVOF ARPT.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −0C.

BATTLESHIP ISLAND RLLS GROUPING; CENTER LIGHT 582132.88N 1344012.22W. IJDL−LOCALIZER RLLS GROUPING; CENTER LIGHT 582132.02N 1343810.39W.

LENA POINT, PEDERSON HILL AND SISTERS ISLAND WX CAMERAS AVBL ON INTERNET AT HTTPS://WEATHERCAMS.FAA.GOV

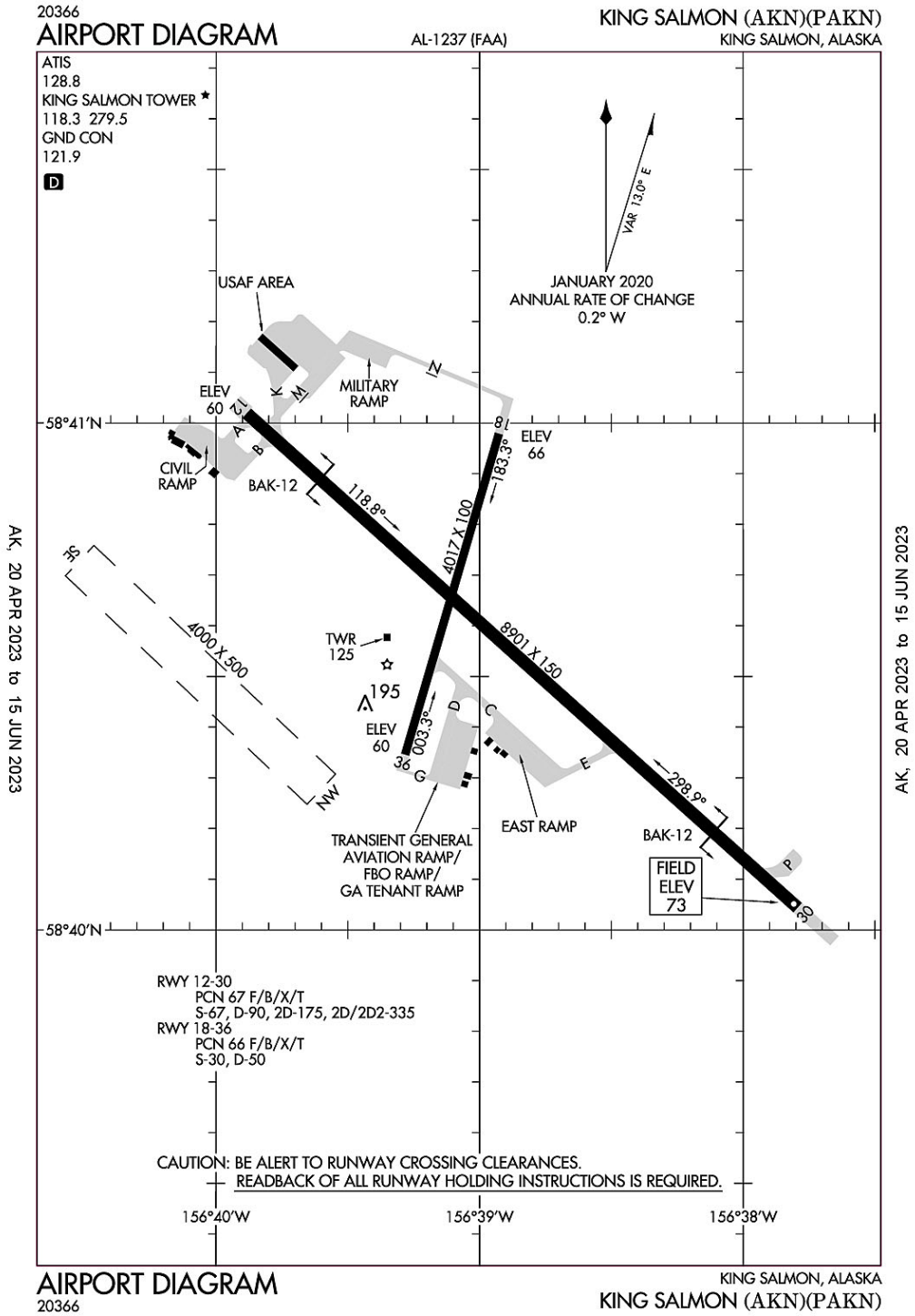
PARAGLIDING ACTIVITY 3 MILES N OF ARPT INVOF THUNDER MOUNTAIN & OVER GASTINEAU CHANNEL NEARS DOWNTOWN APR 15−OCT 1 6000 FT & BLO.

INCREASED HELICOPTER/LIGH ACFT ACTIVITY APR 15−OCT 1 ENTIRE LENGTH ON GASTINEAU CHANNEL & WITHIN 5 MILES OF ARPT.

NATIONAL GUARD 24 HR PPR DUE TO LIMITED PARKING C907−789−3366. 0730−1600 WEEKDAYS CONTACT GUARD OPS 10 MIN PRIOR TO LANDING ON 124.65.

SEE SPECIAL NOTICES AND GENERAL NOTICES FOR ADDITIONAL INFORMATION ON OPNS IN JUNEAU AREA.

King Salmon, Alaska
King Salmon
ICAO Identifier PAKN



King Salmon, AK
King Salmon
ICAO Identifier PAKN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 58–40–35.3765N / 156–38–55.2876W
2.2.2 From City: 0 miles SE of KING SALMON, AK
2.2.3 Elevation: 73.4 ft
2.2.5 Magnetic Variation: 11E (2025)
2.2.6 Airport Contact: FLOYD WILSON
PO BOX 65
KING SALMON, AK 99613 (907–246–3325)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0700–1700 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 3/21/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 12
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58–41–2.184N / 156–39–53.0154W
2.12.6 Threshold Elevation: 59.9 ft
2.12.6 Touchdown Zone Elevation: 61.8 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58–40–3.68N / 156–37–47.63W
2.12.6 Threshold Elevation: 73.4 ft
2.12.6 Touchdown Zone Elevation: 73.4 ft

2.12.1 Designation: 18
2.12.2 True Bearing: 196
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58–40–59.7835N / 156–38–55.6139W
2.12.6 Threshold Elevation: 66.1 ft
2.12.6 Touchdown Zone Elevation: 66.1 ft

2.12.1 Designation: 36
2.12.2 True Bearing: 16
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58−40−21.7997N / 156−39−16.9583W
2.12.6 Threshold Elevation: 59.9 ft
2.12.6 Touchdown Zone Elevation: 65.2 ft

2.12.1 Designation: NW
2.12.2 True Bearing:
2.12.3 Dimensions: 4000 ft x 500 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: SE
2.12.2 True Bearing:
2.12.3 Dimensions: 4000 ft x 500 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 12
2.13.2 Take−off Run Available: 8901 ft
2.13.3 Take−off Distance Available: 8901 ft
2.13.4 Accelerate−Stop Distance Available: 8501 ft
2.13.5 Landing Distance Available: 8501 ft

2.13.1 Designation: 30
2.13.2 Take−off Run Available: 8901 ft
2.13.3 Take−off Distance Available: 8901 ft
2.13.4 Accelerate−Stop Distance Available: 8501 ft
2.13.5 Landing Distance Available: 8501 ft

2.13.1 Designation: 18
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 36
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: NW

2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: SE
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 12
2.14.2 Approach Lighting System: SSALR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: NW
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: SE
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 12. Magnetic variation: 11E
2.19.2 ILS Identification: AKN
2.19.5 Coordinates: 58−39−59.6N / 156−37−31.7W
2.19.6 Site Elevation: 78 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 11E
2.19.2 ILS Identification: AKN
2.19.5 Coordinates: 58−40−57.3435N / 156−39−29.887W
2.19.6 Site Elevation: 63.5 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 11E
2.19.2 ILS Identification: AKN
2.19.5 Coordinates: 58−39−56.5549N / 156−37−32.3734W
2.19.6 Site Elevation: 77.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 16E
2.19.2 Navigation Aid Identification: AKN
2.19.5 Coordinates: 58−43−28.9653N / 156−45−8.4483W
2.19.6 Site Elevation: 94.6 ft

General Remarks:
USAF FAC CIV OPRD WITH LTD SUPPORT; CALL 24 HR PRIOR TO ARR FOR OPS HR; MIL CONFIRM FUEL RQMNTS 24−48 HR PRIOR.

FIGHTER ARR EXP RDCD SEPN; SIMILAR APCH CHARCS & DALGT 3000 FT; DISSIMILAR APCH CHARCS & NGT 6000 FT; AHD/BHND FRMN LNDG 6000 FT.

FLOCKS OF LRG BIRDS INVOF DURG SEASON.

TWY P CLSD. APRON SPOTS 4 – 7 N OF MIL HANGAR CLSD EXC PROP ACFT.

RCR DURG 11TH AF FIGHTER FLYING WINDOW; COORD RCR WITH KING SALMON OPS 907−439−3001/907−439−6000. OPS RSTRD TO LOW APCH/FSL ONLY.

600 FT SAFETY AREA AER 12.

BUSINESS JET PRKG GTR THAN 1 HR 48 HR PPR.

FLIGHT ORIG OUTSIDE AK REFER TO USAF FCG; CSTMS NOT AVBL.

CIV TSNT PRKG ON SE RAMP ONLY; OTR PRKG GTR THAN 48 HR RQRS PERMIT.

LOCKED WHEEL TURN NA ALL SFCS.

MIL FIGHTER/EMERG DVRSN CTC WARRIOR/ELMENDORF SOF 395.15; NON FIGHTER/EMERG CTC KING SALMON OPS. 24 HR POINT MNTS CTAF DURG OPS HR.

GA APRON PAVEMENT CRUMBLING; PSBL FOD HAZ. JET ACFT BE ALERT DURG RUN UP TO AVOID JET WASH DMG.

SNOW/ICE REMOVAL & ARPT HAZ COND RPRTD DURG ATND HR.

OFF PAVEMENT OPS BY ACFT & HEL NA AT ACR APRON. LNDG, TKOF OR PRKG FM DIRT OR GRASS NA.

TSA REG ARPT; SEE 49 CFR 1542. ALL GATES & DOORS RMN SECURE ALL TIMES. TSNT OR UNFAMILIAR PILOTS – AMGR FOR INFO.

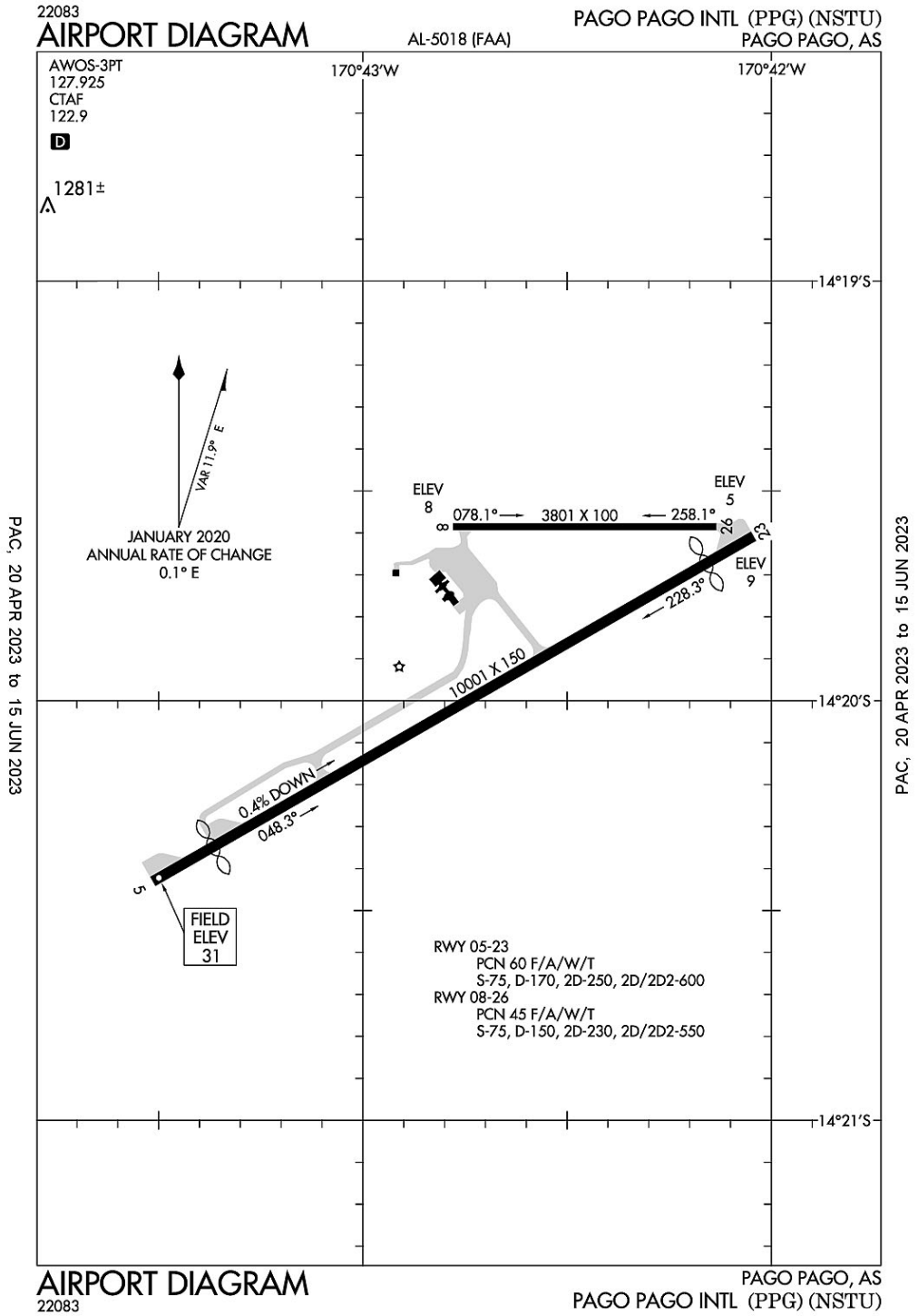
PVT JET PRKG SE SECTION OF E RAMP – AMGR FOR INFO.

WX CAMERA AVBL ON INTERNET AT HTTPS://WEATHERCAMS.FAA.GOV

ARFF AVBL FOR PART 121 ACR INVOLVED IN ETOPS WITH 30 MIN NOTICE.

NWS BLN LAUNCH FAC ON ARPT; SEE INSIDE BACK COVER FOR OPS DETAIL.

Pago Pago, American Samoa
Pago Pago/International
ICAO Identifier NSTU



Pago Pago, AS
Pago Pago Intl
ICAO Identifier NSTU

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 14−19−53.984S / 170−42−41.411W
2.2.2 From City: 3 miles SW of PAGO PAGO, AS
2.2.3 Elevation: 31.2 ft
2.2.5 Magnetic Variation: 12E (1990)
2.2.6 Airport Contact: FALENAOTI LOI−ON FRUEAN
1539 AIRPORT WAY P.O. BOX 1539
PAGO PAGO, AS 96799 (684−733−5464)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05
2.12.2 True Bearing: 60
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 60 F/A/W/T
2.12.5 Coordinates: 14−20−25.8311S / 170−43−30.8448W
2.12.6 Threshold Elevation: 31.2 ft
2.12.6 Touchdown Zone Elevation: 29.3 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 240
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 60 F/A/W/T
2.12.5 Coordinates: 14−19−36.4755S / 170−42−2.6116W
2.12.6 Threshold Elevation: 8.7 ft
2.12.6 Touchdown Zone Elevation: 8.7 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3801 ft x 100 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−19−35.126S / 170−42−46.7563W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.1 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 3801 ft x 100 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−19−35.1106S / 170−42−8.096W
2.12.6 Threshold Elevation: 4.8 ft
2.12.6 Touchdown Zone Elevation: 5.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05
2.13.2 Take−off Run Available: 9200 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 9200 ft
2.13.5 Landing Distance Available: 8200 ft

2.13.1 Designation: 23
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 9200 ft

2.13.1 Designation: 08
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 05
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−19−37.6403S / 170−42−14.7077W
2.19.6 Site Elevation: 19.1 ft

2.19.1 ILS Type: Glide Slope for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−20−13.069S / 170−43−15.1842W
2.19.6 Site Elevation: 24.5 ft

2.19.1 ILS Type: Localizer for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−19−38.7728S / 170−42−12.8837W
2.19.6 Site Elevation: 5.1 ft

General Remarks:

OLOTELE MT 1617 FT MSL 3.5 MILES WEST OF THLD RY 08.

ALL ACFT TRANSITING PAGO PAGO (EXCP COMMERCIAL CARRIERS) MUST MAKE FUEL ARRANGEMENTS WITH PPG AT 684-733-3158.

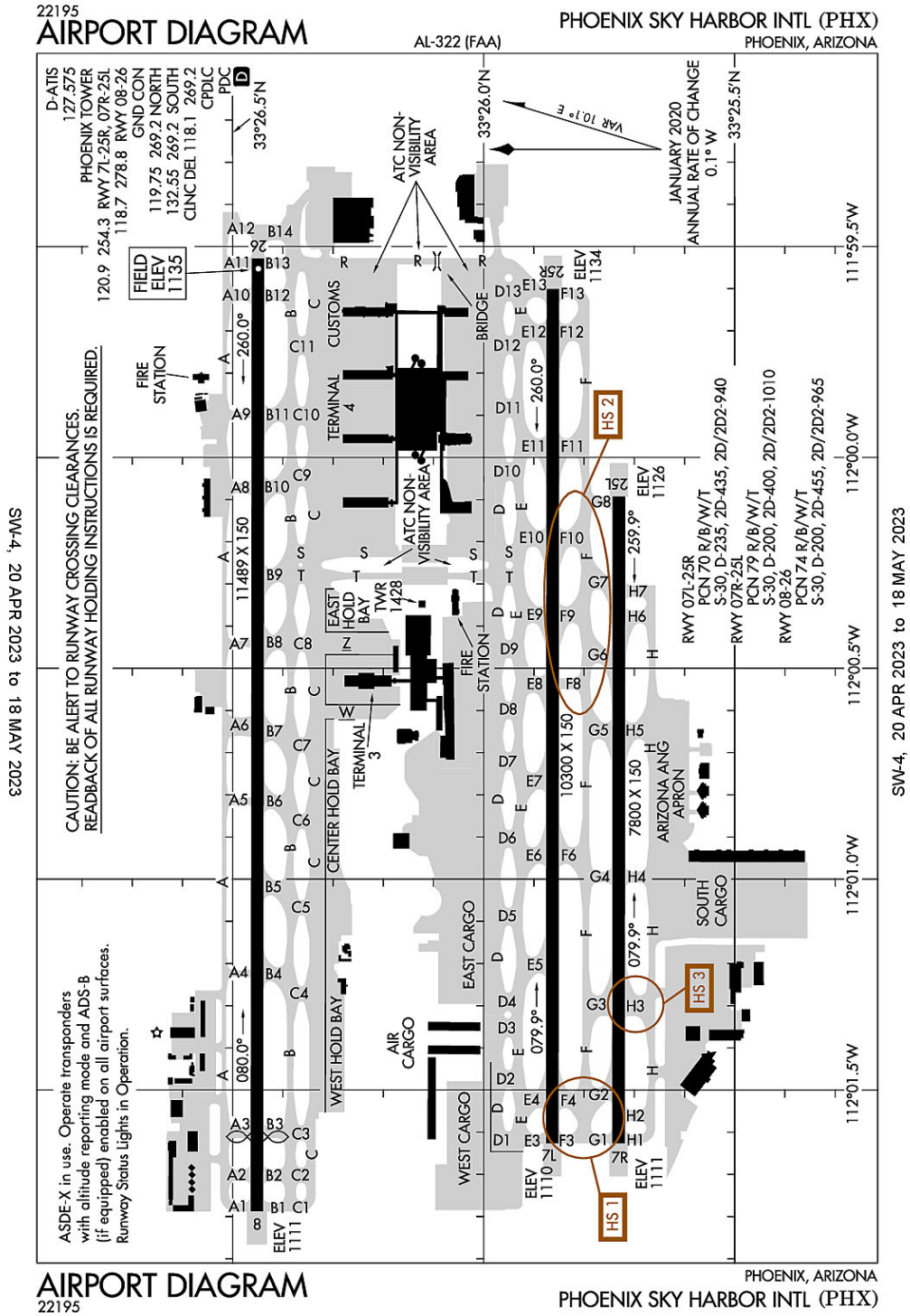
<ALL FLTS (EXCP SKED) PRIOR PMSN FROM AMGR WITH 24 HRS PRIOR NOTICE.

FOR NOTAM CONTACT NEW ZEALAND (643) 358-1688FSS: NEW ZEALAND

SEA SPRAY FM SURF & BLOW HOLES MAY DRIFT ACRS RWY 05/23 UNDER ROUGH SEA CONDS.

PERMLY LGTD & MKD 226' TWR ATOP MT ALAVA 4.3SM NNE ARPT.

Phoenix, Arizona
Phoenix Sky Harbor International
ICAO Identifier KPHX



Phoenix, AZ
Phoenix Sky Harbor Intl
ICAO Identifier KPHX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 33−26−3.4N / 112−0−41.7W
2.2.2 From City: 3 miles E of PHOENIX, AZ
2.2.3 Elevation: 1134.8 ft
2.2.5 Magnetic Variation: 12E (2000)
2.2.6 Airport Contact: CHAD R. MAKOVSKY
2485 E BUCKEYE RD
PHOENIX, AZ 85034 (602−273−3302)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 07L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33−25−51.8081N / 112−1−37.5659W
2.12.6 Threshold Elevation: 1110.2 ft
2.12.6 Touchdown Zone Elevation: 1116.5 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33−25−51.7284N / 111−59−36.0429W
2.12.6 Threshold Elevation: 1134 ft
2.12.6 Touchdown Zone Elevation: 1134.1 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33−25−43.8354N / 112−0−5.5412W
2.12.6 Threshold Elevation: 1126.3 ft
2.12.6 Touchdown Zone Elevation: 1126.4 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33−25−43.8923N / 112−1−37.5686W
2.12.6 Threshold Elevation: 1111 ft
2.12.6 Touchdown Zone Elevation: 1115.9 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33−26−26.9643N / 111−59−31.6884W
2.12.6 Threshold Elevation: 1134.7 ft
2.12.6 Touchdown Zone Elevation: 1134.8 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33−26−27.0993N / 112−1−47.257W
2.12.6 Threshold Elevation: 1111.1 ft
2.12.6 Touchdown Zone Elevation: 1118 ft

AD 2.13 Declared Distances
2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 10300 ft
2.13.3 Take−off Distance Available: 10300 ft
2.13.4 Accelerate−Stop Distance Available: 10300 ft
2.13.5 Landing Distance Available: 10300 ft

2.13.1 Designation: 25R
2.13.2 Take−off Run Available: 10300 ft
2.13.3 Take−off Distance Available: 10300 ft
2.13.4 Accelerate−Stop Distance Available: 10300 ft
2.13.5 Landing Distance Available: 10300 ft

2.13.1 Designation: 25L
2.13.2 Take−off Run Available: 7800 ft
2.13.3 Take−off Distance Available: 7800 ft
2.13.4 Accelerate−Stop Distance Available: 7800 ft
2.13.5 Landing Distance Available: 7800 ft

2.13.1 Designation: 07R
2.13.2 Take−off Run Available: 7800 ft
2.13.3 Take−off Distance Available: 7800 ft
2.13.4 Accelerate−Stop Distance Available: 7800 ft
2.13.5 Landing Distance Available: 7800 ft

2.13.1 Designation: 26

2.13.2 Take−off Run Available: 11489 ft
2.13.3 Take−off Distance Available: 11489 ft
2.13.4 Accelerate−Stop Distance Available: 11489 ft
2.13.5 Landing Distance Available: 11489 ft

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 11489 ft
2.13.3 Take−off Distance Available: 11489 ft
2.13.4 Accelerate−Stop Distance Available: 11489 ft
2.13.5 Landing Distance Available: 10591 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33−25−54.0771N / 111−59−19.1054W
2.19.6 Site Elevation: 1143 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33−25−49.0529N / 112−1−25.2134W
2.19.6 Site Elevation: 1106.5 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33–25–51.7152N / 111–59–20.367W
2.19.6 Site Elevation: 1133.5 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33–25–41.1847N / 111–59–52.1833W
2.19.6 Site Elevation: 1135.8 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33–25–46.628N / 112–1–25.0931W
2.19.6 Site Elevation: 1107.4 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33–25–43.8252N / 111–59–52.2902W
2.19.6 Site Elevation: 1124.2 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33–25–41.1847N / 111–59–52.1833W
2.19.6 Site Elevation: 1117.1 ft

2.19.1 ILS Type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33–25–40.9318N / 112–0–16.8722W
2.19.6 Site Elevation: 1120.3 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33–25–43.8995N / 112–1–49.6368W
2.19.6 Site Elevation: 1103.2 ft

2.19.1 ILS Type: DME for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33–26–24.3207N / 111–59–19.7057W
2.19.6 Site Elevation: 1149.2 ft

2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33–26–29.6544N / 112–1–24.6276W
2.19.6 Site Elevation: 1111.7 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33–26–26.9483N / 111–59–19.7443W
2.19.6 Site Elevation: 1134.1 ft

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 12E

2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−24.3207N / 111−59−19.7057W
2.19.6 Site Elevation: 1149.2 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 12E
2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−29.603N / 111−59−44.4331W
2.19.6 Site Elevation: 1129.1 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 12E
2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−27.1078N / 112−1−59.2267W
2.19.6 Site Elevation: 1105.1 ft

General Remarks:
TWYS A, A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, F BTN G2 AND G3, D BTN D8 AND T, D BTN S AND R, RESTRICTED TO A WINGSPAN OF LESS THAN 135 FT.

NO EXPERIMENTAL FLT OR GND DMSTRN ON ARPT WO PRIOR WRITTEN CONSENT FM THE AIRSIDE OPS.

NO ENG RUNS ON ARPT WO PRIOR COORDN WITH AIRSIDE OPS. NO ENG RUNS ON ARPT BETWEEN 2300L − 0500L.

RWY STATUS LGTS ARE IN OPN.

FOR GENERAL QUESTIONS CALL AIRPORT COMMUNICATIONS CENTER (602) 273−3302

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY R OVERHEAD TRAIN BRIDGE AT MIDPOINT PROVIDES 82FT−4 IN. CLEARANCE.

TWY H5, H6, H7, TWY H BTN TWY H4 AND TWY H7 CLSD TO ACFT WINGSPAN MORE THAN 171 FT.

TWY F BTW TWY INT G2 AND G3 CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT DUE TO FAA NAV EQUIPMENT.

PPR ACFT WITH WINGSPAN 215 FT OR GREATER (GROUP VI) CALL ARPT OPNS 602−272−2008 FOR FOLLOW−ME SERVICES WHILE TAXIING TO AND FROM RAMP AND RWYS.

REVIEW HOT SPOT INFO ON AIRPORT DIAGRAM. ADDITIONAL SAFETY VIDEO @ HTTP://SKYHARBOR.-COM/BUSINESS/FORPILOTS/SAFETYVIDEOFORPILOTS

FEE FOR ALL CHARTERS; TRAVEL CLUBS AND CERTAIN REVENUE PRODUCING ACFT.

PRACTICE INSTRUMENT APPROACHES, STOP & TAXI BACK LANDINGS, STOP & GO LANDINGS, TOUCH & GO LANDINGS ARE PROHIBITED. ALL OTHER FLIGHT TRAINING OPERATIONS PROHIBITED WO PRIOR WRITTEN APPROVAL (AIRSIDE OPS 602−272−2008).

TWYS C BTN S AND R, D BTN D2 AND D7, D3, D6, H BTN H4 AND H7, H7 RESTRICTED TO WINGSPAN OF LESS THAN 171 FT.

TWY R AND PORTIONS OF TWYS S AND T DIRECTLY BELOW THE ATCT ARE NON VISIBLE AREAS FROM THE ATCT.

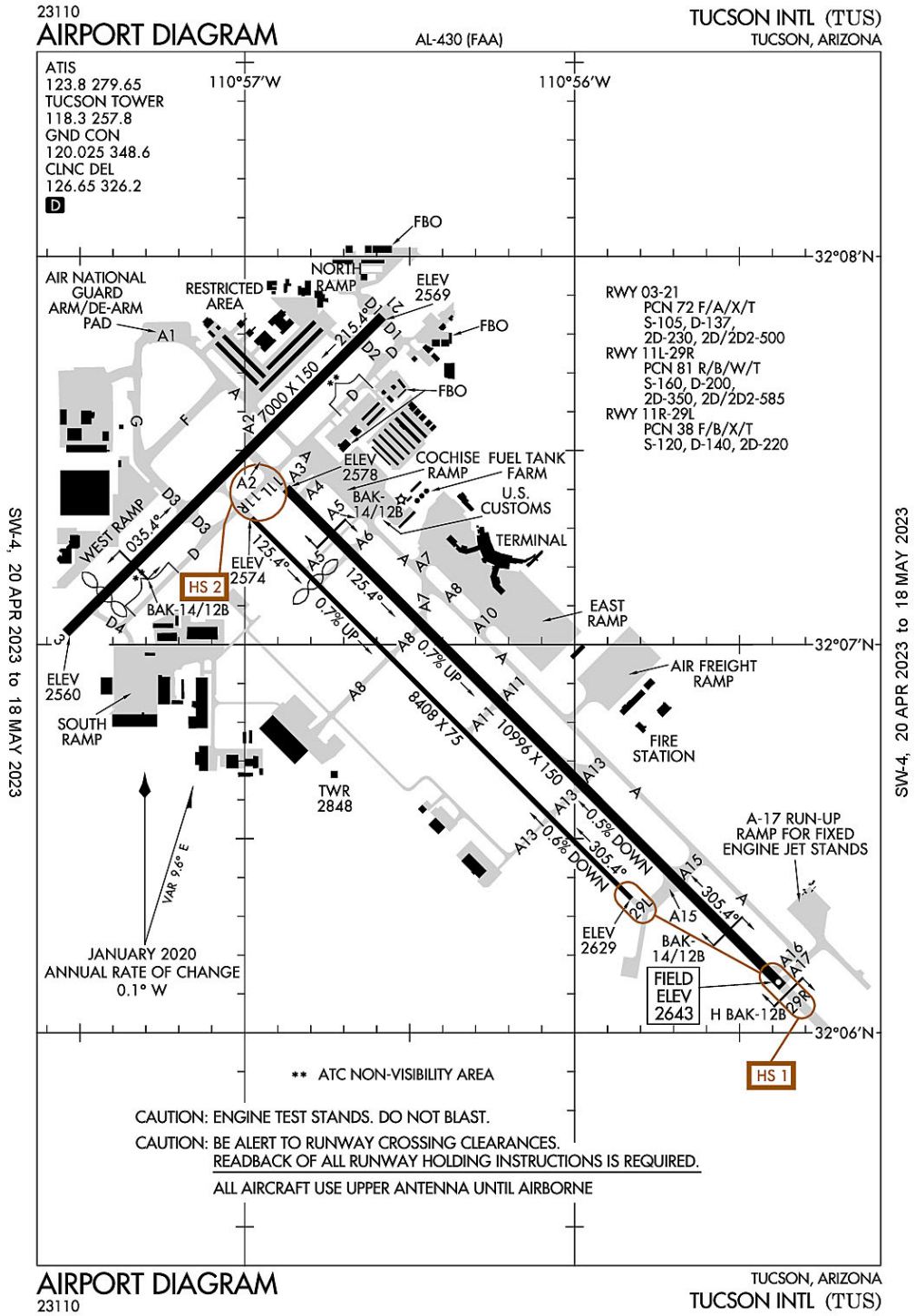
NATL GUARD HAS LMTD TSNT MAINTENANCE AND PARKING RON BY PPR (602)302–9119.

INTERNATIONAL GATE USE RQS COORDN WITH ARPT OPS 48 HOURS PRIOR TO ARRIVAL.

NOISE ABATEMENT PROCEDURES ARE IN AFFECT AT ALL TIMES.

INTERNATIONAL LANDING RIGHTS RQRS US CUSTOMS AND BORDER PROTECTION NOTIFICATION 48 HOURS PRIOR TO LANDING.

Tucson, Arizona
Tucson International
ICAO Identifier KTUS



Tucson, AZ
Tucson Intl
ICAO Identifier KTUS

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 32–6–57.849N / 110–56–27.65W
2.2.2 From City: 6 miles S of TUCSON, AZ
2.2.3 Elevation: 2643 ft
2.2.5 Magnetic Variation: 12E (1995)
2.2.6 Airport Contact: DANETTE BEWLEY
TUCSON APT AUTH 7250 S TUCSON BLVD
TUCSON, AZ 85756 (520–573–8100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A++
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32–7–1.7975N / 110–57–32.5438W
2.12.6 Threshold Elevation: 2560.2 ft
2.12.6 Touchdown Zone Elevation: 2572.1 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32–7–50.7361N / 110–56–34.9535W
2.12.6 Threshold Elevation: 2568.8 ft
2.12.6 Touchdown Zone Elevation: 2572.4 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32–7–24.1289N / 110–56–52.4852W
2.12.6 Threshold Elevation: 2577.7 ft
2.12.6 Touchdown Zone Elevation: 2598.5 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−6−7.1598N / 110−55−22.1441W
2.12.6 Threshold Elevation: 2643 ft
2.12.6 Touchdown Zone Elevation: 2643 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−7−19.5659N / 110−56−58.741W
2.12.6 Threshold Elevation: 2573.5 ft
2.12.6 Touchdown Zone Elevation: 2605 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−6−20.7186N / 110−55−49.6599W
2.12.6 Threshold Elevation: 2628.6 ft
2.12.6 Touchdown Zone Elevation: 2628.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 7000 ft
2.13.3 Take−off Distance Available: 7000 ft
2.13.4 Accelerate−Stop Distance Available: 7000 ft
2.13.5 Landing Distance Available: 6150 ft

2.13.1 Designation: 21
2.13.2 Take−off Run Available: 6000 ft
2.13.3 Take−off Distance Available: 7000 ft
2.13.4 Accelerate−Stop Distance Available: 6000 ft
2.13.5 Landing Distance Available: 6000 ft

2.13.1 Designation: 11L
2.13.2 Take−off Run Available: 10996 ft
2.13.3 Take−off Distance Available: 10996 ft
2.13.4 Accelerate−Stop Distance Available: 10996 ft
2.13.5 Landing Distance Available: 10996 ft

2.13.1 Designation: 29R
2.13.2 Take−off Run Available: 10996 ft
2.13.3 Take−off Distance Available: 10996 ft
2.13.4 Accelerate−Stop Distance Available: 10996 ft
2.13.5 Landing Distance Available: 10996 ft

2.13.1 Designation: 11R

2.13.2 Take−off Run Available: 6998 ft
2.13.3 Take−off Distance Available: 6998 ft
2.13.4 Accelerate−Stop Distance Available: 6998 ft
2.13.5 Landing Distance Available: 6998 ft

2.13.1 Designation: 29L
2.13.2 Take−off Run Available: 6998 ft
2.13.3 Take−off Distance Available: 6998 ft
2.13.4 Accelerate−Stop Distance Available: 6998 ft
2.13.5 Landing Distance Available: 6998 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−5−54.9712N / 110−55−3.2284W
2.19.6 Site Elevation: 2676.1 ft

2.19.1 ILS Type: Glide Slope for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−7−14.7604N / 110−56−48.0571W
2.19.6 Site Elevation: 2580.1 ft

2.19.1 ILS Type: Localizer for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−5−53.5044N / 110−55−6.1189W
2.19.6 Site Elevation: 2659.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 12E
2.19.2 Navigation Aid Identification: TUS
2.19.5 Coordinates: 32−5−42.7296N / 110−54−53.4781W
2.19.6 Site Elevation: 2670.5 ft

General Remarks:
CTN: REVIEW ARPT DIAGRAM HOT SPOT INFO.

MIL: ANG OFFL BUS ONLY; 72 HR PPR − D844−6731/C520−295−6731; FAX EXTN 6732. BASE OPS 1300Z−2300Z MON−FRI & DRILL WKEND 1300Z−2130Z; CLSD OTR WKENDS, HOL & SKED OFF DAYS. TRAN ALERT MAINT NA. TSNT SI FSL ONLY. CONTR FUEL NA.

ACR USE RWY 03/21 & 11L/29R.

SERVICE−A−GEAR: BAK−14/BAK−12B APCH END RWY 11L AND BAK−14/BAK−12B APCH END RWY 29R, ENGAGEMENTS AVBL ONLY DUR ANG DUTY HR AND 15 MIN PN RQR.

TWY A5 LTD 70000 LB OR LESS.

PPR REQUIRED FOR ALL CHARTER, SPORTS TEAM, CARGO AND MILITARY AIRCRAFT. CONTACT FBO FOR PPR REQUEST. LANDING AND PARKING FEES MAY APPLY FOR ACFT 12500 LBS AND UP.

FLT TRNG 2200−0600 NA EXC PPR − 520−573−8190.

MIL/COMM/BASE OPS ARR CTC TITAN OR PUMA − ANG BASE OPS/COMD POST FREQ.

PTNS TWY D NOT VIS FM ATCT.

USE UPPER ANT UNTIL AIRBORNE.

CTN: RWY 29L SHORTER NARROW RWY S OF RWY 29R. NW ARR & DEP DO NOT MISTAKE TWY A FOR LNDG SFC; TWY A IS N & PARL TO RWY 29R.

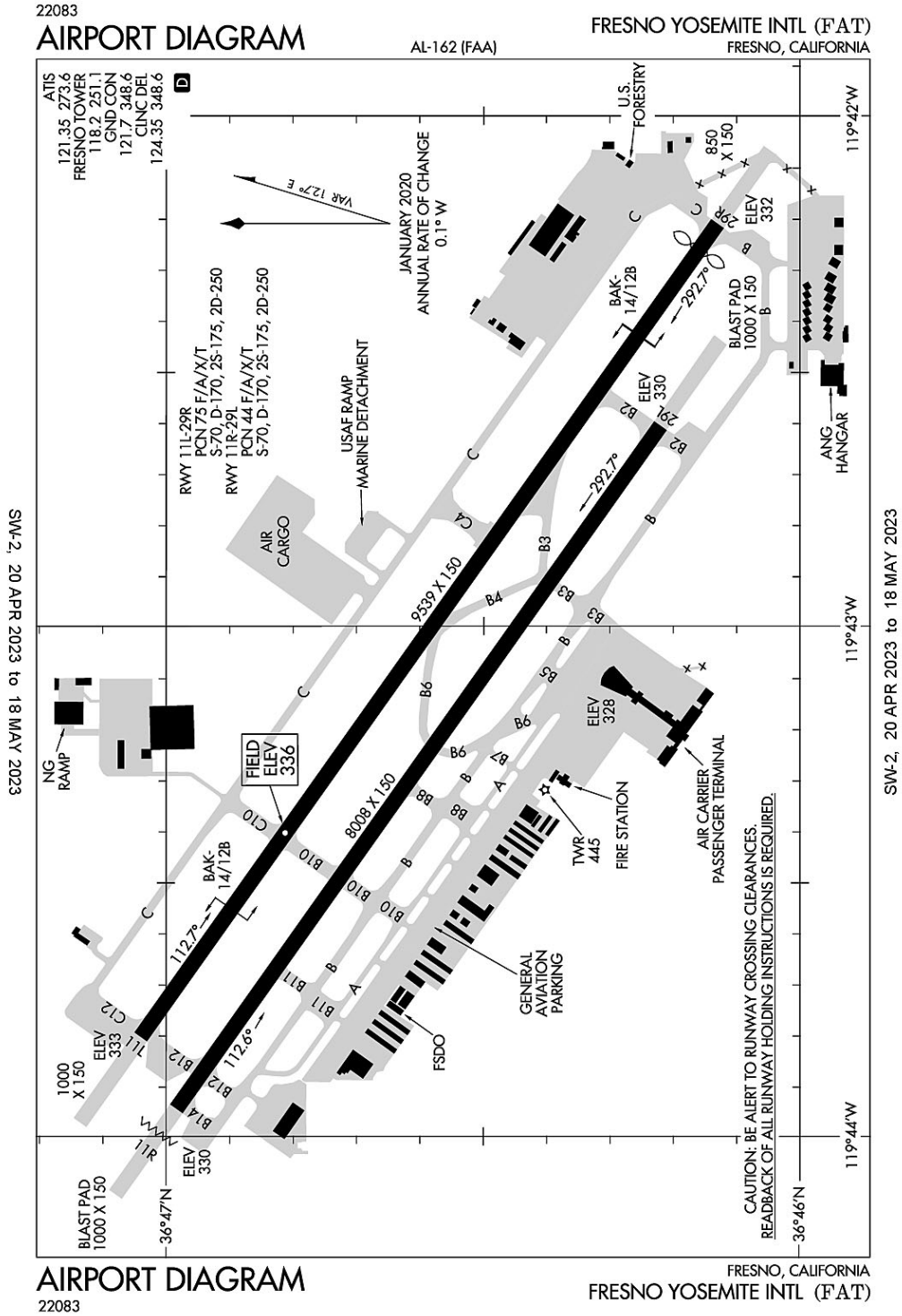
GEN ARPT INFO − 520−573−8182.

GROUP V TAX WITH INBOARD ENG ONLY.

MIL: BIRD ACT PHASE II IN EFCT 1 JUL−31 AUG.

USCBP INSP RAMP RFLG NA EXC MED EMERG.

Fresno, California
Fresno Yosemite International
ICAO Identifier KFAT



Fresno, CA
Fresno Yosemite Intl
ICAO Identifier KFAT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 36−46−35.6N / 119−43−7.8W
2.2.2 From City: 5 miles NE of FRESNO, CA
2.2.3 Elevation: 335.5 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: HENRY L. THOMPSON
4995 E CLINTON WAY
FRESNO, CA 93722 (559−621−4600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 11L
2.12.2 True Bearing: 125
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−47−2.406N / 119−43−48.3081W
2.12.6 Threshold Elevation: 333 ft
2.12.6 Touchdown Zone Elevation: 335.5 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 305
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−46−7.8228N / 119−42−12.6898W
2.12.6 Threshold Elevation: 332 ft
2.12.6 Touchdown Zone Elevation: 332.6 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 305
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36−46−13.2042N / 119−42−36.4402W
2.12.6 Threshold Elevation: 329.9 ft
2.12.6 Touchdown Zone Elevation: 330.7 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 125
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36–46–59.0217N / 119–43–56.7171W
2.12.6 Threshold Elevation: 330 ft
2.12.6 Touchdown Zone Elevation: 332.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 11L
2.13.2 Take–off Run Available: 9539 ft
2.13.3 Take–off Distance Available: 9539 ft
2.13.4 Accelerate–Stop Distance Available: 9279 ft
2.13.5 Landing Distance Available: 9279 ft

2.13.1 Designation: 29R
2.13.2 Take–off Run Available: 9539 ft
2.13.3 Take–off Distance Available: 9539 ft
2.13.4 Accelerate–Stop Distance Available: 9539 ft
2.13.5 Landing Distance Available: 9227 ft

2.13.1 Designation: 29L
2.13.2 Take–off Run Available: 8008 ft
2.13.3 Take–off Distance Available: 8008 ft
2.13.4 Accelerate–Stop Distance Available: 8008 ft
2.13.5 Landing Distance Available: 8008 ft

2.13.1 Designation: 11R
2.13.2 Take–off Run Available: 8008 ft
2.13.3 Take–off Distance Available: 8008 ft
2.13.4 Accelerate–Stop Distance Available: 8008 ft
2.13.5 Landing Distance Available: 8008 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 11L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: ANG OPS
2.14.3 Channel: 140
2.14.5 Hours of Operation:

2.14.1 Service Designation: ANG OPS
2.14.3 Channel: 298.3
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P DEP/P (091–239)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (091–239)
2.14.3 Channel: 323.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (240–090)
2.14.3 Channel: 119.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (240–090)
2.14.3 Channel: 351.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S (S/SE VISALIA AREA)
2.14.3 Channel: 118.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S (S/SE VISALIA AREA)
2.14.3 Channel: 268.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 121.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 273.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (240–090)

2.14.3 Channel: 119.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (091–239)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (091–239)
2.14.3 Channel: 323.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (240–090)
2.14.3 Channel: 351.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NG OPS
2.14.3 Channel: 40.95
2.14.5 Hours of Operation:

2.14.1 Service Designation: NG OPS
2.14.3 Channel: 132
2.14.5 Hours of Operation:

2.14.1 Service Designation: NG OPS
2.14.3 Channel: 255.8
2.14.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 11L. Magnetic variation: 13E
2.19.2 ILS Identification: RPW
2.19.5 Coordinates: 36−47−10.81N / 119−43−56.63W
2.19.6 Site Elevation: 347.1 ft

2.19.1 ILS Type: Localizer for runway 11L. Magnetic variation: 13E
2.19.2 ILS Identification: RPW
2.19.5 Coordinates: 36−46−2.54N / 119−42−3.44W
2.19.6 Site Elevation: 331.3 ft

2.19.1 ILS Type: DME for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−47−10.81N / 119−43−56.63W
2.19.6 Site Elevation: 347.1 ft

2.19.1 ILS Type: Glide Slope for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−46−18.84N / 119−42−23.4799W
2.19.6 Site Elevation: 332 ft

2.19.1 ILS Type: Localizer for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−47−8.2801N / 119−43−58.6W
2.19.6 Site Elevation: 333.7 ft

General Remarks:

MILITARY: SVC: RWY 29R AND 11L A−GEAR CABLE AVBL UPON REQ ONLY; DEFAULT POSN DOWN.

MILITARY: ANG: CTC ANG OPS FOR LCL BIRD WATCH COND (BWC).

SERVICE− JET AIR START UNIT (JASU): (AM32A−60) 2(AGPU)

FRESNO YOSEMITE INTL IS NOISE SENSITIVE; NOISE ABATEMENT PROCEDURES IN EFFECT.

SERVICE − FUEL: ROSS AVIATION, C559−251−1555

RETRACTABLE BAK−12/14 AVBL ON RY 11L AND RY 29R ARE KEPT IN RECESSED POSITION UNTIL REQ FOR USE; TWR MUST BE NOTIFIED AT LEAST 5 SECONDS PRIOR TO ENGAGEMENT SO THAT THE AG CABLE MAY BE RAISED.

POSSIBLE WAKE TURBULENCE OR WIND SHEAR ARR TO RY 29L OR DEP FM RY 11R. JET TESTING CONDUCTED AT AIR NATIONAL GUARD RAMP LCTD AT SE CORNER OF ARPT.

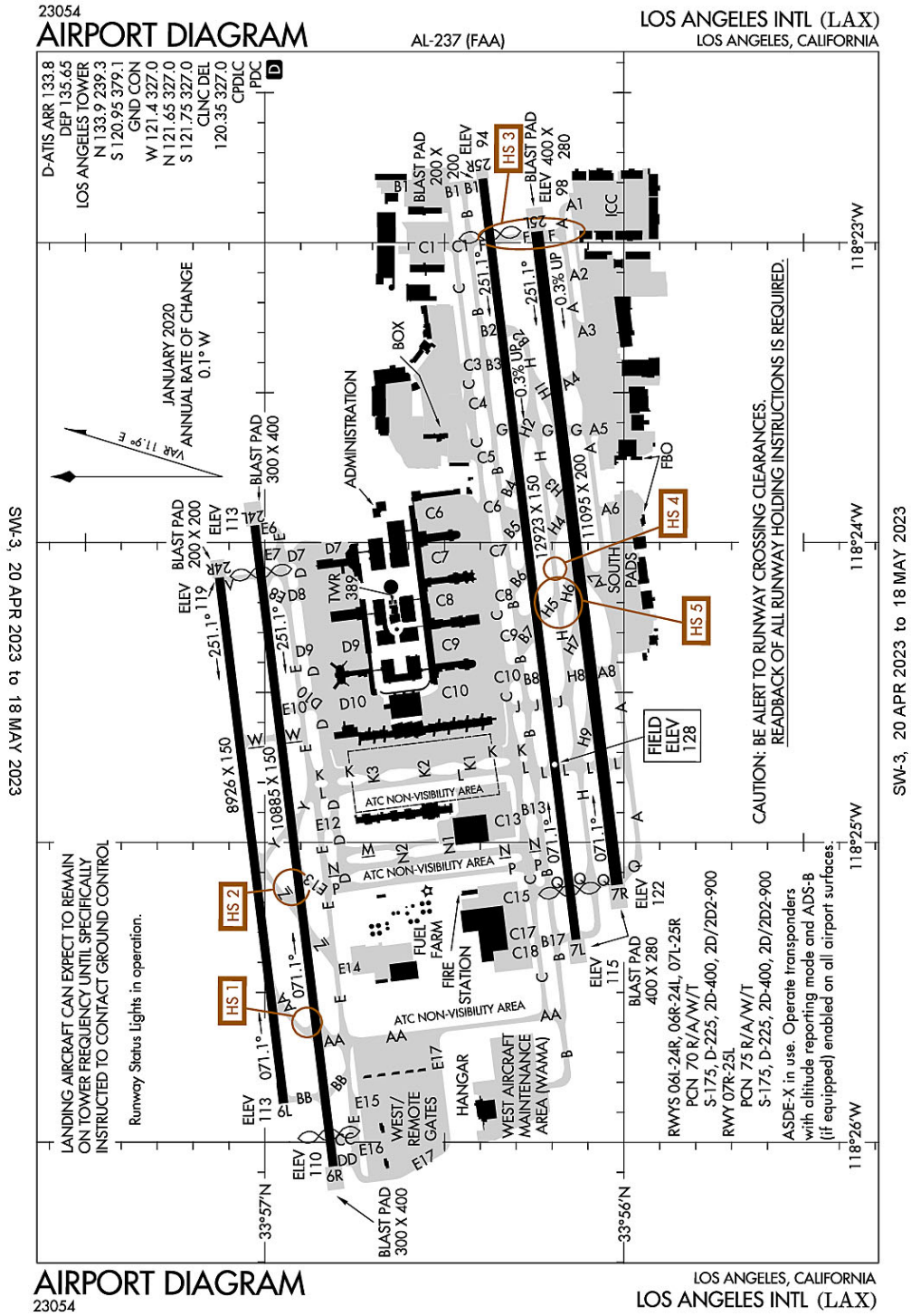
SERVICE−FUEL: SIGNATURE FLIGHT SUPPORT, C559−981−2490

NO MULT APCHS AND LNDGS MON−SAT 2200−0700 AND SUN 1800−1000.

LGTD RY DISTANCE REMAINING MARKERS ON SOUTH SIDE OF RY 11R/29L; LGTD RY DISTANCE REMAINING MARKERS BOTH SIDES OF RY 11L/29R− 11L DRM ON NORTH SIDE; 29R DRM ON SOUTH SIDE.

NUMEROUS BIRDS INVOF ARPT.

Los Angeles, California
Los Angeles International
ICAO Identifier KLAX



Los Angeles, CA
Los Angeles Intl
ICAO Identifier KLAX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 33−56−32.987N / 118−24−28.975W
2.2.2 From City: 9 miles SW of LOS ANGELES, CA
2.2.3 Elevation: 127.8 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: VIJI PRASAD
ONE WORLD WAY
LOS ANGELES, CA 90009 (424−646−8251)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−56.8049N / 118−25−52.1755W
2.12.6 Threshold Elevation: 113.1 ft
2.12.6 Touchdown Zone Elevation: 118.8 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 263
2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−57−7.5741N / 118−24−7.0161W
2.12.6 Threshold Elevation: 118.9 ft
2.12.6 Touchdown Zone Elevation: 122.4 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−48.5368N / 118−26−4.8042W
2.12.6 Threshold Elevation: 109.9 ft
2.12.6 Touchdown Zone Elevation: 116.2 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−57−1.6678N / 118−23−56.5656W
2.12.6 Threshold Elevation: 112.9 ft
2.12.6 Touchdown Zone Elevation: 122.5 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 263
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−23.5604N / 118−22−47.2005W
2.12.6 Threshold Elevation: 94.3 ft
2.12.6 Touchdown Zone Elevation: 103.8 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−7.9864N / 118−25−19.4335W
2.12.6 Threshold Elevation: 114.8 ft
2.12.6 Touchdown Zone Elevation: 127.8 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−1.1378N / 118−25−8.466W
2.12.6 Threshold Elevation: 121.7 ft
2.12.6 Touchdown Zone Elevation: 127.6 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−14.5069N / 118−22−57.7701W
2.12.6 Threshold Elevation: 97.8 ft
2.12.6 Touchdown Zone Elevation: 103.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: 8926 ft
2.13.3 Take−off Distance Available: 8926 ft
2.13.4 Accelerate−Stop Distance Available: 8566 ft
2.13.5 Landing Distance Available: 8566 ft

2.13.1 Designation: 24R
2.13.2 Take−off Run Available: 8926 ft
2.13.3 Take−off Distance Available: 8926 ft

2.13.4 Accelerate–Stop Distance Available: 8926 ft
2.13.5 Landing Distance Available: 8926 ft

2.13.1 Designation: 06R
2.13.2 Take–off Run Available: 10285 ft
2.13.3 Take–off Distance Available: 10285 ft
2.13.4 Accelerate–Stop Distance Available: 10285 ft
2.13.5 Landing Distance Available: 9748 ft

2.13.1 Designation: 24L
2.13.2 Take–off Run Available: 10285 ft
2.13.3 Take–off Distance Available: 10285 ft
2.13.4 Accelerate–Stop Distance Available: 10285 ft
2.13.5 Landing Distance Available: 9483 ft

2.13.1 Designation: 25R
2.13.2 Take–off Run Available: 12091 ft
2.13.3 Take–off Distance Available: 12091 ft
2.13.4 Accelerate–Stop Distance Available: 12091 ft
2.13.5 Landing Distance Available: 11134 ft

2.13.1 Designation: 07L
2.13.2 Take–off Run Available: 12091 ft
2.13.3 Take–off Distance Available: 12091 ft
2.13.4 Accelerate–Stop Distance Available: 12091 ft
2.13.5 Landing Distance Available: 11259 ft

2.13.1 Designation: 07R
2.13.2 Take–off Run Available: 11095 ft
2.13.3 Take–off Distance Available: 11095 ft
2.13.4 Accelerate–Stop Distance Available: 11095 ft
2.13.5 Landing Distance Available: 11095 ft

2.13.1 Designation: 25L
2.13.2 Take–off Run Available: 11095 ft
2.13.3 Take–off Distance Available: 11095 ft
2.13.4 Accelerate–Stop Distance Available: 11095 ft
2.13.5 Landing Distance Available: 11095 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33–56–50.7522N / 118–26–26.6221W
2.19.6 Site Elevation: 139.3 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33–56–54.5859N / 118–25–39.8249W
2.19.6 Site Elevation: 110.5 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33–57–8.5767N / 118–23–57.1965W
2.19.6 Site Elevation: 108.5 ft

2.19.1 ILS Type: DME for runway 24R. Magnetic variation: 12E
2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33–56–50.7522N / 118–26–26.6221W
2.19.6 Site Elevation: 139.3 ft

2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 12E
2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33–57–2.4082N / 118–24–18.522W
2.19.6 Site Elevation: 116.7 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 12E

2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33–56–53.1648N / 118–26–27.6839W
2.19.6 Site Elevation: 125.5 ft

2.19.1 ILS Type: DME for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33–56–49.9191N / 118–26–22.7714W
2.19.6 Site Elevation: 134.3 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33–56–53.3646N / 118–25–47.3623W
2.19.6 Site Elevation: 108 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33–57–2.4125N / 118–23–49.2874W
2.19.6 Site Elevation: 106.3 ft

2.19.1 ILS Type: DME for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33–56–49.9191N / 118–26–22.7714W
2.19.6 Site Elevation: 134.3 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33–57–2.31N / 118–24–18.51W
2.19.6 Site Elevation: 116.7 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33–56–46.746N / 118–26–22.2482W
2.19.6 Site Elevation: 123.4 ft

2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33–56–4.8698N / 118–25–24.8206W
2.19.6 Site Elevation: 104.3 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33–56–7.743N / 118–24–56.7237W
2.19.6 Site Elevation: 119.8 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33–56–24.7529N / 118–22–35.5432W
2.19.6 Site Elevation: 90 ft

2.19.1 ILS Type: DME for runway 25R. Magnetic variation: 12E
2.19.2 ILS Identification: CFN

2.19.5 Coordinates: 33−56−4.8698N / 118−25−24.8206W
2.19.6 Site Elevation: 104.3 ft

2.19.1 ILS Type: Glide Slope for runway 25R. Magnetic variation: 12E
2.19.2 ILS Identification: CFN
2.19.5 Coordinates: 33−56−17.8773N / 118−23−10.1796W
2.19.6 Site Elevation: 97.5 ft

2.19.1 ILS Type: Localizer for runway 25R. Magnetic variation: 12E
2.19.2 ILS Identification: CFN
2.19.5 Coordinates: 33−56−7.2503N / 118−25−26.6262W
2.19.6 Site Elevation: 119.3 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−56−3.1899N / 118−25−20.7882W
2.19.6 Site Elevation: 126 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−55−59.9253N / 118−24−55.0492W
2.19.6 Site Elevation: 118.2 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−56−15.7853N / 118−22−45.2443W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−56−3.1899N / 118−25−20.7882W
2.19.6 Site Elevation: 126 ft

2.19.1 ILS Type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−56−17.7739N / 118−23−10.2139W
2.19.6 Site Elevation: 97.3 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−55−59.8649N / 118−25−20.8676W
2.19.6 Site Elevation: 118.4 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E
2.19.2 Navigation Aid Identification: LAX
2.19.5 Coordinates: 33−55−59.3368N / 118−25−55.246W
2.19.6 Site Elevation: 185 ft

General Remarks:
TWY D BTN TWY D7 AND D8 (N OF TRML ONE) CLSD TO ACFT WITH WINGSPAN GTR THAN 157 FT.

SIMUL ACFT OPNS PROHIBITED ON TWYS L AND H9 BTWN RWYS 07L/25R AND 07R/25L.

SBND TURN NOT AVBL FROM WEST REMOTE GATE 408 AND WEST REMOTE GATE 409

RWY STATUS LGTS IN OPN.

RWY 7R/25L PREFERRED EMERG RWY.

AMERICAN EAGLE TRML SOUTHBOUND TAXING ACFT USE MNM PWR DUE TO BLAST HAZ.

ANY ACFT THAT COMES TO A STOP OR HAS ITS MOMENTUM INTRPD WHILE TURNING AND TAXING INTO ITS PRKG PSN, MUST STOP AND BE TOWED.

LAX SVC TXL M LAWA RAMP TWR OPN CTC LAWA RAMP TWR 131.975.

TURB MAY BE DEFLECTED UPWARD FM THE BLAST FENCE 180 FT E OF RWY 25R.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRACTICE INSTRUMENT APPROACHES & TOUCH AND GO LANDINGS ARE PROHIBITED.

NMRS BIRDS ON AND IN VCNTY OF ARPT.

WEST REMOTE GATES: ACFT USE OF OPEN GATES AS TAXI PATH IS PROHIBITED (GATES 406, 407, 408, 409).

NOISE SENS ARPT ON WESTERLY TAKEOFFS NO TURNS BEFORE CROSSING SHORELINE OVER−OCEAN APCHS UTILIZED 0000−0630.

ACFT USE MINIMAL PWR WHEN TXG VCNTY TRMLS DUE BLAST HAZ.

PILOTS SHOULD USE CTN FOR POSS LASER ACT IN THE LAX AREA.

MILITARY RSTD: ALL MIL ACFT OFFL BUS ONLY, MIN 24 HR PPR, CTC 61 ABW/CP FLT OPS DSN 633−3779/4014,C310−653−3779/4014.

ACFT WITH LEN GTR THAN 240 FT ARE PROHIBITED ON TXLS C7, C8 AND C9 BTN TXL C AND TWY B.

ACFT WITH WINGSPAN GTR THAN 198 FT OBND FM TXL D8 MAY NOT TURN WBND ONTO TXL D.

MILITARY AF: ALL MIL AIRCREWS MUST CTC 61 ABW/CP FLT OPS FOR PRKG LCTN/INSTRNS. NO GOVT TRNSPN, QTRS OR SECURITY AVBL. VIP NOTIFICATION PROCS APPLY. USER FEES ASSESSED USING AVCARD CREDIT. CTC SIGNATURE FLIGHT SUPPORT FBO 130.6 INBD. INBD RELAY ETA, VIP CODE, SVC REQ 30 MIN PRIOR TO ARR.

ACFT WITH WINGSPAN GTR THAN 155 FT WB ON TXL C ARE NOT AUTHD TO MAKE LEFT TURN ON TWY C10 UNDER PWR.

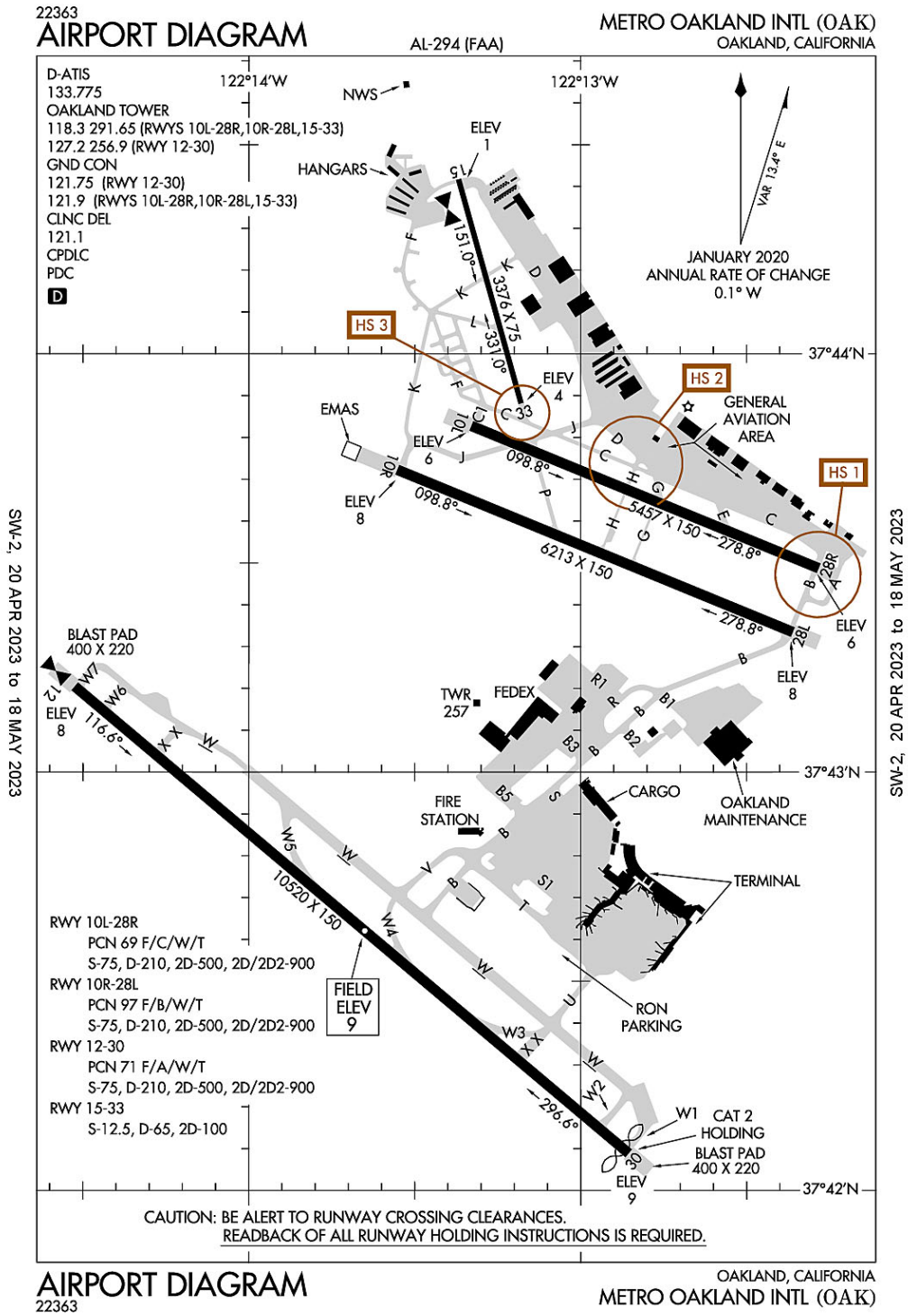
FOR ACFT WITH WINGSPAN GTR THAN 214 FT CTC LAX AIRSIDE OPS (424)−646−5292 FOR ARPT RESTRICTIONS.

MAJOR CONSTRUCTION ON AIRPORT, DAILY.

LAX SVC TXL K AND TXL L LAWA RAMP TWR OPN CTC LAWA RAMP TWR 131.075.

SIMUL ACFT OPNS PROHIBITED ON TWY H2 AND G BTN RWYS 07L/25R AND 07R/25L.

Oakland, California
Metropolitan Oakland International
ICAO Identifier KOAK



Oakland, CA
Metropolitan Oakland Intl
ICAO Identifier KOAK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−43−16.541N / 122−13−16.142W
2.2.2 From City: 4 miles S of OAKLAND, CA
2.2.3 Elevation: 9 ft
2.2.5 Magnetic Variation: 14E (2015)
2.2.6 Airport Contact: MATT DAVIS
METROPOLITAN OAKLAND INTL ARPT
OAKLAND, CA 94621 (510−563−6436)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28R
2.12.2 True Bearing: 292
2.12.3 Dimensions: 5457 ft x 150 ft
2.12.4 PCN: 69 F/C/W/T
2.12.5 Coordinates: 37−43−29.3324N / 122−12−16.9514W
2.12.6 Threshold Elevation: 5.8 ft
2.12.6 Touchdown Zone Elevation: 6.8 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 112
2.12.3 Dimensions: 5457 ft x 150 ft
2.12.4 PCN: 69 F/C/W/T
2.12.5 Coordinates: 37−43−49.6892N / 122−13−19.8482W
2.12.6 Threshold Elevation: 5.5 ft
2.12.6 Touchdown Zone Elevation: 6.3 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 292
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 97 F/B/W/T
2.12.5 Coordinates: 37−43−20.1859N / 122−12−21.6335W
2.12.6 Threshold Elevation: 8.2 ft
2.12.6 Touchdown Zone Elevation: 8.6 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 112
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 97 F/B/W/T
2.12.5 Coordinates: 37−43−43.3496N / 122−13−33.2487W
2.12.6 Threshold Elevation: 8 ft
2.12.6 Touchdown Zone Elevation: 8.9 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 310
2.12.3 Dimensions: 10520 ft x 150 ft
2.12.4 PCN: 71 F/A/W/T
2.12.5 Coordinates: 37−42−5.3755N / 122−12−51.3287W
2.12.6 Threshold Elevation: 9 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 130
2.12.3 Dimensions: 10520 ft x 150 ft
2.12.4 PCN: 71 F/A/W/T
2.12.5 Coordinates: 37−43−12.2254N / 122−14−31.6144W
2.12.6 Threshold Elevation: 8.3 ft
2.12.6 Touchdown Zone Elevation: 8.6 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 164
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 37−44−25.0534N / 122−13−22.1141W
2.12.6 Threshold Elevation: 1.4 ft
2.12.6 Touchdown Zone Elevation: 4.6 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 344
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 37−43−52.9059N / 122−13−10.8261W
2.12.6 Threshold Elevation: 3.9 ft
2.12.6 Touchdown Zone Elevation: 4.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 5457 ft
2.13.3 Take−off Distance Available: 5457 ft
2.13.4 Accelerate−Stop Distance Available: 5457 ft
2.13.5 Landing Distance Available: 5457 ft

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 5457 ft
2.13.3 Take−off Distance Available: 5457 ft

2.13.4 Accelerate−Stop Distance Available: 5336 ft
2.13.5 Landing Distance Available: 5336 ft

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 6213 ft
2.13.3 Take−off Distance Available: 6213 ft
2.13.4 Accelerate−Stop Distance Available: 6213 ft
2.13.5 Landing Distance Available: 6213 ft

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 6213 ft
2.13.3 Take−off Distance Available: 6213 ft
2.13.4 Accelerate−Stop Distance Available: 6213 ft
2.13.5 Landing Distance Available: 6213 ft

2.13.1 Designation: 30
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 12
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 15
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 33
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: OAK
2.19.5 Coordinates: 37−43−28.5969N / 122−12−30.6109W
2.19.6 Site Elevation: 3.5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: OAK
2.19.5 Coordinates: 37−43−54.5477N / 122−13−34.872W
2.19.6 Site Elevation: 3.2 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 14E
2.19.2 ILS Identification: AAZ
2.19.5 Coordinates: 37−43−2.9271N / 122−14−22.8372W
2.19.6 Site Elevation: 3.2 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 14E
2.19.2 ILS Identification: AAZ
2.19.5 Coordinates: 37−42−2.2566N / 122−12−46.6504W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: DME for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−43−33.0786N / 122−14−59.0097W
2.19.6 Site Elevation: 22.7 ft

2.19.1 ILS Type: Glide Slope for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−42−9.7498N / 122−13−5.6377W
2.19.6 Site Elevation: 4.1 ft

2.19.1 ILS Type: Localizer for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−43−29.8615N / 122−14−58.0858W
2.19.6 Site Elevation: 9.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 17E
2.19.2 Navigation Aid Identification: OAK
2.19.5 Coordinates: 37−43−33.332N / 122−13−24.9305W
2.19.6 Site Elevation: 13.2 ft

General Remarks:
100 FT LGTD MICROWAVE ANT TWR LCTD 1320 FT WSW OF OAK VORTAC; S OF UPWIND END OF RWY 28L.

TWY A, E, G, H BTN RWY 28R AND TWY C MAX ACFT WT 150,000 LBS.

PREFERENTIAL RWY USE PROGRAM IN EFFECT 2200−0600. NORTH FLD PREF ARR RWY 28L, NORTH FLD PREF DEP RWYS 10R OR 28R. IF THESE RWYS UNACCEPTABLE FOR SAFETY OR ATC INSTRN THEN RWY 12/30 MUST BE USED.

TWY C BTN TWY G & J MAX ACFT WEIGHT 90,000 LBS SINGLE; 144,000 LBS DUAL; 257,000 LBS TANDEM.

400 FT BY 220 FT BLAST PAD RWY 12 AND RWY 30.

TWY P MAX ACFT WT 116,000 LBS SINGLE; 190,000 LBS DUAL; 305,000 LBS DUAL TANDEM; 735,000 LBS DOUBLE DUAL TANDEM.

NOISE ABATEMENT PROCS N/A IN EMERGS OR WHENEVER RWY 12/30 IS CLSD DUE TO MAINT, SAFETY, WINDS OR WX.

RWY 15/33 CLSD TO ACR ACFT.

FOR NOISE ABATEMENT INFO CTC NOISE ABATEMENT OFC AT (510) 563−6463.

TWY C BTN RWY 28R & TWY G AND TWYS B, J, AND D MAX ACFT WT 861,000 LBS.

TWY K BTN TWY J AND INT TWYS F, L, K MAX ACFT WT 33000 LBS SINGLE; 45000 LBS DUAL; TANDEM NA.

24 HR NOISE ABATEMENT PROCEDURE − TBJT AND TURBOFAN PWRD ACFT, TURBOROPS OVER 17,000 LBS, FOUR−ENGINE RECIPROCATING PWRD ACFT, AND SURPLUS MIL ACFT OVER 12,500 POUNDS SHOULD NOT DEP RWYS 28L & 28R OR LAND ON RWYS 10R & 10L.

TWY C BTN TWY J & F MAX ACFT WEIGHT 76,000 LBS SINGLE; 115,000 LBS DUAL; 257,000 LBS TANDEM (DUAL TANDEM NA).

RWYS 30, 28R AND RWY 28L DIST RMNG SIGNS L SIDE.

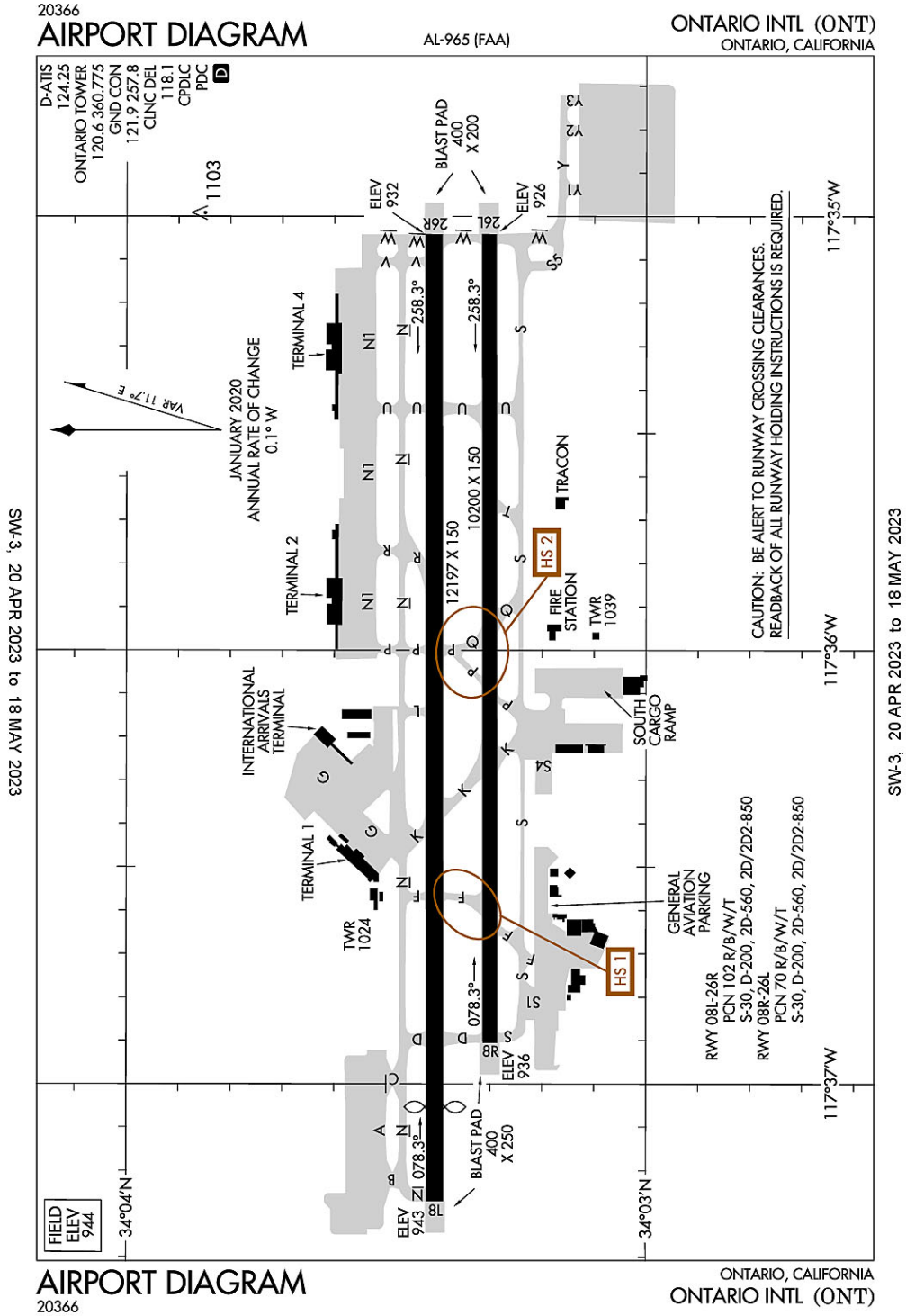
ACFT WITH EXPERIMENTAL OR LTD CERTIF HAVING OVER 1000 HORSEPOWER OR 4000 LBS ARE RSTRD TO RWY 12/30.

BIRDS ON & INVOF ARPT.

TWY G & H BTN RWY 28L & 28R: MAX ACFT WT 12,500 LBS.

TWY K BTN TWY D & INT TWYS F, L, K MAX ACFT WEIGHT 56,000 LBS SINGLE; 70,000 LBS DUAL; 130,000 LBS TANDEM.

Ontario, California
Ontario International
ICAO Identifier KONT



Ontario, CA
Ontario Intl
ICAO Identifier KONT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 34–3–21.651N / 117–36–4.275W
2.2.2 From City: 2 miles E of ONTARIO, CA
2.2.3 Elevation: 944.1 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: ATIF ELKADI
1923 EAST AVION STREET
ONTARIO, CA 91761 (909–544–5432)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,J
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34–3–24.7651N / 117–37–22.1586W
2.12.6 Threshold Elevation: 943.2 ft
2.12.6 Touchdown Zone Elevation: 944.1 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34–3–24.8259N / 117–34–57.2057W
2.12.6 Threshold Elevation: 931.8 ft
2.12.6 Touchdown Zone Elevation: 931.8 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34–3–17.8579N / 117–36–58.4219W
2.12.6 Threshold Elevation: 936 ft
2.12.6 Touchdown Zone Elevation: 936 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34−3−17.9013N / 117−34−57.1985W
2.12.6 Threshold Elevation: 926.2 ft
2.12.6 Touchdown Zone Elevation: 926.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 12197 ft
2.13.3 Take−off Distance Available: 12197 ft
2.13.4 Accelerate−Stop Distance Available: 12197 ft
2.13.5 Landing Distance Available: 11200 ft

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 12197 ft
2.13.3 Take−off Distance Available: 12197 ft
2.13.4 Accelerate−Stop Distance Available: 12197 ft
2.13.5 Landing Distance Available: 12197 ft

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 10200 ft
2.13.3 Take−off Distance Available: 10200 ft
2.13.4 Accelerate−Stop Distance Available: 10200 ft
2.13.5 Landing Distance Available: 10200 ft

2.13.1 Designation: 26L
2.13.2 Take−off Run Available: 10200 ft
2.13.3 Take−off Distance Available: 10200 ft
2.13.4 Accelerate−Stop Distance Available: 10200 ft
2.13.5 Landing Distance Available: 10200 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 12E
2.19.2 ILS Identification: AOD
2.19.5 Coordinates: 34–3–21.2425N / 117–36–59.9428W
2.19.6 Site Elevation: 935.9 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 12E
2.19.2 ILS Identification: AOD
2.19.5 Coordinates: 34–3–24.8274N / 117–34–45.0837W
2.19.6 Site Elevation: 929.1 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34–3–22.0428N / 117–37–33.7049W
2.19.6 Site Elevation: 955 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34–3–22.0256N / 117–35–11.0293W
2.19.6 Site Elevation: 925.2 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34–3–24.7616N / 117–37–34.6764W
2.19.6 Site Elevation: 946.2 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34–3–20.4777N / 117–37–8.8646W
2.19.6 Site Elevation: 947.7 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34–3–21.9048N / 117–35–11.0216W
2.19.6 Site Elevation: 925.2 ft

2.19.1 ILS Type: Inner Marker for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34–3–17.924N / 117–34–47.8618W
2.19.6 Site Elevation: 923.6 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34–3–17.8524N / 117–37–10.2711W
2.19.6 Site Elevation: 931.1 ft

General Remarks:
ALL MILITARY AND GENERAL AVIATION (FIXED OR ROTOR WING) ACFT OPS ARE RESTRICTED TO FBO FACILITIES WITH ADVANCE COORDINATION; OVERNIGHT TIEDOWN AND PARKING FEE.

PILOTS SHOULD USE JUDGEMENTAL OVERSTEER ON TWY S−4.

ACFT PRKG AND CONTR GND SVCS ARE LTD FOR UNSKED OPS. FOR SKED INFO CALL AIRFIELD OPS (909) 214−7682/7683.

EASTBOUND B747, B777, A330, A340 OR LARGER ACFT ON TWY S PROHIBITED FROM NORTHBOUND TURNS ONTO TWY K.

TWY S−4 RSTD TO ACFT WITH WINGSPAN 117 FT OR SMALLER.

FBO ON FREQ 130.75.

B747, B777, A330, A340 OR LARGER ACFT ON TWY S PROHIBITED FROM NORTHBOUND TURNS ONTO TWY P.

NOISE ABATEMENT PROCEDURES IN EFFECT; FULL−LENGTH TURBOJET DEP ENCOURAGED, NIGHTLY PREFERENTIAL RWY USAGE, 2200−0700.

TWY Y EAST OF TWY W IS A NON−MOVEMENT AREA; ALL ACFT CTC RAMP CTL 131.325 FOR ACCESS.

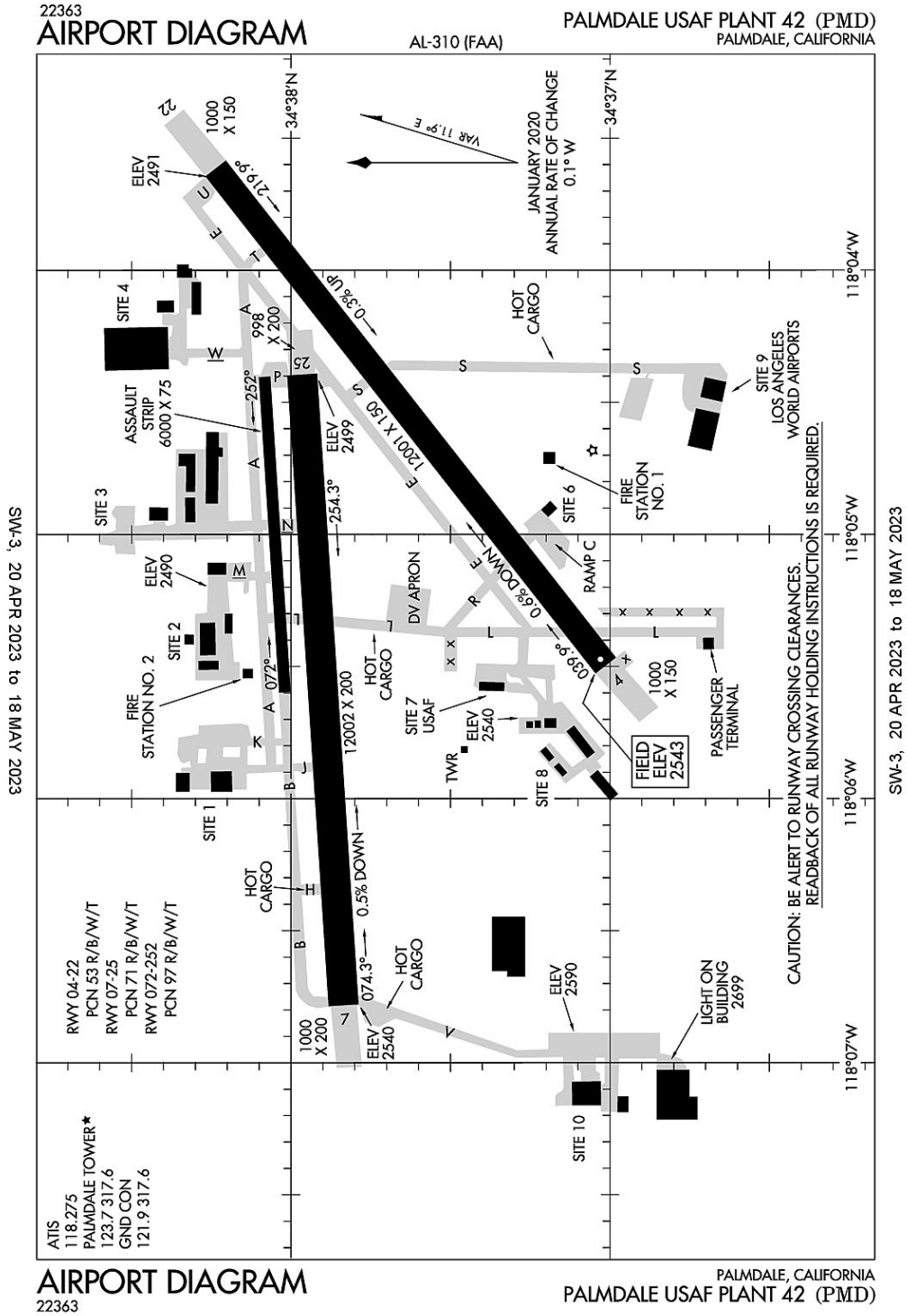
PTNS OF TWY S IN THE VCY OF TWY F ARE NOT VSB FM ATCT; PILOTS USE CTN ENTERING TWY F SOUTH OF TWY S.

WILDLIFE HAZARD MGT PLAN IN EFFECT; POTENTIAL BIRD HAZARDS MAY EXIST ON AND INVOF ARPT; BE ALERT TO LARGE NUMBERS OF STARLINGS AND CROWS POSSIBLE ON APCH TO RY 26L AND RY 26R, HAWKS, EAGLES, FALCONS AND OWLS SPOTTED ON OCCASION.

ACFT ACCESS TO TWY R FROM RWY 26R PROHIBITED

TWY F SOUTH OF TWY S RSTRD TO ACFT WITH 117 FT WINGSPAN AND SMALLER. TWY F SOUTH OF RWY 26L RSTRD TO ACFT WITH 180 FT WINGSPAN.

Palmdale, California
Palmdale Regional/USAF Plant 42
ICAO Identifier KPMD



Palmdale, CA
Palmdale Rgnl/USAF Plant 42
ICAO Identifier KPMD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 34−37−45.8N / 118−5−4.39W
2.2.2 From City: 3 miles NE of PALMDALE, CA
2.2.3 Elevation: 2542.5 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: MATT FISHER
2503 E AVE P
PALMDALE, CA 93550 (661−275−9342)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 1330−0600Z++ Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types:
2.4.5 Hangar Space:
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04
2.12.2 True Bearing: 52
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−37−0.842N / 118−5−29.802W
2.12.6 Threshold Elevation: 2542.5 ft
2.12.6 Touchdown Zone Elevation: 2542.5 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 232
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−38−14.236N / 118−3−36.966W
2.12.6 Threshold Elevation: 2491.1 ft
2.12.6 Touchdown Zone Elevation: 2497.9 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 266
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−57.991N / 118−4−23.743W
2.12.6 Threshold Elevation: 2498.7 ft
2.12.6 Touchdown Zone Elevation: 2503.4 ft

2.12.1 Designation: 07
2.12.2 True Bearing: 86
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−50.106N / 118−6−47.029W
2.12.6 Threshold Elevation: 2540.2 ft
2.12.6 Touchdown Zone Elevation: 2540.2 ft

2.12.1 Designation: 252
2.12.2 True Bearing:
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 072
2.12.2 True Bearing:
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 22
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 25
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 07
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 252

2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 072
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 252
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 072
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 25. Magnetic variation: 12E
2.19.2 ILS Identification: PMD
2.19.5 Coordinates: 34−38−1.256N / 118−4−40.078W
2.19.6 Site Elevation: 2491.8 ft

2.19.1 ILS Type: Localizer for runway 25. Magnetic variation: 12E
2.19.2 ILS Identification: PMD
2.19.5 Coordinates: 34−37−48.786N / 118−7−10.911W
2.19.6 Site Elevation: 2552.2 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E
2.19.2 Navigation Aid Identification: PMD
2.19.5 Coordinates: 34−37−53.0341N / 118−3−49.7607W
2.19.6 Site Elevation: 2498 ft

General Remarks:
PRKG RAMP LCTD S OF RWY 22 & TWY V NOT VSB FM ATCT.

MISC: COMSEC STORAGE UNAVBL.

MISC: WINDS ARE EST DUE TO FMQ−13 WIND SENSORS BEING ACCURATE TO WITHIN ONLY +/− 2 KT. ATC/WX WILL NOT INCL/RELAY WIND CORR INTO FCST/PHRASEOLOGY. THEREFORE, AIRCREWS WILL INCORPORATE A +/− 2 KT ACCURACY INTO THEIR DECISION MAKING PROCESS FOR FLYING OPR.

CAUTION: RWY 25 NSTD MRK: SPOT LDG ZONE MRK LCTD AT 6000 FT REMAINING MRK. RWY 07−25 DECEPTIVE SFC MRK EXCEED STANDARD BY APPROX 50 FT.

ALL DEPT ACFT MUST FILE FPL WITH P42 AFLD MGMT OPS.

MISC: BASE OPS OPR 1330−0600Z++, CLSD FEDERAL HOL.

CAUTION: USE EXTREME CAUTION FOR UNMANNED AERIAL SYSTEMS (UAS) OPS IN VCNTY.

MILITARY USE: ASSAULT LDG ZONE LCTD 1ST 6,000 EAST END OF TWY B. RWY 252 MRK ONLY FOR C−130 ASSAULT OPR; ONE−WAY LDG ONLY.

RSTD: OVERNIGHT PRK UNAUTHD ON C−RAMP.

TRAN ALERT (2 OF 2): UNABLE TO SVC ACFT WITH ORDNANCE. LTD GRD SUPPORT EQUIPMENT AVBL. NO POTABLE WATER SVC. NO TRAN MAINT AVBL. GND SVC UNAVBL WHEN LIGHTNING WITHIN 5 NM.

CAUTION: CONTRACTOR LEASED SITES ARE INTENDED FOR ACFT BASED THEREIN; ENTRY GATES AND APRONS MAY NOT MEET AF OBST STDS.

BIRD HAZ POTENTIAL EXISTS. MIGRATORY SEASON PHASE II 1 OCT – 31 MAR. DURG BWC MODERATE, TKOF AND LNDG PERMITTED. DURG BWC SEVERE, TKOF AND LNDG PROHIBITED.

FUEL: A++ AVBL. NO TRANS ACFT FUEL SVC AVBL. LTD FUELING AVBL; GOVT ACFT ONLY 1600−2300Z++ MON−FRI. 24 HR PN WITH AFLD MGR RQR; NO SAME DAY REQ; GAS AND GO UNAVBL. EXPECT 2+ HR DELAY FOR FUEL.

RSTD – OFFL BUS ONLY. MIL ARPT. CIVIL USE RQR USAF APVL AND DD FORM 2400/01/02. PPR RQR FOR FULL STOP LDG ONLY. CALL C661−275−9342.

SERVICE−JASU: POWER CARS UNAVBL.

DRAINAGE DITCHES PARL RWY 22 FM TWY S TO TWY U.

MISC: FLT PLANS MUST BE FILED AND ACTIVATED WITH P42 AFLD MGMT. USE FLT SVC WHEN P42 AFLD MGMT CLSD.

CAUTION: VARIOUS ACFT TEST OPS MARKINGS PAINTED IN WHITE ON TAXIWAY UNIFORM.

CAUTION: CIV ACFT MAY NOT BE GRANTED ACCESS TO KPMD CLASS D FOR PRACTICE APCH OR TRSN OVER ARPT BDRYS.

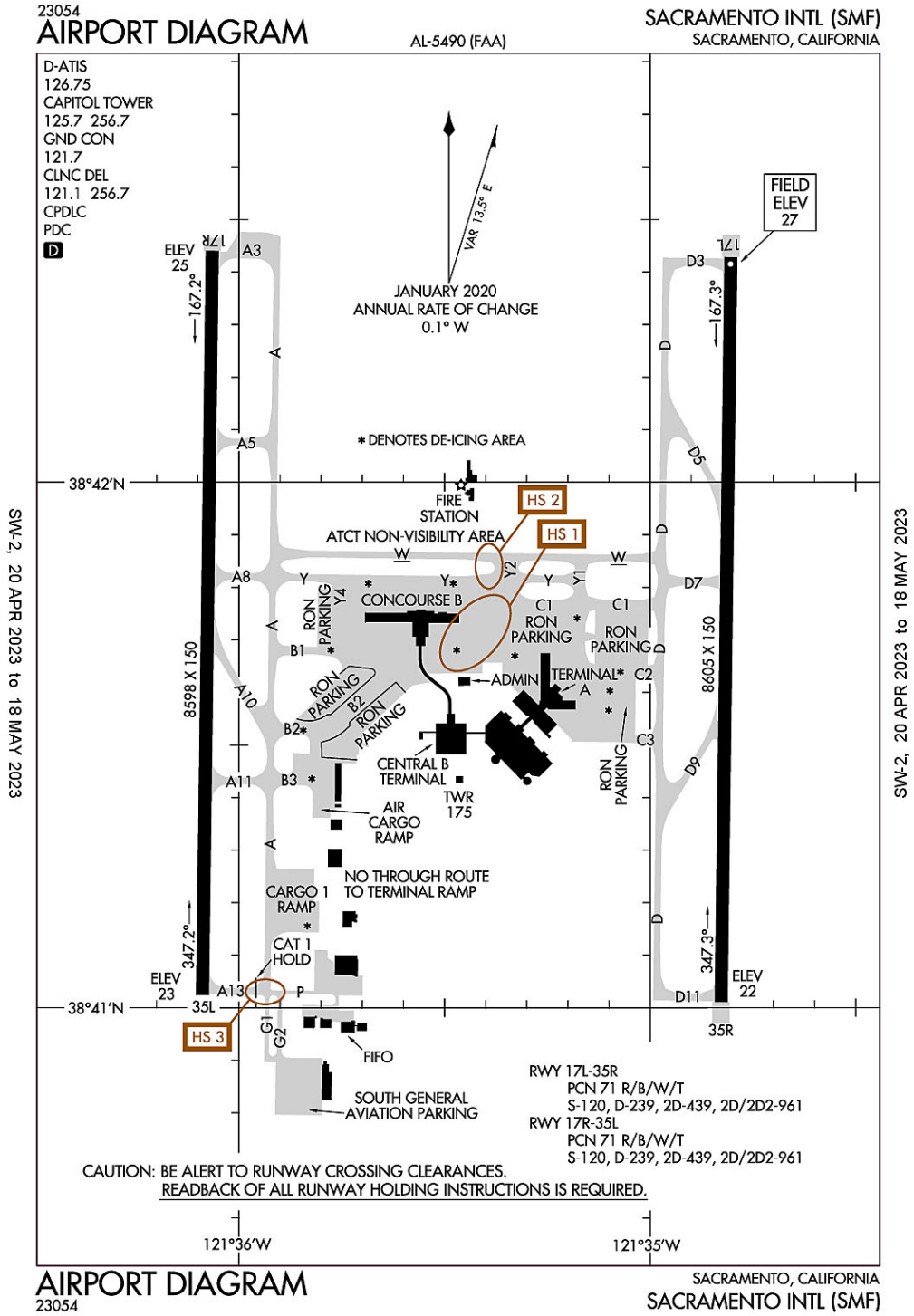
TRAN ALERT (1 OF 2): NO FLEET SVC AVBL. NO FLW ME SVC AVBL. EXP PROGRESSIVE TAXI TO PRK. AIRCREW RESPONSIBLE FOR ACFT PINNING/SAFING.

UNLGT OBSTN SURROUND AFLD.

MISC: INDUS INSTLN − NO TRNSPN, LODGING OR NML SVC AVBL ON SITE.

RSTD: TWY L BTN RWY 04/22 AND PAX TRML UNLGTD AND USABLE FOR DAYLT VFR ONLY.

Sacramento, California
Sacramento International
ICAO Identifier KSMF



Sacramento, CA
Sacramento Intl
ICAO Identifier KSMF

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−41−43.6N / 121−35−26.8W
2.2.2 From City: 10 miles NW of SACRAMENTO, CA
2.2.3 Elevation: 26.9 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: SHERI THOMPSON−DUARTE
6900 AIRPORT BLVD
SACRAMENTO, CA 95837 ((916) 874−0560)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 17L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 38−42−25.6973N / 121−34−48.2125W
2.12.6 Threshold Elevation: 26.9 ft
2.12.6 Touchdown Zone Elevation: 26.9 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 38−41−0.6506N / 121−34−49.642W
2.12.6 Threshold Elevation: 22.1 ft
2.12.6 Touchdown Zone Elevation: 23.8 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 38−42−26.4236N / 121−36−3.8961W
2.12.6 Threshold Elevation: 24.8 ft
2.12.6 Touchdown Zone Elevation: 25.3 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 38–41–1.439N / 121–36–5.3075W
2.12.6 Threshold Elevation: 22.5 ft
2.12.6 Touchdown Zone Elevation: 23.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 17L
2.13.2 Take–off Run Available: 8605 ft
2.13.3 Take–off Distance Available: 8605 ft
2.13.4 Accelerate–Stop Distance Available: 8605 ft
2.13.5 Landing Distance Available: 8605 ft

2.13.1 Designation: 35R
2.13.2 Take–off Run Available: 8605 ft
2.13.3 Take–off Distance Available: 8605 ft
2.13.4 Accelerate–Stop Distance Available: 8605 ft
2.13.5 Landing Distance Available: 8605 ft

2.13.1 Designation: 17R
2.13.2 Take–off Run Available: 8598 ft
2.13.3 Take–off Distance Available: 8598 ft
2.13.4 Accelerate–Stop Distance Available: 8598 ft
2.13.5 Landing Distance Available: 8598 ft

2.13.1 Designation: 35L
2.13.2 Take–off Run Available: 8598 ft
2.13.3 Take–off Distance Available: 8598 ft
2.13.4 Accelerate–Stop Distance Available: 8598 ft
2.13.5 Landing Distance Available: 8598 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 17L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38–40–50.2189N / 121–34–46.3009W
2.19.6 Site Elevation: 30.9 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38–42–15.18N / 121–34–43.22W
2.19.6 Site Elevation: 21.7 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38–40–50.67N / 121–34–49.81W
2.19.6 Site Elevation: 17.4 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38–40–34.7038N / 121–36–3.046W
2.19.6 Site Elevation: 34 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38–42–15.8608N / 121–36–9.106W
2.19.6 Site Elevation: 22.9 ft

2.19.1 ILS Type: Inner Marker for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38–42–34.0974N / 121–36–3.7746W
2.19.6 Site Elevation: 23 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38–40–35.7492N / 121–36–5.7322W
2.19.6 Site Elevation: 19.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38–40–34.7038N / 121–36–3.046W
2.19.6 Site Elevation: 34 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38–41–12.5012N / 121–36–0.0807W
2.19.6 Site Elevation: 21.7 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 13E

2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38−42−36.65N / 121−36−3.72W
2.19.6 Site Elevation: 22 ft

General Remarks:
WEST RAMP SPOTS 56−60 & F1 RSTRD TO TOW IN AND TOW OUT ONLY FROM TXL B2. WHEN PUSHING BACK FOR DEP FROM WEST RAMP SPOTS 56−60 & F1 EACH ACFT IS TO PUSH BACK ON TO TXL B2 AND PULL FWD TO THE "ENGINE START LINE" PRIOR TO STARTING ENGS.

CROP DUSTERS OPER INVOF ARPT AT OR BELOW 200 FT AGL.

MILITARY AIRCRAFT PARKING LIMITED. CONTACT ARPT OPNS IF PARKING IS REQUIRED (916) 806−5309.

NOISE SENSITIVE AREAS W OF ARPT ON SAC RIVER. LCL TURN DISCOURAGED FOR JET ACFT. WHEN CONDUCTING IFR APCH IN VFR CONDITIONS EXECUTE MISSED APCH AT DEP END OF RYS. PLAN VFR PATTERNS TO E. USE MIN POWER SETTINGS.

UNPAVED SFC NORTH OF TWY P AND EAST OF TWY A AND SOUTH OF CARGO 1 RAMP CLSD TO HEL.

TWY B1 CLSD TO CARGO ACFT.

PORTION OF TWY W 500 FT EAST OF TWY A TO 2100 FT EAST OF TWY A IS NOT VISIBLE FROM ATCT.

TWY Y4 RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 118 FT (GROUP III).

ALL ACFT CTC ATC GND CTL PRIOR TO MOVEMENT ON RAMP.

TWY RMK #2: THE MAXIMUM ALLOWABLE GROSS AIRCRAFT LOAD FOR TWYS G1, G2, AND THE GENERAL AVIATION PARKING APRON IS: 70,000 LBS FOR SINGLE GEAR AIRCRAFT; 170,000 LBS FOR DUAL GEAR AIRCRAFT; AND 250,000 LBS FOR DUAL TANDEM GEAR AIRCRAFT.

FAA GWT STRENGTH EVALUATION MD−11 = 590,000 LBS.

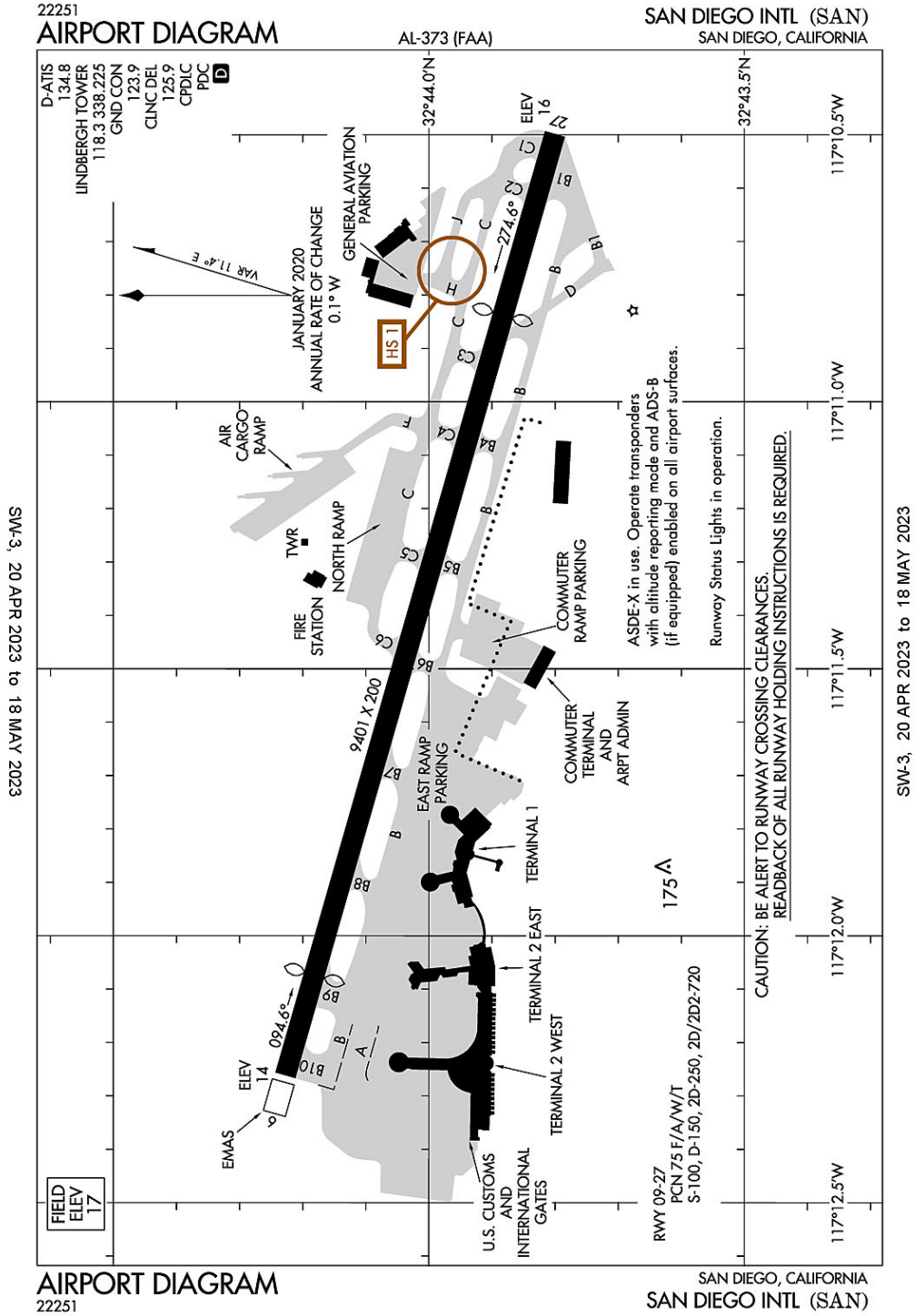
ACFT MUST PUSH BACK TAIL TO THE NORTH FROM TRML GATES A1, A3 AND A5.

GND VEHICLE SURVEILLANCE SYS IN USE. OPR TRANSPONDERS WITH ALT RPRTG MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AP SFCS.

BIRDS ON AND IN VICINITY OF ARPT.

TWY RMK #2 CONT'D: AN AIRCRAFT CANNOT EXCEED THE AIRPLANE DESIGN GROUP III CRITERIA AND MUST HAVE A WHEEL BASE OF LESS THAN 60 FT.

San Diego, California
San Diego International
ICAO Identifier KSAN



San Diego, CA
San Diego Intl
ICAO Identifier KSAN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 32−44−0.826N / 117−11−22.788W
2.2.2 From City: 2 miles W of SAN DIEGO, CA
2.2.3 Elevation: 16.8 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: DEAN ROBBINS
3225 N HARBOR DRIVE
SAN DIEGO, CA 92101 (619−400−2718)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 27
2.12.2 True Bearing: 286
2.12.3 Dimensions: 9401 ft x 200 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 32−43−48.0054N / 117−10−29.8979W
2.12.6 Threshold Elevation: 16.4 ft
2.12.6 Touchdown Zone Elevation: 16.8 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 106
2.12.3 Dimensions: 9401 ft x 200 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 32−44−13.6407N / 117−12−15.6832W
2.12.6 Threshold Elevation: 13.9 ft
2.12.6 Touchdown Zone Elevation: 16.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 27
2.13.2 Take−off Run Available: 9401 ft
2.13.3 Take−off Distance Available: 9401 ft
2.13.4 Accelerate−Stop Distance Available: 9401 ft
2.13.5 Landing Distance Available: 7591 ft

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 8280 ft
2.13.3 Take−off Distance Available: 9401 ft
2.13.4 Accelerate−Stop Distance Available: 8280 ft
2.13.5 Landing Distance Available: 7280 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 09. Magnetic variation: 11E
2.19.2 ILS Identification: SAN
2.19.5 Coordinates: 32−43−46.8256N / 117−10−28.5519W
2.19.6 Site Elevation: 34 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 11E
2.19.2 ILS Identification: SAN
2.19.5 Coordinates: 32−44−10.7741N / 117−11−52.1594W
2.19.6 Site Elevation: 13.1 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 11E
2.19.2 ILS Identification: SAN
2.19.5 Coordinates: 32−43−47.605N / 117−10−28.2382W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 11E
2.19.2 ILS Identification: UBR
2.19.5 Coordinates: 32−44−11.4186N / 117−12−19.9319W
2.19.6 Site Elevation: 25.9 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 11E
2.19.2 ILS Identification: UBR
2.19.5 Coordinates: 32−44−14.7918N / 117−12−20.4335W
2.19.6 Site Elevation: 10.9 ft

General Remarks:
CROSS−BLEED ENGINE STARTS PERMITTED ONLY ON PARALLEL TWY WITH ACFT ALIGNED ON TWY CNTRLN.

RWY STATUS LGTS IN OPN.

747 AND LARGER ACFT ARE PROHIBITED FM MAKING INTERSECTION TKOFS.

INTERMITTENT PRESENCE OF BIRDS ON AND INVOF OF ARPT.

ACFT WITH WINGSPANS GTR THAN 171 FT (52M) RSTD FROM USING TWY D SOUTH OF TWY B, AND WHEN EXITING RWY 09 WB ON TWY B.

DUE TO PAEW ON RY 09–27, 30 MINUTE PPR 0830–1230Z FOR ALL LANDINGS AND DEPARTURES CALL 619–400–2710.

IN THE EVENT OF A DIVERSION OR IRREGULAR OPERATIONS EVENTS, ACFT OPERATORS CONTACT THE APT DUTY MGR (619) 400–2710 FOR PPR DUE TO LIMITATIONS ASSOCIATED WITH HANDLING DIVERTED FLTS. LIMITATIONS INCLUDE RESTRICTED GATE SPACE, CUSTOMS SERVICES AS WELL AS ACFT SERVICING & PARKING.

MILITARY ACFT ON OFFICIAL BUSINESS ONLY CONTACT ARPT OPS AT 619–400–2710 FOR PPR.

TERRAIN & BLDGS TO 500’ MSL N & E WITHIN 1 1/2 MI.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PILOTS REQUIRED TO CTC ATCT GROUND CONTROLLER PRIOR TO PUSHBACK, TOW OUT AND TAXI FOR TRAFFIC ADVISORIES.

30 MIN PPR (619–400–2710) FOR ACFT WITH OVER 171 FT WINGSPAN.

ACFT CROSSING RY 09/27 ON TWY C6, HOLD SHORT OF TWY C6 FACING WEST ON TWY C, PARALLEL TO RY.

ULTRALIGHT ACFT PROHIBITED ON AP.

TAXIING ACFT ARE PROHIBITED FROM PASSING TO THE SOUTH OF ACFT LCTD ON TWY B INTO ALLEY LCTD BTWN GATES 7 AND 14.

TAXILANE A RSTRD TO ACFT WITH WINGSPANS OF 135 FT OR LESS.

TWY C EDGE LGTS OTS INDEFLY.

OUTBOARD ENGINES OF FOUR–ENGINE ACFT ARE TO BE KEPT AT IDLE POWER FOR ALL GND MANEUVERING.

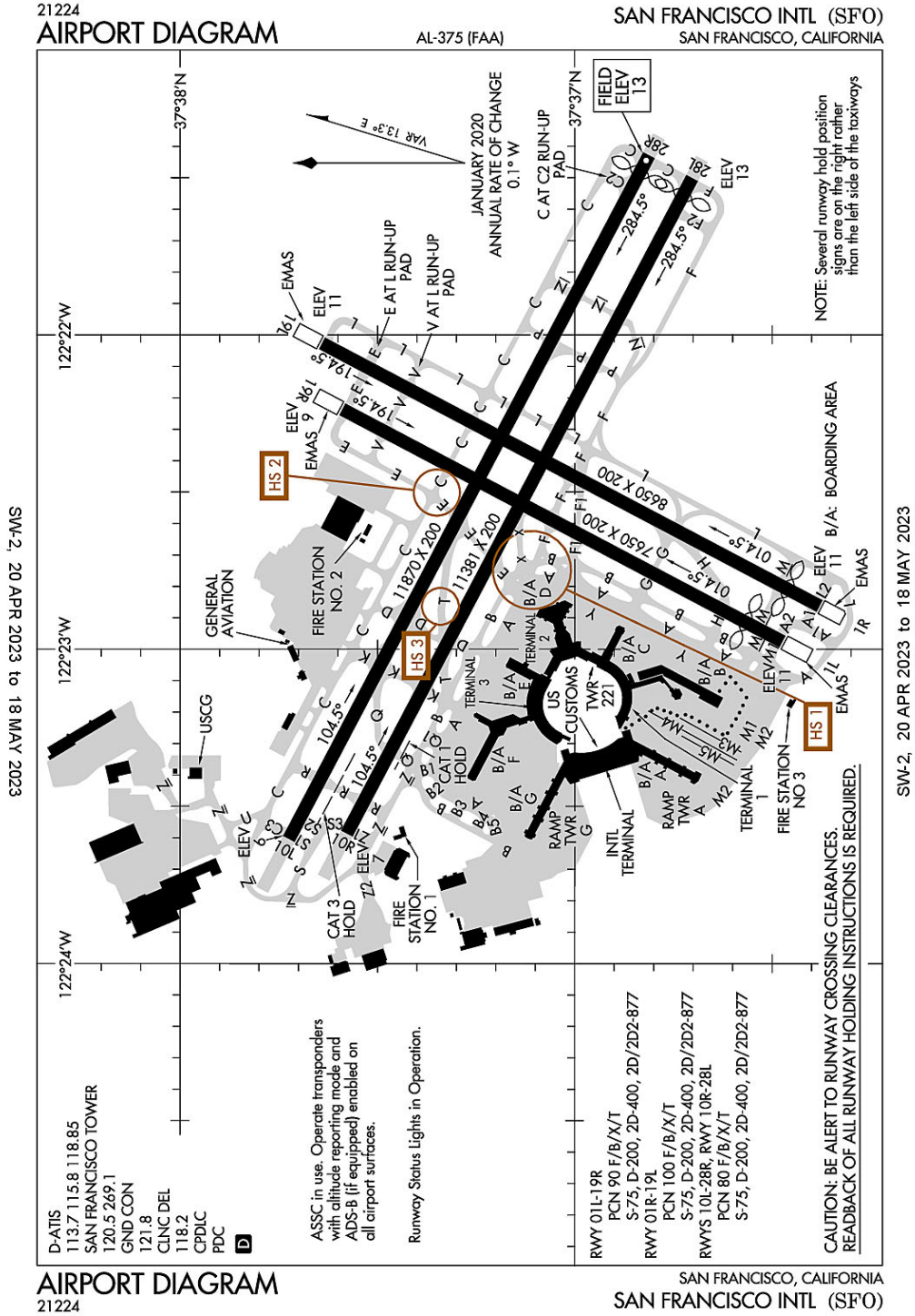
TAXIING ACFT SHALL FOLLOW LEAD–IN LINES UNTIL THE NOSE WHEEL OF THE ACFT HAS ENTERED THE NON–MOVEMENT AREA OF THE ALLEY.

TO REDUCE JET BLAST IMPACT AT N END OF TWY F ACFT WILL NOT START ENG UNTIL 800 FT FM N END OF TWY F; ABEAM THE SECOND PARKING PAD.

PRACTICE APPROACHES AND TGL PROHIBITED.

FOR ACCESS TO/FR TERMINAL 2: GATES 23, 25, 27, 29, 31, 33–51 AND THE ISLAND AND WEST RON PRKG RAMPS, CTC RAMP CTL ON 129.775 SRY 131.975 FR 0600–2400. FR 0000–0600 CTC GROUND CTL ON 123.9.

San Francisco, California
San Francisco International
ICAO Identifier KSFO



San Francisco, CA
San Francisco Intl
ICAO Identifier KSFO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−37−7.7N / 122−22−31.5W
2.2.2 From City: 8 miles SE of SAN FRANCISCO, CA
2.2.3 Elevation: 13.1 ft
2.2.5 Magnetic Variation: 14E (2015)
2.2.6 Airport Contact: IVAR SATERO
PO BOX 8097
SAN FRANCISCO, CA 94128 ((650) 821−3355)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 28
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−36−28.4323N / 122−22−58.5426W
2.12.6 Threshold Elevation: 10.7 ft
2.12.6 Touchdown Zone Elevation: 10.9 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 208
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−37−35.3329N / 122−22−14.1939W
2.12.6 Threshold Elevation: 9.2 ft
2.12.6 Touchdown Zone Elevation: 11.2 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 28
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−36−22.7876N / 122−22−51.7467W
2.12.6 Threshold Elevation: 11.4 ft
2.12.6 Touchdown Zone Elevation: 11.2 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 208
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−37−38.4319N / 122−22−1.599W
2.12.6 Threshold Elevation: 10.5 ft
2.12.6 Touchdown Zone Elevation: 11 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−37−43.4594N / 122−23−36.2107W
2.12.6 Threshold Elevation: 5.5 ft
2.12.6 Touchdown Zone Elevation: 7 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−36−48.721N / 122−21−25.708W
2.12.6 Threshold Elevation: 13 ft
2.12.6 Touchdown Zone Elevation: 12.9 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−37−34.648N / 122−23−35.1796W
2.12.6 Threshold Elevation: 7.1 ft
2.12.6 Touchdown Zone Elevation: 8 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−36−42.163N / 122−21−30.057W
2.12.6 Threshold Elevation: 12.6 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 7650 ft
2.13.3 Take−off Distance Available: 7650 ft
2.13.4 Accelerate−Stop Distance Available: 7650 ft
2.13.5 Landing Distance Available: 7010 ft

2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 7650 ft
2.13.3 Take−off Distance Available: 7650 ft

2.13.4 Accelerate–Stop Distance Available: 7650 ft
2.13.5 Landing Distance Available: 7650 ft

2.13.1 Designation: 01R
2.13.2 Take–off Run Available: 8650 ft
2.13.3 Take–off Distance Available: 8650 ft
2.13.4 Accelerate–Stop Distance Available: 8650 ft
2.13.5 Landing Distance Available: 8090 ft

2.13.1 Designation: 19L
2.13.2 Take–off Run Available: 8650 ft
2.13.3 Take–off Distance Available: 8650 ft
2.13.4 Accelerate–Stop Distance Available: 8650 ft
2.13.5 Landing Distance Available: 8650 ft

2.13.1 Designation: 10L
2.13.2 Take–off Run Available: 11870 ft
2.13.3 Take–off Distance Available: 11870 ft
2.13.4 Accelerate–Stop Distance Available: 11193 ft
2.13.5 Landing Distance Available: 11193 ft

2.13.1 Designation: 28R
2.13.2 Take–off Run Available: 11870 ft
2.13.3 Take–off Distance Available: 11870 ft
2.13.4 Accelerate–Stop Distance Available: 11870 ft
2.13.5 Landing Distance Available: 11236 ft

2.13.1 Designation: 10R
2.13.2 Take–off Run Available: 11381 ft
2.13.3 Take–off Distance Available: 11381 ft
2.13.4 Accelerate–Stop Distance Available: 10704 ft
2.13.5 Landing Distance Available: 10704 ft

2.13.1 Designation: 28L
2.13.2 Take–off Run Available: 11381 ft
2.13.3 Take–off Distance Available: 11381 ft
2.13.4 Accelerate–Stop Distance Available: 10981 ft
2.13.5 Landing Distance Available: 10275 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37–36–18.7188N / 122–22–59.4082W
2.19.6 Site Elevation: 20.6 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37–37–30.7381N / 122–22–11.0577W
2.19.6 Site Elevation: 6.3 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37–36–16.2796N / 122–22–56.0614W
2.19.6 Site Elevation: 19 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37–37–48.1978N / 122–23–40.6085W
2.19.6 Site Elevation: 17.7 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37–36–51.3989N / 122–21–43.1171W
2.19.6 Site Elevation: 8.2 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ

2.19.5 Coordinates: 37−37−46.3566N / 122−23−43.1194W
2.19.6 Site Elevation: 5.3 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−37−39.5363N / 122−23−41.4575W
2.19.6 Site Elevation: 20.3 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−36−51.2769N / 122−21−43.1999W
2.19.6 Site Elevation: 8.2 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−37−37.471N / 122−23−41.9198W
2.19.6 Site Elevation: 9.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 17E
2.19.2 Navigation Aid Identification: SFO
2.19.5 Coordinates: 37−37−10.1465N / 122−22−26.0165W
2.19.6 Site Elevation: 6 ft

General Remarks:
SEVERAL RY HOLD POSITION SIGNS ARE ON THE RIGHT RATHER THAN THE LEFT SIDE OF THE TWYS.

NOISE SENSITIVE ARPT; FOR NOISE ABATEMENT PROCEDURES CTC ARPT NOISE OFFICE MON−FRI 0800−1700 BY CALLING 650−821−5100.

RWY STATUS LGTS IN OPN.

PAEW APCH END RYS 28L, 28R, 19L INDEFLY.

TWY S BTN TWY Z AND TWY S2 CLSD TO ACFT WITH WINGSPAN OVER 215 FT.

ALL OUBD TWY ZULU 2 HVY ACFT WITH A WINGSPAN OF 171 FT OR GTR UNDER PWR PROHIBITED FROM ENTERING WB TWY ZULU.

RWY 1L CLSD TO DEPARTING TRIJET ACFT WITH WINGSPAN GREATER THAN 155 FT.

AIRLINE PILOTS SHALL STRICTLY FOLLOW THE PAINTED NOSE GEAR LINES AND NO OVERSTEERING ADJUSTMENT IS PERMITTED.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

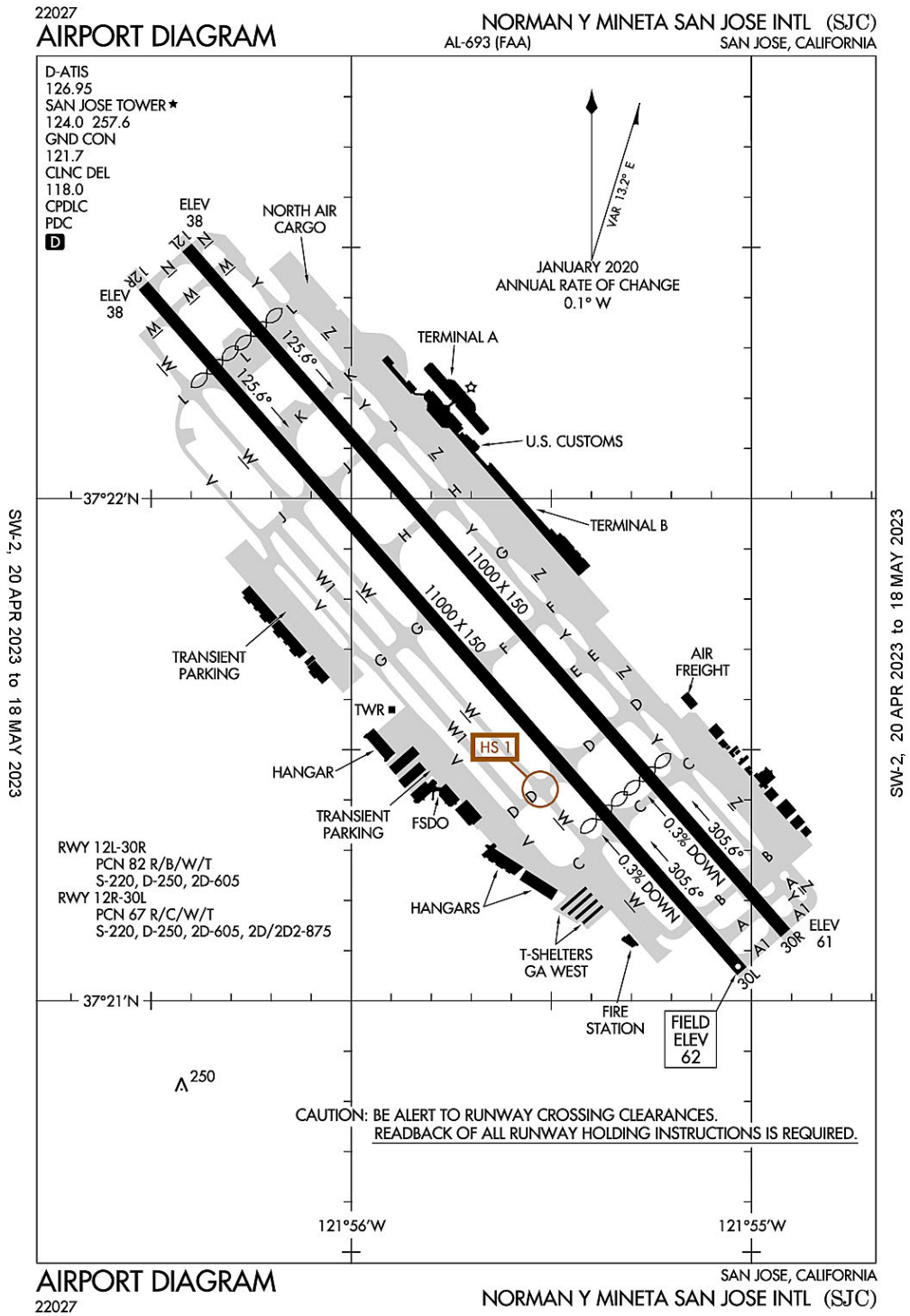
FLOCKS OF BIRDS FEEDING ALONG SHORELINE ADJ TO ARPT; ON OCCASIONS FLY ACROSS VARIOUS PARTS OF THE ARPT.

HIGH SPEED TWY (T) GRVD FULL WIDTH BTN RWY 28R AND 28L.

RY 10 PREFERRED RY BTWN 0100−0600 WEATHER AND FLIGHT CONDITIONS PERMITTING.

SIMULTANEOUS OPERATIONS IN EFFECT ALL RYS.

San Jose, California
Norman Y. Mineta San Jose International
ICAO Identifier KSJC



San Jose, CA
Norman Y. Mineta San Jose Intl
ICAO Identifier KSJC

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−21−46.781N / 121−55−43.034W
2.2.2 From City: 2 miles NW of SAN JOSE, CA
2.2.3 Elevation: 62.2 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: JOHN AITKEN
1701 AIRPORT BLVD., SUITE B−1130
SAN JOSE, CA 95110 ((408) 277−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 12L
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 37−22−29.9801N / 121−56−24.6377W
2.12.6 Threshold Elevation: 37.7 ft
2.12.6 Touchdown Zone Elevation: 43.8 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 37−21−8.1324N / 121−54−54.9212W
2.12.6 Threshold Elevation: 61.1 ft
2.12.6 Touchdown Zone Elevation: 55.2 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−22−25.4266N / 121−56−31.1597W
2.12.6 Threshold Elevation: 38.2 ft
2.12.6 Touchdown Zone Elevation: 45.6 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−21−3.5766N / 121−55−1.4432W
2.12.6 Threshold Elevation: 62.1 ft
2.12.6 Touchdown Zone Elevation: 57 ft

AD 2.13 Declared Distances
2.13.1 Designation: 12L
2.13.2 Take−off Run Available: 10139 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 10139 ft
2.13.5 Landing Distance Available: 8831 ft

2.13.1 Designation: 30R
2.13.2 Take−off Run Available: 10134 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 10134 ft
2.13.5 Landing Distance Available: 7597 ft

2.13.1 Designation: 12R
2.13.2 Take−off Run Available: 9883 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 9883 ft
2.13.5 Landing Distance Available: 8587 ft

2.13.1 Designation: 30L
2.13.2 Take−off Run Available: 10152 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 10152 ft
2.13.5 Landing Distance Available: 7614 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 12L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 30R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37–21–2.6639N / 121–55–1.3459W
2.19.6 Site Elevation: 81.4 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37–22–6.0334N / 121–56–14.5901W
2.19.6 Site Elevation: 36.8 ft

2.19.1 ILS Type: Localizer for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37–21–3.0434N / 121–55–0.8585W
2.19.6 Site Elevation: 75.1 ft

2.19.1 ILS Type: DME for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37–22–27.575N / 121–56–32.6145W
2.19.6 Site Elevation: 56 ft

2.19.1 ILS Type: Glide Slope for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37–21–33.0094N / 121–55–27.8798W
2.19.6 Site Elevation: 48.6 ft

2.19.1 ILS Type: Localizer for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37–22–27.1917N / 121–56–33.1047W
2.19.6 Site Elevation: 49.6 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 16E
2.19.2 Navigation Aid Identification: SJC
2.19.5 Coordinates: 37–22–28.9638N / 121–56–40.8069W
2.19.6 Site Elevation: 34.5 ft

General Remarks:
UNSCHEDULED OPNS BY GROUP 5 ACFT (B747) AND LARGER NOT AUTH EXCEPT WITH PRIOR ARPT APPROVAL CTC AMGR (408) 392–3500.

CURFEW HRS 2300–0700 FAR 36 STAGE II, 2330–0630 FAR 36 STAGE III ACFT LISTED ON THE SCHEDULE OF AUTHORIZED AIRCRAFT ISSUED BY THE DIRECTOR OF AVIATION. DELAYED SCHEDULED FLIGHTS, AND ALTERNATE/EMERGENCY OPERATIONS MAY BE EXEMPT FROM CURFEW HOUR RESTRICTIONS.

PRIOR AIRPORT NOTIFICATION IS REQUIRED FOR ALL LATE/EARLY ARRIVALS. CONTACT MANAGER ON DUTY AT (408) 392–3500.

FIRST 400 FT RY 30R & RY 30L CLSD FOR TKOF DC10, MD11, L1011.

TWY V LTD TO ACFT WITH WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

TWY W BETWEEN TWY J AND TWY L CAN SUPPORT GROUP IV ACFT.

RRP RQRD FM FBO FOR TSNT HEL OPS.

FOR CD WHEN ATCT IS CLSD CTC NORCAL APCH AT 916−361−3748.

TWY Y WILL BE PERIODICALLY RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 171 FT (MD−11 OR SMALLER) DRG B−787 AND B−747 OPNS ON RWY 12L/30R.

TWY D BETWEEN TWY W AND TWY V LIMITED TO ACFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

TWY Z WILL BE PERIODICALLY RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER) DRG B−787 AND B−747 OPNS. TWY Z BTN 200 FT NW OF TWY H AND 200 FT NW OF TWY K LTD TO ACFT WITH WINGSPAN OF LESS THAN 135 FT (B−757−300 OR SMALLER).

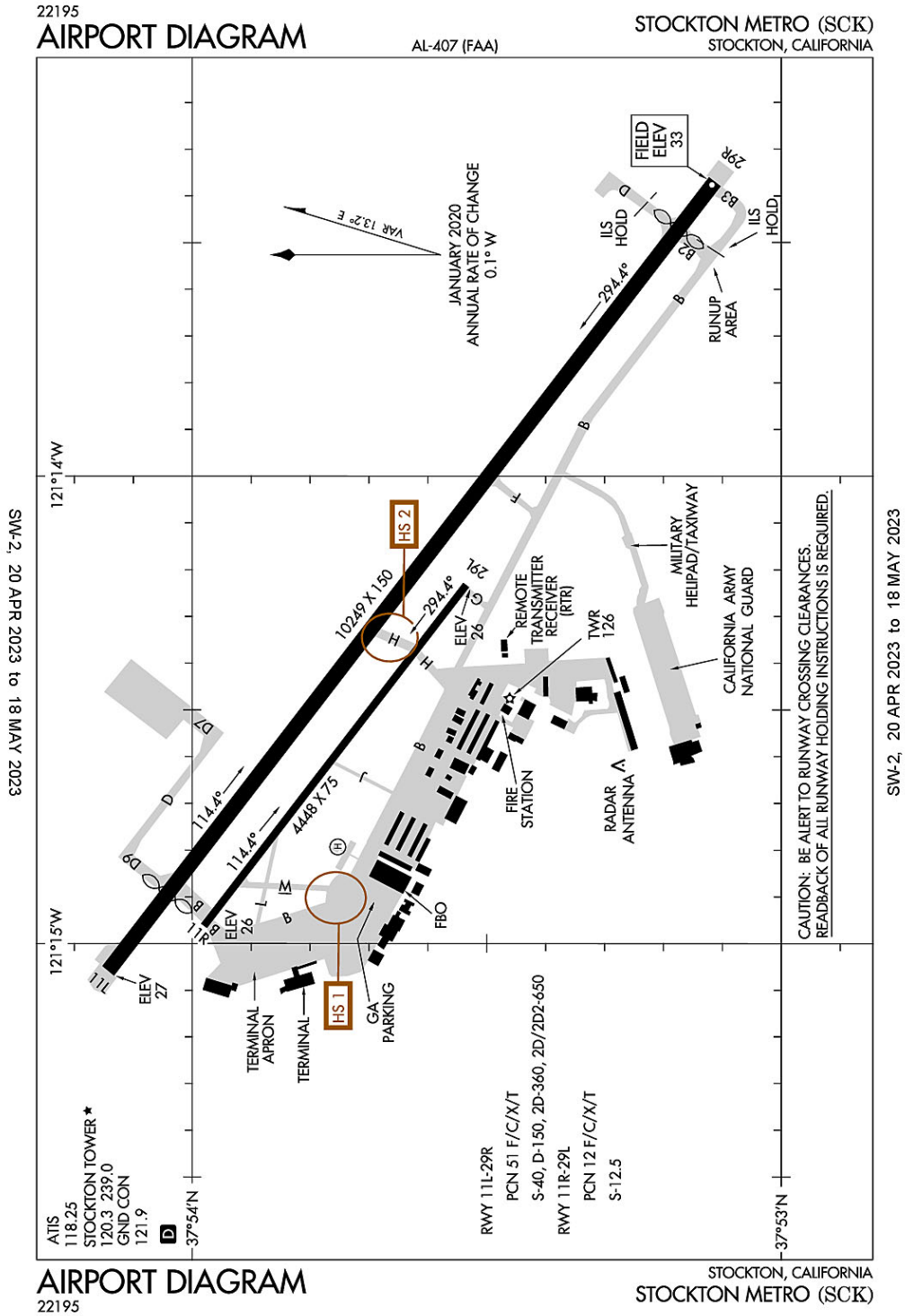
HIGH INTENSITY LIGHT ACTIVITY: HIGH INTENSITY LIGHTS (LASERS AND LARGE MEDIA SCREENS) MAY BE VISIBLE TO ARR AND DEP ACFT TO SAN JOSE INTERNATIONAL AIRPORT DURING EVENTS AT THE LEVI STADIUM COMPLEX (37−24−15N/121−58−14W, SJC VORTAC R−303/2.1 DME). FLIGHT CREWS SHOULD USE CAUTION WHEN OPERATING IN THIS AREA DURING STADIUM EVENTS. COCKPIT ILLUMINATION AND GLARE EFFECT REDUCING VIS MAY BE INTENSIFIED DURING ARR AND DEP OPS ESPECIALLY AT NIGHT.

BIRDS FREQUENTLY ON OR IN VICINITY OF AIRPORT.

ALL TURBINE ENGINE RUN−UPS REQUIRE PRIOR AIRPORT APPROVAL, CONTACT MGR ON DUTY (408) 392−3500.

NOISE ABATEMENT PROCEDURE: RY 30L/12R IS PREFERRED ARRIVAL RY FOR JET ACFT AND RY 12L/30R IS THE PREFERRED DEP RY FOR JET ACFT. ALL JET ACFT TKOFS ARE TO BE INITIATED FM EOR UNLESS DIRECTED OTHERWISE BY ATCT.

Stockton, California
Stockton Metropolitan
ICAO Identifier KSCK



Stockton, CA
Stockton Metropolitan
ICAO Identifier KSCK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−53−39.877N / 121−14−19.464W
2.2.2 From City: 3 miles SE of STOCKTON, CA
2.2.3 Elevation: 33.2 ft
2.2.5 Magnetic Variation: 14E (2010)
2.2.6 Airport Contact: RUSSELL STARK
5000 S. AIRPORT WAY ROOM 202
STOCKTON, CA 95206 (209−468−4700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100,100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 29R
2.12.2 True Bearing: 308
2.12.3 Dimensions: 10249 ft x 150 ft
2.12.4 PCN: 51 F/C/X/T
2.12.5 Coordinates: 37−53−6.64N / 121−13−21.88W
2.12.6 Threshold Elevation: 33.2 ft
2.12.6 Touchdown Zone Elevation: 32.3 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 128
2.12.3 Dimensions: 10249 ft x 150 ft
2.12.4 PCN: 51 F/C/X/T
2.12.5 Coordinates: 37−54−8.4321N / 121−15−3.2005W
2.12.6 Threshold Elevation: 26.5 ft
2.12.6 Touchdown Zone Elevation: 29.1 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 308
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.4 PCN: 12 F/C/X/T
2.12.5 Coordinates: 37−53−31.8561N / 121−14−13.4466W
2.12.6 Threshold Elevation: 25.9 ft
2.12.6 Touchdown Zone Elevation: 26.6 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 128
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.4 PCN: 12 F/C/X/T
2.12.5 Coordinates: 37−53−58.6715N / 121−14−57.4211W
2.12.6 Threshold Elevation: 26.2 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 70 ft x 70 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 37−53−45.27N / 121−14−47.57W
2.12.6 Threshold Elevation: 26 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 29R
2.13.2 Take−off Run Available: 8856 ft
2.13.3 Take−off Distance Available: 9856 ft
2.13.4 Accelerate−Stop Distance Available: 9210 ft
2.13.5 Landing Distance Available: 8650 ft

2.13.1 Designation: 11L
2.13.2 Take−off Run Available: 8474 ft
2.13.3 Take−off Distance Available: 9474 ft
2.13.4 Accelerate−Stop Distance Available: 8604 ft
2.13.5 Landing Distance Available: 8650 ft

2.13.1 Designation: 29L
2.13.2 Take−off Run Available: 4448 ft
2.13.3 Take−off Distance Available: 4448 ft
2.13.4 Accelerate−Stop Distance Available: 4448 ft
2.13.5 Landing Distance Available: 3386 ft

2.13.1 Designation: 11R
2.13.2 Take−off Run Available: 4448 ft
2.13.3 Take−off Distance Available: 4448 ft
2.13.4 Accelerate−Stop Distance Available: 4448 ft
2.13.5 Landing Distance Available: 4448 ft

2.13.1 Designation: H1
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 29R

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System: ODALS
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−54−12.58N / 121−15−15.2W
2.19.6 Site Elevation: 22 ft

2.19.1 ILS Type: Glide Slope for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−53−19.8816N / 121−13−35.2049W
2.19.6 Site Elevation: 29.3 ft

2.19.1 ILS Type: Localizer for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−54−14.48N / 121−15−13.13W
2.19.6 Site Elevation: 23.5 ft

General Remarks:
PRACTICE CIRCLING APPROACHES TO RWYS 11L/11R NA FOR ANY TURBINE POWERED ACFT/PROP DRIVEN ACFT EXCEEDING 12500 LBS EXCP BY PPR FM AMGR.

TSNT PILOTS USE CTN; DO NOT ENTER THE TSA RSTRD AREA ADJ TO THE TSNT PRKG AREA.

BE ALERT TO ELEVD MALSR APCH END RWY 29R LCTD ON BLAST PAD.

PAVEMENT PRIOR TO THLD OF RWY 11L NOT AVBL FOR TAXI BACK OPS.

ARPT CLSD TO TGL & PLANNED LOW APCHS FOR TURBOJET ACFT 2200−0700 EXCEPT BY PPR FM AMGR PART 36 STAGE 3 ACFT.

TRANSIENT PARKING AVBL AT FBO.

THE FLWG AREAS NOT VISIBLE FM ATCT: TWY B FM TRML APN TO INT AT TWY M; TWY B FM 300 FT W OF TWY J TO 375 FT E OF TWY J; NON MOVEMENT AREA S OF TWY B FROM TRML APN TO 200 FT W OF TWY H; SE HALF OF TRML APN; TSNT PRKG APN.

AVOID OVERFLYING SAN JOAQUIN GENERAL HOSPITAL & THE CITY OF MANTECA.

TWY F RSTRD TO ACFT WINGSPAN LESS THAN 118 FT.

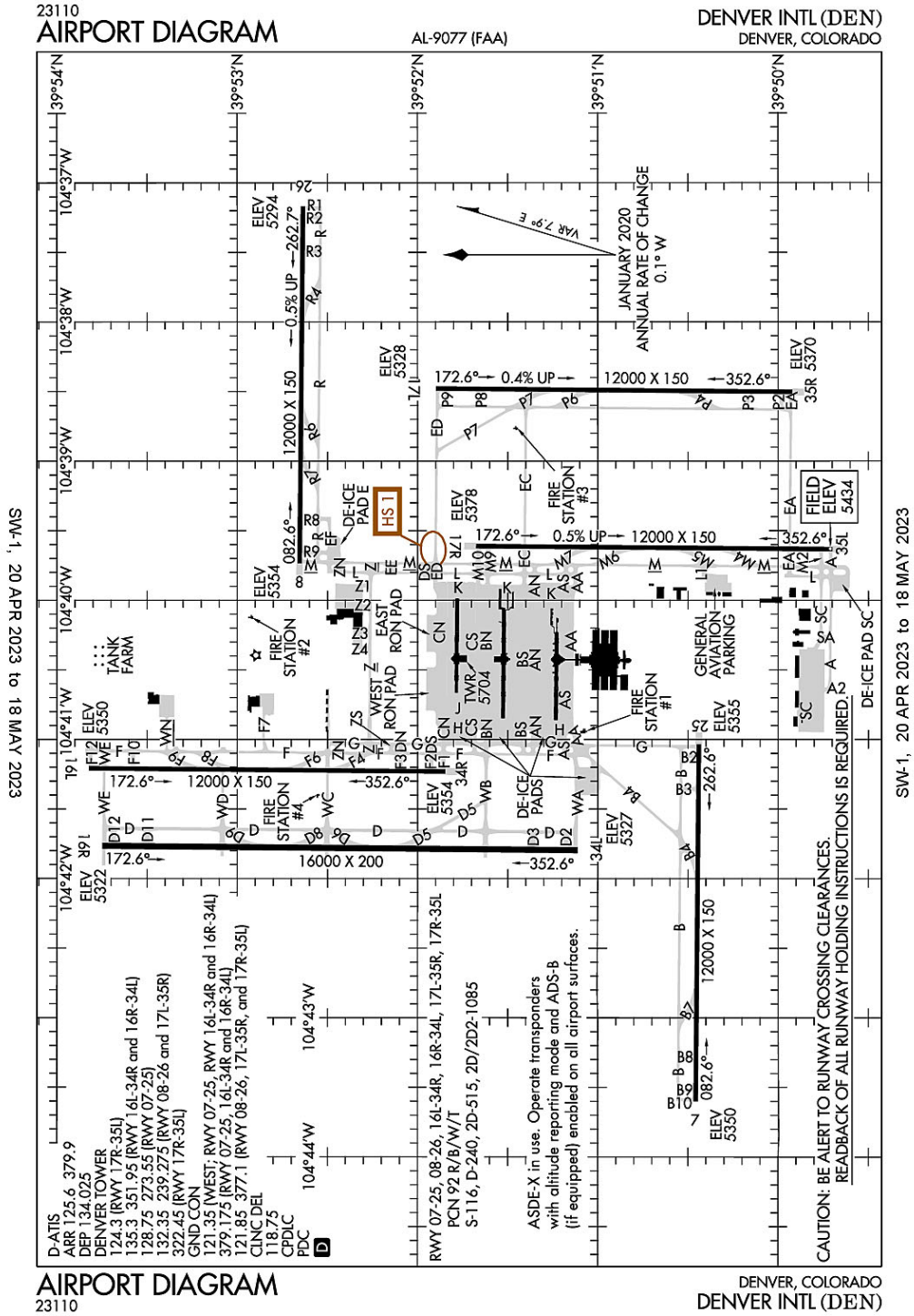
FOR CD WHEN ATCT CLSD CTC NORCAL APCH AT 916–361–0516.

MILITARY USE: ARNG OPR 1500–2330Z++ MON–FRI. DSN 466–5319, C209–983–5319, FAX 5391. PPR REQUIRED. LDTD TRAN SVC AND MAINT AVBL FOR CH47.

SEAGULLS ON AND IN VCNTY OF ARPT MOSTLY DURING RAINY WEATHER.

TRML APN, CARGO APN, TWYS B, B2, B3, F, D, D7, D9, AND H FOR ACFT OVER 12500 LBS. ALL OTR TWYS RSTRD TO ACFT LESS THAN 12500 LBS.

Denver, Colorado
Denver International
ICAO Identifier KDEN



Denver, CO
Denver Intl
ICAO Identifier KDEN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–51–42N / 104–40–23.4W
2.2.2 From City: 16 miles NE of DENVER, CO
2.2.3 Elevation: 5433.8 ft
2.2.5 Magnetic Variation: 8E (2015)
2.2.6 Airport Contact: PHIL WASHINGTON
ADMIN BLDG, 8500 PENA BLVD
DENVER, CO 80249 ((303) 342–2206)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 2/1/1995

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 25
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–50–26.3667N / 104–41–2.1712W
2.12.6 Threshold Elevation: 5355 ft
2.12.6 Touchdown Zone Elevation: 5355 ft

2.12.1 Designation: 07
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–50–27.4022N / 104–43–35.963W
2.12.6 Threshold Elevation: 5350.2 ft
2.12.6 Touchdown Zone Elevation: 5351.6 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–52–38.0769N / 104–37–10.1479W
2.12.6 Threshold Elevation: 5294.4 ft
2.12.6 Touchdown Zone Elevation: 5309.4 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 91
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–52–39.2009N / 104–39–44.0267W
2.12.6 Threshold Elevation: 5354.3 ft
2.12.6 Touchdown Zone Elevation: 5354.3 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–53–49.3301N / 104–41–12.4998W
2.12.6 Threshold Elevation: 5349.9 ft
2.12.6 Touchdown Zone Elevation: 5357.1 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–51–50.7743N / 104–41–13.8782W
2.12.6 Threshold Elevation: 5353.7 ft
2.12.6 Touchdown Zone Elevation: 5353.7 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–53–44.869N / 104–41–45.9006W
2.12.6 Threshold Elevation: 5321.8 ft
2.12.6 Touchdown Zone Elevation: 5326.3 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–51–6.7926N / 104–41–47.7166W
2.12.6 Threshold Elevation: 5327 ft
2.12.6 Touchdown Zone Elevation: 5327 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–51–53.8287N / 104–38–28.6959W
2.12.6 Threshold Elevation: 5328.1 ft
2.12.6 Touchdown Zone Elevation: 5338.5 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft

2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−49−55.2707N / 104−38−30.1554W
2.12.6 Threshold Elevation: 5370 ft
2.12.6 Touchdown Zone Elevation: 5370 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−40.4821N / 104−39−36.5561W
2.12.6 Threshold Elevation: 5377.9 ft
2.12.6 Touchdown Zone Elevation: 5391.9 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−49−41.9262N / 104−39−37.9841W
2.12.6 Threshold Elevation: 5433.8 ft
2.12.6 Touchdown Zone Elevation: 5433.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 25
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 13000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 07
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 13000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft

2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 34R
2.13.2 Take–off Run Available: 12000 ft
2.13.3 Take–off Distance Available: 13000 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 16R
2.13.2 Take–off Run Available: 16000 ft
2.13.3 Take–off Distance Available: 16000 ft
2.13.4 Accelerate–Stop Distance Available: 16000 ft
2.13.5 Landing Distance Available: 16000 ft

2.13.1 Designation: 34L
2.13.2 Take–off Run Available: 16000 ft
2.13.3 Take–off Distance Available: 16000 ft
2.13.4 Accelerate–Stop Distance Available: 16000 ft
2.13.5 Landing Distance Available: 16000 ft

2.13.1 Designation: 17L
2.13.2 Take–off Run Available: 12000 ft
2.13.3 Take–off Distance Available: 12000 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 35R
2.13.2 Take–off Run Available: 12000 ft
2.13.3 Take–off Distance Available: 12000 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 17R
2.13.2 Take–off Run Available: 12000 ft
2.13.3 Take–off Distance Available: 12000 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 35L
2.13.2 Take–off Run Available: 12000 ft
2.13.3 Take–off Distance Available: 12000 ft
2.13.4 Accelerate–Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 25
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39−50−23.6632N / 104−40−48.6232W
2.19.6 Site Elevation: 5359.1 ft

2.19.1 ILS Type: Glide Slope for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39–50–23.2656N / 104–43–22.6558W
2.19.6 Site Elevation: 5340.5 ft

2.19.1 ILS Type: Localizer for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39–50–26.2755N / 104–40–49.0613W
2.19.6 Site Elevation: 5354.9 ft

2.19.1 ILS Type: DME for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39–50–23.6632N / 104–40–48.6232W
2.19.6 Site Elevation: 5359.1 ft

2.19.1 ILS Type: Glide Slope for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39–50–22.4098N / 104–41–15.7881W
2.19.6 Site Elevation: 5344.2 ft

2.19.1 ILS Type: Localizer for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39–50–27.4883N / 104–43–49.0723W
2.19.6 Site Elevation: 5348.9 ft

2.19.1 ILS Type: DME for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39–52–41.8784N / 104–39–57.5078W
2.19.6 Site Elevation: 5360.2 ft

2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39–52–43.1529N / 104–39–29.8599W
2.19.6 Site Elevation: 5342.2 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39–52–37.9791N / 104–36–57.0352W
2.19.6 Site Elevation: 5283.1 ft

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 8E
2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39–52–41.8784N / 104–39–57.5078W
2.19.6 Site Elevation: 5360.2 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 8E
2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39–52–42.2239N / 104–37–22.3854W
2.19.6 Site Elevation: 5293.2 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 8E

2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39–52–39.2968N / 104–39–57.142W
2.19.6 Site Elevation: 5347.6 ft

2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39–53–59.6091N / 104–41–15.7719W
2.19.6 Site Elevation: 5357 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39–53–39.5473N / 104–41–17.8695W
2.19.6 Site Elevation: 5346.5 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39–51–40.6701N / 104–41–13.996W
2.19.6 Site Elevation: 5343.2 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39–53–59.6091N / 104–41–15.7719W
2.19.6 Site Elevation: 5357 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39–52–1.3925N / 104–41–19.0115W
2.19.6 Site Elevation: 5346.4 ft

2.19.1 ILS Type: Inner Marker for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39–51–42.2879N / 104–41–13.9788W
2.19.6 Site Elevation: 5345 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39–53–59.4426N / 104–41–12.3812W
2.19.6 Site Elevation: 5349.7 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ
2.19.5 Coordinates: 39–53–55.7414N / 104–41–50.8967W
2.19.6 Site Elevation: 5323.5 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ
2.19.5 Coordinates: 39–53–34.8236N / 104–41–51.2764W
2.19.6 Site Elevation: 5316.8 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ

2.19.5 Coordinates: 39–50–56.7831N / 104–41–47.8336W
2.19.6 Site Elevation: 5320.8 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39–53–55.7414N / 104–41–50.8967W
2.19.6 Site Elevation: 5323.5 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39–51–17.5994N / 104–41–52.8493W
2.19.6 Site Elevation: 5317.6 ft

2.19.1 ILS Type: Inner Marker for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39–50–58.2971N / 104–41–47.8092W
2.19.6 Site Elevation: 5321.4 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39–53–54.875N / 104–41–45.7848W
2.19.6 Site Elevation: 5320.1 ft

2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39–52–4.266N / 104–38–25.1893W
2.19.6 Site Elevation: 5345.1 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39–51–44.0596N / 104–38–23.5605W
2.19.6 Site Elevation: 5326 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39–49–45.1652N / 104–38–30.282W
2.19.6 Site Elevation: 5362.9 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39–52–4.266N / 104–38–25.1893W
2.19.6 Site Elevation: 5345.1 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39–50–6.3585N / 104–38–24.7651W
2.19.6 Site Elevation: 5359.9 ft

2.19.1 ILS Type: Inner Marker for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39–49–46.7811N / 104–38–30.2697W

2.19.6 Site Elevation: 5364.5 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39−52−3.9404N / 104−38−28.572W
2.19.6 Site Elevation: 5335.5 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−51−50.9244N / 104−39−33.0513W
2.19.6 Site Elevation: 5388 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−51−30.9128N / 104−39−31.4164W
2.19.6 Site Elevation: 5378 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−49−31.8218N / 104−39−38.1041W
2.19.6 Site Elevation: 5427.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−51−50.9244N / 104−39−33.0513W
2.19.6 Site Elevation: 5388 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−49−52.7648N / 104−39−32.5991W
2.19.6 Site Elevation: 5422.6 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−51−50.5996N / 104−39−36.4352W
2.19.6 Site Elevation: 5377.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: DEN
2.19.5 Coordinates: 39−48−45.0506N / 104−39−38.6643W
2.19.6 Site Elevation: 5452.1 ft

General Remarks:
TWY F7 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

INFORMAL RWY USE PROGRAM IN EFCT H24; NOISE ABATEMENT INFO − ARPT MGMT 303−342−4200.

OVHD PAX BRIDGE S SIDE OF CONCOURSE−A PRVDS 42 FT TAIL & 118 FT WINGSPAN CLNC WHEN ON TWY CNTRLN.

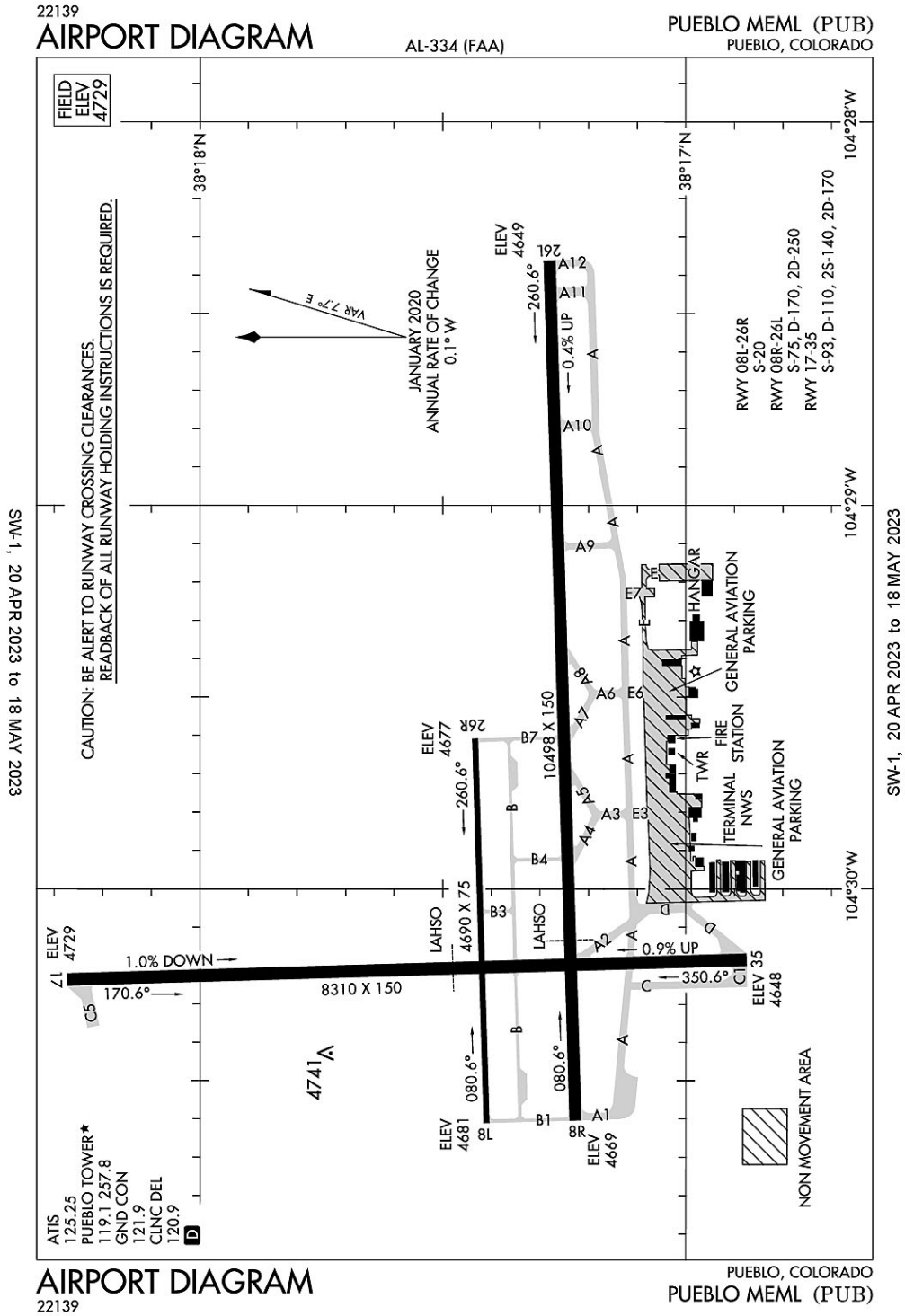
ASDE−X IN USE; OPR TRANSPONDERS WITH ALT RPRTG MODE & ADS−B IF EQUIPPED ENABLED ON ALL ARPT SFCS.

WATERFOWL & BIRDS INVOF ARPT.

CUSTOMS AVBL PPR.

DEP RWY 08, 25 & 34R HAS MNTND CWY 500 X 1000 FT 1.25 SLOPE.

Pueblo, Colorado
Pueblo Memorial
ICAO Identifier KPUB



Pueblo, CO
Pueblo Memorial
ICAO Identifier KPUB

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−17−23.811N / 104−29−52.901W
2.2.2 From City: 5 miles E of PUEBLO, CO
2.2.3 Elevation: 4729.3 ft
2.2.5 Magnetic Variation: 8E (2015)
2.2.6 Airport Contact: GREG PEDROZA
31201 BRYAN CIRCLE
PUEBLO, CO 81001 (719−553−2744)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0500−2200 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I A certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 88
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−17−24.3081N / 104−30−36.6451W
2.12.6 Threshold Elevation: 4681.2 ft
2.12.6 Touchdown Zone Elevation: 4681.2 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 268
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−17−25.7014N / 104−29−37.865W
2.12.6 Threshold Elevation: 4677 ft
2.12.6 Touchdown Zone Elevation: 4678.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 88
2.12.3 Dimensions: 10498 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−17−13.6348N / 104−30−36.2409W
2.12.6 Threshold Elevation: 4669.4 ft
2.12.6 Touchdown Zone Elevation: 4671.4 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 268
2.12.3 Dimensions: 10498 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−17−16.7526N / 104−28−24.6616W
2.12.6 Threshold Elevation: 4648.8 ft
2.12.6 Touchdown Zone Elevation: 4658.9 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 178
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−18−15.0609N / 104−30−14.6942W
2.12.6 Threshold Elevation: 4729.3 ft
2.12.6 Touchdown Zone Elevation: 4729.3 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 358
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 38−16−52.9717N / 104−30−11.6348W
2.12.6 Threshold Elevation: 4648.1 ft
2.12.6 Touchdown Zone Elevation: 4676.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 4690 ft
2.13.3 Take−off Distance Available: 4690 ft
2.13.4 Accelerate−Stop Distance Available: 4690 ft
2.13.5 Landing Distance Available: 4690 ft

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 4690 ft
2.13.3 Take−off Distance Available: 4690 ft
2.13.4 Accelerate−Stop Distance Available: 4690 ft
2.13.5 Landing Distance Available: 4690 ft

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 10496 ft
2.13.3 Take−off Distance Available: 10496 ft
2.13.4 Accelerate−Stop Distance Available: 10496 ft
2.13.5 Landing Distance Available: 10496 ft

2.13.1 Designation: 26L
2.13.2 Take−off Run Available: 10496 ft
2.13.3 Take−off Distance Available: 10496 ft
2.13.4 Accelerate−Stop Distance Available: 10496 ft
2.13.5 Landing Distance Available: 10496 ft

2.13.1 Designation: 17

2.13.2 Take−off Run Available: 8308 ft
2.13.3 Take−off Distance Available: 8308 ft
2.13.4 Accelerate−Stop Distance Available: 8308 ft
2.13.5 Landing Distance Available: 8308 ft

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 8308 ft
2.13.3 Take−off Distance Available: 8308 ft
2.13.4 Accelerate−Stop Distance Available: 8308 ft
2.13.5 Landing Distance Available: 8308 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 8E
2.19.2 ILS Identification: PUB
2.19.5 Coordinates: 38−17−18.9334N / 104−30−21.5794W
2.19.6 Site Elevation: 4672.8 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 8E
2.19.2 ILS Identification: PUB
2.19.5 Coordinates: 38−17−17.2016N / 104−28−6.1097W
2.19.6 Site Elevation: 4653.1 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 8E
2.19.2 ILS Identification: TFR
2.19.5 Coordinates: 38−17−21.3596N / 104−28−39.1966W
2.19.6 Site Elevation: 4649.4 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 8E
2.19.2 ILS Identification: TFR
2.19.5 Coordinates: 38−17−13.2497N / 104−30−52.5582W
2.19.6 Site Elevation: 4668 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: PUB
2.19.5 Coordinates: 38−17−39.3132N / 104−25−46.0107W
2.19.6 Site Elevation: 4755.5 ft

General Remarks:
HIGH VOLUME TRNG DA−20 ACFT SR−SS MON−FRI. OVERHEAD PATTERN DURG TRNG. EXTENSIVE USE OF TRNG AREA 12−28 DME N−SW OF ARPT 500 FT AGL−8500 FT MSL.

BE ALERT; INTENSIVE USAF STUDENT TRAINING IN VICINITY OF COLORADO SPRINGS & PUEBLO COLORADO.

CONDITIONS NOT MONITORED 2200L−0500L.

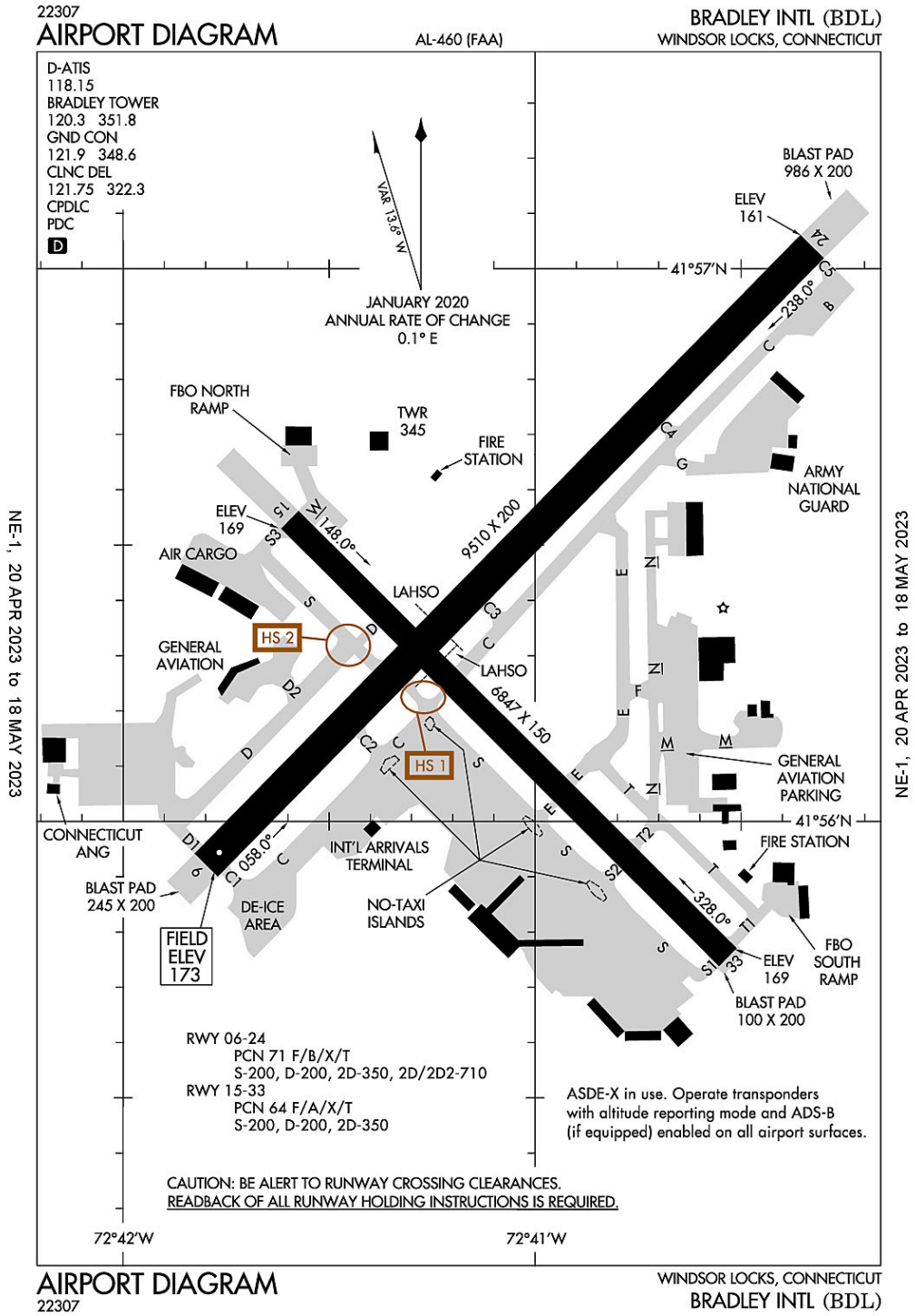
SEE FLIP AP/1 SUPPLEMENTARY ARPT INFO.

RAMP−TAXI LANE E EXTD 30 FT WIDE FM EAST RAMP TO TWY E7.

TWY A BTN TWY A2 AND A6 50 FT WID.

FOR CD CTC PUEBLO APCH AT 303−342−1916, WHEN APCH CLSD CTC DENVER ARTCC AT 303−651−4257.

Windsor Locks, Connecticut
Bradley International
ICAO Identifier KBDL



Windsor Locks, CT
Bradley Intl
ICAO Identifier KBDL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41–56–20.516N / 72–41–3.537W
2.2.2 From City: 3 miles W of WINDSOR LOCKS, CT
2.2.3 Elevation: 173.3 ft
2.2.5 Magnetic Variation: 14W (1980)
2.2.6 Airport Contact: KEVIN DILLON, AAE
BRADLEY INTL AIRPORT
WINDSOR LOCKS, CT 6096 (860–292–2000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06
2.12.2 True Bearing: 44
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.4 PCN: 71 F/B/X/T
2.12.5 Coordinates: 41–55–55.25N / 72–41–47.6885W
2.12.6 Threshold Elevation: 173 ft
2.12.6 Touchdown Zone Elevation: 173.3 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 224
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.4 PCN: 71 F/B/X/T
2.12.5 Coordinates: 41–57–2.3952N / 72–40–19.6697W
2.12.6 Threshold Elevation: 160.9 ft
2.12.6 Touchdown Zone Elevation: 170 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.4 PCN: 64 F/A/X/T
2.12.5 Coordinates: 41–56–32.6254N / 72–41–35.7104W
2.12.6 Threshold Elevation: 168.8 ft
2.12.6 Touchdown Zone Elevation: 170.8 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.4 PCN: 64 F/A/X/T
2.12.5 Coordinates: 41−55−45.3238N / 72−40−30.9557W
2.12.6 Threshold Elevation: 168.5 ft
2.12.6 Touchdown Zone Elevation: 171.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take−off Run Available: 9509 ft
2.13.3 Take−off Distance Available: 9509 ft
2.13.4 Accelerate−Stop Distance Available: 9509 ft
2.13.5 Landing Distance Available: 9509 ft

2.13.1 Designation: 24
2.13.2 Take−off Run Available: 9509 ft
2.13.3 Take−off Distance Available: 9509 ft
2.13.4 Accelerate−Stop Distance Available: 9509 ft
2.13.5 Landing Distance Available: 9509 ft

2.13.1 Designation: 15
2.13.2 Take−off Run Available: 6847 ft
2.13.3 Take−off Distance Available: 6847 ft
2.13.4 Accelerate−Stop Distance Available: 6847 ft
2.13.5 Landing Distance Available: 6847 ft

2.13.1 Designation: 33
2.13.2 Take−off Run Available: 6847 ft
2.13.3 Take−off Distance Available: 6847 ft
2.13.4 Accelerate−Stop Distance Available: 6847 ft
2.13.5 Landing Distance Available: 6847 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41–57–17.2894N / 72–39–56.5118W
2.19.6 Site Elevation: 163.8 ft

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41–56–5.5448N / 72–41–41.8869W
2.19.6 Site Elevation: 169.3 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41–57–17.8499N / 72–39–59.4045W
2.19.6 Site Elevation: 149.5 ft

2.19.1 ILS Type: DME for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41–57–17.2894N / 72–39–56.5118W
2.19.6 Site Elevation: 163.8 ft

2.19.1 ILS Type: Glide Slope for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41–56–53.5757N / 72–40–25.9626W
2.19.6 Site Elevation: 156.7 ft

2.19.1 ILS Type: Localizer for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41–55–47.661N / 72–41–57.6296W
2.19.6 Site Elevation: 170.3 ft

2.19.1 ILS Type: DME for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41–56–37.9724N / 72–41–47.432W
2.19.6 Site Elevation: 181.8 ft

2.19.1 ILS Type: Glide Slope for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41–55–54.7672N / 72–40–38.5896W
2.19.6 Site Elevation: 167.6 ft

2.19.1 ILS Type: Localizer for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41–56–40.2961N / 72–41–46.2065W
2.19.6 Site Elevation: 168.3 ft

General Remarks:
TWY D CLSD BTN S & D1 TO ACFT WITH WING SPANS IN EXCESS OF 170 FT.

ASDE−X IN USE. OPR TRANSPONDERS WITH ALT RPRTG MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL ARPT SFCS.

TWY C BTN TWY B & TWY C4 ACFT TAX SPD RSTRN OF 8 KTS/10 MPH MAX FOR ACFT WITH WINGSPAN 214 FT OR GTR.

LGTD OBST ANT 36 FT AGL/205 FT MSL (RWY 24 ILS/GS ANT) 162 FT NW OF TWY C CNTRLN MARKING BTN TWY B & TWY C4.

CAUTION: ANG RAMP MRK MAY NOT BE APPROPRIATE FOR LARGE ACFT: FLW MARSHALLERS INSTR.

OPS CTC AUTOVON 636−8385; COML 860−627−3001.

NMRS BIRDS FQTLY ON OR INVOF ARPT.

MILITARY: ANG: WHEN CKG ATIS, BIRDS IN VCY MAY INDC HEIGHTENED BIRD WATCH CONDITION (BWC). USAF ACFT CTC ANG AIRFIELD OPS ON UHF FOR CURRENT BWC & ANY ASSOCD RSTRNS.

MILITARY: ARNG − DSN 636−7519/7520. C860−292−4519/4520.

MILITARY: ANG: AFLD MGR DOES NOT ISSUE OR STORE COMSEC FOR TRAN CREWS.

MILITARY: ANG: PPR V220−2356.

FUEL: A++ (MIL).

NON−BASED DVRSN ACRS CTC ARPT OPS 860−627−3001 PRIOR TO DIVG & PRVD CO FLT OPS CTC INFO, ACFT TYPE, POB, INTL OR DOM FLT & GND OPS AGRMTS. ONLY 1 INTL ACR JETBRIDGE AVBL FOR PAX.

MILITARY: ARNG: OPR 1200−2030Z++ MON, TUE, FRI; 1200−0400++ WED, THU. 41.9 149.825 335.775 (HAV-OC OPS).

NO DE−ICING AVBL AT ANG.

MILITARY: ANG: NSTD YELLOW AEROSPACE GND EQPT AND FIRE BOTTLE BOXES PAINTED ON ANG RAMP.

RWY 6 DE−ICE PAD CLSD TO ACFT WITH WINGSPAN 171 FT OR GTR EXC WITH FOLLOW−ME ESCORT BY ARPT OPS.

NO TRNG FLTS, NO PLAS, NO TGLS BTN: 2300 − 0700 MON THRU SAT & 2300 − 1200 SUN.

MILITARY: ANG: OPR 1200−2030Z++ MON−FRI (SAT, SUN UTA).

FIXED WING ACFT USE LOW IDLE FOR TAXI, NO ENGINE CHECKS OR POWER RUNS ALLOWED ON THE ARNG RAMP DUE TO POSSIBLE FOD HAZARD.

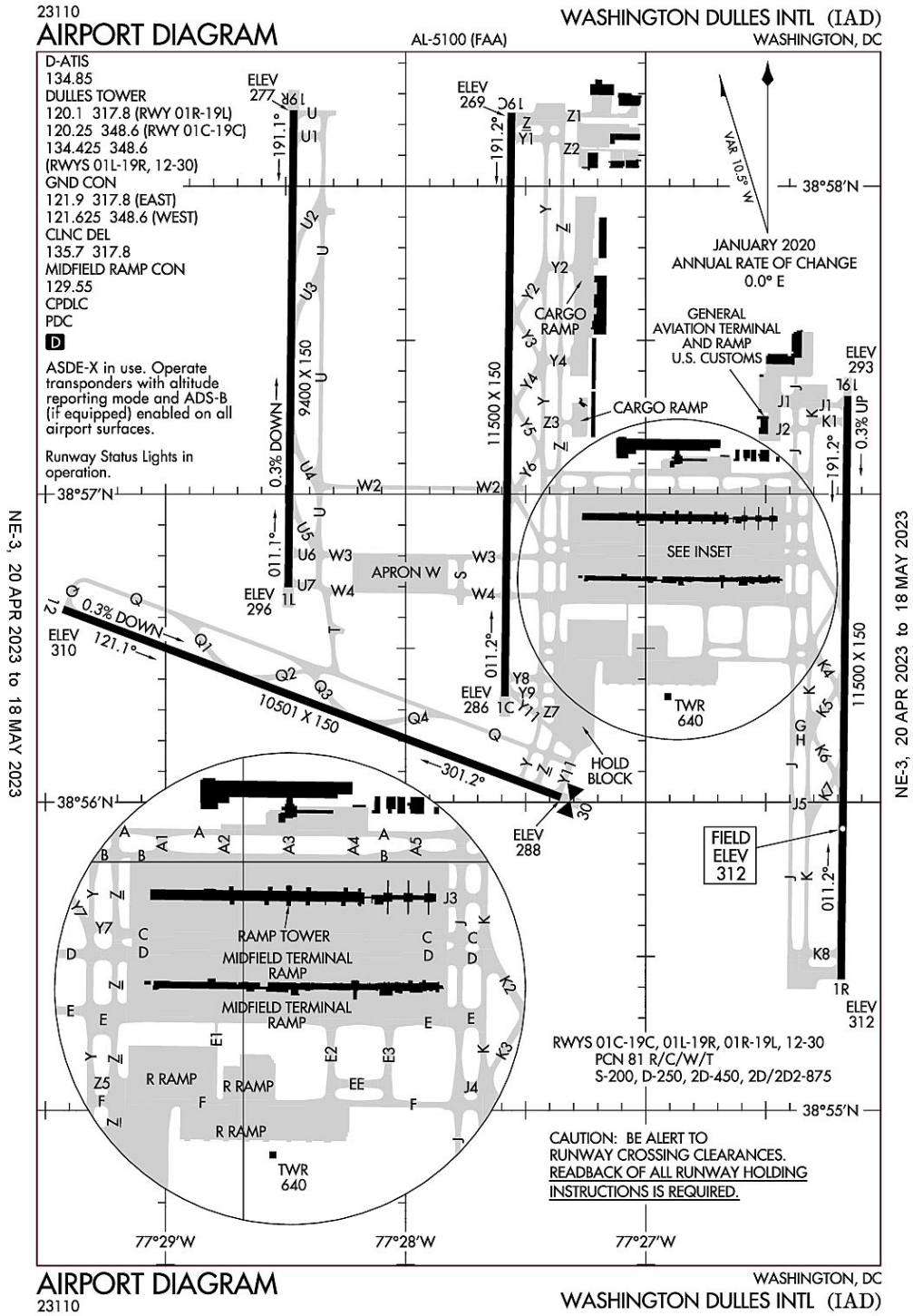
BASH PHASE II INCRD BIRD ACTVTY SEP−OCT AND MAR−APR.

PARL TWY OPS ON TWY C & TWY B RSTRD TO ACFT WITH WINGSPANS OF 171 FT OR LESS.

(E117) CT ANG AND U.S. ARMY NG.

ACFT REQG US CUST SVCS MUST PARK ON THE CUST SPOT W/ THE NOSE OF THE ACFT FACING SW. CTC CUST AT 860−292−1314 WHEN PARKED.

Washington, District of Columbia
Washington Dulles International
ICAO Identifier KIAD



Washington, DC
Washington Dulles Intl
ICAO Identifier KIAD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38–56–50.843N / 77–27–35.743W
2.2.2 From City: 20 miles W of WASHINGTON, VA
2.2.3 Elevation: 312.3 ft
2.2.5 Magnetic Variation: 10W (2000)
2.2.6 Airport Contact: RICHARD GOLINOWSKI
1 SAARINEN CIRCLE
DULLES, VA 20166 (703–572–2730)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19C
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38–58–14.3073N / 77–27–33.5451W
2.12.6 Threshold Elevation: 268.6 ft
2.12.6 Touchdown Zone Elevation: 271.8 ft

2.12.1 Designation: 01C
2.12.2 True Bearing: 1
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38–56–20.6385N / 77–27–35.199W
2.12.6 Threshold Elevation: 286.1 ft
2.12.6 Touchdown Zone Elevation: 286.1 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38–56–41.8795N / 77–28–29.3169W
2.12.6 Threshold Elevation: 296 ft
2.12.6 Touchdown Zone Elevation: 296 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−58−14.784N / 77−28−27.984W
2.12.6 Threshold Elevation: 277 ft
2.12.6 Touchdown Zone Elevation: 278.3 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−55−25.5244N / 77−26−11.2132W
2.12.6 Threshold Elevation: 311.7 ft
2.12.6 Touchdown Zone Elevation: 312.3 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−57−19.1867N / 77−26−9.5086W
2.12.6 Threshold Elevation: 293 ft
2.12.6 Touchdown Zone Elevation: 302 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 291
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−0.9996N / 77−27−21.2257W
2.12.6 Threshold Elevation: 287.6 ft
2.12.6 Touchdown Zone Elevation: 287.7 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 111
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−37.5897N / 77−29−25.5882W
2.12.6 Threshold Elevation: 309.9 ft
2.12.6 Touchdown Zone Elevation: 309.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19C
2.13.2 Take−off Run Available: 11500 ft
2.13.3 Take−off Distance Available: 11500 ft
2.13.4 Accelerate−Stop Distance Available: 11500 ft
2.13.5 Landing Distance Available: 11089 ft

2.13.1 Designation: 01C
2.13.2 Take−off Run Available: 11500 ft
2.13.3 Take−off Distance Available: 11500 ft

2.13.4 Accelerate–Stop Distance Available: 11500 ft
2.13.5 Landing Distance Available: 11500 ft

2.13.1 Designation: 01L
2.13.2 Take–off Run Available: 9400 ft
2.13.3 Take–off Distance Available: 9400 ft
2.13.4 Accelerate–Stop Distance Available: 9400 ft
2.13.5 Landing Distance Available: 9400 ft

2.13.1 Designation: 19R
2.13.2 Take–off Run Available: 9400 ft
2.13.3 Take–off Distance Available: 9400 ft
2.13.4 Accelerate–Stop Distance Available: 9400 ft
2.13.5 Landing Distance Available: 9400 ft

2.13.1 Designation: 01R
2.13.2 Take–off Run Available: 11500 ft
2.13.3 Take–off Distance Available: 11500 ft
2.13.4 Accelerate–Stop Distance Available: 11500 ft
2.13.5 Landing Distance Available: 11500 ft

2.13.1 Designation: 19L
2.13.2 Take–off Run Available: 11500 ft
2.13.3 Take–off Distance Available: 11500 ft
2.13.4 Accelerate–Stop Distance Available: 11500 ft
2.13.5 Landing Distance Available: 11500 ft

2.13.1 Designation: 30
2.13.2 Take–off Run Available: 10501 ft
2.13.3 Take–off Distance Available: 10501 ft
2.13.4 Accelerate–Stop Distance Available: 10501 ft
2.13.5 Landing Distance Available: 10501 ft

2.13.1 Designation: 12
2.13.2 Take–off Run Available: 10501 ft
2.13.3 Take–off Distance Available: 10501 ft
2.13.4 Accelerate–Stop Distance Available: 10501 ft
2.13.5 Landing Distance Available: 10501 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 01C. Magnetic variation: 10W
2.19.2 ILS Identification: OSZ
2.19.5 Coordinates: 38−56−31.0626N / 77−27−40.739W
2.19.6 Site Elevation: 281.7 ft

2.19.1 ILS Type: Localizer for runway 01C. Magnetic variation: 10W
2.19.2 ILS Identification: OSZ
2.19.5 Coordinates: 38−58−24.6804N / 77−27−33.3938W
2.19.6 Site Elevation: 263.3 ft

2.19.1 ILS Type: Glide Slope for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−58−4.1642N / 77−27−37.9988W
2.19.6 Site Elevation: 264.9 ft

2.19.1 ILS Type: Inner Marker for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−58−22.945N / 77−27−33.4229W
2.19.6 Site Elevation: 263.5 ft

2.19.1 ILS Type: Localizer for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−56−14.5833N / 77−27−35.2871W
2.19.6 Site Elevation: 283.8 ft

2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38–58–25.077N / 77–28–31.1445W
2.19.6 Site Elevation: 288.2 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38–56–52.8758N / 77–28–34.3489W
2.19.6 Site Elevation: 288.1 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38–56–33.3882N / 77–28–29.4318W
2.19.6 Site Elevation: 298.4 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38–58–24.7952N / 77–28–27.8419W
2.19.6 Site Elevation: 276.9 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38–58–25.077N / 77–28–31.1445W
2.19.6 Site Elevation: 288.2 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38–58–4.4532N / 77–28–33.3236W
2.19.6 Site Elevation: 272 ft

2.19.1 ILS Type: Inner Marker for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38–58–23.5162N / 77–28–27.8521W
2.19.6 Site Elevation: 275 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38–56–31.869N / 77–28–29.461W
2.19.6 Site Elevation: 298.3 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 10W
2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38–55–11.037N / 77–26–8.2071W
2.19.6 Site Elevation: 326.3 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 10W
2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38–55–35.8487N / 77–26–4.7355W
2.19.6 Site Elevation: 306.4 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 10W

2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38−57−30.8651N / 77−26−9.3346W
2.19.6 Site Elevation: 301.5 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−55−11.037N / 77−26−8.2071W
2.19.6 Site Elevation: 326.3 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−57−9.2652N / 77−26−4.5983W
2.19.6 Site Elevation: 290.9 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−55−11.8054N / 77−26−11.4157W
2.19.6 Site Elevation: 315.1 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 10W
2.19.2 ILS Identification: AJU
2.19.5 Coordinates: 38−56−30.4069N / 77−29−15.5183W
2.19.6 Site Elevation: 303.4 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 10W
2.19.2 ILS Identification: AJU
2.19.5 Coordinates: 38−55−57.2399N / 77−27−8.4716W
2.19.6 Site Elevation: 281 ft

General Remarks:
TAXILANE 'C' ACTIVE; PUSHBACK CLNCS ON NORTH SIDE OF MIDFIELD TERMINAL ARE ONTO TAXILANE 'D' ONLY UNLESS OTHERWISE AUTH.

RWY STATUS LGTS ARE IN OPN.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ENGINE RUN−UPS BTW 2200L & 0700L REQUIRE PRIOR APPROVAL FM ARPT OPS.

LARGE FLOCKS OF BIRDS ON & INVOF ARPT/DEER INVOF ARPT.

B747−8 RESTRICTED TO MAXIMUM TAXI SPEED 17 KTS (20 MPH) ON TWY J.

RUNUP BLX FOR RWY 30 DSGND AS NON−MOVEMENT AREA.

RWY 30 DEPARTURES USE UPPER ANTENNA FOR ATC COMMUNICATIONS.

ACR PUSH BACKS & PWR FM ALL APRON PSNS REQUIRE CLNC FM MWAA RAMP TWR.

ALL AIRCRAFT WITH WINGSPAN EXCEEDING 118 FT ARE RESTRICTED FROM USING TAXILANE A BTN A1 & A5.

ALL 180 DEG TURNS OUT OF APRON POSITIONS SHALL BE MADE USING MINIMUM POWER.

TWY E1 RESTRICTED TO ACFT WITH A WINGSPAN LESS THAN 79 FT.

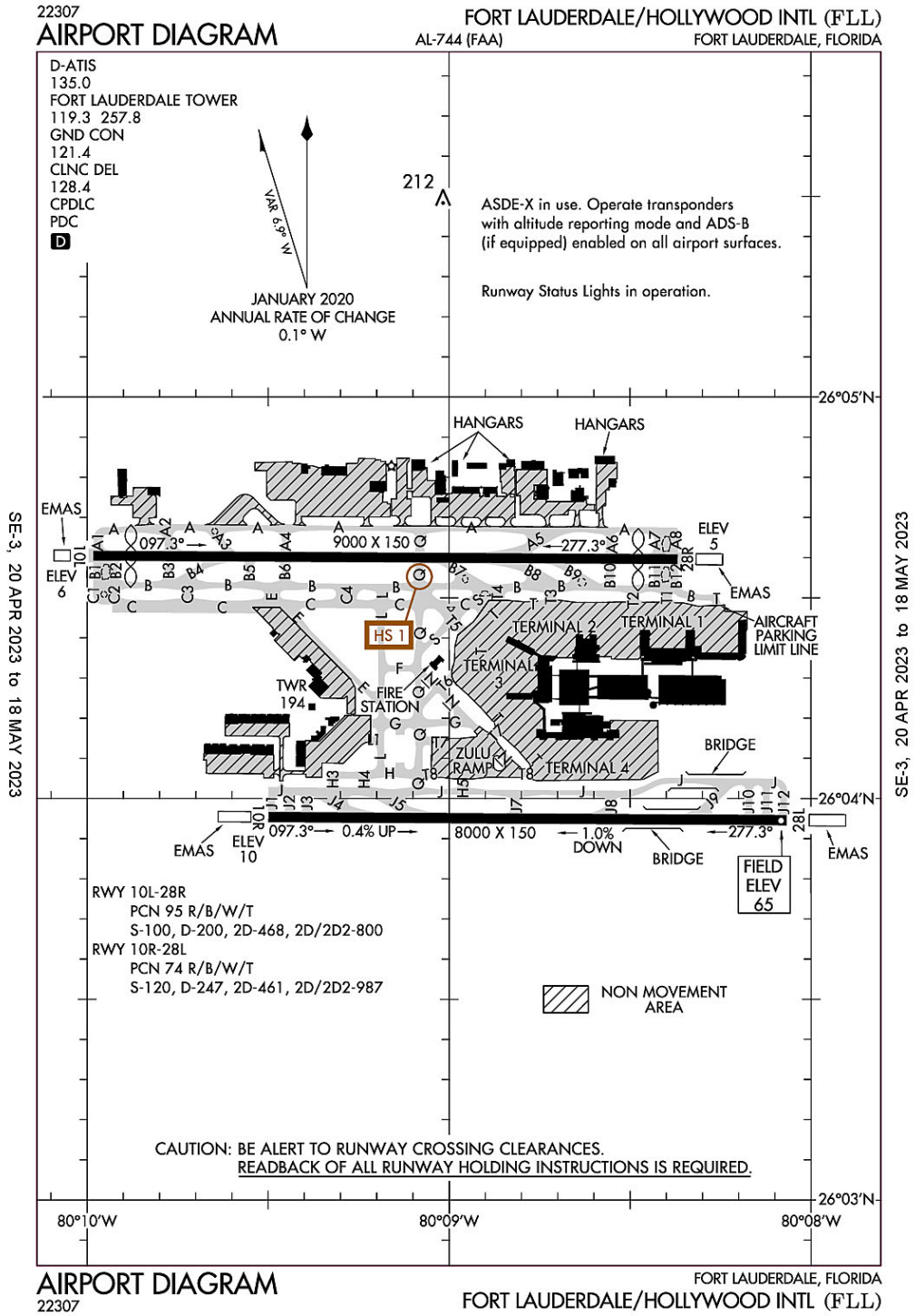
FLIGHT TRAINING BETWEEN 2200–0700 IS PROHIBITED.

DURING PERIODS OF ACFT SATURATION LONG TERM PARKING MAY NOT BE AVAILABLE. SERVICES FOR FUEL AND GO ONLY WILL BE AVAILABLE.

ITNRNT ACFT CTC FBO ON 122.95 OR 129.77 FOR SVCS.

LDG FEE. FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL. NOTE: SEE SPECIAL NOTICES ––CONTINUOUS POWER FACILITIES.

Fort Lauderdale, Florida
Fort Lauderdale–Hollywood International
ICAO Identifier KFLL



Fort Lauderdale, FL
Fort Lauderdale/Hollywood Intl
ICAO Identifier KFLL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 26–4–18N / 80–8–58.9W
2.2.2 From City: 3 miles SW of FORT LAUDERDALE, FL
2.2.3 Elevation: 65 ft
2.2.5 Magnetic Variation: 6W (2015)
2.2.6 Airport Contact: MARK GALE
320 TERMINAL DRIVE SUITE 200
FORT LAUDERDALE, FL 33315 (954–359–6100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/21/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 26–4–37.0166N / 80–9–59.5381W
2.12.6 Threshold Elevation: 5.6 ft
2.12.6 Touchdown Zone Elevation: 7.1 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 26–4–36.4507N / 80–8–20.835W
2.12.6 Threshold Elevation: 5.3 ft
2.12.6 Touchdown Zone Elevation: 6.7 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26–3–57.1919N / 80–9–30.056W
2.12.6 Threshold Elevation: 10.1 ft
2.12.6 Touchdown Zone Elevation: 14.3 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26−3−56.6718N / 80−8−2.3388W
2.12.6 Threshold Elevation: 65 ft
2.12.6 Touchdown Zone Elevation: 65 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 8424 ft

2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 8394 ft

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26–4–40.1757N / 80–8–15.6721W
2.19.6 Site Elevation: 11.3 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26–4–39.6411N / 80–9–42.3329W
2.19.6 Site Elevation: 2.9 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26–4–36.4066N / 80–8–13.1434W
2.19.6 Site Elevation: 4.3 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26–4–34.5346N / 80–10–2.4136W
2.19.6 Site Elevation: 10.4 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26–4–39.627N / 80–8–39.0644W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26–4–37.0351N / 80–10–2.8297W
2.19.6 Site Elevation: 4.6 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26–3–58.8348N / 80–7–55.7162W
2.19.6 Site Elevation: 68.3 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26–3–53.1134N / 80–9–18.5896W
2.19.6 Site Elevation: 5.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26–3–56.6314N / 80–7–55.5666W
2.19.6 Site Elevation: 64.4 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 6W

2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−59.4802N / 80−9−40.4489W
2.19.6 Site Elevation: 14.7 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 6W
2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−52.7404N / 80−8−15.5298W
2.19.6 Site Elevation: 45 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 6W
2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−57.2361N / 80−9−37.7655W
2.19.6 Site Elevation: 7.5 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 6W
2.19.2 Navigation Aid Identification: FLL
2.19.5 Coordinates: 26−4−26.1833N / 80−9−59.1921W
2.19.6 Site Elevation: 5.6 ft

General Remarks:
PPR FOR ACFT WITH EXPLOSIVES.

ASDE−X IN USE; OPR PARROT WITH ALT RPRTG MODE & ADS−B (IF EQUIPPED) ENABLED ON ARPT SFCS.

TWY E BTN TWY C & TWY L CLSD TO ACFT WINGSPAN MORE THAN 118 FT EXC 10 MIN PPR 954−816−3179.

ARR FM N & W MNTN 6000 FT UNTIL ABM RWY 28R ON DOWNWIND; ARR FM N MNTN 6000 FT UNTIL ABM RWY 10L ON DOWNWIND.

EAST SIDE OF CONCOURSE B AVBL TO ACFT WITH WINGSPAN LESS THAN 124.9 FT.

ALL RWYS NOISE SENSITIVE; NOISE ABATEMENT IN EFCT − 954−359−6181.

RWY STATUS LIGHTS IN OPRN.

NO VFR APCHS OR BASE LEGS UNTIL OFFSHORE.

TURB BLW 1000 FT OVR LANDFILL LCTD 2 NM W.

JET RUNUPS NA 2300−0700.

ACFT OPRG FROM TRML 1, 2, 3, 4 MUST CTC RAMP CTL. RAMP CTL EFF − CTC ARPT OPS FOR HRS.

IR CARRIER ACFT USE RAMP PUSH BACK PROCS PRESCRIBED BY ARPT OPS.

TWY J BGN TO ELEV 900 FT EAST OF TWY Q. DUE TO ELEV ALL ACFT REMAIN ON CNTRLN; TWY T8 & TAXILANE T NOT ACCESSIBLE FM TWY J.

ACFT LDG RWY 10R & EXITING J9 FOLLOW TWY LEAD OFF LINE ONTO J9.

NMRS TREES SW QUADRANT OF ARPT.

BIRDS ON & INVOF ARPT; CONCENTRATION OF BIRDS BLW 500 FT 2.0 NM W OF 10L & 10R AER.

CLSD TO ACR TRAINING; LRG ACFT TRNG OVER 58000 LBS MAX CERTD GROSS TKOF WEIGHT; ALL TRNG 2300−0700.

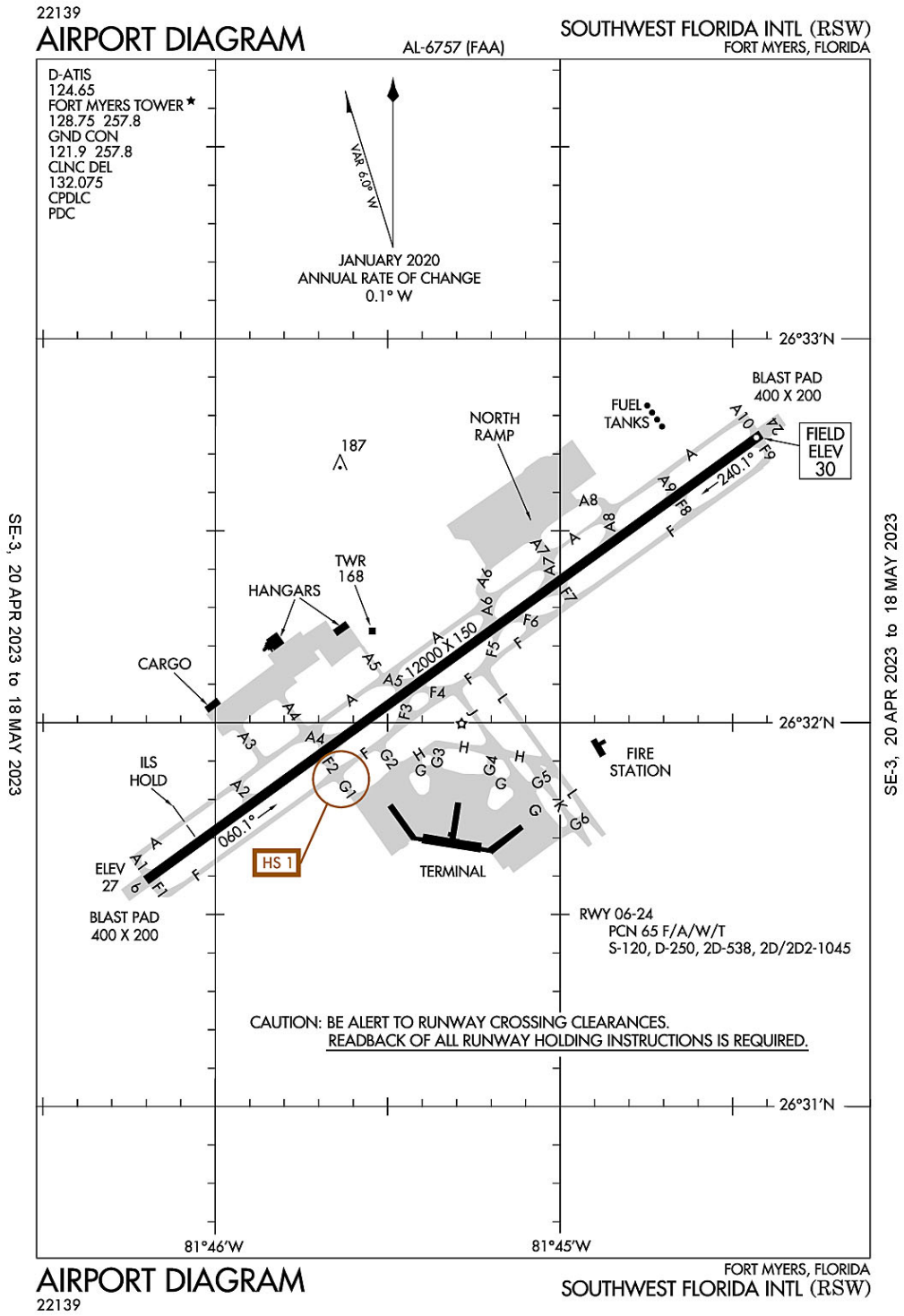
PREFERENTIAL RWY USE PROGRAM IN EFCT; CTC NOISE ABATEMENT OFFICE.

TWY B EAST OF TWY B12 & TAXILANE T EAST OF TWY T1 CLSD TO ACFT WITH WINGSPAN GTR THAN 118 FT & TAIL HGT GTR THAN 45 FT. TWY A BTN TWY A2 & TWY A3 CLSD TO ACFT WINGSPAN MORE THAN 170 FT & TAIL HGT MORE THAN 59 FT EXC 10 MIN PPR 954−816−3179.

PPR FOR ACFT WITH WINGSPAN GTR THAN 171 FT & TAIL HGT GTR THAN 60 FT ON TWY N BTWN TWY Q & TWY T6

HIGH LIGHT MASTS WNW APCH END RWY 28L.

Fort Myers, Florida
Southwest Florida International
ICAO Identifier KRSW



Fort Myers, FL
Southwest Florida Intl
ICAO Identifier KRSW

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 26−32−10.19N / 81−45−18.558W
2.2.2 From City: 10 miles SE of FORT MYERS, FL
2.2.3 Elevation: 29.9 ft
2.2.5 Magnetic Variation: 4W (2000)
2.2.6 Airport Contact: BEN SIEGEL
11000 TERMINAL ACCESS RD.
FORT MYERS, FL 33913 (239−590−4400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0700−0100 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1983

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 24
2.12.2 True Bearing: 234
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−32−45.0262N / 81−44−25.0374W
2.12.6 Threshold Elevation: 29.8 ft
2.12.6 Touchdown Zone Elevation: 29.9 ft

2.12.1 Designation: 06
2.12.2 True Bearing: 54
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−31−35.3489N / 81−46−12.0692W
2.12.6 Threshold Elevation: 26.6 ft
2.12.6 Touchdown Zone Elevation: 27 ft

AD 2.13 Declared Distances
2.13.1 Designation: 24
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 06
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: ALICO DP (RWY 06)
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: ALICO DP (RWY 24)
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: ALICO DP (RWY 06/24)
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (121–240)
2.14.3 Channel: 124.125
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (001–120)
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (301–360)
2.14.3 Channel: 127.05
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (241–300)
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (241–120)
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P (121–240)

2.14.3 Channel: 371.85
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P IC (RWY 06)
2.14.3 Channel: 125.15
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: APCH/P IC (RWY 24)
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CD/P
2.14.3 Channel: 132.075
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (121–240)
2.14.3 Channel: 124.125
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (001–120)
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (301–360)
2.14.3 Channel: 127.05
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (241–300)
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (241–120)
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CLASS C (121–240)
2.14.3 Channel: 371.85
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CSHEL DP (RWY 06)
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CSHEL DP (RWY 24)
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: CSHEL DP (RWY 06/24)
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: D–ATIS
2.14.3 Channel: 124.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: GND/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: JOSFF STAR
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: JOSFF STAR
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 128.75
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: MOOKY DP (RWY 06)
2.14.3 Channel: 124.125
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: MOOKY DP (RWY 24)
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: MOOKY DP (RWY 24)
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: MOOKY DP (RWY 06)
2.14.3 Channel: 371.85
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: SCUBY DP
2.14.3 Channel: 124.125
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: SCUBY DP
2.14.3 Channel: 371.85
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: SHFTY STAR
2.14.3 Channel: 126.8
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: TYNEE STAR
2.14.3 Channel: 134.425
2.14.5 Hours of Operation: 0600–0000

2.14.1 Service Designation: TYNEE STAR
2.14.3 Channel: 306.2
2.14.5 Hours of Operation: 0600–0000

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06. Magnetic variation: 4W
2.19.2 ILS Identification: RSW
2.19.5 Coordinates: 26–32–53.339N / 81–44–17.5144W
2.19.6 Site Elevation: 38 ft

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 4W
2.19.2 ILS Identification: RSW
2.19.5 Coordinates: 26–31–43.5444N / 81–46–4.4222W
2.19.6 Site Elevation: 25.2 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 4W
2.19.2 ILS Identification: RSW
2.19.5 Coordinates: 26–32–51.1355N / 81–44–15.6428W
2.19.6 Site Elevation: 27.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 2W
2.19.2 Navigation Aid Identification: RSW
2.19.5 Coordinates: 26–31–47.5921N / 81–46–32.7666W
2.19.6 Site Elevation: 24.8 ft

General Remarks:
ACR USE RAMP PROC PRESCRIBED BY ARPT OPS.

CAUTION: OPEN BAGGAGE BAYS & CONST WITHIN TERMINAL RAMP AREA. AIRCREWS USE MINIMUM THRUST SETTINGS IN THESE AREAS, SPCLY DURG SINGLE ENG TAXI. CROSS–BLEED STARTS ONLY ALLOWED AFT REACHING THE TUG RELEASE POINT.

TWY A5 BTN FBO RAMP AND TWY A CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

FOR CD IFUN TO CTC ON MIAMI CTR FREQ, CTC MIAMI ARTCC AT 305–716–1731 (0100–0700).

GND CLNC RQRD PRIOR TO ENTERING TWY G.

OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

DEP ACFT OBTAIN APVL FM GND CTL PRIOR TO PUSHBACK FM GATES B7, B9, C8, C9 & D10A. PILOTS ADVISE TUG OPR OF OBTAINED CLNC FM GND CTL PRIOR TO ENTERING TWY G. DEP CTC GND CTL PRIOR TO LEAVING THE COMMUTER RAMP FROM GATES D9A & D9B.

GATES B7 & B9 EXP CALL SPOT #7. GATES C8 & C9 EXP CALL SPOT #4. GATE D10A EXP CALL SPOT #2.

LGTS ON PARALLEL ROAD & PARKING LOT NW OF RWY 06/24 CAN BE MISTAKEN FOR RWY & APCH ENVIRONMENT.

ALL ACFT ON RAMP EXP CLOCKWISE FLOW. OUTBOUND TRAFFIC FROM GATES D2, D4, D6, D8 & D10 PROCEED TO CALL SPOT 1; OUTBOUND TRAFFIC FROM GATES C2, C4, C6, D1, D3, D5 & D7 PROCEED TO CALL SPOT 3; OUTBOUND TRAFFIC FROM GATES B2, B4, B6, B8, C1, C3, C5 & C7 PROCEED TO CALL SPOT 5; OUTBOUND TRAFFIC FROM GATES B1, B3 & B5 PROCEED TO CALL SPOT 9; ALL OUTBOUND TRAFFIC REQUEST TAXI INSTRUCTIONS.

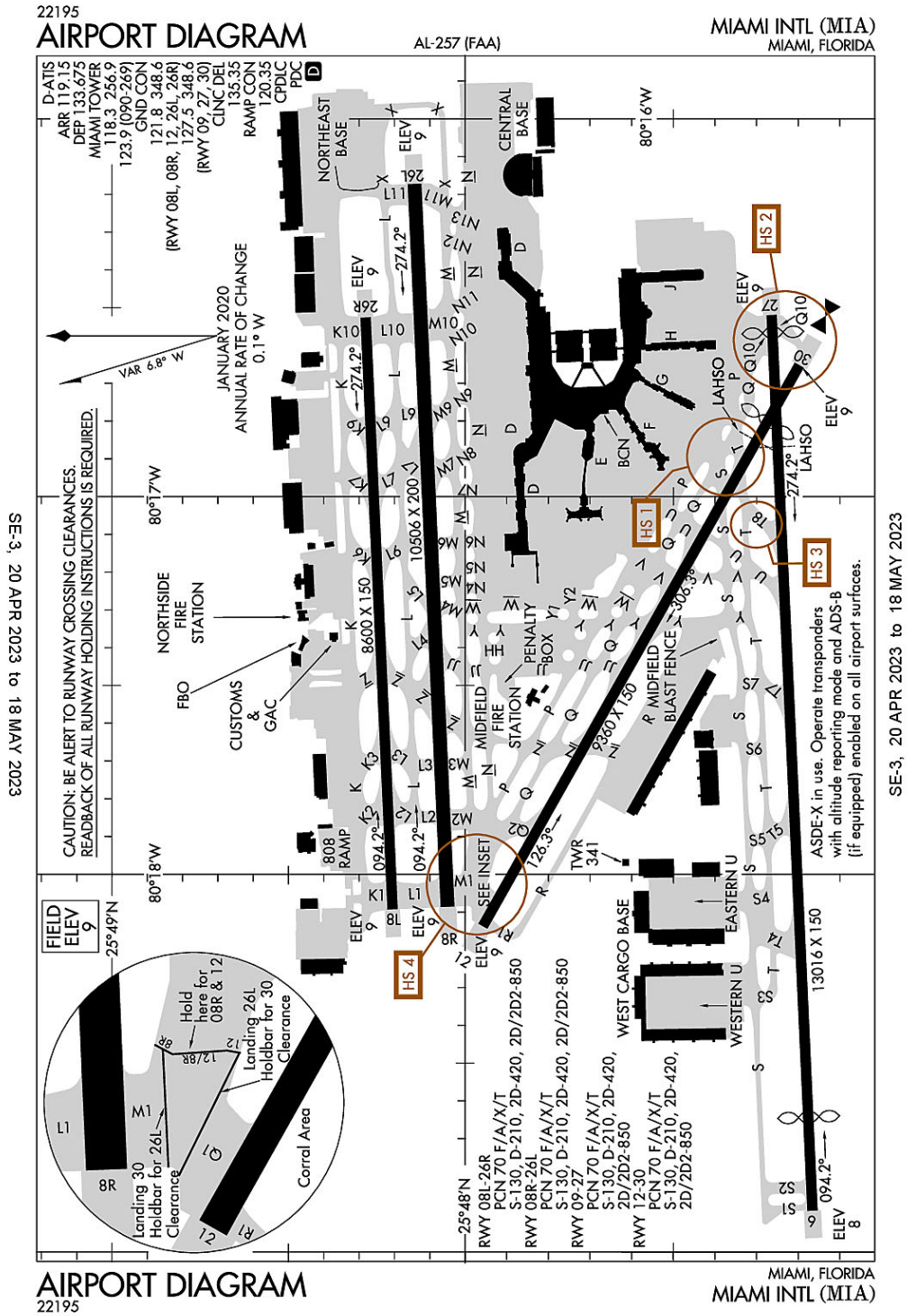
NO HELI OPS PERMITTED ON TRML APRON.

TFC PROCD DRCTLY TO GATE UNLESS DRCTD BY ATC; ADVISE ATC IF GATE IS NOT AVBL.

CAUTION: GS ANT 130 FT SW OF TWY A CNTRLN BTN TWY A1 & TWY A2.

RWY USE PROGRAM IN EFFECT; USE DISTANT NOISE ABATEMENT DEP PROFILE. VISUAL APCH TO RWY 06 W OF FORT MYERS BEACH MAINTAIN 3000 FT UNTIL CROSSING SHORELINE 12 NM SW OF ARPT. RWY 24 PREFERRED BTN 2200−0600. FOR NOISE ABATEMENT PROC CTC AMGR.

Miami, Florida
Miami International
ICAO Identifier KMIA



Miami, FL
Miami Intl
ICAO Identifier KMIA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 25−47−43.3N / 80−17−24.417W
2.2.2 From City: 8 miles NW of MIAMI, FL
2.2.3 Elevation: 9.3 ft
2.2.5 Magnetic Variation: 5W (2000)
2.2.6 Airport Contact: RALPH CUTIE
MIAMI−DADE AVIATION DEPARTMENT
MIAMI, FL 33102 (305−876−7038)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 26R
2.12.2 True Bearing: 267
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−14.3204N / 80−16−31.5499W
2.12.6 Threshold Elevation: 8.8 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 87
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−10.432N / 80−18−5.5508W
2.12.6 Threshold Elevation: 8.9 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 87
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−2.5177N / 80−18−5.1588W
2.12.6 Threshold Elevation: 8.5 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 267
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–48–7.2652N / 80–16–10.3282W
2.12.6 Threshold Elevation: 8.9 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 87
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–9.9421N / 80–18–53.4173W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.2 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 267
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–15.8328N / 80–16–31.1711W
2.12.6 Threshold Elevation: 9 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9360 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–11.8224N / 80–16–39.0805W
2.12.6 Threshold Elevation: 8.7 ft
2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9360 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–57.4262N / 80–18–8.2439W
2.12.6 Threshold Elevation: 9.1 ft
2.12.6 Touchdown Zone Elevation: 9.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 26R
2.13.2 Take–off Run Available: 8600 ft
2.13.3 Take–off Distance Available: 8600 ft
2.13.4 Accelerate–Stop Distance Available: 8600 ft
2.13.5 Landing Distance Available: 8600 ft

2.13.1 Designation: 08L
2.13.2 Take–off Run Available: 8600 ft
2.13.3 Take–off Distance Available: 8600 ft

2.13.4 Accelerate–Stop Distance Available: 8600 ft
2.13.5 Landing Distance Available: 8600 ft

2.13.1 Designation: 08R
2.13.2 Take–off Run Available: 10506 ft
2.13.3 Take–off Distance Available: 10506 ft
2.13.4 Accelerate–Stop Distance Available: 10506 ft
2.13.5 Landing Distance Available: 10506 ft

2.13.1 Designation: 26L
2.13.2 Take–off Run Available: 10506 ft
2.13.3 Take–off Distance Available: 10506 ft
2.13.4 Accelerate–Stop Distance Available: 10220 ft
2.13.5 Landing Distance Available: 10220 ft

2.13.1 Designation: 09
2.13.2 Take–off Run Available: 13016 ft
2.13.3 Take–off Distance Available: 13016 ft
2.13.4 Accelerate–Stop Distance Available: 12755 ft
2.13.5 Landing Distance Available: 11397 ft

2.13.1 Designation: 27
2.13.2 Take–off Run Available: 13016 ft
2.13.3 Take–off Distance Available: 13016 ft
2.13.4 Accelerate–Stop Distance Available: 13016 ft
2.13.5 Landing Distance Available: 12755 ft

2.13.1 Designation: 30
2.13.2 Take–off Run Available: 9355 ft
2.13.3 Take–off Distance Available: 9355 ft
2.13.4 Accelerate–Stop Distance Available: 8853 ft
2.13.5 Landing Distance Available: 7913 ft

2.13.1 Designation: 12
2.13.2 Take–off Run Available: 9355 ft
2.13.3 Take–off Distance Available: 9355 ft
2.13.4 Accelerate–Stop Distance Available: 8579 ft
2.13.5 Landing Distance Available: 8579 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: ALTNN DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALTNN DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALTNN DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALTNN DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ANNEY STAR
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ANNEY STAR
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ANNEY STAR
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ANNEY STAR
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (090–269)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (090–269)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (270–089)
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (270–089)
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (090–269)
2.14.3 Channel: 379.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (090–269)
2.14.3 Channel: 379.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (270–089)
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (270–089)
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (270–089)
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (270–089)
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S
2.14.3 Channel: 125.75

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S (270–089)
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S (270–089)
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLUFI STAR
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLUFI STAR
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLUFI STAR
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLUFI STAR
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNFSH STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNFSH STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNFSH STAR
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNFSH STAR
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNGOS DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNGOS DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNGOS DP

2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BNGOS DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 135.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 135.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (090–269)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (090–269)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (270–089)
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (270–089)
2.14.3 Channel: 125.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (270–089)
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (270–089)
2.14.3 Channel: 322.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (090–269)
2.14.3 Channel: 379.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (090–269)
2.14.3 Channel: 379.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CSTAL STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CSTAL STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CSTAL STAR
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CSTAL STAR
2.14.3 Channel: 263.025
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (ARRIVAL)
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (ARRIVAL)
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (DEPART)
2.14.3 Channel: 133.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (DEPART)
2.14.3 Channel: 133.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090–269)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090–269)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (270–089)
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (270–089)
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090–269)
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090–269)
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P IC (270–089)
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P IC (270–089)
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORRL DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORRL DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORRL DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORRL DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DVALL STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DVALL STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DVALL STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DVALL STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: FLMGO DP
2.14.3 Channel: 119.45

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FLMGO DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FLMGO DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FLMGO DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOLZZ DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOLZZ DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOLZZ DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOLZZ DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR
2.14.3 Channel: 124.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FOWEE STAR

2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FROGZ STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FROGZ STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FROGZ STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FROGZ STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GLADZ DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GLADZ DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GLADZ DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GLADZ DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC (RWY 08L/26R, 08R/26L, 12)
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC (RWY 08L/26R, 08R/26L, 12)
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC (RWY 09/27, 30)
2.14.3 Channel: 127.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC (RWY 09/27, 30)
2.14.3 Channel: 127.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P IC
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GWAVA DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GWAVA DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GWAVA DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GWAVA DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURCN DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURCN DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURCN DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURCN DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HUSIL DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HUSIL DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HUSIL DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HUSIL DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KLADA DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KLADA DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KLADA DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KLADA DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (090−269)
2.14.3 Channel: 123.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (090−269)
2.14.3 Channel: 123.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P IC (270−089)
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P IC (270−089)
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P IC
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P IC
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIFRR DP
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIFRR DP
2.14.3 Channel: 119.45

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIFRR DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIFRR DP
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (9000 FT)
2.14.3 Channel: 126.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (9000 FT)
2.14.3 Channel: 126.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (7000 FT)
2.14.3 Channel: 133.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (7000 FT)
2.14.3 Channel: 133.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (9000 FT)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (9000 FT)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (7000 FT)
2.14.3 Channel: 371.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LUUCE STAR (7000 FT)
2.14.3 Channel: 371.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAYNR DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAYNR DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAYNR DP

2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAYNR DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (ALTNN,BEECH,BNGOS,DORRL,FLMGO,HURCN,FOLZZ,ZFP)
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (ALTNN,BEECH,BNGOS,DORRL,FLMGO,HURCN,FOLZZ,ZFP)
2.14.3 Channel: 119.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (GWAVA, KETLL, MAYNR TRANSITIONS)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (GWAVA, KETLL, MAYNR TRANSITIONS)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (ALTNN,BEECH,BNGOS,DORRL,FLMGO,HURCN,FOLZZ,ZFP)
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (ALTNN,BEECH,BNGOS,DORRL,FLMGO,HURCN,FOLZZ,ZFP)
2.14.3 Channel: 290.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (GWAVA, KETLL, MAYNR TRANSITIONS)
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIAMI DP (GWAVA, KETLL, MAYNR TRANSITIONS)
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NNOCE DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NNOCE DP
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NNOCE DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NNOCE DP
2.14.3 Channel: 354.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALMZ STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALMZ STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALMZ STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALMZ STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RAMP CTL
2.14.3 Channel: 120.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RAMP CTL
2.14.3 Channel: 120.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RTIS (120–300 WITHIN 25 NM)
2.14.3 Channel: 125.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RTIS (120–300 WITHIN 25 NM)
2.14.3 Channel: 125.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SNDBR STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SNDBR STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SNDBR STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SNDBR STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (9000 FT)
2.14.3 Channel: 126.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (9000 FT)
2.14.3 Channel: 126.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (7000 FT)
2.14.3 Channel: 133.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (7000 FT)
2.14.3 Channel: 133.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (9000 FT)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (9000 FT)
2.14.3 Channel: 251.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (7000 FT)
2.14.3 Channel: 371.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TARPN STAR (7000 FT)
2.14.3 Channel: 371.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VIICE STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VIICE STAR
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VIICE STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VIICE STAR
2.14.3 Channel: 350.225
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: ROY
2.19.5 Coordinates: 25–48–16.3597N / 80–16–18.3104W
2.19.6 Site Elevation: 20.1 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: ROY
2.19.5 Coordinates: 25–48–14.865N / 80–16–18.3941W
2.19.6 Site Elevation: 6.8 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: CNV
2.19.5 Coordinates: 25–48–7.1241N / 80–18–16.4684W
2.19.6 Site Elevation: 20.3 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: CNV
2.19.5 Coordinates: 25–48–9.969N / 80–18–16.6983W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25–48–5.0878N / 80–16–0.575W
2.19.6 Site Elevation: 15.6 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25–48–6.1715N / 80–17–54.807W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25–48–7.688N / 80–16–0.0426W
2.19.6 Site Elevation: 6.3 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25–48–5.8074N / 80–18–14.9415W
2.19.6 Site Elevation: 14.3 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25–48–9.7347N / 80–16–22.5043W
2.19.6 Site Elevation: 5.9 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25–48–2.1576N / 80–18–13.7966W
2.19.6 Site Elevation: 7.6 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 5W

2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25–47–15.8249N / 80–16–17.2451W
2.19.6 Site Elevation: 20.1 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 5W
2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25–47–7.8388N / 80–18–26.7053W
2.19.6 Site Elevation: 7.5 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 5W
2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25–47–16.4165N / 80–16–17.1006W
2.19.6 Site Elevation: 18.4 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 5W
2.19.2 ILS Identification: MIA
2.19.5 Coordinates: 25–47–11.7269N / 80–16–45.3981W
2.19.6 Site Elevation: 4.7 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 5W
2.19.2 ILS Identification: MIA
2.19.5 Coordinates: 25–47–9.3891N / 80–19–6.6406W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: DME for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25–47–11.2767N / 80–16–32.4152W
2.19.6 Site Elevation: 15.9 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25–47–50.78N / 80–17–58.58W
2.19.6 Site Elevation: 7 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25–47–9.6403N / 80–16–34.8108W
2.19.6 Site Elevation: 8.3 ft

2.19.1 ILS Type: DME for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX
2.19.5 Coordinates: 25–47–57.7789N / 80–18–14.5127W
2.19.6 Site Elevation: 14.7 ft

2.19.1 ILS Type: Glide Slope for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX
2.19.5 Coordinates: 25–47–17.643N / 80–16–59.572W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: Localizer for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX

2.19.5 Coordinates: 25–47–59.8764N / 80–18–13.0372W
2.19.6 Site Elevation: 8.9 ft

General Remarks:
ACFT WITH A WINGSPAN GTR THAN 171 FT ARE PROHIBITED FM TXG ON TWY P EAST OF TWY U.

ALL MEDICAL EMERGENCIES ARRIVALS, WITH THE EXCEPTION OF AIR AMBULANCE FLIGHTS, MUST SECURE DOORS UNTIL ARFF IS ON SCENE.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

AIRPORT MANAGER: 305–876–7038.

US CBP AND EAPIS AVBL.

ALL DIVERSION CTC FREQ 130.5 UPON ARR.

ALL TURBOJET ACFT USE DSNT NOISE ABATEMENT DEP PROFILE FROM ALL RYS EXC A320, B727, B737–800, B767–400, AND DC9 WHICH SHOULD USE CLOSE–IN NOISE ABATEMENT ABATEMENT PROFILE.

PPR 3 HRS PRIOR TO ALL ARRIVALS ON THE GENERAL AVIATION CENTER (GAC) RAMP 305–876–7550 CTC RAMP CONTROL UPON ARRIVAL ON FREQUENCY 131.600. ACFT WITH WINGSPAN GREATER THAN 78 FT ARE PROHIBITED FROM ENTERING THE GAC RAMP.

NO INT DEP AUTH WO PPR FM AMGR.

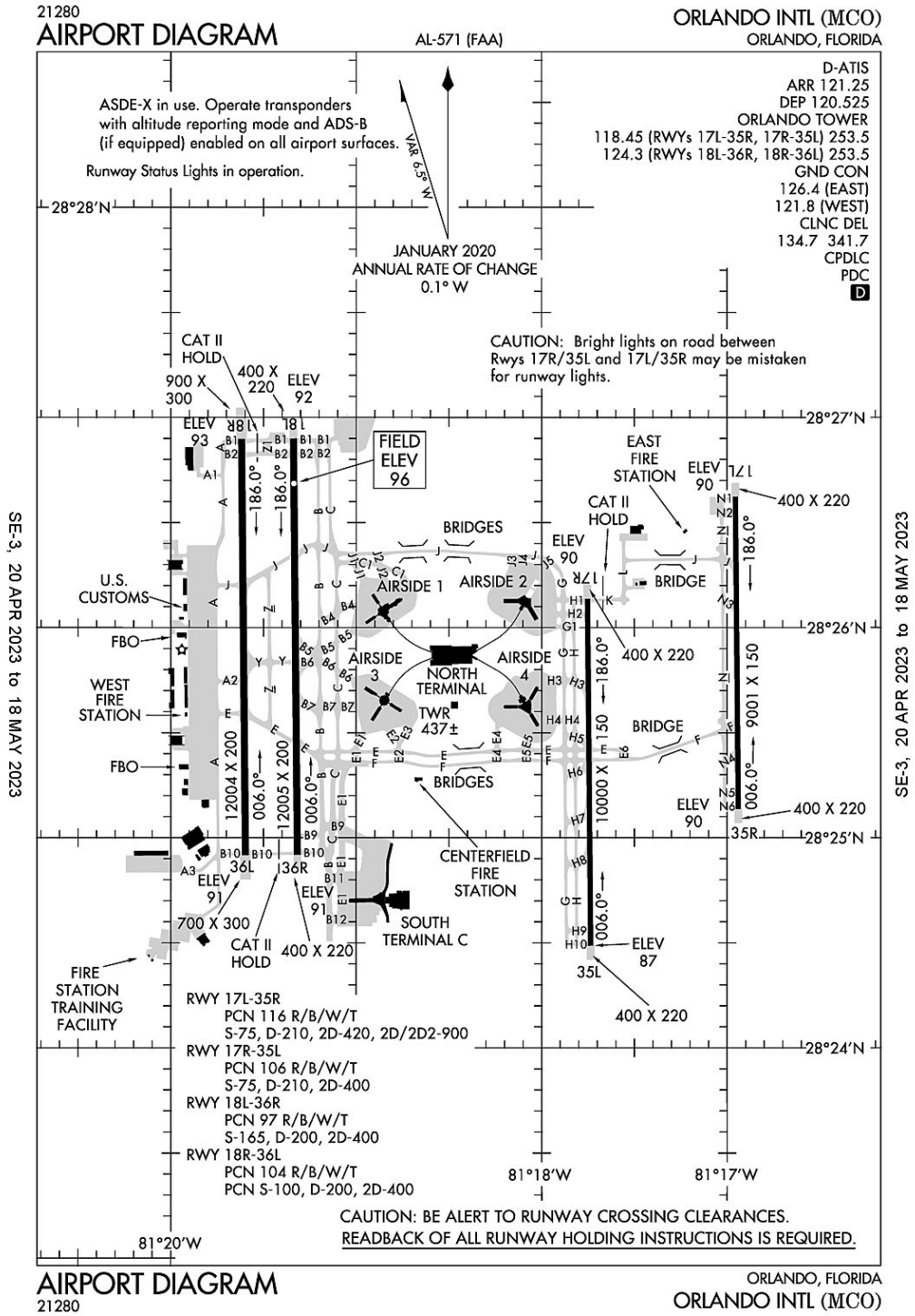
AIRPORT OPS 305–876–7550.

CLSD NON ENG ACFT.

BIRDS ON & INVOF ARPT.

PPR FOR INBOUND MILITARY FLIGHTS 100 NM ON FREQ 130.5.

Orlando, Florida
Orlando International
ICAO Identifier KMCO



Orlando, FL
Orlando Intl
ICAO Identifier KMCO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 28–25–45.8N / 81–18–32.4W
2.2.2 From City: 6 miles SE of ORLANDO, FL
2.2.3 Elevation: 96.4 ft
2.2.5 Magnetic Variation: 6W (2015)
2.2.6 Airport Contact: KEVIN J. THIBAULT, P.E.
1 JEFF FUQUA BLVD
ORLANDO, FL 32827 (407–825–7445)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 17L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28–26–37.308N / 81–16–57.2924W
2.12.6 Threshold Elevation: 89.7 ft
2.12.6 Touchdown Zone Elevation: 89.9 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28–25–8.1974N / 81–16–56.3802W
2.12.6 Threshold Elevation: 89.7 ft
2.12.6 Touchdown Zone Elevation: 89.8 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28–26–8.2029N / 81–17–45.1656W
2.12.6 Threshold Elevation: 90.1 ft
2.12.6 Touchdown Zone Elevation: 90.2 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28−24−29.1952N / 81−17−44.1335W
2.12.6 Threshold Elevation: 86.7 ft
2.12.6 Touchdown Zone Elevation: 88.3 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−24−55.1469N / 81−19−19.0358W
2.12.6 Threshold Elevation: 91 ft
2.12.6 Touchdown Zone Elevation: 92.3 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−26−54.0038N / 81−19−20.3022W
2.12.6 Threshold Elevation: 92.4 ft
2.12.6 Touchdown Zone Elevation: 96.4 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−26−53.8569N / 81−19−37.1091W
2.12.6 Threshold Elevation: 92.5 ft
2.12.6 Touchdown Zone Elevation: 93.5 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−24−55.007N / 81−19−35.8294W
2.12.6 Threshold Elevation: 91.1 ft
2.12.6 Touchdown Zone Elevation: 92.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 17L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 35R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft

2.13.4 Accelerate–Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 17R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 35L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 36R
2.13.2 Take–off Run Available: 12005 ft
2.13.3 Take–off Distance Available: 12005 ft
2.13.4 Accelerate–Stop Distance Available: 11601 ft
2.13.5 Landing Distance Available: 11601 ft

2.13.1 Designation: 18L
2.13.2 Take–off Run Available: 12005 ft
2.13.3 Take–off Distance Available: 12005 ft
2.13.4 Accelerate–Stop Distance Available: 12005 ft
2.13.5 Landing Distance Available: 12005 ft

2.13.1 Designation: 18R
2.13.2 Take–off Run Available: 12004 ft
2.13.3 Take–off Distance Available: 12004 ft
2.13.4 Accelerate–Stop Distance Available: 12004 ft
2.13.5 Landing Distance Available: 12004 ft

2.13.1 Designation: 36L
2.13.2 Take–off Run Available: 12004 ft
2.13.3 Take–off Distance Available: 12004 ft
2.13.4 Accelerate–Stop Distance Available: 11621 ft
2.13.5 Landing Distance Available: 11621 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 17L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28–24–57.9921N / 81–16–51.737W
2.19.6 Site Elevation: 97 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28–26–27.0479N / 81–16–52.5933W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28–24–57.8892N / 81–16–56.2728W
2.19.6 Site Elevation: 89.1 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28–26–48.2377N / 81–16–52.8447W
2.19.6 Site Elevation: 98.3 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28–25–18.6301N / 81–16–51.8726W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28–26–47.6103N / 81–16–57.3979W
2.19.6 Site Elevation: 89.6 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28–24–18.9549N / 81–17–47.0755W
2.19.6 Site Elevation: 86.4 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28–25–57.8375N / 81–17–40.5783W
2.19.6 Site Elevation: 92.7 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28–24–18.7729N / 81–17–44.0255W
2.19.6 Site Elevation: 81.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28–26–18.3948N / 81–17–48.1528W
2.19.6 Site Elevation: 95.5 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28–24–39.5307N / 81–17–39.7618W
2.19.6 Site Elevation: 83.7 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28–26–18.5959N / 81–17–45.2712W
2.19.6 Site Elevation: 87.7 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28–27–0.7626N / 81–19–18.0064W
2.19.6 Site Elevation: 96.2 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28–25–5.5139N / 81–19–23.6289W
2.19.6 Site Elevation: 87.7 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28–27–1.4488N / 81–19–20.3839W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 6W

2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28–24–42.2043N / 81–19–38.5819W
2.19.6 Site Elevation: 94.7 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28–26–43.5N / 81–19–32.21W
2.19.6 Site Elevation: 89 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28–24–41.97N / 81–19–35.69W
2.19.6 Site Elevation: 86 ft

General Remarks:
WHEN ORL ILS RY 7 AND MCO ILS RYS 17 & 18R SIMULTANEOUS OPERATIONS ARE CONDUCTED, ATC RADAR REQUIRED.

WEST RAMP CUSTOMS INSPECTION PRKG AREA RSTD TO ACFT WINGSPAN LESS THAN 118'

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

UNLESS ADV BY ATIS, DEP FLTS ON INITIAL CTC WITH GND CTL: ACFT ON WEST RAMP, AIRSIDE 1 & 3 (GATES 1–59) USE GND CTL 121.8. ACFT AT AIRSIDE 2 & 4 (GATES 60 AND HIGHER), USE GND CTL 126.4.

TWY A, BTN W RAMP S END AND TWY B10, RSTRD TO ACFT WINGSPAN LESS THAN 171 FT. PPR FOR ACFT WINGSPAN 171 FT OR GTR.

TWY J3 AND TWY J4 RSTD TO WINGSPAN OF LESS THAN 118 FT.

RUNWAY STATUS LIGHTS ARE IN OPERATION.

BRIGHT LGTS ON ROAD BTN RY 17R/35L AND RY 17L/35R MAY BE MISTAKEN FOR RY LGTS.

AVOID CONTACT WITH TAXIWAY EDGE LIGHTS; ALL AIRCRAFT DETERMINED TO BE FAA DESIGN GROUP IV AND ABOVE MUST PERFORM JUDGEMENTAL OVERSTEERING INSTEAD OF COCKPIT CENTERLINE STEERING WHEN TAXIING.

TWY A, SOUTH OF TWY A3 RSTD TO WINGSPAN OF LESS THAN 118 FT. PPR REQUIRED FOR WINGSPAN 118 FT OR GREATER.

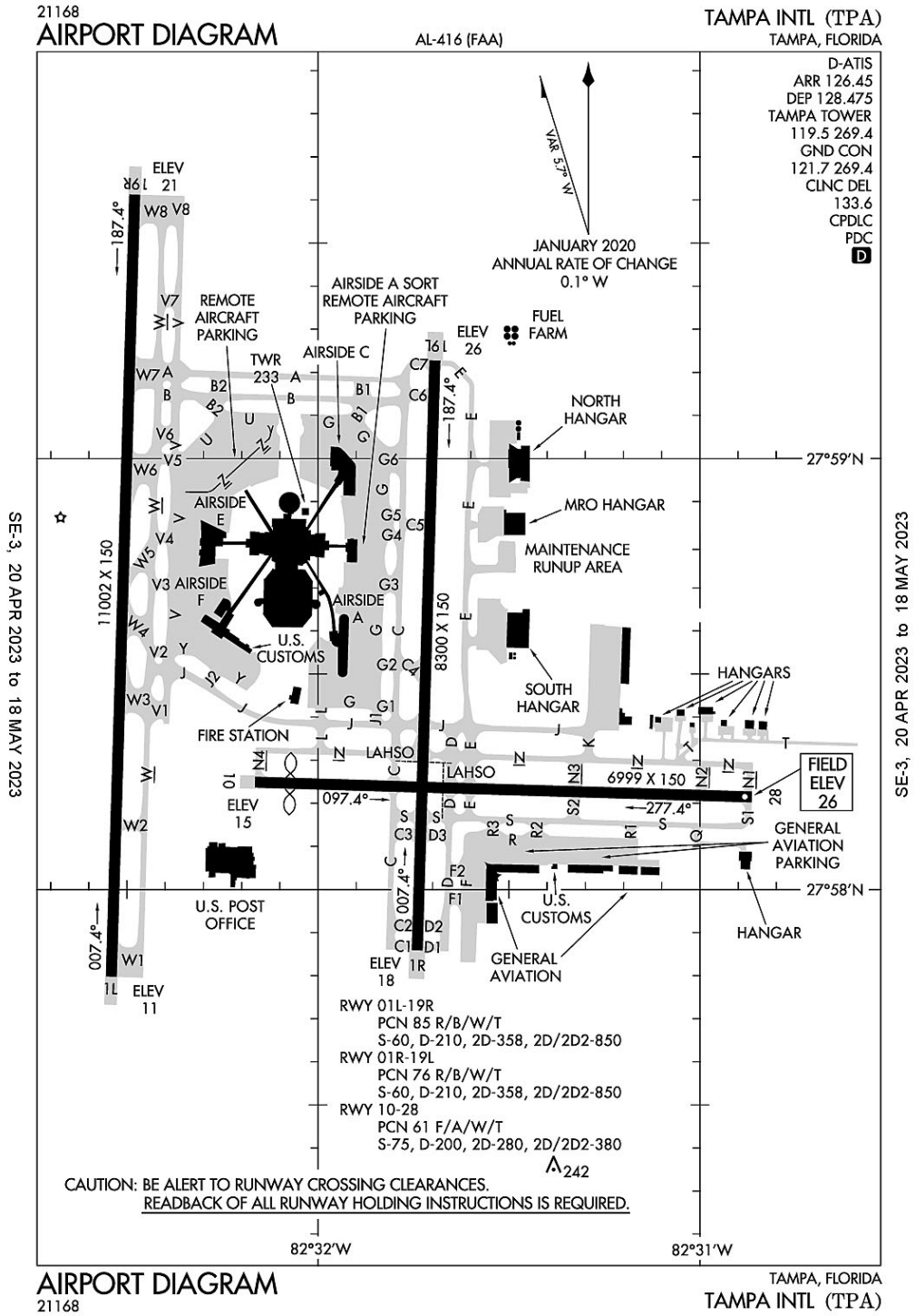
RY 17L–35R UNLIT 0400–1100Z.

USE CAUTION IN VCNTY OF TWY "A" ALONG WEST RAMP.

BIRDS & DEER ON & INVOF ARPT.

ACFT WITH WINGSPAN GREATER THAN 214 FT MUST ADHERE TO SPECIFIC RY AND TAXI ROUTES. CONTACT AIRFIELD OPS AT 407–825–2036 FOR DETAILS.

Tampa, Florida
Tampa International
ICAO Identifier KTPA



Tampa, FL
Tampa Intl
ICAO Identifier KTPA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 27−58−31.7N / 82−31−59.7W
2.2.2 From City: 6 miles W of TAMPA, FL
2.2.3 Elevation: 26.4 ft
2.2.5 Magnetic Variation: 5W (2010)
2.2.6 Airport Contact: JOHN TILIACOS
PO BOX 22287
TAMPA, FL 33622 (813−870−8700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19R
2.12.2 True Bearing: 182
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−59−36.7423N / 82−32−28.7801W
2.12.6 Threshold Elevation: 21 ft
2.12.6 Touchdown Zone Elevation: 21 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 2
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−57−47.8596N / 82−32−32.4793W
2.12.6 Threshold Elevation: 10.7 ft
2.12.6 Touchdown Zone Elevation: 10.8 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 182
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27−59−13.6607N / 82−31−41.5739W
2.12.6 Threshold Elevation: 26 ft
2.12.6 Touchdown Zone Elevation: 26.1 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 2
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27–57–51.5169N / 82–31–44.3687W
2.12.6 Threshold Elevation: 17.7 ft
2.12.6 Touchdown Zone Elevation: 20.5 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 92
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27–58–14.9917N / 82–32–9.9027W
2.12.6 Threshold Elevation: 14.5 ft
2.12.6 Touchdown Zone Elevation: 21.8 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 272
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27–58–12.8902N / 82–30–51.8781W
2.12.6 Threshold Elevation: 26.4 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19R
2.13.2 Take–off Run Available: 11002 ft
2.13.3 Take–off Distance Available: 11002 ft
2.13.4 Accelerate–Stop Distance Available: 11002 ft
2.13.5 Landing Distance Available: 11002 ft

2.13.1 Designation: 01L
2.13.2 Take–off Run Available: 11002 ft
2.13.3 Take–off Distance Available: 11002 ft
2.13.4 Accelerate–Stop Distance Available: 10800 ft
2.13.5 Landing Distance Available: 10800 ft

2.13.1 Designation: 19L
2.13.2 Take–off Run Available: 8300 ft
2.13.3 Take–off Distance Available: 8300 ft
2.13.4 Accelerate–Stop Distance Available: 8300 ft
2.13.5 Landing Distance Available: 8300 ft

2.13.1 Designation: 01R
2.13.2 Take–off Run Available: 8300 ft
2.13.3 Take–off Distance Available: 8300 ft
2.13.4 Accelerate–Stop Distance Available: 8300 ft
2.13.5 Landing Distance Available: 8300 ft

2.13.1 Designation: 10

2.13.2 Take–off Run Available: 6999 ft
2.13.3 Take–off Distance Available: 6999 ft
2.13.4 Accelerate–Stop Distance Available: 6999 ft
2.13.5 Landing Distance Available: 6501 ft

2.13.1 Designation: 28
2.13.2 Take–off Run Available: 6999 ft
2.13.3 Take–off Distance Available: 6999 ft
2.13.4 Accelerate–Stop Distance Available: 6501 ft
2.13.5 Landing Distance Available: 6501 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P DEP/P (001–150)
2.14.3 Channel: 118.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (220–360)
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (151–219)
2.14.3 Channel: 119.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (220–360)
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (001–150)
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (151–219)
2.14.3 Channel: 353.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 118.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 307.175
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 353.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BAYPO DP
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BAYPO DP
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLFRG STAR
2.14.3 Channel: 119.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLFRG STAR
2.14.3 Channel: 353.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRDGE STAR
2.14.3 Channel: 119.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRDGE STAR
2.14.3 Channel: 353.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 133.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (151–219)
2.14.3 Channel: 119.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (001–150)
2.14.3 Channel: 119.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (220–360)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (001–150)
2.14.3 Channel: 290.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (220–360)
2.14.3 Channel: 316.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (151–219)
2.14.3 Channel: 353.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CROWD DP
2.14.3 Channel: 135.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CROWD DP
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (ARR)
2.14.3 Channel: 126.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (DEP)
2.14.3 Channel: 128.475
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DADES STAR
2.14.3 Channel: 135.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DADES STAR
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORMR DP
2.14.3 Channel: 118.8

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DORMR DP
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: ENDED DP
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ENDED DP
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GANDY DP
2.14.3 Channel: 119.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GANDY DP
2.14.3 Channel: 353.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 269.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/S
2.14.3 Channel: 121.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNOST DP
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNOST DP
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P

2.14.3 Channel: 119.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 269.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/S
2.14.3 Channel: 119.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LGTNG DP
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LGTNG DP
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAATY STAR
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAATY STAR
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RAYZZ STAR
2.14.3 Channel: 118.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RAYZZ STAR
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TAMPA DP
2.14.3 Channel: 135.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TAMPA DP
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27–59–43.4N / 82–32–25.65W
2.19.6 Site Elevation: 20 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 5W

2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27–57–58.2392N / 82–32–36.5897W
2.19.6 Site Elevation: 7.6 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27–57–39.6244N / 82–32–32.7564W
2.19.6 Site Elevation: 6.4 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27–59–44.7869N / 82–32–28.5048W
2.19.6 Site Elevation: 20.6 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27–57–37.34N / 82–32–31.94W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27–59–26.4582N / 82–32–33.5927W
2.19.6 Site Elevation: 17.2 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27–57–37.46N / 82–32–32.84W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 5W
2.19.2 ILS Identification: TWJ
2.19.5 Coordinates: 27–59–22.9831N / 82–31–38.4291W
2.19.6 Site Elevation: 35.9 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 5W
2.19.2 ILS Identification: TWJ
2.19.5 Coordinates: 27–59–23.9328N / 82–31–41.2197W
2.19.6 Site Elevation: 25.6 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27–57–40.42N / 82–31–40.5W
2.19.6 Site Elevation: 10 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27–59–3.1644N / 82–31–37.4636W
2.19.6 Site Elevation: 23.8 ft

2.19.1 ILS Type: Inner Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA

2.19.5 Coordinates: 27−59−23.6601N / 82−31−41.2251W
2.19.6 Site Elevation: 25.7 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27−57−40.972N / 82−31−44.7284W
2.19.6 Site Elevation: 13.7 ft

General Remarks:

TAXILANE G WEST OF TWY B1 CLSD TO WINGSPAN GTR THAN 118 FT − PPR APT OPS.

RWY 19L IS NOISE SENSITIVE TO TBJT DEPARTURES. RWY 01R IS NOISE SENSITIVE TO TBJT ARRIVALS. PUBLD NOISE ABATEMENT PROCS IN EFCT.

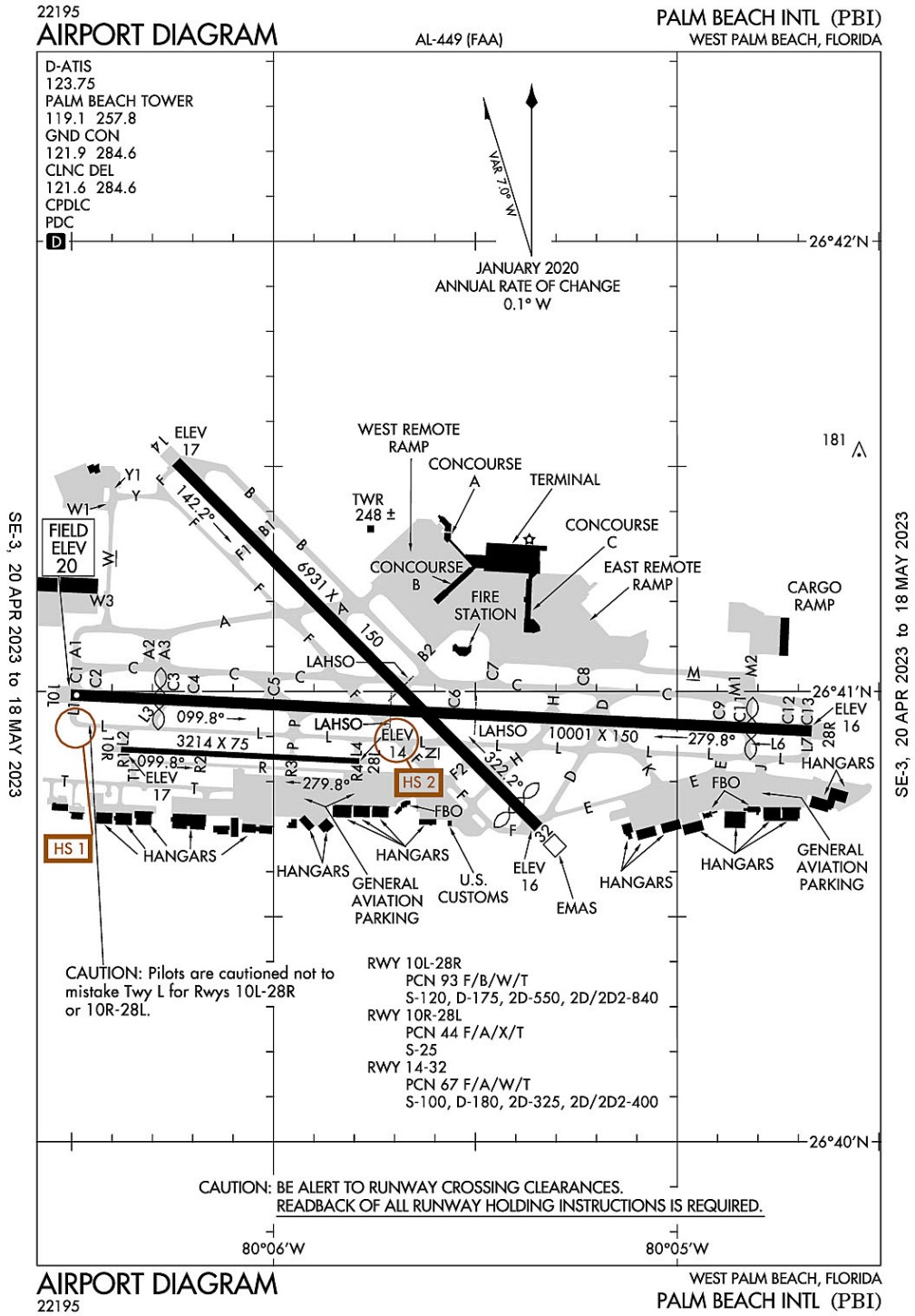
BIRD ACT ON AND INVOF ARPT.

TWY F AND TWY R ARE NON−MOVEMENT AREAS. BOTH LOCATONS ARE UNAVBL FOR GROUP IV ACFT WITH A WINGSPAN GTR THAN 117 FT WO PPR FM ARPT OPS. TWY T PPR FROM ARPT OPS RQRD FOR ACFT WITH A WINGSPAN GTR THAN 90 FT.

ONLY ACFT WITH PRIOR PMSN MAY USE TRML APN; ALL OTRS USE GA APN.

RSTRS TO DESIGN GROUP V OR LGR; TWY J BTN TWY J1 AND TWY J2; TWY N WEST OF TWY L AND TWY E NORTH OF TWY J UNAVBL; TAXILANE Z CLSD TO WINGSPAN GTR THAN 171 FT − PPR ARPT OPS.

West Palm Beach, Florida
Palm Beach International
ICAO Identifier KPBI



West Palm Beach, FL
Palm Beach Intl
ICAO Identifier KPBI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 26–40–59.382N / 80–5–44.131W
2.2.2 From City: 3 miles W of WEST PALM BEACH, FL
2.2.3 Elevation: 19.6 ft
2.2.5 Magnetic Variation: 6W (2010)
2.2.6 Airport Contact: LAURA BEEBE
846 PALM BEACH INTL AIRPORT
WEST PALM BEACH, FL 33406 (561–471–7420)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10L
2.12.2 True Bearing: 93
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26–40–59.5493N / 80–6–30.1296W
2.12.6 Threshold Elevation: 19.6 ft
2.12.6 Touchdown Zone Elevation: 16.3 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26–40–54.7438N / 80–4–40.0137W
2.12.6 Threshold Elevation: 16.4 ft
2.12.6 Touchdown Zone Elevation: 18.3 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26–40–52.282N / 80–6–22.6416W
2.12.6 Threshold Elevation: 17.1 ft
2.12.6 Touchdown Zone Elevation: 17.2 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26–40–50.7327N / 80–5–47.2501W
2.12.6 Threshold Elevation: 13.6 ft
2.12.6 Touchdown Zone Elevation: 16.9 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 6931 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26–41–30.596N / 80–6–14.482W
2.12.6 Threshold Elevation: 17 ft
2.12.6 Touchdown Zone Elevation: 17.3 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 6931 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26–40–41.913N / 80–5–20.622W
2.12.6 Threshold Elevation: 15.8 ft
2.12.6 Touchdown Zone Elevation: 15.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take–off Run Available: 10001 ft
2.13.3 Take–off Distance Available: 10001 ft
2.13.4 Accelerate–Stop Distance Available: 10001 ft
2.13.5 Landing Distance Available: 8800 ft

2.13.1 Designation: 28R
2.13.2 Take–off Run Available: 10001 ft
2.13.3 Take–off Distance Available: 10001 ft
2.13.4 Accelerate–Stop Distance Available: 10001 ft
2.13.5 Landing Distance Available: 9189 ft

2.13.1 Designation: 10R
2.13.2 Take–off Run Available: 3214 ft
2.13.3 Take–off Distance Available: 3214 ft
2.13.4 Accelerate–Stop Distance Available: 3214 ft
2.13.5 Landing Distance Available: 3214 ft

2.13.1 Designation: 28L
2.13.2 Take–off Run Available: 3214 ft
2.13.3 Take–off Distance Available: 3214 ft
2.13.4 Accelerate–Stop Distance Available: 3214 ft
2.13.5 Landing Distance Available: 3214 ft

2.13.1 Designation: 14

2.13.2 Take−off Run Available: 6926 ft
2.13.3 Take−off Distance Available: 6926 ft
2.13.4 Accelerate−Stop Distance Available: 6000 ft
2.13.5 Landing Distance Available: 6000 ft

2.13.1 Designation: 32
2.13.2 Take−off Run Available: 6926 ft
2.13.3 Take−off Distance Available: 6926 ft
2.13.4 Accelerate−Stop Distance Available: 6926 ft
2.13.5 Landing Distance Available: 6513 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P DEP/P (SOUTH)
2.14.3 Channel: 125.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (SOUTH)
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 121.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 284.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (SOUTH)
2.14.3 Channel: 125.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH)
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH)
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (SOUTH)
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLMNT STAR
2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLMNT STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CPTAN STAR
2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CPTAN STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 123.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 284.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JESTR STAR
2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JESTR STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 119.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/S
2.14.3 Channel: 118.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/S
2.14.3 Channel: 384.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAHHI STAR
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAHHI STAR
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MELBOURNE STAR
2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MELBOURNE STAR
2.14.3 Channel: 317.4

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIXAE DP (RWY 10L, 14)
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIXAE DP (RWY 28R, 32)
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIXAE DP (RWY 28R, 32)
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MIXAE DP (RWY 10L, 14)
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OLAKE DP
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OLAKE DP
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALM BEACH DP (SOUTH)
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALM BEACH DP (NORTH)
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALM BEACH DP (NORTH)
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALM BEACH DP (SOUTH)
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SLIDZ DP
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SLIDZ DP
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STOOP STAR

2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STOOP STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TBIRD DP
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TBIRD DP
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TTYLR STAR
2.14.3 Channel: 125.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TTYLR STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VUUDU STAR
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: VUUDU STAR
2.14.3 Channel: 317.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WELLY DP
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WELLY DP
2.14.3 Channel: 343.6
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26−40−51.4319N / 80−4−29.0092W
2.19.6 Site Elevation: 23.3 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26−40−55.9795N / 80−6−6.0748W
2.19.6 Site Elevation: 14.5 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26–40–54.2434N / 80–4–28.6079W
2.19.6 Site Elevation: 13 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: PWB
2.19.5 Coordinates: 26–40–53.0853N / 80–5–1.7298W
2.19.6 Site Elevation: 13.5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: PWB
2.19.5 Coordinates: 26–40–59.9773N / 80–6–39.9822W
2.19.6 Site Elevation: 18.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 3W
2.19.2 Navigation Aid Identification: PBI
2.19.5 Coordinates: 26–40–48.198N / 80–5–11.3586W
2.19.6 Site Elevation: 15.7 ft

General Remarks:
BE ALERT: TWY L IS LCTD BTWN RYS 10L/28R & 10R/28L. TWY L IS WIDER AND LONGER THAN RY 10R/28L – DO NOT CONFUSE TWY L FOR RY. AIRCRAFT WITH WINGSPAN OF 118 FT OR GREATER IS PROHIBITED ON TWY L.

24 HR PPR FOR ACFT WITH WINGSPANS GTR THAN 171 FT.

RWY 10R/28L NOT AVBL FOR SKED ACR OPS WITH MORE THAN 9 PAX SEATS OR UNSKED ACR AT LEAST 31 PAX SEATS.

ACFT WITH WINGSPANS GTR THAN 118 FT MAY NOT OPER ON TWY E, TWY W, TWY Y AND TWY F NW OF TWY A.

ACFT WITH WINGSPANS GTR THAN 49 FT MAY NOT OPER SIMUL ON RWY 10R/27L AND TWY R.

RWY 10L/28R SAFETY AREA NOT STD SFC VARNS.

NOISE ABATEMENT PROCEDURES IN EFFECT. MULTIENGINE FLIGHT TRAINING PROHIBITED SS TO SR SUN AND HOLIDAY; STRICT ENVIRONMENTAL OPERATING STAGE 2 ACFT 0300–1200Z CALL NOISE ABATEMENT OFFICER 561–471–7467.

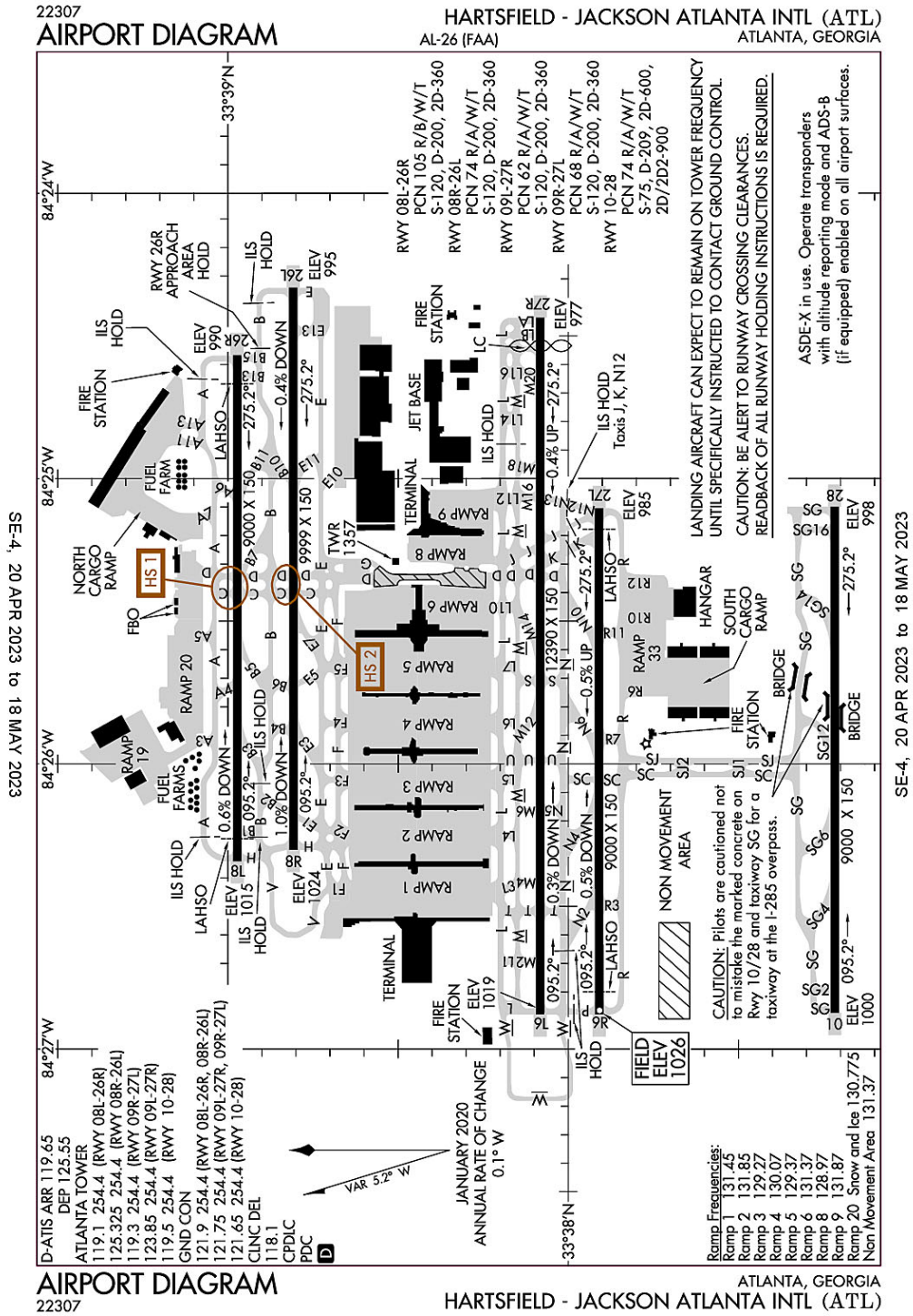
TWY L3 EAST SURFACE PAINTED HOLDING POSITION SIGN NOT STD.

BE ALERT; RYS 28L & 28R THLDS STAGGERED BY 5400 FT.

RWY 14/32 SAFETY AREA NOT STD SFC VARNS.

MIGRATORY BIRDS ON AND INVOF ARPT.

Atlanta, Georgia
Hartsfield–Jackson Atlanta International
ICAO Identifier KATL



Atlanta, GA
Hartsfield – Jackson Atlanta Intl
ICAO Identifier KATL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 33–38–12.1186N / 84–25–40.3104W

2.2.2 From City: 7 miles S of ATLANTA, GA

2.2.3 Elevation: 1026.2 ft

2.2.5 Magnetic Variation: 5W (2015)

2.2.6 Airport Contact: BALRAM BHEODARI
PO BOX 20509
ATLANTA, GA 30320 (404–530–6600)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100,100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 08L

2.12.2 True Bearing: 90

2.12.3 Dimensions: 9000 ft x 150 ft

2.12.4 PCN: 105 R/B/W/T

2.12.5 Coordinates: 33–38–58.3238N / 84–26–20.4923W

2.12.6 Threshold Elevation: 1014.6 ft

2.12.6 Touchdown Zone Elevation: 1014.6 ft

2.12.1 Designation: 26R

2.12.2 True Bearing: 270

2.12.3 Dimensions: 9000 ft x 150 ft

2.12.4 PCN: 105 R/B/W/T

2.12.5 Coordinates: 33–38–58.3515N / 84–24–34.0341W

2.12.6 Threshold Elevation: 990 ft

2.12.6 Touchdown Zone Elevation: 990 ft

2.12.1 Designation: 08R

2.12.2 True Bearing: 90

2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.432N / 84−26−18.1035W
2.12.6 Threshold Elevation: 1023.7 ft
2.12.6 Touchdown Zone Elevation: 1023.8 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.4612N / 84−24−19.8313W
2.12.6 Threshold Elevation: 995.4 ft
2.12.6 Touchdown Zone Elevation: 995.5 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−4.929N / 84−24−26.158W
2.12.6 Threshold Elevation: 977.2 ft
2.12.6 Touchdown Zone Elevation: 984.6 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−4.936N / 84−26−52.6807W
2.12.6 Threshold Elevation: 1018.7 ft
2.12.6 Touchdown Zone Elevation: 1018.7 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.5282N / 84−26−52.6768W
2.12.6 Threshold Elevation: 1026.1 ft
2.12.6 Touchdown Zone Elevation: 1026.2 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.5649N / 84−25−6.243W
2.12.6 Threshold Elevation: 984.7 ft

2.12.6 Touchdown Zone Elevation: 998.9 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−13.0275N / 84−25−5.9358W
2.12.6 Threshold Elevation: 997.5 ft
2.12.6 Touchdown Zone Elevation: 997.5 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−12.9808N / 84−26−52.3574W
2.12.6 Threshold Elevation: 1000.3 ft
2.12.6 Touchdown Zone Elevation: 1000.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 8800 ft
2.13.5 Landing Distance Available: 8800 ft

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 9999 ft
2.13.3 Take−off Distance Available: 10999 ft
2.13.4 Accelerate−Stop Distance Available: 9999 ft
2.13.5 Landing Distance Available: 9999 ft

2.13.1 Designation: 26L
2.13.2 Take−off Run Available: 9999 ft
2.13.3 Take−off Distance Available: 9999 ft
2.13.4 Accelerate−Stop Distance Available: 9999 ft
2.13.5 Landing Distance Available: 9999 ft

2.13.1 Designation: 27R
2.13.2 Take−off Run Available: 12390 ft
2.13.3 Take−off Distance Available: 12390 ft
2.13.4 Accelerate−Stop Distance Available: 12390 ft
2.13.5 Landing Distance Available: 11890 ft

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 12390 ft
2.13.3 Take−off Distance Available: 12390 ft
2.13.4 Accelerate−Stop Distance Available: 11730 ft
2.13.5 Landing Distance Available: 11730 ft

2.13.1 Designation: 09R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 27L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 8865 ft
2.13.5 Landing Distance Available: 8865 ft

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−39−1.782N / 84−24−24.7032W
2.19.6 Site Elevation: 977.2 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 5W

2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−39−2.288N / 84−26−6.3042W
2.19.6 Site Elevation: 1001.7 ft

2.19.1 ILS Type: Inner Marker for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−38−58.3145N / 84−26−30.5173W
2.19.6 Site Elevation: 1017.7 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−38−58.3506N / 84−24−23.3901W
2.19.6 Site Elevation: 985.2 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−38−53.87N / 84−26−32.61W
2.19.6 Site Elevation: 1008 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−39−2.3139N / 84−24−47.6304W
2.19.6 Site Elevation: 983.8 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−38−58.32N / 84−26−30.19W
2.19.6 Site Elevation: 1016 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−45.7727N / 84−24−7.5608W
2.19.6 Site Elevation: 992.1 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−52.4042N / 84−26−3.334W
2.19.6 Site Elevation: 1005 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−48.4575N / 84−24−7.5394W
2.19.6 Site Elevation: 986.8 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33–38–49.0988N / 84–26–30.1749W
2.19.6 Site Elevation: 1030.3 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33–38–52.4111N / 84–24–32.8404W
2.19.6 Site Elevation: 993.7 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33–38–48.4526N / 84–26–30.1664W
2.19.6 Site Elevation: 1021 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33–38–7.48N / 84–24–44.38W
2.19.6 Site Elevation: 978 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33–38–2.42N / 84–26–39.67W
2.19.6 Site Elevation: 1014.6 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33–38–4.94N / 84–24–19.08W
2.19.6 Site Elevation: 949.5 ft

2.19.1 ILS Type: Outer Marker for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33–37–57.073N / 84–32–3.073W
2.19.6 Site Elevation:

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 5W
2.19.2 ILS Identification: AFA
2.19.5 Coordinates: 33–38–7.45N / 84–24–44.13W
2.19.6 Site Elevation: 977.7 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 5W
2.19.2 ILS Identification: AFA
2.19.5 Coordinates: 33–38–4.931N / 84–27–2.2719W
2.19.6 Site Elevation: 1019.5 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33–37–56.6292N / 84–24–54.2376W
2.19.6 Site Elevation: 995.5 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33–37–58.482N / 84–26–39.0507W
2.19.6 Site Elevation: 1019.1 ft

2.19.1 ILS Type: Inner Marker for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33–37–54.5222N / 84–27–2.5364W
2.19.6 Site Elevation: 1029.2 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33–37–54.5664N / 84–24–52.6064W
2.19.6 Site Elevation: 976.2 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33–37–53.7N / 84–27–3.53W
2.19.6 Site Elevation: 1003.8 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33–37–58.5048N / 84–25–18.9643W
2.19.6 Site Elevation: 986.7 ft

2.19.1 ILS Type: Inner Marker for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33–37–54.59N / 84–24–52.99W
2.19.6 Site Elevation: 983 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33–37–54.53N / 84–27–3.03W
2.19.6 Site Elevation: 1015.7 ft

2.19.1 ILS Type: DME for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33–37–12.4476N / 84–24–53.9549W

2.19.6 Site Elevation: 999.7 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33–37–8.9408N / 84–26–38.7669W
2.19.6 Site Elevation: 985.4 ft

2.19.1 ILS Type: Inner Marker for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33–37–12.9816N / 84–27–2.5224W
2.19.6 Site Elevation: 1001 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33–37–13.0192N / 84–24–53.9594W
2.19.6 Site Elevation: 991.1 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33–37–12.4016N / 84–27–5.3143W
2.19.6 Site Elevation: 1003.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33–37–17.0569N / 84–25–18.9449W
2.19.6 Site Elevation: 989.2 ft

2.19.1 ILS Type: Inner Marker for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33–37–13.0151N / 84–24–55.769W
2.19.6 Site Elevation: 982.2 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33–37–12.9761N / 84–27–5.3149W
2.19.6 Site Elevation: 994.5 ft

General Remarks:
ALL RWYS, TOUCH AND GO OPERATIONS, LOW APPROACHES, AND PRACTICE INSTRUMENT APPROACHES NOT PERMITTED.

ACFT WITH WINGSPAN GREATER THAN 214 FT SHOULD EXPECT TO USE RWYS 09L/27R AND 9R/27L.

NO ACFT WITH WINGSPAN GEATER THAN OR EQUAL TO 225 FT MAY TAXI ON TWY M BETWEEN L14 AND L16, TWY N BETWEEN P AND SC, AND TWY N BETWEEN U AND K.

ALL ACFT WITH WINGSPANS GREATER THAN 214 FT ARE REQUIRED TO USE TAXI SPEEDS NOT GREATER THAN 15 MPH ON TWYS A, L, M, AND SJ.

WHEN ACFT WITH WINGSPANS GREATER THAN 214 FT ARE PRESENT ON THE FIELD, ALL OTHER ACFT MUST ADHERE TO THE TWY CENTERLINE ON TWYS L AND M, TWYS E AND F, AND TWYS SC AND SJ BETWEEN SG AND R DUE TO SEPARATION BETWEEN THE PARALLEL TWYS.

RUNUPS ARE PERMITTED AT VARIOUS SITES; COORD USE OF CITY FACS, MOVEMENT AREAS, ALLOWABLE NON−MOVEMENT AREAS WITH DEPT OF AVN OPNS, 404−787−6095; AND COORD THE USE OF THE AIRLINES FACS WITH THEM.

NOISE & OPNS MONITORING SYSTEM (NOMS) PROGRAM IN EFFECT; CALL THE ATLANTA DEPT OF AVIATION 770−43−NOISE OR 770−436−6473 FOR MORE INFO.

BE ALERT TO RWY CROSSING CLEARANCES. READBACK OF ALL RWY HOLDING INSTRUCTIONS IS REQUIRED.

ACFT WITH WINGSPAN GTR THAN 171 FT AND/OR TAIL HGT GTR THAN 45 FT ARE RSTD FROM USING TWY W. DURG TWY W OPNS RWY 27R INTXN DEPS FROM TWY LB OR TWY LC CAN EXPC THE FLWG DSTCS WITH RWY RMNG: FROM TWY LB 11,040 FT (TORA/TODA) AND 12,140 FT (ASDA); FROM TWY LC 10,810 FT (TODA/TODA) AND 11,910 FT (ASDA). ACFT MAY REQ THE FULL LEN OF RWY 27R FOR DEP UPON INITIAL CTC WITH ATC.

GROUP VI ACFT (LOCKHEED GALAXY C−5; ANTONOV AN−124 & AN−125) WITH A WINGSPAN OF GREATER THAN 214 FT ARE RESTRICTED FM USING TWY F EAST OF RAMP 5 NORTH AND WEST OF TWY D.

RWY 9L DEPARTURES CAN EXPECT INTERSECTION DEPARTURE FM M2 WITH RWY REMAINING 11,440 FT (TORA/TODA) AND 10,780 (ASDA).

TWO ACFT WITH WINGSPANS GREATER THAN OR EQUAL TO 225 FT MAY NOT TAXISIMULTANEOUSLY ON ADJACENT PARALLEL TWYS L/M EXCEPT WEST OF L7 AT SPEEDS LESS THAN 15 MPH.

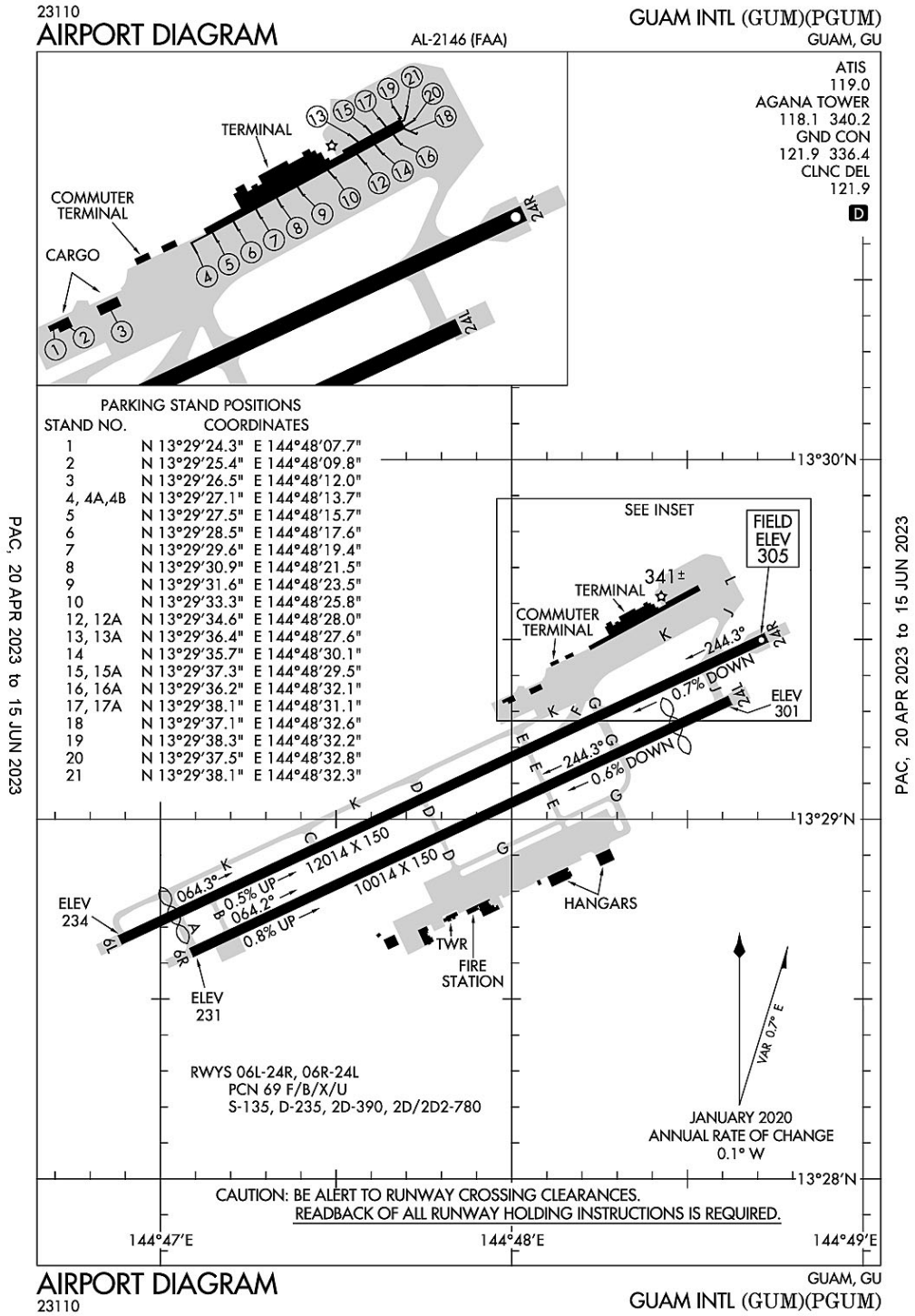
PREFERENTIAL RWY USE IN EFFECT, EXPECT TO USE RWYS 08R/26L, 09L/27R FOR DEPS; RWYS 08L/26R, 09R/27L ARE USED PRIMARILY FOR ARRIVALS.

NO ACFT WITH WINGSPAN GREATER THAN 213 FT MAY PASS ANOTHER ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 225 FT ON TWY L/M EAST OF L7.

ACFT WITH WINGSPAN GREATER THAN 171 FT ARE RSTRD FROM USING TWY V. ACFT WITH WINGSPAN GREATER THAN 171 FT ARE REQUIRED TO USE TAXI SPEEDS LESS THAN 15 MPH WHEN PASSING ACFT WITH WINGSPAN GREATER THAN 214FT ON TXWY L/M (EAST OF L7).

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Agana, Guam
Guam International
ICAO Identifier PGUM



Agana, GU
Guam Intl
ICAO Identifier PGUM

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 13−29−2.227N / 144−47−49.666E
2.2.2 From City: 3 miles NE of GUAM, GU
2.2.3 Elevation: 305 ft
2.2.5 Magnetic Variation: 2E (2000)
2.2.6 Airport Contact: JOHN QUINATA
P.O. BOX 8770
TAMUNING, GU 96931 (671−646−0300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 4/1/1995

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 65
2.12.3 Dimensions: 12014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−28−39.8644N / 144−46−53.1529E
2.12.6 Threshold Elevation: 233.7 ft
2.12.6 Touchdown Zone Elevation: 256.1 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 245
2.12.3 Dimensions: 12014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−29−30.3045N / 144−48−43.4542E
2.12.6 Threshold Elevation: 305 ft
2.12.6 Touchdown Zone Elevation: 305 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 65
2.12.3 Dimensions: 10014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−28−37.7705N / 144−47−5.333E
2.12.6 Threshold Elevation: 231 ft
2.12.6 Touchdown Zone Elevation: 257.9 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 245
2.12.3 Dimensions: 10014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−29−19.8209N / 144−48−37.2751E
2.12.6 Threshold Elevation: 301 ft
2.12.6 Touchdown Zone Elevation: 293 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 24R
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 06R
2.13.2 Take−off Run Available: 10014 ft
2.13.3 Take−off Distance Available: 10014 ft
2.13.4 Accelerate−Stop Distance Available: 10014 ft
2.13.5 Landing Distance Available: 10014 ft

2.13.1 Designation: 24L
2.13.2 Take−off Run Available: 9714 ft
2.13.3 Take−off Distance Available: 9714 ft
2.13.4 Accelerate−Stop Distance Available: 9714 ft
2.13.5 Landing Distance Available: 8710 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 24L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−29−38.0751N / 144−48−51.492E
2.19.6 Site Elevation: 345.6 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−28−53.074N / 144−47−8.5127E
2.19.6 Site Elevation: 245.8 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−29−34.711N / 144−48−53.0959E
2.19.6 Site Elevation: 312.4 ft

2.19.1 ILS Type: DME for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: AWD
2.19.5 Coordinates: 13−29−21.7429N / 144−48−48.0979E
2.19.6 Site Elevation: 329.8 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: AWD
2.19.5 Coordinates: 13−28−37.9922N / 144−47−15.3932E
2.19.6 Site Elevation: 236.5 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: AWD
2.19.5 Coordinates: 13−29−24.2258N / 144−48−46.9153E
2.19.6 Site Elevation: 310.5 ft

General Remarks:
TSNT ACFT PRVD 24 HRS ADVN INFO TO EXEC MGR GUAM INTL ARPT AUTHORITY; 1−671−642−4455 MON−FRI 0800−1700 OR FAX 1−671−646−8567.

<1000’ OVRN S END & 450’ OVRN N END RWY 6L−24R.

CLASS III ACFT ARE PROHIBITED FROM MAKING ANY TURNS ONTO OR OFF TWY GOLF (SOUTH) WHILE UTILIZING TWY ECHO.

THE FIRST 500 FT OF THE LEFT SHOULDER OF RWY 24L IS NOT VISIBLE FROM THE TWR. PILOTS ARE ADVISED TO CAUTION FOR ANY PRESENCE OF WILDLIFE IN THAT AREA.

FOR PARKING INFORMATION ALL ACFT CTC RAMP CTL. ALL ACFT DEP TERMINAL PARKING CTC RAMP CTL FOR ENGINE START AND PUSHBACK.

ADG−VI AIRPLANES MAY DEPART ON RWY 6L AND RWY 24R WITH ACFT ON PARL TWY K AS LONG AS NO ADG−VI ACFT OCCUPIES THE PARL TWY BYD 1500 FT OF THE POINT OF TKOF ROLL.

FOR TAXG B747–8 ACFT ON TWY K FRONTING THE ACFT PRKG APN FROM GATES 5 – 16 AT THE MAIN TRML, MAX TAXG SPEED SHALL BE NO MORE THAN 15 MPH.

DRG TAXG OF THE B747–8 BTN GATES 5 – 16, ALL VEHICLES SHALL YIELD AND RMN CLEAR OF THE VEHICLE TFC PAT AND ARE RSTRD TO A MAX HGT OF 14 FT.

EFFECTIVE RY GRADIENT RY 06L 0.46% UP NE; RY 24R 0.70% DOWN SW; RY 06R 0.80 % UP NE; RY 24L 0.52% DOWN SW.

RISING TERRAIN 75 FT FM RY 24L THLD 140 FT EAST OF CNTRLN EXTENDED +8 FT.

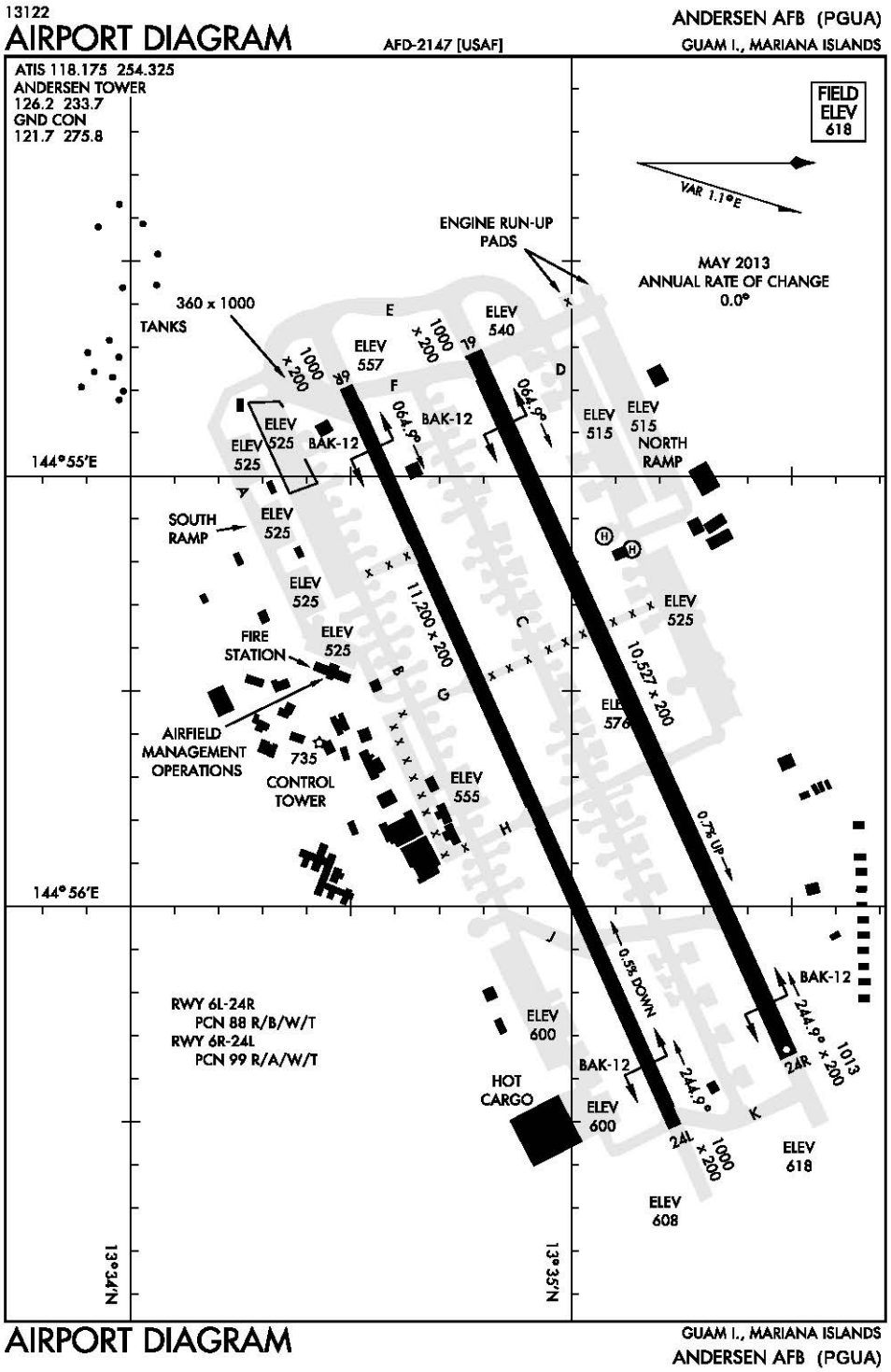
DEP VFR ACFT MAINT RY HDG TIL PAST DEP END OF RY AND REACHING 1000 FT AGL; RGT PAT 24L/R DO NOT EXCEED 1500 FT AGL IN TFC PAT.

FOR ALL ARRS, THE B747–8 AIRLINE WILL TOW THE ACFT INTO GATES 4 OR 18 FROM TWY K AND AIRLINE TO PRVD WING–WALKERS AS THE ACFT IS BEING TOWED INTO GATES 4 OR 18.

LGTD TWR 780 FT 1.3 NM ENE OF RY 24L THLD .

FOR THE B747–8, DRG RWY 24L & 24R OPS AND DUE TO JET BLAST EFCTS AT GATES 14, 16 & 18, THE B747–8 WILL BE TOWED FROM GATE 4 ON TWY K TO TWY J WITH THE ACFT PSND ON TWY J FACING TWD RWY 24R.

Andersen, Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA



Andersen,Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 13−35−1.99N / 144−55−48.2E
2.2.2 From City: 0 miles N of YIGO, GU
2.2.3 Elevation: 617.4 ft
2.2.5 Magnetic Variation: 2E (1980)
2.2.6 Airport Contact: MAJOR BILLY G TOWLES
3 AD
ANDERSEN AFB, GUAM, 69912 ()
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types:
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing:
2.12.3 Dimensions: 10528 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−34−49.281N / 144−54−56.32E
2.12.6 Threshold Elevation: 539.1 ft
2.12.6 Touchdown Zone Elevation: 539.3 ft

2.12.1 Designation: 24R
2.12.2 True Bearing:
2.12.3 Dimensions: 10528 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−35−31.93N / 144−56−33.74E
2.12.6 Threshold Elevation: 617.4 ft
2.12.6 Touchdown Zone Elevation: 617.4 ft

2.12.1 Designation: 06R
2.12.2 True Bearing:
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−34−31.18N / 144−54−59.38E
2.12.6 Threshold Elevation: 556.8 ft
2.12.6 Touchdown Zone Elevation: 556.8 ft

2.12.1 Designation: 24L
2.12.2 True Bearing:
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−35−16.59N / 144−56−43E
2.12.6 Threshold Elevation: 607.2 ft
2.12.6 Touchdown Zone Elevation: 607.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 24R
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 06R
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 24L
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: SALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L
2.14.2 Approach Lighting System: SALS
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 2E
2.19.2 ILS Identification: YIG
2.19.5 Coordinates: 13−35−30.26N / 144−56−17.53E
2.19.6 Site Elevation: 593.6 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 2E
2.19.2 ILS Identification: YIG
2.19.5 Coordinates: 13−34−43.23N / 144−54−42.5E
2.19.6 Site Elevation: 533.6 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: UAM
2.19.5 Coordinates: 13−34−40.04N / 144−55−7.21E
2.19.6 Site Elevation: 544.6 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: UAM
2.19.5 Coordinates: 13−35−21.67N / 144−56−54.64E
2.19.6 Site Elevation: 606.6 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 2E
2.19.2 ILS Identification: PMY
2.19.5 Coordinates: 13−35−15.55N / 144−56−29.18E
2.19.6 Site Elevation: 596.1 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 2E
2.19.2 ILS Identification: PMY
2.19.5 Coordinates: 13−34−25.7N / 144−54−46.9E
2.19.6 Site Elevation: 568.8 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 2E
2.19.2 Navigation Aid Identification: UAM
2.19.5 Coordinates: 13−35−28.39N / 144−56−47.68E
2.19.6 Site Elevation: 614.8 ft

General Remarks:
FREQUENT RAIN SHOWERS OF SHORT DURATION, EXPECT WET RWY BRAKEING ACTION.

RSTD: ALL ACFT CTC 36 WG COMD POST 90 MIN OUT AND AT 30 MIN OUT PRIOR TO ARR.

MISC: AIRCRAFT EXCEEDING AFLD WEIGHTS MUST REQUEST WEIGHT BEARING CAPACITY WAIVER WITH 24 HR NOTICE TO AIRFIELD OPS TO PROCESS ANY APPROVALS NEEDED. IF REQUESTS ARE NOT MADE WITHIN 24 HRS EXPECT DELAYS.

RSTD: ACFT MUST ADHERE TO PPR ARR +/− 30 MIN. ACFT WITH WINGSPANS GREATER THAN 261’ NOT AUTHORIZED.

HAZUS AIR TURB FINAL APCH RWYS 24L/24R. NO VSBY REF AVBL ON NGT TKOF BYD END RWY 6.

MISC: RWY 06L/24R CLSD SECOND WED EACH MONTH 2000−2300Z(0600−0900L THU). RWY 06R/24L CLSD FOURTH WED EACH MONTH 2000−23000Z (0600−0900L THU).

ILS/RADAR−ILS: ILS CRITICAL AREAS NOT PROTECTED.

RSTD: ALL AEROMEDICAL EVAC MSN ARE RQRD TO CTC COMD POST (DSN 366−2961, C671−366−2961) BY ANY MEANS AVAIL 3 HRS PRIOR TO ARR. ALL ACFT RQRD TO MAKE CALL 30 MIN PRIOR TO ARR.

RSTD: ALL OPR MUST OBTAIN APVL FR GND AND AMOPS PRIOR TO ENG RUNUP.

MISC: ANDERSEN AFB DOES NOT HAVE CAPABILITY TO STORE REFRIGERATED CARGO.

RSTD: RESTRICTIONS TO FLT OPNS DUR EA BWC. MOD: NO TOUCH AND GO LDG. RSTD LOW APPCH NO LOWER THAN 200' OR AS DETERMINED BY SOF. SEVERE: RSTD LOW APPCH NO LOWER THAN 200' OR AS DETERMINED BY SOF. EMERG LDG AND 36 OG/CC APV DEP ONLY. PHASE I: PHASE I:1 APR − 31 JUL. PHASE II: 1 AUG − 31 MAR.

SERVICE−LGT: ARPT BCN 763 FT MSL LCTD 1.4 NM SSW OF AFLD.

MISC: "NO VHF CAPABILITIES WITH AFLD MGMT."

ALL INBD ACFT TO INCL TACC/GDSS MSNS MUST COORD PPR REQ WITH AFLD MGMT AND HAVE VALID PPR NUMBER APV PRIOR TO ARR. PPR REQ MUST BE MADE MORE THAN 24 HR IN ADVANCE AND NO EARLIER THAN 14 DAYS PRIOR TO ARR/DEP. PPR REQ GIVEN WITHIN 24 HR WILL NOT BE APV.

A−GEAR BAK−12 RWYS 06L & 06R 30 MIN NTC RQR.

TWY B AND C BTN TWY J AND K CLSD DUE TO CONSTRUCTION.

SERVICE−A−GEAR: CONTACT CONTROL TOWER 30 MIN PRIOR FOR DEPARTURE END BAK12 CABLE CONFIGURATION. 60 MIN PN FOR CHG IN CONFIGURATION. BAK12 HOUSING LCTD 317' FROM RY CENTERLINE, 217' FROM RY EDGE, MAX HEIGHT 8'. NO ARRESTING−GEAR MARKER LCTD ON LEFT SIDE OF ALL APPROACH END BARRIERS.

MISC: RWY 06L AND 06R UNDERRUNS 1000' AVBL FOR TWY/TKOF. RWY 24R UNDERRUN AVBL 500' FOR TAXI/TKOF.

BASE OPS V366−4188; FAX V366−6217.

CAUTION: USE EXTREME CAUTION FOR EXTV UAS OPS IN VCNTY OF ANDERSEN AFB.

SERVICE−FLUID: C−5 NITROGEN SVC CAPABILITY UNAVBL.

MAINT AVBL 0100−0400 WEEKDAY ONLY; CLOSED WEEKEND & HOL.

RSTD: PPR REQ DSN: AFLD MGMT 315−366−4188.

NO ARRESTING GEAR MARKERS LOCATED ON THE LEFT SIDE OF ALL APPROACH END BARRIERS.

MISC: ALL AIRCREWS TO RON MUST CK INTO AFLD MGT OPS AND PROVIDE POC INFO UPON ARR.

MISC: PAVEMENT PRIOR TO RY 06R AND RY 06L THLDS AVBL FOR TKOF RUN WHEN NECESSARY FOR MSN ACCOMPLISHMENT.

MISC: ATTN: ALL DRY ICE REQ MUST BE MADE THRU 734TH MS/ATOC DSN 315−366−3125/3137/3162 OR C671−366−3125/3137/3162. REQ MUST BE MADE AT LEAST 24 HR IN ADVANCE FOR ACFT LDG TUE−FRI AND 72 HR IN ADVANCE FOR ACFT LDG SAT−MON. DUR HOL, ADD 2 HR TO COORD TIME.

NS ABTMT: QUIET HR 1200−2000Z (2200−0600L) DLY. NO AFTERBURNER, OR OVR FLT OF BASE AND LCL POPULATED AREAS. OTHER RESTRICTIONS BY NOTAM.

CAUTION: 47' TACAN ANTENNAE LCTD 1,300 FT NE OF RY 24L & 1,300 FT SE OF RY 24R THLDS.

MISC: AFLD MGT HAS NO COMSEC STORAGE AVBL FOR TRAN AIRCREWS. TRANS AIRCREWS CAN STORE COMSEC UP TO TOP−SECRET AT 36 WG CP.

MISC: WX OPR H24, DSN 315−366−5230. AUTOMATED SENSOR PRVDS OBSN; AUGMENTED DUR HAZ WX & SENSOR OUTAGES. HUMAN WX OBSN VIEW OBSTD BY BLDG N−SSE. WX STN PRVDS LTD WX BRIEF SUPPORT. REMOTE WX BRIEF AVBL H24 FR 17 OWS AT DSN 315−449−8333/7950, C808−448−3809; 2 HR NTC RQRD FOR TIMELY BRIEF.

RSTD 1 OF 2: THERE WILL BE NO OVFT OF MARIANA CROW TERRITORIES BLW 1,000 FT AGL FROM SEP−MAY. OVFT BLW 1,000 FT AGL IS ALLOWED BTN JUNE AND AUG, THE CROW NON−BREEDING SEASON.

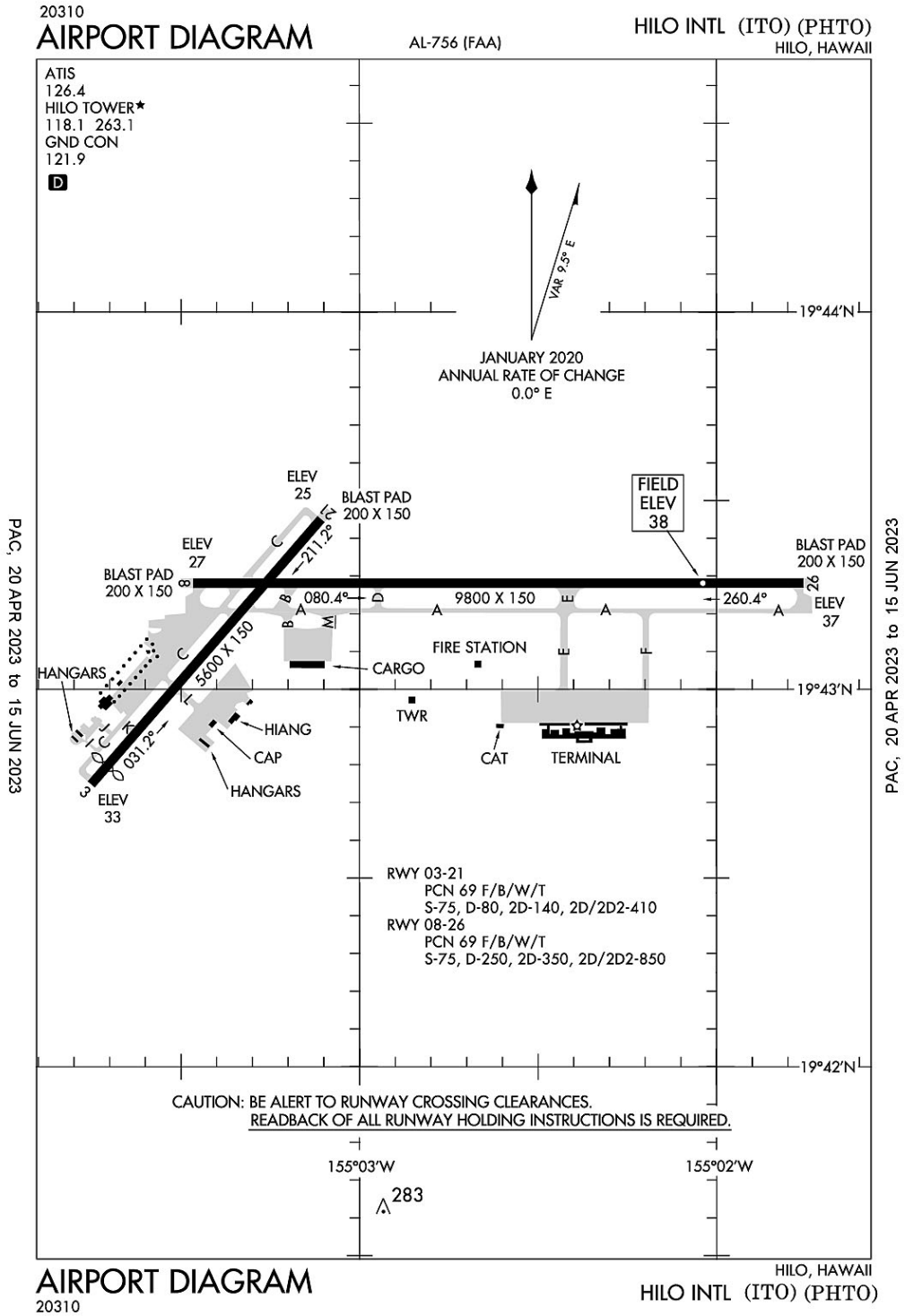
AREA BTN 1000' ROLL BAR AND THU LGT RWY 06R AND 06L UNLGTD. LAST 642' PRIOR TO THU LGT 24R UNLGTD.

ANY CREW RQRG ASSISTANCE FR AGENCIES OUTSIDE OF AFLD SUPPORT, CTC WING RECEPTIONS DSN 315−366−3464, C671−366−3464.

SERVICE−LGT: RAMP LGT UNAVBL FOR NGT TIME OPS, AND UNSAFE ACFT MVMT COND EXIST ON NORTH RAMP 3; ACFT TAXI AT THEIR OWN RISK. ALL AFLD ILS STOP LGT UNSVC. VEGETATION OBST RWY 06R AND RWY 24R APCH LGT SYS.

RSTD: BA ON BOTH RWYS MAY BE LESS THAN EXP DUE TO RUBBER BUILD−UP; PROBABILITY OF HYDROPLANING EXISTS.

Hilo, Hawaii
Hilo International
ICAO Identifier PHTO



Hilo, HI
Hilo Intl
ICAO Identifier PHTO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 19−43−12.9468N / 155−2−54.4925W
2.2.2 From City: 2 miles E of HILO, HI
2.2.3 Elevation: 37.6 ft
2.2.5 Magnetic Variation: 11E (1985)
2.2.6 Airport Contact: CHAUNCEY WONG YUEN
HAWAII AIRPORTS DISTRICT MANAGER
HILO, HI 96720 (808−961−9300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0700−2030 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 41
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−42−44.9639N / 155−3−44.7803W
2.12.6 Threshold Elevation: 33.3 ft
2.12.6 Touchdown Zone Elevation: 33.7 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 221
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−26.9946N / 155−3−6.4865W
2.12.6 Threshold Elevation: 25.4 ft
2.12.6 Touchdown Zone Elevation: 31.4 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.9328N / 155−3−27.9882W
2.12.6 Threshold Elevation: 27.3 ft
2.12.6 Touchdown Zone Elevation: 30.1 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.9196N / 155−1−45.4051W
2.12.6 Threshold Elevation: 37 ft
2.12.6 Touchdown Zone Elevation: 37.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 5600 ft
2.13.3 Take−off Distance Available: 5600 ft
2.13.4 Accelerate−Stop Distance Available: 5600 ft
2.13.5 Landing Distance Available: 5251 ft

2.13.1 Designation: 21
2.13.2 Take−off Run Available: 5251 ft
2.13.3 Take−off Distance Available: 5251 ft
2.13.4 Accelerate−Stop Distance Available: 5510 ft
2.13.5 Landing Distance Available: 5510 ft

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 9800 ft
2.13.3 Take−off Distance Available: 9800 ft
2.13.4 Accelerate−Stop Distance Available: 9800 ft
2.13.5 Landing Distance Available: 9800 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 9800 ft
2.13.3 Take−off Distance Available: 9800 ft
2.13.4 Accelerate−Stop Distance Available: 9800 ft
2.13.5 Landing Distance Available: 9800 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08
2.14.2 Approach Lighting System: ODALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 119.7
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 269.2
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 120.25
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 323
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: ATIS
2.14.3 Channel: 126.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.1
2.14.5 Hours of Operation: 0600−2200

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 263.1
2.14.5 Hours of Operation: 0600−2200

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 11E
2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−13.742N / 155−3−39.505W
2.19.6 Site Elevation: 39 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 11E

2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−20.887N / 155−1−58.099W
2.19.6 Site Elevation: 32.5 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 11E
2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−16.933N / 155−3−38.784W
2.19.6 Site Elevation: 25.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: ITO
2.19.5 Coordinates: 19−43−16.862N / 155−0−39.435W
2.19.6 Site Elevation: 23 ft

General Remarks:
ATCT CTLS ENTRY/EXIT TFC ON TWYS F&E TO EAST TRML RAMP.

BE ALERT OCNL BIRD FLOCKS ON ARPT AND IN FLT ACROSS RWY 08/26 AND 03/21.

PPR FROM ARPT MGR FOR TRANSIENT PARKING.

FOR CD WHEN ATCT IS CLSD CTC HONOLULU CONTROL FACILITY AT 808−840−6262.

181' LGTD SMOKE STACK 1/2 SM SOUTH OF FLD.

RY 08/26 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 450,000 LBS.

RY 03/21 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 230,000 LBS.

NOISE ABATEMENT: AVOID OVERFLIGHT OF NOISE SENSITIVE RESIDENTIAL AREAS N, W AND SW OF AIRPORT.

RY 3/21 CLSD TO TURBINE ACFT 1800−0600.

TWY E BTN TWY A AND RWY 08/26 PONDING DRG HVY RAINS.

RWY 08 PVD 1325' MKD BY CHEVRONS, UNUSBL FOR LNDG/TKOF/OVRN/STY; CANNOT BE USED IN COMPUTING TKOF DATA.

DIVISION 1.1, 1.2, 1.3 EXPLOSIVES PROHIBITED.

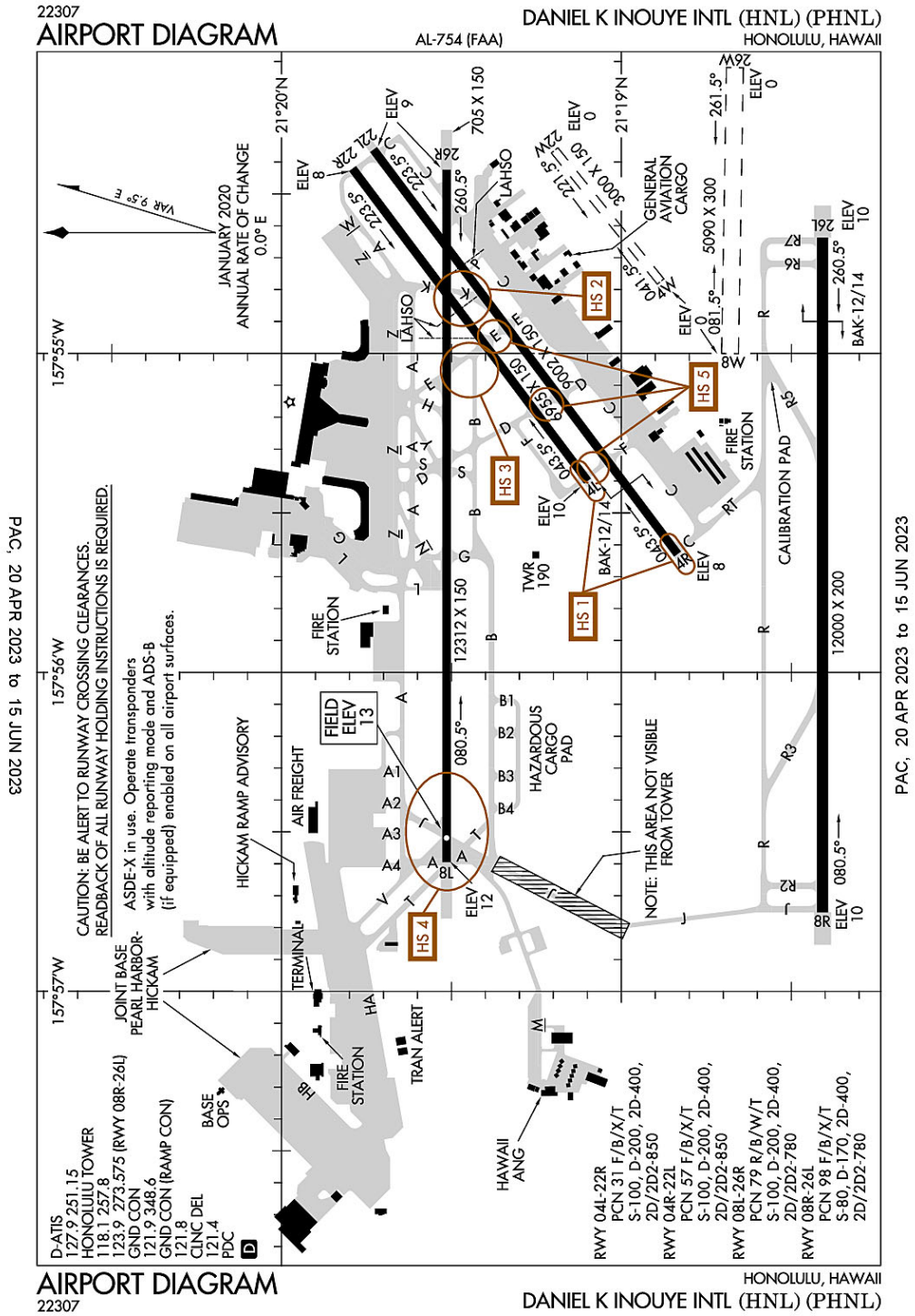
RWYS 8, 21 AND 26 WIND CONES ARE LCTD IN THE ROFA.

(A70A) JET FUEL AVBL MON−SAT 0800−1700 CALL (808) 935−6881/6122 OR 961−6601.

(E93) NO MKD PAD, HEL OPER FM FBO HANGER AREA.

PPR FROM AIRPORT MANAGER FOR TRANSPORTATION OF DIVISION 1.4 EXPLOSIVES AND HAZARDOUS MATERIAL IN OR OUT OF AIRPORT.

Honolulu, Hawaii
Honolulu International
ICAO Identifier PHNL



PAC, 20 APR 2023 to 15 JUN 2023

Honolulu, HI
Honolulu Intl
ICAO Identifier PHNL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 21−19−4.142N / 157−55−12.819W
2.2.2 From City: 3 miles NW of HONOLULU, HI
2.2.3 Elevation: 12.6 ft
2.2.5 Magnetic Variation: 11E (1990)
2.2.6 Airport Contact: MALCOM SMITH
300 RODGERS BLVD. #12
HONOLULU, HI 96819 (808−836−6434)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 53
2.12.3 Dimensions: 6955 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21−19−5.9954N / 157−55−23.9541W
2.12.6 Threshold Elevation: 9.8 ft
2.12.6 Touchdown Zone Elevation: 10.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 233
2.12.3 Dimensions: 6955 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21−19−47.4694N / 157−54−25.1972W
2.12.6 Threshold Elevation: 7.5 ft
2.12.6 Touchdown Zone Elevation: 9.6 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 53
2.12.3 Dimensions: 9002 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−18−50.1044N / 157−55−37.685W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.4 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 233
2.12.3 Dimensions: 9002 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−19−43.7762N / 157−54−21.6299W
2.12.6 Threshold Elevation: 8.5 ft
2.12.6 Touchdown Zone Elevation: 8.6 ft

2.12.1 Designation: 04W
2.12.2 True Bearing: 51
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 21−18−53.09N / 157−54−46.44W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 22W
2.12.2 True Bearing: 231
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 21−19−11.7999N / 157−54−21.78W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.8826N / 157−56−35.6573W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.884N / 157−54−25.4326W
2.12.6 Threshold Elevation: 8.4 ft
2.12.6 Touchdown Zone Elevation: 8.8 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.4938N / 157−56−45.061W
2.12.6 Threshold Elevation: 9.9 ft
2.12.6 Touchdown Zone Elevation: 10 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12000 ft x 200 ft

2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.4867N / 157−54−38.152W
2.12.6 Threshold Elevation: 9.8 ft
2.12.6 Touchdown Zone Elevation: 9.8 ft

2.12.1 Designation: 08W
2.12.2 True Bearing: 91
2.12.3 Dimensions: 5090 ft x 300 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 21−18−40.85N / 157−55−0W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 26W
2.12.2 True Bearing: 271
2.12.3 Dimensions: 5090 ft x 300 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 21−18−39.9794N / 157−54−6.1782W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 6952 ft
2.13.3 Take−off Distance Available: 6952 ft
2.13.4 Accelerate−Stop Distance Available: 6952 ft
2.13.5 Landing Distance Available: 6952 ft

2.13.1 Designation: 22R
2.13.2 Take−off Run Available: 6952 ft
2.13.3 Take−off Distance Available: 6952 ft
2.13.4 Accelerate−Stop Distance Available: 6952 ft
2.13.5 Landing Distance Available: 6952 ft

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 8950 ft
2.13.5 Landing Distance Available: 8950 ft

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 8937 ft
2.13.5 Landing Distance Available: 8937 ft

2.13.1 Designation: 04W
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft

2.13.5 Landing Distance Available: ft

2.13.1 Designation: 22W
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 12312 ft
2.13.3 Take−off Distance Available: 12312 ft
2.13.4 Accelerate−Stop Distance Available: 12312 ft
2.13.5 Landing Distance Available: 12312 ft

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 12300 ft
2.13.3 Take−off Distance Available: 12300 ft
2.13.4 Accelerate−Stop Distance Available: 12300 ft
2.13.5 Landing Distance Available: 12300 ft

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 26L
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 08W
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 26W
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: ADZY (HONOLULU RAMP ADZY)
2.14.3 Channel: 121.8
2.14.5 Hours of Operation:

2.14.1 Service Designation: ADZY (HICKAM RAMP ADZY)
2.14.3 Channel: 133.6

2.14.5 Hours of Operation:

2.14.1 Service Designation: ADZY (HICKAM RAMP ADZY)
2.14.3 Channel: 254.4
2.14.5 Hours of Operation:

2.14.1 Service Designation: ANG OPS
2.14.3 Channel: 293.7
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (WEST)
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (WEST)
2.14.3 Channel: 269
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BANZI RNAV DP
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BANZI RNAV DP
2.14.3 Channel: 269
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 121.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 281.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (ARR E/NW DEP NW)
2.14.3 Channel: 119.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (EAST)
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (ARR E/NW DEP NW)
2.14.3 Channel: 239.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: COMD POST

2.14.3 Channel: 141.8
2.14.5 Hours of Operation:

2.14.1 Service Designation: COMD POST (15 AW COMD POST)
2.14.3 Channel: 168
2.14.5 Hours of Operation:

2.14.1 Service Designation: COMD POST
2.14.3 Channel: 292.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: COMD POST (15 AW COMD POST)
2.14.3 Channel: 295.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 127.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 251.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (EAST)
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P CLASS B (EAST)
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KEAHI DP (JORDA,LANAI, UPOLU TRNS.)
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KEAHI DP (JORDA, LANAI, UPOLU TRNS.)
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KEOLA DP (KATHS,LIHUE,LILIA,NONNI,PUPPI, SOUTH KAUAI TRNS.)
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KEOLA DP (KATHS,LIHUE,LILIA,PUPPI,SOUTH KAUAI TRNS.)
2.14.3 Channel: 269
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 08R/26L)
2.14.3 Channel: 123.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 08R/26L)
2.14.3 Channel: 273.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MOLOKAI DP (APACK, CLUTS ,EBBER, FITES, PULPS, ZIGIE TRNS.)
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MOLOKAI DP (APACK, CLUTS, EBBER, FITIES, PULPS, ZIGIE TRNS.)
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OPS (SHAKA OPS)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation:

2.14.1 Service Designation: OPS (SAC OPS)
2.14.3 Channel: 311
2.14.5 Hours of Operation:

2.14.1 Service Designation: OPS (SHAKA OPS)
2.14.3 Channel: 349.4
2.14.5 Hours of Operation:

2.14.1 Service Designation: PALAY DP (LANAI, MOLOKAI TRNS.)
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PALAY DP (LANAI, MOLOKAI TRNS.)
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PIPLN RNAV DP
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PIPLN RNAV DP
2.14.3 Channel: 317.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PTD (HICKAM)
2.14.3 Channel: 133.6
2.14.5 Hours of Operation:

2.14.1 Service Designation: PTD
2.14.3 Channel: 372.2
2.14.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−19−47.9018N / 157−54−10.9794W
2.19.6 Site Elevation: 19.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−18−53.9933N / 157−55−26.9028W
2.19.6 Site Elevation: 5.6 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−19−49.8152N / 157−54−13.0662W
2.19.6 Site Elevation: 5.1 ft

2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−27.8674N / 157−54−17.1566W
2.19.6 Site Elevation: 21.2 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−26.6745N / 157−56−24.533W
2.19.6 Site Elevation: 6.7 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−30.8788N / 157−54−14.7214W

2.19.6 Site Elevation: 5.4 ft

2.19.1 ILS Type: Outer Marker for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−28.9934N / 158−2−56.1122W
2.19.6 Site Elevation: 43.5 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: EPC
2.19.5 Coordinates: 21−19−37.0011N / 157−54−25.9888W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: EPC
2.19.5 Coordinates: 21−19−35.0845N / 157−54−28.3182W
2.19.6 Site Elevation: 6.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: HNL
2.19.5 Coordinates: 21−18−29.9581N / 157−55−49.4801W
2.19.6 Site Elevation: 5.1 ft

General Remarks:
MILITARY RSTD: JBPH−H IS PPR TO ALL NON−TFWC MSN, AMC TRNG MSN AND KC−135 8 UN & 8 EN MSN CALL 735TH MOC AT DSN (315) 499−6970 FOR PPR. ALL AMC PPR WILL BE COORD MON−FRI 1700−0400Z ONLY. ALL NON−AMC ACFT SUCH AS FOREIGN, SISTER SVC, TSNT ACFT, AND OTR MSN MUST CTC 15 OSS/OSA (AMOPS) AT DSN (315) 449−0046/0048 FOR PPR COORD. ALL PPR WILL BE APVD NO EARLIER THAN 72 HR BUT NO LATER THAN 24 HR PRIOR.

CAUTION: DURING PERIODS OF REPEATED PRECIPITATION ANTICIPATE WET RY CONDTIONS, IF CURRENT CONDITIONS RQR CONFIRMATION CTC HONOLULU TWR ON INITIAL CONTACT.

CAUTION: RECREATIONAL BOATING ACTIVITIES ON AND INVOF WATERWAYS.

MILITARY: ALL MIL ACFT RQR CSTMS/AG/IMG INSPECTION MUST CTC 15WG COMMAND POST OR IF AMC CTC HICKAM AMCC, NLT 3 HRS PRIOR TO ARR WITH DEPARTURE LOCATION, EST BLOCK TIME, NR OF AIRCREW, CIV/MIL PAX, FOREIGN NATIONALS, AND DV CODES.*

ALL JET ACFT CTC RAMP CONTROL PRIOR TO ENGINE START AT GATE OR HARD STAND.

MILITARY MISC: ALL FPL MUST BE FILED WITH PHNL AS DESTN. IF MIL SIDE OF ARPT IS FINAL DESTN, PLACE ”DESTINATION HIK” IN RMKS OF FPL. FOR NOTAM USE PHNL IDENT.

MILITARY CAUTION: NO FIGHTER TRANSIENT SUPPORT AVAILABLE IN ACCORDANCE WITH ACC LSET FLASH SAFETY 06−02. TRANSIENT FIGHTER UNITS SHOULD PROVIDE THEIR OWN MAINTENANCE SUPPORT.

BIRD STRIKE HAZARD ALL RUNWAYS.

MILITARY/COMMUNICATIONS: BEDTIME (ALL CORONET W TANKERS USE 311.0 FOR TANKER−FTR INTER−PLANE ON LAUNCH DAY. AFT DUTY HR DSN 448−8888 613AOC/AMD, FLT MGMT).

MILITARY MISC: WX OPR H24, DSN 449−2251, C808−658−9961.

PPR FM AMGR FOR TRANSPORATION OF CLASS A OR B EXPLOS IN AND/OR OUT OF HNL.

TFC PAT OVHD ALT 2000 FT, RESTRICTED TO HIANG AND SENTRY ALOHA ACFT.

APRON TAXILANE 2 EAST END 360 FT CLSD.

MILITARY MISC: ANG − HI ANG AFLD OPS OPR 1500−0300Z MON−FRI AND UTA WKENDS; CLSD SAT, SUN AND HOL.

MILITARY CAUTION: FOD HAZARD EXISTS ON ALL MOVEMENT AREAS E OF TWY S. FIGHTER AIRCRAFT EXERCISE EXTREME CTN WHEN TAXIING.

MILITARY MISC 2 OF 2: WAIVERS WILL BE GRANTED ON EXTREME NEC. IF SHORT NOTICE MSN ESSENTIAL WAIVERS ARE NEC, CTC 15OG/CC BY FONE THRU 15 WG COMD POST(15 WG/CP) OR 154 OG/CC FOR HIANG AIRCRAFT. 15 WG COMMAND POST WILL PASS APVL TO HICKAM FLT SVC AND HICKAM RAMP ADZY.

MILITARY RSTD: MIL ACFT OPR DUR BIRD WATCH COND MODERATE (INITIAL TKOF OR FULL STOP LDG ONLY, NO MULTIPLE IFR/VFR APCH) AND SEVERE (TKOF AND LDG PROH WO 15 OG/CC APVL OR 154 OG/CC APVL FOR HIANG ACFT) CTC HIK RAMP, PTD, 15 WG COMD POST, 735 AMC COMD POST, 154 WG COMD POST FOR CURRENT COND.

MILITARY A−GEAR: HOOK MB100(B) LCTD 200 FT FM THLD RY 26R.

MILITARY TRAN ALERT: 15 WG CAN PROVIDE EQPT BUT CREWS MUST PROVIDE OWN PERS WHEN NEEDED.

TWYS G ADG V AND BELOW POWER IN W/PPR.

MILITARY CAUTION: A FOD HAZARD EXISTS ON ALL TAXIWAYS AND RUNWAYS BUT ESPECIALLY ON RUNWAY 4L/22R AND TAXIWAYS NORTH OF RUNWAY 8L/26R.

MILITARY RSTD: UPON ARR, CREWS WILL PRVD CREW ORDER/EAL TO 647 SFS PATROL AND PROCD DRCTLY TO COMMAND POST (BLDG 2050) AND CMPLT AN OUBD SETUP SHEET TO FACILITATE DEP RQMNTS.

DUE TO NON−VISIBILITY TWR UNA TO DTRM IF THE FLWG AREAS ARE CLEAR OF OBSTNS AND/OR TFC: PTNS OF TWY J BTN TWY B & RWY 08R; PTNS OF INTER−ISLAND ACFT PRKG RAMP.

MILITARY MISC: AFLD OPS DSN 449−0046/0048 FAX DSN 449−7624.

RYS 04W/22W AND 08W/26W RECREATIONAL BOATING ACTIVITIESON AND INVOF WATERWAYS.

MILITARY MISC 1 OF 2: DUE TO SENSITIVITIES OF CITIZENS, FTR ACFT DEP ONLY AUTHORIZED FR 1700−0700Z MON−SAT, AND 1800−0700Z SUN AND HOL. ALL REQ FOR WAIVERS WILL BE SENT TO THE 15/OG/CC OR 154 OG/CC FOR HIANG AIRCRAFT AT LEAST 5 WORKING DAYS IN ADVANCE.

MILITARY MISC: NO COMSEC MATERIAL AVBL THRU HICKAM AIRFIELD OPS.

RMN AT LEAST 1 MILE OFF SHORE OF WAIKIKI DIAMOND HEAD KOKO HEAD & EWA BEACH. ARR RWY 08L; FLY ILS APCH PROC OR A CLOSE−IN BASE LEG RMNG OVER CNTR OF PEARL HARBOR CHNL. ARR 26L/R; RNM AT TFC PAT ALTS AS LONG AS PSBL BFR BGNG DSCNT FOR LNDG.

MILITARY RSTD: ALL TRAN ACFT NOT ON AN AMC/TWCF MSN AND HOME STN ACFT TERMINATING AT JBPH−H, WILL PROVIDE A 3 HR OUT CALL (COMM 808−448−6900) AS WELL AS A 20−30 MIN OUT CALL ON 292.5 TO THE 15 WG/CP (KOA CONTROL).

DUE TO LOCATION OF ATCT, CONTROLLERS UNABLE TO DETERMINE WHETHER ACFT ARE ON CORRECT FINAL APCH TO RYS 04L−04R AND 22L−22R.

MILITARY RSTD: IF ACFT IS CARRYING HAZ CARGO, CARGO MANIFEST IS ALSO RQRD. AVBL TIMES TO ACCEPT HAZ CARGO ARE 0400−1600Z; ALL HAZ CARGO MUST COORDINATE WITH AMOPS 449−0046/48 48 HRS PRIOR TO MSN.

MILITARY SERVICE−A−GEAR: RWY 4R/22L AND 8R/26L SFC GROOVED WITHIN 10 FT OF A−G SYSTEM. POTENTIAL FOR FTR ACFT TAIL HOOK SKIP EXISTS.

MILITARY SERVICE−FUEL: A++ (MIL; AVBL H24).

WIDE BODY AND 4 ENGINE TBJTS LDG ON RY 04R ROLL TO END OF RY, NO LEFT TURN AT TWY K WO APVL.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

MILITARY: ALL MIL ACFT WITH VIP CODE 7 OR ABV CTC 15WG COMMAND POST OR RELAY THRU HF/SSB AWY 1 HR OUT TO CFM BLOCKTIME.

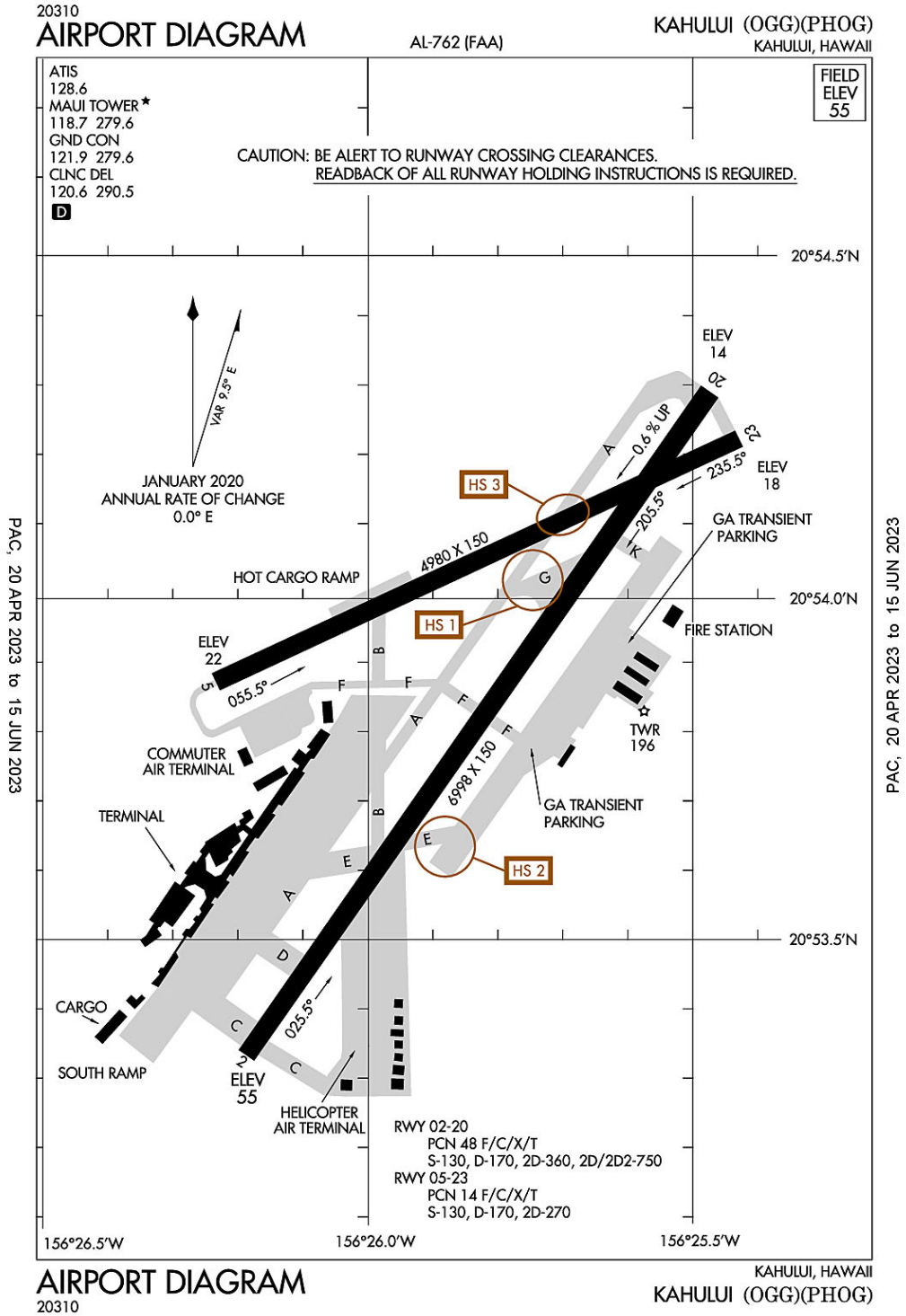
MILITARY REMARKS: SEE FLIP AP/3 SUPPLEMENTARY APRT INFO, RTE AND AREA RSTD, AND OAKLAND FIR FLT HAZ.

MILITARY MISC (2 OF 2 CONT'D): LTD WX BRIEF SUPPORT.REMOTE FLT WX BRIEFINGS CTC 17TH WX SQ H24, DSN 315−449−7950/8333, FAX DSN 315−449−8336; 2 HR PN RQR FOR TIMELY BRIEF.OFFICIAL OBSN TAKEN BY FAA. COOPERATIVE WX WATCH PROCEDURES DO NOT EXIST BTW WX AND ATC.

MILITARY RSTD: TWR APVL RQRD TO USE TWY KILO FROM RWY 4R. HOLD LINE IN EFCT FOR TWY R7 BTN PTN OF TWY XNG APCH ZONE FOR RWY 04L/R. TWY P CLSD TO ACFT OVER 12500 LBS.

APRON TAXILANE 6 BTWN TWY C AND SOUTH RAMP CLSD EXCEPT GA/FIXED WING LOADING/UNLOADING ONLY.

Kahului, Hawaii
Kahului
ICAO Identifier PHOG



Kahului, HI
Kahului
ICAO Identifier PHOG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 20–53–55.135N / 156–25–49.651W
2.2.2 From City: 3 miles E of KAHULUI, HI
2.2.3 Elevation: 55.4 ft
2.2.5 Magnetic Variation: 11E (1990)
2.2.6 Airport Contact: MARVIN MONIZ
1 KAHULUI AIRPORT ROAD, UNIT 5
KAHULUI, HI 96732 (808–872–3808)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 35
2.12.3 Dimensions: 6998 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20–53–20.9058N / 156–26–10.7497W
2.12.6 Threshold Elevation: 55.3 ft
2.12.6 Touchdown Zone Elevation: 55.4 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 215
2.12.3 Dimensions: 6998 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20–54–17.7389N / 156–25–28.4443W
2.12.6 Threshold Elevation: 14.3 ft
2.12.6 Touchdown Zone Elevation: 27 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 65
2.12.3 Dimensions: 4980 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20–53–52.8965N / 156–26–13.521W
2.12.6 Threshold Elevation: 22.1 ft
2.12.6 Touchdown Zone Elevation: 22.2 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 245
2.12.3 Dimensions: 4980 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20−54−13.7155N / 156−25−25.928W
2.12.6 Threshold Elevation: 17.6 ft
2.12.6 Touchdown Zone Elevation: 18.9 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 125 ft x 125 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 02
2.13.2 Take−off Run Available: 6995 ft
2.13.3 Take−off Distance Available: 6995 ft
2.13.4 Accelerate−Stop Distance Available: 6995 ft
2.13.5 Landing Distance Available: 6995 ft

2.13.1 Designation: 20
2.13.2 Take−off Run Available: 6995 ft
2.13.3 Take−off Distance Available: 6995 ft
2.13.4 Accelerate−Stop Distance Available: 6995 ft
2.13.5 Landing Distance Available: 6995 ft

2.13.1 Designation: 05
2.13.2 Take−off Run Available: 4990 ft
2.13.3 Take−off Distance Available: 4990 ft
2.13.4 Accelerate−Stop Distance Available: 4990 ft
2.13.5 Landing Distance Available: 4990 ft

2.13.1 Designation: 23
2.13.2 Take−off Run Available: 4990 ft
2.13.3 Take−off Distance Available: 4990 ft
2.13.4 Accelerate−Stop Distance Available: 4990 ft
2.13.5 Landing Distance Available: 4990 ft

2.13.1 Designation: H1
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 20
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P DEP/P IC (SOUTH)
2.14.3 Channel: 119.5
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: APCH/P DEP/P IC (NORTH)
2.14.3 Channel: 120.2
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: APCH/P DEP/P IC (SOUTH)
2.14.3 Channel: 225.4
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: APCH/P DEP/P IC (NORTH)
2.14.3 Channel: 322.4
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: ATIS
2.14.3 Channel: 128.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 120.6
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: CD/P

2.14.3 Channel: 290.5
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: CLASS C (SOUTH)
2.14.3 Channel: 119.5
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: CLASS C (NORTH)
2.14.3 Channel: 120.2
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: CLASS C (SOUTH)
2.14.3 Channel: 225.4
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: CLASS C (NORTH)
2.14.3 Channel: 322.4
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: GND/P
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.7
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 0600–2300 (MAR–NOV)
0600–2400 (NOV–MAR)

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−54−27.3859N / 156−25−23.7568W
2.19.6 Site Elevation: 22 ft

2.19.1 ILS Type: Glide Slope for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−53−29.5489N / 156−25−59.2238W
2.19.6 Site Elevation: 49.5 ft

2.19.1 ILS Type: Localizer for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−54−25.9395N / 156−25−22.344W
2.19.6 Site Elevation: 11.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: OGG
2.19.5 Coordinates: 20−54−23.2995N / 156−25−15.4249W
2.19.6 Site Elevation: 24.3 ft

General Remarks:
ACCESS TO HELIPAD FM TWY C ONLY.

ACFT OVR 30,000 LB LDG ON RY 02/20 UNA TO TURN OFF ONTO RY 05/23 DUE TO PAVEMENT COND.

MIGRATORY BIRD ACTIVITY BLO 1500 FT WI 5 NM RADIUS OF ARPT DURG AUG−MAY.

570’ LGTD TWR APRX 3 MI. W.

COMMUTER AIR TRML RSTRD TO PART 121 AND PART 135 OPRS ONLY. ACFT AT THE TRML SHALL CALL THE TWR ON 121.9 PRIOR TO PUSHBACK.

FOR CD WHEN ATCT IS CLSD CTC HONOLULU CONTROL FACILITY AT 808−840−6262.

RY 02/20 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 460,000 LBS.

TSNT PARKING LCTD ON NE SECTION OF E RAMP.

PPR FOR FIXED WING ACFT OPNS ON HELIPAD DURG NON−OPERATIONAL HRS CALL (808) 872−3880 5:15A−10:00P.

COMMUTER TERMINAL RAMP RESTRICTED TO ACFT 140000 LBS OR LESS.

DUE TO NONVISIBILITY ATCT UNABLE TO DETERMINE IF FLWG AREA IS CLEAR OF OBSTNS AND/OR TFC: PORTION OF TWY F BTN THE COMMUTER AIR TERMINAL & APCH END RY 05.

DUE TO NONVISIBILITY ATCT UNABLE TO PROVIDE ATC SVC BTN ACFT & GROUND VEHICLES ON THE COMMUTER AIR TERMINAL S OF TWY F AND THE HELICOPTER AIR TERMINAL E OF APCH END RY 02.

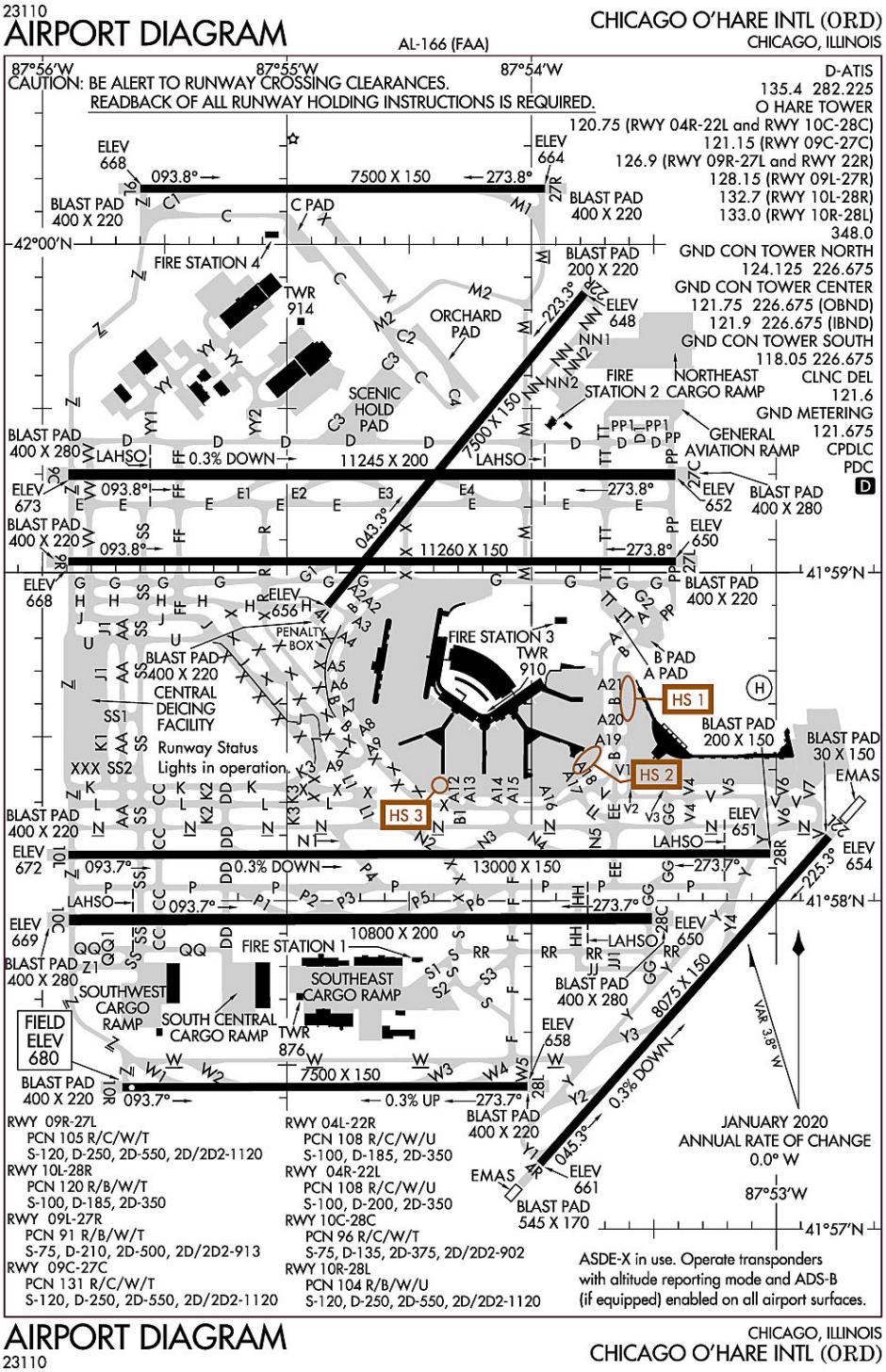
AREA E OF APCH END RY 02 DESIGNATED AS HELICOPTER OPER AREA. NO FIXED WING ACFT MAY OPER ON HELIPAD DURG OPNL HRS SR−SS.

RAMP AREA E SIDE RY 02 UNDER STATE AUTHORITY. FAA NOT RESPONSIBLE FOR DIRECTION & CTL GND TFC IN AREA.

MIL HEL OPS WITH PPR RSTRD TO THE SW CORNER OF HOT CARGO APRON (HAZMAT) N OF RWY 05/23.

24 HRS PPR FOR DIVISION 1.1,1.2,1.3 EXPLOSIVES AND 4 HRS PPR FOR OTHER HAZARDOUS CARGO IN/OUT OF ARPT; CTC (808) 872−3830 0745−1630 OTHER TIMES (808) 872−3888.

Chicago, Illinois
Chicago–O'Hare International
ICAO Identifier KORD



Chicago, IL
Chicago O'Hare Intl
ICAO Identifier KORD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−58−36.985N / 87−54−29.339W
2.2.2 From City: 14 miles NW of CHICAGO, IL
2.2.3 Elevation: 680 ft
2.2.5 Magnetic Variation: 3W (2010)
2.2.6 Airport Contact: JAMIE RHEE
10510 WEST ZEMKE RO
CHICAGO, IL 60666 (773−686−8060)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 39
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−53.9601N / 87−54−50.1039W
2.12.6 Threshold Elevation: 655.7 ft
2.12.6 Touchdown Zone Elevation: 658.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 219
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−59−51.1336N / 87−53−46.9364W
2.12.6 Threshold Elevation: 647.7 ft
2.12.6 Touchdown Zone Elevation: 651.5 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 42
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−57−11.9778N / 87−53−57.9066W
2.12.6 Threshold Elevation: 661.4 ft
2.12.6 Touchdown Zone Elevation: 661.4 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 222
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−11.718N / 87−52−47.0759W
2.12.6 Threshold Elevation: 654.4 ft
2.12.6 Touchdown Zone Elevation: 654.4 ft

2.12.1 Designation: 09C
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11245 ft x 200 ft
2.12.4 PCN: 131 R/C/W/T
2.12.5 Coordinates: 41−59−17.8916N / 87−55−53.6564W
2.12.6 Threshold Elevation: 673.3 ft
2.12.6 Touchdown Zone Elevation: 673.3 ft

2.12.1 Designation: 27C
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11245 ft x 200 ft
2.12.4 PCN: 131 R/C/W/T
2.12.5 Coordinates: 41−59−17.9172N / 87−53−24.7562W
2.12.6 Threshold Elevation: 652.4 ft
2.12.6 Touchdown Zone Elevation: 652.8 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−0−10.1909N / 87−53−56.6997W
2.12.6 Threshold Elevation: 663.6 ft
2.12.6 Touchdown Zone Elevation: 663.6 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−0−10.1954N / 87−55−36.0339W
2.12.6 Threshold Elevation: 668 ft
2.12.6 Touchdown Zone Elevation: 668 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11260 ft x 150 ft
2.12.4 PCN: 105 R/C/W/T
2.12.5 Coordinates: 41−59−2.0171N / 87−55−53.6481W
2.12.6 Threshold Elevation: 668.2 ft
2.12.6 Touchdown Zone Elevation: 668.2 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11260 ft x 150 ft

2.12.4 PCN: 105 R/C/W/T
2.12.5 Coordinates: 41–59–2.0417N / 87–53–24.5558W
2.12.6 Threshold Elevation: 650.3 ft
2.12.6 Touchdown Zone Elevation: 653.9 ft

2.12.1 Designation: 10C
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10800 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41–57–56.5251N / 87–55–53.4778W
2.12.6 Threshold Elevation: 669.4 ft
2.12.6 Touchdown Zone Elevation: 669.4 ft

2.12.1 Designation: 28C
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10800 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41–57–56.7568N / 87–53–30.5171W
2.12.6 Threshold Elevation: 650.1 ft
2.12.6 Touchdown Zone Elevation: 651.1 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41–58–8.6529N / 87–53–1.4244W
2.12.6 Threshold Elevation: 651.4 ft
2.12.6 Touchdown Zone Elevation: 651.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41–58–8.3816N / 87–55–53.5142W
2.12.6 Threshold Elevation: 672.1 ft
2.12.6 Touchdown Zone Elevation: 672.1 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41–57–26.0865N / 87–54–1.0355W
2.12.6 Threshold Elevation: 658 ft
2.12.6 Touchdown Zone Elevation: 666.8 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41–57–25.924N / 87–55–40.3004W
2.12.6 Threshold Elevation: 680 ft

2.12.6 Touchdown Zone Elevation: 680 ft

2.12.1 Designation: 10X
2.12.2 True Bearing:
2.12.3 Dimensions: 0 ft x 0 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 200 ft x 100 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 41−58−39.0644N / 87−53−4.0081W
2.12.6 Threshold Elevation: 649.7 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 7500 ft
2.13.3 Take−off Distance Available: 7500 ft
2.13.4 Accelerate−Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 22R
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: 7300 ft

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 8075 ft
2.13.3 Take−off Distance Available: 8075 ft
2.13.4 Accelerate−Stop Distance Available: 8075 ft
2.13.5 Landing Distance Available: 8075 ft

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 8075 ft
2.13.3 Take−off Distance Available: 8075 ft
2.13.4 Accelerate−Stop Distance Available: 8075 ft
2.13.5 Landing Distance Available: 8075 ft

2.13.1 Designation: 09C
2.13.2 Take−off Run Available: 11245 ft
2.13.3 Take−off Distance Available: 11245 ft
2.13.4 Accelerate−Stop Distance Available: 11245 ft
2.13.5 Landing Distance Available: 11245 ft

2.13.1 Designation: 27C

2.13.2 Take–off Run Available: 11245 ft
2.13.3 Take–off Distance Available: 11245 ft
2.13.4 Accelerate–Stop Distance Available: 11245 ft
2.13.5 Landing Distance Available: 11245 ft

2.13.1 Designation: 27R
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 09L
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 09R
2.13.2 Take–off Run Available: 11260 ft
2.13.3 Take–off Distance Available: 11260 ft
2.13.4 Accelerate–Stop Distance Available: 11260 ft
2.13.5 Landing Distance Available: 11260 ft

2.13.1 Designation: 27L
2.13.2 Take–off Run Available: 11260 ft
2.13.3 Take–off Distance Available: 11260 ft
2.13.4 Accelerate–Stop Distance Available: 11260 ft
2.13.5 Landing Distance Available: 11260 ft

2.13.1 Designation: 10C
2.13.2 Take–off Run Available: 10801 ft
2.13.3 Take–off Distance Available: 10801 ft
2.13.4 Accelerate–Stop Distance Available: 10540 ft
2.13.5 Landing Distance Available: 10540 ft

2.13.1 Designation: 28C
2.13.2 Take–off Run Available: 10801 ft
2.13.3 Take–off Distance Available: 10801 ft
2.13.4 Accelerate–Stop Distance Available: 10801 ft
2.13.5 Landing Distance Available: 10801 ft

2.13.1 Designation: 28R
2.13.2 Take–off Run Available: 13000 ft
2.13.3 Take–off Distance Available: 13000 ft
2.13.4 Accelerate–Stop Distance Available: 13000 ft
2.13.5 Landing Distance Available: 13000 ft

2.13.1 Designation: 10L
2.13.2 Take–off Run Available: 13000 ft
2.13.3 Take–off Distance Available: 13000 ft
2.13.4 Accelerate–Stop Distance Available: 13000 ft

2.13.5 Landing Distance Available: 12246 ft

2.13.1 Designation: 28L
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 10R
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 10X
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: H1
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 3W
2.19.2 ILS Identification: RXZ
2.19.5 Coordinates: 41–59–46.5114N / 87–53–59.027W
2.19.6 Site Elevation: 645.1 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 3W
2.19.2 ILS Identification: RXZ
2.19.5 Coordinates: 41–58–47.729N / 87–54–56.987W
2.19.6 Site Elevation: 656.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 3W
2.19.2 ILS Identification: FJU
2.19.5 Coordinates: 41–57–16.8552N / 87–53–44.3489W
2.19.6 Site Elevation: 654.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 3W
2.19.2 ILS Identification: FJU
2.19.5 Coordinates: 41–58–16.1967N / 87–52–41.7631W
2.19.6 Site Elevation: 646.6 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 3W
2.19.2 ILS Identification: LQQ
2.19.5 Coordinates: 41–58–0.7989N / 87–52–52.6077W
2.19.6 Site Elevation: 645.9 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 3W
2.19.2 ILS Identification: LQQ
2.19.5 Coordinates: 41–57–5.6133N / 87–54–5.4506W
2.19.6 Site Elevation: 653 ft

2.19.1 ILS Type: DME for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41–59–22.1969N / 87–56–7.1574W
2.19.6 Site Elevation: 688.1 ft

2.19.1 ILS Type: Glide Slope for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41–59–21.8824N / 87–55–38.9074W
2.19.6 Site Elevation: 667.2 ft

2.19.1 ILS Type: Inner Marker for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41–59–17.8812N / 87–56–5.0452W
2.19.6 Site Elevation: 680.4 ft

2.19.1 ILS Type: Localizer for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41–59–17.9161N / 87–53–10.9443W
2.19.6 Site Elevation: 656.3 ft

2.19.1 ILS Type: DME for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41–59–22.1969N / 87–56–7.1574W
2.19.6 Site Elevation: 688.1 ft

2.19.1 ILS Type: Glide Slope for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41–59–21.9024N / 87–53–38.9227W
2.19.6 Site Elevation: 646.1 ft

2.19.1 ILS Type: Inner Marker for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41–59–17.9169N / 87–53–13.3671W
2.19.6 Site Elevation: 656.3 ft

2.19.1 ILS Type: Localizer for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41–59–17.8863N / 87–56–7.0691W
2.19.6 Site Elevation: 681.9 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42–0–14.0985N / 87–55–48.2323W
2.19.6 Site Elevation: 669.5 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42–0–14.2182N / 87–55–20.6714W
2.19.6 Site Elevation: 651.3 ft

2.19.1 ILS Type: Inner Marker for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42–0–10.1934N / 87–55–47.4231W
2.19.6 Site Elevation: 668.8 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42–0–10.1874N / 87–53–43.3254W
2.19.6 Site Elevation: 660.9 ft

2.19.1 ILS Type: DME for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42–0–14.0985N / 87–55–48.2323W
2.19.6 Site Elevation: 669.5 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42–0–14.2137N / 87–54–11.7412W
2.19.6 Site Elevation: 648.4 ft

2.19.1 ILS Type: Inner Marker for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42–0–9.9864N / 87–53–45.3008W
2.19.6 Site Elevation: 663.1 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42–0–10.1939N / 87–55–50.1994W
2.19.6 Site Elevation: 668.1 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41–58–57.74N / 87–53–13.65W
2.19.6 Site Elevation: 673 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41–59–6.96N / 87–55–38.39W
2.19.6 Site Elevation: 661.9 ft

2.19.1 ILS Type: Inner Marker for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41–59–2.01N / 87–56–4.01W
2.19.6 Site Elevation: 669.1 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41–59–2.04N / 87–53–10.79W
2.19.6 Site Elevation: 642 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41–58–57.74N / 87–53–13.65W
2.19.6 Site Elevation: 673 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41–59–6.98N / 87–53–38.67W
2.19.6 Site Elevation: 647.3 ft

2.19.1 ILS Type: Inner Marker for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41–59–2.04N / 87–53–13.53W
2.19.6 Site Elevation: 645 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41–59–2.01N / 87–56–7.22W
2.19.6 Site Elevation: 673 ft

2.19.1 ILS Type: DME for runway 10C. Magnetic variation: 3W

2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41–58–0.9714N / 87–56–9.15W
2.19.6 Site Elevation: 689.3 ft

2.19.1 ILS Type: Glide Slope for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41–57–52.8465N / 87–55–39.0226W
2.19.6 Site Elevation: 663 ft

2.19.1 ILS Type: Inner Marker for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41–57–56.5015N / 87–56–4.8681W
2.19.6 Site Elevation: 674.3 ft

2.19.1 ILS Type: Localizer for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41–57–56.803N / 87–52–57.2925W
2.19.6 Site Elevation: 646.3 ft

2.19.1 ILS Type: DME for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41–58–0.9714N / 87–56–9.15W
2.19.6 Site Elevation: 689.3 ft

2.19.1 ILS Type: Glide Slope for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41–57–53.0321N / 87–53–44.3196W
2.19.6 Site Elevation: 642.4 ft

2.19.1 ILS Type: Inner Marker for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41–57–58.7451N / 87–53–19.1677W
2.19.6 Site Elevation: 648 ft

2.19.1 ILS Type: Localizer for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41–57–56.5013N / 87–56–6.8848W
2.19.6 Site Elevation: 676.4 ft

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41–58–5.6721N / 87–52–41.6845W
2.19.6 Site Elevation: 656 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41–58–4.3877N / 87–55–38.7659W
2.19.6 Site Elevation: 665.3 ft

2.19.1 ILS Type: Inner Marker for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED

2.19.5 Coordinates: 41–58–8.5523N / 87–56–4.8866W
2.19.6 Site Elevation: 676.8 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41–58–8.6818N / 87–52–39.6951W
2.19.6 Site Elevation: 644.9 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41–58–5.6721N / 87–52–41.6845W
2.19.6 Site Elevation: 656 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41–58–4.4701N / 87–53–15.0487W
2.19.6 Site Elevation: 648.2 ft

2.19.1 ILS Type: Inner Marker for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41–58–6.1128N / 87–52–49.1235W
2.19.6 Site Elevation: 649.5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41–58–8.356N / 87–56–6.8801W
2.19.6 Site Elevation: 679.1 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41–57–28.3399N / 87–53–27.4609W
2.19.6 Site Elevation: 669.6 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41–57–21.909N / 87–55–25.5702W
2.19.6 Site Elevation: 671.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41–57–31.6045N / 87–53–26.3741W
2.19.6 Site Elevation: 649.9 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41–57–22.2251N / 87–53–34.2417W
2.19.6 Site Elevation: 656.1 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41–57–22.0258N / 87–54–14.1801W

2.19.6 Site Elevation: 654 ft

2.19.1 ILS Type: Inner Marker for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−26.9517N / 87−53−47.4584W
2.19.6 Site Elevation: 650.4 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−25.8994N / 87−55−53.7065W
2.19.6 Site Elevation: 680.2 ft

2.19.1 ILS Type: DME for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−22.2251N / 87−53−34.2417W
2.19.6 Site Elevation: 656.1 ft

2.19.1 ILS Type: Glide Slope for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−22.1087N / 87−55−25.5572W
2.19.6 Site Elevation: 671.8 ft

2.19.1 ILS Type: Inner Marker for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−25.9088N / 87−55−51.6695W
2.19.6 Site Elevation: 680 ft

2.19.1 ILS Type: Localizer for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−26.1287N / 87−53−32.5409W
2.19.6 Site Elevation: 652.2 ft

General Remarks:
A380−800 OPR CONSTRAINTS EXIST ON RWYS, TWYS, & RAMPS − CTC ARPT OPS FOR INFO 773−686−2255.

BIRDS ON & INVOF ARPT; PYROTECHNICS & BIRD CANNONS IN USE.

BE ALERT: THE NORTHEAST/SOUTHWEST PORTION OF TWY YY IS NOT VSBL FM THE CENTER ATCT.

RWY STATUS LGTS ARE IN OPN.

MAG DEVIATION PSBL IMT W OF TWY Y & RWY 22L APCH ON TWY N.

EAST AND WEST GATES ARE MANNED 24 HRS A DAY.

ACFT ARE NOT PMTD TO STOP ON EITHER TWY A OR B BRIDGES.

BE ALERT: TWY S1 OBND OR EB ONLY, TWY S2 INBD OR WB ONLY, TWY P1, P2, P3, P5, AND P6 NB ONLY, TWY E1, E2, E3 & E4 SB ONLY. TWY E3 WB ONLY FM RWY 09C/27C.

ALERT: DUPE ALPHA−NUMERIC TWY DESIGNATORS & TRML GATE DESIGNATIONS INVOLVING THE LTRS B, C, G, H, K, L & M.

SEE LND & HOLD SHORT OPS SECTION.

B747–8, B747–400, B777–200LR(F), B777–300ER, A350–900, A350–1000, A340–500, A340–600 & A330–900 CANNOT PASS ON TWY A & TWY B DUE TO INSUFFICIENT WINGTIP CLNC

PAEW NEAR VARIOUS TWYS.

ACFT WITH WINGSPAN GREATER THAN 214 FT RQR 48 HRS PPR – 773–686–2255.

LINE UP AND WAIT AUTHORIZATION IN EFF BTWN SS AND SR AT THE FLWG INTS: RWY 28R AT TWY GG, TWY EE AND TWY N5; RWY 10L AT TWY DD AND TWY CC AND TWY SS; RWY 27C AT TWY TT; RWY 9C AT TWY FF; RWY 27L AT TWY TT; RWY 9R AT TWY SS AND FF. THESE RWYS WILL BE USED FOR DEPS ONLY WHEN EXERCISING THE PROVISIONS OF THIS AUTHORIZATION.

ATCT IS AUTH TO CONDUCT SIMUL DEPS FM RWY 04L/04R, RWY 22L/22R, RWY 09R WITH RWY 09L OR RWY 10L, RWY 09C WITH RWY 09L OR RWY 10L, RWY 10C WITH RWY 09R OR RWY 09C, RWY 27L WITH RWY 27R OR RWY 28R, RWY 27C WITH RWY 27R OR RWY 28R, RWY 28C WITH RWY 27L OR RWY 27C WITH CRS DIVERGENCE BEGINNING NO LATER THAN 4 MILES FM RWY END.

B747–8 OPS NOT AUTHORIZED ON RWY 09R/27L, 09L/27R & 10R/28L.

PERIODIC FIRE DEPT TRNG AT N SECTOR OF THE ARPT.

NOISE ABATEMENT PROC IN EFFECT FM 2200 TO 0700; CTC AMGR – 773–686–2255.

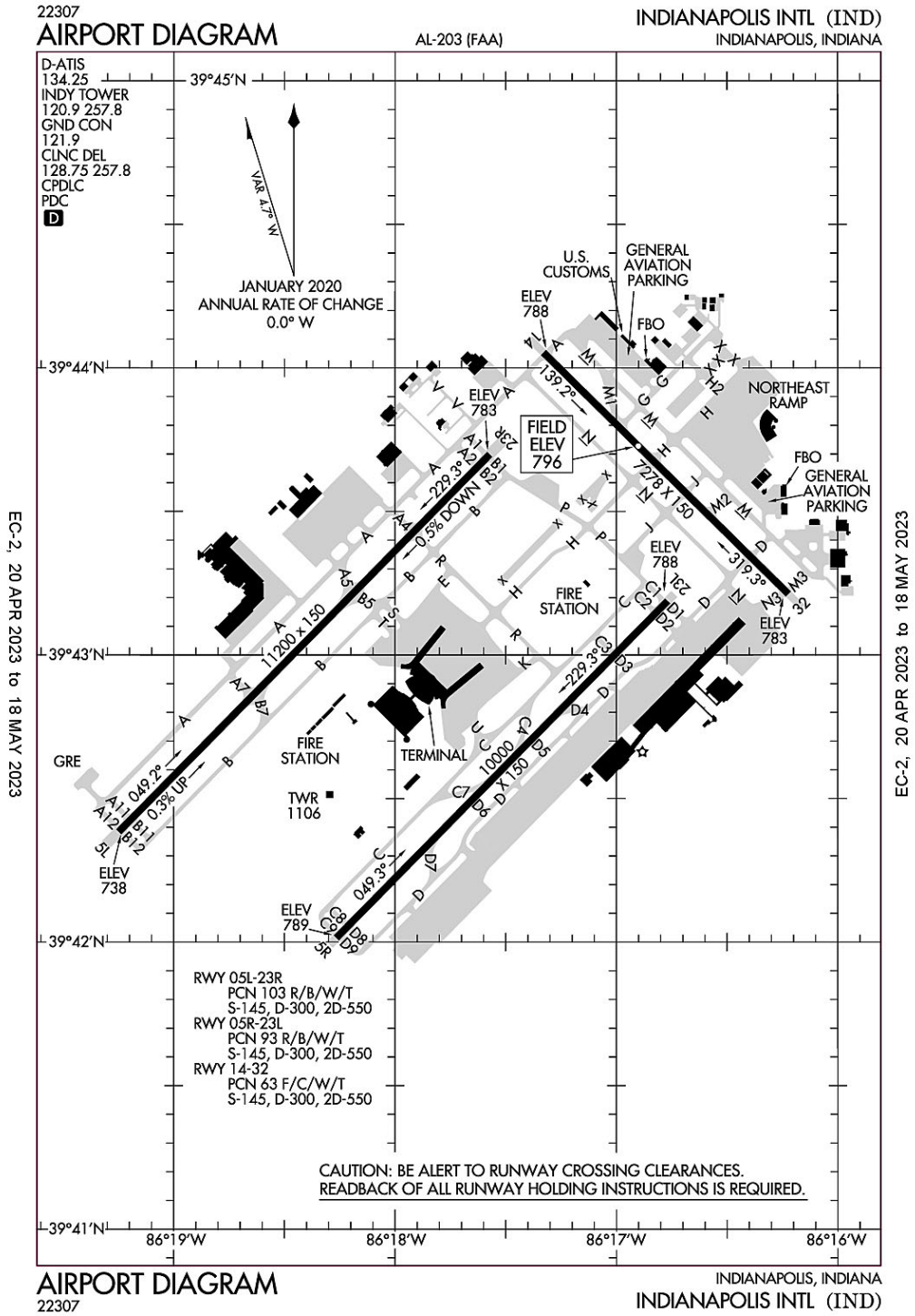
DVRSN ACRS WO A PRESENCE AT ORD SHOULD CTC ARPT OPNS 773–686–2255 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PRVD: CO, FLIGHT OPS CTC INFO, ACFT TYPE, PERSONS OB, INTL OR DOMESTIC, ANY GND HANDLER AGRMTS IN PLACE.

PRIM RUN–UP LOCATION GROUND RUN UP ENCLOSURE; SECONDARY RUN UP LOCATIONS AVBL UPON REQ – CTC CITY OPS 773–686–2255.

ALL PART 91 & UNSKED PART 125, 133 & 135 CHARTER OPERATORS CTC SIGNATURE FLIGHT SUPPORT AT 773–686–7000 REGARDING NEW SECURITY REGULATIONS PRIOR TO DEP.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Indianapolis, Indiana
Indianapolis International
ICAO Identifier KIND



Indianapolis, IN
Indianapolis Intl
ICAO Identifier KIND

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–43–2.3N / 86–17–40.7W
2.2.2 From City: 7 miles SW of INDIANAPOLIS, IN
2.2.3 Elevation: 796.2 ft
2.2.5 Magnetic Variation: 5W (2015)
2.2.6 Airport Contact: MARIO RODRIGUEZ
7800 COL. H. WEIR COOK MEMORIAL DR.
INDIANAPOLIS, IN 46241 (317–487–9594)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39–42–23.0337N / 86–19–14.9025W
2.12.6 Threshold Elevation: 738 ft
2.12.6 Touchdown Zone Elevation: 747.3 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39–43–41.9101N / 86–17–34.3591W
2.12.6 Threshold Elevation: 782.9 ft
2.12.6 Touchdown Zone Elevation: 782.9 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39–42–0.873N / 86–18–15.906W
2.12.6 Threshold Elevation: 788.8 ft
2.12.6 Touchdown Zone Elevation: 790.7 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39–43–11.2875N / 86–16–46.1248W
2.12.6 Threshold Elevation: 787.6 ft
2.12.6 Touchdown Zone Elevation: 790.1 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39–44–3.2059N / 86–17–19.7638W
2.12.6 Threshold Elevation: 787.5 ft
2.12.6 Touchdown Zone Elevation: 796.2 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39–43–12.7458N / 86–16–13.3895W
2.12.6 Threshold Elevation: 782.6 ft
2.12.6 Touchdown Zone Elevation: 792.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05L
2.13.2 Take–off Run Available: 11200 ft
2.13.3 Take–off Distance Available: 11200 ft
2.13.4 Accelerate–Stop Distance Available: 11200 ft
2.13.5 Landing Distance Available: 11200 ft

2.13.1 Designation: 23R
2.13.2 Take–off Run Available: 11200 ft
2.13.3 Take–off Distance Available: 11200 ft
2.13.4 Accelerate–Stop Distance Available: 11200 ft
2.13.5 Landing Distance Available: 11200 ft

2.13.1 Designation: 05R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 23L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 14

2.13.2 Take–off Run Available: 7278 ft
2.13.3 Take–off Distance Available: 7278 ft
2.13.4 Accelerate–Stop Distance Available: 7278 ft
2.13.5 Landing Distance Available: 7278 ft

2.13.1 Designation: 32
2.13.2 Take–off Run Available: 7278 ft
2.13.3 Take–off Distance Available: 7278 ft
2.13.4 Accelerate–Stop Distance Available: 7278 ft
2.13.5 Landing Distance Available: 7278 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 05L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P (WEST OF ACTIVE RWY)
2.14.3 Channel: 124.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (EAST OF ACTIVE RWY)
2.14.3 Channel: 127.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 317.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC
2.14.3 Channel: 128.175
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 128.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLANG STAR
2.14.3 Channel: 128.175
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLANG STAR
2.14.3 Channel: 317.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (WEST OF ACTIVE RWY)
2.14.3 Channel: 124.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (EAST)
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (EAST OF ACTIVE RWY)
2.14.3 Channel: 127.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 317.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 134.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (WEST)
2.14.3 Channel: 119.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (EAST)
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/S
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 120.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACYR STAR
2.14.3 Channel: 128.175
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACYR STAR
2.14.3 Channel: 317.8
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39–43–51.3513N / 86–17–27.5671W
2.19.6 Site Elevation: 797.6 ft

2.19.1 ILS Type: Glide Slope for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39–42–32.7741N / 86–19–9.6768W
2.19.6 Site Elevation: 735.4 ft

2.19.1 ILS Type: Inner Marker for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39–42–15.7098N / 86–19–24.4367W
2.19.6 Site Elevation: 735.9 ft

2.19.1 ILS Type: Localizer for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39–43–49.0283N / 86–17–25.2797W
2.19.6 Site Elevation: 787.8 ft

2.19.1 ILS Type: DME for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39–43–51.3513N / 86–17–27.5671W
2.19.6 Site Elevation: 797.6 ft

2.19.1 ILS Type: Glide Slope for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39–43–36.5113N / 86–17–48.4342W
2.19.6 Site Elevation: 772.4 ft

2.19.1 ILS Type: Localizer for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39–42–15.9186N / 86–19–23.9666W
2.19.6 Site Elevation: 736.6 ft

2.19.1 ILS Type: DME for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39–43–20.1868N / 86–16–39.5353W
2.19.6 Site Elevation: 802 ft

2.19.1 ILS Type: Glide Slope for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39–42–5.3627N / 86–18–2.9983W
2.19.6 Site Elevation: 788.5 ft

2.19.1 ILS Type: Inner Marker for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39–41–52.0586N / 86–18–27.1359W
2.19.6 Site Elevation: 776.4 ft

2.19.1 ILS Type: Localizer for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39–43–18.3778N / 86–16–37.0825W
2.19.6 Site Elevation: 785.5 ft

2.19.1 ILS Type: DME for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39–43–20.1868N / 86–16–39.5353W
2.19.6 Site Elevation: 802 ft

2.19.1 ILS Type: Glide Slope for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39–43–2.4585N / 86–16–54.2858W
2.19.6 Site Elevation: 785 ft

2.19.1 ILS Type: Localizer for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39–41–53.5322N / 86–18–25.2565W
2.19.6 Site Elevation: 777.3 ft

2.19.1 ILS Type: Glide Slope for runway 14. Magnetic variation: 5W

2.19.2 ILS Identification: BJP
2.19.5 Coordinates: 39–43–59.3065N / 86–17–7.3342W
2.19.6 Site Elevation: 790 ft

2.19.1 ILS Type: Localizer for runway 14. Magnetic variation: 5W
2.19.2 ILS Identification: BJP
2.19.5 Coordinates: 39–43–5.64N / 86–16–4.06W
2.19.6 Site Elevation: 768.5 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 5W
2.19.2 ILS Identification: COA
2.19.5 Coordinates: 39–43–16.2751N / 86–16–25.5096W
2.19.6 Site Elevation: 781.7 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic variation: 5W
2.19.2 ILS Identification: COA
2.19.5 Coordinates: 39–44–10.3487N / 86–17–29.1696W
2.19.6 Site Elevation: 782.3 ft

General Remarks:
TWY V IS NOT AVBL FOR ACR OPS.

TWY H RUNS CONTIGUOUS AT NORTHEAST RAMP.

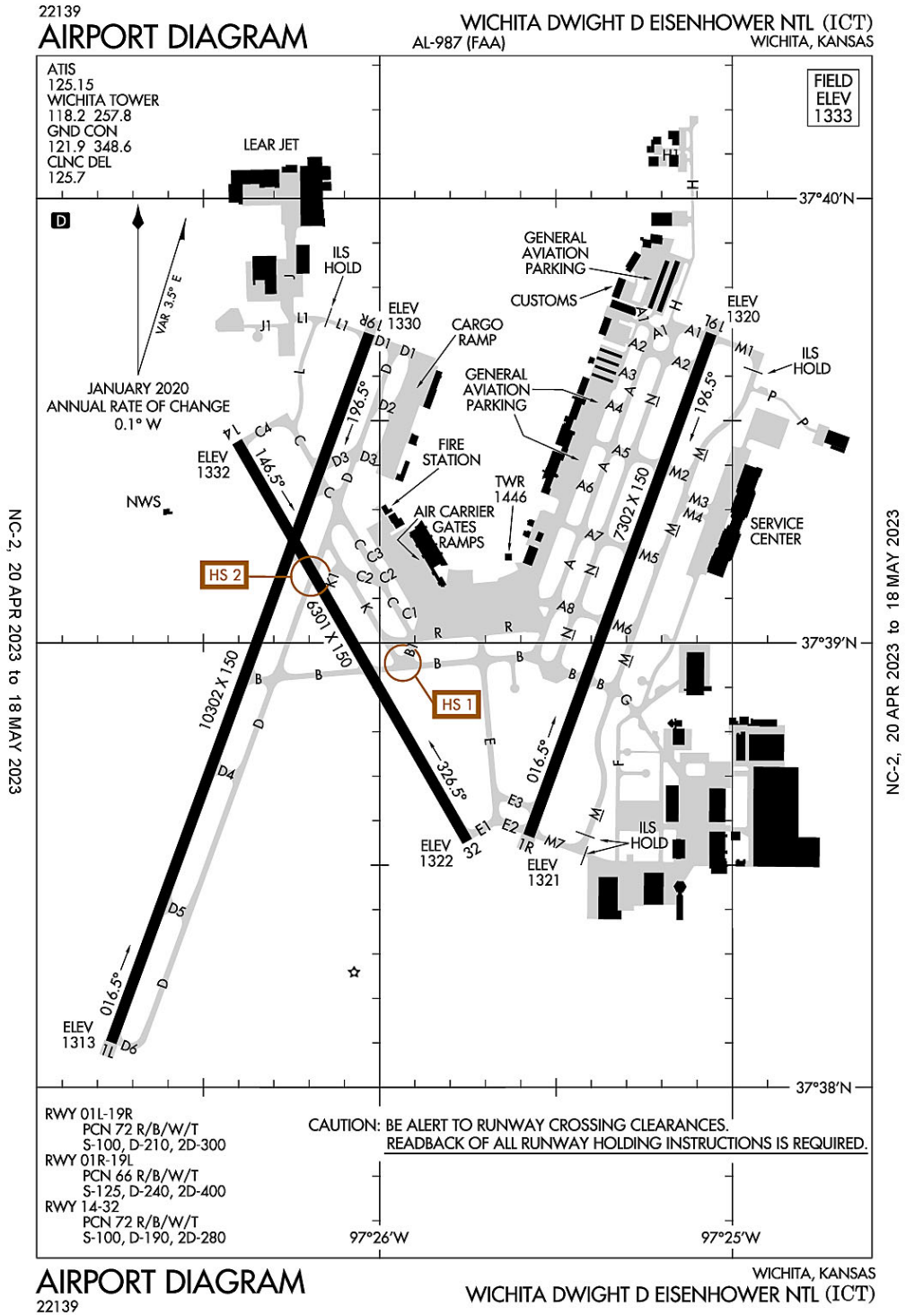
LARGE FLOCKS OF BIRDS ON & INVOF ARPT.

NOISE ABATEMENT PROCEDURES IN EFFECT CTC ARPT MGR.

PRIM STUDENT TGL NOT PMTD.

BE ALERT TO CLOSE PROXIMITY OF RWY 14/32 TO NORTHEAST RAMP.

Wichita, Kansas
Wichita Mid–Continent
ICAO Identifier KICT



Wichita, KS
Wichita Mid−Continent
ICAO Identifier KICT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−38−59.829N / 97−25−58.954W
2.2.2 From City: 5 miles SW of WICHITA, KS
2.2.3 Elevation: 1332.6 ft
2.2.5 Magnetic Variation: 4E (2015)
2.2.6 Airport Contact: MR. JESSE ROMO, A.A.E.
2173 AIR CARGO ROAD
WICHITA, KS 67209 (316−946−4700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10302 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−38−6.0645N / 97−26−45.5906W
2.12.6 Threshold Elevation: 1312.5 ft
2.12.6 Touchdown Zone Elevation: 1314.1 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 200
2.12.3 Dimensions: 10302 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−39−41.7663N / 97−26−1.7916W
2.12.6 Threshold Elevation: 1329.6 ft
2.12.6 Touchdown Zone Elevation: 1329.7 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7302 ft x 150 ft
2.12.4 PCN: 66 R/B/W/T
2.12.5 Coordinates: 37−39−41.7709N / 97−25−3.5648W
2.12.6 Threshold Elevation: 1319.8 ft
2.12.6 Touchdown Zone Elevation: 1320.1 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 20
2.12.3 Dimensions: 7302 ft x 150 ft
2.12.4 PCN: 66 R/B/W/T
2.12.5 Coordinates: 37−38−33.9441N / 97−25−34.6296W
2.12.6 Threshold Elevation: 1321 ft
2.12.6 Touchdown Zone Elevation: 1321.1 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 330
2.12.3 Dimensions: 6301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−38−33.2136N / 97−25−45.1001W
2.12.6 Threshold Elevation: 1321.6 ft
2.12.6 Touchdown Zone Elevation: 1321.8 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 150
2.12.3 Dimensions: 6301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−39−27.162N / 97−26−24.273W
2.12.6 Threshold Elevation: 1332.1 ft
2.12.6 Touchdown Zone Elevation: 1332.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 10301 ft
2.13.3 Take−off Distance Available: 10301 ft
2.13.4 Accelerate−Stop Distance Available: 10301 ft
2.13.5 Landing Distance Available: 10301 ft

2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 10301 ft
2.13.3 Take−off Distance Available: 10301 ft
2.13.4 Accelerate−Stop Distance Available: 10301 ft
2.13.5 Landing Distance Available: 10301 ft

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 7302 ft
2.13.3 Take−off Distance Available: 7302 ft
2.13.4 Accelerate−Stop Distance Available: 7302 ft
2.13.5 Landing Distance Available: 7302 ft

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 7302 ft
2.13.3 Take−off Distance Available: 7302 ft
2.13.4 Accelerate−Stop Distance Available: 7302 ft
2.13.5 Landing Distance Available: 7302 ft

2.13.1 Designation: 32

2.13.2 Take−off Run Available: 6301 ft
2.13.3 Take−off Distance Available: 6301 ft
2.13.4 Accelerate−Stop Distance Available: 6301 ft
2.13.5 Landing Distance Available: 6301 ft

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 6301 ft
2.13.3 Take−off Distance Available: 6301 ft
2.13.4 Accelerate−Stop Distance Available: 6301 ft
2.13.5 Landing Distance Available: 6301 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P (270−009 BLW 5000 FT & BYD 20 NM)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (E IAB BLW 5000 FT)
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−009 BLW 5000 FT & BYD 20 NM)
2.14.3 Channel: 325.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (010−190)
2.14.3 Channel: 134.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (010−190)
2.14.3 Channel: 290.275
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (191−009)
2.14.3 Channel: 126.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (191−009)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 327.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 125.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (191−009)
2.14.3 Channel: 126.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (010−190 4000 FT & BLW)
2.14.3 Channel: 134.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (010−190 ABV 4000 FT)
2.14.3 Channel: 134.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (010−190 ABV 4000 FT)
2.14.3 Channel: 290.275
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (191−009)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37–38–16.7093N / 97–26–46.0091W
2.19.6 Site Elevation: 1310.5 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37–37–57.139N / 97–26–49.6801W
2.19.6 Site Elevation: 1317.9 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37–39–51.3411N / 97–25–57.406W
2.19.6 Site Elevation: 1319.7 ft

2.19.1 ILS Type: Outer Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37–33–33.9381N / 97–28–51.7772W
2.19.6 Site Elevation: 1311.2 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 4E
2.19.2 ILS Identification: HOV
2.19.5 Coordinates: 37–39–33.8636N / 97–26–10.8356W
2.19.6 Site Elevation: 1327.4 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 4E
2.19.2 ILS Identification: HOV
2.19.5 Coordinates: 37–37–54.7075N / 97–26–50.7862W

2.19.6 Site Elevation: 1320.8 ft

2.19.1 ILS Type: Outer Marker for runway 19R. Magnetic variation: 4E
2.19.2 ILS Identification: HOV
2.19.5 Coordinates: 37–44–16.6003N / 97–24–0.9982W
2.19.6 Site Elevation: 1325.3 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37–39–52.0431N / 97–25–2.8236W
2.19.6 Site Elevation: 1327.1 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37–38–42.6366N / 97–25–24.6949W
2.19.6 Site Elevation: 1314.7 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37–39–52.0134N / 97–24–58.8717W
2.19.6 Site Elevation: 1309.6 ft

2.19.1 ILS Type: Outer Marker for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37–34–41.4784N / 97–27–21.1454W
2.19.6 Site Elevation: 1315.2 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 4E
2.19.2 ILS Identification: MVP
2.19.5 Coordinates: 37–38–21.5439N / 97–25–43.3444W
2.19.6 Site Elevation: 1320 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 4E
2.19.2 ILS Identification: MVP
2.19.5 Coordinates: 37–39–30.7714N / 97–25–3.1731W
2.19.6 Site Elevation: 1313.6 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 4E
2.19.2 ILS Identification: MVP
2.19.5 Coordinates: 37–38–21.2844N / 97–25–40.4224W
2.19.6 Site Elevation: 1319.3 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 7E
2.19.2 Navigation Aid Identification: ICT
2.19.5 Coordinates: 37–44–42.9259N / 97–35–1.782W
2.19.6 Site Elevation: 1472 ft

General Remarks:
CALL FOR PUSHBACK NOT REQUIRED.

TWY L AND L1 CLSD TO ACFT WITH WINGSPAN MORE THAN 118FT.

APN AIR CARGO RAMP CLSD TO ACFT WINGSPAN MORE THAN 148 FT.

TWY H CLSD TO ACFT WITH WINGSPAN MORE THAN 75 FT.TWY H CONGESTED AND NOT VISIBLE FROM ATCT; USE CAUTION.

NOTE: SEE SPECIAL NOTICES−CONTINUOUS POWER FACILITIES.

ACFT ENG RUNS ABV IDLE NOT APPROVED ON ACFT PRKG RAMPS.

TWYS F, G, H, J, P AND ALL PARKING RAMPS ARE NON−MOVEMENT AREAS.

PPR REQUIRED FOR ACFT CARRYING CLASS 1 − DIVISION 1.1; 1.2 OR 1.3 EXPLOSIVES AS DEFINED BY 49 CFR 173.50 OR AS AMENDED.

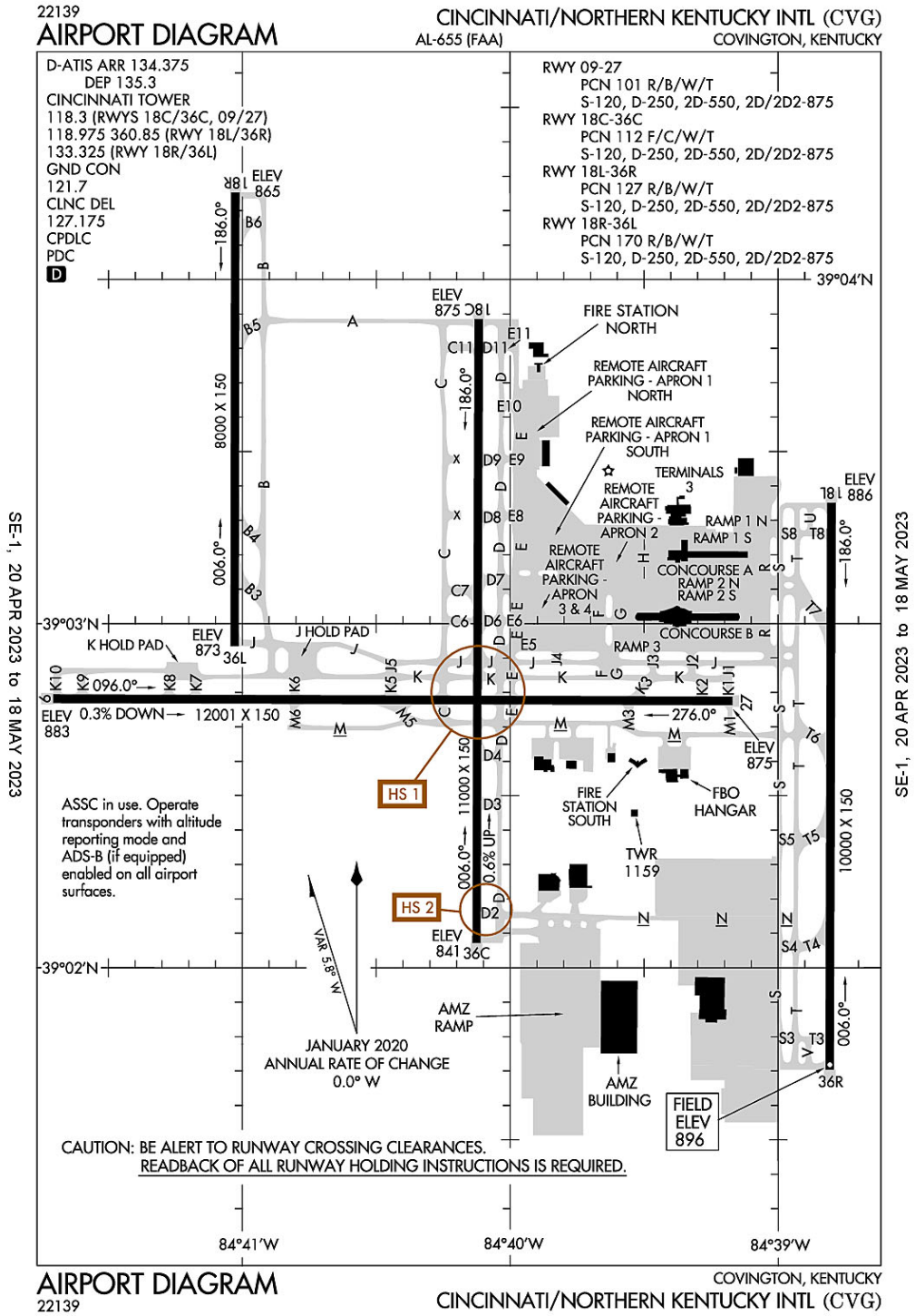
TWY P CLSD TO ACFT WITH WINGSPAN MORE THAN 79FT.

MIGRATORY BIRDS ON AND INVOF ARPT.

ATCT HAS LIMITED VISIBILITY OF TERMINAL GATES 1−8.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

Covington, Kentucky
Cincinnati/Northern Kentucky International
ICAO Identifier KCVG



Covington, KY
Cincinnati/Northern Kentucky Intl
ICAO Identifier KCVG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–2–55.815N / 84–40–4.155W
2.2.2 From City: 8 miles SW of COVINGTON, KY
2.2.3 Elevation: 896.1 ft
2.2.5 Magnetic Variation: 6W (2025)
2.2.6 Airport Contact: CANDACE MCGRAW
PO BOX 752000
CINCINNATI, OH 45275 (859–767–3151)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 101 R/B/W/T
2.12.5 Coordinates: 39–2–46.9049N / 84–41–42.3528W
2.12.6 Threshold Elevation: 883.1 ft
2.12.6 Touchdown Zone Elevation: 883.2 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 101 R/B/W/T
2.12.5 Coordinates: 39–2–46.5417N / 84–39–10.2436W
2.12.6 Threshold Elevation: 874.8 ft
2.12.6 Touchdown Zone Elevation: 874.8 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39–2–4.3552N / 84–40–7.4709W
2.12.6 Threshold Elevation: 840.7 ft
2.12.6 Touchdown Zone Elevation: 850.3 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39−3−53.0734N / 84−40−7.0233W
2.12.6 Threshold Elevation: 874.6 ft
2.12.6 Touchdown Zone Elevation: 874.6 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39−3−21.0781N / 84−38−48.0048W
2.12.6 Threshold Elevation: 886.3 ft
2.12.6 Touchdown Zone Elevation: 889.1 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39−1−42.2406N / 84−38−48.4562W
2.12.6 Threshold Elevation: 896.1 ft
2.12.6 Touchdown Zone Elevation: 896.1 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39−2−56.1037N / 84−41−1.7608W
2.12.6 Threshold Elevation: 872.6 ft
2.12.6 Touchdown Zone Elevation: 872.7 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39−4−15.1736N / 84−41−1.4552W
2.12.6 Threshold Elevation: 864.7 ft
2.12.6 Touchdown Zone Elevation: 867.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 09
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 27
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft

2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 36C
2.13.2 Take–off Run Available: 11000 ft
2.13.3 Take–off Distance Available: 11000 ft
2.13.4 Accelerate–Stop Distance Available: 11000 ft
2.13.5 Landing Distance Available: 11000 ft

2.13.1 Designation: 18C
2.13.2 Take–off Run Available: 11000 ft
2.13.3 Take–off Distance Available: 11000 ft
2.13.4 Accelerate–Stop Distance Available: 11000 ft
2.13.5 Landing Distance Available: 11000 ft

2.13.1 Designation: 18L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 36R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 36L
2.13.2 Take–off Run Available: 8000 ft
2.13.3 Take–off Distance Available: 8000 ft
2.13.4 Accelerate–Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 18R
2.13.2 Take–off Run Available: 8000 ft
2.13.3 Take–off Distance Available: 8000 ft
2.13.4 Accelerate–Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P (090−269)
2.14.3 Channel: 119.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−089)
2.14.3 Channel: 123.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P
2.14.3 Channel: 363.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 127.175
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CINCE STAR
2.14.3 Channel: 123.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CINCE STAR
2.14.3 Channel: 254.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (001−180)
2.14.3 Channel: 121
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (181–360)
2.14.3 Channel: 128.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B
2.14.3 Channel: 254.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (ARR)
2.14.3 Channel: 134.375
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS (DEP)
2.14.3 Channel: 135.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (001–180)
2.14.3 Channel: 126.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (181–360)
2.14.3 Channel: 128.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P
2.14.3 Channel: 254.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HARDU STAR (090–269)
2.14.3 Channel: 119.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HARDU STAR (270–089)
2.14.3 Channel: 123.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HARDU STAR
2.14.3 Channel: 363.15

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JAKIE STAR
2.14.3 Channel: 119.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JAKIE STAR
2.14.3 Channel: 254.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 09/27, 18C/36C)
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18L/36R)
2.14.3 Channel: 118.975
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18R/36L)
2.14.3 Channel: 133.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18L/36R)
2.14.3 Channel: 360.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SHELBYVILLE STAR (090−269)
2.14.3 Channel: 119.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SHELBYVILLE STAR (270−089)
2.14.3 Channel: 123.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SHELBYVILLE STAR
2.14.3 Channel: 363.15
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 09. Magnetic variation: 6W
2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39−2−42.9147N / 84−39−2.0835W
2.19.6 Site Elevation: 886.8 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 6W
2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39−2−42.9226N / 84−41−28.2646W
2.19.6 Site Elevation: 873.4 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 6W

2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39–2–46.5213N / 84–39–2.0181W
2.19.6 Site Elevation: 877.4 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 6W
2.19.2 ILS Identification: JDP
2.19.5 Coordinates: 39–2–42.6295N / 84–39–25.1643W
2.19.6 Site Elevation: 866.4 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 6W
2.19.2 ILS Identification: JDP
2.19.5 Coordinates: 39–2–46.9321N / 84–41–55.3805W
2.19.6 Site Elevation: 883.3 ft

2.19.1 ILS Type: DME for runway 18C. Magnetic variation: 6W
2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39–1–54.1461N / 84–40–8.213W
2.19.6 Site Elevation: 843.6 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 6W
2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39–3–42.6496N / 84–40–12.1363W
2.19.6 Site Elevation: 868 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 6W
2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39–1–54.1433N / 84–40–7.5139W
2.19.6 Site Elevation: 838.2 ft

2.19.1 ILS Type: DME for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39–4–3.9117N / 84–40–10.1702W
2.19.6 Site Elevation: 883 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39–2–15.4827N / 84–40–12.493W
2.19.6 Site Elevation: 834.2 ft

2.19.1 ILS Type: Inner Marker for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39–1–53.9241N / 84–40–7.5094W
2.19.6 Site Elevation: 818.2 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39–4–3.6949N / 84–40–6.9785W
2.19.6 Site Elevation: 882.1 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 6W
2.19.2 ILS Identification: CIZ

2.19.5 Coordinates: 39–1–31.5713N / 84–38–45.4036W
2.19.6 Site Elevation: 910.4 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 6W
2.19.2 ILS Identification: CIZ
2.19.5 Coordinates: 39–3–10.8831N / 84–38–42.976W
2.19.6 Site Elevation: 881.2 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 6W
2.19.2 ILS Identification: CIZ
2.19.5 Coordinates: 39–1–31.787N / 84–38–48.5019W
2.19.6 Site Elevation: 899 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39–3–30.8826N / 84–38–51.18W
2.19.6 Site Elevation: 900.1 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39–1–52.8044N / 84–38–43.3385W
2.19.6 Site Elevation: 889.9 ft

2.19.1 ILS Type: Inner Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39–1–33.5681N / 84–38–48.5005W
2.19.6 Site Elevation: 898.7 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39–3–31.4843N / 84–38–47.9544W
2.19.6 Site Elevation: 892.1 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39–2–41.52N / 84–41–5.2W
2.19.6 Site Elevation: 869 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39–4–3.91N / 84–41–6.57W
2.19.6 Site Elevation: 860.5 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39–4–23.57N / 84–41–1.42W
2.19.6 Site Elevation: 856 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39–2–41.27N / 84–41–1.83W

2.19.6 Site Elevation: 871 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39–4–25.0237N / 84–41–4.7924W
2.19.6 Site Elevation: 854.5 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39–3–6.5542N / 84–41–6.7898W
2.19.6 Site Elevation: 865.8 ft

2.19.1 ILS Type: Inner Marker for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39–2–44.323N / 84–41–1.8019W
2.19.6 Site Elevation: 868.2 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39–4–25.5032N / 84–41–1.4165W
2.19.6 Site Elevation: 860.3 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 4W
2.19.2 Navigation Aid Identification: CVG
2.19.5 Coordinates: 39–0–57.5308N / 84–42–12.0468W
2.19.6 Site Elevation: 878 ft

General Remarks:
NOISE SENS AREA N & S OF ARPT; RWY ASGN 2200–0700 BASED ON NOISE ABATEMENT.

SUCCESSIVE OR SIMUL DEP FM RWY 18L, 18C, 36L, 36C & 36R APVD WITH COURSE DVRG BGN NO FURTHER THAN 2 MI FM EOR DUE TO NOISE ABATEMENT RSTR.

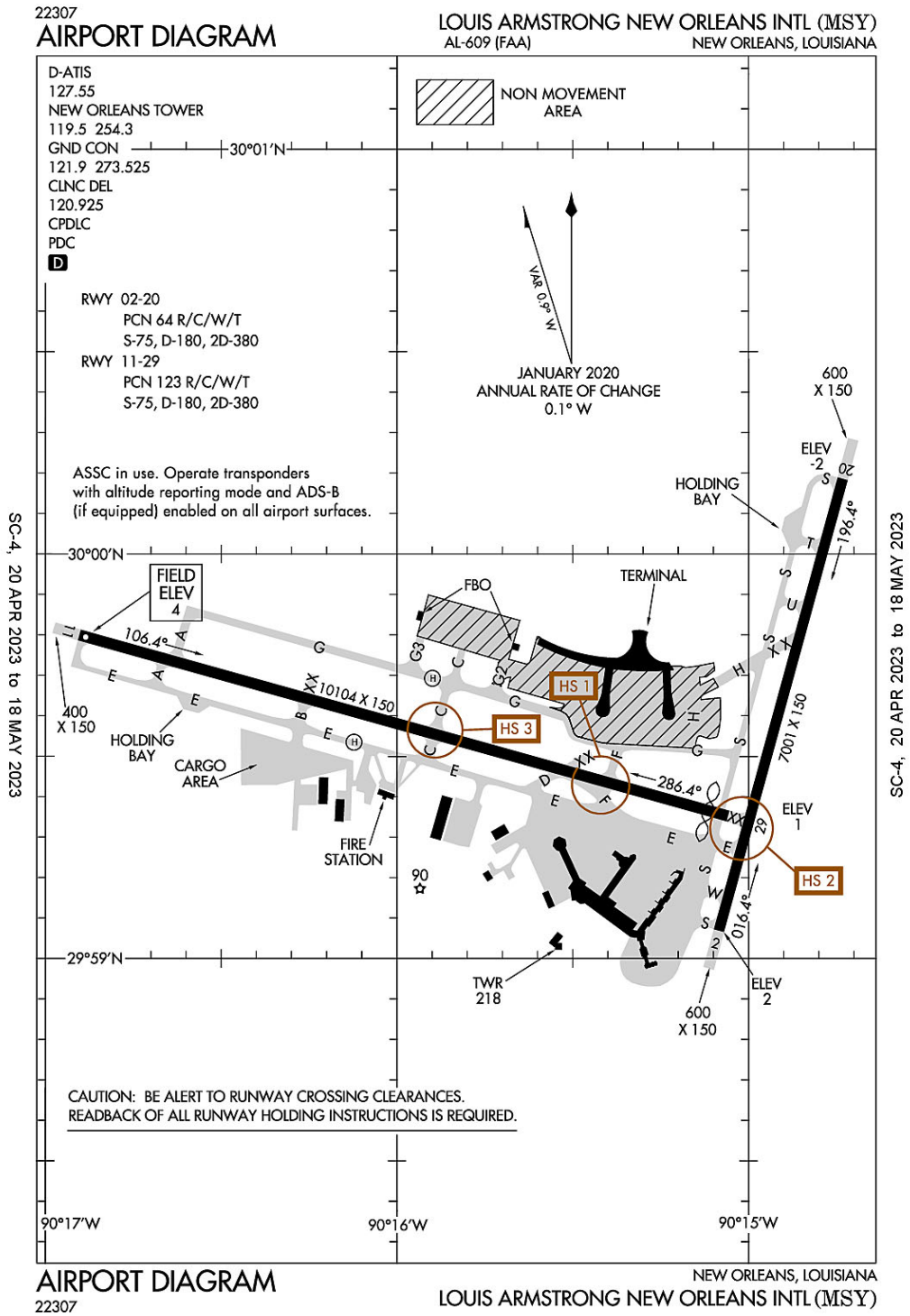
ALL TWYS RSTRD TO 15 MPH OR LESS WITH WINGSPAN 214 FT OR GREATER.

ASSC IN USE: OPR TRANSPONDERS WITH ALT REPORTING MODE & ADS–B IF EQUIPPED ENABLED ON ARPT SFCS.

RAMP CTL: RAMP 1N / 1S TXL & RAMP 2N / 2S TXL – 130.90, RAMP 3 TXL & N TXL – 130.375; DHL RAMP CTL: 129.475; AMZ RAMP CTL: 130.5.

BIRDS ON & INVOF THE ARPT.

New Orleans, Louisiana
Louis Armstrong New Orleans International
ICAO Identifier KMSY



New Orleans, LA
Louis Armstrong New Orleans Intl
ICAO Identifier KMSY

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 29–59–35.8N / 90–15–32.5W
2.2.2 From City: 10 miles W of NEW ORLEANS, LA
2.2.3 Elevation: 3.7 ft
2.2.5 Magnetic Variation: 1W (2020)
2.2.6 Airport Contact: KEVIN DOLLIOLE
PO BOX 20007
NEW ORLEANS, LA 70141 ((504) 303–7652)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 15
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 29–59–4.2055N / 90–15–5.094W
2.12.6 Threshold Elevation: 1.8 ft
2.12.6 Touchdown Zone Elevation: 2.1 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 195
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 30–0–10.9924N / 90–14–43.8363W
2.12.6 Threshold Elevation: –2.4 ft
2.12.6 Touchdown Zone Elevation: –0.6 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 105
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29–59–47.8556N / 90–16–54.2241W
2.12.6 Threshold Elevation: 3.7 ft
2.12.6 Touchdown Zone Elevation: 3.7 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 285
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29−59−21.1654N / 90−15−3.4894W
2.12.6 Threshold Elevation: 1.3 ft
2.12.6 Touchdown Zone Elevation: 2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 02
2.13.2 Take−off Run Available: 7001 ft
2.13.3 Take−off Distance Available: 7001 ft
2.13.4 Accelerate−Stop Distance Available: 7001 ft
2.13.5 Landing Distance Available: 7001 ft

2.13.1 Designation: 20
2.13.2 Take−off Run Available: 7001 ft
2.13.3 Take−off Distance Available: 7001 ft
2.13.4 Accelerate−Stop Distance Available: 7001 ft
2.13.5 Landing Distance Available: 7001 ft

2.13.1 Designation: 11
2.13.2 Take−off Run Available: 10104 ft
2.13.3 Take−off Distance Available: 10104 ft
2.13.4 Accelerate−Stop Distance Available: 9800 ft
2.13.5 Landing Distance Available: 9800 ft

2.13.1 Designation: 29
2.13.2 Take−off Run Available: 10104 ft
2.13.3 Take−off Distance Available: 10104 ft
2.13.4 Accelerate−Stop Distance Available: 10104 ft
2.13.5 Landing Distance Available: 9800 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02
2.14.2 Approach Lighting System: RLLS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 29
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P (WEST)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (EAST)
2.14.3 Channel: 133.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (EAST)
2.14.3 Channel: 290.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (WEST)
2.14.3 Channel: 350.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S
2.14.3 Channel: 269.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: AWDAD STAR (WEST)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: AWDAD STAR (WEST)
2.14.3 Channel: 350.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 120.925
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 120.925
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE & SOUTH)
2.14.3 Channel: 123.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NORTH & EAST)
2.14.3 Channel: 133.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE & SOUTH)
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NORTH & EAST)
2.14.3 Channel: 290.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST)
2.14.3 Channel: 350.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 127.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 273.525
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 119.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 254.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MNSTR STAR (EAST)
2.14.3 Channel: 133.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MNSTR STAR (EAST)
2.14.3 Channel: 290.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OLEDD STAR (WEST)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OLEDD STAR (WEST)
2.14.3 Channel: 350.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RYTHM STAR (WEST/NORTH)
2.14.3 Channel: 125.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RYTHM STAR (EAST/NORTH)
2.14.3 Channel: 133.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RYTHM STAR (EAST/NORTH)
2.14.3 Channel: 290.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RYTHM STAR (WEST/NORTH)
2.14.3 Channel: 350.35
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 02. Magnetic variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 30–0–21.6577N / 90–14–43.2465W
2.19.6 Site Elevation: 1.3 ft

2.19.1 ILS Type: Glide Slope for runway 02. Magnetic variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 29–59–13.6093N / 90–14–58.5588W
2.19.6 Site Elevation: –0.9 ft

2.19.1 ILS Type: Localizer for runway 02. Magnetic variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 30–0–20.5102N / 90–14–40.8078W
2.19.6 Site Elevation: –4.2 ft

2.19.1 ILS Type: DME for runway 20. Magnetic variation: 1W
2.19.2 ILS Identification: ONW
2.19.5 Coordinates: 30–0–21.6577N / 90–14–43.2465W
2.19.6 Site Elevation: 1.3 ft

2.19.1 ILS Type: Localizer for runway 20. Magnetic variation: 1W
2.19.2 ILS Identification: ONW
2.19.5 Coordinates: 29–58–55.148N / 90–15–7.973W
2.19.6 Site Elevation: 2.3 ft

2.19.1 ILS Type: DME for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29–59–17.2127N / 90–14–55.7209W

2.19.6 Site Elevation: 12.4 ft

2.19.1 ILS Type: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−48.6197N / 90−16−39.2497W
2.19.6 Site Elevation: −3.1 ft

2.19.1 ILS Type: Inner Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−50.256N / 90−17−4.1742W
2.19.6 Site Elevation: 4.4 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−19.3211N / 90−14−55.8537W
2.19.6 Site Elevation: −0.5 ft

2.19.1 ILS Type: DME for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−17.2127N / 90−14−55.7209W
2.19.6 Site Elevation: 12.4 ft

2.19.1 ILS Type: Glide Slope for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−27.9656N / 90−15−16.7865W
2.19.6 Site Elevation: 0.1 ft

2.19.1 ILS Type: Localizer for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−50.5168N / 90−17−5.2703W
2.19.6 Site Elevation: 4.4 ft

General Remarks:
180 DEG & LOCKED WHEEL TURNS PROHIBITED ON ASPH SFC ACFT 12500 LBS & OVER.

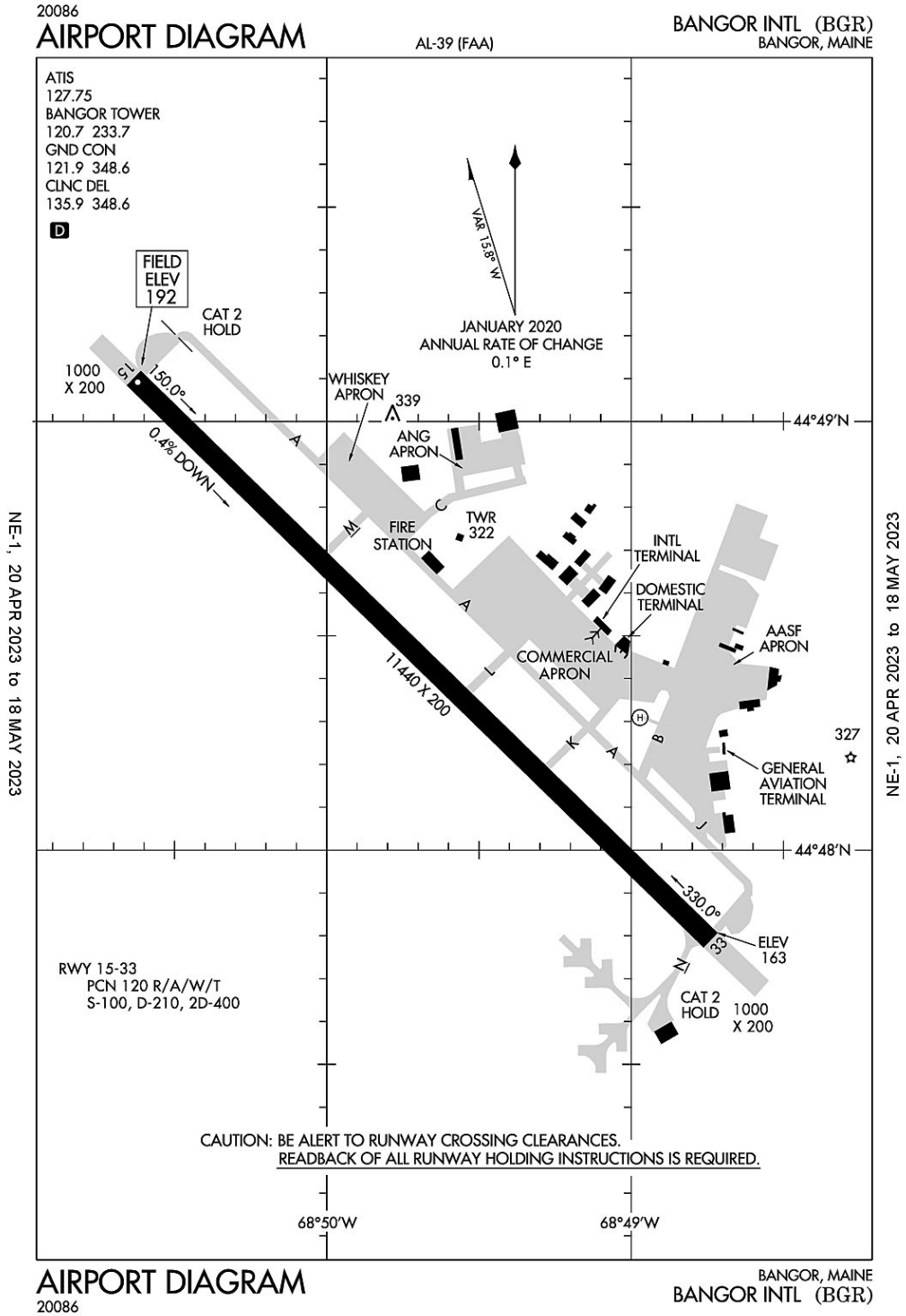
FLOCKS OF BIRDS ON & IN VICINITY OF ARPT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY G BTN RWY 11/29 AND TWY S SFC MOV GUIDANCE AND CTL SYSTEM U/S PERM

RY 11 NOISE SENSITIVE FOR DEP; AVBL FOR OPNL NECESSITY. ALL RYS NOISE SENSITIVE FOR ARR. ARRIVING TURBOJETS MUST MAKE 5 MILE FINAL APCH TO MINIMIZE NOISE.

Bangor, Maine
Bangor International
ICAO Identifier KBGR



Bangor, ME
Bangor Intl
ICAO Identifier KBGR

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 44−48−26.8N / 68−49−41.3W
2.2.2 From City: 3 miles W of BANGOR, ME
2.2.3 Elevation: 192.1 ft
2.2.5 Magnetic Variation: 16W (2020)
2.2.6 Airport Contact: TONY CARUSO
BANGOR INTERNATIONAL ARPT
BANGOR, ME 4401 (207−992−4600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.4 PCN: 120 R/A/W/T
2.12.5 Coordinates: 44−49−6.1369N / 68−50−38.1522W
2.12.6 Threshold Elevation: 192.1 ft
2.12.6 Touchdown Zone Elevation: 192.1 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.4 PCN: 120 R/A/W/T
2.12.5 Coordinates: 44−47−47.4136N / 68−48−44.3618W
2.12.6 Threshold Elevation: 162.9 ft
2.12.6 Touchdown Zone Elevation: 162.9 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 100 ft x 100 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances

2.13.1 Designation: 15
2.13.2 Take–off Run Available: 11440 ft
2.13.3 Take–off Distance Available: 11440 ft
2.13.4 Accelerate–Stop Distance Available: 11440 ft
2.13.5 Landing Distance Available: 11440 ft

2.13.1 Designation: 33
2.13.2 Take–off Run Available: 11440 ft
2.13.3 Take–off Distance Available: 11440 ft
2.13.4 Accelerate–Stop Distance Available: 11440 ft
2.13.5 Landing Distance Available: 11440 ft

2.13.1 Designation: H1
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 15
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 118.925
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 124.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 127.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 135.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 118.925
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 239.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C/S
2.14.3 Channel: 124.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 120.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 233.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NG OPS
2.14.3 Channel: 41.2
2.14.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−47−42.4986N / 68−48−31.8082W
2.19.6 Site Elevation: 166.2 ft

2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−2.1756N / 68−50−22.4761W
2.19.6 Site Elevation: 187.7 ft

2.19.1 ILS Type: Inner Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−12.0633N / 68−50−46.7197W
2.19.6 Site Elevation: 184 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−47−40.3704N / 68−48−34.1931W
2.19.6 Site Elevation: 161.7 ft

2.19.1 ILS Type: Middle Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−23.6858N / 68−51−3.4639W
2.19.6 Site Elevation: 158 ft

2.19.1 ILS Type: DME for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−47−42.4986N / 68−48−31.8082W
2.19.6 Site Elevation: 166.2 ft

2.19.1 ILS Type: Glide Slope for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−47−53.7039N / 68−48−59.7081W
2.19.6 Site Elevation: 148.8 ft

2.19.1 ILS Type: Localizer for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−49−13.6222N / 68−50−48.9786W
2.19.6 Site Elevation: 181.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 19W
2.19.2 Navigation Aid Identification: BGR
2.19.5 Coordinates: 44−50−30.4619N / 68−52−26.2752W
2.19.6 Site Elevation: 360.1 ft

General Remarks:
ANG: PPR VALID +/− 1 HR UNLESS PRIOR CDN. 3 HR OUT CALL, 30 MIN OUT CALL 311.0 TO CFM CSTMS/AG AND TRAN SVC. COMMAND POST C207−404−7788 H24.

FUEL: A++ (MIL).

TWY L CLSD.

ANG: CAUTION: BASH PHASE II PERIOD SEP–NOV, APR–MAY. EXPECT INCREASED BIRD ACTIVITY. CONTACT BASE OPS/COMMAND POST/SOF FOR CURRENT BIRDWATCH COND.

ANG: OPR 1100–1930Z++ MON–FRI, CLSD WKEND AND HOL. PPR RQRD FOR ANG RAMP. CTC AFLD MGMT DSN 698–7232, C207–404–7232 FOR PPR DURG OPR HRS. PRE–COORD ALL TRNSPN RQMNTS AND HAZ CARGO WITH PPR REQ.

ARNG: OPR 1230–2100Z++ MON–FRI EXC HOL. LTD MAINT. J8. PPR MAY–OCT SVC DSN 626–1100.

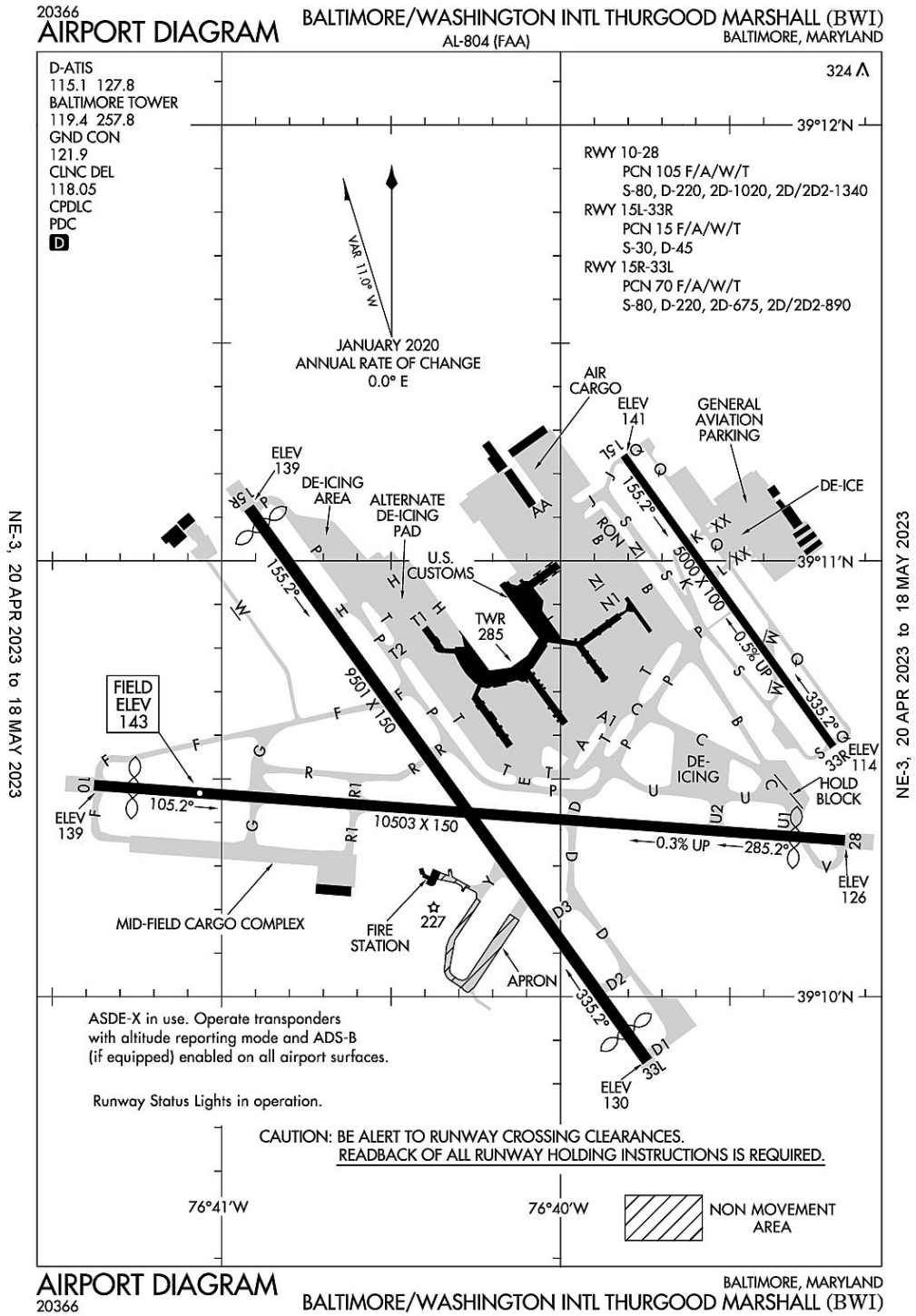
MISC: RWY 15–33 GROOVED.

SVC MIL–FLUID: OFF–BASE CONTRACTED LOX AVBL H24–RQR 24 HR NOTICE.

ANG: TRANSIENT ACFT MAY BE DIVERTED TO CIVILIAN SIDE DURING NON–DUTY HRS & WEEKENDS. FEE REQUIRED; NO ANG TRANSIENT ALERT.

TFC PAT: RWY 33 LEFT TFC, TURBO JET TFC 2000’ MSL UNLESS OTHERWISE INSTR.

Baltimore, Maryland
Baltimore–Washington International Thurgood Marshall
ICAO Identifier KBWI



Baltimore, MD
Baltimore/Washington Intl Thurgood Marshal
ICAO Identifier KBWI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–10–32.622N / 76–40–8.368W
2.2.2 From City: 9 miles S of BALTIMORE, MD
2.2.3 Elevation: 143.4 ft
2.2.5 Magnetic Variation: 11W (2000)
2.2.6 Airport Contact: GREGORY SOLEK
PO BOX 8766
BWI AIRPORT, MD 21240 (410–859–7024)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10503 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T
2.12.5 Coordinates: 39–10–29.0895N / 76–41–22.6248W
2.12.6 Threshold Elevation: 139 ft
2.12.6 Touchdown Zone Elevation: 143.4 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10503 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T
2.12.5 Coordinates: 39–10–21.4754N / 76–39–9.6234W
2.12.6 Threshold Elevation: 126.4 ft
2.12.6 Touchdown Zone Elevation: 142.7 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 324
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39–10–34.4468N / 76–39–11.6307W
2.12.6 Threshold Elevation: 114 ft
2.12.6 Touchdown Zone Elevation: 124.4 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 144
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39−11−14.5431N / 76−39−48.7441W
2.12.6 Threshold Elevation: 141.4 ft
2.12.6 Touchdown Zone Elevation: 141.5 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 324
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39−9−51.1311N / 76−39−44.6134W
2.12.6 Threshold Elevation: 129.6 ft
2.12.6 Touchdown Zone Elevation: 142.7 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 144
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39−11−7.3007N / 76−40−55.1704W
2.12.6 Threshold Elevation: 139 ft
2.12.6 Touchdown Zone Elevation: 138.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10
2.13.2 Take−off Run Available: 10503 ft
2.13.3 Take−off Distance Available: 10503 ft
2.13.4 Accelerate−Stop Distance Available: 10503 ft
2.13.5 Landing Distance Available: 9953 ft

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 10503 ft
2.13.3 Take−off Distance Available: 10503 ft
2.13.4 Accelerate−Stop Distance Available: 10503 ft
2.13.5 Landing Distance Available: 9803 ft

2.13.1 Designation: 33R
2.13.2 Take−off Run Available: 5000 ft
2.13.3 Take−off Distance Available: 5000 ft
2.13.4 Accelerate−Stop Distance Available: 5000 ft
2.13.5 Landing Distance Available: 5000 ft

2.13.1 Designation: 15L
2.13.2 Take−off Run Available: 5000 ft
2.13.3 Take−off Distance Available: 5000 ft
2.13.4 Accelerate−Stop Distance Available: 5000 ft
2.13.5 Landing Distance Available: 5000 ft

2.13.1 Designation: 33L

2.13.2 Take−off Run Available: 9501 ft
2.13.3 Take−off Distance Available: 9501 ft
2.13.4 Accelerate−Stop Distance Available: 8801 ft
2.13.5 Landing Distance Available: 8301 ft

2.13.1 Designation: 15R
2.13.2 Take−off Run Available: 9501 ft
2.13.3 Take−off Distance Available: 9501 ft
2.13.4 Accelerate−Stop Distance Available: 8601 ft
2.13.5 Landing Distance Available: 8301 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: BAL
2.19.5 Coordinates: 39−10−23.557N / 76−41−3.233W
2.19.6 Site Elevation: 137.6 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: BAL
2.19.5 Coordinates: 39−10−20.5919N / 76−38−54.2857W
2.19.6 Site Elevation: 137.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 11W
2.19.2 ILS Identification: OEH
2.19.5 Coordinates: 39–10–18.64N / 76–39–31.024W
2.19.6 Site Elevation: 129.2 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 11W
2.19.2 ILS Identification: OEH
2.19.5 Coordinates: 39–10–29.8183N / 76–41–35.4222W
2.19.6 Site Elevation: 134 ft

2.19.1 ILS Type: Glide Slope for runway 15L. Magnetic variation: 11W
2.19.2 ILS Identification: UQC
2.19.5 Coordinates: 39–11–3.67N / 76–39–44.24W
2.19.6 Site Elevation: 138.1 ft

2.19.1 ILS Type: Localizer for runway 15L. Magnetic variation: 11W
2.19.2 ILS Identification: UQC
2.19.5 Coordinates: 39–10–29.3978N / 76–39–6.9539W
2.19.6 Site Elevation: 94 ft

2.19.1 ILS Type: Glide Slope for runway 33R. Magnetic variation: 11W
2.19.2 ILS Identification: BWI
2.19.5 Coordinates: 39–10–40.05N / 76–39–21.19W
2.19.6 Site Elevation: 110.3 ft

2.19.1 ILS Type: Localizer for runway 33R. Magnetic variation: 11W
2.19.2 ILS Identification: BWI
2.19.5 Coordinates: 39–11–19.7555N / 76–39–53.5728W
2.19.6 Site Elevation: 133 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 11W
2.19.2 ILS Identification: FND
2.19.5 Coordinates: 39–10–53.6029N / 76–40–48.8976W
2.19.6 Site Elevation: 130.2 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 11W
2.19.2 ILS Identification: FND
2.19.5 Coordinates: 39–9–39.0861N / 76–39–33.4607W
2.19.6 Site Elevation: 115.9 ft

2.19.1 ILS Type: Glide Slope for runway 33L. Magnetic variation: 11W
2.19.2 ILS Identification: RUX
2.19.5 Coordinates: 39–10–0.5283N / 76–39–59.734W
2.19.6 Site Elevation: 125.6 ft

2.19.1 ILS Type: Localizer for runway 33L. Magnetic variation: 11W
2.19.2 ILS Identification: RUX
2.19.5 Coordinates: 39–11–12.2145N / 76–40–59.7239W
2.19.6 Site Elevation: 133 ft

General Remarks:
NO APRON PARKING FOR UNSKED ACR.

GENERAL AVIATION ACFT CTC UNICOM PRIOR TO ARRIVING AT GENERAL AVIATION RAMP FOR SECURITY PURPOSES.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALT REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL ARPT SURFACES.

TWY 'A' IS RSTRD TO GROUP IV ACFT WINGSPAN 171 FT OR LESS.

RWY STATUS LGTS IN OPN.

DISTRACTING LGTS (GOLF DRIVING RANGE) RIGHT SIDE EXTDD CNTRLN RWY 33L FM AER TO 1/4 MI FINAL.

ACFT DEPARTING RWY 28 EXP DEP FM TWY U1.

DURING ATC ZERO EVENTS, UNICOM 119.4.

ACFT ON VISUAL APCHS EXPECT TO MAINTAIN 3000 FT UNTIL 10 DME FM BAL VORTAC; DEP ACFT SHOULD EXPECT TURNS BASED ON BALTIMORE DME.

DEER & BIRDS OCNLLY ON & INVOF ARPT.

PRACTICE LNDG & APCH BY TURBO–PWRD ACFT PROHIBITED 2200–0600; PRACTICE LNDG & TKOF BY B–747 ACFT PROHIBITED RWY 15R/33L.

RWY 28 DE–ICE PAD LANE 1 RSTRD TO ACFT WITH WINGSPAN 171 FT OR LESS, LANE 2 RSTRD TO ACFT WITH WINGSPAN 135 FT OR LESS, LANE 3 IS USED BY LARGE ACFT MAX WINGSPAN 215 FT AND WHEN IN USE– LANES 2 AND 4 ARE UNAVBL. LANES 4, 5 & 6 ARE RSTRD TO ACFT WINGSPAN 135 FT OR LESS.

RWY 15R DEICE PAD, POSITION # 1, RSTRD TO ACFT WITH WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS. PSN'S #2 & #3 ARE RSTD TO ACFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS, POSITION #3 IS RSTRD TO ACFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS; POSITION 4 RSTRD TO ACFT WITH WINGSPAN OF 213 FT OR LESS & LENGTH OF 229 FT 2 INCHES OR LESS.

RWY LEN AVBL FOR RWY 28 DEPS FM TWY U1 IS 9802 FT.

MAJOR CONSTR ON ARPT DLY; ACFT MOV & PRKG AREAS SUBJECT TO SHORT NOTICE CHANGE/CLOSURE. FOR CURRENT INFO PHONE BWI OPNS CNTR 410–859–7018.

CONCOURSE A ALT DEICING AREA IS RSTRD TO B737–800 SIZE ACFT WITH WINGLETS OR SMLR ON SPOTS 6, 7 AND 8.

TAXIING PROHIBITED BTN CONCOURSE C & ADJ BLDG STRUCTURE SW OF CONCOURSE C. ACCESS TO GATE C12 MUST BE VIA TWY A.

TWY T BTN TWY H AND TWY E RSTD TO GROUP IV ACFT WITH WINGSPAN LESS THAN 171 FT. TWY T BTN TWY E AND TWY B RSTRD TO GROUP V ACFT WITH WINGSPAN LESS THAN 214 FT; WHEN GROUP V ACFT ARE ON TWY T, TWY A IS RSTRD TO MAX WINGSPANS OF 110 FT.

TWY "S", SOUTH OF TWY "P", RSTRD TO ACFT 60000 LBS & LESS.

TAXILANES 'T–1' & "H" RSTRD TO GROUP III ACFT WITH MAX WINGSPAN OF 118 FEET.

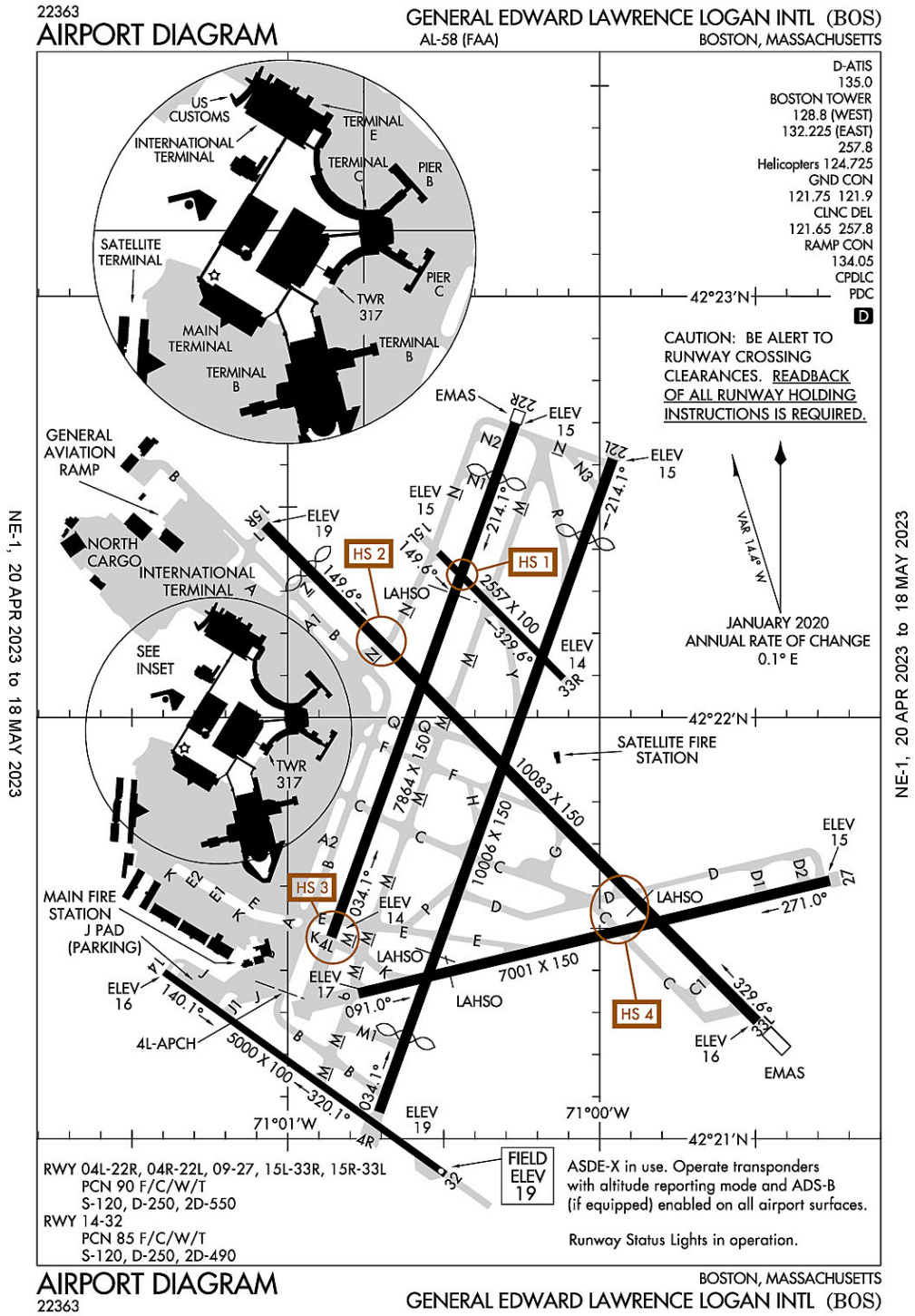
NOISE ABATEMENT PROCEDURES IN EFFECT – RSTRN FOR RWY 15L/33R EXCEPT FOR EMERG OR MERCY FLIGHTS CTC AMGR FOR INFO.

CONT MOWING OPERATIONS ADJ ALL RWYS & TWYS – APR THRU NOV.

UNICOM 119.4.

DUAL PARALLEL TAXILANES HAVE BEEN ADDED TO THE 'D'/'E' ALLEYWAY; TAXILANE 'N' AND TAXILANE 'N1'. TAXILANE 'N' IS DESIGNATED A "GROUP V" TAXILANE WITH MAX WINGSPAN OF 213 FT. TAXILANE 'N1' IS DESIGNATED A "GROUP IV" TAXILANE WITH MAX WINGSPAN OF 170 FT.

Boston, Massachusetts
General Edward Lawrence Logan International
ICAO Identifier KBOS



Boston, MA
General Edward Lawrence Logan Intl
ICAO Identifier KBOS

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42–21–46.6N / 71–0–23W
2.2.2 From City: 1 miles E of BOSTON, MA
2.2.3 Elevation: 19.1 ft
2.2.5 Magnetic Variation: 15W (2020)
2.2.6 Airport Contact: EDWARD FRENI
LOGAN INTERNATIONAL AIRPORT
EAST BOSTON, MA 2128 (617–567–5400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 9/1/1972

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–21–28.7577N / 71–0–51.6187W
2.12.6 Threshold Elevation: 13.9 ft
2.12.6 Touchdown Zone Elevation: 13.9 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–22–41.8759N / 71–0–16.2499W
2.12.6 Threshold Elevation: 14.9 ft
2.12.6 Touchdown Zone Elevation: 15.2 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–21–3.8094N / 71–0–42.458W
2.12.6 Threshold Elevation: 18.8 ft
2.12.6 Touchdown Zone Elevation: 17.6 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–22–36.8399N / 70–59–57.4473W
2.12.6 Threshold Elevation: 14.5 ft
2.12.6 Touchdown Zone Elevation: 15.6 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 77
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–21–20.715N / 71–0–46.4187W
2.12.6 Threshold Elevation: 16.7 ft
2.12.6 Touchdown Zone Elevation: 16.8 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 257
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–21–36.7767N / 70–59–15.7276W
2.12.6 Threshold Elevation: 14.8 ft
2.12.6 Touchdown Zone Elevation: 17.2 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 125
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42–21–23.7521N / 71–1–23.7886W
2.12.6 Threshold Elevation: 16 ft
2.12.6 Touchdown Zone Elevation: 19.1 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 305
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42–20–54.9565N / 71–0–29.6841W
2.12.6 Threshold Elevation: 19.1 ft
2.12.6 Touchdown Zone Elevation: 19.1 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 2557 ft x 100 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42–22–23.5008N / 71–0–31.0047W
2.12.6 Threshold Elevation: 14.8 ft
2.12.6 Touchdown Zone Elevation: 15.8 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 2557 ft x 100 ft

2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−5.5791N / 71−0−7.0008W
2.12.6 Threshold Elevation: 14 ft
2.12.6 Touchdown Zone Elevation: 15.8 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−27.3749N / 71−1−4.4117W
2.12.6 Threshold Elevation: 18.9 ft
2.12.6 Touchdown Zone Elevation: 17 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−16.7428N / 70−59−29.7098W
2.12.6 Threshold Elevation: 15.7 ft
2.12.6 Touchdown Zone Elevation: 16.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 7864 ft
2.13.3 Take−off Distance Available: 7864 ft
2.13.4 Accelerate−Stop Distance Available: 7864 ft
2.13.5 Landing Distance Available: 7864 ft

2.13.1 Designation: 22R
2.13.2 Take−off Run Available: 7864 ft
2.13.3 Take−off Distance Available: 7864 ft
2.13.4 Accelerate−Stop Distance Available: 7864 ft
2.13.5 Landing Distance Available: 7046 ft

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 10006 ft
2.13.3 Take−off Distance Available: 10006 ft
2.13.4 Accelerate−Stop Distance Available: 10006 ft
2.13.5 Landing Distance Available: 8851 ft

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 10006 ft
2.13.3 Take−off Distance Available: 10006 ft
2.13.4 Accelerate−Stop Distance Available: 10006 ft
2.13.5 Landing Distance Available: 8806 ft

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 7001 ft
2.13.3 Take−off Distance Available: 7001 ft
2.13.4 Accelerate−Stop Distance Available: 7001 ft

2.13.5 Landing Distance Available: 7001 ft

2.13.1 Designation: 27
2.13.2 Take–off Run Available: 7001 ft
2.13.3 Take–off Distance Available: 7001 ft
2.13.4 Accelerate–Stop Distance Available: 7001 ft
2.13.5 Landing Distance Available: 7001 ft

2.13.1 Designation: 14
2.13.2 Take–off Run Available: 5000 ft
2.13.3 Take–off Distance Available: 5000 ft
2.13.4 Accelerate–Stop Distance Available: 5000 ft
2.13.5 Landing Distance Available: 5000 ft

2.13.1 Designation: 32
2.13.2 Take–off Run Available: 5000 ft
2.13.3 Take–off Distance Available: 5000 ft
2.13.4 Accelerate–Stop Distance Available: 5000 ft
2.13.5 Landing Distance Available: 5000 ft

2.13.1 Designation: 15L
2.13.2 Take–off Run Available: 2557 ft
2.13.3 Take–off Distance Available: 2557 ft
2.13.4 Accelerate–Stop Distance Available: 2557 ft
2.13.5 Landing Distance Available: 2557 ft

2.13.1 Designation: 33R
2.13.2 Take–off Run Available: 2557 ft
2.13.3 Take–off Distance Available: 2557 ft
2.13.4 Accelerate–Stop Distance Available: 2557 ft
2.13.5 Landing Distance Available: 2557 ft

2.13.1 Designation: 15R
2.13.2 Take–off Run Available: 10083 ft
2.13.3 Take–off Distance Available: 10083 ft
2.13.4 Accelerate–Stop Distance Available: 10083 ft
2.13.5 Landing Distance Available: 9202 ft

2.13.1 Designation: 33L
2.13.2 Take–off Run Available: 10083 ft
2.13.3 Take–off Distance Available: 10083 ft
2.13.4 Accelerate–Stop Distance Available: 10083 ft
2.13.5 Landing Distance Available: 10083 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42–22–57.4695N / 70–59–50.8873W
2.19.6 Site Elevation: 34.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42–21–21.8231N / 71–0–24.5483W
2.19.6 Site Elevation: 10.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42–22–55.9736N / 70–59–48.1884W
2.19.6 Site Elevation: 17.6 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42–22–57.4695N / 70–59–50.8873W
2.19.6 Site Elevation: 34.5 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42–22–17.0026N / 71–0–11.9878W
2.19.6 Site Elevation: 11.1 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42–21–0.0409N / 71–0–44.2844W
2.19.6 Site Elevation: 14.6 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42–21–15.6955N / 71–0–55.7791W
2.19.6 Site Elevation: 30.5 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42–21–31.2953N / 70–59–28.3545W
2.19.6 Site Elevation: 12.3 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42–21–18.4751N / 71–0–59.0489W
2.19.6 Site Elevation: 16.5 ft

2.19.1 ILS Type: DME for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42–21–26.5111N / 70–59–35.0574W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42–22–14.6947N / 71–0–42.4209W
2.19.6 Site Elevation: 11.2 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42–21–26.3592N / 70–59–37.052W
2.19.6 Site Elevation: 11.1 ft

2.19.1 ILS Type: DME for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42–21–26.5111N / 70–59–35.0574W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Glide Slope for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42–21–26.6446N / 70–59–34.7132W
2.19.6 Site Elevation: 11.3 ft

2.19.1 ILS Type: Localizer for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42–22–37.5624N / 71–1–18.0895W
2.19.6 Site Elevation: 15.9 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 16W
2.19.2 Navigation Aid Identification: BOS
2.19.5 Coordinates: 42–21–26.8197N / 70–59–22.3742W
2.19.6 Site Elevation: 18.4 ft

General Remarks:
RWY STATUS LGTS IN OPN.

NOISE SENSITIVE AREA – HELS OPNG WITHIN THE CTZL ARE REQD TO MAINT THE HIGHEST POSSIBLE ALT.

NO RON PARKING FOR NON–TENANT CHARTER AIRCRAFT WITHOUT PRIOR MASSPORT PERMISSION.

PILOTS SHOULD COMPLETE ALL CALCULATIONS PRIOR TO PUSHBACK FROM GATE.

BTN 0000–0600 LCL – RY 15R IS PREFERENTIAL NGT RY FOR TKOF & RY 33L IS PREFERENTIAL NGT RY FOR LNDG.

RWY 14/32 UNIDIRECTIONAL; NO LDGS RWY 14; NO TKOFS RWY 32.

NMRS CRANES ON AND INVOF ARPT.

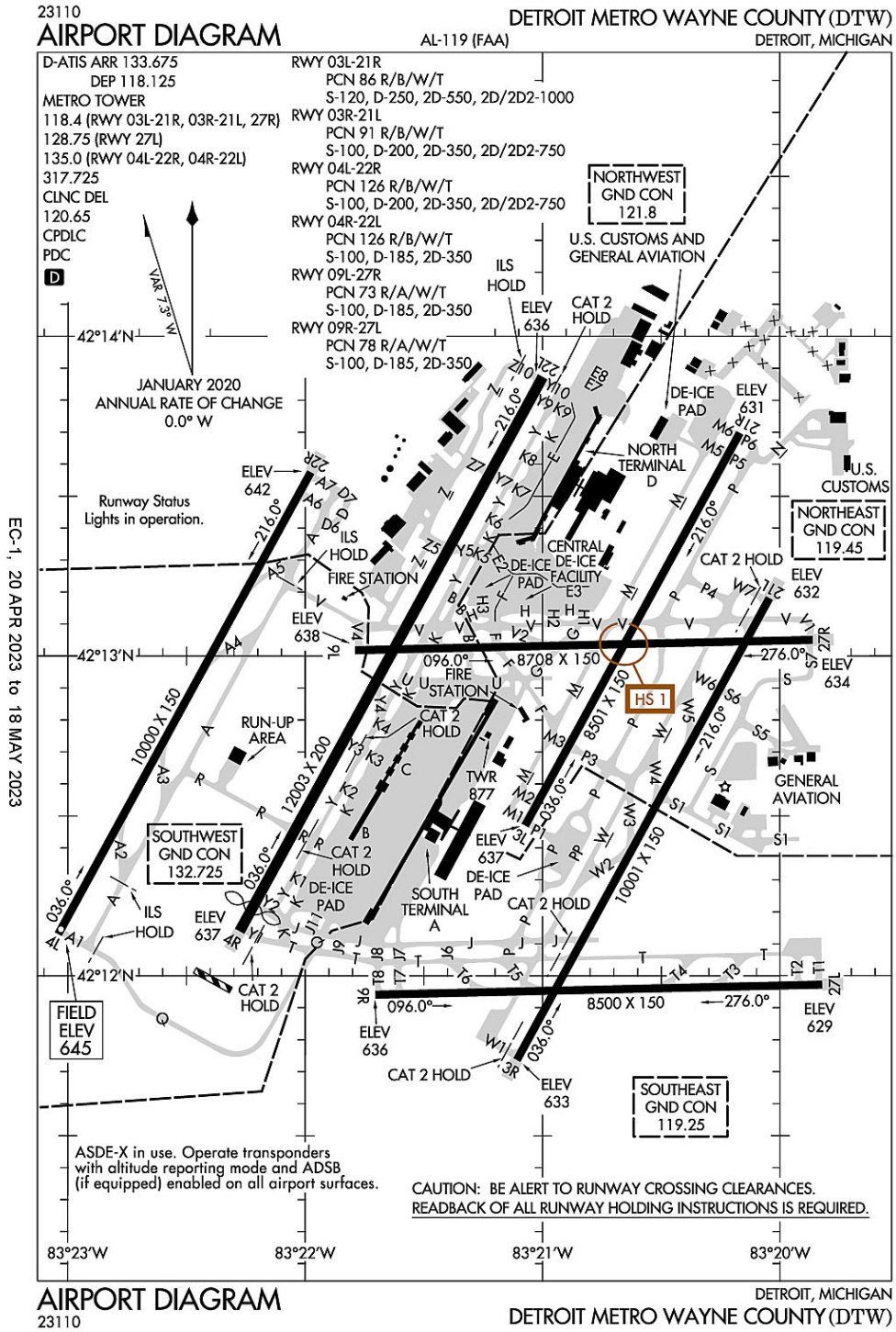
TERMINAL E; NORTH & SOUTH CARGO ARRIVALS CTC MASSPORT GATE CONTROL ON FREQ 131.1 BEFORE ENTERING/DEPARTING RAMP AREA.

FOR NOISE ABATEMENT PROCEDURES CALL 617–561–1636 0900–1700 MON–FRI.

BIRDS ON & INVOF ARPT.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Detroit, Michigan
Detroit Metropolitan Wayne County
ICAO Identifier KDTW



Detroit, MI
Detroit Metropolitan Wayne County
ICAO Identifier KDTW

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42–12–44.752N / 83–21–12.216W
2.2.2 From City: 15 miles S of DETROIT, MI
2.2.3 Elevation: 645.2 ft
2.2.5 Magnetic Variation: 7W (2020)
2.2.6 Airport Contact: CHAD NEWTON
11050 ROGELL DR #602
DETROIT, MI 48242 (734–942–3685)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 8501 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 42–12–28.2081N / 83–21–4.3881W
2.12.6 Threshold Elevation: 636.5 ft
2.12.6 Touchdown Zone Elevation: 636.9 ft

2.12.1 Designation: 21R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 8501 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 42–13–41.8586N / 83–20–10.107W
2.12.6 Threshold Elevation: 631.4 ft
2.12.6 Touchdown Zone Elevation: 634.5 ft

2.12.1 Designation: 03R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42–11–44.2115N / 83–21–6.4868W
2.12.6 Threshold Elevation: 632.8 ft
2.12.6 Touchdown Zone Elevation: 633.1 ft

2.12.1 Designation: 21L
2.12.2 True Bearing: 209
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−13−10.8552N / 83−20−2.6517W
2.12.6 Threshold Elevation: 631.8 ft
2.12.6 Touchdown Zone Elevation: 632.3 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−12−7.8216N / 83−23−2.4003W
2.12.6 Threshold Elevation: 645.2 ft
2.12.6 Touchdown Zone Elevation: 645.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−13−34.4821N / 83−21−58.6115W
2.12.6 Threshold Elevation: 642.1 ft
2.12.6 Touchdown Zone Elevation: 642.1 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 209
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−13−52.3644N / 83−20−59.9655W
2.12.6 Threshold Elevation: 635.8 ft
2.12.6 Touchdown Zone Elevation: 637.4 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−12−8.3656N / 83−22−16.5697W
2.12.6 Threshold Elevation: 637 ft
2.12.6 Touchdown Zone Elevation: 639.5 ft

2.12.1 Designation: 22X
2.12.2 True Bearing: 209
2.12.3 Dimensions: 0 ft x 0 ft
2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 04X
2.12.2 True Bearing: 29
2.12.3 Dimensions: 0 ft x 0 ft

2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−1.0821N / 83−21−47.4044W
2.12.6 Threshold Elevation: 638 ft
2.12.6 Touchdown Zone Elevation: 639.6 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−3.0219N / 83−19−51.7146W
2.12.6 Threshold Elevation: 634.3 ft
2.12.6 Touchdown Zone Elevation: 634.7 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−56.4542N / 83−21−42.2248W
2.12.6 Threshold Elevation: 636 ft
2.12.6 Touchdown Zone Elevation: 636.1 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−58.3372N / 83−19−49.3276W
2.12.6 Threshold Elevation: 629 ft
2.12.6 Touchdown Zone Elevation: 630.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03L
2.13.2 Take−off Run Available: 8501 ft
2.13.3 Take−off Distance Available: 8501 ft
2.13.4 Accelerate−Stop Distance Available: 8501 ft
2.13.5 Landing Distance Available: 8501 ft

2.13.1 Designation: 21R
2.13.2 Take−off Run Available: 8501 ft
2.13.3 Take−off Distance Available: 8501 ft
2.13.4 Accelerate−Stop Distance Available: 8501 ft
2.13.5 Landing Distance Available: 8501 ft

2.13.1 Designation: 03R
2.13.2 Take–off Run Available: 10001 ft
2.13.3 Take–off Distance Available: 10001 ft
2.13.4 Accelerate–Stop Distance Available: 10001 ft
2.13.5 Landing Distance Available: 10001 ft

2.13.1 Designation: 21L
2.13.2 Take–off Run Available: 10001 ft
2.13.3 Take–off Distance Available: 10001 ft
2.13.4 Accelerate–Stop Distance Available: 10001 ft
2.13.5 Landing Distance Available: 10001 ft

2.13.1 Designation: 04L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 22R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 22L
2.13.2 Take–off Run Available: 12003 ft
2.13.3 Take–off Distance Available: 12003 ft
2.13.4 Accelerate–Stop Distance Available: 12003 ft
2.13.5 Landing Distance Available: 12003 ft

2.13.1 Designation: 04R
2.13.2 Take–off Run Available: 12003 ft
2.13.3 Take–off Distance Available: 12003 ft
2.13.4 Accelerate–Stop Distance Available: 12003 ft
2.13.5 Landing Distance Available: 11494 ft

2.13.1 Designation: 22X
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 04X
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 09L
2.13.2 Take–off Run Available: 8708 ft
2.13.3 Take–off Distance Available: 8708 ft

2.13.4 Accelerate–Stop Distance Available: 8618 ft
2.13.5 Landing Distance Available: 8618 ft

2.13.1 Designation: 27R
2.13.2 Take–off Run Available: 8708 ft
2.13.3 Take–off Distance Available: 8708 ft
2.13.4 Accelerate–Stop Distance Available: 8708 ft
2.13.5 Landing Distance Available: 8708 ft

2.13.1 Designation: 09R
2.13.2 Take–off Run Available: 8500 ft
2.13.3 Take–off Distance Available: 8500 ft
2.13.4 Accelerate–Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

2.13.1 Designation: 27L
2.13.2 Take–off Run Available: 8500 ft
2.13.3 Take–off Distance Available: 8500 ft
2.13.4 Accelerate–Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 21R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 03R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 21L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−11−34.2185N / 83−21−9.5792W
2.19.6 Site Elevation: 638.7 ft

2.19.1 ILS Type: Glide Slope for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−11−51.1266N / 83−20−54.979W
2.19.6 Site Elevation: 630.1 ft

2.19.1 ILS Type: Inner Marker for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−11−36.5551N / 83−21−12.137W
2.19.6 Site Elevation: 631.1 ft

2.19.1 ILS Type: Localizer for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−13−20.4082N / 83−19−55.609W
2.19.6 Site Elevation: 634 ft

2.19.1 ILS Type: DME for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42–11–34.2185N / 83–21–9.5792W
2.19.6 Site Elevation: 638.7 ft

2.19.1 ILS Type: Glide Slope for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42–12–58.4945N / 83–20–5.1867W
2.19.6 Site Elevation: 628.9 ft

2.19.1 ILS Type: Localizer for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42–11–34.9459N / 83–21–13.3158W
2.19.6 Site Elevation: 631.1 ft

2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42–13–41.8988N / 83–21–48.7254W
2.19.6 Site Elevation: 649.7 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42–12–18.9498N / 83–23–0.2665W
2.19.6 Site Elevation: 640.6 ft

2.19.1 ILS Type: Inner Marker for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42–12–0.3838N / 83–23–7.8811W
2.19.6 Site Elevation: 645.2 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42–13–43.2279N / 83–21–52.161W
2.19.6 Site Elevation: 642 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42–13–41.8988N / 83–21–48.7254W
2.19.6 Site Elevation: 649.7 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42–13–27.2272N / 83–22–10.0062W
2.19.6 Site Elevation: 636.7 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42–11–59.0707N / 83–23–8.842W
2.19.6 Site Elevation: 644.6 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−13−59.7252N / 83−20−50.3339W
2.19.6 Site Elevation: 645.3 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−12−23.21N / 83−22−11.85W
2.19.6 Site Elevation: 633.1 ft

2.19.1 ILS Type: Inner Marker for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−12−4.547N / 83−22−19.3737W
2.19.6 Site Elevation: 637.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−14−1.3028N / 83−20−53.3772W
2.19.6 Site Elevation: 636.5 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−13−59.7252N / 83−20−50.3339W
2.19.6 Site Elevation: 645.3 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−13−43.8552N / 83−21−12.2894W
2.19.6 Site Elevation: 635.6 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−11−59.5406N / 83−22−23.0644W
2.19.6 Site Elevation: 636.1 ft

2.19.1 ILS Type: DME for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−11−57.1056N / 83−23−6.1821W
2.19.6 Site Elevation: 656.6 ft

2.19.1 ILS Type: Glide Slope for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−12−19.0378N / 83−23−0.5079W
2.19.6 Site Elevation: 640.7 ft

2.19.1 ILS Type: Localizer for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−13−33.4002N / 83−21−50.9401W
2.19.6 Site Elevation: 638.5 ft

2.19.1 ILS Type: DME for runway 22X. Magnetic variation: 7W

2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42–11–57.1056N / 83–23–6.1821W
2.19.6 Site Elevation: 656.6 ft

2.19.1 ILS Type: Glide Slope for runway 22X. Magnetic variation: 7W
2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42–13–27.3517N / 83–22–10.3013W
2.19.6 Site Elevation: 636.8 ft

2.19.1 ILS Type: Localizer for runway 22X. Magnetic variation: 7W
2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42–11–56.2259N / 83–23–1.9618W
2.19.6 Site Elevation: 646.3 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 7W
2.19.2 ILS Identification: DMI
2.19.5 Coordinates: 42–12–58.3552N / 83–20–4.8574W
2.19.6 Site Elevation: 629 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 7W
2.19.2 ILS Identification: DMI
2.19.5 Coordinates: 42–13–0.7158N / 83–22–9.2988W
2.19.6 Site Elevation: 639.3 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA
2.19.5 Coordinates: 42–11–53.6723N / 83–21–55.0763W
2.19.6 Site Elevation: 645.8 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA
2.19.5 Coordinates: 42–11–54.6653N / 83–20–2.5117W
2.19.6 Site Elevation: 625.9 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA
2.19.5 Coordinates: 42–11–56.2294N / 83–21–55.6348W
2.19.6 Site Elevation: 634.1 ft

General Remarks:
BRIGHTLY LIGHTED PARKING LOT 2.6 NM SW OF ARPT.

RWY VISUAL SCREEN 20 FT AGL 1150 FT S. AER 04R

TURNING RESTRICTION TWY B TO TWY K RESTRICTED TO AIRCRAFT WITH WINGSPAN 171 FT OR LESS.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PPR FOR B747–8 OPRS DUE TO CONSTRAINTS ON RWYS, TWYS AND RAMPS CTC AIRFIELD OPRS AT 734–942–3685.

TAXI ON RWY 09L/27R LTD TO: EXITING FM RWY 04R/22L, 03L/21R, & 03R/21L EXC NO TAXI BTN RWY 03L/21R & TWY W; TWO–WAY TAXI BTN TWY Y & TWY M WHEN RED STOP BAR LGTS ARE LGTD AT RWY 04R/22L & 03L/21R OR WHEN BARRICADES ARE USED INSTEAD AT THE RESPECTIVE INTS. TAXI BTN SS–SR OR IN CONDS WITH VIS LESS THAN 1 SM RQRS GREEN CNTRLN LGT TO BE OPR.

BE ALERT BIRDS, WATERFOWL, ON & INVOF ARPT.

RY STATUS LGTS ARE IN OPN.

ACFT WITH WINGSPAN GTR THAN 171 FT ARE RSTRD FM USING TWY P BTN TWY J & TWY P3.

TURNING RSTRD TO WINGSPAN 135 FT OR LESS TWY G NORTH TO TWY V EAST.

ACFT WITH WINGSPAN GTR THAN 171 FT ARE RSTRD FM USING TWY H BTN TWY B & TWY F.

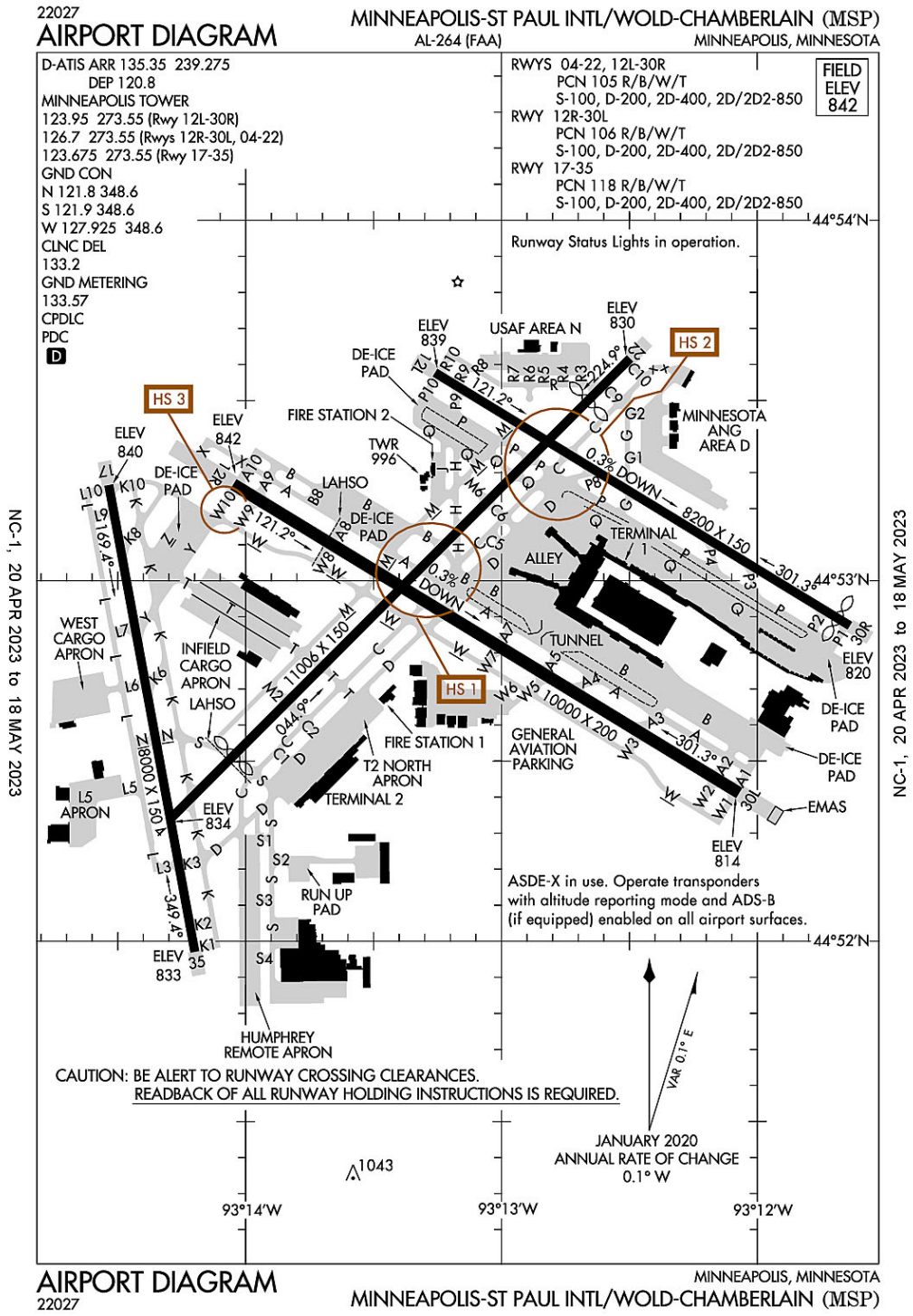
AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT CANNOT PASS EACH OTHER ON TWYS Y AND K BETWEEN TWYS U AND K6 INSUFFICIENT WINGTIP CLEARANCE.

ACFT ON TWY ’F’ AND TWY ’V’ DO NOT BLOCK FIRE STATION EXITS.

DIVERSIONAIR CARRIERS WITHOUT A PRESENCE AT DTW SHOULD CTC AIRFIELD OPRS 734–942–3685 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PROVIDE COMPANY, FLT OPRS, CTC INFO, AIRCRAFT TYPE, PERSONS ONBOARD, INTERNATIONAL OR DOMESTIC, ANY GRND HANDLER AGGREEMENTS IN PLACE.

AUTH TO CONDUCT SIMUL INDEPENDENT INSTR APCHS TO PARL RWY 04L/22R & 03R/21L WO FINAL MONITORS, RWY CNTRLNS SEPARATED BY 8800 FT.

Minneapolis, Minnesota
Minneapolis–St. Paul International (Wold–Chamberlain)
ICAO Identifier KMSP



Minneapolis, MN
Minneapolis–St Paul Intl/Wold–Chamberlain
ICAO Identifier KMSP

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 44–52–55.1N / 93–13–18.4W
2.2.2 From City: 6 miles S of MINNEAPOLIS, MN
2.2.3 Elevation: 841.8 ft
2.2.5 Magnetic Variation: 0E (2015)
2.2.6 Airport Contact: BRIAN RYKS
6040 28TH AVE S
MINNEAPOLIS, MN 55450 (612–726–8100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 44–52–20.158N / 93–14–17.9427W
2.12.6 Threshold Elevation: 833.5 ft
2.12.6 Touchdown Zone Elevation: 831.7 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 44–53–36.9917N / 93–12–29.8434W
2.12.6 Threshold Elevation: 830.3 ft
2.12.6 Touchdown Zone Elevation: 828.3 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 44–52–52.5152N / 93–11–38.296W
2.12.6 Threshold Elevation: 819.5 ft
2.12.6 Touchdown Zone Elevation: 822.4 ft

2.12.1 Designation: 12L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 44−53−34.6287N / 93−13−15.5666W
2.12.6 Threshold Elevation: 838.6 ft
2.12.6 Touchdown Zone Elevation: 840.7 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 44−53−16.0438N / 93−14−2.8731W
2.12.6 Threshold Elevation: 841.8 ft
2.12.6 Touchdown Zone Elevation: 841.8 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 44−52−24.68N / 93−12−4.2689W
2.12.6 Threshold Elevation: 814.4 ft
2.12.6 Touchdown Zone Elevation: 823 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 170
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 118 R/B/W/T
2.12.5 Coordinates: 44−53−15.9127N / 93−14−32.1137W
2.12.6 Threshold Elevation: 840.4 ft
2.12.6 Touchdown Zone Elevation: 840.4 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 350
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 118 R/B/W/T
2.12.5 Coordinates: 44−51−58.2366N / 93−14−11.9205W
2.12.6 Threshold Elevation: 833.3 ft
2.12.6 Touchdown Zone Elevation: 834.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 11006 ft
2.13.3 Take−off Distance Available: 11006 ft
2.13.4 Accelerate−Stop Distance Available: 11006 ft
2.13.5 Landing Distance Available: 9456 ft

2.13.1 Designation: 22
2.13.2 Take−off Run Available: 11006 ft
2.13.3 Take−off Distance Available: 11006 ft

2.13.4 Accelerate−Stop Distance Available: 11006 ft
2.13.5 Landing Distance Available: 10006 ft

2.13.1 Designation: 30R
2.13.2 Take−off Run Available: 8200 ft
2.13.3 Take−off Distance Available: 8200 ft
2.13.4 Accelerate−Stop Distance Available: 8200 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 12L
2.13.2 Take−off Run Available: 8200 ft
2.13.3 Take−off Distance Available: 8200 ft
2.13.4 Accelerate−Stop Distance Available: 7620 ft
2.13.5 Landing Distance Available: 7620 ft

2.13.1 Designation: 12R
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 30L
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30R
2.14.2 Approach Lighting System: MALSF

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 35
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 0E
2.19.2 ILS Identification: APL
2.19.5 Coordinates: 44–53–44.0038N / 93–12–19.9688W
2.19.6 Site Elevation: 832.1 ft

2.19.1 ILS Type: Localizer for runway 22. Magnetic variation: 0E
2.19.2 ILS Identification: SIJ
2.19.5 Coordinates: 44–52–12.792N / 93–14–28.3006W
2.19.6 Site Elevation: 831.4 ft

2.19.1 ILS Type: DME for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44–53–3.674N / 93–11–48.8687W
2.19.6 Site Elevation: 824 ft

2.19.1 ILS Type: Glide Slope for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44–53–31.1153N / 93–12–56.6941W
2.19.6 Site Elevation: 831 ft

2.19.1 ILS Type: Inner Marker for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44–53–39.694N / 93–13–25.8963W
2.19.6 Site Elevation: 845.3 ft

2.19.1 ILS Type: Localizer for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44–52–50.3312N / 93–11–33.2418W
2.19.6 Site Elevation: 813 ft

2.19.1 ILS Type: DME for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44–53–3.674N / 93–11–48.8687W
2.19.6 Site Elevation: 824 ft

2.19.1 ILS Type: Glide Slope for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44–53–3.4471N / 93–11–48.8472W
2.19.6 Site Elevation: 813.2 ft

2.19.1 ILS Type: Localizer for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44–53–40.841N / 93–13–29.92W
2.19.6 Site Elevation: 843.1 ft

2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44–52–26.9244N / 93–12–20.5476W
2.19.6 Site Elevation: 825.4 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44–53–7.28N / 93–13–53.62W
2.19.6 Site Elevation: 835.1 ft

2.19.1 ILS Type: Inner Marker for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44–53–20.8698N / 93–14–12.7019W
2.19.6 Site Elevation: 840 ft

2.19.1 ILS Type: Localizer for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44–52–20.3796N / 93–11–54.3455W
2.19.6 Site Elevation: 812.8 ft

2.19.1 ILS Type: DME for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44–52–26.9244N / 93–12–20.5476W
2.19.6 Site Elevation: 825.4 ft

2.19.1 ILS Type: Glide Slope for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44–52–27.0021N / 93–12–20.2067W
2.19.6 Site Elevation: 812.1 ft

2.19.1 ILS Type: Inner Marker for runway 30L. Magnetic variation: 0E

2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44–52–19.4377N / 93–11–52.1826W
2.19.6 Site Elevation: 808.1 ft

2.19.1 ILS Type: Localizer for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44–53–22.4589N / 93–14–17.688W
2.19.6 Site Elevation: 840 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 0E
2.19.2 ILS Identification: TJZ
2.19.5 Coordinates: 44–53–24.6166N / 93–14–38.0356W
2.19.6 Site Elevation: 832.5 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 0E
2.19.2 ILS Identification: TJZ
2.19.5 Coordinates: 44–51–48.4327N / 93–14–9.3727W
2.19.6 Site Elevation: 830.4 ft

2.19.1 ILS Type: DME for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44–53–24.6166N / 93–14–38.0356W
2.19.6 Site Elevation: 832.5 ft

2.19.1 ILS Type: Glide Slope for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44–52–7.7086N / 93–14–20.1127W
2.19.6 Site Elevation: 829.9 ft

2.19.1 ILS Type: Inner Marker for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44–51–49.9075N / 93–14–9.7433W
2.19.6 Site Elevation: 832.6 ft

2.19.1 ILS Type: Localizer for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44–53–25.7158N / 93–14–34.6512W
2.19.6 Site Elevation: 845.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 2E
2.19.2 Navigation Aid Identification: MSP
2.19.5 Coordinates: 44–53–47.3958N / 93–14–11.5137W
2.19.6 Site Elevation: 831.6 ft

General Remarks:
NOISE ABATEMENT PROCEDURES – 612–726–9411. NO STAGE 1 CAT CIVIL ACFT. NIGHT HR 2230–0600.

TRNG FLTS PROHIBITED. GA FLTS MUST TRMT AT THE FBO OR US CUSTOMS UNLESS APVD BY AMGR.

MILITARY RSTD: NO HAZ CL/DIV1.1 OR 1.2 EXPLOSIVES PERMITTED. LOADING OR UNLOADING OF HAZ CL/DIV 1.3, 1.4, 1.5 0R 1.6 MUST BE APV BY ARPT DRCT PRIOR TO FLT.

ASDE−X IN USE; OPR TRANSPONDERS WITH ALT RPRT MODE & ADS−B ENABLED ON ALL ARPT SFCS.

RWY STATUS LGTS IN OPRN.

TWY J CLSD TO ACFT WINGSPAN MORE THAN 85.5 FT.

133 AW AFLD MGMT − 324.1 REMARKS: CALL LIGHTHOUSE.

UNSKED ACFT AT TRML 2−HUMPHREY REQ TO CTC TRML 2 GATE CONTROL ON 122.95 OR CALL 612−726−5742 PRIOR TO ARR.

SIGNATURE FLIGHT SUPPORT 128.95

MILITARY: ARFC 934 AW OPS 1300−0400Z++ MON−THUR, 1300−2200Z++ FRI, CLSD WKEND AND FEDERAL HOL. UNIT TRNG ASSEMBLY (UTA) WKEND 1330−2200Z++. ALL TRANS ACFT MUST RECEIVE PPR 48 HR PRIOR TO ETA − CTC AIRFIELD MGMT.

COMMUNICATIONS: MINNEAPOLIS AIR RESERVE STATION JOINT COMD POST − 252.1 REMARKS: CALL NORTHSTAR.

REMARKS: AFRC 934 AW CTC PTD VIKING OPS 20 MIN PRIOR LDG.

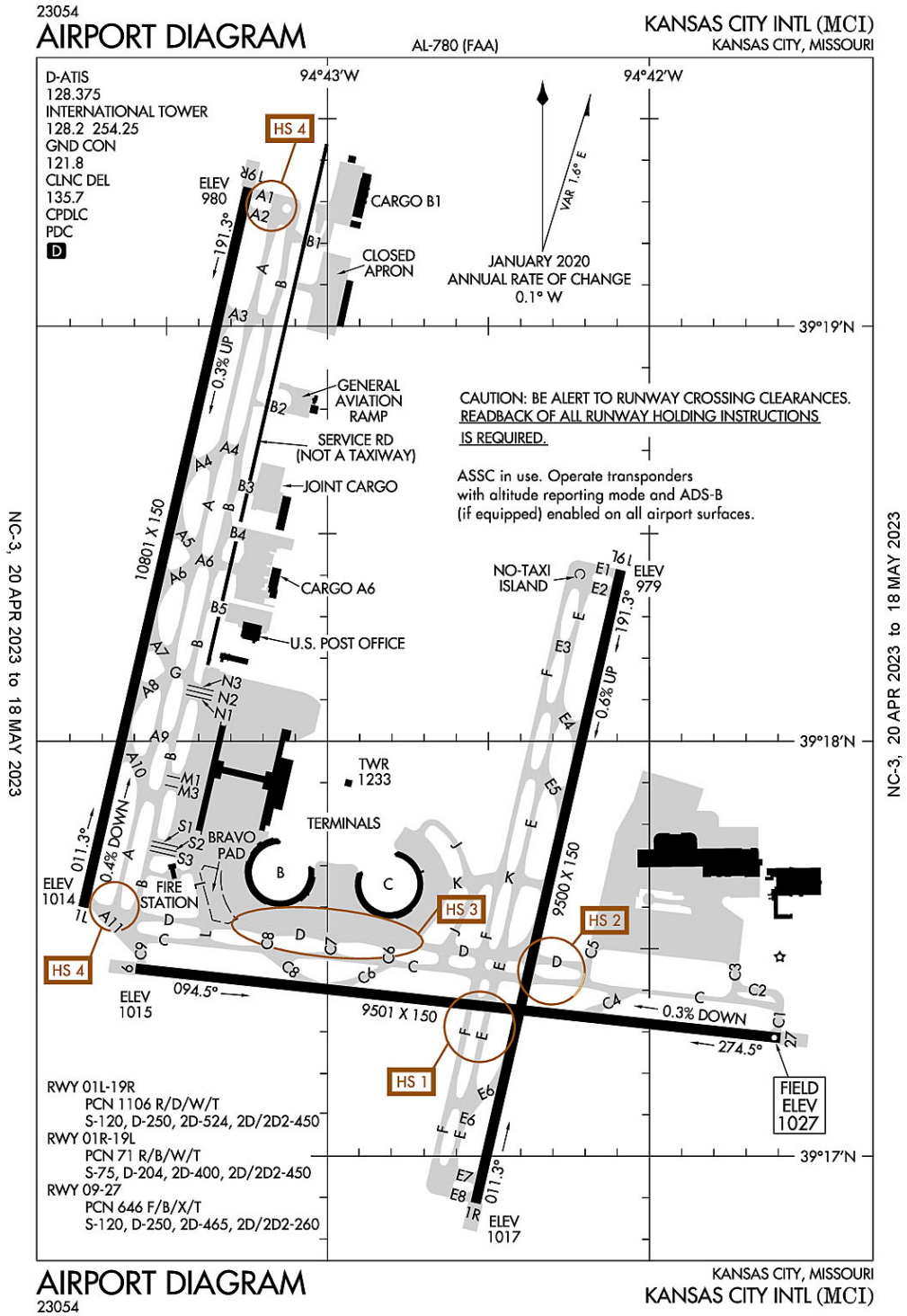
ALL GROUP VI ACFT WITH WINGSPAN GREATER THAN 214 FT PPR REQ PRIOR TO ARR − CTC AIRSIDE OPS 612−726−5111.

934 AW AFLD MGMT − PTD 282.675 REMARKS: CALL VIKING OPS.

BIRDS ON & INVOF ARPT.

ALL GA ACFT WITH LESS THAN 20 PAX THAT NEED TO CLEAR US CUSTOMS SHOULD CTC SIGNATURE FLT SUPPORT 128.95 OR 612−726−5700 PRIOR TO ARR.

Kansas City, Missouri
Kansas City International
ICAO Identifier KMCI



Kansas City, MO
Kansas City Intl
ICAO Identifier KMCI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–17–51.4N / 94–42–50W
2.2.2 From City: 15 miles NW of KANSAS CITY, MO
2.2.3 Elevation: 1026.9 ft
2.2.5 Magnetic Variation: 2E (2015)
2.2.6 Airport Contact: MR. BOB JOHNSON
P.O. BOX 20047
KANSAS CITY, MO 64195 (816–243–5248)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 13
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 39–17–36.0029N / 94–43–45.5433W
2.12.6 Threshold Elevation: 1014.4 ft
2.12.6 Touchdown Zone Elevation: 1014.4 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 193
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 39–19–20.0396N / 94–43–14.7835W
2.12.6 Threshold Elevation: 979.6 ft
2.12.6 Touchdown Zone Elevation: 990.5 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 193
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39–18–24.7369N / 94–42–5.3226W
2.12.6 Threshold Elevation: 978.5 ft
2.12.6 Touchdown Zone Elevation: 995.2 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 13
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39−16−53.2341N / 94−42−32.3935W
2.12.6 Threshold Elevation: 1017.2 ft
2.12.6 Touchdown Zone Elevation: 1017.4 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 276
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 39−17−17.0716N / 94−41−35.5978W
2.12.6 Threshold Elevation: 1026.9 ft
2.12.6 Touchdown Zone Elevation: 1026.9 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 96
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 39−17−27.099N / 94−43−35.7371W
2.12.6 Threshold Elevation: 1015.3 ft
2.12.6 Touchdown Zone Elevation: 1015.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 10801 ft
2.13.3 Take−off Distance Available: 10801 ft
2.13.4 Accelerate−Stop Distance Available: 10801 ft
2.13.5 Landing Distance Available: 10801 ft

2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 10801 ft
2.13.3 Take−off Distance Available: 10801 ft
2.13.4 Accelerate−Stop Distance Available: 10801 ft
2.13.5 Landing Distance Available: 10801 ft

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 9500 ft
2.13.3 Take−off Distance Available: 9500 ft
2.13.4 Accelerate−Stop Distance Available: 9500 ft
2.13.5 Landing Distance Available: 9500 ft

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 9500 ft
2.13.3 Take−off Distance Available: 9500 ft
2.13.4 Accelerate−Stop Distance Available: 9500 ft
2.13.5 Landing Distance Available: 9500 ft

2.13.1 Designation: 27

2.13.2 Take–off Run Available: 9501 ft
2.13.3 Take–off Distance Available: 9501 ft
2.13.4 Accelerate–Stop Distance Available: 9501 ft
2.13.5 Landing Distance Available: 9501 ft

2.13.1 Designation: 09
2.13.2 Take–off Run Available: 9501 ft
2.13.3 Take–off Distance Available: 9501 ft
2.13.4 Accelerate–Stop Distance Available: 9501 ft
2.13.5 Landing Distance Available: 9501 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P
2.14.3 Channel: 120.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRAYMER STAR
2.14.3 Channel: 120.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRAYMER STAR
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 135.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHIEF DP
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHIEF DP
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (EAST OF RWY 01/19)
2.14.3 Channel: 118.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (S OF A LINE FROM LWC ARPT TO 3GV ARPT)
2.14.3 Channel: 118.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST OF RWY 01/19)
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (EAST OF RWY 01–19)
2.14.3 Channel: 294.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (S OF A LINE FROM LWC ARPT TO 3GV ARPT)
2.14.3 Channel: 294.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST OF RWY 01/19)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS
2.14.3 Channel: 128.375
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (010–190)
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (191–009)
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (191–009)
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (010–190)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/S
2.14.3 Channel: 121.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JHAWK STAR
2.14.3 Channel: 120.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JHAWK STAR
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LAKES DP
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LAKES DP
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 128.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 254.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/S
2.14.3 Channel: 125.75

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACER DP (BUTLER/SPRINGFIELD TRANSITION)
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACER DP (DOSOA TRANSITION)
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACER DP (DOSOA TRANSITION)
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RACER DP (BUTLER/SPRINGFIELD TRANSITION)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROYAL DP (ARENZ/BODYN TRANSITION)
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROYAL DP (TONCE TRANSITION)
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROYAL DP (TONCE TRANSITION)
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROYAL DP (ARENZ/BODYN TRANSITION)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TIFTO DP
2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TIFTO DP
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TYGER STAR
2.14.3 Channel: 120.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TYGER STAR
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WILDCAT DP

2.14.3 Channel: 124.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WILDCAT DP
2.14.3 Channel: 284.7
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39–19–30.0746N / 94–43–8.2388W
2.19.6 Site Elevation: 988.8 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39–17–48.2654N / 94–43–47.1321W
2.19.6 Site Elevation: 1002.8 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39–19–31.1181N / 94–43–11.5232W
2.19.6 Site Elevation: 972.3 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39–17–25.7846N / 94–43–51.9618W
2.19.6 Site Elevation: 1026 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39–19–11.0536N / 94–43–22.6772W
2.19.6 Site Elevation: 976.8 ft

2.19.1 ILS Type: Inner Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39–19–30.1157N / 94–43–11.8201W
2.19.6 Site Elevation: 972.4 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39–17–23.1222N / 94–43–49.3464W
2.19.6 Site Elevation: 1017.6 ft

2.19.1 ILS Type: Middle Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39–19–49.2587N / 94–43–6.2032W
2.19.6 Site Elevation: 965.1 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL

2.19.5 Coordinates: 39–18–35.6272N / 94–42–5.4664W
2.19.6 Site Elevation: 960 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39–17–3.1905N / 94–42–24.2292W
2.19.6 Site Elevation: 1010.8 ft

2.19.1 ILS Type: Inner Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39–16–45.0995N / 94–42–34.8009W
2.19.6 Site Elevation: 1011.1 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39–18–34.4013N / 94–42–2.4648W
2.19.6 Site Elevation: 963.3 ft

2.19.1 ILS Type: Middle Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39–16–27.6318N / 94–42–39.9693W
2.19.6 Site Elevation: 994.9 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39–16–43.6236N / 94–42–38.5532W
2.19.6 Site Elevation: 1017.5 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39–18–13.9534N / 94–42–3.2934W
2.19.6 Site Elevation: 977.9 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39–16–43.575N / 94–42–35.2495W
2.19.6 Site Elevation: 1011.8 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39–17–18.904N / 94–41–21.7047W
2.19.6 Site Elevation: 1032.1 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39–17–21.0763N / 94–43–22.949W
2.19.6 Site Elevation: 1010.7 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39–17–16.0109N / 94–41–22.9272W

2.19.6 Site Elevation: 1020.2 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−25.6745N / 94−43−54.5943W
2.19.6 Site Elevation: 1024.3 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−15.7129N / 94−41−50.2717W
2.19.6 Site Elevation: 1021.4 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−28.6283N / 94−43−54.0717W
2.19.6 Site Elevation: 1015.3 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 5E
2.19.2 Navigation Aid Identification: MCI
2.19.5 Coordinates: 39−17−7.02N / 94−44−13.42W
2.19.6 Site Elevation: 1017 ft

General Remarks:
PPR TO PARK AT AIRLINE GATES CTC RESPECTIVE AIRLINE.

WHEN USING HIGH−SPEED EXITS C5 & C6 CONTINUE UNTIL FIRST PARALLEL TWY, THEN USE EXTREME CARE WHEN TURNING IN EXCESS OF 90 DEGREES.

NOISE ABATEMENT PROCEDURES IN EFFECT 2200−0600 WITH LANDING ON RYS 01L & 19L; TAKEOFFS ON RYS 01R & 19R.

PUSHBACK CLNC RQRD AT GATES 43 THRU 57 IN TRML B AND GATES 68 THRU 77 IN TRML C, PUSHBACK FROM THESE GATES ENTERS TWY D.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

DESIGN GROUP V AND VI ACFT RQR AN ARPT ESCORT ON TWY DELTA BTN TWYS JULIET AND LIMA.

NO ACFT PARKING ON POSTAL APRON.

MIL ACFT MAY BE CHARGED RAMP/PARKING FEES.

TWY B1 BTN TWY B AND FEDEX APN COCKPIT OVER CNTRLN STEERING RQRD

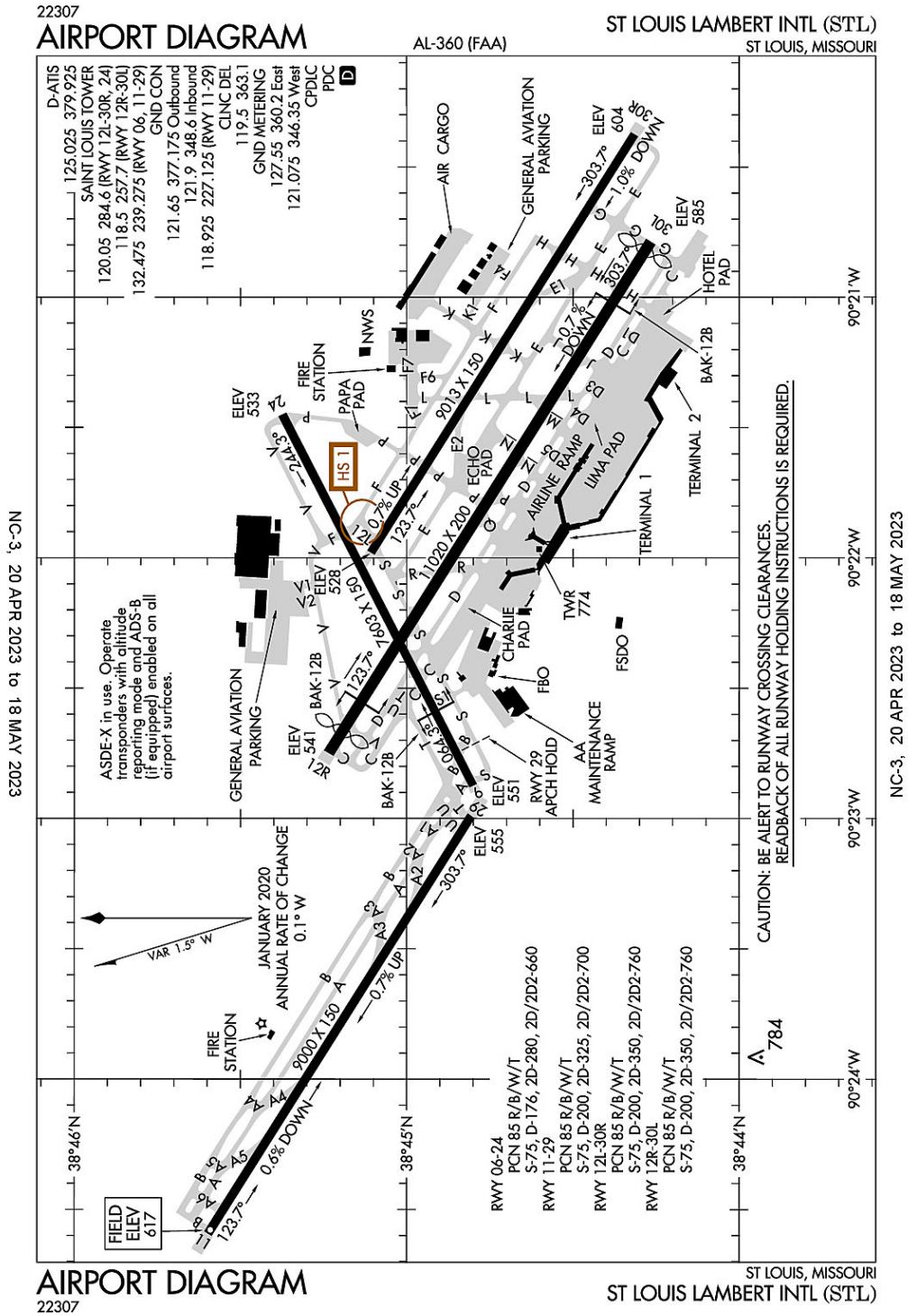
TWY L BTN TWY L1 AND TWY D WINGSPAN RESTRICTION OF 118 FT. TWY C2 BTN TWY C3 AND TWY C1 WINGSPAN RESTRICTION OF 118 FT.

WINDSHEAR ALERT SYSTEM ON ARPT.

WATERFOWL ON AND INVOF ARPT.

FLIGHT NOTIFICATION SVC (ADCUS) AVBL AT GATE 90.

St. Louis, Missouri
Lambert–St. Louis International
ICAO Identifier KSTL



St Louis, MO
Lambert−St Louis Intl
ICAO Identifier KSTL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−44−55.3136N / 90−22−12.0926W
2.2.2 From City: 10 miles NW of ST LOUIS, MO
2.2.3 Elevation: 617.3 ft
2.2.5 Magnetic Variation: 1W (2020)
2.2.6 Airport Contact: MS. RHONDA HAMM−NIEBRUEGGE
BOX 10212
ST LOUIS, MO 63145 (314−426−8000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06
2.12.2 True Bearing: 63
2.12.3 Dimensions: 7603 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−48.0621N / 90−22−52.3834W
2.12.6 Threshold Elevation: 550.6 ft
2.12.6 Touchdown Zone Elevation: 550.9 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 243
2.12.3 Dimensions: 7603 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−22.3829N / 90−21−27.014W
2.12.6 Threshold Elevation: 533.2 ft
2.12.6 Touchdown Zone Elevation: 533.7 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−35.8282N / 90−24−35.5403W
2.12.6 Threshold Elevation: 616.8 ft
2.12.6 Touchdown Zone Elevation: 617.3 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 302
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38–44–48.4521N / 90–22–59.3854W
2.12.6 Threshold Elevation: 555.2 ft
2.12.6 Touchdown Zone Elevation: 579.6 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 302
2.12.3 Dimensions: 9013 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38–44–18.9859N / 90–20–22.5077W
2.12.6 Threshold Elevation: 604.3 ft
2.12.6 Touchdown Zone Elevation: 604.5 ft

2.12.1 Designation: 12L
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9013 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38–45–6.4559N / 90–21–58.7582W
2.12.6 Threshold Elevation: 527.7 ft
2.12.6 Touchdown Zone Elevation: 540.6 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 122
2.12.3 Dimensions: 11020 ft x 200 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38–45–14.0539N / 90–22–44.9719W
2.12.6 Threshold Elevation: 541.3 ft
2.12.6 Touchdown Zone Elevation: 539.7 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 302
2.12.3 Dimensions: 11020 ft x 200 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38–44–16.0145N / 90–20–47.272W
2.12.6 Threshold Elevation: 585.3 ft
2.12.6 Touchdown Zone Elevation: 582.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take–off Run Available: 7603 ft
2.13.3 Take–off Distance Available: 7603 ft
2.13.4 Accelerate–Stop Distance Available: 7323 ft
2.13.5 Landing Distance Available: 7323 ft

2.13.1 Designation: 24
2.13.2 Take–off Run Available: 7603 ft
2.13.3 Take–off Distance Available: 7603 ft

2.13.4 Accelerate–Stop Distance Available: 7603 ft
2.13.5 Landing Distance Available: 7603 ft

2.13.1 Designation: 11
2.13.2 Take–off Run Available: 9000 ft
2.13.3 Take–off Distance Available: 9000 ft
2.13.4 Accelerate–Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 29
2.13.2 Take–off Run Available: 9000 ft
2.13.3 Take–off Distance Available: 9000 ft
2.13.4 Accelerate–Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 30R
2.13.2 Take–off Run Available: 9013 ft
2.13.3 Take–off Distance Available: 9013 ft
2.13.4 Accelerate–Stop Distance Available: 9013 ft
2.13.5 Landing Distance Available: 9013 ft

2.13.1 Designation: 12L
2.13.2 Take–off Run Available: 9013 ft
2.13.3 Take–off Distance Available: 9013 ft
2.13.4 Accelerate–Stop Distance Available: 8956 ft
2.13.5 Landing Distance Available: 8956 ft

2.13.1 Designation: 12R
2.13.2 Take–off Run Available: 11020 ft
2.13.3 Take–off Distance Available: 11020 ft
2.13.4 Accelerate–Stop Distance Available: 11020 ft
2.13.5 Landing Distance Available: 10553 ft

2.13.1 Designation: 30L
2.13.2 Take–off Run Available: 11020 ft
2.13.3 Take–off Distance Available: 11020 ft
2.13.4 Accelerate–Stop Distance Available: 10880 ft
2.13.5 Landing Distance Available: 10679 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 24
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 29
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 12L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06. Magnetic variation: 1W
2.19.2 ILS Identification: JAK
2.19.5 Coordinates: 38–44–40.533N / 90–22–58.4278W
2.19.6 Site Elevation: 555.1 ft

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 1W
2.19.2 ILS Identification: JAK
2.19.5 Coordinates: 38–44–54.582N / 90–22–40.1291W
2.19.6 Site Elevation: 537.6 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 1W
2.19.2 ILS Identification: JAK
2.19.5 Coordinates: 38–45–27.2803N / 90–21–14.821W
2.19.6 Site Elevation: 547.5 ft

2.19.1 ILS Type: DME for runway 24. Magnetic variation: 1W
2.19.2 ILS Identification: STL
2.19.5 Coordinates: 38–44–40.533N / 90–22–58.4278W
2.19.6 Site Elevation: 555.1 ft

2.19.1 ILS Type: Glide Slope for runway 24. Magnetic variation: 1W
2.19.2 ILS Identification: STL
2.19.5 Coordinates: 38–45–13.5951N / 90–21–37.573W
2.19.6 Site Elevation: 528.6 ft

2.19.1 ILS Type: Localizer for runway 24. Magnetic variation: 1W

2.19.2 ILS Identification: STL
2.19.5 Coordinates: 38–44–43.5036N / 90–23–3.7184W
2.19.6 Site Elevation: 545.7 ft

2.19.1 ILS Type: DME for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38–44–36.5929N / 90–22–41.4734W
2.19.6 Site Elevation: 562.6 ft

2.19.1 ILS Type: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38–45–26.0348N / 90–24–25.3788W
2.19.6 Site Elevation: 598.2 ft

2.19.1 ILS Type: Inner Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38–45–40.3474N / 90–24–44.7374W
2.19.6 Site Elevation: 613.3 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38–44–38.7168N / 90–22–39.6283W
2.19.6 Site Elevation: 544.8 ft

2.19.1 ILS Type: DME for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: RQN
2.19.5 Coordinates: 38–45–43.8773N / 90–24–45.2373W
2.19.6 Site Elevation: 628 ft

2.19.1 ILS Type: Glide Slope for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: RQN
2.19.5 Coordinates: 38–44–49.8126N / 90–23–11.853W
2.19.6 Site Elevation: 555.6 ft

2.19.1 ILS Type: Localizer for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: RQN
2.19.5 Coordinates: 38–45–41.3528N / 90–24–46.7635W
2.19.6 Site Elevation: 612.3 ft

2.19.1 ILS Type: DME for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38–44–10.3827N / 90–20–12.0493W
2.19.6 Site Elevation: 614.1 ft

2.19.1 ILS Type: Glide Slope for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38–44–58.2183N / 90–21–50.3412W
2.19.6 Site Elevation: 533.8 ft

2.19.1 ILS Type: Inner Marker for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ

2.19.5 Coordinates: 38–45–11.9417N / 90–22–9.8845W
2.19.6 Site Elevation: 531.1 ft

2.19.1 ILS Type: Localizer for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38–44–13.6664N / 90–20–11.7277W
2.19.6 Site Elevation: 601.7 ft

2.19.1 ILS Type: DME for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38–45–14.1233N / 90–22–7.9077W
2.19.6 Site Elevation: 541 ft

2.19.1 ILS Type: Glide Slope for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38–44–21.9637N / 90–20–38.0149W
2.19.6 Site Elevation: 592.5 ft

2.19.1 ILS Type: Inner Marker for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38–44–14.6573N / 90–20–13.7268W
2.19.6 Site Elevation: 600.9 ft

2.19.1 ILS Type: Localizer for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38–45–12.1188N / 90–22–10.2369W
2.19.6 Site Elevation: 531.7 ft

2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 1W
2.19.2 ILS Identification: LMR
2.19.5 Coordinates: 38–44–7.6656N / 90–20–39.8597W
2.19.6 Site Elevation: 606.5 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 1W
2.19.2 ILS Identification: LMR
2.19.5 Coordinates: 38–45–8.9361N / 90–22–24.8753W
2.19.6 Site Elevation: 532 ft

2.19.1 ILS Type: Localizer for runway 12R. Magnetic variation: 1W
2.19.2 ILS Identification: LMR
2.19.5 Coordinates: 38–44–10.2182N / 90–20–35.5392W
2.19.6 Site Elevation: 595.6 ft

2.19.1 ILS Type: Glide Slope for runway 30L. Magnetic variation: 1W
2.19.2 ILS Identification: BKY
2.19.5 Coordinates: 38–44–28.0656N / 90–21–1.7914W
2.19.6 Site Elevation: 564.5 ft

2.19.1 ILS Type: Localizer for runway 30L. Magnetic variation: 1W
2.19.2 ILS Identification: BKY
2.19.5 Coordinates: 38–45–19.3841N / 90–22–55.7958W

2.19.6 Site Elevation: 550.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 1E
2.19.2 Navigation Aid Identification: STL
2.19.5 Coordinates: 38−51−38.6039N / 90−28−56.456W
2.19.6 Site Elevation: 445.5 ft

General Remarks:
TWY DELTA OR TAXILANE CHARLIE FM TWY SIERRA TO TWY GOLF, B−747S ARE NOT AUTH TO PASS OR BE PASSED BY B767 OR OTR LRGR ACFT OPRG ON THE PARL TWY/TAXILANE.

TWY ALPHA EAST OF TWY TANGO, TWY SIERRA AND RWY 6/24 SOUTH OF TWY BRAVO, NO ACFT OR VEHICLE OPNS WHEN ARRIVING OR DEPG RWY 11 OR ARRIVING RWY 29.

TWY LIMA, NORTH OF RWY 12L/30R, ACFT LRGR THAN A GULFSTREAM VI TAX NBND ARE PROHIBITED FM MAKING A RIGHT TURN EBND ON TWY FOXTROT.

TWY KILO 1 IS UNAVBL TO B−767 OR LRGR ACFT (WINGSPAN 118 FT OR GTR).

WG TIP CLNC WITH GND VEH NOT ADEQUATE ALONG N SIDE OF MAIN TRML APN.

TWY VICTOR 2 IS UNAVBL TO B−767 OR LRGR ACFT (WINGSPAN 118 FT OR GTR).

WAIVER TO CONDUCT SIMULTANEOUS APCHS TO PARALLEL RYS SEPARATED BY 1,300 FT IN EFFECT.

TAXILANE CHARLIE, FM TWY SIERRA TO TWY ROMEO, RSTRD TO B−767 OR SMLR ACFT (156 FT AVBL) WHEN ACFT ARE PARKED IN THE CHARLIE PAD. RSTRN IS FOR TAX ACFT, LRGR ACFT MAY BE TOWED THRU THE AREA.

TWY VICTOR, UNDERLYING THE RWY 12L FNA CRS, IS RSTRD TO ACFT WITH A TAIL HGT OF 25 FT OR LESS (CRJ−700 OR SMLR) WHEN ACFT ARE LNDG ON RWY 12L.

TWY ECHO, BTN TWY PAPA AND TWY NOVEMBER, RSTRD TO B−767 OR SMLR ACFT (WINGSPAN LESS THAN 171 FT) WHEN ACFT ARE PARKED ON THE ECHO PAD.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

A−GEAR: A−G ARE KEPT IN RECESSED POSN TIL REQ FOR USE. TWR MUST BE NOTIFIED AT LEAST 5 SEC PRIOR TO ENGAGEMENT SO THAT CABLE MAY BE RAISED.

TWY PAPA, EAST OF THE PAPA PAD TO TWY FOXTROT, RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 79 FT (CRJ−900 OR SMLR), WHEN ACFT ARE PARKED ON THE PAPA PAD. THIS AREA IS RSTRD TO ALL OPNS WHEN ACFT ARE PERFORMING ENG RUN−UPS IN THE PAPA PAD

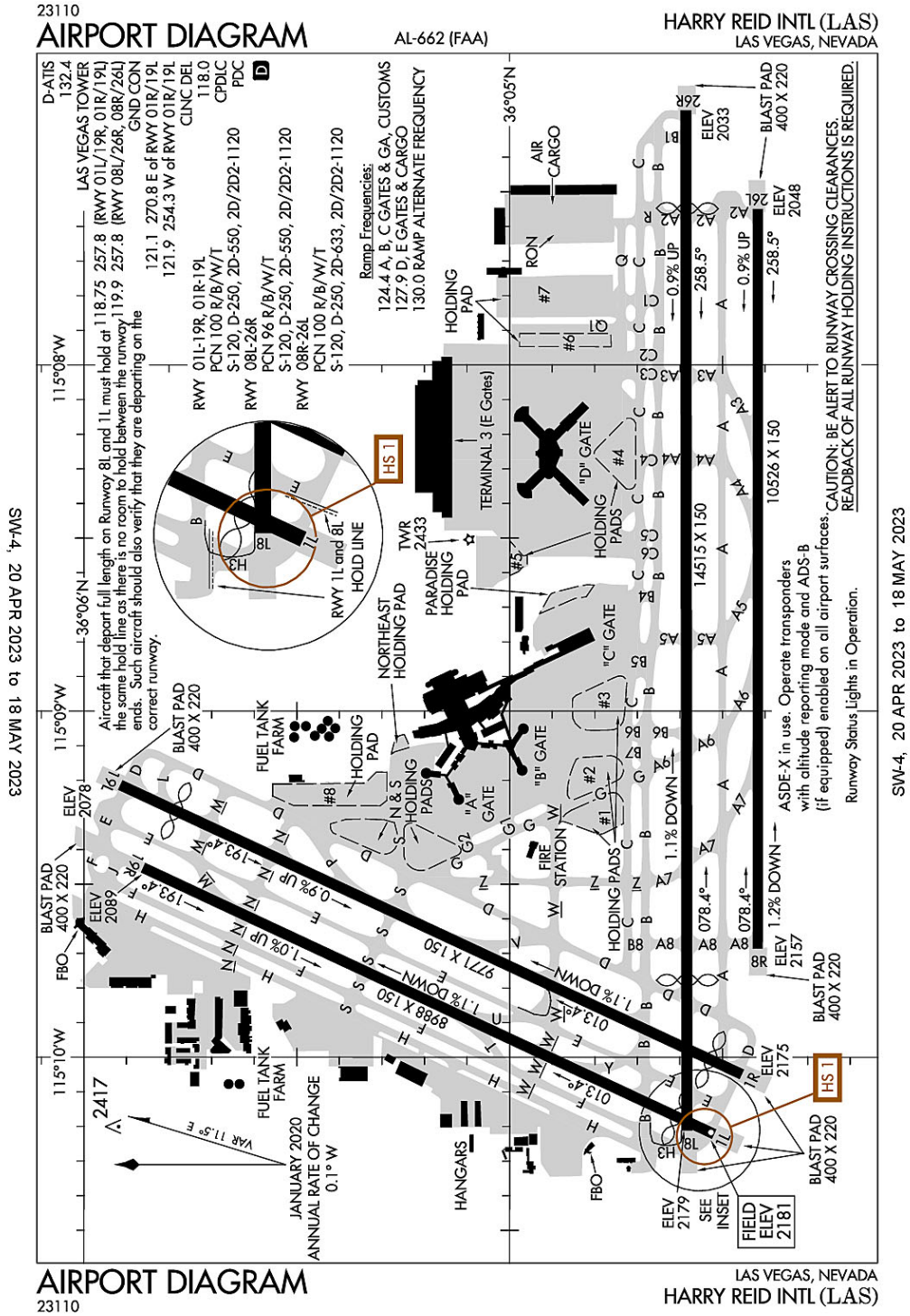
TAXILANE/TWY CHARLIE, EAST OF TWY DELTA ONE TO THE AER 30L, RSTRD TO B−737 OR SMLR ACFT (WINGSPAN LESS THAN 118 FT) WHEN ACFT ARE PARKED ON THE HOTEL PAD.

TAXILANE CHARLIE, FROM TWY PAPA TO TWY QUEBEC, RSTRD TO A B757−300 SERIES OR SMLR.

TAXILANE CHARLIE, FROM TWY PAPA TO TWY DELTA FOUR, RSTRD TO B757−300 SERIES OR SMLR WHEN PASSING BHND ACFT THAT HAVE MADE THE INITIAL 10 FT PUSHBACK.

TWY VICTOR 2, B−737 (WINGSPAN GTR THAN 79 FT BUT LESS THAN 118 FT) MUST PERFORM JUDGMENTAL OVERSTEERING INSTEAD OF COCKPIT OVR CNTRLN STEERING WHEN TAX.

Las Vegas, Nevada
Harry Reid International
ICAO Identifier KLAS



Las Vegas, NV
Mc Carran Intl
ICAO Identifier KLAS

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 36−4−48.158N / 115−9−8.045W
2.2.2 From City: 5 miles S of LAS VEGAS, NV
2.2.3 Elevation: 2181.2 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: ROSEMARY A. VASSILIADIS
5757 WAYNE NEWTON BLVD
LAS VEGAS, NV 89119 (702−261−5211)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 25
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−31.1684N / 115−10−13.3148W
2.12.6 Threshold Elevation: 2181.2 ft
2.12.6 Touchdown Zone Elevation: 2176.1 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 205
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−5−51.7658N / 115−9−27.1851W
2.12.6 Threshold Elevation: 2088.5 ft
2.12.6 Touchdown Zone Elevation: 2116.6 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 25
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−27.264N / 115−10−2.9581W
2.12.6 Threshold Elevation: 2175.1 ft
2.12.6 Touchdown Zone Elevation: 2169.8 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 205
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−5−54.8814N / 115−9−12.8055W
2.12.6 Threshold Elevation: 2077.6 ft
2.12.6 Touchdown Zone Elevation: 2112.1 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 14515 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 36−4−34.9211N / 115−10−12.6889W
2.12.6 Threshold Elevation: 2179.2 ft
2.12.6 Touchdown Zone Elevation: 2154.9 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 14515 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 36−4−35.0633N / 115−7−15.8989W
2.12.6 Threshold Elevation: 2033 ft
2.12.6 Touchdown Zone Elevation: 2067.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10526 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−25.0637N / 115−9−41.1617W
2.12.6 Threshold Elevation: 2156.9 ft
2.12.6 Touchdown Zone Elevation: 2156.9 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10526 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−25.1671N / 115−7−32.9665W
2.12.6 Threshold Elevation: 2048.4 ft
2.12.6 Touchdown Zone Elevation: 2069 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 8988 ft
2.13.3 Take−off Distance Available: 8988 ft
2.13.4 Accelerate−Stop Distance Available: 8988 ft
2.13.5 Landing Distance Available: 8401 ft

2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 8988 ft
2.13.3 Take−off Distance Available: 9400 ft

2.13.4 Accelerate–Stop Distance Available: 8417 ft
2.13.5 Landing Distance Available: 8417 ft

2.13.1 Designation: 01R
2.13.2 Take–off Run Available: 9771 ft
2.13.3 Take–off Distance Available: 10168 ft
2.13.4 Accelerate–Stop Distance Available: 9276 ft
2.13.5 Landing Distance Available: 8785 ft

2.13.1 Designation: 19L
2.13.2 Take–off Run Available: 9771 ft
2.13.3 Take–off Distance Available: 10171 ft
2.13.4 Accelerate–Stop Distance Available: 9686 ft
2.13.5 Landing Distance Available: 8808 ft

2.13.1 Designation: 08L
2.13.2 Take–off Run Available: 14515 ft
2.13.3 Take–off Distance Available: 15099 ft
2.13.4 Accelerate–Stop Distance Available: 14099 ft
2.13.5 Landing Distance Available: 11960 ft

2.13.1 Designation: 26R
2.13.2 Take–off Run Available: 14515 ft
2.13.3 Take–off Distance Available: 15037 ft
2.13.4 Accelerate–Stop Distance Available: 14037 ft
2.13.5 Landing Distance Available: 12638 ft

2.13.1 Designation: 08R
2.13.2 Take–off Run Available: 10526 ft
2.13.3 Take–off Distance Available: 10526 ft
2.13.4 Accelerate–Stop Distance Available: 10526 ft
2.13.5 Landing Distance Available: 10526 ft

2.13.1 Designation: 26L
2.13.2 Take–off Run Available: 10526 ft
2.13.3 Take–off Distance Available: 10526 ft
2.13.4 Accelerate–Stop Distance Available: 10526 ft
2.13.5 Landing Distance Available: 10526 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36–6–1.7244N / 115–9–25.0625W
2.19.6 Site Elevation: 2089.4 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36–4–49.142N / 115–10–6.5151W
2.19.6 Site Elevation: 2158.4 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36–6–0.8259N / 115–9–22W
2.19.6 Site Elevation: 2078.9 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36–4–30.5228N / 115–10–19.1659W
2.19.6 Site Elevation: 2201.5 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36–4–32.0826N / 115–7–46.6759W
2.19.6 Site Elevation: 2046.5 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36–4–34.9114N / 115–10–19.1797W
2.19.6 Site Elevation: 2186.3 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36–4–22.2517N / 115–9–53.2672W
2.19.6 Site Elevation: 2182.2 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36–4–21.996N / 115–7–46.6672W
2.19.6 Site Elevation: 2050.4 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36–4–25.0515N / 115–9–53.3413W
2.19.6 Site Elevation: 2168.2 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E
2.19.2 Navigation Aid Identification: LAS
2.19.5 Coordinates: 36–4–46.9253N / 115–9–35.2725W
2.19.6 Site Elevation: 2136 ft

General Remarks:
ACFT OPER NEAR THE INT OF TWYS S, D, G AND THE N END OF TWY Z SHOULD BE ALERT AS THERE ARE CLOSELY ALIGNED TWY CNTRLN AND RADIUS TURNS.

ACFT WITH WINGSPAN GTR THAN 135 FT PPR FM DEPT OF AVN TO USE TWY H.

ACFT THAT DEP FULL LENGTH OF RWYS 01L AND 08L MUST HOLD AT THE SAME HOLD LINE AS THERE IS NO ROOM TO HOLD BTN THE RWY ENDS AND SUCH ACFT SHOULD VERIFY THAT THEY ARE ON THE CORRECT RWY.

ALL ACFT CTC RAMP CTL ON FREQ 124.4 FOR OPNS AT A, B, AND C GATES; CTC RAMP CTL FREQ 127.9 FOR OPNS AT D & E GATES AND CARGO RAMP PRIOR TO ENTERING RAMP OR PUSHING BACK FM GATE OR PRKG SPOT. RAMP CTL OPR HRS 0530–0100. CTC ATC FM 0100–0530 FOR RAMP OPNS.

WHEN SPL EVENT PRKG PPR PROGRAM NOTAM IS ACTV, TSNT ACFT OPERS NOT PERM BASED NEED TO OBTAIN A PPR NR FM AN FBO FOR EA LDG. PPR APPVL & CONFIRMATION NRS CAN BE OBTAINED FM THE SEL FBO AT 702–261–7775. PPR CONFIRMATION NRS SHOULD BE ENTERED IN THE RMKS SECTION OF EACH FLT PLAN.

GA CUST AND IMG LCTD WEST SIDE OF AFLD BTWN FBO'S.

ACFT TAX WB ON TWY B NEAR TWY E USE CARE NOT TO ENTER THE RWY ON TWY Y, ACFT TAX WB ON TWY W NEAR TWY E USE CARE NOT TO ENTER THE RWY ON TWY U.

ACFT MAY EXPERIENCE REFLECTION OF SUN FM GLASS HOTELS LCTD NW OF ARPT. REFLECTION MAY OCCUR AT VARIOUS ALTS, HDGS, & DSTCS FM ARPT.

ALL NON–STD RWY OPNS PPR FM DEPT OF AVN.

RWY STS LGTS ARE IN OPN.

ACFT DEPG RWY 19R USE MINIMAL PWR UNTIL PASSING THE RWY THLD. RWY 19R THLD HAS STD RWY MARKINGS AND IS 780 FT S OF THE BLAST PAD.

PLA AUZD BTN 0200 & 0600.

LGTD GOLF RANGE 1400 FT S OF RWYS 01L/19R AND 01R/19L.

RWY 08L 589 FT CWY; RWY 26R 645 FT CWY.

GA CBP RSVNS ARE RQRD TO BE SMTD A MIN OF 12 HOURS IN ADVN (OTHER CONDS APPLY). RSVNS MUST BE MADE ONLINE AT WWW.MCCARRAN.COM/GACBP . QNS CAN BE DCTD TO CBP559@MCCARRAN.COM.

LRG NR OF BIRDS AND BATS INVOF OF ARPT BTWN SS AND SR.

TBJT DEPS NOT PMTD ON RWY 01R/19L OR RWY 01L/19R 2000–0800. XCPNS FOR WX OR OPNL NECESSITY.

EXTSV GLDR/SOARING OPNS WKENDS & HOLS; SR–SS; LAS R187/020; ALTS UP TO BUT NOT INCLG FL180. GLDRS RMN CLEAR OF THE TCA BUT OTHERWISE OPR WI THE ENTIRE SW QUAD OF THE TCA VEIL.

(E98) PLUS 64 SHELTERS & 24 SHEDS.

TIEDOWN FEE.

GA PRKG VERY LTD. FOR PRKG AVAILABILITY CTC EITHER FBO (702) 736–1830 OR (702) 739–1100.

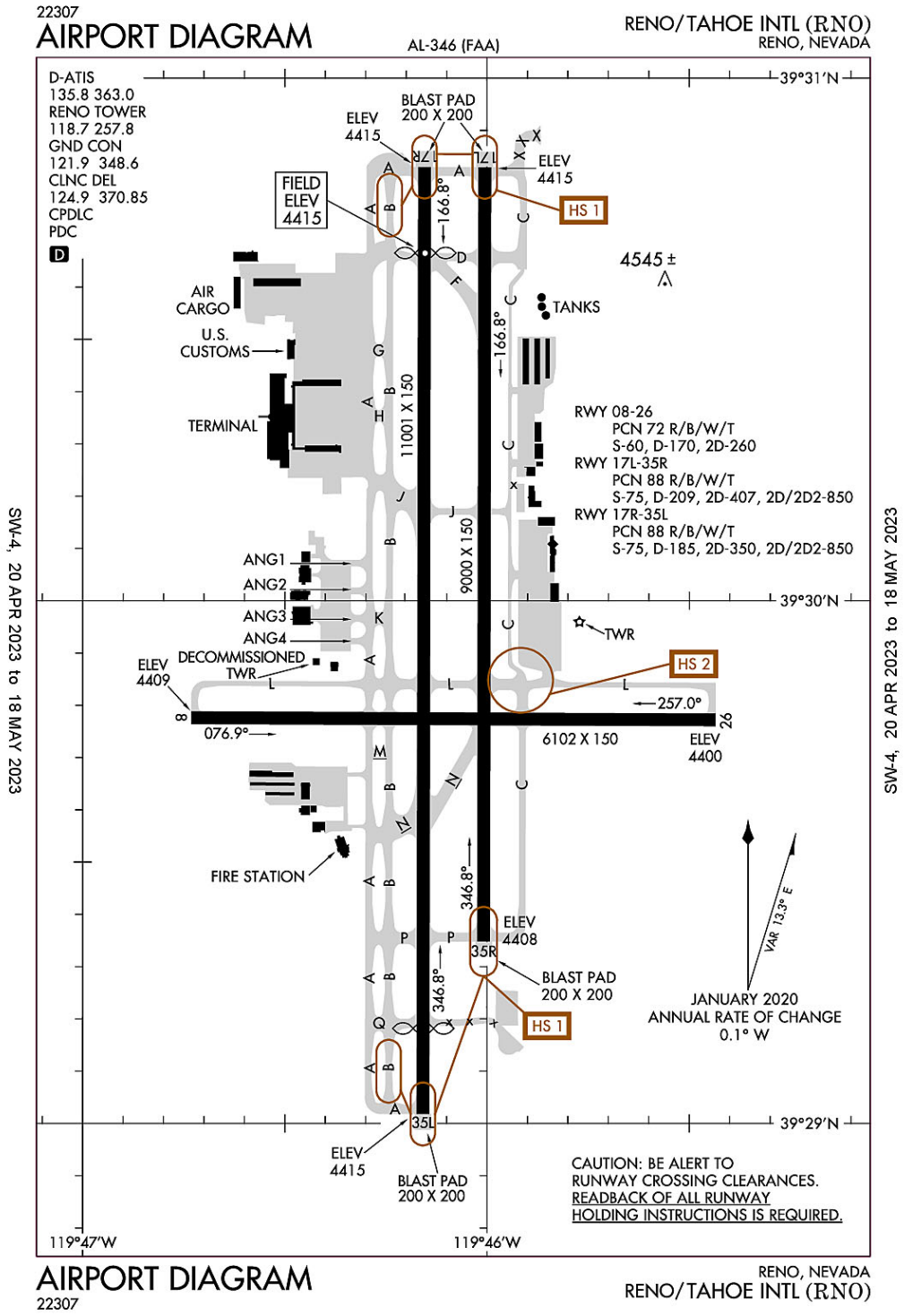
ACFT USING FULL LEN DEP ON RWY 08L USE MINIMAL PWR TIL PASSING THE PWR–UP POINT ON RWY. PWR–UP POINT IS 348 FT EAST OF BLAST PAD AND MKD WITH SIGN AND STD MARKINGS FOR BGNG OF RWY.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

NMRS HOP ON WEST SIDE OF ARPT.

CTN PAJA INVOF ARPT.

Reno, Nevada
Reno/Tahoe International
ICAO Identifier KRNO



Reno, NV
Reno/Tahoe Intl
ICAO Identifier KRNO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–29–56.8N / 119–46–5.2W
2.2.2 From City: 3 miles SE of RENO, NV
2.2.3 Elevation: 4414.9 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: DAREN GRIFFIN, A.A.E.
P O BOX 12490
RENO, NV 89510 (775–328–6550)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 6102 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 39–29–46.6299N / 119–46–43.822W
2.12.6 Threshold Elevation: 4409.2 ft
2.12.6 Touchdown Zone Elevation: 4409.3 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 6102 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 39–29–46.3739N / 119–45–25.9978W
2.12.6 Threshold Elevation: 4399.6 ft
2.12.6 Touchdown Zone Elevation: 4401.8 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39–30–49.8258N / 119–46–0.266W
2.12.6 Threshold Elevation: 4414.8 ft
2.12.6 Touchdown Zone Elevation: 4414.8 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39−29−20.8949N / 119−46−0.4971W
2.12.6 Threshold Elevation: 4408.3 ft
2.12.6 Touchdown Zone Elevation: 4408.3 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11001 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39−30−49.8381N / 119−46−9.1937W
2.12.6 Threshold Elevation: 4414.8 ft
2.12.6 Touchdown Zone Elevation: 4414.8 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11001 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39−29−1.1337N / 119−46−9.475W
2.12.6 Threshold Elevation: 4414.5 ft
2.12.6 Touchdown Zone Elevation: 4410.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 5854 ft
2.13.3 Take−off Distance Available: 5854 ft
2.13.4 Accelerate−Stop Distance Available: 6102 ft
2.13.5 Landing Distance Available: 5854 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 6102 ft
2.13.3 Take−off Distance Available: 6102 ft
2.13.4 Accelerate−Stop Distance Available: 6102 ft
2.13.5 Landing Distance Available: 6102 ft

2.13.1 Designation: 17L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 35R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 17R

2.13.2 Take−off Run Available: 11001 ft
2.13.3 Take−off Distance Available: 11001 ft
2.13.4 Accelerate−Stop Distance Available: 11001 ft
2.13.5 Landing Distance Available: 10001 ft

2.13.1 Designation: 35L
2.13.2 Take−off Run Available: 11001 ft
2.13.3 Take−off Distance Available: 11001 ft
2.13.4 Accelerate−Stop Distance Available: 11001 ft
2.13.5 Landing Distance Available: 10011 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: RNO
2.19.5 Coordinates: 39−28−48.3183N / 119−46−6.1675W
2.19.6 Site Elevation: 4433.4 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: RNO
2.19.5 Coordinates: 39−30−28.0958N / 119−46−5.6655W
2.19.6 Site Elevation: 4408.4 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: RNO
2.19.5 Coordinates: 39–28–49.5342N / 119–46–9.505W
2.19.6 Site Elevation: 4419.7 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: AGY
2.19.5 Coordinates: 39–31–0.2724N / 119–46–12.5676W
2.19.6 Site Elevation: 4434.8 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: AGY
2.19.5 Coordinates: 39–29–19.6039N / 119–46–5.3446W
2.19.6 Site Elevation: 4403.3 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: AGY
2.19.5 Coordinates: 39–30–59.9826N / 119–46–9.1647W
2.19.6 Site Elevation: 4433.1 ft

General Remarks:
ANG: APN HAS 22 FT X 6 FT ACFT GND EQUIP (AGE) BOXES LCTD TO THE EAST OF EA PKG SPOT.

INTENSIVE GLIDER ACTIVITY INVOF ARPT AND SURROUNDING AREAS UP TO 18000 FT.

ACFT OVR 12500 LBS: WRITTEN PPR FOR TRNG FLIGHTS; FOR MORE INFO CTC ARPT OPS 1–775–328–6490.

MIL ACFT: TSNT ACFT EXECUTE STRAIGHT–IN FULL STOP APCH. OVERHEAD PAT NOT AUTH FOR TSNT ACFT.

ANG: PPR 24 HR PN RQRD.

NOISE SENSITIVE AREA ALL QUADS. PILOTS OF TBJT ACFT USE RCMDD NOISE ABATEMENT PROCS; AVBL ON REQ.

TWY C BTN TWY L & TWY D RSTRD TO ACFT 100000 LBS OR LESS.

PRESIDENT / CEO OF RENO–TAHOE ARPT AUTHORITY–DARREN GRIFFIN, CARRIE GUEDEA, AMGR (775) 328–6446.

TWY A BETWEEN NORTH TWY B AND TWY D CLSD TO ACFT WITH WINGSPAN GREATER THAN 149 FT.

MIL ACFT: NOISE ABTMT CRITICAL TERMINATE AFTERBURNER ASAP THEN CLIMB TO 6500 FT MSL ASAP.

TWY M CLSD TO AIR CARRIER ACFT.

ALL COMMERCIAL AIRCRAFT CONTACT GROUND CONTROL FOR ADVISORIES PRIOR TO PUSH BACK ON THE TERMINAL RAMP.

NOISE NOTE CONT: PILOTS OF NON–TBJT ACFT USE BEST ABATEMENT PROCS AND SETTINGS. AVOID AS MUCH AS FEASIBLE FLYING OVER POPULATED AREAS.

TWY J EAST OF RY 16L/34R CLSD TO AIR CARRIER ACFT.

ANG: COMSEC MTRL STORAGE AVBL WITH PRIOR CDN AT 152 CF/SCXS, DSN 830−4798.

24 HRS PPR FOR TSNT ACFT PARKING WITH WINGSPANS GREATER THAN 75 FT.

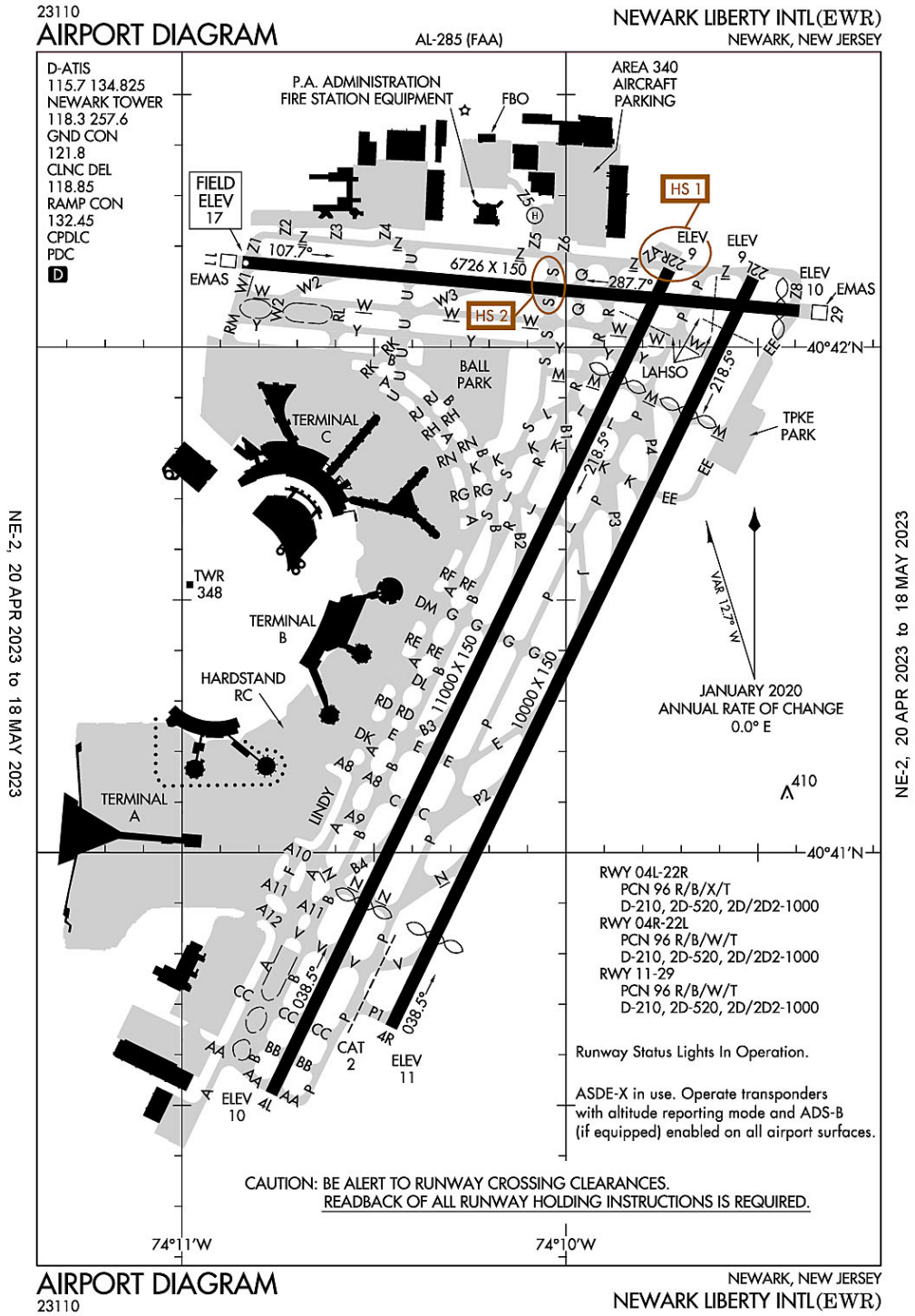
WATERFOWL ALL QUADRANTS ALL SEASONS. CONCENTRATED NW OF RWY 17R AND EAST OF RWY 17L.

GLIDER/SOARING OPER 30−50 MILES SOUTH OF ARPT DURING VFR WEATHER & MOUNTAIN WAVE WIND CONDITIONS 1100 TO SS.

ANG: ANG OPS 1430−2359Z++ MON−FRI EXC HOL AND SKED DAYS OFF; OTR TIMES BY NOTAM; DSN 830−4709 OR C775−788−4709.

TWY C BTN TWY L AND TWY D CLSD TO AIR CARRIER ACFT.

Newark, New Jersey
Newark Liberty International
ICAO Identifier KEWR



Newark, NJ
Newark Liberty Intl
ICAO Identifier KEWR

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 40–41–32.9274N / 74–10–7.2724W

2.2.2 From City: 3 miles S of NEWARK, NJ

2.2.3 Elevation: 17.4 ft

2.2.5 Magnetic Variation: 13W (1985)

2.2.6 Airport Contact: JAMES GILL
BUILDING #1– CONRAD ROAD
NEWARK, NJ 7114 (973–961–6161)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 04L

2.12.2 True Bearing: 26

2.12.3 Dimensions: 11000 ft x 150 ft

2.12.4 PCN: 96 R/B/X/T

2.12.5 Coordinates: 40–40–31.3716N / 74–10–46.0209W

2.12.6 Threshold Elevation: 10.1 ft

2.12.6 Touchdown Zone Elevation: 10.4 ft

2.12.1 Designation: 22R

2.12.2 True Bearing: 206

2.12.3 Dimensions: 11000 ft x 150 ft

2.12.4 PCN: 96 R/B/X/T

2.12.5 Coordinates: 40–42–9.2091N / 74–9–43.8255W

2.12.6 Threshold Elevation: 8.9 ft

2.12.6 Touchdown Zone Elevation: 10.4 ft

2.12.1 Designation: 22L

2.12.2 True Bearing: 206

2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−8.2438N / 74−9−30.7308W
2.12.6 Threshold Elevation: 9.4 ft
2.12.6 Touchdown Zone Elevation: 10.7 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 26
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−40−39.2984N / 74−10−27.2835W
2.12.6 Threshold Elevation: 11.1 ft
2.12.6 Touchdown Zone Elevation: 11.3 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 275
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−4.3181N / 74−9−23.5515W
2.12.6 Threshold Elevation: 9.7 ft
2.12.6 Touchdown Zone Elevation: 9.8 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 95
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−10.0955N / 74−10−50.5467W
2.12.6 Threshold Elevation: 17.4 ft
2.12.6 Touchdown Zone Elevation: 17.4 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 54 ft x 54 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40−42−15.85N / 74−10−5W
2.12.6 Threshold Elevation: 8 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 11000 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 11000 ft

2.13.5 Landing Distance Available: 8460 ft

2.13.1 Designation: 22R
2.13.2 Take–off Run Available: 11000 ft
2.13.3 Take–off Distance Available: 11000 ft
2.13.4 Accelerate–Stop Distance Available: 11000 ft
2.13.5 Landing Distance Available: 9560 ft

2.13.1 Designation: 22L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 8207 ft

2.13.1 Designation: 04R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 8810 ft

2.13.1 Designation: 29
2.13.2 Take–off Run Available: 6726 ft
2.13.3 Take–off Distance Available: 6726 ft
2.13.4 Accelerate–Stop Distance Available: 6726 ft
2.13.5 Landing Distance Available: 6502 ft

2.13.1 Designation: 11
2.13.2 Take–off Run Available: 6726 ft
2.13.3 Take–off Distance Available: 6726 ft
2.13.4 Accelerate–Stop Distance Available: 6726 ft
2.13.5 Landing Distance Available: 6726 ft

2.13.1 Designation: H1
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 04L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 11
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−42−15.686N / 74−9−33.736W
2.19.6 Site Elevation: 34.3 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−41−2.167N / 74−10−22.759W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−42−18.192N / 74−9−38.112W
2.19.6 Site Elevation: 8.7 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 13W

2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40–42–15.686N / 74–9–33.736W
2.19.6 Site Elevation: 34.3 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40–41–47.5592N / 74–9–53.883W
2.19.6 Site Elevation: 8 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40–40–22.392N / 74–10–51.726W
2.19.6 Site Elevation: 9.1 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40–41–43.5471N / 74–9–41.6275W
2.19.6 Site Elevation: 33.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40–40–57.598N / 74–10–9.8776W
2.19.6 Site Elevation: 6 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40–42–15.9432N / 74–9–25.8352W
2.19.6 Site Elevation: 8.1 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40–41–43.5471N / 74–9–41.6275W
2.19.6 Site Elevation: 33.5 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40–41–43.6732N / 74–9–41.7368W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40–40–28.9529N / 74–10–33.8654W
2.19.6 Site Elevation: 9.4 ft

2.19.1 ILS Type: DME for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−9.5406N / 74−10−4.0694W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: Glide Slope for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−10.837N / 74−10−35.03W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−9.2938N / 74−10−4.9852W
2.19.6 Site Elevation: 7 ft

2.19.1 Navigation Aid Type: DME. Magnetic variation:
2.19.2 Navigation Aid Identification: EWR
2.19.5 Coordinates: 40−40−27.64N / 74−10−40.68W
2.19.6 Site Elevation: 9 ft

2.19.1 Navigation Aid Type: FAN MARKER. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: EWR
2.19.5 Coordinates: 40−42−12.1824N / 74−11−14.7211W
2.19.6 Site Elevation: 9.5 ft

General Remarks:
DURNG ATC ZERO EVENTS; ARPT OPS WILL MNT 118.3 AND PROVIDE EMERG NOTIFICATIONS TO ARFF

HIGH VOLUME OF LOW LEVEL HEL TFC ARR AND DEP HELO KEARNY HELI (65NJ) LCTD 3.5 MILES NE OF ARPT.

TWY Z5 CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 118 FT.

TWY Z BTN TWY Z2 & Z4 CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

TWY A11 W OF TWY A ACFT SPD RSTR OF 17 KTS/20 MPH MAX FOR ALL ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

ADG IV ACFT RSTR FM PSG TWY Z3 ON Z

TWY EE BTN RWY 4R−22L AND RWY 11−29 CLSD TO AFCT WITH WINGSPANS IN EXCESS OF 171 FT.

NOISE RSTR CALL 212−435−3784 DRG NML BUS HRS.

FLOCKS OF BIRDS ON & INVOF ARPT.

TWY A BTN TWY AA AND RAMP CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

RWY STATUS LIGHTS IN OPR

TWY Y BTN RM AND TWY U, SPEED RESTRICTION OF 17KT (20MPH).

PARA–SAIL & BANNER TOWING OPS 1000 FT & BLO IN UPPER & LOWER NY BAYS INCLUDING ROCKAWAY INLET INDEF.

CPDLC DEPARTURE CLEARANCE SERVICE AVAILABLE.

ACFT WITH WINGSPANS IN EXCESS OF 118 FEET PROHIBITED FROM TURNING S ON TWY R FROM TWY B1.

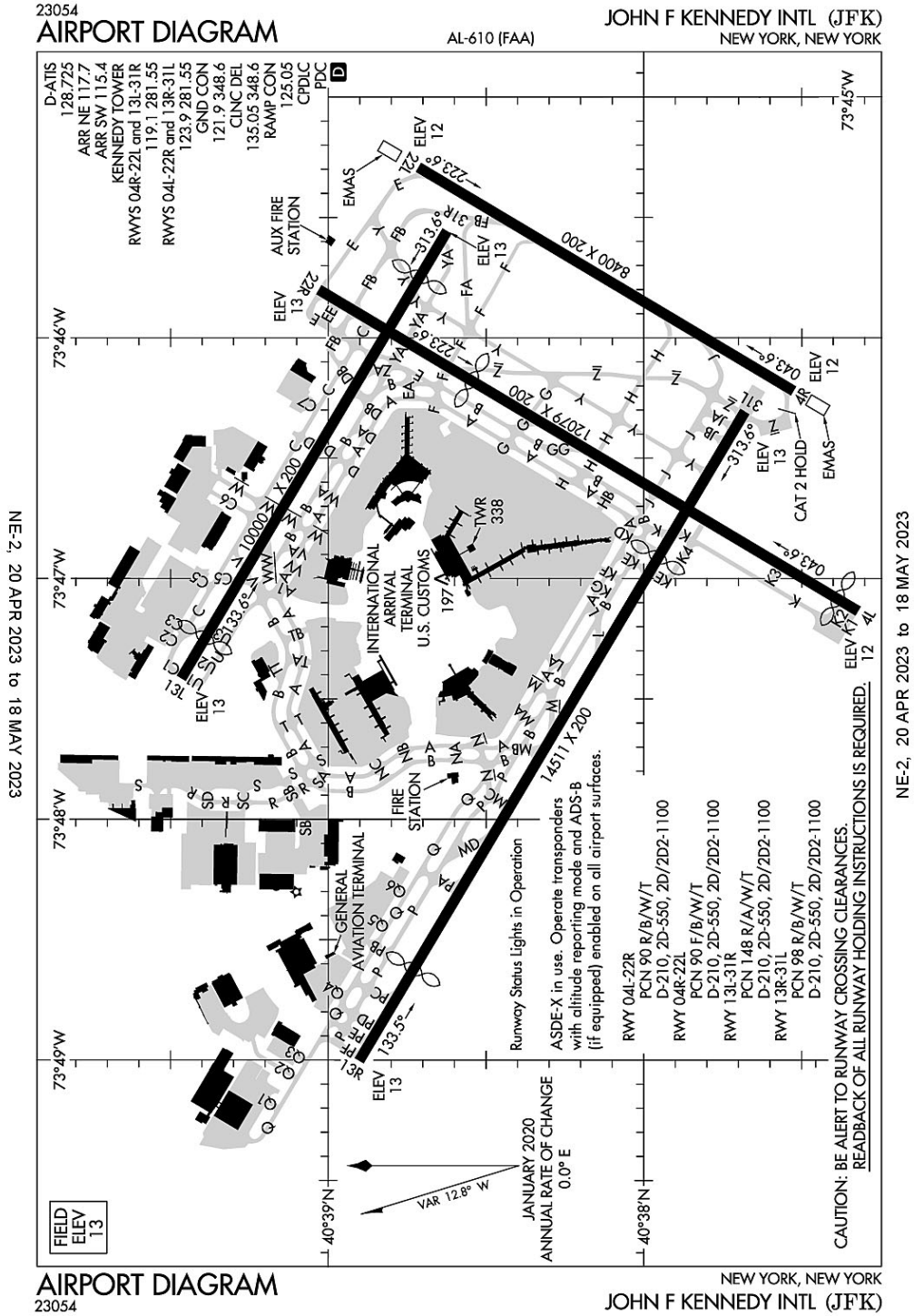
ALL TWYS SURROUNDING ”BALLPARK” PRKG AREA (TWY Y BTN TWY S AND TWY U, TWY S BTN TWY Y AND TWY K, TWAY K BTN TWY S AND TWY B, TWY B BTN TWY K AND TWY U, AND TWY U BTN TWY B AND TWY Y) ACFT SPEED RSTR OF 17KTS/20MPH FOR ALL AFCT WITH WINGSPANS IN EXCESS OF 171 FT.

RWY 4R & 4L DEP USE UPPER ANT FOR ATC COM.

ASDE–X IN USE. OPER TRANSPONDER WITH ALT REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL ARPT SFCS.

TWY Z EAST OF TWY U ACFT SPEED RSTR OF 17 KTS/20 MPH MAX FOR ALL ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

New York, New York
John F. Kennedy International
ICAO Identifier KJFK



New York, NY
John F Kennedy Intl
ICAO Identifier KJFK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40–38–23.74N / 73–46–43.293W
2.2.2 From City: 13 miles SE of NEW YORK, NY
2.2.3 Elevation: 13 ft
2.2.5 Magnetic Variation: 13W (2020)
2.2.6 Airport Contact: TERESA RIZZUTO
BLDG 14
JAMAICA, NY 11430 ((718) 244–3501)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 31
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40–37–19.2759N / 73–47–8.1038W
2.12.6 Threshold Elevation: 11.9 ft
2.12.6 Touchdown Zone Elevation: 12.7 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 211
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40–39–1.8337N / 73–45–47.9596W
2.12.6 Threshold Elevation: 12.7 ft
2.12.6 Touchdown Zone Elevation: 12.7 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 31
2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40–37–31.532N / 73–46–13.25W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 11.9 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 211
2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40−38−42.849N / 73−45−17.509W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 11.9 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 148 R/A/W/T
2.12.5 Coordinates: 40−39−27.9533N / 73−47−24.86W
2.12.6 Threshold Elevation: 13 ft
2.12.6 Touchdown Zone Elevation: 13 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 148 R/A/W/T
2.12.5 Coordinates: 40−38−37.4079N / 73−45−33.3832W
2.12.6 Threshold Elevation: 12.7 ft
2.12.6 Touchdown Zone Elevation: 13 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−38−54.102N / 73−49−0.173W
2.12.6 Threshold Elevation: 12.5 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−37−40.781N / 73−46−18.413W
2.12.6 Threshold Elevation: 12.5 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 11351 ft
2.13.3 Take−off Distance Available: 11351 ft
2.13.4 Accelerate−Stop Distance Available: 11470 ft
2.13.5 Landing Distance Available: 11010 ft

2.13.1 Designation: 22R
2.13.2 Take−off Run Available: 12079 ft
2.13.3 Take−off Distance Available: 12079 ft

2.13.4 Accelerate–Stop Distance Available: 11219 ft
2.13.5 Landing Distance Available: 7794 ft

2.13.1 Designation: 04R
2.13.2 Take–off Run Available: 8400 ft
2.13.3 Take–off Distance Available: 8400 ft
2.13.4 Accelerate–Stop Distance Available: 8400 ft
2.13.5 Landing Distance Available: 8400 ft

2.13.1 Designation: 22L
2.13.2 Take–off Run Available: 8400 ft
2.13.3 Take–off Distance Available: 8400 ft
2.13.4 Accelerate–Stop Distance Available: 8400 ft
2.13.5 Landing Distance Available: 8400 ft

2.13.1 Designation: 13L
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 9093 ft

2.13.1 Designation: 31R
2.13.2 Take–off Run Available: 10000 ft
2.13.3 Take–off Distance Available: 10000 ft
2.13.4 Accelerate–Stop Distance Available: 9513 ft
2.13.5 Landing Distance Available: 8486 ft

2.13.1 Designation: 13R
2.13.2 Take–off Run Available: 14511 ft
2.13.3 Take–off Distance Available: 14511 ft
2.13.4 Accelerate–Stop Distance Available: 14511 ft
2.13.5 Landing Distance Available: 12468 ft

2.13.1 Designation: 31L
2.13.2 Take–off Run Available: 14511 ft
2.13.3 Take–off Distance Available: 14511 ft
2.13.4 Accelerate–Stop Distance Available: 14511 ft
2.13.5 Landing Distance Available: 11248 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: RLLS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−37−43.82N / 73−46−40.578W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−37−31.0826N / 73−46−54.9123W
2.19.6 Site Elevation: 9.3 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−39−6.9659N / 73−45−43.9469W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC
2.19.5 Coordinates: 40−38−53.286N / 73−45−13.179W
2.19.6 Site Elevation: 29 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC
2.19.5 Coordinates: 40−38−21.2797N / 73−46−13.9085W
2.19.6 Site Elevation: 8.6 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC
2.19.5 Coordinates: 40–37–44.5024N / 73–46–43.0851W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40–38–53.286N / 73–45–13.179W
2.19.6 Site Elevation: 29 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40–37–42.1007N / 73–46–11.0535W
2.19.6 Site Elevation: 12.2 ft

2.19.1 ILS Type: Inner Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40–37–23.9N / 73–46–19.1W
2.19.6 Site Elevation: 12 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40–38–51.57N / 73–45–10.684W
2.19.6 Site Elevation: 12.7 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40–37–43.82N / 73–46–40.578W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40–38–32.9529N / 73–45–19.9899W
2.19.6 Site Elevation: 13.1 ft

2.19.1 ILS Type: Inner Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40–38–51.13N / 73–45–11.04W
2.19.6 Site Elevation: 12 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40–37–27.513N / 73–46–16.387W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: DME for runway 13L. Magnetic variation: 13W
2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40–38–33.543N / 73–45–18.237W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Glide Slope for runway 13L. Magnetic variation: 13W

2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40–39–14.7571N / 73–47–4.857W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: Localizer for runway 13L. Magnetic variation: 13W
2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40–38–30.687N / 73–45–18.566W
2.19.6 Site Elevation: 14.1 ft

2.19.1 ILS Type: DME for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40–38–33.543N / 73–45–18.237W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Glide Slope for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40–38–50.3237N / 73–45–51.0237W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: Localizer for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40–39–30.778N / 73–47–31.088W
2.19.6 Site Elevation: 11.9 ft

2.19.1 ILS Type: Glide Slope for runway 31L. Magnetic variation: 13W
2.19.2 ILS Identification: MOH
2.19.5 Coordinates: 40–37–59.8702N / 73–47–9.4213W
2.19.6 Site Elevation: 8.7 ft

2.19.1 ILS Type: Localizer for runway 31L. Magnetic variation: 13W
2.19.2 ILS Identification: MOH
2.19.5 Coordinates: 40–38–59.645N / 73–49–12.422W
2.19.6 Site Elevation: 13.7 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 12W
2.19.2 Navigation Aid Identification: JFK
2.19.5 Coordinates: 40–37–58.4N / 73–46–17W
2.19.6 Site Elevation: 11 ft

General Remarks:
PERIODIC FIRE DEPT TRNG ADJACENT APCH END OF RWYS 22L & 22R.

CONTINUOUS TAXIWAY MAINTENANCE ACTIVITIES AT NUMEROUS LOCATIONS

JFK APN BLDG 73 RAMP CLSD TO ACFT WINGSPAN MORE THAN 171FT EXC UNDER TOW.

RY 13R HAS TWO (2) PAPI – P4L SYSTEMS. (RY 13R) OFFSET PAPI SUPPORTS VOR OR GPS RWY 13R & PARKWAY VISUAL RY 13R.

METERING PROCEDURES IN EFFECT– CONTACT RAMP CONTROL PRIOR TO PUSHBACK 1200Z–1500Z DAILY/1900Z–0300Z DAILY.

NON–STD MARKINGS IN GA APN, CTC FBO ON UNICOM OR 347–566–6620 FOR WING WALKERS.

TWY 'H' CL LGTS BTN TWY 'A' & RY 4L/22R OTS.

TWY Q3 CNTRLN LGTS OTS.

ACFT ARE NOT PMTD TO STOP ON EITHER TWY A OR B BRIDGES.

CONVERGING OPNS ON RYS 13R AND 22L CONDUCTED VIA ARRIVAL DISTANCE WINDOW.

PARA–SAIL & BANNER TOWING OPNS 1000 FT & BLO IN UPPER & LOWER NEW YORK BAYS INCLUDING ROCKAWAY INLET INDEFLY.

FLOCKS OF BIRDS ON & INVOF ARPT.

NON–STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 393 FT IN LENGTH BY 226 FT IN WIDTH LCTD AT THE DER 4R.

NON–STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 405 FT IN LENGTH BY 226 FT IN WIDTH LCTD AT THE DER 22L.

A380 AND B747–800 ACFT TAX SPD RESTRICTED TO MAX 17KTS/20MPH ON ALL TWYS.

GAT HELIPAD NON–STANDARD MARKINGS & LIGHTING.

HIGH VOLUME OF LOW LEVEL VFR TRAFFIC, 500 FT AND BLO, ALONG SHORELINE SOUTH OF JFK.

SPECIAL AIR TFC RULES–PART 93 HIGH DENSITY ARPT. PROR RESERVATION REQUIRED. SEE AERONAUTICAL INFORMATION MANUAL.

TWY 'H' CL LGTS BTN TERMINAL 4 RAMP AND TWY A OTS.

RY 31R HOLDING POSITION MARKINGS AT RY 4L/22R 'SE' SIDE OBSC.

TWY NB CLSD TO SB TURNS AT TWY A.

UFN TWY 'D' BTN TWY 'C' AND HANGAR 7 CLOSED.

OBST BLDG LGT OTS 6.3 NM ESE JFK 222 FT MSL (220 FT AGL).

FOR NOISE ABATEMENT RSTRNS CALL 212–435–3782 DURG NML BUS HRS.

OBST PARKED ACFT (ASN 2020–AEA–1302–NRA) 403933 N0734749W (1.4NM NW JFK) 74 (64FT AGL) U/S 1200–0100 DLY.

RWY 31R 1000 FT DIST REMAINING SIGN MISG.

RWY STATUS LGTS IN OPS.

RLLS RY 13L USES 1000 FT LGT STN OF THE ALS ONLY WITH CRI VOR APCHS & IS ANGLED TOWARD AQUEDUCT; ALSO 5 SFL FM 1200–2000 FT & A 5 SFL GROUPING APROXLY 1 MI FM RY +1 ADJ FORMING APCH. APCH GATE ANGLED 35 DEGS S OF RY 13L CNTRLN DESIGNED TO PRVD EARLIER IDENT OF RY ENVI.

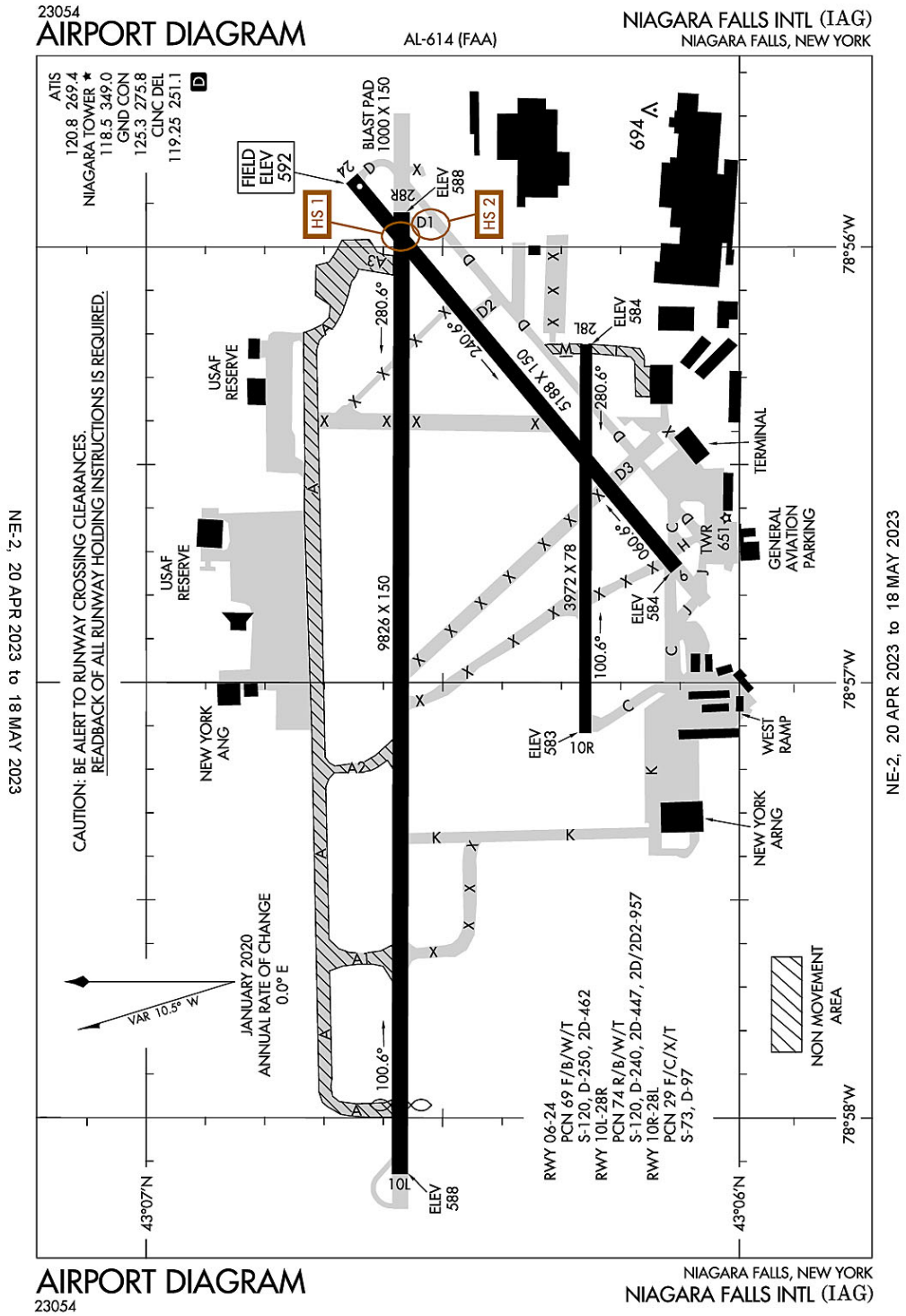
ACFT OPS & TWY RESTRICTIONS EXIST FOR A380, B747–800, B777–300ER, A340–600 AND A350–1000. PLEASE CTC JFK ARPT OPS FOR MORE INFO.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY 'A' BTN TWY 'NA' & TWY 'NB' ARCFT SPEED RESTRICTION OF 17KTS/20MPH MAXIMUM FOR A380, B747−800, B747−400, B777−300ER, B777−200, A340,A330, B787, AND A350

RY 13L HOLDING POSITION MARKINGS AT RY 4L/22R 'NW' SIDE OBSC.

Niagara Falls, New York
Niagara Falls International
ICAO Identifier KIAG



Niagara Falls, NY
Niagara Falls Intl
ICAO Identifier KIAG

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 43−6−27.2065N / 78−56−45.048W

2.2.2 From City: 4 miles E of NIAGARA FALLS, NY

2.2.3 Elevation: 592.3 ft

2.2.5 Magnetic Variation: 10W (1985)

2.2.6 Airport Contact: MR. ROBERT STONE
2035 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304 ((716) 297−4494)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A,A+

2.4.5 Hangar Space:

2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 7/1/1974

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 06

2.12.2 True Bearing: 50

2.12.3 Dimensions: 5188 ft x 150 ft

2.12.4 PCN: 69 F/B/W/T

2.12.5 Coordinates: 43−6−6.3587N / 78−56−44.2955W

2.12.6 Threshold Elevation: 584.3 ft

2.12.6 Touchdown Zone Elevation: 585.8 ft

2.12.1 Designation: 24

2.12.2 True Bearing: 230

2.12.3 Dimensions: 5188 ft x 150 ft

2.12.4 PCN: 69 F/B/W/T

2.12.5 Coordinates: 43−6−39.1997N / 78−55−50.6072W

2.12.6 Threshold Elevation: 592.2 ft

2.12.6 Touchdown Zone Elevation: 592.3 ft

2.12.1 Designation: 10L

2.12.2 True Bearing: 90

2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−6−34.3453N / 78−58−7.7703W
2.12.6 Threshold Elevation: 588.2 ft
2.12.6 Touchdown Zone Elevation: 588.8 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−6−34.1594N / 78−55−55.3156W
2.12.6 Threshold Elevation: 587.9 ft
2.12.6 Touchdown Zone Elevation: 588.3 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43−6−15.6025N / 78−57−7.0063W
2.12.6 Threshold Elevation: 582.6 ft
2.12.6 Touchdown Zone Elevation: 584.1 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43−6−15.507N / 78−56−13.4609W
2.12.6 Threshold Elevation: 584.2 ft
2.12.6 Touchdown Zone Elevation: 584.8 ft

AD 2.13 Declared Distances

2.13.1 Designation: 06
2.13.2 Take−off Run Available: 5188 ft
2.13.3 Take−off Distance Available: 5188 ft
2.13.4 Accelerate−Stop Distance Available: 5188 ft
2.13.5 Landing Distance Available: 5188 ft

2.13.1 Designation: 24
2.13.2 Take−off Run Available: 5188 ft
2.13.3 Take−off Distance Available: 5188 ft
2.13.4 Accelerate−Stop Distance Available: 5108 ft
2.13.5 Landing Distance Available: 5108 ft

2.13.1 Designation: 10L
2.13.2 Take–off Run Available: 9829 ft
2.13.3 Take–off Distance Available: 10829 ft
2.13.4 Accelerate–Stop Distance Available: 9829 ft
2.13.5 Landing Distance Available: 9129 ft

2.13.1 Designation: 28R
2.13.2 Take–off Run Available: 9829 ft
2.13.3 Take–off Distance Available: 10529 ft
2.13.4 Accelerate–Stop Distance Available: 9129 ft
2.13.5 Landing Distance Available: 9129 ft

2.13.1 Designation: 10R
2.13.2 Take–off Run Available: 3973 ft
2.13.3 Take–off Distance Available: 3973 ft
2.13.4 Accelerate–Stop Distance Available: 3973 ft
2.13.5 Landing Distance Available: 3973 ft

2.13.1 Designation: 28L
2.13.2 Take–off Run Available: 3973 ft
2.13.3 Take–off Distance Available: 3973 ft
2.13.4 Accelerate–Stop Distance Available: 3973 ft
2.13.5 Landing Distance Available: 3973 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P2L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P2L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43–6–30.0921N / 78–56–16.6451W
2.19.6 Site Elevation: 582.8 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43–6–34.3589N / 78–58–18.8146W
2.19.6 Site Elevation: 585.1 ft

2.19.1 ILS Type: Outer Marker for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43–6–32.5184N / 78–50–18.2195W
2.19.6 Site Elevation: 614.9 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: IAG
2.19.5 Coordinates: 43–6–45.1638N / 78–57–36.8623W
2.19.6 Site Elevation: 591.5 ft

General Remarks:
CAUTION: HEAVY CONCENTRATIONS OF GULLS–BLACKBIRDS–STARLINGS UP TO 5000 AGL ON & INVOF ARPT. BASH PHASE II OPERATIONS AT KIAG MAR–MAY AND SEP–NOV.

FLUID: SP.

JASU: 2(A/M32A–86) 1(AM32A–60) 1(MA–1A).

FUEL: J8, A++ (MIL).

MISC: LOCAL MISSION AIRCRAFT HAVE PRIORITY FOR DEICING; FULL AIRCRAFT DEICING FOR C–17 AND C–5 AIRCRAFT NOT AVAILABLE.

INTXN DEPS RWY 24 AT TWY D1 ARE NA.

ALL MIL ACFT ONLY MINIMAL CLASSIFIED MATERIALS AVBL; AIRCREWS SHOULD ARRIVE WITH APPROPRIATE AMOUNT TO COMPLETE THEIR MISSION.

EXTSV ACFT ACTIVITY OPERATING INVOF US/CANADIAN FALLS ALL ALTS.

RWY 28R 1000 FT BY 150 FT BLAST PAD

AFLD MGMT DOES NOT ISSUE OR STORE COMSEC, FOR COMSEC STORAGE CTC COMMAND POST DSN 238−2150, C716−236−2150.

OIL: O−148(MIL).

BEARING STRENGTH RWY 06/24: ST110 TT145 SBTT281TDT415 TRT252.

PILOTS ARE REMINDED TO REVIEW ARPT HOTSPOT INFO BFR TXG FOR DEP & BFR LNDG. SEE TPP ARPT DIAGRAM AND CHART SUPPL SXN ON HOTSPOTS FOR ADDNL INFO.

REMARKS: SEE FLIP AP/1 SUPPLEMENTARY ARPT RMK.

AFRC/ANG: CSTMS/AG/IMG SVC NOT LCTD ON NIAGARA FALLS ARS. SVC AVBL H24.

AFRC/ANG: NSTD OPS APN MRKS IDENTIFYING PRKG ROW AND PRKG LCTN. NSTD MAIN APN MRKS PRKG STOP BAR AND ACFT GND EQPT (AGE) BOX.

ALL MIL ACFT ONLY OPNS RESTRICTED DURING BIRD WATCH CONDITIONS. MODERATE − TKOF & LDG PERMISSION ONLY WNEN DEP/ARR RTE AVOIDS IDENTIFIED BIRD ACTIVITY; NO LCL IFR/VFR TFC PAT ACTIVITY. SEVERE − TKOF & LDG PHOHIBITED WO OG/CC APPROVAL; CTC COMMAND POST FOR CURRENT BIRD WATCH CONDITIONS.

TWY D3 RSTRD TO 12500 LBS OR LESS.

MILITARY: MISC: FOR CURRENT MIL RWY CONDITION READING (RCR) CALL OR CTC 914 ARW COMD POST OR 914TH ARW AFLD MANAGEMENT.

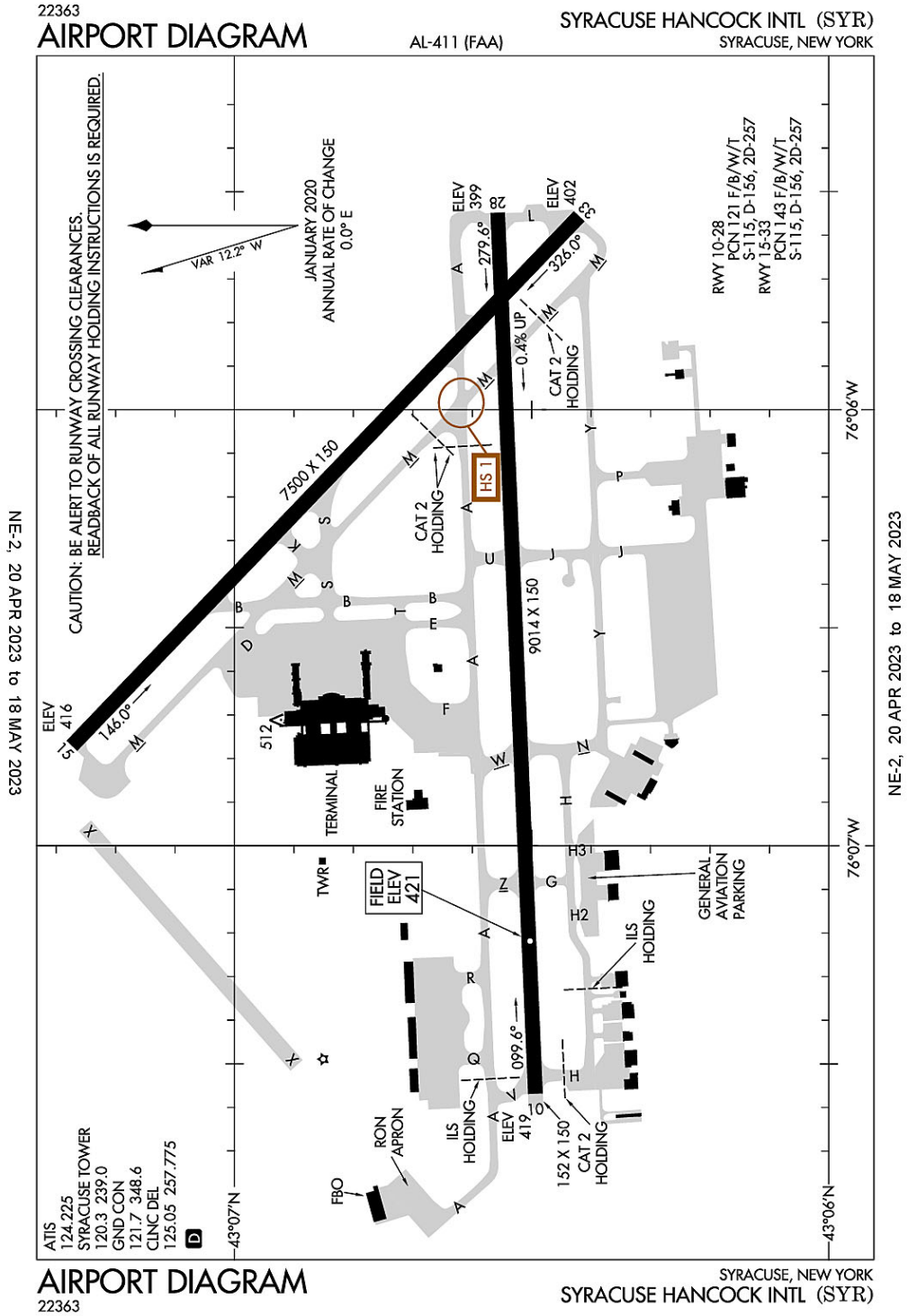
RWY 10R/28L CLSD TO SKED ACR OPS MORE THAN 9 PAX SEATS AND NON SKED ACR OPS MORE THAN 30 PAX SEATS EXC TAX.

PPR CTC AFLD MGT DSN: 238−2176, C716−236−2176. AFLD MGMT RQR 48 HR ADVANCE NOTICE FOR PPR AND WILL ARRANGE U.S. CUSTOMS IF NEEDED. U.S. CUSTOMS NOT ON STATION.

MILITARY: AFRC/ANG: AIRFIELD OPS SVC 1200−0400Z++ MON−FRI EXC HOL. TWYS A, A1, A2, AND A3 PAINTED MRK FADED AND RETRO−REFLECTIVITY INEFFECTIVE.

TWY A, A1, A2, A3, M & L NON−MOV AREAS.

Syracuse, New York
Syracuse Hancock International
ICAO Identifier KSYR



Syracuse, NY
Syracuse Hancock Intl
ICAO Identifier KSYR

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 43–6–40.252N / 76–6–22.753W
2.2.2 From City: 4 miles NE of SYRACUSE, NY
2.2.3 Elevation: 421.4 ft
2.2.5 Magnetic Variation: 13W (2000)
2.2.6 Airport Contact: JASON TERRERI
1000 COL EILEEN COLLINS BLVD
SYRACUSE, NY 13212 (315–454–3263)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10
2.12.2 True Bearing: 87
2.12.3 Dimensions: 9014 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43–6–29.5015N / 76–7–34.2763W
2.12.6 Threshold Elevation: 418.5 ft
2.12.6 Touchdown Zone Elevation: 421.4 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 267
2.12.3 Dimensions: 9014 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43–6–33.4984N / 76–5–32.8925W
2.12.6 Threshold Elevation: 399 ft
2.12.6 Touchdown Zone Elevation: 412.3 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43–7–16.4185N / 76–6–46.2005W
2.12.6 Threshold Elevation: 415.5 ft
2.12.6 Touchdown Zone Elevation: 416.8 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43–6–25.1095N / 76–5–33.2753W
2.12.6 Threshold Elevation: 401.7 ft
2.12.6 Touchdown Zone Elevation: 409.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10
2.13.2 Take–off Run Available: 9014 ft
2.13.3 Take–off Distance Available: 9014 ft
2.13.4 Accelerate–Stop Distance Available: 9014 ft
2.13.5 Landing Distance Available: 9014 ft

2.13.1 Designation: 28
2.13.2 Take–off Run Available: 9014 ft
2.13.3 Take–off Distance Available: 9014 ft
2.13.4 Accelerate–Stop Distance Available: 9014 ft
2.13.5 Landing Distance Available: 9014 ft

2.13.1 Designation: 15
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 33
2.13.2 Take–off Run Available: 7500 ft
2.13.3 Take–off Distance Available: 7500 ft
2.13.4 Accelerate–Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: ANG OPS
2.14.3 Channel: 379.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 134.275
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 126.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 269.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: AR OPS
2.14.3 Channel: 245.3
2.14.5 Hours of Operation:

2.14.1 Service Designation: ATIS
2.14.3 Channel: 124.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 125.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 257.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 126.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 269.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 120.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 239
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−31.27N / 76−5−20.92W
2.19.6 Site Elevation: 390.5 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−26.02N / 76−7−20.146W
2.19.6 Site Elevation: 422.6 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−33.96N / 76−5−19.01W
2.19.6 Site Elevation: 395.6 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−31.27N / 76−5−20.92W
2.19.6 Site Elevation: 390.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−39.474N / 76−5−46.433W
2.19.6 Site Elevation: 404.1 ft

2.19.1 ILS Type: Inner Marker for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−34.1N / 76−5−18.52W
2.19.6 Site Elevation: 395 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−28.943N / 76−7−51.655W
2.19.6 Site Elevation: 416.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: SYR
2.19.5 Coordinates: 43−9−37.8684N / 76−12−16.4106W
2.19.6 Site Elevation: 453.2 ft

General Remarks:
DEER/COYOTE/BIRDS ON INVOF ARPT.

NON−STD MKG ON MIL RAMP.

ANG: HVY ACFT CTC ARPT COMMISSIONER FOR PRK AVBL AT C315−455−3666. ALL TRAN ACFT RQR NS ABTMT BRIEFING.

UAS OPS IN SYRACUSE APCH/DEP AIRSPACE WILL BE CONTROLLED BY SYR ATC AT ALL TIMES.

NO TSNT ACFT PARKING ON MAIN TERMINAL RAMP.

DIRECT CUSTOM NOTIFICATION IS REQUIRED. HOURS OF NOTIFICATION ARE MON−SAT 0800−1700. ARRIVALS OUTSIDE OF THESE HRS MUST MAKE ARRANGEMENTS DURING REGULAR WORK HRS; CALL 315−455−2271.

HVY ACFT CTC ARPT COMMISSIONER FOR PRK AVBL AT C315−455−3263. LIMITED METRO AVAIL AT DSN 243−2185. C315−233−2185 OR CTC OWS DSN 576−9755/9702. ALL TRAN ACFT REQ NOISE ABATEMENT BRIEFING.

NO CHARTER OPER THRU PASSENGER TERMINAL BLDG WITHOUT PRIOR PERMISSION.

RSTD: TWY J AND P SOUTH OF TWY Y CLSD TO CIV OPS.

NOISE ABATEMENT PROCEDURES IN EFFECT.

MILITARY: COMMUNICATIONS – ANG – OPS – 140.425 379.5 REMARKS: (COBRA OPS) CTC ANG OPS 15 MIN PRIOR TO ARR.

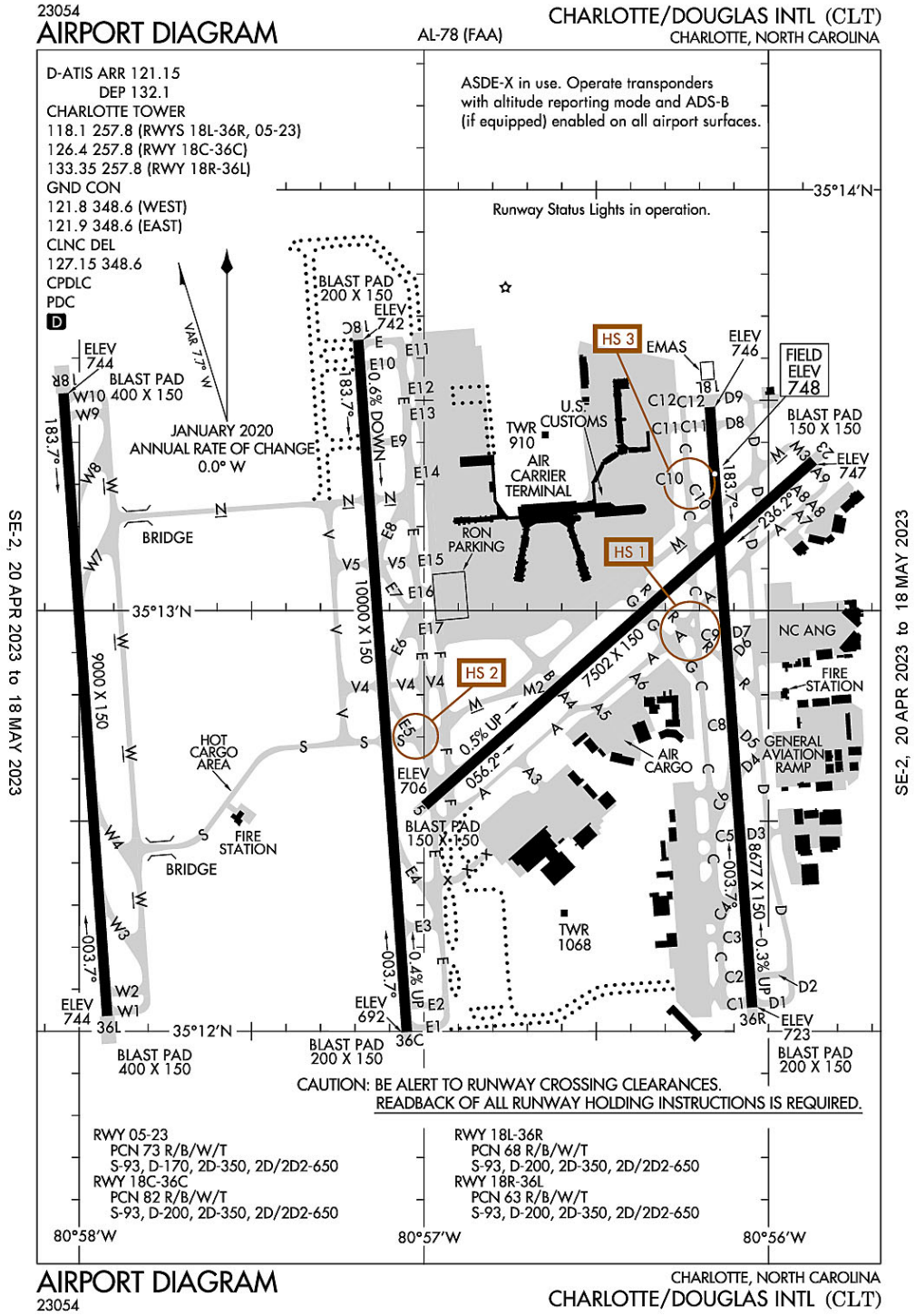
NO JET ENGINE MAINT RUNS ABOVE IDLE BTWN 2300−0600.

CAUTION: TWY J AND P SOUTH OF TWY Y AND ANG RAMP HAVE UNCTL VEH AND EQPT TFC.

UAS OPERATE WITHIN THE CONFINES OF THE SYRACUSE CLASS C, TIMES VARY.

MILITARY: ANG: OPR 1030−2100Z++ MON−THUR EXC HOL. PPR TRANS ACFT OFFL BUS ONLY. AFLD MGR DSN 243−2398, C315−233−2398, AFT DUTY HR CTC C315−233−2398. PPR REQ FOR ALL TRAN ACFT DUE LTD TRANS SVC. NTFY AFLD MGR OF ETA DELAY OVER 30 MIN OR MSN CNL IS RQR.

Charlotte, North Carolina
Charlotte/Douglas International
ICAO Identifier KCLT



Charlotte, NC
Charlotte/Douglas Intl
ICAO Identifier KCLT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−12−49.5N / 80−56−56.6W
2.2.2 From City: 5 miles W of CHARLOTTE, NC
2.2.3 Elevation: 747.9 ft
2.2.5 Magnetic Variation: 7W (2000)
2.2.6 Airport Contact: HALEY GENTRY
5601 WILKINSON BLVD.
CHARLOTTE, NC 28208 (704−359−4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 23
2.12.2 True Bearing: 228
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35−13−21.4183N / 80−55−52.1235W
2.12.6 Threshold Elevation: 746.7 ft
2.12.6 Touchdown Zone Elevation: 746.7 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 48
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35−12−32.2287N / 80−56−59.8045W
2.12.6 Threshold Elevation: 705.9 ft
2.12.6 Touchdown Zone Elevation: 715.6 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 176
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 35−13−38.6269N / 80−57−11.4094W
2.12.6 Threshold Elevation: 742 ft
2.12.6 Touchdown Zone Elevation: 742 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 356
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 35−11−59.9721N / 80−57−2.9217W
2.12.6 Threshold Elevation: 692.2 ft
2.12.6 Touchdown Zone Elevation: 706.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 176
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35−13−29.0474N / 80−56−10.1652W
2.12.6 Threshold Elevation: 746 ft
2.12.6 Touchdown Zone Elevation: 747.9 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 356
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35−12−3.4456N / 80−56−2.822W
2.12.6 Threshold Elevation: 723.4 ft
2.12.6 Touchdown Zone Elevation: 726.9 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 176
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 35−13−31.0182N / 80−58−2.707W
2.12.6 Threshold Elevation: 744 ft
2.12.6 Touchdown Zone Elevation: 744 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 356
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 35−12−2.2277N / 80−57−55.0671W
2.12.6 Threshold Elevation: 743.9 ft
2.12.6 Touchdown Zone Elevation: 743.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 23
2.13.2 Take−off Run Available: 7502 ft
2.13.3 Take−off Distance Available: 7502 ft
2.13.4 Accelerate−Stop Distance Available: 7502 ft
2.13.5 Landing Distance Available: 7502 ft

2.13.1 Designation: 05
2.13.2 Take−off Run Available: 7502 ft
2.13.3 Take−off Distance Available: 7502 ft

2.13.4 Accelerate−Stop Distance Available: 7092 ft
2.13.5 Landing Distance Available: 7092 ft

2.13.1 Designation: 18C
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 36C
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 8676 ft
2.13.3 Take−off Distance Available: 8676 ft
2.13.4 Accelerate−Stop Distance Available: 8676 ft
2.13.5 Landing Distance Available: 8676 ft

2.13.1 Designation: 36R
2.13.2 Take−off Run Available: 8676 ft
2.13.3 Take−off Distance Available: 8676 ft
2.13.4 Accelerate−Stop Distance Available: 8390 ft
2.13.5 Landing Distance Available: 8390 ft

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 36L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 05
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: ALCP
2.14.3 Channel: 292.25
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (120−295 8000 FT & BLW)
2.14.3 Channel: 120.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (246−074 ABV 8000 FT)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (075−245 ABV 8000 FT)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (001−119 8000 FT & BLW)
2.14.3 Channel: 128.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (296−360 8000 FT & BLW)
2.14.3 Channel: 134.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (180−359)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (360−179)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BANKR STAR
2.14.3 Channel: 135.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BANKR STAR
2.14.3 Channel: 377.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BARMY DP
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BARMY DP
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEAVY DP (RWY 36L, 36C)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEAVY DP (RWY 18L, 18R, 18C, 36R)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEAVY DP (RWY 36L, 36C)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEAVY DP (RWY 18R, 18L, 18C, 36R)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOBZY DP
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOBZY DP
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BTSEY STAR
2.14.3 Channel: 125.35

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 127.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (BUCKL TRANSITION, RWY 18L, 18R, 18C, 36R)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (BUCKL, HARAY & PITTY TRANSITIONS. RWY 36L, 36C)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (BUCKL, GANTS, LILLS & RUNIE TRANSITIONS.)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (RWY 18L, 18R, 18C, 36R)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (BUCKL, HARAY & PITTY TRANSITION. RWY 36L, 36C)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHARLOTTE DP (GANTS, LILLS & RUNIE TRANSITIONS)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHPTR STAR
2.14.3 Channel: 135.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHPTR STAR
2.14.3 Channel: 377.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHSLY STAR
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CHSLY STAR
2.14.3 Channel: 282.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (120−295 8000 FT & BLW)

2.14.3 Channel: 120.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (246−074 ABV 8000 FT)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (075−245 ABV 8000 FT)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (001−119 8000 FT & BLW)
2.14.3 Channel: 128.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (296−360 8000 FT & BLW)
2.14.3 Channel: 134.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (180−359)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (360−179)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (ARR)
2.14.3 Channel: 121.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (DEP)
2.14.3 Channel: 132.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: ESTRR DP
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ESTRR DP
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FILPZ STAR
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FILPZ STAR
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P (WEST)
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P (EAST)
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ICONS DP (RWY 36L, 36C)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ICONS DP (RWY 18L, 18R, 18C, 36R)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ICONS DP (RWY 36L, 36C)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ICONS DP (RWY 18R, 18L, 18C, 36R)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JOJJO DP
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JOJJO DP
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JONZE STAR
2.14.3 Channel: 135.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JONZE STAR
2.14.3 Channel: 377.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KERMIT DP (235–055)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KERMIT DP (055–235)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KERMIT DP (235–055)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KERMIT DP (055–235)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KILNS DP
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KILNS DP
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (DEBIE, NEANO TRANSITIONS)
2.14.3 Channel: 120.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (FLYYN, CEGAL TRANSITIONS, 18L, 18C, 18R)
2.14.3 Channel: 120.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (FLYYN, CEGAL TRANSITIONS RWY 36L, 36C, 36R)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (055–235)
2.14.3 Channel: 128.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (PEKNN, LILLS, HAMLN, ANDYS TRANSITIONS)
2.14.3 Channel: 128.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (235–055)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KNIGHTS DP (055–235)
2.14.3 Channel: 307.8

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KRITR DP
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KRITR DP
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KWEEN DP (RWY 36L, 36C)
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KWEEN DP (RWY 18L, 18R, 18C, 36R)
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KWEEN DP (RWY 36L, 36C)
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KWEEN DP (RWY 18R, 18L, 18C, 36R)
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18L/36R)
2.14.3 Channel: 118.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18C/36C)
2.14.3 Channel: 126.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 18R/36L)
2.14.3 Channel: 133.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIILS DP
2.14.3 Channel: 124
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIINN STAR
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LIINN STAR

2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LILLS DP
2.14.3 Channel: 307.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAJIC STAR
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MAJIC STAR
2.14.3 Channel: 282.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MLLET STAR
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MLLET STAR
2.14.3 Channel: 282.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PARQR STAR
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PARQR STAR
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RASLN STAR
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RASLN STAR
2.14.3 Channel: 282.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STOCR STAR
2.14.3 Channel: 126.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STOCR STAR
2.14.3 Channel: 282.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: UNARM STAR
2.14.3 Channel: 135.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: UNARM STAR
2.14.3 Channel: 377.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WEAZL DP
2.14.3 Channel: 120.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: WEAZL DP
2.14.3 Channel: 257.2
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 05. Magnetic variation: 7W
2.19.2 ILS Identification: CLT
2.19.5 Coordinates: 35−12−43.05N / 80−56−52.18W
2.19.6 Site Elevation: 695.1 ft

2.19.1 ILS Type: Localizer for runway 05. Magnetic variation: 7W
2.19.2 ILS Identification: CLT
2.19.5 Coordinates: 35−13−26.34N / 80−55−45.36W
2.19.6 Site Elevation: 738.2 ft

2.19.1 ILS Type: DME for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−12−21.2833N / 80−57−10.052W
2.19.6 Site Elevation: 699.4 ft

2.19.1 ILS Type: Glide Slope for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−13−12.1531N / 80−56−0.0758W
2.19.6 Site Elevation: 737.7 ft

2.19.1 ILS Type: Localizer for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−12−23.38N / 80−57−11.99W
2.19.6 Site Elevation: 704 ft

2.19.1 ILS Type: DME for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP
2.19.5 Coordinates: 35−11−50.2369N / 80−56−58.6363W
2.19.6 Site Elevation: 684.4 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP
2.19.5 Coordinates: 35−13−26.9102N / 80−57−15.2356W
2.19.6 Site Elevation: 731.4 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP

2.19.5 Coordinates: 35−11−48.5979N / 80−57−1.9439W
2.19.6 Site Elevation: 683.3 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−12−9.1687N / 80−57−8.5431W
2.19.6 Site Elevation: 691.1 ft

2.19.1 ILS Type: Inner Marker for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−11−48.7253N / 80−57−1.9507W
2.19.6 Site Elevation: 682.9 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−13−53.9477N / 80−57−12.7316W
2.19.6 Site Elevation: 749.4 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−11−50.25N / 80−56−4.63W
2.19.6 Site Elevation: 710 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−13−19.2609N / 80−56−5.097W
2.19.6 Site Elevation: 743.5 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−11−50.5994N / 80−56−1.7186W
2.19.6 Site Elevation: 719.2 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC
2.19.5 Coordinates: 35−13−33.1089N / 80−56−6.903W
2.19.6 Site Elevation: 752.3 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC
2.19.5 Coordinates: 35−12−14.0034N / 80−55−58.8923W
2.19.6 Site Elevation: 717.3 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC
2.19.5 Coordinates: 35−13−33.7034N / 80−56−10.5664W
2.19.6 Site Elevation: 741.2 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35−12−13.2565N / 80−58−1.0908W

2.19.6 Site Elevation: 743.8 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35–13–20.0955N / 80–58–6.7207W
2.19.6 Site Elevation: 733.9 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35–13–38.8124N / 80–58–3.3825W
2.19.6 Site Elevation: 738.6 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35–11–51.8431N / 80–57–54.1735W
2.19.6 Site Elevation: 738.1 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35–13–19.8318N / 80–58–6.8193W
2.19.6 Site Elevation: 738.9 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35–12–12.9817N / 80–58–0.9403W
2.19.6 Site Elevation: 732.3 ft

2.19.1 ILS Type: Inner Marker for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35–11–54.4339N / 80–57–54.3965W
2.19.6 Site Elevation: 738.8 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35–13–41.4048N / 80–58–3.6016W
2.19.6 Site Elevation: 737.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 5W
2.19.2 Navigation Aid Identification: CLT
2.19.5 Coordinates: 35–11–25.0392N / 80–57–6.3124W
2.19.6 Site Elevation: 731.7 ft

General Remarks:
TWY C10 RSTRD TO ACFT WITH WINGSPAN LESS THAN 171 FT WHEN EXITING RWY.

CLT RAMP, NON–MOVMT AREA, IS CTLD RAMP; CTC RAMP CTL PRIOR TO ENTERING.

TWY C10 UNUSBL FOR TXG ONTO RWY 18L/36R.

MILITARY: ANG: CTC COMD POST 30 MIN PRIOR LDG. AMOPS/COMD POST – 292.25 (CALL NEWSREEL).

SUCCESSIVE OR SIMULTANEOUS DEPARTURES FROM RWY 18L AND RWY 18C ARE APPROVED WITH

COURSE DIVERGENCE BEGINNING NO FURTHER THAN 4 MILES FROM END OF RWY.

DUAL TAXI BTN DEP CALL SPOTS 11/12 AND 13N/13S RSTRD TO ONE ACFT LESS THAN 214 FT AND ONE ACFT LESS THAN 118 FT OR TWO ACFT LESS THAN 171 FT.

RWY SFC COND INFO DURG DUTY HRS PHONE ANG OPS V583−9177/9144 OR AIRBORNE 292.2.

TWY M BETWEEN THE TERMINAL RAMP AND TWY C, AS WELL AS TWY C NORTH OF TWY M, ARE RESTRICTED TO GROUP V AIRCRAFT WITH A WINGSPAN LESS THAN 214 FT (65M).

DUAL TAXI BTN DEP CALL SPOTS 22/23 AND 24N/24S RSTRD TO ACFT WITH WINGSPANS LESS THAN 118 FT.

RWY STATUS LGTS IN OPR.

TWY C4 AND C6: WHEN TAXIING AIRCRAFT WITH COCKPIT TO MAIN GEAR DISTANCE GREATER THAN 90 FT, PILOT MUST PERFORM JUDGEMENTAL OVERSTEERING INSTEAD OF COCKPIT OVER CENTERLINE STEERING.

TWY D, RESTRICTED TO 15 MPH OR LESS WITH WINGSPAN 171 FT AND GREATER.

GROUP IV ACFT WITH A WINGSPAN GTR THAN 118 FT ARE PROHIBITED FM EXITING RWY 18L/36R AT TWY C10.

GROUP III ACFT WITH A WINGSPAN GTR THAN 79 FT ARE PROHIBITED FM MAKING A NBND TURN ONTO TWY C WHEN TAXIING WB ON TWY A.

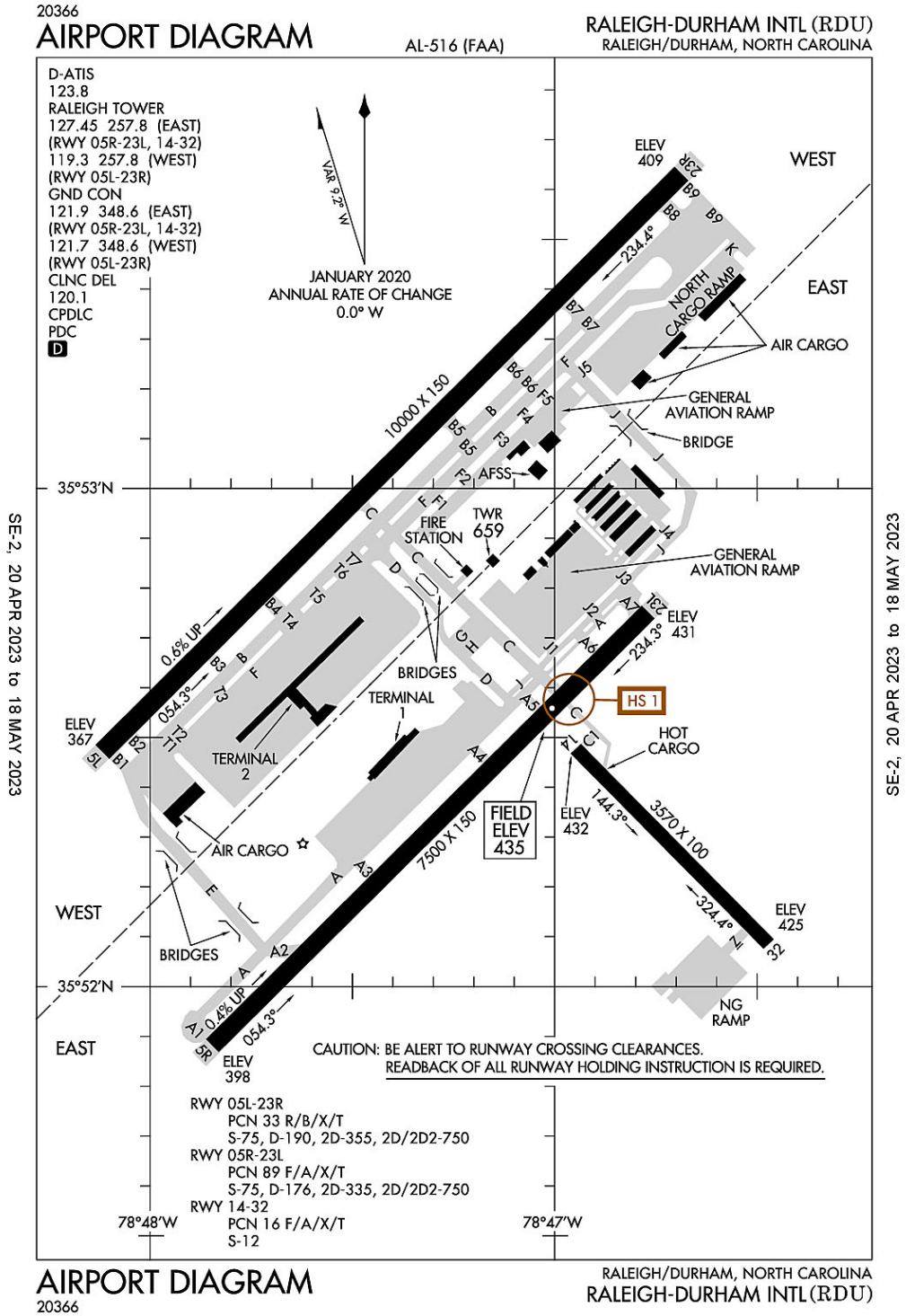
15 MPH SPEED RESTRICTION ON TWY C FROM THE APPROACH OF RWY 18L TO RWY 05/23, AND TWY M FROM THE APRON TO RWY 18L/36R.

BE ALERT FOR FLOCKS OF MIGRATORY BIRDS ON & INVOF ARPT.

GROUP III ACFT WITH A WINGSPAN GTR THAN 79 FT ARE PROHIBITED FM MAKING A SBND TURN ONTO TWY C WHEN TAXIING NWBND ON TWY R.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Raleigh–Durham, North Carolina
Raleigh–Durham International
ICAO Identifier KRDU



Raleigh/Durham, NC
Raleigh−Durham Intl
ICAO Identifier KRDU

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−52−39.5N / 78−47−14.9W
2.2.2 From City: 9 miles NW of RALEIGH/DURHAM, NC
2.2.3 Elevation: 435.2 ft
2.2.5 Magnetic Variation: 9W (2020)
2.2.6 Airport Contact: MICHAEL LANDGUTH
RALEIGH−DURHAM ARPT AUTH
RDU AIRPORT, NC 27623 ((919) 840−7701)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35−52−28.016N / 78−48−7.069W
2.12.6 Threshold Elevation: 366.8 ft
2.12.6 Touchdown Zone Elevation: 384.3 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35−53−37.7657N / 78−46−40.9198W
2.12.6 Threshold Elevation: 408.6 ft
2.12.6 Touchdown Zone Elevation: 408.6 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35−51−52.6684N / 78−47−50.4174W
2.12.6 Threshold Elevation: 397.5 ft
2.12.6 Touchdown Zone Elevation: 419.8 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35−52−44.9832N / 78−46−45.8171W
2.12.6 Threshold Elevation: 430.7 ft
2.12.6 Touchdown Zone Elevation: 435.2 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35−52−30.1119N / 78−46−57.6427W
2.12.6 Threshold Elevation: 432.1 ft
2.12.6 Touchdown Zone Elevation: 432.1 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35−52−5.0792N / 78−46−27.0499W
2.12.6 Threshold Elevation: 424.7 ft
2.12.6 Touchdown Zone Elevation: 428.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05L
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 23R
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 05R
2.13.2 Take−off Run Available: 7500 ft
2.13.3 Take−off Distance Available: 7500 ft
2.13.4 Accelerate−Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 23L
2.13.2 Take−off Run Available: 7500 ft
2.13.3 Take−off Distance Available: 7500 ft
2.13.4 Accelerate−Stop Distance Available: 7500 ft
2.13.5 Landing Distance Available: 7500 ft

2.13.1 Designation: 14

2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 32
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 05L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P (055−229)
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (055−229)
2.14.3 Channel: 318.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (230−054)
2.14.3 Channel: 127.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (230−054)
2.14.3 Channel: 307.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEXGO DP
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BEXGO DP
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLOGS STAR
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BLOGS STAR
2.14.3 Channel: 318.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRADE STAR
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRADE STAR
2.14.3 Channel: 318.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BUZZY STAR
2.14.3 Channel: 127.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BUZZY STAR
2.14.3 Channel: 307.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 120.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (055−229)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (230−054)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (230−054)
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (055−229)
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 123.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (055−229)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (230−054)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (230−054)
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (055−229)
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (SOUTH)
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DMSTR STAR
2.14.3 Channel: 127.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DMSTR STAR
2.14.3 Channel: 307.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: FINAL (EAST)
2.14.3 Channel: 285.425
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: FINAL CTL
2.14.3 Channel: 124.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P (WEST, RWY 05L/23R)
2.14.3 Channel: 121.7

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P (EAST, RWY 05R/23L, 14/32)
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HOOKZ DP
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HOOKZ DP
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURIC DP
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HURIC DP
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (WEST, RWY 05L/23R)
2.14.3 Channel: 119.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (EAST, RWY 05R/23L, 14/32)
2.14.3 Channel: 127.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LWOOD DP
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LWOOD DP
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OXFRD DP
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OXFRD DP

2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PACKK DP (055–229)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PACKK DP (230–054)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PACKK DP (230–054)
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PACKK DP (055–229)
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RALEIGH DP (055–229)
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RALEIGH DP (230–054)
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RALEIGH DP (230–054)
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: RALEIGH DP (055–229)
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROZBO DP
2.14.3 Channel: 125.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ROZBO DP
2.14.3 Channel: 353.675
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SHPRD DP
2.14.3 Channel: 132.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SHPRD DP
2.14.3 Channel: 256.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TAQLE STAR
2.14.3 Channel: 124.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: TAQLE STAR
2.14.3 Channel: 318.2
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−53−46.25N / 78−46−25.87W
2.19.6 Site Elevation: 403 ft

2.19.1 ILS Type: Glide Slope for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−52−37.7972N / 78−48−1.884W
2.19.6 Site Elevation: 365.5 ft

2.19.1 ILS Type: Localizer for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−53−48.0693N / 78−46−28.1855W
2.19.6 Site Elevation: 408.6 ft

2.19.1 ILS Type: DME for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−52−20.25N / 78−48−15.21W
2.19.6 Site Elevation: 358 ft

2.19.1 ILS Type: Glide Slope for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−53−32.4744N / 78−46−54.3483W
2.19.6 Site Elevation: 396.2 ft

2.19.1 ILS Type: Localizer for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−52−20.84N / 78−48−15.93W
2.19.6 Site Elevation: 358.8 ft

2.19.1 ILS Type: DME for runway 05R. Magnetic variation: 9W
2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−52−54.38N / 78−46−41.19W
2.19.6 Site Elevation: 412 ft

2.19.1 ILS Type: Glide Slope for runway 05R. Magnetic variation: 9W
2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−51−57.0189N / 78−47−38.1689W
2.19.6 Site Elevation: 400.1 ft

2.19.1 ILS Type: Localizer for runway 05R. Magnetic variation: 9W

2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−52−52.1055N / 78−46−37.0152W
2.19.6 Site Elevation: 423.6 ft

2.19.1 ILS Type: DME for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−51−43.52N / 78−47−54.49W
2.19.6 Site Elevation: 386 ft

2.19.1 ILS Type: Glide Slope for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−52−36.18N / 78−46−52.21W
2.19.6 Site Elevation: 430.2 ft

2.19.1 ILS Type: Localizer for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−51−45.6108N / 78−47−59.1266W
2.19.6 Site Elevation: 381 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 9W
2.19.2 Navigation Aid Identification: RDU
2.19.5 Coordinates: 35−52−21.0761N / 78−47−0.0316W
2.19.6 Site Elevation: 429.2 ft

General Remarks:
TWY F2 AND F5 CLOSED UNTIL FURTHER NOTICE.

ALL TDG V AIRCRAFT TXG ON TWY A ARE RSTD TO TAXI SPD OF 15 MPH

NO APPROVAL REQUIRED FOR PUSHBACK AT TERMINAL 1 GATES UNLESS ACFT REQUIRED TO USE TWY A. CTC ATC PRIOR TO PUSH ONTO TWY A. TERMINAL 2 ACFT MUST CTC RAMP TOWER PRIOR TO PUSH.

NG 24 HR PPR FOR JET ACFT & TRANS MIL ACFT − 919−840−7510.

TWY E BEHIND SOUTH CARGO 4 & TWY J BEHIND CORPORATE HANGARS NOT VSBL FM ATCT.

RSTD: PPR FOR ALL MILITARY AIRCRAFT F/W − R/W & UNSCHEDULED CHARTER FLIGHTS WITH 30 OR MORE PASSENGERS. 24 HR PN RQR FOR MIL PRACTICE APCH. CTC ARPT OPS 919−840−7510 OR RDU APP C919−380−3125. 24 HR PPR FOR ALL F/W AND R/W MIL ACFT GOING TO ARNG RAMP. POC DSN 582−9000, EXTN 16200, C919−804−5300, EXTN 16200. OSACOM FLT DET DSN 582−9000, EXTN 16202, C919−804−5300, EXTN 16202.

NO JET ENGINE MAINTENANCE RUNS BETWEEN 0000−0600.

ARPT CLSD TO AIRSHIPS.

NG PPR FOR LDG CTC V582−9181 C(919)664−9181.

TAXIWAY F1 IS CLOSED UNTIL FURTHER NOTICE.

ARNG: LTD PRK. ARNG OPS DSN 582−9000, EXTN 16200, C919−804−5300 EXTN 16200, DSN 582−9000,X16200,

C919−804−5300,X16200 CTC FORECAST BASE 10 MIN PRIOR LDG. RAMP CLSD TO ALL F/W EXCEPT ARMY & MIL TRANSPORT WITH PPR, FACILITY HRS 1300−2130Z++ MON−FRI EXC HOL. MAKE APPT FOR AFTER DUTY HRS. NO FUEL EXCARNG FERRY ACFT. OSACOM FLT DET DSN 582−9248, C919−664−6248.

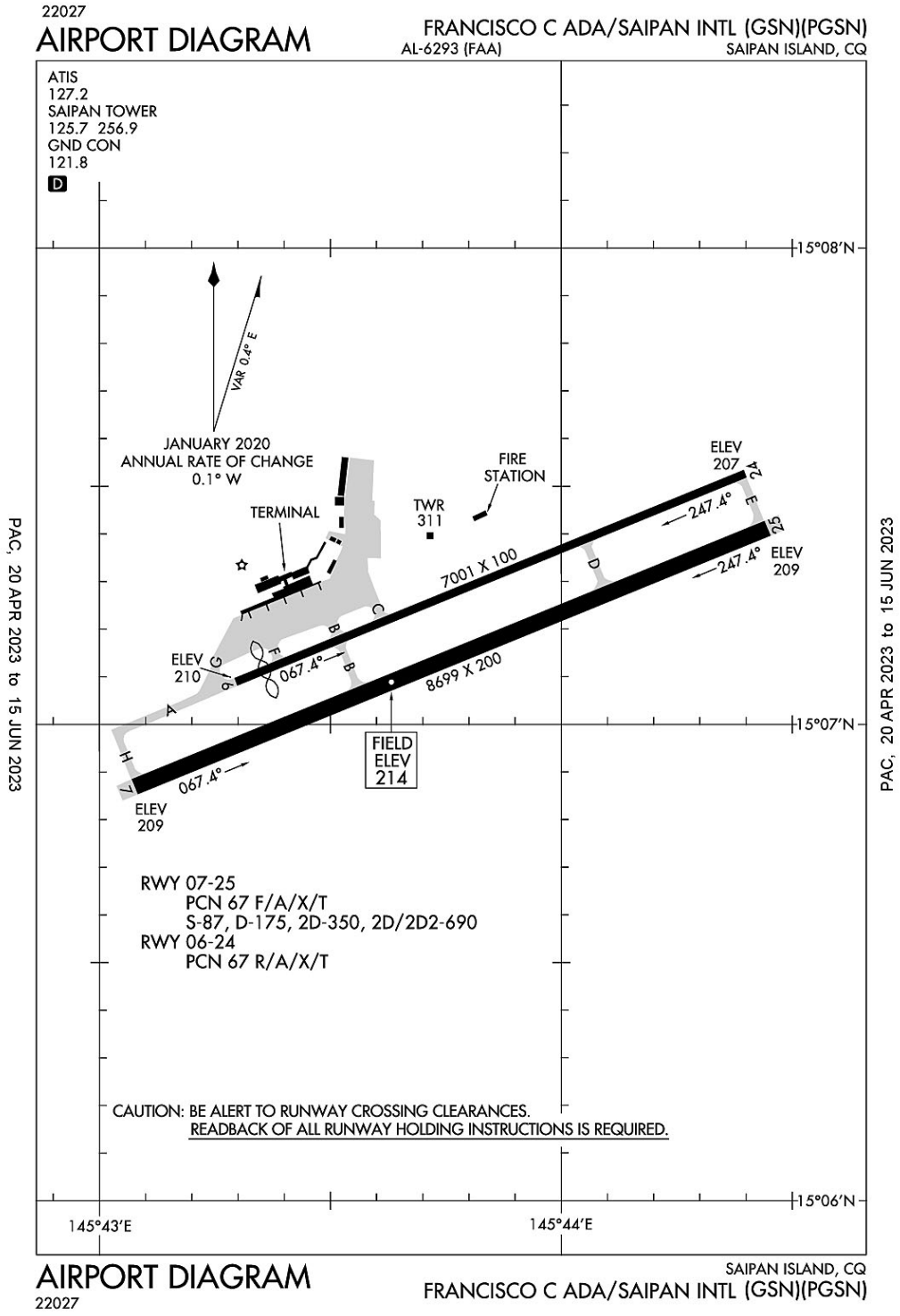
TWY D CLSD TO ACFT WITH WINGSPAN MORE THAN 171 FT WHEN TWY G AND H ARE OCCUPIED.

APN TXL F BTN TWY T1 AND TWY T7 CLSD TO ACFT WITH WINGSPAN MORE THAN 171 FT.

TWY C BTN TWY G AND TWY F CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

TWY C BTN TWY F AND G IS RSTRD TO ACFT LESS THAN A MAX GROSS TAKEOFF WEIGHT OF 490000 LBS.

North Mariana Islands, Saipan Island
Francisco C. Ada/Saipan International
ICAO Identifier PGSN



Saipan Island, CQ
Francisco C. Ada/Saipan Intl
ICAO Identifier PGSN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 15−7−12.895N / 145−43−47.951E

2.2.2 From City: 4 miles SW of SAIPAN ISLAND, MP

2.2.3 Elevation: 214 ft

2.2.5 Magnetic Variation: 2E (1985)

2.2.6 Airport Contact: CHRISTOPHER S. TENORIO
PO BOX 501055
SAIPAN, MP 96950 (670−285−2504)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100,100LL,A1+

2.4.5 Hangar Space:

2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 1/1/1978

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 06

2.12.2 True Bearing: 68

2.12.3 Dimensions: 7001 ft x 100 ft

2.12.4 PCN: 67 R/A/X/T

2.12.5 Coordinates: 15−7−5.3655N / 145−43−17.7212E

2.12.6 Threshold Elevation: 209.8 ft

2.12.6 Touchdown Zone Elevation: 212.7 ft

2.12.1 Designation: 24

2.12.2 True Bearing: 248

2.12.3 Dimensions: 7001 ft x 100 ft

2.12.4 PCN: 67 R/A/X/T

2.12.5 Coordinates: 15−7−31.5859N / 145−44−23.8908E

2.12.6 Threshold Elevation: 206.5 ft

2.12.6 Touchdown Zone Elevation: 206.8 ft

2.12.1 Designation: 07

2.12.2 True Bearing: 68

2.12.3 Dimensions: 8699 ft x 200 ft
2.12.4 PCN: 67 F/A/X/T
2.12.5 Coordinates: 15−6−52.1086N / 145−43−4.5454E
2.12.6 Threshold Elevation: 209 ft
2.12.6 Touchdown Zone Elevation: 214 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 248
2.12.3 Dimensions: 8699 ft x 200 ft
2.12.4 PCN: 67 F/A/X/T
2.12.5 Coordinates: 15−7−24.6959N / 145−44−26.7638E
2.12.6 Threshold Elevation: 209 ft
2.12.6 Touchdown Zone Elevation: 209 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take−off Run Available: 7000 ft
2.13.3 Take−off Distance Available: 6800 ft
2.13.4 Accelerate−Stop Distance Available: 6645 ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 24
2.13.2 Take−off Run Available: 6400 ft
2.13.3 Take−off Distance Available: 7000 ft
2.13.4 Accelerate−Stop Distance Available: 6302 ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 07
2.13.2 Take−off Run Available: 8699 ft
2.13.3 Take−off Distance Available: 8669 ft
2.13.4 Accelerate−Stop Distance Available: 8664 ft
2.13.5 Landing Distance Available: 8010 ft

2.13.1 Designation: 25
2.13.2 Take−off Run Available: 8699 ft
2.13.3 Take−off Distance Available: 8699 ft
2.13.4 Accelerate−Stop Distance Available: 8045 ft
2.13.5 Landing Distance Available: 8010 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 07
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 25
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07. Magnetic variation: 2E
2.19.2 ILS Identification: GSN
2.19.5 Coordinates: 15−7−30.4581N / 145−44−34.0368E
2.19.6 Site Elevation: 211.1 ft

2.19.1 ILS Type: Glide Slope for runway 07. Magnetic variation: 2E
2.19.2 ILS Identification: GSN
2.19.5 Coordinates: 15−6−58.6872N / 145−43−13.0288E
2.19.6 Site Elevation: 206.5 ft

2.19.1 ILS Type: Localizer for runway 07. Magnetic variation: 2E
2.19.2 ILS Identification: GSN
2.19.5 Coordinates: 15−7−28.4649N / 145−44−36.3028E
2.19.6 Site Elevation: 205.8 ft

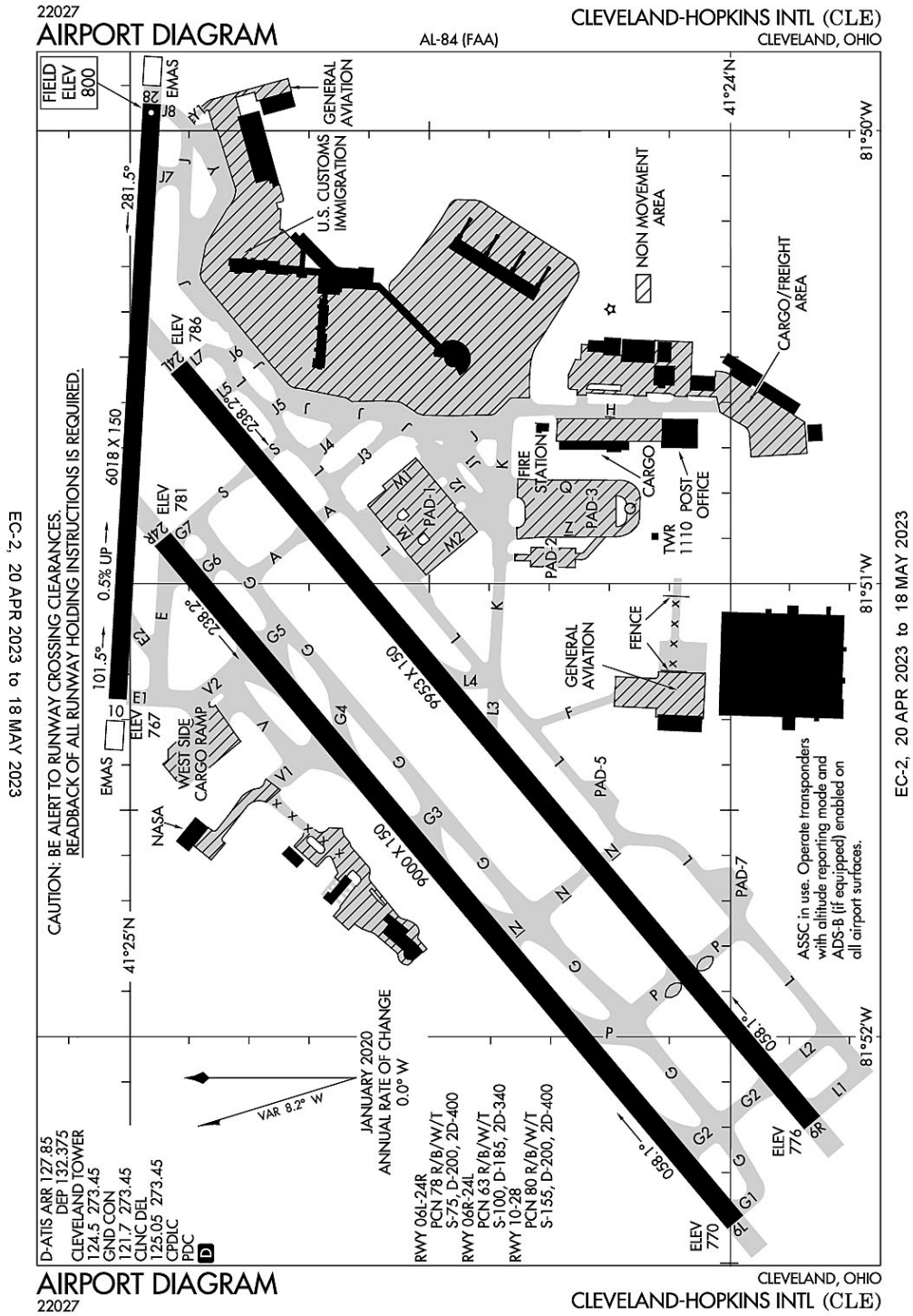
General Remarks:
FOR ARPT SECURITY CALL (670) 237−6529.

RWY 06/24 OPEN FOR TAXIING ONLY (NOT AVBL FOR LDG AND TKOF). OPEN FOR LDG AND TKOF WHEN RWY 7/25 CLSD.

PPR FM EXECUTIVE DIRECTOR COMMONWEALTH PORTS AUTHORITY SAIPAN CALL (670) 237−6500 MON−FRI 0730−1630 OTHER TIMES CALL (670) 237−6535.

IMMIGRATION & CUSTOMS AVBL DURG SCHEDULED OPNS. OTHER TIMES PRIOR ARRANGEMENTS MUST BE MADE WITH CBP PORT DIRECTOR CALL (670)288−0025/26.

Cleveland, Ohio
Cleveland–Hopkins International
ICAO Identifier KCLE



Cleveland, OH
Cleveland−Hopkins Intl
ICAO Identifier KCLE

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−24−33.865N / 81−51−16.888W
2.2.2 From City: 9 miles SW of CLEVELAND, OH
2.2.3 Elevation: 799.5 ft
2.2.5 Magnetic Variation: 8W (2020)
2.2.6 Airport Contact: DINA WILSON
PO BOX 81009
CLEVELAND, OH 44181 (216−265−6963)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41−23−59.5393N / 81−52−24.5622W
2.12.6 Threshold Elevation: 770.1 ft
2.12.6 Touchdown Zone Elevation: 772.6 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41−24−56.7503N / 81−50−54.1515W
2.12.6 Threshold Elevation: 781.1 ft
2.12.6 Touchdown Zone Elevation: 781.1 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9953 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41−23−51.8742N / 81−52−11.3519W
2.12.6 Threshold Elevation: 775.5 ft
2.12.6 Touchdown Zone Elevation: 776.5 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9953 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41−24−55.141N / 81−50−31.3701W
2.12.6 Threshold Elevation: 785.7 ft
2.12.6 Touchdown Zone Elevation: 785.8 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 93
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41−25−1.2562N / 81−51−15.2842W
2.12.6 Threshold Elevation: 767.1 ft
2.12.6 Touchdown Zone Elevation: 782.8 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 273
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41−24−57.8208N / 81−49−56.4392W
2.12.6 Threshold Elevation: 799.5 ft
2.12.6 Touchdown Zone Elevation: 799.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 24R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 06R
2.13.2 Take−off Run Available: 9956 ft
2.13.3 Take−off Distance Available: 9956 ft
2.13.4 Accelerate−Stop Distance Available: 9956 ft
2.13.5 Landing Distance Available: 8029 ft

2.13.1 Designation: 24L
2.13.2 Take−off Run Available: 9956 ft
2.13.3 Take−off Distance Available: 9956 ft
2.13.4 Accelerate−Stop Distance Available: 9956 ft
2.13.5 Landing Distance Available: 9956 ft

2.13.1 Designation: 10

2.13.2 Take−off Run Available: 6018 ft
2.13.3 Take−off Distance Available: 6018 ft
2.13.4 Accelerate−Stop Distance Available: 6018 ft
2.13.5 Landing Distance Available: 6018 ft

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 6018 ft
2.13.3 Take−off Distance Available: 6018 ft
2.13.4 Accelerate−Stop Distance Available: 6018 ft
2.13.5 Landing Distance Available: 6018 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P
2.14.3 Channel: 126.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 346.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CAVVS DP
2.14.3 Channel: 135.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 125.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 273.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (340−200)
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (201−339)
2.14.3 Channel: 126.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (ARR)
2.14.3 Channel: 127.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (DEP)
2.14.3 Channel: 132.375
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P
2.14.3 Channel: 128.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P
2.14.3 Channel: 135.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 273.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GTLKE DP
2.14.3 Channel: 128.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: KKIDS DP
2.14.3 Channel: 135.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 124.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 273.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PFLYD DP
2.14.3 Channel: 128.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ZAAPA DP
2.14.3 Channel: 128.25
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41–25–11.9443N / 81–50–35.682W
2.19.6 Site Elevation: 783.4 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41–24–9.1461N / 81–52–17.5279W
2.19.6 Site Elevation: 764.3 ft

2.19.1 ILS Type: Inner Marker for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41–23–53.9363N / 81–52–33.3994W
2.19.6 Site Elevation: 761.5 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41–25–10.1943N / 81–50–32.8939W
2.19.6 Site Elevation: 778.7 ft

2.19.1 ILS Type: DME for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41–25–11.9443N / 81–50–35.682W
2.19.6 Site Elevation: 783.4 ft

2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41–24–53.0116N / 81–51–8.214W

2.19.6 Site Elevation: 768.4 ft

2.19.1 ILS Type: Inner Marker for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41–25–3.7844N / 81–50–47.3046W
2.19.6 Site Elevation: 777.9 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41–23–53.0789N / 81–52–34.7494W
2.19.6 Site Elevation: 760.6 ft

2.19.1 ILS Type: DME for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41–25–4.0601N / 81–50–11.0982W
2.19.6 Site Elevation: 794.1 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41–24–13.6551N / 81–51–45.2101W
2.19.6 Site Elevation: 766 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41–25–5.1773N / 81–50–15.5025W
2.19.6 Site Elevation: 785.5 ft

2.19.1 ILS Type: DME for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41–23–44.3404N / 81–52–18.0729W
2.19.6 Site Elevation: 778.9 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41–24–51.9504N / 81–50–45.3186W
2.19.6 Site Elevation: 782.2 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41–23–45.4329N / 81–52–21.5252W
2.19.6 Site Elevation: 771.7 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41–24–58.7198N / 81–51–23.8351W
2.19.6 Site Elevation: 766.3 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41–25–3.4337N / 81–50–9.415W
2.19.6 Site Elevation: 786.3 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41−25−1.5177N / 81−51−21.2475W
2.19.6 Site Elevation: 756.3 ft

General Remarks:
NASA GLENN RESEARCH CENTER; NASA RAMP PPR CALL 216−433−2031; 0800−1730 MON−FRI. CONTACT NASA OPNS ON FREQ 122.925 WITHIN 50 NM.

RAMP AREA CONCOURSE D BTN GATES D1, D28 CLSD EXC ACFT WINGSPAN LESS THAN 86 FT.

TXL H CLSD TO ACFT WITH WINGSPAN OVR 171 FT.

PAD 3 BAYS 1−5 CLOSED TO ACFT WITH WINGSPAN OVER 134 FT.

PAD 2 AND TAXILANE Y1 RSTRD TO GROUP II ACFT LESS THAN 79 FT WINGSPAN.

DEER, COYOTES, & BIRDS INCLG WATERFOWL ON & INVOF ARPT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ADCUS AVBL DLY 0700−1900, LTD AVBLTY DURG OFF HRS; ALL REQS FOR SVC MUST BE MADE WITH THE US CUST SVC OFC LCTD AT GATE A−14, CALL 216−267−3600 DURG LISTED HRS.

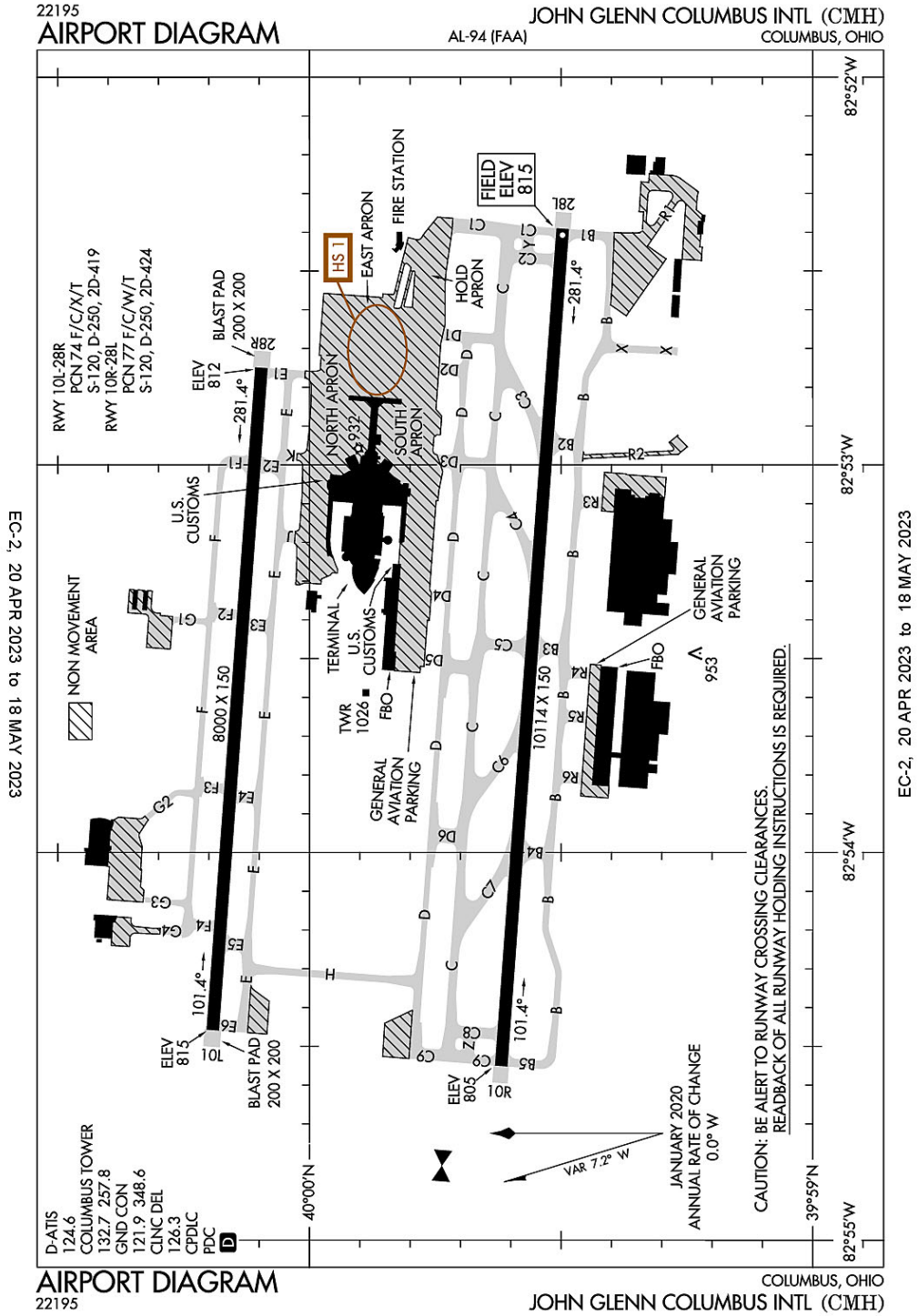
PAD 3 BAY 6 CLOSED TO ACFT WITH WINGSPAN OVER 94 FT.

ALL APCHS ARE OVR NOISE SENSITIVE AREAS. ARPT LATE NGT NOISE ABATEMENT PROCEDURES ARE IN EFFECT 2300−0600. ADDITIONAL NOISE ABATEMENT PROCEDURES ARE IN EFFECT CALL AMGR NORMAL BUSINESS HRS AT 216−265−6090.

TWY F CLSD TO ACFT WITH WINGSPAN OVR 118 FT.

TWYS CLSD OCT−APR TO SUPPORT DEICING OPS: TWY M; TWY J2; TWY M1 BTN TWY L & TWY J1; TWY M2 BTN TWY L & TWY J1.

Columbus, Ohio
Port Columbus International
ICAO Identifier KCMH



Columbus, OH
Port Columbus Intl
ICAO Identifier KCMH

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−59−49.008N / 82−53−31.773W
2.2.2 From City: 6 miles E of COLUMBUS, OH
2.2.3 Elevation: 815 ft
2.2.5 Magnetic Variation: 7W (2015)
2.2.6 Airport Contact: JOE NARDONE
COLUMBUS REGIONAL AIRPORT AUTHORITY
COLUMBUS, OH 43219 (614−239−4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10L
2.12.2 True Bearing: 94
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 F/C/X/T
2.12.5 Coordinates: 40−0−11.5307N / 82−54−27.4941W
2.12.6 Threshold Elevation: 814.7 ft
2.12.6 Touchdown Zone Elevation: 814.8 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 274
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 F/C/X/T
2.12.5 Coordinates: 40−0−5.7308N / 82−52−44.9692W
2.12.6 Threshold Elevation: 812.3 ft
2.12.6 Touchdown Zone Elevation: 813.1 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10114 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39−59−37.1453N / 82−54−33.0422W
2.12.6 Threshold Elevation: 804.9 ft
2.12.6 Touchdown Zone Elevation: 809.2 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10114 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39−59−29.8102N / 82−52−23.4543W
2.12.6 Threshold Elevation: 815 ft
2.12.6 Touchdown Zone Elevation: 815 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 8000 ft
2.13.3 Take−off Distance Available: 8000 ft
2.13.4 Accelerate−Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 10113 ft
2.13.3 Take−off Distance Available: 10113 ft
2.13.4 Accelerate−Stop Distance Available: 10113 ft
2.13.5 Landing Distance Available: 10113 ft

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 10113 ft
2.13.3 Take−off Distance Available: 10113 ft
2.13.4 Accelerate−Stop Distance Available: 10113 ft
2.13.5 Landing Distance Available: 10113 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P (100−279)
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (100−279)
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (280−099)
2.14.3 Channel: 317.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (280−099)
2.14.3 Channel: 125.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (280−099)
2.14.3 Channel: 371.975
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CBUSS STAR
2.14.3 Channel: 125.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CBUSS STAR
2.14.3 Channel: 371.975
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 126.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (280−099)
2.14.3 Channel: 125.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (100−279)
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (100−279)
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (280−099)
2.14.3 Channel: 317.775
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLPRR STAR
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 124.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DUBLN STAR
2.14.3 Channel: 125.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DUBLN STAR
2.14.3 Channel: 371.975
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JAKTZ STAR
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 132.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NCLUS DP (DEPARTURES OVER RDBUV & POMCT)
2.14.3 Channel: 125.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NCLUS DP (DEPARTURES OVER PKACZ & POBSE)
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NCLUS DP (DEPARTURES OVER PKACZ & POBSE)
2.14.3 Channel: 279.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: NCLUS DP (DEPARTURES OVER RDBUV & POMCT)
2.14.3 Channel: 371.975
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OPS (DEICE PAD CONTROL)
2.14.3 Channel: 122.775
2.14.5 Hours of Operation:

2.14.1 Service Designation: SCRLT STAR
2.14.3 Channel: 134
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−9.698N / 82−54−41.0247W
2.19.6 Site Elevation: 822.2 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−14.2837N / 82−54−14.862W
2.19.6 Site Elevation: 809.9 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−4.9978N / 82−52−32.0266W
2.19.6 Site Elevation: 799.2 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−9.698N / 82−54−41.0247W
2.19.6 Site Elevation: 822.2 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−9.1363N / 82−52−56.9903W
2.19.6 Site Elevation: 808.4 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−12.2661N / 82−54−40.558W
2.19.6 Site Elevation: 811.7 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI

2.19.5 Coordinates: 39−59−33.7337N / 82−54−45.9278W
2.19.6 Site Elevation: 814.8 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI
2.19.5 Coordinates: 39−59−32.3813N / 82−54−20.6176W
2.19.6 Site Elevation: 802.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI
2.19.5 Coordinates: 39−59−29.072N / 82−52−10.4143W
2.19.6 Site Elevation: 814.1 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 7W
2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−33.7337N / 82−54−45.9278W
2.19.6 Site Elevation: 814.8 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 7W
2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−26.4974N / 82−52−36.6536W
2.19.6 Site Elevation: 810.7 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 7W
2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−37.8812N / 82−54−46.0853W
2.19.6 Site Elevation: 806 ft

General Remarks:
TWY D−5 PAVEMENT (NORTH OF TWY D) IS RSTRD TO ACFT WITH WINGSPAN LESS THAN 79 FT.

TAXILANE CONCOURSE A BTN TWY D3 AND TWY D4 CLSD TO ACFT WINGSPAN MORE THAN 130 FT.

ALL SURFACES AROUND TERMINAL; NORTH OF TWY 'D' & SOUTH OF TWY 'E' ARE NON−MOVEMENT AREAS.

TO REQ LDG RIGHTS CTC US CUSTOMS BETWEEN 1230−0300Z, MON−FRI AT 614−497−1865.

BIRDS INVOF ARPT.

TWYS R2, R3, R4, R5 AND R6 RSTRD TO WINGSPAN LESS THAN 118 FT.

TWY F1 RSTRD TO AIRCRAFT WITH WINGSPAN LESS THAN 120 FT.

HOLD PAD FOR RWY 28L RSTRD TO ACFT WITH WINGSPAN LESS THAN 118 FT.

NOISE BARRIER LOCATED AT SE SIDE OF AIRFIELD RESTRICTED TO ACFT WITH WINGSPAN LESS THAN 79 FT.

BE ALERT: RY 10L/28R RESTRICTIONS ON STAGE I & II TURBOJET ACFT 2200−0800 & ON STAGE III TURBOJET ACFT 2200−0700. PRACTICE APCHS FOR HIGH NOISE LEVEL TYPE ACFT INCLUDING NON−STAGE III MIL JET ACFT SHALL NOT BE APPROVED UNLESS RY 10R/28L IS IN USE & THE APCH TERMINATES IN A FULL STOP TAXI−BACK OPN.

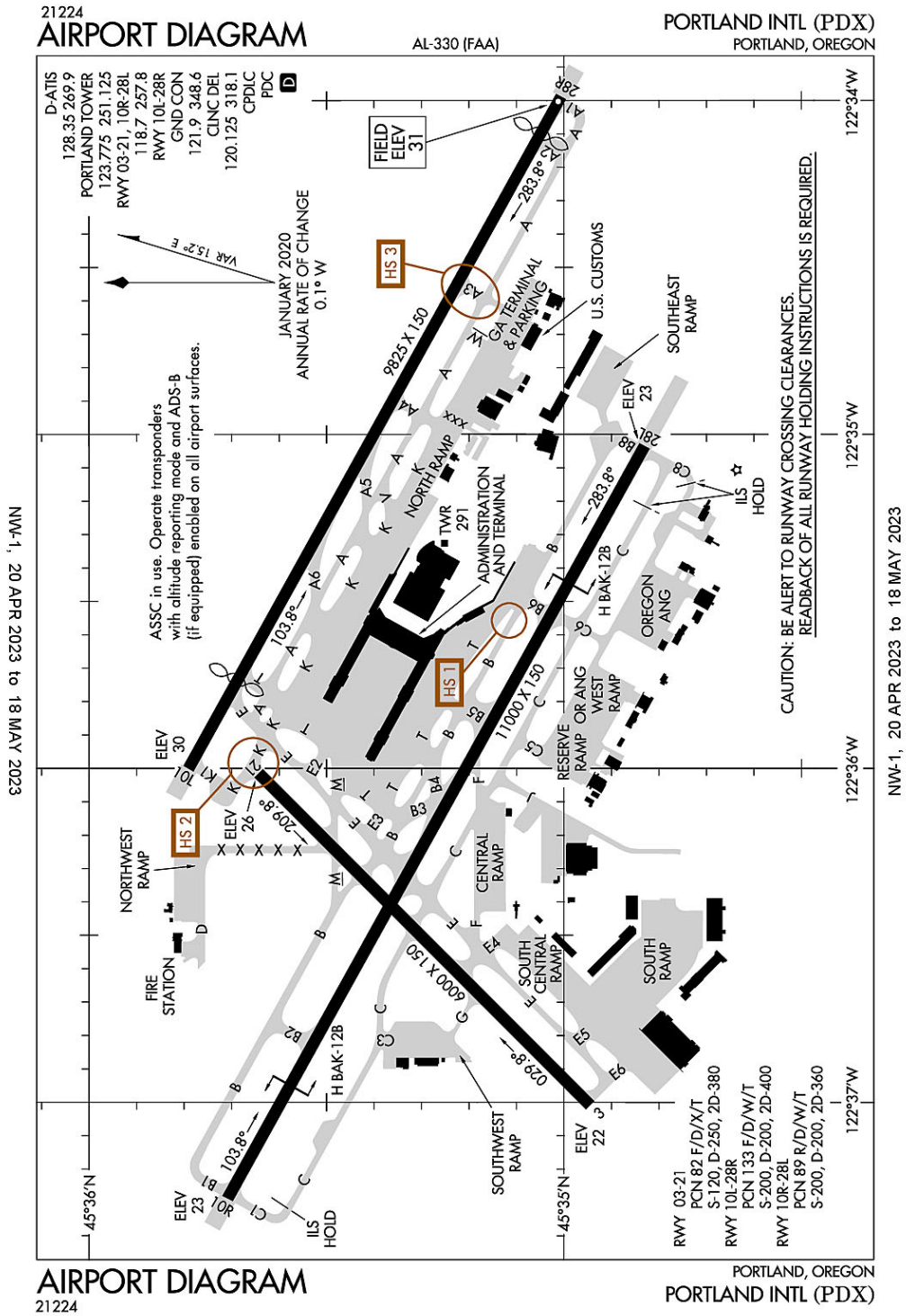
MODEL ACFT TFC WITHIN A 1 NM RDS OF A POINT 8 NM ON A 010 DEG BRG FM THE ARPT; SFC − 5000 FT AGL; SR−SS DLY.

TAXILANE CONCOURSE C BTN TWY J AND TWY K CLSD TO ACFT WINGSPAN MORE THAN 135 FT.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

TWY R1 RSTRD TO ACFT WITH WINGSPAN LESS THAN 79 FT.

Portland, Oregon
Portland International
ICAO Identifier KPDX



Portland, OR
Portland Intl
ICAO Identifier KPDX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 45−35−19.3519N / 122−35−48.7299W
2.2.2 From City: 4 miles NE of PORTLAND, OR
2.2.3 Elevation: 30.8 ft
2.2.5 Magnetic Variation: 16E (2010)
2.2.6 Airport Contact: STEPHEN NAGY
7200 NE AIRPORT WAY
PORTLAND, OR 97218 (503−415−6195)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 82 F/D/X/T
2.12.5 Coordinates: 45−34−56.73N / 122−37−0.5188W
2.12.6 Threshold Elevation: 22.2 ft
2.12.6 Touchdown Zone Elevation: 22.9 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 82 F/D/X/T
2.12.5 Coordinates: 45−35−38.605N / 122−36−0.8463W
2.12.6 Threshold Elevation: 26.4 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−47.454N / 122−36−0.0581W
2.12.6 Threshold Elevation: 29.5 ft
2.12.6 Touchdown Zone Elevation: 30.2 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−0.3785N / 122−33−59.2636W
2.12.6 Threshold Elevation: 30.8 ft
2.12.6 Touchdown Zone Elevation: 30.8 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 119
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−35−42.5347N / 122−37−17.3022W
2.12.6 Threshold Elevation: 22.7 ft
2.12.6 Touchdown Zone Elevation: 23.7 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 299
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−34−49.8531N / 122−35−2.0463W
2.12.6 Threshold Elevation: 22.7 ft
2.12.6 Touchdown Zone Elevation: 22.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 6000 ft
2.13.3 Take−off Distance Available: 6000 ft
2.13.4 Accelerate−Stop Distance Available: 6000 ft
2.13.5 Landing Distance Available: 6000 ft

2.13.1 Designation: 21
2.13.2 Take−off Run Available: 6000 ft
2.13.3 Take−off Distance Available: 6000 ft
2.13.4 Accelerate−Stop Distance Available: 6000 ft
2.13.5 Landing Distance Available: 6000 ft

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 9825 ft
2.13.3 Take−off Distance Available: 9825 ft
2.13.4 Accelerate−Stop Distance Available: 9825 ft
2.13.5 Landing Distance Available: 8535 ft

2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 9825 ft
2.13.3 Take−off Distance Available: 9825 ft
2.13.4 Accelerate−Stop Distance Available: 9825 ft
2.13.5 Landing Distance Available: 9290 ft

2.13.1 Designation: 10R

2.13.2 Take−off Run Available: 11000 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 11000 ft
2.13.5 Landing Distance Available: 11000 ft

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 11000 ft
2.13.3 Take−off Distance Available: 11000 ft
2.13.4 Accelerate−Stop Distance Available: 11000 ft
2.13.5 Landing Distance Available: 11000 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 21. Magnetic variation: 16E
2.19.2 ILS Identification: GPO
2.19.5 Coordinates: 45−34−47.97N / 122−37−7.94W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Localizer for runway 21. Magnetic variation: 16E
2.19.2 ILS Identification: GPO
2.19.5 Coordinates: 45−34−49.75N / 122−37−10.47W
2.19.6 Site Elevation: 11.4 ft

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−35−47.9502N / 122−36−13.551W
2.19.6 Site Elevation: 25.5 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−35−39.7602N / 122−35−30.1707W
2.19.6 Site Elevation: 30.8 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−34−55.53N / 122−33−46.85W
2.19.6 Site Elevation: 28.9 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−47.95N / 122−36−13.551W
2.19.6 Site Elevation: 25.5 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−10.93N / 122−34−16.4W
2.19.6 Site Elevation: 30.1 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−52.3N / 122−36−12.47W
2.19.6 Site Elevation: 25.6 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−34−46.7386N / 122−34−45.2294W
2.19.6 Site Elevation: 36 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−35−33.9026N / 122−37−7.2471W
2.19.6 Site Elevation: 16.1 ft

2.19.1 ILS Type: Inner Marker for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−35−46.7091N / 122−37−28.0266W
2.19.6 Site Elevation: 17 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−34−43.5268N / 122−34−45.8188W
2.19.6 Site Elevation: 19.5 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 16E

2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45–34–46.7386N / 122–34–45.2294W
2.19.6 Site Elevation: 36 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 16E
2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45–34–52.6331N / 122–35–16.7121W
2.19.6 Site Elevation: 19.9 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 16E
2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45–35–50.5155N / 122–37–37.8096W
2.19.6 Site Elevation: 24.8 ft

General Remarks:
FUEL – A (AIR BP – ATLANTIC AVIATION SVCS. C503–331–4220) J8(MIL) (NC–100LL, A)

BEARING STRENGTH: RWY 03–21 ST 175, RY 10L–28R ST175, RY 10R–28L ST175.

ACFT WITH WINGSPAN GREATER THAN 118 FEET ARE PROHIBITED FROM TURNING EASTBOUND ON TWY C FROM SOUTHWESTBOUND ON TWY F UNLESS UNDER TOW.

NOISE ABATEMENT PROCEDURES IN EFFECT; CALL NOISE OFFICE AT 503–460–4100. RY 28L ARRIVALS ARE NOISE SENSITIVE, EXPECT APCH TO 28R WITH TRANSITION TO 28L.

TWY T BTN EXITS B5 & B6 CLSD TO ACFT WITH WINGSPAN GTR THAN 118 FT.

OIL – O–128–133–148(MIL).

MISC: FLT NOTIFICATION SVC, ADCUS, AVBL.

TWY E3 CLSD TO ACFT WITH WINGSPAN GTR THAN 198 FT.

AREA OF TWY T BTN M & E3 NOT VSB FM TWR.

MIGRATORY & WINTERING FLOCKS OF LRG WATERFOWL ON & INVOF APRT. HEAVY SEAGULL ACTIVITY SEP THRU APR; EXPECT HIGH NMBR OF BIRDS YEAR AROUND; CK LCL ADVISORIES.

ANG: SEE FLIP AP/1 FOR SUPPLEMENTARY ARPT INFO. HAZARDOUS BIRD COND EXIST. PHASE 1 MAY–OCT, PHASE II NOV–APR. CURRENT BIRD WATCH CONDITIONS ARE NOT REPORTED ON ATIS.

ACFT AUTHORIZED TO UTILIZE THE NORTHWEST RAMP WILL BE TOWED TO/FROM THIS RAMP.

TWY T BTN TWY E3 & TWY B5 CLSD TO ACFT WITH WINGSPAN GTR THAN 198 FT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY K BTN TWY V & TWY A4 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

180 DEGREE TURNS BY ACFT WEIGHING IN EXCESS OF 12500 LBS PROHIBITED ON RY 10L/28R, RY 03/21 AND ALL TWYS.

ANG : PPR/OFFL BUS ONLY. BASE OPS OPR 1500–2300Z++ MON–FRI EXC HOL.; DSN 638–4390, C503–335–4390. CTC BASE OPS 15 MIN PRIOR TO LDG AND AFTER DEP ON 281.2. TRAN QUARTERS NOT

AVBL. CAUTION: OBST LIGHTING IS NOT NVD COMPATIBLE. NVD NOT AUTHORIZED WHILE AIRBORNE IN VCNTY OF AFLD.

TWY K BTN TWY A5 & TWY V CLSD TO ACFT WINGSPAN MORE THAN 168 FT.

JASU − 4(A/M32A−86) (MC−11) 1(MA−1A).

FLUID − LHOXRB.

(E94) WSFO/WSO/FW/RFC.

TWY V CLSD TO ACFT WITH WINGSPAN GREATER THAN 168 FT. ACFT WITH WINGSPAN GREATER THAN 118 FT PROHIBITED FM TURNING WB ONTO TWY A FM TWY V UNLESS UNDER TOW.

TWY C BTN TWY C6 AND TWY C8 CLSD TO ACFT WITH WINGSPAN GTR THAN 200 FT.

TWY A3 BTN TWY A & THE GA RAMP CLSD TO ACFT WITH WINGSPAN GTR THAN 135 FEET UNLESS UNDER TOW.

UNCONTROLLED TFC AT PEARSON FIELD VANCOUVER WA 3 NM W OF RY 10L THLD ON EXTDD CNTRLN.

ARPT CLSD TO NON−POWERED ACFT EXCP IN EMERG.

AT THE WEST END ARM/DEARM AREA ON TWY C NO ACFT OF ANY TYPE MAY TAXI PAST THE ARM/DEARM AREA WHILE IT IS BEING USED.

TWY C3 CLSD TO ACFT WITH WINGSPAN EQUAL TO OR GTR THAN 79 FT.

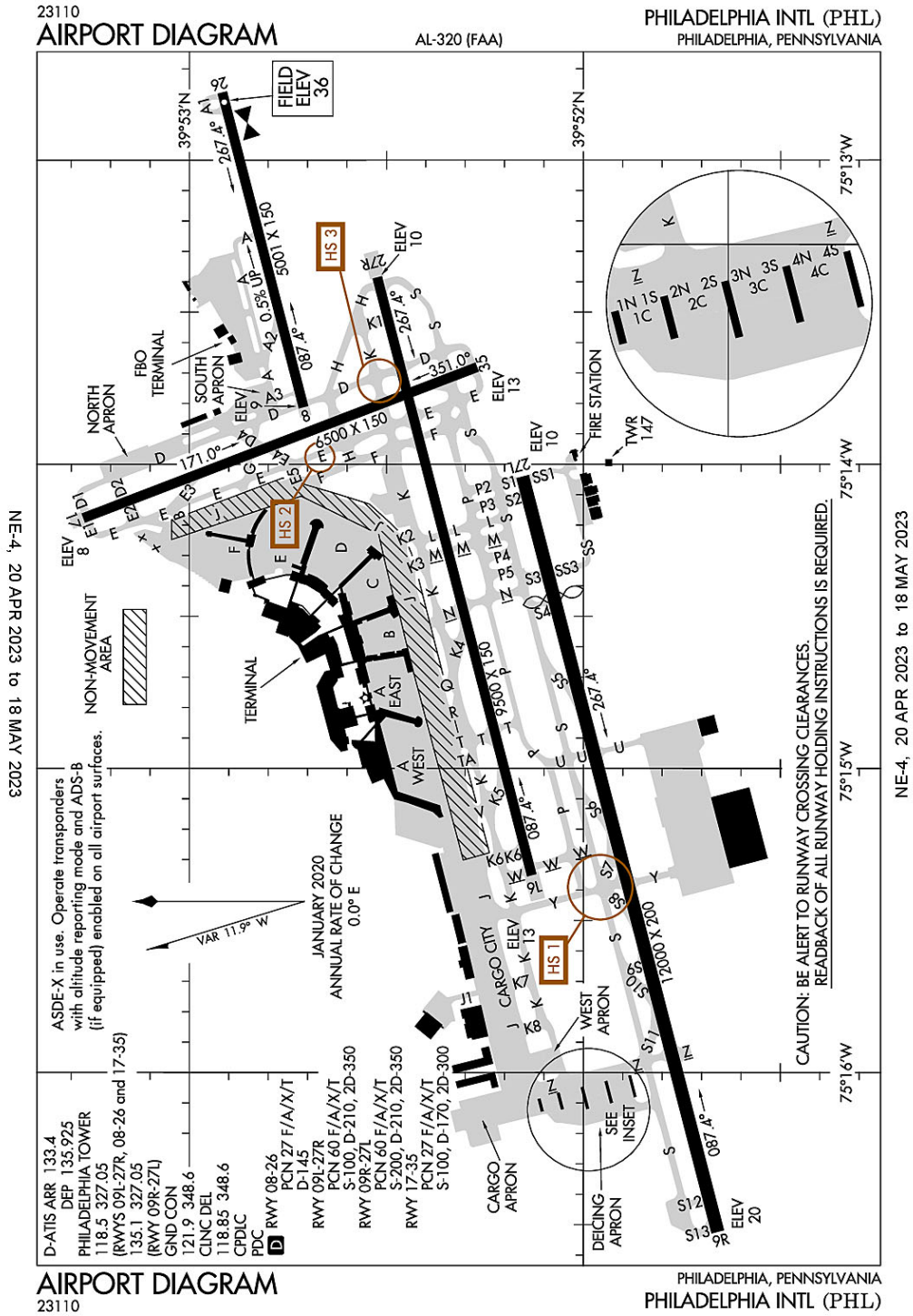
TWY W CLSD TO ACFT WITH WINGSPAN GTR THAN 118 FT UNLESS UNDER TOW.

PDX HAS FAC CONSTRAINTS THAT LMT ITS ABILITY TO ACCOMMODATE DIVD FLTS & MNTN THE ARPT SAFE OPN DUR IREG OPS. ACFT OPRS SHUD CTC THE ARPT DUTY MGR AT (503) 460−4236 TO COORD DIVD FLTS EXC IN THE CASE OF A DECLARED IN−FLT EMERG.

NSTD YELLOW PRK SPOT DESIGNATORS AND EQPT TOOL BOX LCTN PAINTED ON RAMP. PLEASE CTC BASE OPS OR REQ FOLLOW ME IF NOT FAMILIAR WITH PANGB PRK PROCEDURES.

MILITARY: ANG: OREGON ANG E RAMP SUN SHADE OBST LGTS O/S.

Philadelphia, Pennsylvania
Philadelphia International
ICAO Identifier KPHL



Philadelphia, PA
Philadelphia Intl
ICAO Identifier KPHL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39−52−19.502N / 75−14−26.387W
2.2.2 From City: 5 miles SW of PHILADELPHIA, PA
2.2.3 Elevation: 35.9 ft
2.2.5 Magnetic Variation: 12W (2020)
2.2.6 Airport Contact: KEITH BRUNE
DIV OF AVIATION TERMINAL E
PHILADELPHIA, PA 19153 (215−937−6914)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 75
2.12.3 Dimensions: 5001 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−42.0147N / 75−13−48.05W
2.12.6 Threshold Elevation: 9.3 ft
2.12.6 Touchdown Zone Elevation: 20.3 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 256
2.12.3 Dimensions: 5001 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−54.3825N / 75−12−45.9478W
2.12.6 Threshold Elevation: 35.9 ft
2.12.6 Touchdown Zone Elevation: 35.9 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 255
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−30.7933N / 75−13−22.4291W
2.12.6 Threshold Elevation: 10.4 ft
2.12.6 Touchdown Zone Elevation: 10.5 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 75
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−7.2582N / 75−15−20.3809W
2.12.6 Threshold Elevation: 13.2 ft
2.12.6 Touchdown Zone Elevation: 13.3 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 75
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−51−38.9137N / 75−16−30.7056W
2.12.6 Threshold Elevation: 20.1 ft
2.12.6 Touchdown Zone Elevation: 20.5 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 255
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−8.651N / 75−14−1.719W
2.12.6 Threshold Elevation: 10.2 ft
2.12.6 Touchdown Zone Elevation: 10.1 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 159
2.12.3 Dimensions: 6500 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−53−15.5714N / 75−14−9.9268W
2.12.6 Threshold Elevation: 8.2 ft
2.12.6 Touchdown Zone Elevation: 10.5 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 339
2.12.3 Dimensions: 6500 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−15.5777N / 75−13−40.1314W
2.12.6 Threshold Elevation: 12.9 ft
2.12.6 Touchdown Zone Elevation: 12.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 5001 ft
2.13.3 Take−off Distance Available: 5001 ft
2.13.4 Accelerate−Stop Distance Available: 5001 ft
2.13.5 Landing Distance Available: 5001 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 5001 ft
2.13.3 Take−off Distance Available: 5001 ft

2.13.4 Accelerate−Stop Distance Available: 5001 ft
2.13.5 Landing Distance Available: 5001 ft

2.13.1 Designation: 27R
2.13.2 Take−off Run Available: 9500 ft
2.13.3 Take−off Distance Available: 9500 ft
2.13.4 Accelerate−Stop Distance Available: 9500 ft
2.13.5 Landing Distance Available: 8864 ft

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 9500 ft
2.13.3 Take−off Distance Available: 9500 ft
2.13.4 Accelerate−Stop Distance Available: 9500 ft
2.13.5 Landing Distance Available: 9500 ft

2.13.1 Designation: 09R
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 27L
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 11825 ft
2.13.5 Landing Distance Available: 9912 ft

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 6500 ft
2.13.3 Take−off Distance Available: 6500 ft
2.13.4 Accelerate−Stop Distance Available: 6500 ft
2.13.5 Landing Distance Available: 6500 ft

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 6500 ft
2.13.3 Take−off Distance Available: 6500 ft
2.13.4 Accelerate−Stop Distance Available: 6500 ft
2.13.5 Landing Distance Available: 6500 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: 5500 & BLO (NORTH)
2.14.3 Channel: 123.8
2.14.5 Hours of Operation:

2.14.1 Service Designation: 5500 & BLO (NORTH)
2.14.3 Channel: 291.7
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P (001−089, 5000 FT & BLW)
2.14.3 Channel: 123.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−360, 5000 FT & BLW)
2.14.3 Channel: 126.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (090−269, 5000 FT & BLW)
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.14.3 Channel: 128.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (090−269, 6000−8000 FT)
2.14.3 Channel: 133.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−360, 5000 FT & BLW)
2.14.3 Channel: 263.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.14.3 Channel: 272.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.14.3 Channel: 273.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (001−089, 5000 FT & BLW)
2.14.3 Channel: 291.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (090−269 6000−8000 FT)
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (090−269, 5000 FT & BLW)
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BUNTS STAR
2.14.3 Channel: 128.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BUNTS STAR
2.14.3 Channel: 272.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 118.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CEDAR LAKE STAR
2.14.3 Channel: 133.875

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CEDAR LAKE STAR
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SW 6000 FT & BLW)
2.14.3 Channel: 118.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SOUTH/SOUTHWEST RWY 27 8500−10000 FT)
2.14.3 Channel: 119.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE RWY 27 ACTIVE 8500−10000 FT)
2.14.3 Channel: 119.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE RWY 09 ACTIVE 10000 FT & BLW)
2.14.3 Channel: 119.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NE 6500 FT & BLW)
2.14.3 Channel: 123.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (W RWY 27 ACTIVE 10000 FT & BLW)
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NE 7000−10000 FT)
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (W RWY 09 ACTIVE 8500−10000 FT)
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NW 8000−10000 FT)
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (5500 FT & BLW)
2.14.3 Channel: 126.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE−SW 5000 FT & BLW)
2.14.3 Channel: 127.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8000 FT & BLW)

2.14.3 Channel: 128.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NORTH 6500−7500)
2.14.3 Channel: 128.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (6000−8000 FT)
2.14.3 Channel: 133.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SOUTHEAST RWY 27 5500−7500)
2.14.3 Channel: 133.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (5500 FT & BLW)
2.14.3 Channel: 263.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE RWY 09 ACTIVE 10000 FT & BLW)
2.14.3 Channel: 269.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE RWY 27 ACTIVE 8500−10000 FT)
2.14.3 Channel: 269.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SOUTH/SOUTHWEST RWY 27 8500−10000 FT)
2.14.3 Channel: 269.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NORTH 6500−7500)
2.14.3 Channel: 272.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8000 FT & BLW)
2.14.3 Channel: 272.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (N NE 6500−7500)
2.14.3 Channel: 273.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (W RWY 09 ACTIVE 8000 FT & BLW)
2.14.3 Channel: 273.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NE RWY 27 ACTIVE 5000 FT & BLW)
2.14.3 Channel: 291.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (6000−8000 FT)
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SE−SW 5000 FT & BLW)
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (RWY 27, 5500−7500 FT)
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NE 7000−10000 FT)
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8500−10000 FT)
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (NW 8000−10000 FT)
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (SW 6000 FT & BLW)
2.14.3 Channel: 323.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (ARR)
2.14.3 Channel: 133.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (DEP)
2.14.3 Channel: 135.925
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090−269)
2.14.3 Channel: 119.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (270−089)
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090−269)
2.14.3 Channel: 269.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (270−089)
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: FINAL APCH
2.14.3 Channel: 125.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/S
2.14.3 Channel: 121.65
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JIIMS STAR
2.14.3 Channel: 133.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: JIIMS STAR
2.14.3 Channel: 317.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 08/26, 09L/27R, 17/35)
2.14.3 Channel: 118.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P (RWY 09R/27L)
2.14.3 Channel: 135.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 327.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PAATS STAR
2.14.3 Channel: 133.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PAATS STAR
2.14.3 Channel: 317.55

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PHL ONE DP
2.14.3 Channel: 124.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PHL ONE DP
2.14.3 Channel: 319.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PRM (RWY 27L)
2.14.3 Channel: 120.425
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: PRM (RWY 26)
2.14.3 Channel: 123.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SPUDS STAR
2.14.3 Channel: 128.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: SPUDS STAR
2.14.3 Channel: 272.575
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39–52–42.2207N / 75–13–32.3765W
2.19.6 Site Elevation: 28.9 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39–52–49.3706N / 75–12–58.3473W
2.19.6 Site Elevation: 21.3 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39–52–42.383N / 75–13–31.8279W
2.19.6 Site Elevation: 5.4 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39–52–37.1712N / 75–13–11.1396W
2.19.6 Site Elevation: 20 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39–52–6.03N / 75–15–6.06W

2.19.6 Site Elevation: 8.9 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39–52–33.52N / 75–13–8.777W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: DME for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39–52–37.1712N / 75–13–11.1396W
2.19.6 Site Elevation: 20 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39–52–24.0466N / 75–13–35.8144W
2.19.6 Site Elevation: 7.5 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39–52–4.7498N / 75–15–32.9263W
2.19.6 Site Elevation: 8.8 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39–52–7.3002N / 75–13–47.0459W
2.19.6 Site Elevation: 23.5 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39–51–37.8234N / 75–16–15.7274W
2.19.6 Site Elevation: 13.3 ft

2.19.1 ILS Type: Inner Marker for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39–51–36.7356N / 75–16–41.589W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39–52–11.1577N / 75–13–49.1415W
2.19.6 Site Elevation: 9.1 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39–52–7.3002N / 75–13–47.0459W
2.19.6 Site Elevation: 23.5 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39–51–57.2838N / 75–14–37.7318W
2.19.6 Site Elevation: 8.5 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39–51–36.2572N / 75–16–43.9517W
2.19.6 Site Elevation: 6.8 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39–52–6.7468N / 75–13–39.3372W
2.19.6 Site Elevation: 24.5 ft

2.19.1 ILS Type: Glide Slope for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39–53–5.9004N / 75–14–8.6899W
2.19.6 Site Elevation: 6.2 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39–52–6.3204N / 75–13–35.5323W
2.19.6 Site Elevation: 12 ft

General Remarks:
ARPT IS LCTD IN A NOISE SENSITIVE AREA. AIRPORT NOISE ABATEMENT TAKEOFF PROCEDURES ARE TO BE USED.

ONLY NOSE–IN PRKG PERMITTED ON NORTH REMOTE APNS. PPR FM ARPT OPS FOR ALL ACFT PRKG ON REMOTE APNS; CTC 215–937–6914/6800.

RY 09R ROLLOUT RVR USED FOR RY 09L MIDPOINT RVR.

RYS 27L, 27R & 35 SHIP CHNL (DELAWARE RIVER) MAX HEIGHT OF SHIPS 189 FT. RY 26 SHIP CHNL (SCHUYLKILL) MAX HEIGHT OF SHIPS 149 FT.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ALL ACFT TRAVELING ON TWY J MUST USE MINIMUM POWER WHEN TURNING SOUTH DUE TO JETBLAST CONCERNS.

UNLGTD STACK 288 FT MSL (271 FT AGL) 2.3 NM SW OF ARPT.

TCAS EQUIPPED ACFT–TCAS ALERT MAY BE CAUSED BY TRANSPONDER EQUIPPED SHIPS LCTD PHL NAVAL BASE 3 NM E.

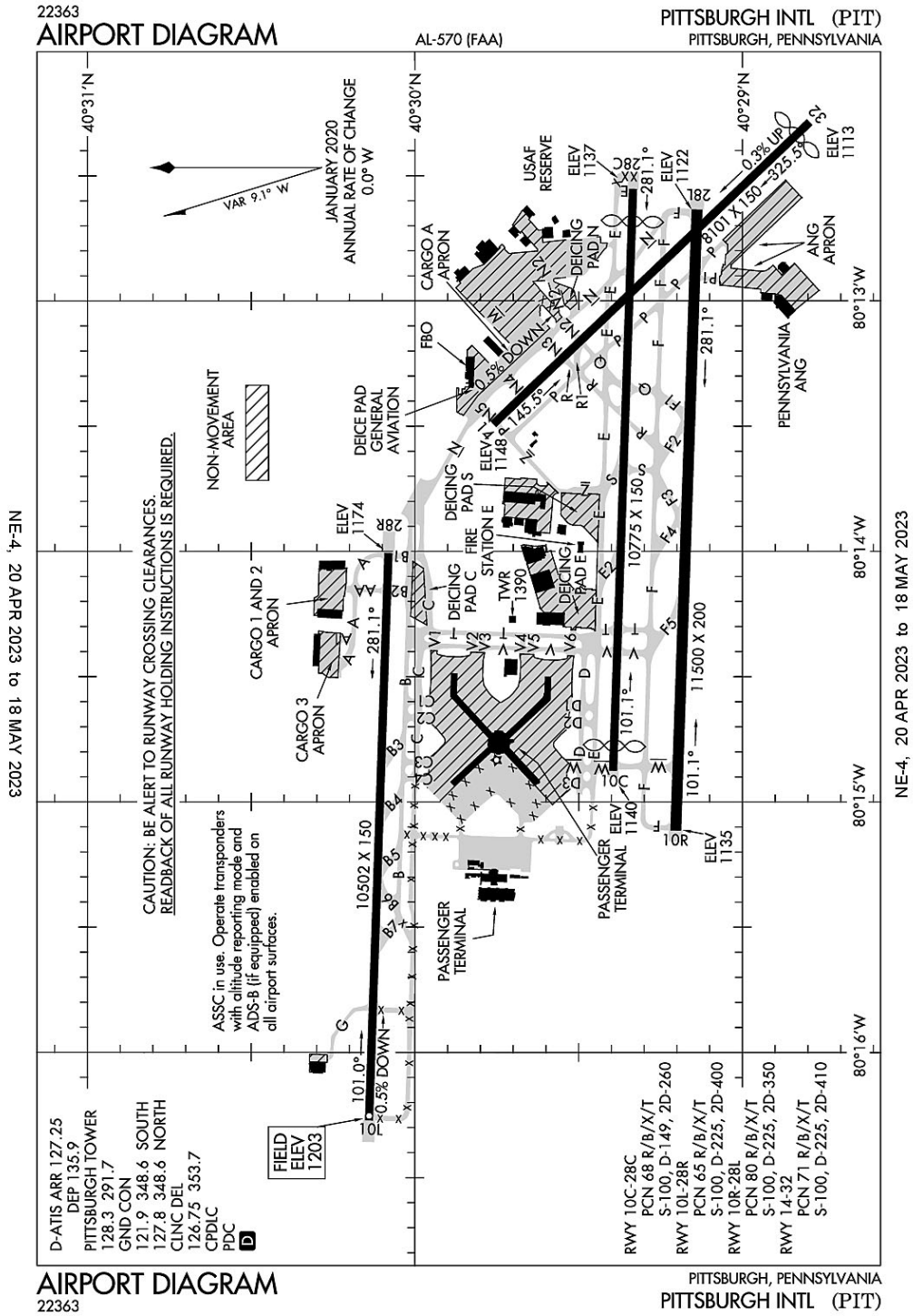
TWY J BTN TWYS K3 AND Q RESTRICTED TO ACFT WITH WINGSPANS 171 FT AND LESS.

ALL ENGINE RUNUPS REQUIRE PPR FM DUTY OPNS OFFICER AT 937–6914/6800; RUNUPS 20 MIN MAXIMUM.

POSSIBLE UNMARKED SHIP OBSTRUCTION TRANSITING EAST OR WESTBOUND ALONG THE DELAWARE RIVER REACHING HEIGHTS OF 189’ – BE ALERT WHEN APPROACHING PHL RUNWAY 35 AND WHENEVER CIRCLING OR VISUALLY APPROACHING ALL OTHER RUNWAYS.

BIRDS ON & INVOF ARPT.

Pittsburgh, Pennsylvania
Pittsburgh International
ICAO Identifier KPIT



Pittsburgh, PA
Pittsburgh Intl
ICAO Identifier KPIT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−29−29.1N / 80−13−57.7W
2.2.2 From City: 12 miles NW of PITTSBURGH, PA
2.2.3 Elevation: 1202.9 ft
2.2.5 Magnetic Variation: 9W (2020)
2.2.6 Airport Contact: CHRISTINA A. CASSOTIS
PO BOX 12370, SUITE 4000
PITTSBURGH, PA 15231 ((412) 472−3509)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28C
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−20.0419N / 80−12−33.1754W
2.12.6 Threshold Elevation: 1136.6 ft
2.12.6 Touchdown Zone Elevation: 1133.5 ft

2.12.1 Designation: 10C
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−23.6989N / 80−14−52.5475W
2.12.6 Threshold Elevation: 1140.2 ft
2.12.6 Touchdown Zone Elevation: 1141.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40−30−8.4012N / 80−16−16.2687W
2.12.6 Threshold Elevation: 1202.9 ft
2.12.6 Touchdown Zone Elevation: 1202.9 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40−30−4.8667N / 80−14−0.4048W
2.12.6 Threshold Elevation: 1174.1 ft
2.12.6 Touchdown Zone Elevation: 1174.1 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 92
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40−29−12.2249N / 80−15−6.8568W
2.12.6 Threshold Elevation: 1134.8 ft
2.12.6 Touchdown Zone Elevation: 1134.8 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 272
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40−29−8.3238N / 80−12−38.1249W
2.12.6 Threshold Elevation: 1121.9 ft
2.12.6 Touchdown Zone Elevation: 1125 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 316
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−28−47.69N / 80−12−17.2183W
2.12.6 Threshold Elevation: 1113.4 ft
2.12.6 Touchdown Zone Elevation: 1123.6 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 136
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−29−45.6544N / 80−13−29.5187W
2.12.6 Threshold Elevation: 1147.6 ft
2.12.6 Touchdown Zone Elevation: 1147.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 28C
2.13.2 Take−off Run Available: 10775 ft
2.13.3 Take−off Distance Available: 10775 ft
2.13.4 Accelerate−Stop Distance Available: 10310 ft
2.13.5 Landing Distance Available: 9708 ft

2.13.1 Designation: 10C
2.13.2 Take−off Run Available: 10775 ft
2.13.3 Take−off Distance Available: 10775 ft

2.13.4 Accelerate–Stop Distance Available: 10173 ft
2.13.5 Landing Distance Available: 9708 ft

2.13.1 Designation: 10L
2.13.2 Take–off Run Available: 10502 ft
2.13.3 Take–off Distance Available: 10502 ft
2.13.4 Accelerate–Stop Distance Available: 10502 ft
2.13.5 Landing Distance Available: 10502 ft

2.13.1 Designation: 28R
2.13.2 Take–off Run Available: 10502 ft
2.13.3 Take–off Distance Available: 10502 ft
2.13.4 Accelerate–Stop Distance Available: 10102 ft
2.13.5 Landing Distance Available: 10102 ft

2.13.1 Designation: 10R
2.13.2 Take–off Run Available: 11500 ft
2.13.3 Take–off Distance Available: 11500 ft
2.13.4 Accelerate–Stop Distance Available: 11492 ft
2.13.5 Landing Distance Available: 11492 ft

2.13.1 Designation: 28L
2.13.2 Take–off Run Available: 11500 ft
2.13.3 Take–off Distance Available: 11500 ft
2.13.4 Accelerate–Stop Distance Available: 11500 ft
2.13.5 Landing Distance Available: 11500 ft

2.13.1 Designation: 32
2.13.2 Take–off Run Available: 8101 ft
2.13.3 Take–off Distance Available: 8101 ft
2.13.4 Accelerate–Stop Distance Available: 7801 ft
2.13.5 Landing Distance Available: 7466 ft

2.13.1 Designation: 14
2.13.2 Take–off Run Available: 8101 ft
2.13.3 Take–off Distance Available: 8101 ft
2.13.4 Accelerate–Stop Distance Available: 7366 ft
2.13.5 Landing Distance Available: 7366 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: ANG OPS
2.14.3 Channel: 311
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P (271−360)
2.14.3 Channel: 121.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (001−090)
2.14.3 Channel: 124.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (181−270)
2.14.3 Channel: 133.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (270−089)
2.14.3 Channel: 279.625
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (090−269)
2.14.3 Channel: 360.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P
2.14.3 Channel: 336.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (091−180)
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 126.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 353.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (271−360)
2.14.3 Channel: 121.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (091−180)
2.14.3 Channel: 123.95
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (001−090)
2.14.3 Channel: 124.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (181−270)
2.14.3 Channel: 133.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (270−089)
2.14.3 Channel: 279.625
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS B (090−269)
2.14.3 Channel: 360.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: COMD POST
2.14.3 Channel: 252.1
2.14.5 Hours of Operation:

2.14.1 Service Designation: D−ATIS (ARR)
2.14.3 Channel: 127.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS (DEP)
2.14.3 Channel: 135.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (SOUTH)
2.14.3 Channel: 119.35

2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (NORTH)
2.14.3 Channel: 124.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (090−269)
2.14.3 Channel: 285.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (NORTH)
2.14.3 Channel: 338.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/S
2.14.3 Channel: 125.275
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P (SOUTH)
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P (NORTH)
2.14.3 Channel: 127.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 128.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 291.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OPS
2.14.3 Channel: 36.35
2.14.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−11.9236N / 80−15−59.9044W
2.19.6 Site Elevation: 1195 ft

2.19.1 ILS Type: Inner Marker for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−8.7927N / 80−16−27.004W
2.19.6 Site Elevation: 1175.5 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−4.5231N / 80−13−47.1428W
2.19.6 Site Elevation: 1160.8 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 9W
2.19.2 ILS Identification: HFE
2.19.5 Coordinates: 40−30−8.7192N / 80−14−14.6252W
2.19.6 Site Elevation: 1170.6 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 9W
2.19.2 ILS Identification: HFE
2.19.5 Coordinates: 40−30−8.7888N / 80−16−31.3335W
2.19.6 Site Elevation: 1214.2 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−15.3464N / 80−14−53.775W
2.19.6 Site Elevation: 1129.2 ft

2.19.1 ILS Type: Inner Marker for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−12.5381N / 80−15−18.8824W
2.19.6 Site Elevation: 1144.8 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−8.2188N / 80−12−34.1165W
2.19.6 Site Elevation: 1116.6 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 9W
2.19.2 ILS Identification: PFS
2.19.5 Coordinates: 40−29−4.7301N / 80−12−51.2688W
2.19.6 Site Elevation: 1120.3 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 9W
2.19.2 ILS Identification: PFS
2.19.5 Coordinates: 40−29−12.6437N / 80−15−23.0275W
2.19.6 Site Elevation: 1141.2 ft

2.19.1 ILS Type: DME for runway 32. Magnetic variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−29−48.847N / 80−13−37.583W
2.19.6 Site Elevation: 1134 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−28−52.663N / 80−12−29.1403W
2.19.6 Site Elevation: 1112.2 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−29−50.4118N / 80−13−35.4629W
2.19.6 Site Elevation: 1139.1 ft

General Remarks:
TWY AA NO TURN−OFF ONTO TWY A FOR ACFT WINGSPAN 171 FT OR GREATER EXC PPR (412) 472−5630.

[MILITARY]: CAUTION: BASH PHASE II OPS IN EFFECT 1 JUL − 31 AUG ANNUALLY. UNLESS MSN REQUIREMENTS DIRECT OTHERWISE, FLIGHTS SHOULD NOT BE SKED WITHIN +/−1HR OF SS/SR. TRAN AIRCREW SHOULD REQ BIRD WATCH COND FR AFRC (PITT OPS) ON 252.1 OR ANG OPS (STEEL CTL) ON 311.0. AIRCREW WILL BE INFORMED BY STEEL CONTROL OR PITT OPS (AS APPLICABLE) IF CURRENT BWC IS OTHER THAN LOW REGARDLESS OF BASH PHASE.

SERVICE−OIL: O−156.

TERML TAXILANES E OF CONCOURSES A & B RESTRD TO GROUP 3 ACFT & SMALLER.

ACFT USING TWY 'N' PROHIBITED TO STOP ON OVERPASS AREA DUE TO POSSIBLE EMERGENCY EVACUATION HAZARD.

ALL JETS DEPARTING RY 28R MUST BE ALIGNED WI RY PRIOR TO APPLYING TKOF POWER.

DEER & BIRDS ON & INVOF ARPT.

PPR/OFFL BUS MIN 48 HR CTC AFLD MGMT DSN 277 8163, C412 474 8163. LTD TRAN SVC. AFLD MGT NML DUTY HRS 1300 0100++ MON, WED, FRI, 1300−0500++ TUE, THU, EXC HOL. UNIT TRAINING ASSEMBLY 1300 2100Z++SAT SUN.TRAN ACFT MUST HAVE APPVL OF 911OG/CC FOR PPR DUR OFF DUTY HR. NO SVC AVBL FOR SPACE AVBL PAX DUR OFF DUTY HR. CALL PITT COMD POST (IRON CITY) BY RDO 15 MIN PRIOR TO ARRIVAL. ALFD MGMT DOES NOT ISSUE OR STOR COMSEC. COMSEC STOR CTC COMD POST DSN 277 8146.

ANG: OPR 1130−2030Z++MON−FRI EXCP HOL. (CLSD EV OTH MON.)

ANG ACFT MUST CTC TANKER 303.0/FTR OPNS 293.7 BEFORE CROSSING RWY 28L TO OBTAIN CLNC TO ENTER.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

SERVICE−TRAN ALERT: NO PRIORITY BASIS.

FUEL: A++ PROVIDED BY ANG AND AFRC.(MIL).

LDG FEE.

TRML APN UNCONTROLLED. PUSHBACK PILOT DESCRETION. DO NOT EXIT TRML APN AT TWY C1, C4, V3, V4, D1, W. CTC GC WHEN HLDG AT TWY C2, C3, V1, V2, V5, V6, D2, D3.

PUSHBACK CLNC REQUIRED FR GATES A100 AND A101 AT CARGO A. CTC GC. PUSHBACK FM THESE GATES ENTERS TWY N.

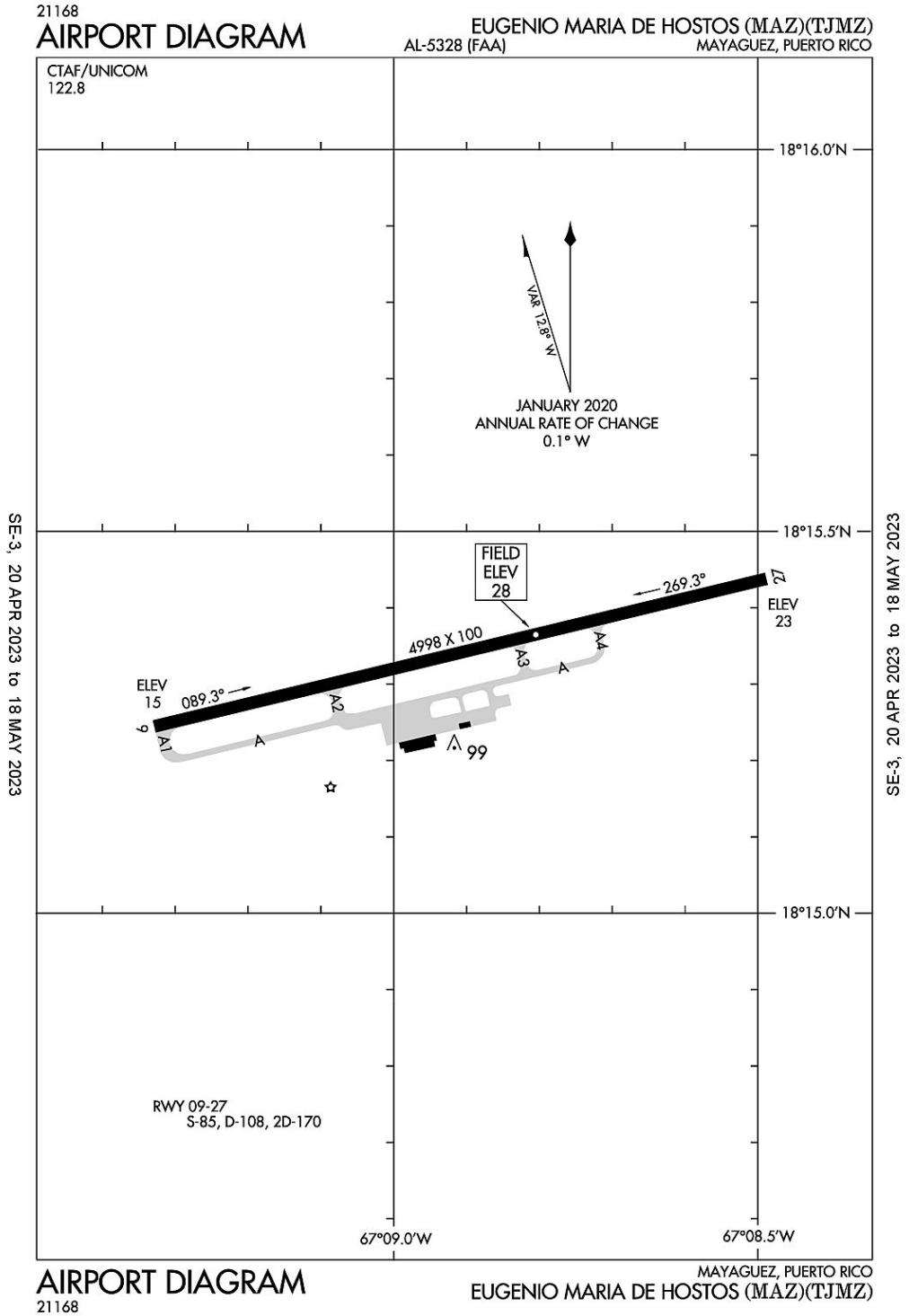
SERVICE−JASU: (ANG) (A/M32A−86) (AM 32−95; (AFRC − 2(A/M32−86 (AM32−95).

SERVICE−FLUID: LPOX LHNIT.

ATCT IS AUTHORIZED TO HAVE ACFT LINE−UP & WAIT ON RYS 28L AT TWY 'P' DURG HRS OF DARKNESS. THE SPECIFIC RY SHALL BE USED ONLY FOR DEPARTURES & THE INTXN MUST BE VSB FM ATCT.

TWY G INTXN AT RY 10L/28R RIGHT TURN NA.

Mayaguez, Puerto Rico
Eugenio Maria De Hostos
ICAO Identifier TJMZ



Mayaguez, PR
Eugenio Maria De Hostos
ICAO Identifier TJMZ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−15−20.5N / 67−8−54.5W

2.2.2 From City: 3 miles N of MAYAGUEZ, PR

2.2.3 Elevation: 27.7 ft

2.2.5 Magnetic Variation: 10W (1985)

2.2.6 Airport Contact: EDGAR SIERRA
BOX 710
MAYAGUEZ, PR 681 (787−832−3390)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, MON−FRI Days, 0730−1600 Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: NO

2.4.2 Fuel Types:

2.4.5 Hangar Space: NO

2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 27

2.12.2 True Bearing: 256

2.12.3 Dimensions: 4998 ft x 100 ft

2.12.4 PCN: ///

2.12.5 Coordinates: 18−15−26.2517N / 67−8−29.2981W

2.12.6 Threshold Elevation: 23.2 ft

2.12.6 Touchdown Zone Elevation: 27.7 ft

2.12.1 Designation: 09

2.12.2 True Bearing: 76

2.12.3 Dimensions: 4998 ft x 100 ft

2.12.4 PCN: ///

2.12.5 Coordinates: 18−15−14.6817N / 67−9−19.728W

2.12.6 Threshold Elevation: 15.3 ft

2.12.6 Touchdown Zone Elevation: 27.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 27
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: 09
2.13.2 Take−off Run Available: ft
2.13.3 Take−off Distance Available: ft
2.13.4 Accelerate−Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 27
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 Navigation Aid Type: NDB. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: MAZ
2.19.5 Coordinates: 18−15−13.529N / 67−9−8.947W
2.19.6 Site Elevation:

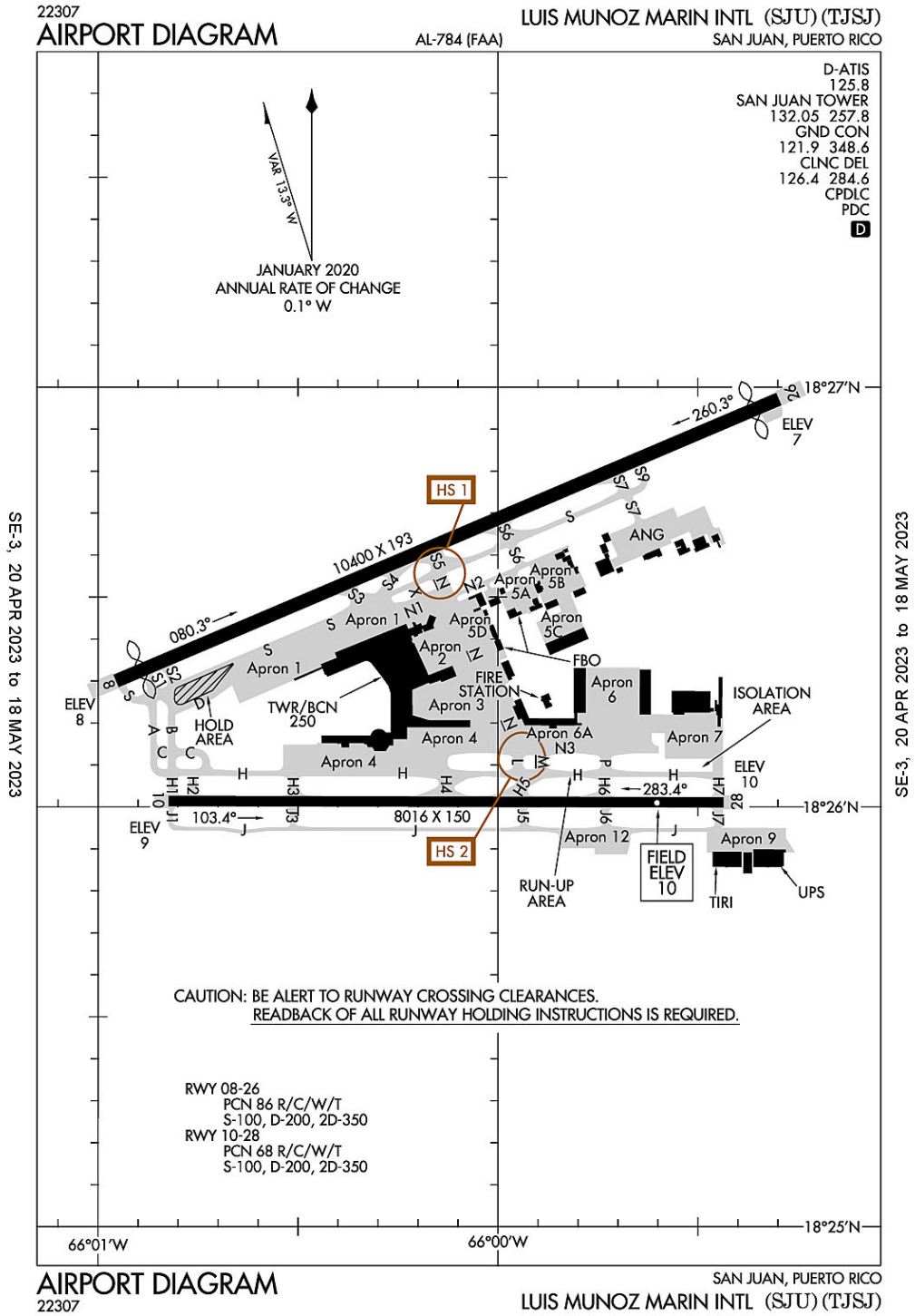
2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: MAZ
2.19.5 Coordinates: 18−15−23.2293N / 67−9−3.7215W
2.19.6 Site Elevation: 18 ft

General Remarks:
FOR CD IF FREQ ARE OTS CTC SAN JUAN CERAP AT 787−253−8664/8667

ULTRALIGHT ACTIVITY.

BIRDS ON AND INVOF ARPT.

San Juan, Puerto Rico
Luis Munoz Marin International
ICAO Identifier TJSJ



San Juan, PR
Luis Munoz Marin Intl
ICAO Identifier TJSJ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−26−21.837N / 66−0−7.68W

2.2.2 From City: 3 miles SE of SAN JUAN, PR

2.2.3 Elevation: 9.6 ft

2.2.5 Magnetic Variation: 11W (1985)

2.2.6 Airport Contact: MR. JORGE HERNANDEZ
P. O. BOX 38085
SAN JUAN, PR 937 ((787) 289−7240)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100,A+,A++

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/2005

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 08

2.12.2 True Bearing: 67

2.12.3 Dimensions: 10400 ft x 193 ft

2.12.4 PCN: 86 R/C/W/T

2.12.5 Coordinates: 18−26−17.9673N / 66−0−57.3115W

2.12.6 Threshold Elevation: 8.2 ft

2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 26

2.12.2 True Bearing: 247

2.12.3 Dimensions: 10400 ft x 193 ft

2.12.4 PCN: 86 R/C/W/T

2.12.5 Coordinates: 18−26−58.2684N / 65−59−17.8783W

2.12.6 Threshold Elevation: 6.9 ft

2.12.6 Touchdown Zone Elevation: 7.4 ft

2.12.1 Designation: 10

2.12.2 True Bearing: 90

2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−0.8092N / 66−0−49.4179W
2.12.6 Threshold Elevation: 9.3 ft
2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−0.6107N / 65−59−26.159W
2.12.6 Threshold Elevation: 9.5 ft
2.12.6 Touchdown Zone Elevation: 9.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 10400 ft
2.13.3 Take−off Distance Available: 10400 ft
2.13.4 Accelerate−Stop Distance Available: 9784 ft
2.13.5 Landing Distance Available: 9384 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 10400 ft
2.13.3 Take−off Distance Available: 10400 ft
2.13.4 Accelerate−Stop Distance Available: 10308 ft
2.13.5 Landing Distance Available: 9908 ft

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 8016 ft
2.13.3 Take−off Distance Available: 8016 ft
2.13.4 Accelerate−Stop Distance Available: 8016 ft
2.13.5 Landing Distance Available: 8016 ft

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 8016 ft
2.13.3 Take−off Distance Available: 8016 ft
2.13.4 Accelerate−Stop Distance Available: 8016 ft
2.13.5 Landing Distance Available: 8016 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P (WEST & SW)
2.14.3 Channel: 119.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (NORTH & EAST)
2.14.3 Channel: 120.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (WEST & SW)
2.14.3 Channel: 269.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (NORTH & EAST)
2.14.3 Channel: 290.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 126.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 284.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (WEST & SW)
2.14.3 Channel: 119.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH & EAST)
2.14.3 Channel: 120.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (WEST & SW)
2.14.3 Channel: 269.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH & EAST)
2.14.3 Channel: 290.2
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: COMD POST (PRANG COMD POST)
2.14.3 Channel: 235
2.14.5 Hours of Operation:

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 125.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 132.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU

2.19.5 Coordinates: 18−26−27.0397N / 66−0−45.5699W
2.19.6 Site Elevation: 4.2 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU
2.19.5 Coordinates: 18−26−59.7947N / 65−59−14.1228W
2.19.6 Site Elevation: 5.6 ft

2.19.1 ILS Type: Outer Marker for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU
2.19.5 Coordinates: 18−24−31.8227N / 66−5−21.8301W
2.19.6 Site Elevation: 66.5 ft

2.19.1 ILS Type: DME for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−26−2.5352N / 65−59−15.6282W
2.19.6 Site Elevation: 18.2 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−25−57.5628N / 66−0−39.041W
2.19.6 Site Elevation: 4.5 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−26−0.5899N / 65−59−15.5192W
2.19.6 Site Elevation: 9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: SJU
2.19.5 Coordinates: 18−26−46.6101N / 65−59−22.2272W
2.19.6 Site Elevation: 5.7 ft

General Remarks:
TWY J BTN J1 AND J5 (NOT INCLUDING J5) CLSD TO ACFT WITH GREATER THAN 118 FT WINGSPAN.

ACFT 180 TURNS ON TWYS REQUIRES OPS COORDINATIONS.

FBO/GROUND HANDLER MUST SUBMIT 72 HRS PPR FOR ALL MIL ACFT TO: CCO@AEROSTARAIRPORTS.-COM OR BY PHONE TO: 787−253−0979

MILITARY: ANG: INBD ACFT ORIGINATING FR OCONUS WITH A PPR FOR MUNIZ ANGB APN MUST CLEAR CUSTOMS AND BORDER PROTECTION AT CIV SIDE. PRIOR COORD MUST BE MADE WITH ANG AMOPS, FONE 740−9629 AT LEAST ONE BUS DAY PRIOR TO ARRIVAL.

ALL PVT AND CORPORATE AIRCRAFT MUST CONTACT ARPT OPS, BEFORE ARRIVAL, FOR FBOS & GROUND HANDLING INFO AT 787−253−0979.

ENGINE RUNUPS PROHIBITED ON GATES AREA.

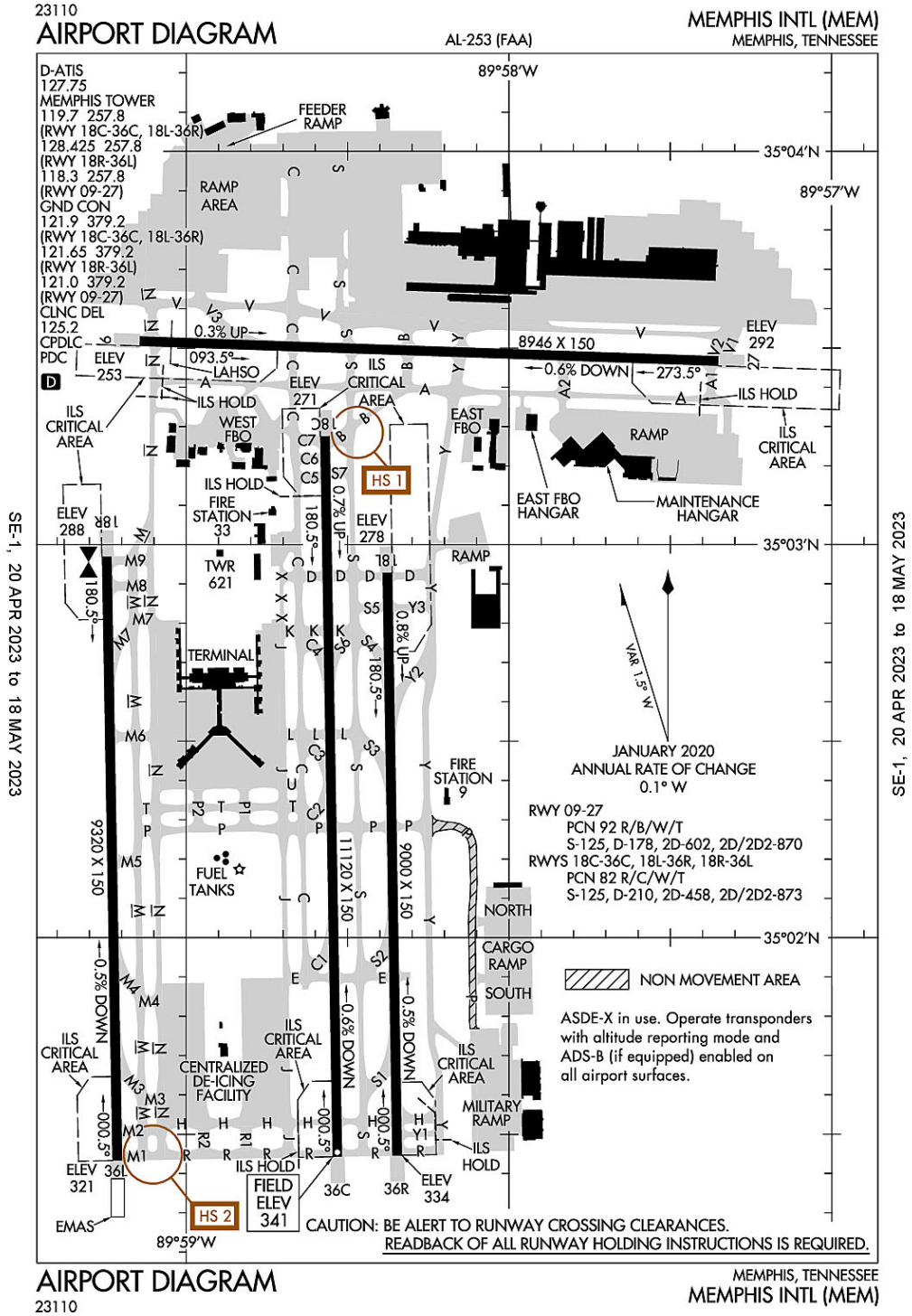
APRON 12 AVBL FOR GA ACFT ONLY.

TWY H BTN TWY C AND TWY H3 CLSD. PLEASE, CONTACT ARPT OPS AT 787−253−0979 FOR FURTHER DETAILS AND RESTRICTIONS.

BASE OPS 1130−2000Z MON−FRI, CLSD WKEND AND HOL.

TWY S BTN TWY S2 AND TWY S5 CLSD LGTD AND BARRICADED.

Memphis, Tennessee
Memphis International
ICAO Identifier KMEM



Memphis, TN
Memphis Intl
ICAO Identifier KMEM

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−2−32.681N / 89−58−36.045W
2.2.2 From City: 3 miles S of MEMPHIS, TN
2.2.3 Elevation: 340.9 ft
2.2.5 Magnetic Variation: 1W (2020)
2.2.6 Airport Contact: SCOTT A BROCKMAN
2491 WINCHESTER RD.
MEMPHIS, TN 38116 (901−922−8000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A+,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 92
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−3−31.046N / 89−59−8.6536W
2.12.6 Threshold Elevation: 253.2 ft
2.12.6 Touchdown Zone Elevation: 258.7 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 272
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−3−28.0128N / 89−57−21.0816W
2.12.6 Threshold Elevation: 292 ft
2.12.6 Touchdown Zone Elevation: 292 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 179
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−3−16.5411N / 89−58−34.2156W
2.12.6 Threshold Elevation: 270.6 ft
2.12.6 Touchdown Zone Elevation: 290.1 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 359
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−26.5803N / 89−58−31.8977W
2.12.6 Threshold Elevation: 340.9 ft
2.12.6 Touchdown Zone Elevation: 340.9 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−26.7376N / 89−58−20.7544W
2.12.6 Threshold Elevation: 334.3 ft
2.12.6 Touchdown Zone Elevation: 334.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−2−55.7402N / 89−58−22.6229W
2.12.6 Threshold Elevation: 277.6 ft
2.12.6 Touchdown Zone Elevation: 300.9 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−2−58.1489N / 89−59−14.7913W
2.12.6 Threshold Elevation: 288.4 ft
2.12.6 Touchdown Zone Elevation: 294.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−25.9852N / 89−59−12.8121W
2.12.6 Threshold Elevation: 320.8 ft
2.12.6 Touchdown Zone Elevation: 320.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 09
2.13.2 Take−off Run Available: 8946 ft
2.13.3 Take−off Distance Available: 8946 ft
2.13.4 Accelerate−Stop Distance Available: 8946 ft
2.13.5 Landing Distance Available: 8946 ft

2.13.1 Designation: 27
2.13.2 Take−off Run Available: 8946 ft
2.13.3 Take−off Distance Available: 8946 ft

2.13.4 Accelerate−Stop Distance Available: 8946 ft
2.13.5 Landing Distance Available: 8946 ft

2.13.1 Designation: 18C
2.13.2 Take−off Run Available: 11120 ft
2.13.3 Take−off Distance Available: 11120 ft
2.13.4 Accelerate−Stop Distance Available: 11120 ft
2.13.5 Landing Distance Available: 11120 ft

2.13.1 Designation: 36C
2.13.2 Take−off Run Available: 11120 ft
2.13.3 Take−off Distance Available: 11120 ft
2.13.4 Accelerate−Stop Distance Available: 10715 ft
2.13.5 Landing Distance Available: 10715 ft

2.13.1 Designation: 36R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 9320 ft
2.13.3 Take−off Distance Available: 9320 ft
2.13.4 Accelerate−Stop Distance Available: 9320 ft
2.13.5 Landing Distance Available: 9320 ft

2.13.1 Designation: 36L
2.13.2 Take−off Run Available: 9320 ft
2.13.3 Take−off Distance Available: 9320 ft
2.13.4 Accelerate−Stop Distance Available: 9320 ft
2.13.5 Landing Distance Available: 9320 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 1W
2.19.2 ILS Identification: MEM
2.19.5 Coordinates: 35−3−27.2174N / 89−58−56.2128W
2.19.6 Site Elevation: 252.5 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 1W
2.19.2 ILS Identification: MEM
2.19.5 Coordinates: 35−3−27.6511N / 89−57−7.9461W
2.19.6 Site Elevation: 296.5 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 1W
2.19.2 ILS Identification: JIM
2.19.5 Coordinates: 35−3−24.4908N / 89−57−36.2529W
2.19.6 Site Elevation: 277.2 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 1W
2.19.2 ILS Identification: JIM
2.19.5 Coordinates: 35−3−31.3982N / 89−59−20.811W
2.19.6 Site Elevation: 252.2 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 1W
2.19.2 ILS Identification: SDU
2.19.5 Coordinates: 35−3−7.6024N / 89−58−37.5142W
2.19.6 Site Elevation: 273.1 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 1W
2.19.2 ILS Identification: SDU
2.19.5 Coordinates: 35–1–10.2462N / 89–58–31.5613W
2.19.6 Site Elevation: 345.5 ft

2.19.1 ILS Type: DME for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35–3–22.0479N / 89–58–37.3452W
2.19.6 Site Elevation: 268.9 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35–1–38.095N / 89–58–36.9423W
2.19.6 Site Elevation: 329.5 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35–3–22.514N / 89–58–34.3391W
2.19.6 Site Elevation: 261.2 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35–1–16.8761N / 89–58–19.3033W
2.19.6 Site Elevation: 328.2 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35–2–46.7849N / 89–58–17.6254W
2.19.6 Site Elevation: 278.6 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35–1–16.6952N / 89–58–20.5424W
2.19.6 Site Elevation: 344.5 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35–3–5.9229N / 89–58–19.6804W
2.19.6 Site Elevation: 282.5 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35–1–38.0016N / 89–58–16.1795W
2.19.6 Site Elevation: 324.2 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35–3–6.1649N / 89–58–22.8431W
2.19.6 Site Elevation: 278.7 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 1W

2.19.2 ILS Identification: OOI
2.19.5 Coordinates: 35−2−48.6497N / 89−59−18.4713W
2.19.6 Site Elevation: 287.1 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 1W
2.19.2 ILS Identification: OOI
2.19.5 Coordinates: 35−1−17.2969N / 89−59−12.6028W
2.19.6 Site Elevation: 321.4 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−3−6.901N / 89−59−10.0928W
2.19.6 Site Elevation: 285.7 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−1−38.7288N / 89−59−17.8741W
2.19.6 Site Elevation: 308.9 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−3−8.5885N / 89−59−14.9936W
2.19.6 Site Elevation: 277.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 1E
2.19.2 Navigation Aid Identification: MEM
2.19.5 Coordinates: 35−0−54.3808N / 89−58−59.5258W
2.19.6 Site Elevation: 363.4 ft

General Remarks:
ANG RAMP OFFL BUS ONLY; PPR − V966−8131. TSNT ACFT RQR FOLLOW ME ASSIST ENTERING ANG RAMP.

ANG: PPR 24 HR PN RQR; OFFL BUS ONLY.

HOLD SHORT INSTRN READ BACK RQR.

COMMUNICATIONS−ANG COMD POST: RADIO CALL GRACELAND OPS.

TWY N BTN TWY M & TWY M7 CLSD TO WINGSPAN MORE THAN 171.5 FT EXC TAX SPEED LESS THAN 15 MPH.

ANG−PPR DSN 726−7131/7505, C901−291−7131/7505. MIL RAMP OPS 1230−0430Z++ MON−FRI; CLSD ALTN MON & HOL. MIL RAMP CLSD OUTSIDE OF PUB HR WITHOUT OG/CC APVL DSN 726−7557, C901−291−7557. TSNT ACFT MAINT NOT AVBL. REFUEL SVC FOR OTR THAN C17 ACFT RQR QUALIFIED CREW CHIEF OR CREWMEMBERS. NON−C17 ACFT SUPPORT PRVDD BY CONTRACT FBO ON FLD. SECURITY AVBL 24 HRS, DSN 726−7101, C901−291−7101. COMD POST DSN 726−7148/7311/7312, C901−291−7148/7311/7312. OPR 1230−0430Z++ MON−FRI, CLSD ALTN MON AND HOL DUE TO ALTN WORK SCHED. AFLD MGR DOES NOT ISSUE OR STORE COMSEC FOR TRAN CRES. TMPRY STOR OF CLASSIFIED MATERIALS UP TO TOP SECRET AT COMD POST.

HELI OPS TO/FM TRML BLDG NA.

BASH PHASE II APR−MAY & AUG−OCT; CURRENT BIRD WATCH COND NOT ON ATIS.

NOISE ABATEMENT PROC IN EFCT. SUCCESSIVE AND/OR SIMUL DEP APVD ON RWY 36L−18R & RWY 36C−18C OR RWY 36L−18R & RWY 36R−18L WITH COURSE DVRGNC NO LATER THAN 2.27 NM FROM RWY END.

BIRDS INVOF ARPT.

MIL: MIL RAMP OPS AT REDUCED ARFF, DOWNGRADED TO YELLOW.

TWY V BTN TWY S & Y RSTR TO ACFT WITH TAIL HEIGHT 65 FT 10 IN OR LESS.

LRG & HVY EBND ACFT ON TWY V FOR RWY 27 HOLD SHORT AT MNM THRUST AREA SIGN.

ASDE−X IN USE. OPR PARROT WITH ALT RPRTG MODE & ADS−B ENABLED ON ARPT SFCS.

PPR FOR TAXI CLNC ON TWY N NORTH OF TWY V, TWY S NORTH TWY V & TWY C NORTH OF TWY V − FEDEX RAMP ATCT 131.5.

TWY N NORTH OF TWY V, TWY C NORTH OF TWY V, TWY S NORTH OF TWY V AND TWY V WEST OF TWY N DESIGNATED AS NON−MOVEMENT AREAS.

TWY V BTN SPOT 7W & RWY 27 RSTR TO ACFT WITH WINGSPAN OF 171 FT 6 IN OR LESS.

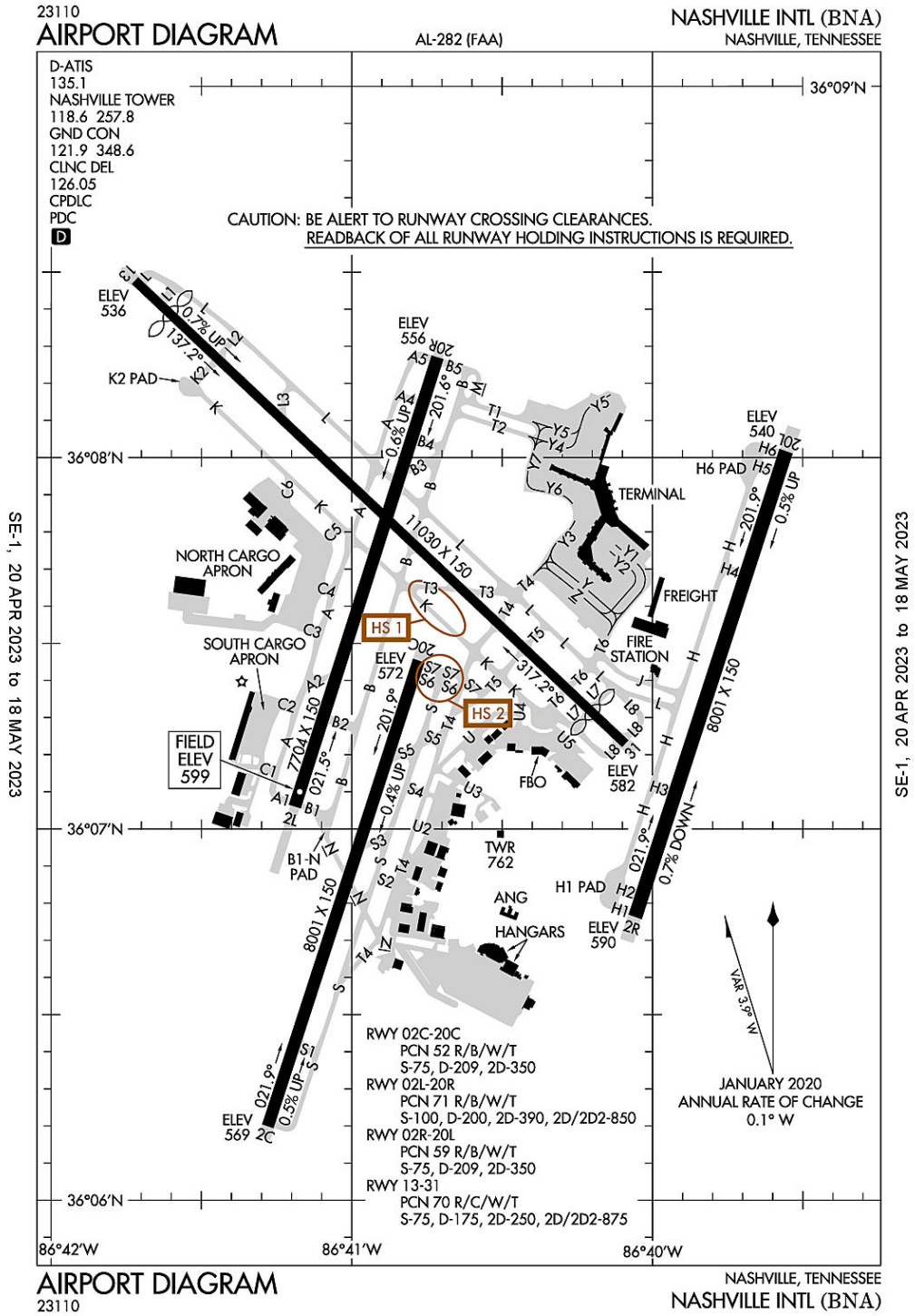
CTC RAMP CONTROL 121.8 FOR ENTRY ON ANG RAMP. ANG FREQS 138.95 353.45. AFT HR CTC COMMAND POST − DSN 726−7148; C901−291−7311/7312 OR SECURITY FORCES − DSN 726−7101; C901−291−7101/7133.

PPR FOR TAXI CLNC FM N & S CARGO RAMP PRKG − 121.9.

ANG−ATIS INFO RPRTS BIRD ACT H24.

TWY J NORTH OF C3 TAXI NA FOR WINGSPAN MORE THAN 118 FT.

Nashville, Tennessee
Nashville International
ICAO Identifier KBNA



Nashville, TN
Nashville Intl
ICAO Identifier KBNA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 36−7−28.11N / 86−40−41.45W
2.2.2 From City: 5 miles SE of NASHVILLE, TN
2.2.3 Elevation: 599 ft
2.2.5 Magnetic Variation: 3W (2010)
2.2.6 Airport Contact: ROBERT RAMSEY
140 BNA PARK DR. SUITE 520
NASHVILLE, TN 37214 (615−275−1612)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02C
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 52 R/B/W/T
2.12.5 Coordinates: 36−6−11.9899N / 86−41−16.6591W
2.12.6 Threshold Elevation: 569.1 ft
2.12.6 Touchdown Zone Elevation: 586.7 ft

2.12.1 Designation: 20C
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 52 R/B/W/T
2.12.5 Coordinates: 36−7−27.2406N / 86−40−46.55W
2.12.6 Threshold Elevation: 571.8 ft
2.12.6 Touchdown Zone Elevation: 587.7 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 18
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 36−7−3.6342N / 86−41−11.3105W
2.12.6 Threshold Elevation: 598.7 ft
2.12.6 Touchdown Zone Elevation: 599 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 198
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 36−8−16.2324N / 86−40−42.8335W
2.12.6 Threshold Elevation: 555.6 ft
2.12.6 Touchdown Zone Elevation: 578 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 59 R/B/W/T
2.12.5 Coordinates: 36−6−45.767N / 86−40−3.5138W
2.12.6 Threshold Elevation: 589.8 ft
2.12.6 Touchdown Zone Elevation: 589.8 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 59 R/B/W/T
2.12.5 Coordinates: 36−8−1.0116N / 86−39−33.3955W
2.12.6 Threshold Elevation: 540 ft
2.12.6 Touchdown Zone Elevation: 550.6 ft

2.12.1 Designation: 13
2.12.2 True Bearing: 133
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 70 R/C/W/T
2.12.5 Coordinates: 36−8−28.5991N / 86−41−43.2788W
2.12.6 Threshold Elevation: 535.9 ft
2.12.6 Touchdown Zone Elevation: 567.5 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 313
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 70 R/C/W/T
2.12.5 Coordinates: 36−7−13.7852N / 86−40−5.4384W
2.12.6 Threshold Elevation: 582.3 ft
2.12.6 Touchdown Zone Elevation: 577.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 02C
2.13.2 Take−off Run Available: 8001 ft
2.13.3 Take−off Distance Available: 8001 ft
2.13.4 Accelerate−Stop Distance Available: 7601 ft
2.13.5 Landing Distance Available: 7601 ft

2.13.1 Designation: 20C
2.13.2 Take−off Run Available: 8001 ft
2.13.3 Take−off Distance Available: 8001 ft

2.13.4 Accelerate–Stop Distance Available: 8001 ft
2.13.5 Landing Distance Available: 8001 ft

2.13.1 Designation: 02L
2.13.2 Take–off Run Available: 7702 ft
2.13.3 Take–off Distance Available: 7702 ft
2.13.4 Accelerate–Stop Distance Available: 7702 ft
2.13.5 Landing Distance Available: 7702 ft

2.13.1 Designation: 20R
2.13.2 Take–off Run Available: 7702 ft
2.13.3 Take–off Distance Available: 7702 ft
2.13.4 Accelerate–Stop Distance Available: 7702 ft
2.13.5 Landing Distance Available: 7702 ft

2.13.1 Designation: 02R
2.13.2 Take–off Run Available: 8000 ft
2.13.3 Take–off Distance Available: 8000 ft
2.13.4 Accelerate–Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 20L
2.13.2 Take–off Run Available: 8000 ft
2.13.3 Take–off Distance Available: 8000 ft
2.13.4 Accelerate–Stop Distance Available: 8000 ft
2.13.5 Landing Distance Available: 8000 ft

2.13.1 Designation: 13
2.13.2 Take–off Run Available: 10288 ft
2.13.3 Take–off Distance Available: 11029 ft
2.13.4 Accelerate–Stop Distance Available: 10288 ft
2.13.5 Landing Distance Available: 9487 ft

2.13.1 Designation: 31
2.13.2 Take–off Run Available: 10228 ft
2.13.3 Take–off Distance Available: 11029 ft
2.13.4 Accelerate–Stop Distance Available: 10228 ft
2.13.5 Landing Distance Available: 9487 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 02L
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 20R
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 02R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 13
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 31
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: ALCP
2.14.3 Channel: 314.4
2.14.5 Hours of Operation:

2.14.1 Service Designation: APCH/P (WEST)
2.14.3 Channel: 372
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (EAST)
2.14.3 Channel: 118.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (EAST)
2.14.3 Channel: 360.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 126.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (EAST)
2.14.3 Channel: 118.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (WEST)
2.14.3 Channel: 119.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (EAST)
2.14.3 Channel: 360.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (WEST)
2.14.3 Channel: 372
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D–ATIS
2.14.3 Channel: 135.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (EAST)
2.14.3 Channel: 118.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (WEST)
2.14.3 Channel: 119.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (EAST)
2.14.3 Channel: 360.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (WEST)
2.14.3 Channel: 372
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8

2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 02C. Magnetic variation: 3W
2.19.2 ILS Identification: EZN
2.19.5 Coordinates: 36–6–22.6382N / 86–41–16.8861W
2.19.6 Site Elevation: 570.5 ft

2.19.1 ILS Type: Localizer for runway 02C. Magnetic variation: 3W
2.19.2 ILS Identification: EZN
2.19.5 Coordinates: 36–7–32.9571N / 86–40–44.2611W
2.19.6 Site Elevation: 574.3 ft

2.19.1 ILS Type: DME for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36–8–26.4864N / 86–40–42.3692W
2.19.6 Site Elevation: 554 ft

2.19.1 ILS Type: Glide Slope for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36–7–12.9535N / 86–41–2.539W
2.19.6 Site Elevation: 589.7 ft

2.19.1 ILS Type: Inner Marker for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36–6–54.829N / 86–41–14.7612W
2.19.6 Site Elevation: 594.5 ft

2.19.1 ILS Type: Localizer for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36–8–25.7779N / 86–40–39.0927W
2.19.6 Site Elevation: 545.4 ft

2.19.1 ILS Type: Glide Slope for runway 20R. Magnetic variation: 3W
2.19.2 ILS Identification: VIY
2.19.5 Coordinates: 36–8–5.8196N / 86–40–42.7621W
2.19.6 Site Elevation: 554.9 ft

2.19.1 ILS Type: Localizer for runway 20R. Magnetic variation: 3W
2.19.2 ILS Identification: VIY
2.19.5 Coordinates: 36–6–49.6756N / 86–41–16.7814W
2.19.6 Site Elevation: 598.1 ft

2.19.1 ILS Type: DME for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36–8–9.8916N / 86–39–35.7867W
2.19.6 Site Elevation: 537.1 ft

2.19.1 ILS Type: Glide Slope for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU

2.19.5 Coordinates: 36–6–56.0152N / 86–39–54.7364W
2.19.6 Site Elevation: 576.7 ft

2.19.1 ILS Type: Inner Marker for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36–6–37.6961N / 86–40–6.7484W
2.19.6 Site Elevation: 569 ft

2.19.1 ILS Type: Localizer for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36–8–10.5404N / 86–39–29.5803W
2.19.6 Site Elevation: 531 ft

2.19.1 ILS Type: DME for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36–6–30.9674N / 86–40–12.8854W
2.19.6 Site Elevation: 622.2 ft

2.19.1 ILS Type: Glide Slope for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36–7–50.0286N / 86–39–33.1134W
2.19.6 Site Elevation: 534.5 ft

2.19.1 ILS Type: Localizer for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36–6–30.0253N / 86–40–9.8136W
2.19.6 Site Elevation: 613.4 ft

2.19.1 ILS Type: Glide Slope for runway 31. Magnetic variation: 3W
2.19.2 ILS Identification: PNO
2.19.5 Coordinates: 36–7–28.2722N / 86–40–18.5978W
2.19.6 Site Elevation: 566.4 ft

2.19.1 ILS Type: Localizer for runway 31. Magnetic variation: 3W
2.19.2 ILS Identification: PNO
2.19.5 Coordinates: 36–8–30.6518N / 86–41–45.9626W
2.19.6 Site Elevation: 539.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 2W
2.19.2 Navigation Aid Identification: BNA
2.19.5 Coordinates: 36–8–13.0573N / 86–41–5.1762W
2.19.6 Site Elevation: 566.4 ft

General Remarks:
TBJT RWY NOISE ABATEMENT PROC; MIL TBJT USE RWY 13/31 FOR ARR & DEP.

MIL & ACFT MORE THAN 12500 LB PRAC APCH NA; PRAC APCH BTW 2300–0700 NA.

TRML RAMP & NON–MOVMT AREA UNCTLD; BFR USE – 122.95

PPR GA & CARGO TO PROCD TO AIRLINE TRML GATE FOR DE–ICE – ARPT OPS.

DO NOT CONFUSE TWY S FOR RWY 20C.

BIRD ACT ON & INVOF ARPT.

CTN: READ BACK & COMPLIANCE OF RWY HLDG INSTRN RQR; SPCLY TWY K & RWY 20C, TWY L AT RWY 13 & TWY H AT RWY 31.

C CONCOURSE; INNER TXL OUBD TFC; OUTER TXL INBD TFC.

TRML APRON TAX BTN ACR PUSHBACK OPS & GATES NA.

ANG: PPR − MUSIC CITY OPS 615−367−5579.

180 DEG TURNS OVR 12500 LBS NA ON ASPH SFC.

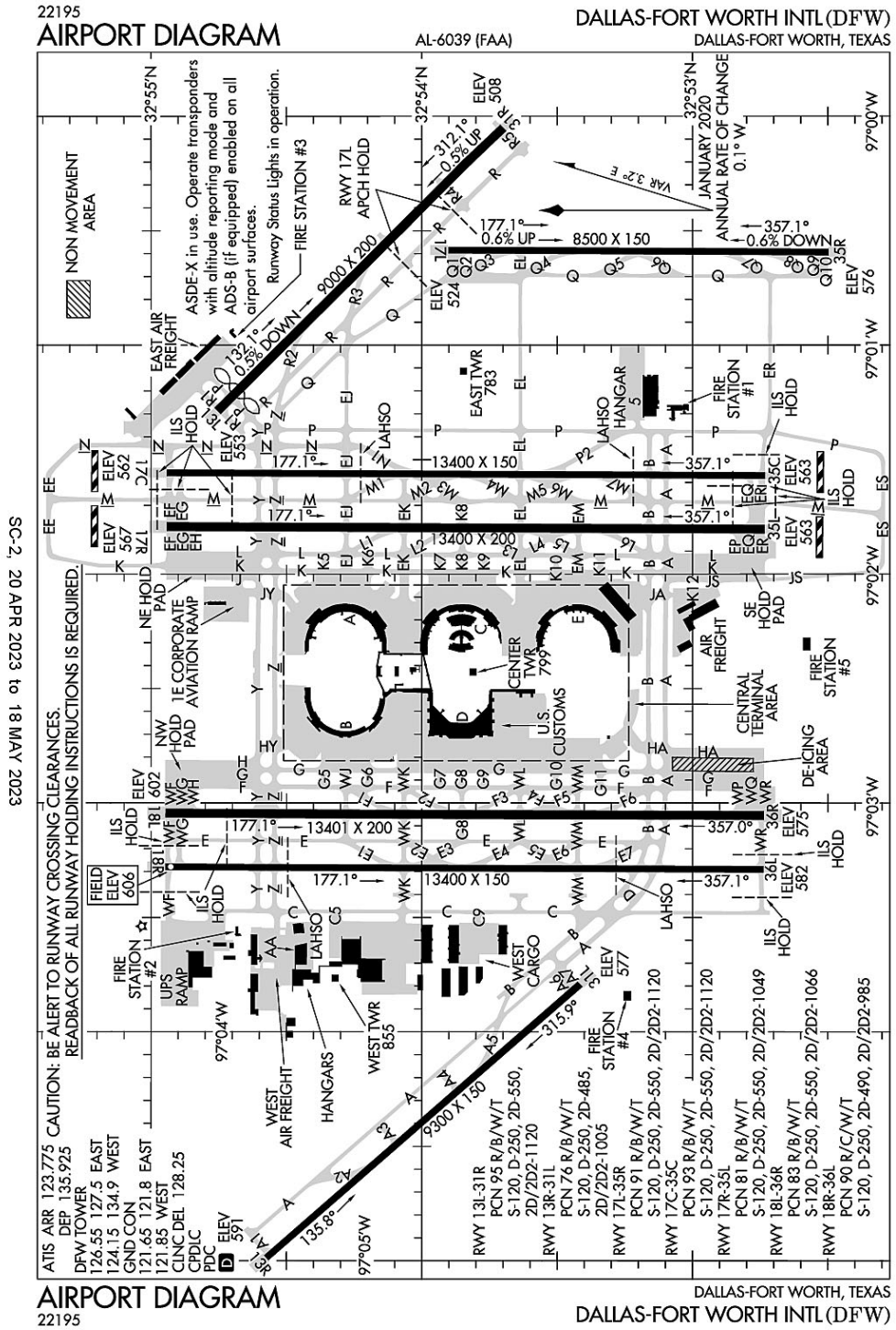
FLT NOTIFICATION SVC (ADCUS) AVBL.

FLT OVR MAIN TRML NA.

ADHERE TO TWY & TXL CNTRLN WI TRML APRON.

WINGSPAN GREATER THAN 214 FT 96 HR PPR − AMGR.

Dallas, Texas
Dallas–Fort Worth International
ICAO Identifier KDFW



Dallas−Fort Worth, TX
Dallas/Fort Worth Intl
ICAO Identifier KDFW

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 32−53−50.039N / 97−2−15.701W

2.2.2 From City: 12 miles NW of DALLAS−FORT WORTH, TX

2.2.3 Elevation: 606.4 ft

2.2.5 Magnetic Variation: 4E (2015)

2.2.6 Airport Contact: SEAN DONOHUE
PO BOX 619428
DALLAS−FT WORTH, TX 75261 (972−973−3112)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space:

2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 7/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 31R

2.12.2 True Bearing: 315

2.12.3 Dimensions: 9000 ft x 200 ft

2.12.4 PCN: 95 R/B/W/T

2.12.5 Coordinates: 32−53−41.932N / 97−0−3.0376W

2.12.6 Threshold Elevation: 508.4 ft

2.12.6 Touchdown Zone Elevation: 523.4 ft

2.12.1 Designation: 13L

2.12.2 True Bearing: 135

2.12.3 Dimensions: 9000 ft x 200 ft

2.12.4 PCN: 95 R/B/W/T

2.12.5 Coordinates: 32−54−45.197N / 97−1−17.3221W

2.12.6 Threshold Elevation: 553.1 ft

2.12.6 Touchdown Zone Elevation: 550 ft

2.12.1 Designation: 13R

2.12.2 True Bearing: 139

2.12.3 Dimensions: 9300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32–54–34.4723N / 97–4–59.276W
2.12.6 Threshold Elevation: 591 ft
2.12.6 Touchdown Zone Elevation: 591 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 9300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32–53–24.9716N / 97–3–47.7953W
2.12.6 Threshold Elevation: 577.2 ft
2.12.6 Touchdown Zone Elevation: 581.4 ft

2.12.1 Designation: 17C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 32–54–56.5441N / 97–1–33.5097W
2.12.6 Threshold Elevation: 562.2 ft
2.12.6 Touchdown Zone Elevation: 563.2 ft

2.12.1 Designation: 35C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 32–52–43.9636N / 97–1–34.218W
2.12.6 Threshold Elevation: 563.1 ft
2.12.6 Touchdown Zone Elevation: 563.2 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 32–52–29.8535N / 97–0–35.6686W
2.12.6 Threshold Elevation: 575.6 ft
2.12.6 Touchdown Zone Elevation: 575.6 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 32–53–53.9534N / 97–0–35.203W
2.12.6 Threshold Elevation: 524.3 ft

2.12.6 Touchdown Zone Elevation: 545.2 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−52−44.0203N / 97−1−48.2888W
2.12.6 Threshold Elevation: 563.4 ft
2.12.6 Touchdown Zone Elevation: 564 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−54−56.5996N / 97−1−47.5806W
2.12.6 Threshold Elevation: 566.6 ft
2.12.6 Touchdown Zone Elevation: 566.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32−54−56.8785N / 97−3−2.6511W
2.12.6 Threshold Elevation: 601.5 ft
2.12.6 Touchdown Zone Elevation: 601.6 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32−52−44.2972N / 97−3−3.3332W
2.12.6 Threshold Elevation: 575.3 ft
2.12.6 Touchdown Zone Elevation: 580.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 90 R/C/W/T
2.12.5 Coordinates: 32−52−44.3493N / 97−3−17.4003W
2.12.6 Threshold Elevation: 582.2 ft
2.12.6 Touchdown Zone Elevation: 587.6 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180

2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 90 R/C/W/T
2.12.5 Coordinates: 32–54–56.9275N / 97–3–16.7239W
2.12.6 Threshold Elevation: 606.4 ft
2.12.6 Touchdown Zone Elevation: 606.4 ft

AD 2.13 Declared Distances

2.13.1 Designation: 31R
2.13.2 Take–off Run Available: 8373 ft
2.13.3 Take–off Distance Available: 8373 ft
2.13.4 Accelerate–Stop Distance Available: 8373 ft
2.13.5 Landing Distance Available: 8373 ft

2.13.1 Designation: 13L
2.13.2 Take–off Run Available: 9000 ft
2.13.3 Take–off Distance Available: 9000 ft
2.13.4 Accelerate–Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 8373 ft

2.13.1 Designation: 13R
2.13.2 Take–off Run Available: 9300 ft
2.13.3 Take–off Distance Available: 9300 ft
2.13.4 Accelerate–Stop Distance Available: 9300 ft
2.13.5 Landing Distance Available: 9300 ft

2.13.1 Designation: 31L
2.13.2 Take–off Run Available: 9300 ft
2.13.3 Take–off Distance Available: 9300 ft
2.13.4 Accelerate–Stop Distance Available: 9300 ft
2.13.5 Landing Distance Available: 9300 ft

2.13.1 Designation: 17C
2.13.2 Take–off Run Available: 13400 ft
2.13.3 Take–off Distance Available: 13400 ft
2.13.4 Accelerate–Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

2.13.1 Designation: 35C
2.13.2 Take–off Run Available: 13400 ft
2.13.3 Take–off Distance Available: 13400 ft
2.13.4 Accelerate–Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

2.13.1 Designation: 35R
2.13.2 Take–off Run Available: 8500 ft
2.13.3 Take–off Distance Available: 8500 ft
2.13.4 Accelerate–Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

2.13.1 Designation: 17L
2.13.2 Take–off Run Available: 8500 ft
2.13.3 Take–off Distance Available: 8500 ft
2.13.4 Accelerate–Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

2.13.1 Designation: 35L
2.13.2 Take–off Run Available: 13400 ft
2.13.3 Take–off Distance Available: 13400 ft
2.13.4 Accelerate–Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

2.13.1 Designation: 17R
2.13.2 Take–off Run Available: 13400 ft
2.13.3 Take–off Distance Available: 13400 ft
2.13.4 Accelerate–Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

2.13.1 Designation: 18L
2.13.2 Take–off Run Available: 13401 ft
2.13.3 Take–off Distance Available: 13401 ft
2.13.4 Accelerate–Stop Distance Available: 13401 ft
2.13.5 Landing Distance Available: 13401 ft

2.13.1 Designation: 36R
2.13.2 Take–off Run Available: 13401 ft
2.13.3 Take–off Distance Available: 13401 ft
2.13.4 Accelerate–Stop Distance Available: 13401 ft
2.13.5 Landing Distance Available: 13401 ft

2.13.1 Designation: 36L
2.13.2 Take–off Run Available: 13400 ft
2.13.3 Take–off Distance Available: 13400 ft
2.13.4 Accelerate–Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

2.13.1 Designation: 18R
2.13.2 Take–off Run Available: 13400 ft

2.13.3 Take−off Distance Available: 13400 ft
2.13.4 Accelerate−Stop Distance Available: 13400 ft
2.13.5 Landing Distance Available: 13400 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 31R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−54−49.6375N / 97−1−18.3123W
2.19.6 Site Elevation: 558.1 ft

2.19.1 ILS Type: Glide Slope for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−53−51.7482N / 97−0−7.9558W
2.19.6 Site Elevation: 509 ft

2.19.1 ILS Type: Localizer for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−54−48.1182N / 97−1−20.7551W
2.19.6 Site Elevation: 551.5 ft

2.19.1 ILS Type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN
2.19.5 Coordinates: 32−53−16.0647N / 97−3−42.7672W
2.19.6 Site Elevation: 588.7 ft

2.19.1 ILS Type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN

2.19.5 Coordinates: 32–54–24.1329N / 97–4–54.0746W
2.19.6 Site Elevation: 587.6 ft

2.19.1 ILS Type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN
2.19.5 Coordinates: 32–53–17.4371N / 97–3–40.0471W
2.19.6 Site Elevation: 575 ft

2.19.1 ILS Type: DME for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32–52–34.123N / 97–1–39.6491W
2.19.6 Site Elevation: 573.6 ft

2.19.1 ILS Type: Glide Slope for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32–54–45.6425N / 97–1–28.781W
2.19.6 Site Elevation: 555.8 ft

2.19.1 ILS Type: Inner Marker for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32–55–4.09N / 97–1–33.46W
2.19.6 Site Elevation: 562 ft

2.19.1 ILS Type: Localizer for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32–52–33.1505N / 97–1–34.2781W
2.19.6 Site Elevation: 562.7 ft

2.19.1 ILS Type: DME for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32–52–34.123N / 97–1–39.6491W
2.19.6 Site Elevation: 573.6 ft

2.19.1 ILS Type: Glide Slope for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32–52–54.3357N / 97–1–29.4713W
2.19.6 Site Elevation: 557.2 ft

2.19.1 ILS Type: Inner Marker for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32–52–35.3015N / 97–1–34.258W
2.19.6 Site Elevation: 562.5 ft

2.19.1 ILS Type: Localizer for runway 35C. Magnetic variation: 4E

2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32–55–7.0371N / 97–1–33.452W
2.19.6 Site Elevation: 561.2 ft

2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32–52–18.7175N / 97–0–40.2982W
2.19.6 Site Elevation: 591.2 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32–53–45.2247N / 97–0–31.1329W
2.19.6 Site Elevation: 526.4 ft

2.19.1 ILS Type: Inner Marker for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32–54–5.3333N / 97–0–35.2536W
2.19.6 Site Elevation: 521.7 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32–52–19.4359N / 97–0–35.7267W
2.19.6 Site Elevation: 584.2 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32–52–18.7175N / 97–0–40.2982W
2.19.6 Site Elevation: 591.2 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32–52–43.4402N / 97–0–30.9032W
2.19.6 Site Elevation: 559.2 ft

2.19.1 ILS Type: Inner Marker for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32–52–22.6082N / 97–0–35.7029W
2.19.6 Site Elevation: 581.2 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32–54–4.1916N / 97–0–35.1492W
2.19.6 Site Elevation: 519.5 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32–52–33.6523N / 97–1–53.6029W
2.19.6 Site Elevation: 556.9 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32–54–45.8213N / 97–1–43.0635W
2.19.6 Site Elevation: 561.3 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32–52–33.207N / 97–1–48.3488W
2.19.6 Site Elevation: 558.2 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32–52–33.6523N / 97–1–53.6029W
2.19.6 Site Elevation: 556.9 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32–52–54.9854N / 97–1–43.5413W
2.19.6 Site Elevation: 559 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32–55–7.3142N / 97–1–47.5225W
2.19.6 Site Elevation: 567.6 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32–55–8.6708N / 97–3–7.2741W
2.19.6 Site Elevation: 594.7 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32–54–45.2198N / 97–3–6.8173W
2.19.6 Site Elevation: 594.3 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32–52–33.5835N / 97–3–3.3873W
2.19.6 Site Elevation: 570.1 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32–55–8.6708N / 97–3–7.2741W
2.19.6 Site Elevation: 594.7 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32–52–54.8518N / 97–3–7.9662W
2.19.6 Site Elevation: 577.2 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32–55–6.8486N / 97–3–2.5997W
2.19.6 Site Elevation: 597.2 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32–52–34.0875N / 97–3–12.5854W
2.19.6 Site Elevation: 582.3 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32–54–45.4683N / 97–3–21.5693W
2.19.6 Site Elevation: 598.5 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32–55–4.5483N / 97–3–16.6916W
2.19.6 Site Elevation: 602.6 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32–52–33.9326N / 97–3–17.4526W
2.19.6 Site Elevation: 580.4 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32–52–34.0875N / 97–3–12.5854W
2.19.6 Site Elevation: 582.3 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32–52–54.4087N / 97–3–22.0405W

2.19.6 Site Elevation: 579.9 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32–55–6.9002N / 97–3–16.6717W
2.19.6 Site Elevation: 601.9 ft

General Remarks:
TKOF DSTC FOR RY 35L FM TWY EQ IS 13084 FT & FM TWY EP IS 12811 FT.

ARPT UNDER CONSTRUCTION; PAEW IN MOVEMENT AREAS.

PPR ACFT WITH WINGSPAN 215 FT OR GREATER (GROUP VI) CALL ARPT OPNS 972–973–3112 FOR FOLLOW–ME SERVICES WHILE TAXIING TO & FROM RAMP & RYS.

TWY A6 CLSD TO ACFT WITH WINGSPAN 171 FT AND GREATER.

TKOF DSTC FOR RY 18R FM TWY WG IS 13,082 FT.

RY VISUAL SCREEN 20 FT AGL 1180 FT S AER 35C.

ACFT AT EAST AIR FREIGHT MUST CONTACT DFW TWR AT 127.5 PRIOR TO TAXI OUT.

APRON ENTRANCE/EXIT POINT 3 CLSD TO ACFT WITH WINGSPAN GREATER THAN 214 FT EXCEPT PPR.

APRON ENTRANCE/EXIT POINTS 22, 24, 105, AND 107 CLSD TO ACFT WITH WINGSPAN GREATER THAN 125 FT.

ACFT USING TERMINAL A GATES A8–A39 AND TERMINAL C GATES C2–C12 MUST OBTAIN APPROVAL FROM RAMP 131.275 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

TKOF DSTC FOR RY 17L FM TWY Q2 IS 8196 FT.

ACFT USING TERMINAL C GATES C14–C39 MUST OBTAIN APPROVAL FROM RAMP 131.80 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

PPR GA OPERATIONS 0000–0500; CALL ARPT OPNS 972–973–3112.

APRON ENTRANCE/EXIT POINT 124 CLSD TO ACFT WITH WINGSPAN GREATER THAN 213 FT.

RY STATUS LGTS IN OPN.

TKOF DSTC FOR RY 35R FM TWY Q9 IS 8196 FT.

ACFT USING TERMINAL B GATES B1–B17, ALL TERMINAL D GATES, AND APRON ENTRY POINTS 117–150 MUST OBTAIN APPROVAL FROM RAMP 129.825 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

TERMINAL B APRON TAXILANE BTN APRON ENTRANCE/EXIT POINT TAXILANES 107 & 117 CLSD TO ACFT WITH WINGSPAN 94 FT AND GREATER.

TKOF DSTC FOR RY 17C FM TWY EG IS 13,082 FT.

APRON ENTRANCE/EXIT POINTS 110, 111, 112, 113, 114, 115, AND 116 CLSD TO ACFT WITH WINGSPAN GREATER THAN 94 FT.

TKOF DSTC FOR RY 18L FM TWY WG IS 13,082; FM TWY WH IS 12,815.

UNLESS OTHERWISE SPECIFIED, ALL APRON ENTRANCE/EXIT POINTS CLSD TO ACFT WITH WINGSPAN GREATER THAN 214 FT EXCEPT PPR.

PPR FROM ARPT OPNS FOR GEN AVN ACFT TO PROCD TO AIRLINE TRML GATE EXCP GEN AVN FAC.

PPR FM THE PRIMARY TENANT AIRLINES TO OPERATE WITHIN THE CENTRAL TERMINAL AREA. PROPER MINIMUM OBJECT FREE AREA DISTANCES MAY NOT BE MAINTAINED FOR RAMP/APRON TAXILANES.

TWY EDGE REFLECTORS ALONG ALL TWYS.

APRON ENTRANCE/EXIT POINTS 1 AND 2 CLSD TO ACFT WITH WINGSPAN GREATER THAN 89' EXCEPT PPR.

TKOF DSTC FOR RY 36R FM TWY WP IS 12,815 FT; FM TWY WQ IS 13,082 FT.

TKOF DSTC FOR RY 17R FM TWY EG IS 13082 FT & FM TWY EH IS 12816 FT.

LAND & HOLD SHORT SIGNS ON RY 17C AT TWY 'B' 10,460 FT S OF RY 17C THLD; RY 18R AT TWY 'B' 10,100 FT S OF RY 18R THLD; RY 35C AT TWY 'EJ' 9050 FT N OF RY 35C THLD; RY 36L AT TWY 'Z' 10,650 FT N OF RY 36L THLD; LGTD & MKD WITH IN–PAVEMENT PULSATING WHITE LGTS.

ACFT USING TWY HA NORTH OF TWY B MUST OBTAIN APPROVAL FROM RAMP 129.825 PRIOR TO ENTERING RAMP.

APRON ENTRANCE/EXIT POINTS 9, 32, 33, 34, 35, 36, 37, 38, & 53 CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT.

APRON ENTRANCE/EXIT POINTS 5, 7, 42, 44, 48, 49, 51, 52, 117, 118 AND 122 CLSD TO ACFT WITH WINGSPAN GREATER THAN 118 FT.

APRON ENTRANCE/EXIT POINTS 31 AND 39 CLSD TO ACFT WITH WINGSPAN GREATER THAN 167 FT.

ACFT USING TERMINAL B GATES B18–B49 MUST OBTAIN APPROVAL FROM RAMP 131.10 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

TWYS MAY REQUIRE JUDGMENTAL OVERSTEERING FOR LARGE ACFT.

STD SAWED GROOVING 160 FT WIDE FULL LENGTH RYS 13L/31R; 18L/36R & 17R/35L. STD GROOVING 130 FTWIDE FULL LENGTH RYS 17L/35R; 18R/36L; 13R/31L & 17C/35C.

BIRDS ON & INVOF ARPT.

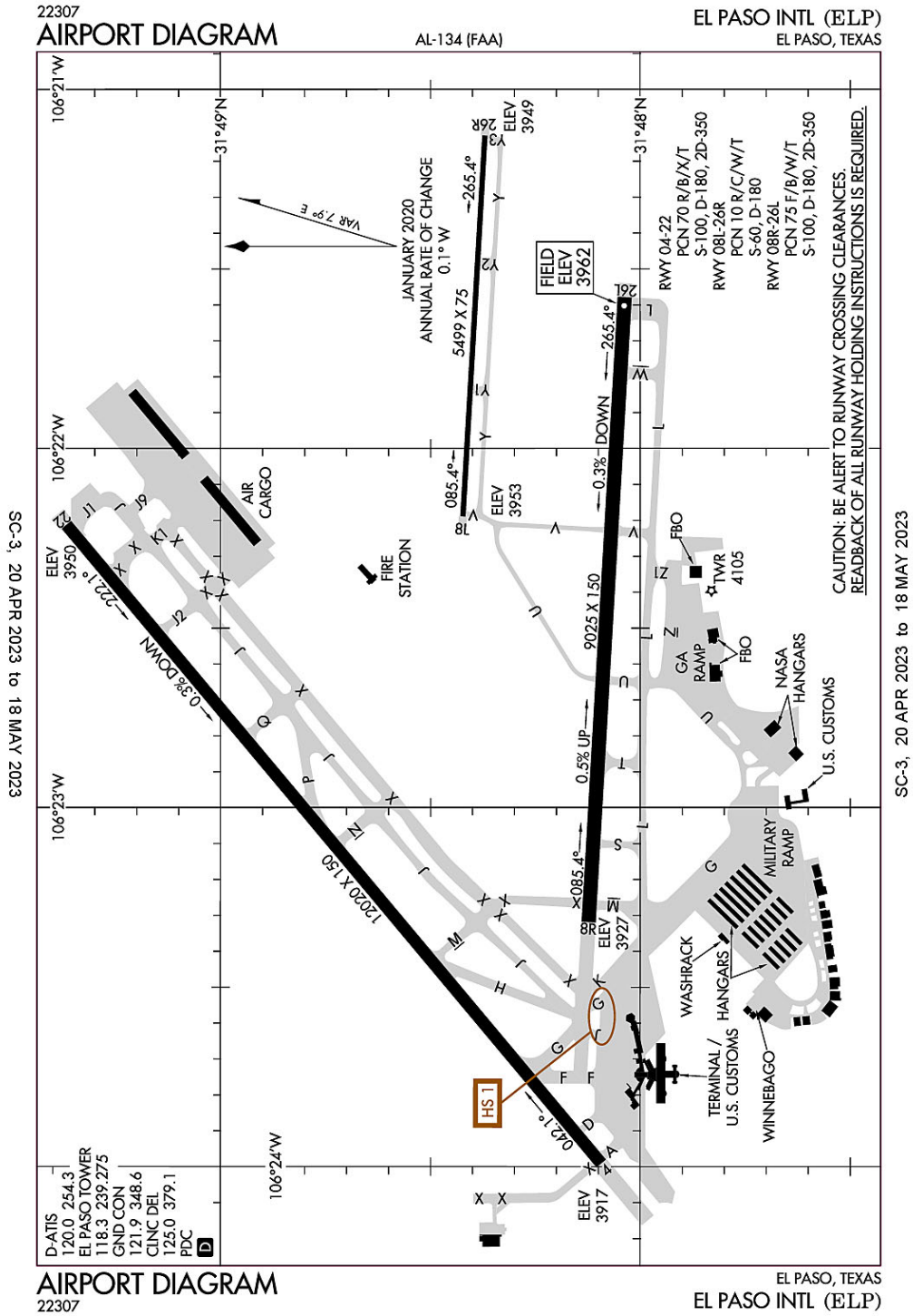
ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RY VISUAL SCREEN 22 FT AGL 1179 FT S AER 35L.

ACFT USING TERMINAL E GATES E2–E17 MUST OBTAIN APPROVAL FROM RAMP 131.0 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK. ACFT USING TERMINAL E GATES E–18–E38 MUST OBTAIN APPROVAL FROM RAMP 128.825 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

A380 OPNS ONLY AUZD ON RWYS 18R/36L AND 18L/36R. B747–8 OPNS ONLY AUZD ON RWYS 18R/36L, 18L/36R AND 17R/35L. CTC ARPT OPNS FOR ADDNL INFO.

El Paso, Texas
El Paso International
ICAO Identifier KELP



El Paso, TX
El Paso Intl
ICAO Identifier KELP

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 31−48−26.4N / 106−22−34.9W

2.2.2 From City: 4 miles NE of EL PASO, TX

2.2.3 Elevation: 3961.6 ft

2.2.5 Magnetic Variation: 8E (2015)

2.2.6 Airport Contact: SAM RODRIGUEZ
6701 CONVAIR RD
EL PASO, TX 79925 (915−212−0333)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A1+

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 04

2.12.2 True Bearing: 50

2.12.3 Dimensions: 12020 ft x 150 ft

2.12.4 PCN: 70 R/B/X/T

2.12.5 Coordinates: 31−48−5.5605N / 106−23−59.4625W

2.12.6 Threshold Elevation: 3916.9 ft

2.12.6 Touchdown Zone Elevation: 3923.2 ft

2.12.1 Designation: 22

2.12.2 True Bearing: 230

2.12.3 Dimensions: 12020 ft x 150 ft

2.12.4 PCN: 70 R/B/X/T

2.12.5 Coordinates: 31−49−22.0112N / 106−22−12.7821W

2.12.6 Threshold Elevation: 3949.5 ft

2.12.6 Touchdown Zone Elevation: 3949.5 ft

2.12.1 Designation: 08L

2.12.2 True Bearing: 93

2.12.3 Dimensions: 5499 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31−48−25.3326N / 106−22−11.3796W
2.12.6 Threshold Elevation: 3952.6 ft
2.12.6 Touchdown Zone Elevation: 3952.7 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 5499 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31−48−22.1849N / 106−21−7.7768W
2.12.6 Threshold Elevation: 3949.2 ft
2.12.6 Touchdown Zone Elevation: 3949.5 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 9025 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31−48−7.3509N / 106−23−19.1333W
2.12.6 Threshold Elevation: 3927.1 ft
2.12.6 Touchdown Zone Elevation: 3940.3 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 9025 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31−48−2.195N / 106−21−34.7505W
2.12.6 Threshold Elevation: 3961.6 ft
2.12.6 Touchdown Zone Elevation: 3961.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 12020 ft
2.13.3 Take−off Distance Available: 12020 ft
2.13.4 Accelerate−Stop Distance Available: 12020 ft
2.13.5 Landing Distance Available: 12020 ft

2.13.1 Designation: 22
2.13.2 Take−off Run Available: 12020 ft
2.13.3 Take−off Distance Available: 12020 ft
2.13.4 Accelerate−Stop Distance Available: 12020 ft
2.13.5 Landing Distance Available: 12020 ft

2.13.1 Designation: 08L
2.13.2 Take–off Run Available: 5499 ft
2.13.3 Take–off Distance Available: 5499 ft
2.13.4 Accelerate–Stop Distance Available: 5499 ft
2.13.5 Landing Distance Available: 5499 ft

2.13.1 Designation: 26R
2.13.2 Take–off Run Available: 5499 ft
2.13.3 Take–off Distance Available: 5499 ft
2.13.4 Accelerate–Stop Distance Available: 5499 ft
2.13.5 Landing Distance Available: 5499 ft

2.13.1 Designation: 08R
2.13.2 Take–off Run Available: 9025 ft
2.13.3 Take–off Distance Available: 9025 ft
2.13.4 Accelerate–Stop Distance Available: 9025 ft
2.13.5 Landing Distance Available: 9025 ft

2.13.1 Designation: 26L
2.13.2 Take–off Run Available: 9025 ft
2.13.3 Take–off Distance Available: 9025 ft
2.13.4 Accelerate–Stop Distance Available: 9025 ft
2.13.5 Landing Distance Available: 9025 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 04
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P (SOUTH–V16)
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (SOUTH–V16)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (NORTH–V16)
2.14.3 Channel: 124.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (NORTH–V16)
2.14.3 Channel: 298.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD PRE TAXI CLNC
2.14.3 Channel: 125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 379.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (SOUTH–V16)
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH–V16)
2.14.3 Channel: 124.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (NORTH−V16)
2.14.3 Channel: 298.85
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (SOUTH−V16)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 120
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 254.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P
2.14.3 Channel: 119.15
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P
2.14.3 Channel: 263
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 239.275
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 04. Magnetic variation: 8E
2.19.2 ILS Identification: ETF
2.19.5 Coordinates: 31–47–58.7232N / 106–24–13.5201W
2.19.6 Site Elevation: 3926 ft

2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 8E
2.19.2 ILS Identification: ETF
2.19.5 Coordinates: 31–49–28.4448N / 106–22–3.7979W
2.19.6 Site Elevation: 3950.4 ft

2.19.1 ILS Type: DME for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31–47–58.7232N / 106–24–13.5201W
2.19.6 Site Elevation: 3926 ft

2.19.1 ILS Type: Glide Slope for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31–49–17.2839N / 106–22–26.5917W
2.19.6 Site Elevation: 3940.3 ft

2.19.1 ILS Type: Localizer for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31–47–55.923N / 106–24–12.9005W
2.19.6 Site Elevation: 3910.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 12E
2.19.2 Navigation Aid Identification: ELP
2.19.5 Coordinates: 31–48–57.277N / 106–16–54.7782W
2.19.6 Site Elevation: 4023 ft

General Remarks:
ENGINE POWER IS RSTRD TO IDLE POWER ON ONE ENGINE AT A TIME FOR MAX 5 MIN ON ANY TERMINAL OR PARKING APRONS, CROSS–BLEED STARTS OR OTHER PRE DEP ACTIVITY ON MOVEMENT AREAS ONLY, MAINT OR OTR RQRMT NEEDING LONGER OR HIGHER POWER CTC TWR FOR DIRECTIONS TO DESIGNATED RUNUP AREAS.

CTN: BIGGS AAF 2NM NW RWY 22 CAN BE MISTAKEN FOR ELP RWY 22.

COMPASS ROSE CLSD PERMLY.

TWY J NE OF TWY K1; TWY K NE OF TWY K1 BTN TWY J & NORTH CARGO RAMP; TWYS U & V SOUTH OF TWY L; & TWY K2 NOT VISIBLE FM ATCT.

NOISE ABATEMENT PROCEDURES IN EFFECT, CTC ATCT FOR DETAILS.

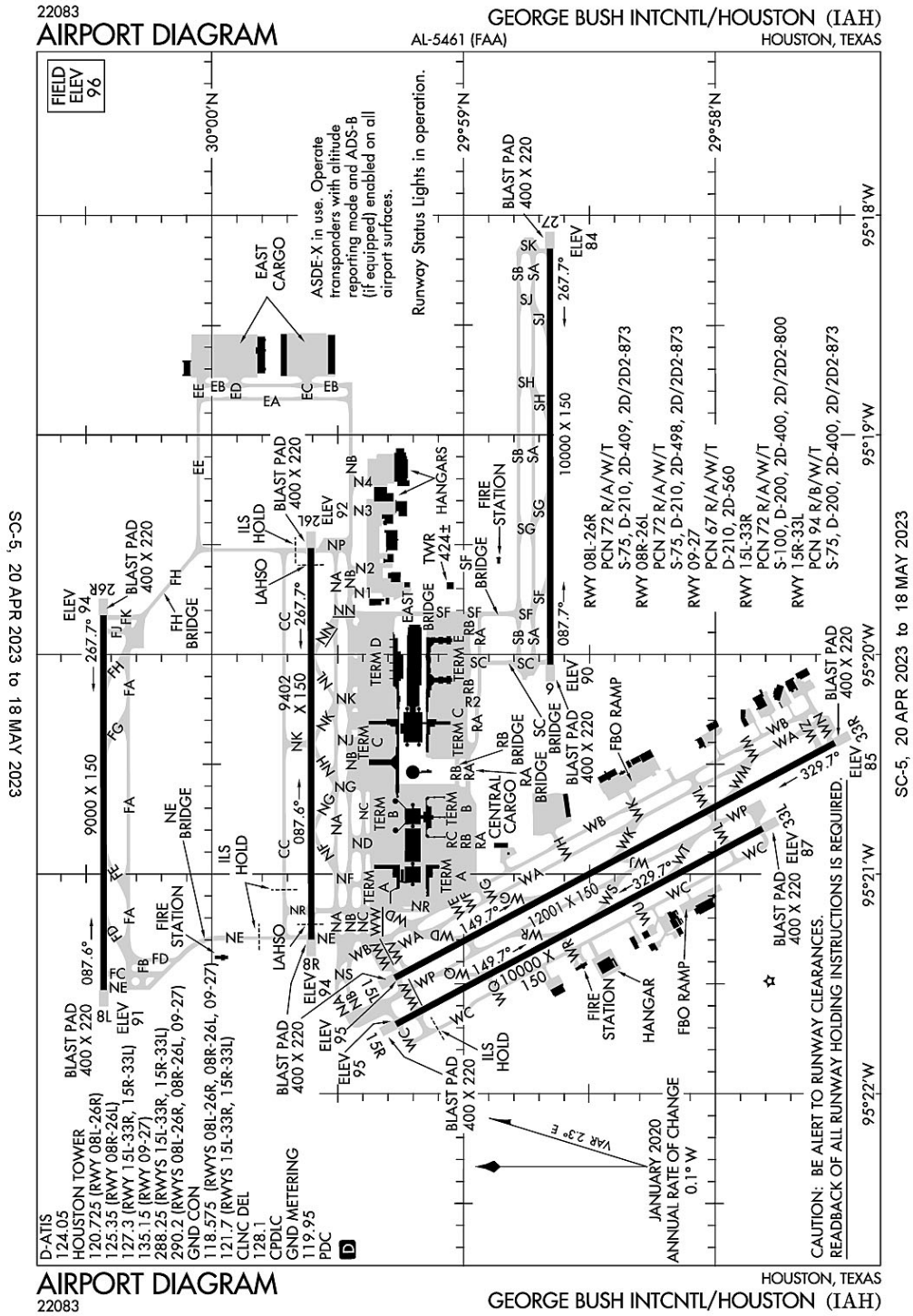
HOLDING POSITION MARKINGS FOR RUNWAY 8R APPROACH AND RUNWAY 4/22 ARE IN CLOSE PROXIMITY TO THE TERMINAL APRON; REVIEW AIRPORT DIAGRAM PRIOR TO PUSHBACK FROM THE GATE.

MILITARY USERS SHOULD REVIEW NOISE ABATEMENT PROCEDURES LISTED FOR BIGGS AAF.

NORTH BOUND TFC PROHIBITED ON TWY F SOUTH OF APCH END RWY 08R.

24 HR PPR CLASS A EXPLOSIVES CTC 915−212−0333.

Houston, Texas
George Bush Intercontinental/Houston
ICAO Identifier KIAH



Houston, TX
George Bush Intercontinental/Houston
ICAO Identifier KIAH

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 29–59–3.967N / 95–20–29.193W
2.2.2 From City: 15 miles N of HOUSTON, TX
2.2.3 Elevation: 95.8 ft
2.2.5 Magnetic Variation: 3E (2015)
2.2.6 Airport Contact: STEVEN RUNGE
PO BOX 60106
HOUSTON, TX 77205 (281–233–1131)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30–0–25.7816N / 95–21–31.6473W
2.12.6 Threshold Elevation: 90.6 ft
2.12.6 Touchdown Zone Elevation: 94 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30–0–25.8612N / 95–19–49.2891W
2.12.6 Threshold Elevation: 94.2 ft
2.12.6 Touchdown Zone Elevation: 95.3 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29–59–36.3028N / 95–21–17.8703W
2.12.6 Threshold Elevation: 94.3 ft
2.12.6 Touchdown Zone Elevation: 95.3 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29–59–36.3817N / 95–19–30.9539W
2.12.6 Threshold Elevation: 92.3 ft
2.12.6 Touchdown Zone Elevation: 94.6 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29–58–39.3363N / 95–20–2.7891W
2.12.6 Threshold Elevation: 89.9 ft
2.12.6 Touchdown Zone Elevation: 90.1 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29–58–39.4071N / 95–18–9.0948W
2.12.6 Threshold Elevation: 84.3 ft
2.12.6 Touchdown Zone Elevation: 86.2 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 332
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29–57–31.5505N / 95–20–24.189W
2.12.6 Threshold Elevation: 84.9 ft
2.12.6 Touchdown Zone Elevation: 88 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 152
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29–59–16.4026N / 95–21–28.3335W
2.12.6 Threshold Elevation: 94.6 ft
2.12.6 Touchdown Zone Elevation: 95.2 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 332
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29–57–48.7474N / 95–20–47.5811W
2.12.6 Threshold Elevation: 86.5 ft
2.12.6 Touchdown Zone Elevation: 89.3 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 152
2.12.3 Dimensions: 10000 ft x 150 ft

2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29−59−16.1082N / 95−21−41.0384W
2.12.6 Threshold Elevation: 94.8 ft
2.12.6 Touchdown Zone Elevation: 94.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 9000 ft
2.13.3 Take−off Distance Available: 9000 ft
2.13.4 Accelerate−Stop Distance Available: 9000 ft
2.13.5 Landing Distance Available: 9000 ft

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 9402 ft
2.13.3 Take−off Distance Available: 9402 ft
2.13.4 Accelerate−Stop Distance Available: 9402 ft
2.13.5 Landing Distance Available: 9402 ft

2.13.1 Designation: 26L
2.13.2 Take−off Run Available: 9402 ft
2.13.3 Take−off Distance Available: 9402 ft
2.13.4 Accelerate−Stop Distance Available: 9402 ft
2.13.5 Landing Distance Available: 9402 ft

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 27
2.13.2 Take−off Run Available: 10000 ft
2.13.3 Take−off Distance Available: 10000 ft
2.13.4 Accelerate−Stop Distance Available: 10000 ft
2.13.5 Landing Distance Available: 10000 ft

2.13.1 Designation: 33R
2.13.2 Take−off Run Available: 12001 ft
2.13.3 Take−off Distance Available: 12001 ft
2.13.4 Accelerate−Stop Distance Available: 12001 ft
2.13.5 Landing Distance Available: 12001 ft

2.13.1 Designation: 15L
2.13.2 Take−off Run Available: 12001 ft

2.13.3 Take–off Distance Available: 12001 ft
2.13.4 Accelerate–Stop Distance Available: 12001 ft
2.13.5 Landing Distance Available: 12001 ft

2.13.1 Designation: 33L
2.13.2 Take–off Run Available: 9999 ft
2.13.3 Take–off Distance Available: 9999 ft
2.13.4 Accelerate–Stop Distance Available: 9999 ft
2.13.5 Landing Distance Available: 9999 ft

2.13.1 Designation: 15R
2.13.2 Take–off Run Available: 9999 ft
2.13.3 Take–off Distance Available: 9999 ft
2.13.4 Accelerate–Stop Distance Available: 9999 ft
2.13.5 Landing Distance Available: 9999 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 33L

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30–0–21.9187N / 95–21–44.0405W
2.19.6 Site Elevation: 87.5 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30–0–29.7528N / 95–21–18.6875W
2.19.6 Site Elevation: 86 ft

2.19.1 ILS Type: Inner Marker for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30–0–25.764N / 95–21–40.8592W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30–0–25.8701N / 95–19–36.9727W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30–0–21.9187N / 95–21–44.0405W
2.19.6 Site Elevation: 87.5 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30–0–29.8117N / 95–20–2.26W
2.19.6 Site Elevation: 89.7 ft

2.19.1 ILS Type: Inner Marker for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30–0–25.8755N / 95–19–40.4195W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30–0–25.7696N / 95–21–43.9647W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29–59–38.9211N / 95–21–31.3127W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29–59–40.3184N / 95–21–6.0476W
2.19.6 Site Elevation: 88.8 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29–59–36.3913N / 95–19–19.5749W
2.19.6 Site Elevation: 89.6 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29–59–38.9211N / 95–21–31.3127W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29–59–39.5388N / 95–19–42.8056W
2.19.6 Site Elevation: 86.8 ft

2.19.1 ILS Type: Inner Marker for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29–59–36.3841N / 95–19–20.5992W
2.19.6 Site Elevation: 89.2 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29–59–36.2865N / 95–21–31.2791W
2.19.6 Site Elevation: 92.2 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29–58–35.3774N / 95–20–13.5882W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29–58–35.3875N / 95–19–50.679W
2.19.6 Site Elevation: 85.3 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29–58–39.4132N / 95–17–57.578W
2.19.6 Site Elevation: 81 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 3E

2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29–58–35.3774N / 95–20–13.5882W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29–58–35.4434N / 95–18–20.8578W
2.19.6 Site Elevation: 80 ft

2.19.1 ILS Type: Inner Marker for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29–58–39.4166N / 95–17–59.1664W
2.19.6 Site Elevation: 81.1 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29–58–39.3268N / 95–20–15.3338W
2.19.6 Site Elevation: 87.4 ft

2.19.1 ILS Type: Glide Slope for runway 33R. Magnetic variation: 3E
2.19.2 ILS Identification: CDG
2.19.5 Coordinates: 29–57–38.8144N / 95–20–33.4594W
2.19.6 Site Elevation: 80.4 ft

2.19.1 ILS Type: Localizer for runway 33R. Magnetic variation: 3E
2.19.2 ILS Identification: CDG
2.19.5 Coordinates: 29–59–31.6238N / 95–21–37.6444W
2.19.6 Site Elevation: 91.9 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 3E
2.19.2 ILS Identification: LKM
2.19.5 Coordinates: 29–59–4.4118N / 95–21–39.0331W
2.19.6 Site Elevation: 89.9 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 3E
2.19.2 ILS Identification: LKM
2.19.5 Coordinates: 29–57–39.3739N / 95–20–41.8496W
2.19.6 Site Elevation: 82.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 5E
2.19.2 Navigation Aid Identification: IAH
2.19.5 Coordinates: 29–57–24.9013N / 95–20–44.5885W
2.19.6 Site Elevation: 80.6 ft

General Remarks:
THE FLWG MOV AREAS ARE NOT VSB FM THE ATCT: PORTIONS OF TWYS ’WA’ & ’WB’ FM TWY ’WH’ TO THE AER 33R; TWYS ’WA’ & ’WB’ FM TWY ’WD’ NORTH FOR 400 FT; TWY ’WD’ FM TWY ’WA’ TO TWY ’NR’; TWY ’NR’; TWY ’WL’ FM RWY 15L TO TWY ’WB’ & TWY ’WM’.

TXLN ’RA’, ’RB’, ’RC’, ’R2’, AND TWY ’SC’ NORTH OF TWY ’SB’ ARE DSGND NON–MOVEMENT AREAS OPERD BY UAL RAMP CTL.

DUAL TWY OPNS TWY NK BTN TWY NB & NORTH RAMP; WEST CNTRLN RSTRD TO ACFT MAX WING SPANS 125 FT & EAST CNTRLN MAX WING SPANS 214 FT.

NORTH RAMP TAXILANE BTN TWYS NF & NR RSTRD TO ACFT WITH WING SPAN 125 FT & BLO.

RWY STATUS LGTS ARE IN OPN.

TWY WW BTN TWY NR AND TWY WB CLSD TO ACFT WINGSPAN MORE THAN 214 FT.

APRON TERMINAL ALPHA NORTH RAMP EAST–WEST TXL CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

TWY 'SF' BTN TWY 'NB' AND TXL 'RA' IS DSGND NON–MOV AREA.

9 FT AGL UNMKD SECURITY FENCE ADJ TO FBO & CORPORATE BASE OPR RAMPS AND NONMOV AREA TXLS.

TWY SF BTN RWY 09/27 UP TO AND INCLUDING THE EAST BRIDGE CLSD TO ACFT WITH WINGSPAN 215 FT & OVER.

HEL HOVER/TAXI RSTRD TO HARD SFC MOV AREAS ONLY.

APRON TERMINAL ALPHA NORTH RAMP SPOT 5 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

TWY 'NR' CLSD TO ACFT WITH WING SPANS GREATER THAN 125 FT BTN TWY 'WD' & TWY 'WB'.

TWY WC WEST OF RWY 15R/33L RSTRD TO ACFT WITH 118 FT WING SPAN AND BLW.

TWY NR BTN TWY NC AND TWY WW CLSD TO ACFT WINGSPAN MORE THAN 214 FT.

TWY NR BTN WW AND TWY WB DSGND NON–MOVEMENT AREA.

TWY NA LGT ALL BTN TWY WP AND TWY NP NOT STD

APRON TERMINAL ALPHA NORTH RAMP SPOT 6 CLSD TO ACFT WINGSPAN MORE THAN 125 FT.

PILOTS & CREWS SHOULD BE AWARE OF DEP TURNS ON CRS IN EXCESS OF 180 DEGS. PILOT READ BACK OF DRCTN OF TURN IS HIGHLY ENCOURAGED.

TWYS WA & WB MAGNETIC ANOMALIES MAY AFFECT COMPASS HDG.

RWY 15L/33R MAGNETIC ANOMALIES MAY AFFECT COMPASS HDG FOR TKOF.

GBAS APCH SVC VOL 20NM FR THR, ALL GLS APCHS.

TWY WD BTN TWY NR AND TWY WB CLSD TO ACFT WINGSPAN MORE THAN 171 FT.

NORTH RAMP NORTH & SOUTH TAXI LANES CLSD TO ACFT WITH WING SPANS GREATER THAN 125 FT.

RWY 09/27 CLSD TO ACFT WITH WINGSPAN 215 FT & ABOVE.

TXLN RC CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT.

BIRDS ON & INVOF ARPT.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

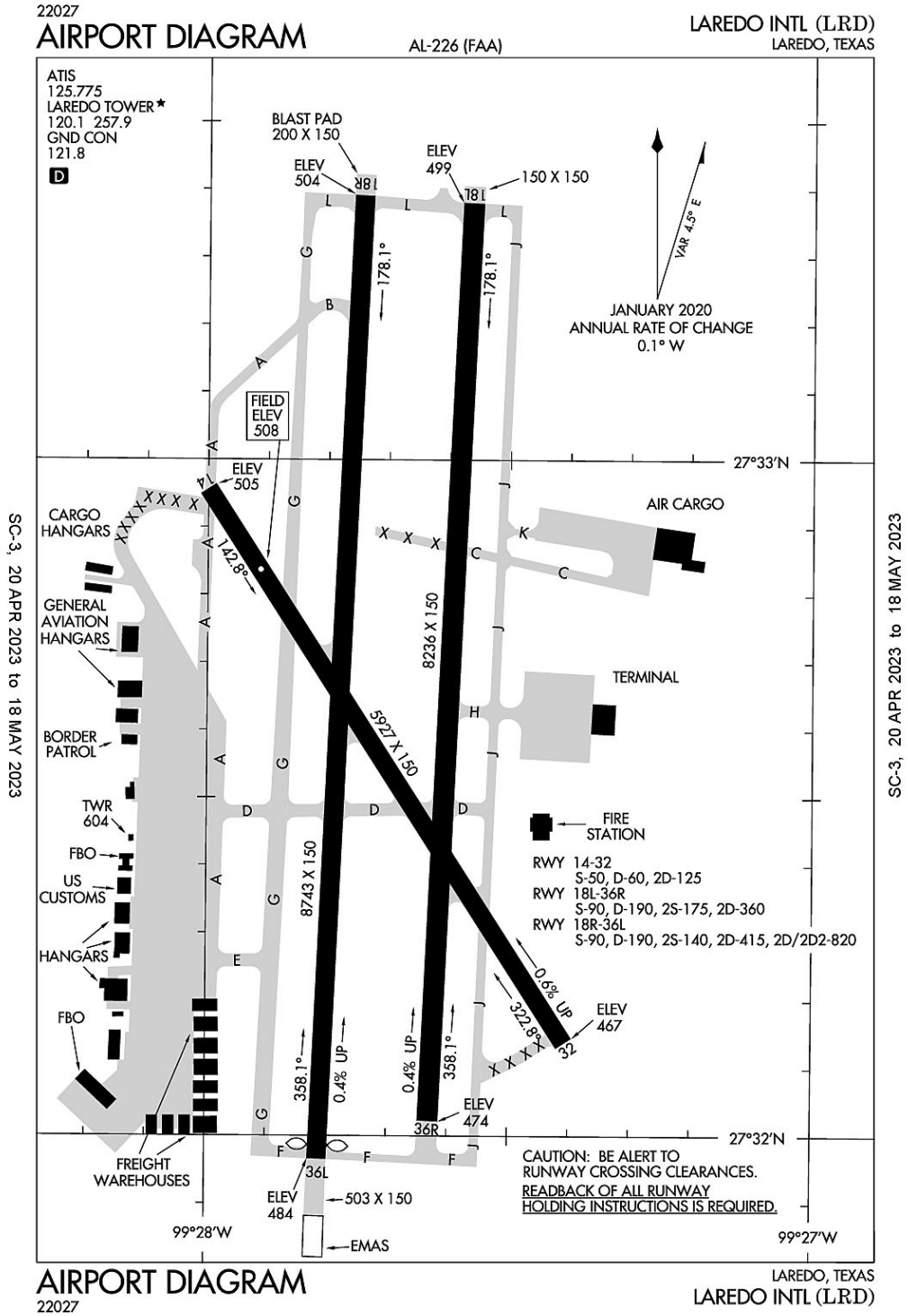
NOISE SENSITIVE AREA N, E AND W OF ARPT.

TWY WW RUN UP PAD FOR RWY 15L CLSD TO ACFT WITH WINGSPAN 135 FT & OVER.

WILDLIFE HAZ BATS INVOF IAH.

TWY NK BTN TWY NB AND TERMINAL D RAMP SIMULTANEOUS ACFT OPS PROHIBITED WHEN MIDDLE TAXILANE IN USE.

Laredo, Texas
Laredo International
ICAO Identifier KLRD



Laredo, TX
Laredo Intl
ICAO Identifier KLRD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 27−32−39.1N / 99−27−41.7W

2.2.2 From City: 3 miles NE of LAREDO, TX

2.2.3 Elevation: 508 ft

2.2.5 Magnetic Variation: 5E (2020)

2.2.6 Airport Contact: GILBERTO SANCHEZ
5210 BOB BULLOCK LOOP
LAREDO, TX 78041 (956−795−2000)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 7/1/1975

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 32

2.12.2 True Bearing: 327

2.12.3 Dimensions: 5927 ft x 150 ft

2.12.4 PCN: ///

2.12.5 Coordinates: 27−32−8.635N / 99−27−24.668W

2.12.6 Threshold Elevation: 467.4 ft

2.12.6 Touchdown Zone Elevation: 493.6 ft

2.12.1 Designation: 14

2.12.2 True Bearing: 147

2.12.3 Dimensions: 5927 ft x 150 ft

2.12.4 PCN: ///

2.12.5 Coordinates: 27−32−58.0248N / 99−28−0.2242W

2.12.6 Threshold Elevation: 505.4 ft

2.12.6 Touchdown Zone Elevation: 508 ft

2.12.1 Designation: 18L

2.12.2 True Bearing: 183

2.12.3 Dimensions: 8236 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 27−33−22.9267N / 99−27−33.5988W
2.12.6 Threshold Elevation: 499.2 ft
2.12.6 Touchdown Zone Elevation: 499.2 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8236 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 27−32−1.4547N / 99−27−37.6934W
2.12.6 Threshold Elevation: 474.2 ft
2.12.6 Touchdown Zone Elevation: 486.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 27−31−56.8817N / 99−27−49.0449W
2.12.6 Threshold Elevation: 483.7 ft
2.12.6 Touchdown Zone Elevation: 497 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 183
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 27−33−23.3681N / 99−27−44.7128W
2.12.6 Threshold Elevation: 503.7 ft
2.12.6 Touchdown Zone Elevation: 503.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 32
2.13.2 Take−off Run Available: 5927 ft
2.13.3 Take−off Distance Available: 5927 ft
2.13.4 Accelerate−Stop Distance Available: 5927 ft
2.13.5 Landing Distance Available: 5927 ft

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 5927 ft
2.13.3 Take−off Distance Available: 5927 ft
2.13.4 Accelerate−Stop Distance Available: 5927 ft
2.13.5 Landing Distance Available: 5927 ft

2.13.1 Designation: 18L
2.13.2 Take–off Run Available: 8236 ft
2.13.3 Take–off Distance Available: 8236 ft
2.13.4 Accelerate–Stop Distance Available: 8236 ft
2.13.5 Landing Distance Available: 8236 ft

2.13.1 Designation: 36R
2.13.2 Take–off Run Available: 8236 ft
2.13.3 Take–off Distance Available: 8236 ft
2.13.4 Accelerate–Stop Distance Available: 8236 ft
2.13.5 Landing Distance Available: 8236 ft

2.13.1 Designation: 36L
2.13.2 Take–off Run Available: 8743 ft
2.13.3 Take–off Distance Available: 8743 ft
2.13.4 Accelerate–Stop Distance Available: 8743 ft
2.13.5 Landing Distance Available: 8623 ft

2.13.1 Designation: 18R
2.13.2 Take–off Run Available: 8743 ft
2.13.3 Take–off Distance Available: 8743 ft
2.13.4 Accelerate–Stop Distance Available: 8743 ft
2.13.5 Landing Distance Available: 8743 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36L
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−31−50.8814N / 99−27−46.6673W
2.19.6 Site Elevation: 477 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−33−12.4993N / 99−27−40.6967W
2.19.6 Site Elevation: 497 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−31−51.7421N / 99−27−49.3028W
2.19.6 Site Elevation: 477 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 9E
2.19.2 Navigation Aid Identification: LRD
2.19.5 Coordinates: 27−28−43.4544N / 99−25−3.6441W
2.19.6 Site Elevation: 583 ft

General Remarks:
RWY 14/32 RSTRD TO ACFT LESS THAN 60000 LBS DTW.

BIRDS ON AND INVOF ARPT.

FEDERAL INSPECTION STATION FEE.

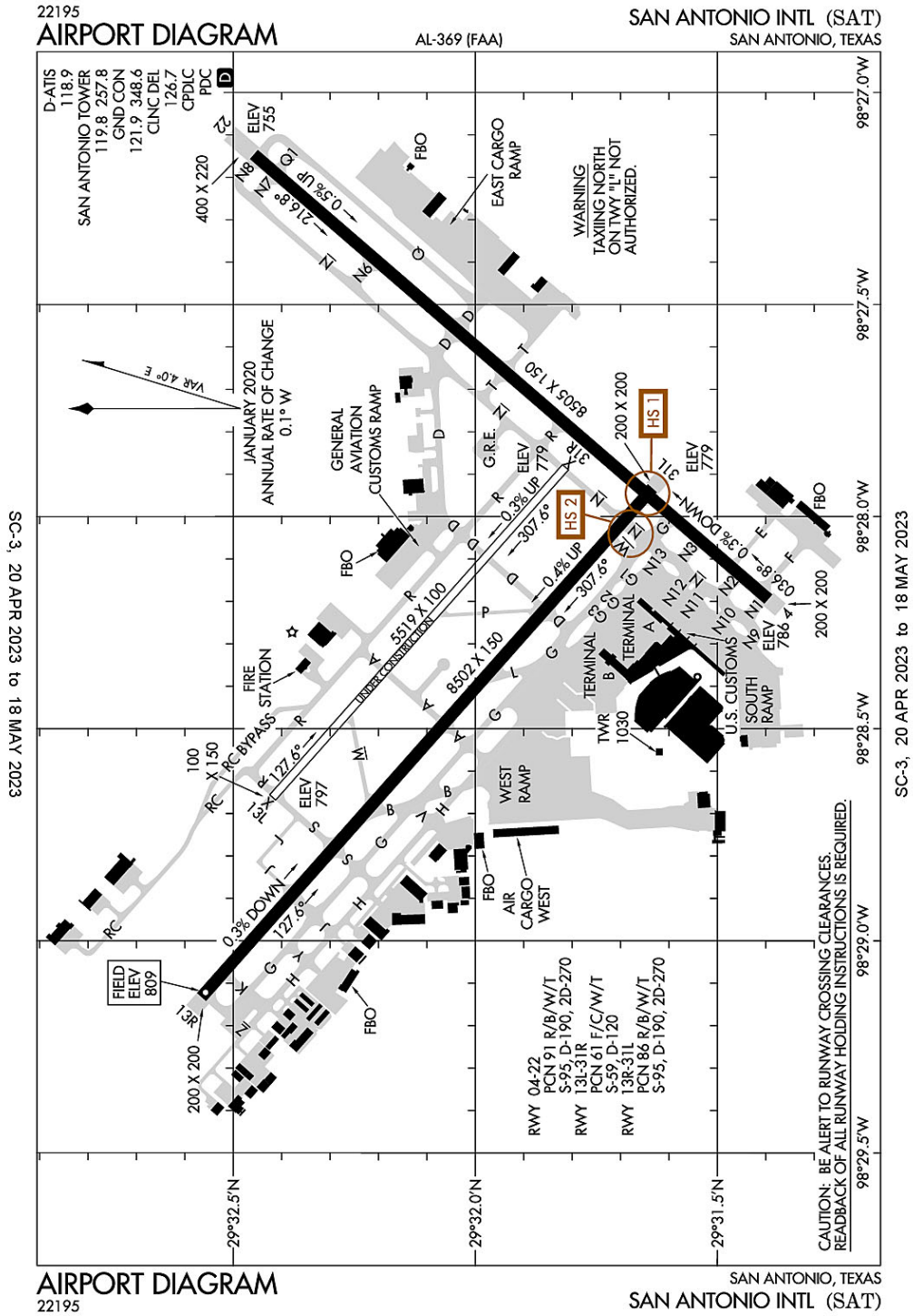
FOR CD IF UNA TO CTC ON FSS FREQ, CTC HOUSTON ARTCC AT 281−230−5622.

TWY C CLSD BTN RWY 18L/36R & RWY 18R INDEFLY.

FEDERAL INSPECTION STATION IS LCTD ON THE WEST GENERAL AVIATION/CARGO APRON.

LNDG FEE ASSESSED FOR ANY ”FOR HIRE” ACFT.

San Antonio, Texas
San Antonio International
ICAO Identifier KSAT



San Antonio, TX
San Antonio Intl
ICAO Identifier KSAT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 29−32−2.25N / 98−28−8.605W

2.2.2 From City: 7 miles N of SAN ANTONIO, TX

2.2.3 Elevation: 809.1 ft

2.2.5 Magnetic Variation: 4E (2020)

2.2.6 Airport Contact: JESUS H. SAENZ, JR.
9800 AIRPORT BLVD
SAN ANTONIO, TX 78216 (210−207−3444)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 04

2.12.2 True Bearing: 41

2.12.3 Dimensions: 8505 ft x 150 ft

2.12.4 PCN: 91 R/B/W/T

2.12.5 Coordinates: 29−31−23.6409N / 98−28−11.6562W

2.12.6 Threshold Elevation: 786 ft

2.12.6 Touchdown Zone Elevation: 786 ft

2.12.1 Designation: 22

2.12.2 True Bearing: 221

2.12.3 Dimensions: 8505 ft x 150 ft

2.12.4 PCN: 91 R/B/W/T

2.12.5 Coordinates: 29−32−27.3928N / 98−27−8.7715W

2.12.6 Threshold Elevation: 754.5 ft

2.12.6 Touchdown Zone Elevation: 770 ft

2.12.1 Designation: 31R

2.12.2 True Bearing: 312

2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−31−48.7812N / 98−27−53.0202W
2.12.6 Threshold Elevation: 779.2 ft
2.12.6 Touchdown Zone Elevation: 788.1 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−32−25.0764N / 98−28−39.714W
2.12.6 Threshold Elevation: 797.3 ft
2.12.6 Touchdown Zone Elevation: 797.3 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−31−38.0038N / 98−27−55.9932W
2.12.6 Threshold Elevation: 778.5 ft
2.12.6 Touchdown Zone Elevation: 790 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−32−33.8853N / 98−29−7.9481W
2.12.6 Threshold Elevation: 809.1 ft
2.12.6 Touchdown Zone Elevation: 809.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 8505 ft
2.13.3 Take−off Distance Available: 8505 ft
2.13.4 Accelerate−Stop Distance Available: 8505 ft
2.13.5 Landing Distance Available: 8505 ft

2.13.1 Designation: 22
2.13.2 Take−off Run Available: 8505 ft
2.13.3 Take−off Distance Available: 8505 ft
2.13.4 Accelerate−Stop Distance Available: 8505 ft
2.13.5 Landing Distance Available: 8505 ft

2.13.1 Designation: 31R
2.13.2 Take–off Run Available: 5519 ft
2.13.3 Take–off Distance Available: 5519 ft
2.13.4 Accelerate–Stop Distance Available: 5519 ft
2.13.5 Landing Distance Available: 5519 ft

2.13.1 Designation: 13L
2.13.2 Take–off Run Available: 5519 ft
2.13.3 Take–off Distance Available: 5519 ft
2.13.4 Accelerate–Stop Distance Available: 5519 ft
2.13.5 Landing Distance Available: 5519 ft

2.13.1 Designation: 31L
2.13.2 Take–off Run Available: 8502 ft
2.13.3 Take–off Distance Available: 8502 ft
2.13.4 Accelerate–Stop Distance Available: 8502 ft
2.13.5 Landing Distance Available: 8502 ft

2.13.1 Designation: 13R
2.13.2 Take–off Run Available: 8502 ft
2.13.3 Take–off Distance Available: 8502 ft
2.13.4 Accelerate–Stop Distance Available: 8502 ft
2.13.5 Landing Distance Available: 8502 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 04
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: ALAMO DP (RWY 04, 22, 31)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALAMO DP (RWY 13)
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALAMO DP (RWY 13)
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALAMO DP (RWY 04, 22, 31)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALISS DP (RWY 04, 22, 31)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALISS DP (RWY 13)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ALISS DP (RWY 13)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P
2.14.3 Channel: 121.375
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P (115−154/35−56 SAT)
2.14.3 Channel: 257.625
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (141–270)
2.14.3 Channel: 118.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (360–090)
2.14.3 Channel: 124.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (091–140)
2.14.3 Channel: 128.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (091–140)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (360–090)
2.14.3 Channel: 335.625
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (141–270)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (271–359)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (271–359)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 251.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 04 LRD TRANSITION)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 13, 22, 31)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 04 CRP TRANSITION)
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 04 CRP TRANSITION)
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 04, 13, 31)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BOWIE DP (RWY 04 LRD TRANSITION)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRAUN STAR
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: BRAUN STAR
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 126.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CENTERPOINT STAR (RWY 13R, 22)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CENTERPOINT STAR (RWY 04, 31L)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CENTERPOINT STAR (RWY 04, 31L)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CENTERPOINT STAR (RWY 13R, 22)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (141–270)
2.14.3 Channel: 118.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (360–090)
2.14.3 Channel: 124.45
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (271–359)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (091–140)
2.14.3 Channel: 128.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (271–359)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (091–140)
2.14.3 Channel: 318.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (360–090)
2.14.3 Channel: 335.625
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (141–270)
2.14.3 Channel: 353.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: D−ATIS
2.14.3 Channel: 118.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 119.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 257.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEJON DP (RWY 04, 22, 31)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEJON DP (RWY 13)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEJON DP (RWY 12)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEJON DP (RWY 13)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEJON DP (RWY 04, 22, 31)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEMIG STAR
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LEMIG STAR
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MARCS STAR
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MARCS STAR
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MILET DP (RWY 04)
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MILET DP (RWY 13, 22, 31)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MILET DP (RWY 13, 22, 31)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: MILET DP (RWY 04)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STONEWALL STAR
2.14.3 Channel: 125.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: STONEWALL STAR
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: THREE RIVERS DP (RWY 13, 22, 31)
2.14.3 Channel: 125.7
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: THREE RIVERS DP (RWY 04)
2.14.3 Channel: 127.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: THREE RIVERS DP (RWY 04)
2.14.3 Channel: 269.1
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: THREE RIVERS DP (RWY 13, 22, 31)
2.14.3 Channel: 290.225
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−32−32.9486N / 98−26−58.6881W
2.19.6 Site Elevation: 746.3 ft

2.19.1 ILS Type: Glide Slope for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−31−30.2202N / 98−27−58.0715W
2.19.6 Site Elevation: 774.8 ft

2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−32−35.0937N / 98−27−1.1714W
2.19.6 Site Elevation: 748.9 ft

2.19.1 ILS Type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−31−29.0932N / 98−27−49.9584W
2.19.6 Site Elevation: 790.7 ft

2.19.1 ILS Type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−32−28.9928N / 98−28−54.8202W
2.19.6 Site Elevation: 801.3 ft

2.19.1 ILS Type: Inner Marker for runway 13R. Magnetic variation: 4E

2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29–32–39.0383N / 98–29–14.595W
2.19.6 Site Elevation: 807.6 ft

2.19.1 ILS Type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29–31–31.3122N / 98–27–47.3799W
2.19.6 Site Elevation: 771 ft

2.19.1 ILS Type: Outer Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29–36–27.2991N / 98–34–11.0119W
2.19.6 Site Elevation: 1054.4 ft

2.19.1 ILS Type: DME for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29–31–29.0932N / 98–27–49.9584W
2.19.6 Site Elevation: 790.7 ft

2.19.1 ILS Type: Glide Slope for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29–31–47.9039N / 98–28–1.9173W
2.19.6 Site Elevation: 777.5 ft

2.19.1 ILS Type: Localizer for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29–32–43.1182N / 98–29–19.835W
2.19.6 Site Elevation: 813.4 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: SAT
2.19.5 Coordinates: 29–38–38.508N / 98–27–40.7369W
2.19.6 Site Elevation: 1158.8 ft

General Remarks:
TWY L CLSD NORTHBOUND.

FREQUENT RUBBER ACCUMULATION NW 2500 RY 13R/31L.

GLIDER/SOARING OPNS APRXLY 17 MILES NW OF ARPT DURG VFR.

ARPT RSTD TO ACFT WITH WINGSPAN GTR THAN 171 FT, PPR WITH 24HR OPS 210–207–3433. RQRD FOR AUTH.

ALL INTL GENERAL AVIATION CLEAR U.S. CSTMS AT NORTH FIXED BASE OPERATOR RAMP EAST SIDE, CALL U.S. CSTMS 210–821–6965 UPON ARR.

TWY S BTN APCH END RWY 13L AND RWY 13R/31L CLSD TO ACFT WITH WINGSPAN MORE THAN 100 FT. TWY R BTN APCH END RWY 13L AND TWY D CLSD TO ACFT WINGSPAN MORE THAN 100 FT.

NOISE SENSITIVE AREAS EXIST ON ALL SIDES OF ARPT, AT PILOTS DISCRETION CLIMB AS QUICKLY AND QUIETLY AS SAFELY POSSIBLE ON DEPARTURE AND USE CONSIDERATION WHEN FLYING OVER POPULATED AREAS BY MINIMIZING FLT AND HIGH PWR SETTINGS. MILITARY AIRCRAFT: DEPARTING AND ARRIVING AIRCRAFT WILL USE MINIMUM POWER SETTINGS CONSISTENT WITH AIRCRAFT FLIGHT MANUALS, AFTERBURNER TAKEOFF IS PROHIBITED UNLESS REQUIRED FOR SAFETY OF FLIGHT. ENGINE−UPS ARE PERMITTED BTN 0600−2300.

ACFT TAXIING ON RY 04 NE BOUND LOOK FOR HOLD SHORT TO RY 31L.

INNER RAMP TAXILANE NORTH OF TRML A AND B IS CLSD TO ACFT WITH WINGSPAN GTR THAN 135 FT.

TWY D NON−MOVEMENT AREA FM TWY N TO 500 FT W OF TWY N.

PPR WITH ARPT OPNS FOR ACFT POWERING BACK FM TERMINAL GATES.

GROUND RUN−UP ENCLOSURE AVBL 24 HRS.

NUMEROUS FLOCKS OF BIRDS INVOF ARPT.

FOREIGN MIL ACFT WITH WINGSPAN LESS THAN 100 FT MUST REP TO GA RAMP FED INSPECTION STATION FOR CUST PROCESSING, CTC AP MANAGEMENT AT 210−207−3433.

RY 13L/31R NOT AVBL FOR PART 121 ACR OPNS.

TERMINAL GATES A1, A5, A6, A7 & A8 USE ONLY WITH PPR CALL OPNS 210−207−3433.

ALL ACFT AFTER LDG ON RWY 13R/31L EXITING SOUTHWEST BOUND ON TWY DELTA TO MAKE 90 DEG TURN ON TWY GOLF TO AVOID UNUSBL SFC.

C130 AND C17 TYPE ACFT MUST PARK ON WEST RAMP TO CLR CUST.

ACFT TAXIING ON TWY N SW BOUND LOOK FOR HOLD SHORT TO RY 31R.

TWY Z CLSD TO ACFT WITH WINGSPAN GREATER THAN 118 FT.

APRON EAST CARGO RAMP INT OF RWY 04/22 AND TWY DELTA ACFT ARE REQ TO APPLY THE MNM THRUST WHEN XNG THE RWY TO AVOID DMG DUE TO JET BLAST.

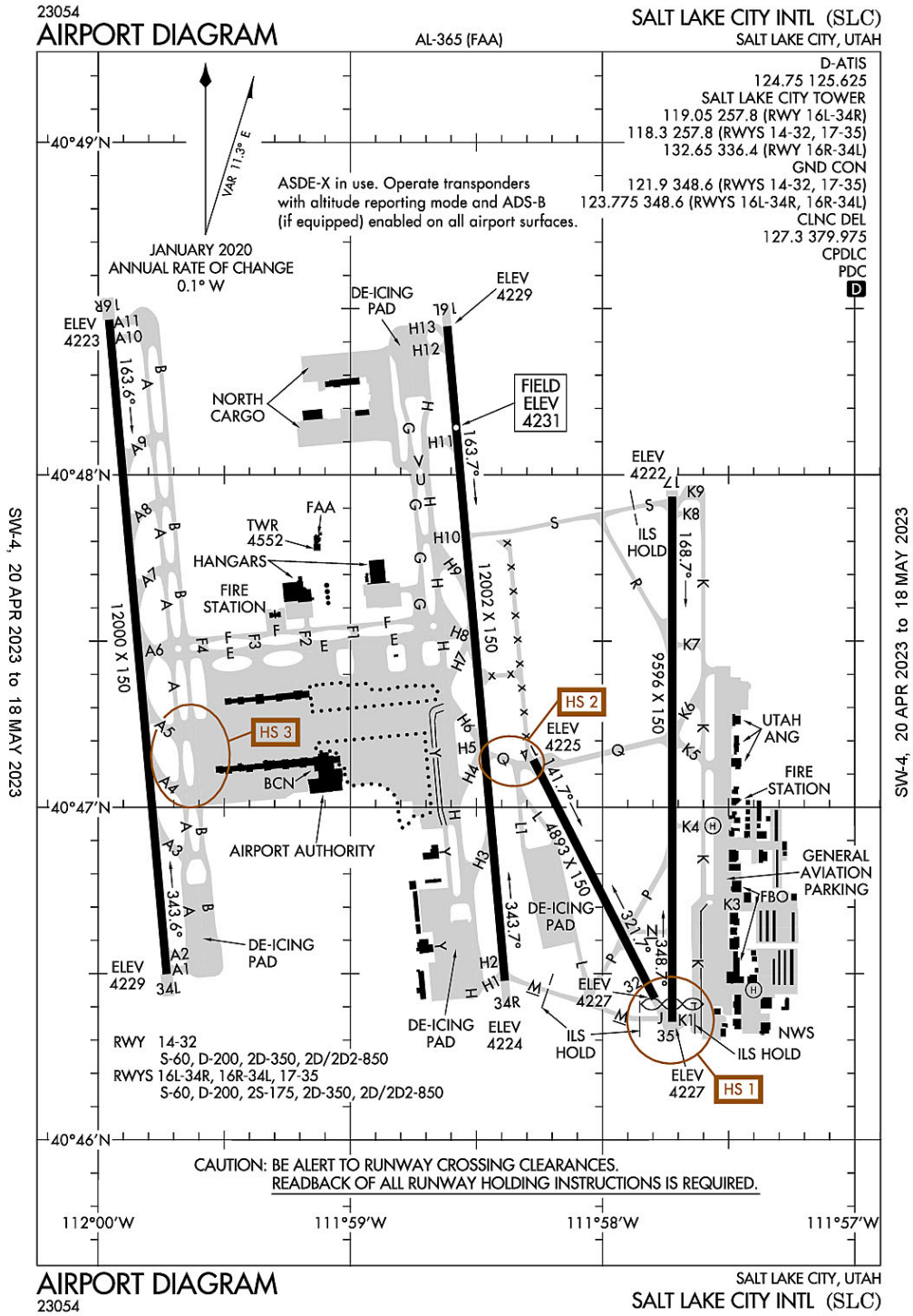
THE FOLLOWING TWYS ARE NOT AVBL FOR ACFT 59,000 LBS OR OVER: TWY A & TWY J NORTH OF RY 13R−31L, TWY M & TWY P, TWY H NORTHWEST OF TWY Z AND TWY E EAST OF RY 04/22.

SAT TWY R BTN APCH END RWY 13L AND TWY D CLSD TO ACFT MORE THAN 99600 LB.

TWYS L & B CLSD TO ACFT WITH WINGSPANS GREATER THAN 118 FT EXITING RY 31L.

ACFT AT TERMINAL A & B ADVISE GND CTL PRIOR TO PUSH.

Salt Lake City, Utah
Salt Lake City International
ICAO Identifier KSLC



Salt Lake City, UT
Salt Lake City Intl
ICAO Identifier KSLC

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−47−18.216N / 111−58−39.984W
2.2.2 From City: 3 miles W of SALT LAKE CITY, UT
2.2.3 Elevation: 4230.9 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: MATTHEW BROWN
P.O. BOX 145550
SALT LAKE CITY, UT 84114 (801−575−2244)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 14
2.12.2 True Bearing: 153
2.12.3 Dimensions: 4893 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40−47−8.5848N / 111−58−16.4661W
2.12.6 Threshold Elevation: 4224.7 ft
2.12.6 Touchdown Zone Elevation: 4224.8 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 333
2.12.3 Dimensions: 4893 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40−46−25.5192N / 111−57−47.5915W
2.12.6 Threshold Elevation: 4226.8 ft
2.12.6 Touchdown Zone Elevation: 4226.8 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40−46−28.7185N / 111−58−23.2566W
2.12.6 Threshold Elevation: 4224.3 ft
2.12.6 Touchdown Zone Elevation: 4224.7 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–48–26.8298N / 111–58–36.9557W
2.12.6 Threshold Elevation: 4229.1 ft
2.12.6 Touchdown Zone Elevation: 4230.9 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–48–28.0035N / 111–59–57.4282W
2.12.6 Threshold Elevation: 4223.4 ft
2.12.6 Touchdown Zone Elevation: 4225.8 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–46–29.9171N / 111–59–43.6913W
2.12.6 Threshold Elevation: 4228.8 ft
2.12.6 Touchdown Zone Elevation: 4228.8 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 360
2.12.3 Dimensions: 9596 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–46–21.3022N / 111–57–43.4496W
2.12.6 Threshold Elevation: 4226.8 ft
2.12.6 Touchdown Zone Elevation: 4226.9 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9596 ft x 150 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–47–56.1043N / 111–57–43.4552W
2.12.6 Threshold Elevation: 4221.7 ft
2.12.6 Touchdown Zone Elevation: 4222.2 ft

2.12.1 Designation: HB
2.12.2 True Bearing:
2.12.3 Dimensions: 60 ft x 60 ft
2.12.4 PCN: ///
2.12.5 Coordinates: 40–46–27.0827N / 111–57–24.0562W
2.12.6 Threshold Elevation: 4220.4 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: HF
2.12.2 True Bearing:
2.12.3 Dimensions: 60 ft x 60 ft

2.12.4 PCN: ///
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 14
2.13.2 Take−off Run Available: 4892 ft
2.13.3 Take−off Distance Available: 4892 ft
2.13.4 Accelerate−Stop Distance Available: 4892 ft
2.13.5 Landing Distance Available: 4892 ft

2.13.1 Designation: 32
2.13.2 Take−off Run Available: 4892 ft
2.13.3 Take−off Distance Available: 4892 ft
2.13.4 Accelerate−Stop Distance Available: 4892 ft
2.13.5 Landing Distance Available: 4892 ft

2.13.1 Designation: 34R
2.13.2 Take−off Run Available: 12002 ft
2.13.3 Take−off Distance Available: 12002 ft
2.13.4 Accelerate−Stop Distance Available: 12002 ft
2.13.5 Landing Distance Available: 12002 ft

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 12002 ft
2.13.3 Take−off Distance Available: 12002 ft
2.13.4 Accelerate−Stop Distance Available: 12002 ft
2.13.5 Landing Distance Available: 12002 ft

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 34L
2.13.2 Take−off Run Available: 12000 ft
2.13.3 Take−off Distance Available: 12000 ft
2.13.4 Accelerate−Stop Distance Available: 12000 ft
2.13.5 Landing Distance Available: 12000 ft

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 9596 ft
2.13.3 Take−off Distance Available: 9596 ft
2.13.4 Accelerate−Stop Distance Available: 9596 ft
2.13.5 Landing Distance Available: 9272 ft

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 9596 ft

2.13.3 Take–off Distance Available: 9596 ft
2.13.4 Accelerate–Stop Distance Available: 9596 ft
2.13.5 Landing Distance Available: 9596 ft

2.13.1 Designation: HB
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

2.13.1 Designation: HF
2.13.2 Take–off Run Available: ft
2.13.3 Take–off Distance Available: ft
2.13.4 Accelerate–Stop Distance Available: ft
2.13.5 Landing Distance Available: ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: HB

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: HF
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40–46–18.724N / 111–58–18.1254W
2.19.6 Site Elevation: 4239.9 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40–48–17.0756N / 111–58–30.6172W
2.19.6 Site Elevation: 4225 ft

2.19.1 ILS Type: Inner Marker for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40–48–35.7038N / 111–58–38.0115W
2.19.6 Site Elevation: 4222.8 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40–46–18.5061N / 111–58–22.0717W
2.19.6 Site Elevation: 4226.5 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40–46–18.724N / 111–58–18.1254W
2.19.6 Site Elevation: 4239.9 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40–46–39.3436N / 111–58–19.2908W
2.19.6 Site Elevation: 4220 ft

2.19.1 ILS Type: Inner Marker for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40–46–20.3855N / 111–58–22.2947W
2.19.6 Site Elevation: 4225.1 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40–48–37.6811N / 111–58–38.2145W
2.19.6 Site Elevation: 4224.5 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40–46–19.627N / 111–59–46.3581W
2.19.6 Site Elevation: 4233.6 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40–48–17.3028N / 112–0–1.6005W
2.19.6 Site Elevation: 4218.7 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40–46–19.9476N / 111–59–42.5324W
2.19.6 Site Elevation: 4227.2 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40–46–19.627N / 111–59–46.3581W
2.19.6 Site Elevation: 4233.6 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40–46–39.8998N / 111–59–50.2673W
2.19.6 Site Elevation: 4222.6 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40–48–37.9731N / 111–59–58.5893W
2.19.6 Site Elevation: 4220 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40–46–9.7838N / 111–57–47.5356W
2.19.6 Site Elevation: 4242.7 ft

2.19.1 ILS Type: Glide Slope for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40–47–45.7497N / 111–57–50.0372W
2.19.6 Site Elevation: 4216.4 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40–46–10.0541N / 111–57–43.4502W
2.19.6 Site Elevation: 4227.9 ft

2.19.1 ILS Type: DME for runway 35. Magnetic variation: 11E
2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40–46–9.7838N / 111–57–47.5356W
2.19.6 Site Elevation: 4242.7 ft

2.19.1 ILS Type: Glide Slope for runway 35. Magnetic variation: 11E

2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40−46−35.1583N / 111−57−48.6413W
2.19.6 Site Elevation: 4229.2 ft

2.19.1 ILS Type: Localizer for runway 35. Magnetic variation: 11E
2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40−47−8.3329N / 111−57−51.5557W
2.19.6 Site Elevation: 4220.8 ft

General Remarks:
SEE CURRENT NOTAMS FOR DATES AND ADDITIONAL INFO.

MILITARY: ANG RAMP: NSTD PAVEMENT MARK ON RAMP.

SVFR IS NOT RCMD AT THE ARPT, IF REQD, EXPT DLAS.

TWY Y RSTD TO WINGSPANS LESS THAN 171 FT BTWN TWY H3 AND H4.

MILITARY: ANG RAMP: OPR 1430−2230Z++ MON−THU. CLSD FRI−SUN AND HOL. OFFL BUS ONLY. PPR REQ 48 HR ALL ACFT, VALID 1 HR +/− ETA. TRAN PRK/SVC EXTREMELY LTD. BASE OPS DSN 245−2274, C801−245−2274. MIL ALT HILL AFB (KHIF) 25 NM N. ALL ACFT CTC UTAH CTL (COMD POST) 20 MIN OUT WITH ETA AND REQ.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

SURFACE MOVEMENT GUIDANCE CONTROL SYSTEM & LOW VISIBILITY TAXI PROCEDURES.

HELIPADS B AND F LOCATED ON GENERAL AVIATION APRONS.

USE CAUTION FOR EXTENSIVE PARAGLIDING OPS INVOF POINT OF THE MOUNTAIN.

SEE FLIP AP/1 SUPPLEMENTARY ARPT INFO.

MILITARY: COMMUNICATIONS: ANG COMD POST − CALL UTAH CONTROL.

USE MINIMUM THRUST IN CONSTRUCTION AREAS.

CONTACT GROUND ON 123.775 BEFORE TAXIING OUT OF NORTH CARGO.

DUE TO TFC VOL, LCL DEPARTURE AND ARR OPNS ARE DISCOURAGED AND DLAS CAN BE EXPCD BTN 1500−1730Z++ AND 0130−0300Z++.

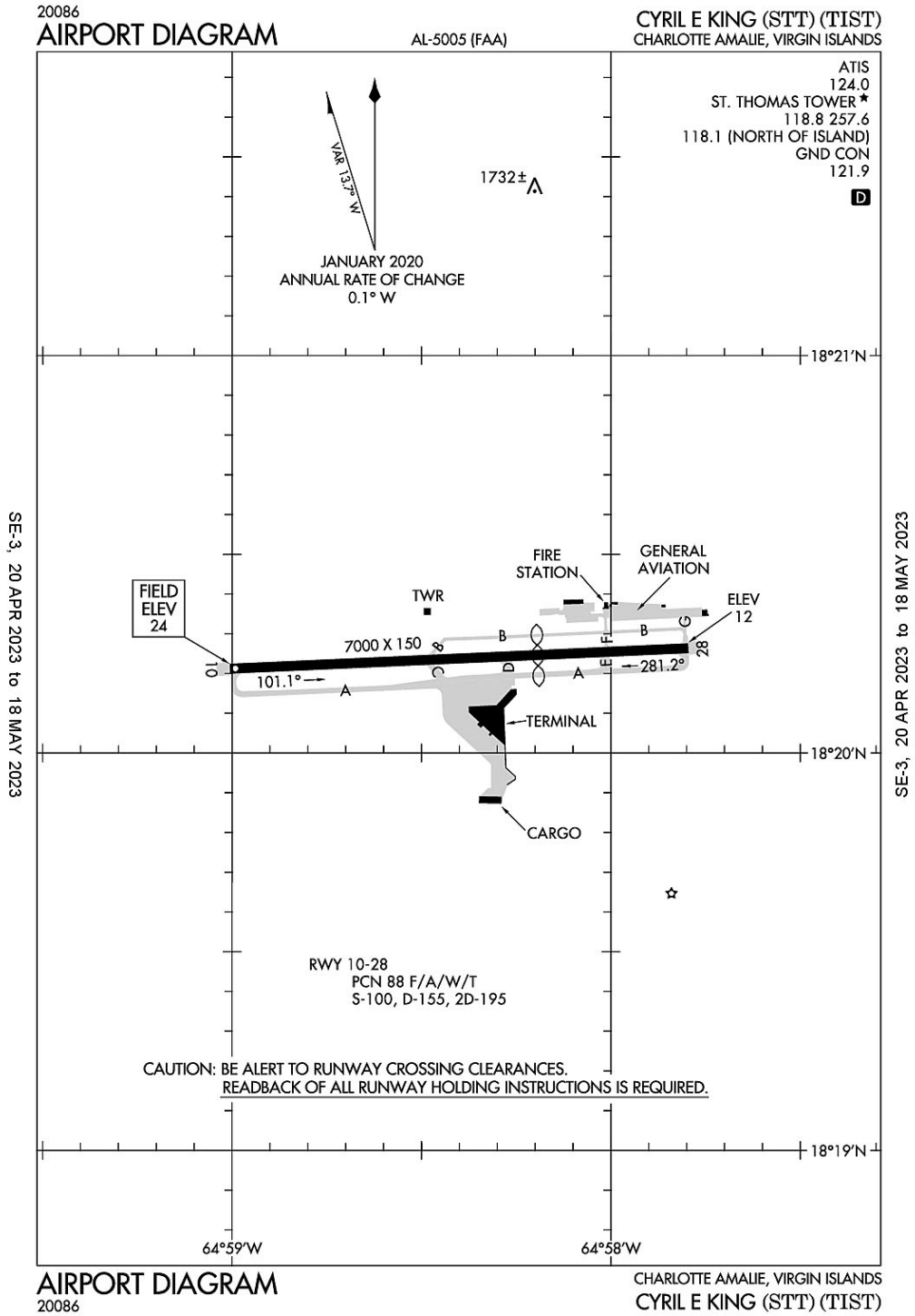
MILITARY: SVC: FUEL A++.

TWY K RSTRD TO ACFT WITH WINGSPAN LESS THAN 171 FT.

FLOCK OF BIRDS ON AND IN VICINITY OF ARPT.

MILITARY: ANG RAMP: ALL ACFT CTC UTAH CONTROL WITH LDG & DEP TIMES. COMD POST DSN: 245−2416/2417; C801−245−2416/2417. PHASE II WILDLIFE ACT DURING MIGRATION/MORNING/EVENING HRS FR OCT−APR. CTC UTAH CTL FOR CURRENT BIRD−WATCH COND.

Charlotte Amalie St. Thomas, Virgin Islands
Cyril E King
ICAO Identifier TIST



Charlotte Amalie, VI
Cyril E King
ICAO Identifier TIST

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−20−14.3N / 64−58−24W

2.2.2 From City: 2 miles W of CHARLOTTE AMALIE, VI

2.2.3 Elevation: 23.6 ft

2.2.5 Magnetic Variation: 13W (2000)

2.2.6 Airport Contact: JEROME SHERIDAN
CYRIL E. KING AIRPORT
ST THOMAS, VI 802 ((340) 714−6667)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, 0700−2300 Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 28

2.12.2 True Bearing: 267

2.12.3 Dimensions: 7000 ft x 150 ft

2.12.4 PCN: 88 F/A/W/T

2.12.5 Coordinates: 18−20−15.8124N / 64−57−47.7382W

2.12.6 Threshold Elevation: 11.7 ft

2.12.6 Touchdown Zone Elevation: 16.5 ft

2.12.1 Designation: 10

2.12.2 True Bearing: 87

2.12.3 Dimensions: 7000 ft x 150 ft

2.12.4 PCN: 88 F/A/W/T

2.12.5 Coordinates: 18−20−12.7247N / 64−59−0.3371W

2.12.6 Threshold Elevation: 23.5 ft

2.12.6 Touchdown Zone Elevation: 23.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 7000 ft
2.13.3 Take−off Distance Available: 7000 ft
2.13.4 Accelerate−Stop Distance Available: 6170 ft
2.13.5 Landing Distance Available: 3870 ft

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 7000 ft
2.13.3 Take−off Distance Available: 7000 ft
2.13.4 Accelerate−Stop Distance Available: 6892 ft
2.13.5 Landing Distance Available: 6892 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−18.78N / 64−57−39.88W
2.19.6 Site Elevation: 22.6 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−10.62N / 64−58−48.29W
2.19.6 Site Elevation: 15.1 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−16.26N / 64−57−37.22W
2.19.6 Site Elevation: 17 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: STT

2.19.5 Coordinates: 18−21−20.9431N / 65−1−28.3968W

2.19.6 Site Elevation: 679.2 ft

General Remarks:
LGTS ON HILL 4 NM SE OF ARPT MAY BE MISTAKEN FOR RY 10/28 WHEN MAKING A VISUAL APCH FROM THE SOUTH.

ACFT THAT BACK TAXI FOR DEP ON RY 28 SHALL MAKE THEIR 180 DEG TURN CCLKWS.

NOISE SENSITIVE AREA: AVOID OVERFLIGHTS OF WATER ISLAND LOCATED 2 MI SE OF ARPT.

ARFF UNAVBL 2300−0630.

RY 10 DEPS MAINTAIN RY HDG UNTIL REACHING DEP END OF RY BFR TURNING ON COURSE OR ASSIGNED HDG UNLESS OTRW AUZD BY ATCT.

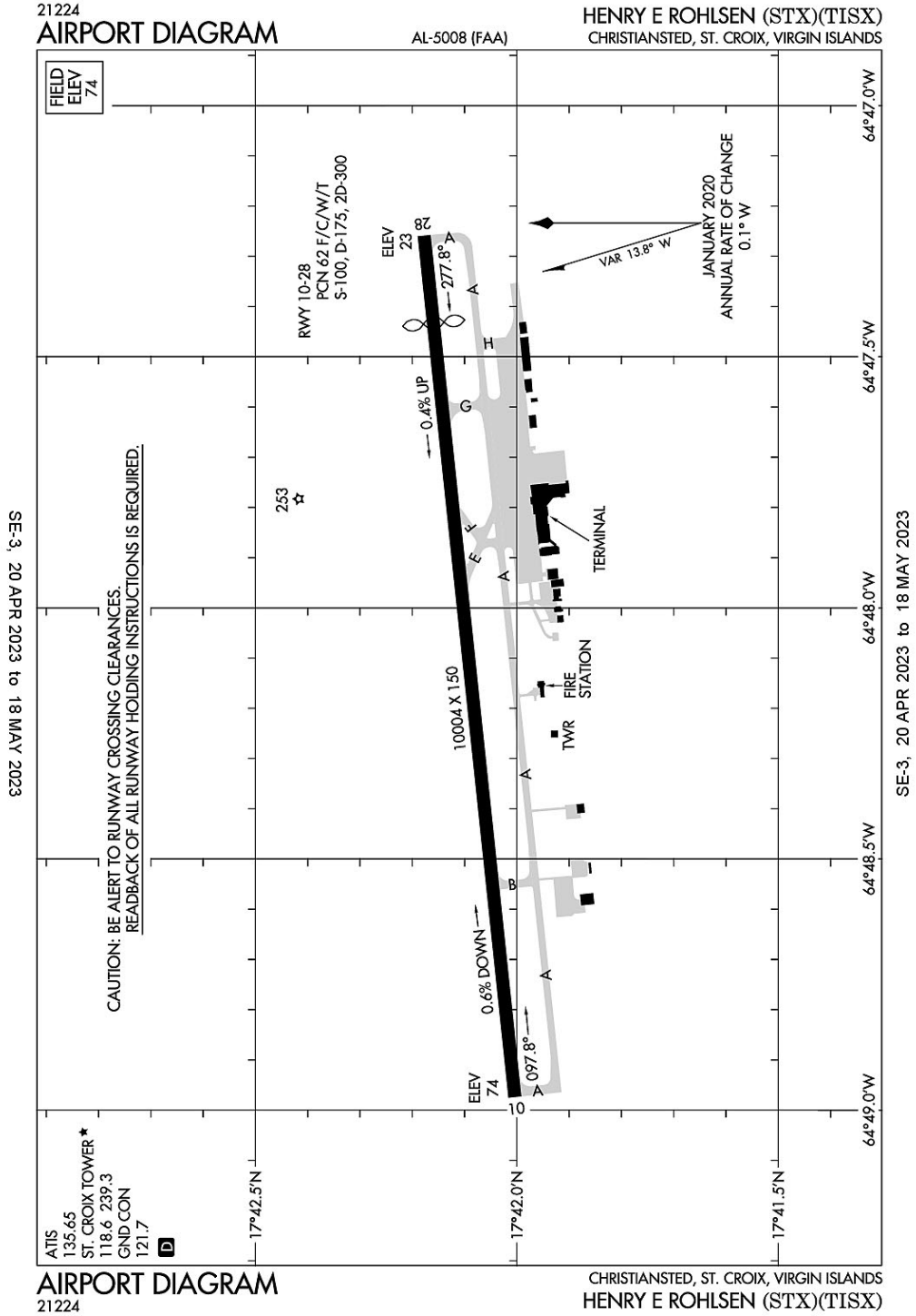
WHEN TWR CLSD CTC SAN JUAN CERAP AT 787−253−8664/8665

PILOTS CTC GND CTL PRIOR TO PUSHBACK.

PILOTS MAY ENCTR FALSE ILLUSORY INDICATIONS DURG NGT VISUAL APCHS TO RY 10 WHEN USING VISUAL CUES FOR VERTICAL GUIDANCE; RCMD USE OF THE ILS GS & FQT CROSS REF WITH THE ACFT ALTM TO MAINT THE PROPER APCH PROFILE.

OBSTRUCTION SAILBOAT MAST 100FT WEST OF APPROACH END OF RWY 10 50FT AGL

Christiansted St. Croix
Henry E Rohlsen
ICAO Identifier TISX



Christiansted, VI
Henry E Rohlsen
ICAO Identifier TISX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 17−42−5.416N / 64−48−6.9945W
2.2.2 From City: 6 miles SW of CHRISTIANSTED, VI
2.2.3 Elevation: 74.1 ft
2.2.5 Magnetic Variation: 13W (2000)
2.2.6 Airport Contact: JEROME SHERIDAN
P.O. BOX 1134
ST CROIX, VI 821 (340−714−6662)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0500−2300 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28
2.12.2 True Bearing: 264
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−10.62N / 64−47−15.544W
2.12.6 Threshold Elevation: 22.5 ft
2.12.6 Touchdown Zone Elevation: 40 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 84
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−0.212N / 64−48−58.445W
2.12.6 Threshold Elevation: 73.7 ft
2.12.6 Touchdown Zone Elevation: 74.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 28
2.13.2 Take−off Run Available: 10004 ft
2.13.3 Take−off Distance Available: 10004 ft
2.13.4 Accelerate−Stop Distance Available: 10004 ft
2.13.5 Landing Distance Available: 8998 ft

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 10004 ft
2.13.3 Take−off Distance Available: 10004 ft
2.13.4 Accelerate−Stop Distance Available: 9003 ft
2.13.5 Landing Distance Available: 9003 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX
2.19.5 Coordinates: 17−41−58.77N / 64−48−45.5W
2.19.6 Site Elevation: 63.5 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX
2.19.5 Coordinates: 17−42−11.36N / 64−47−8.28W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Outer Marker for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX
2.19.5 Coordinates: 17−41−30.92N / 64−53−4.74W
2.19.6 Site Elevation: 40 ft

General Remarks:
APCH TO RY 28 SMTMS OBSCD BY SMOKE FM LANDFILL LCTD E OF ARPT.

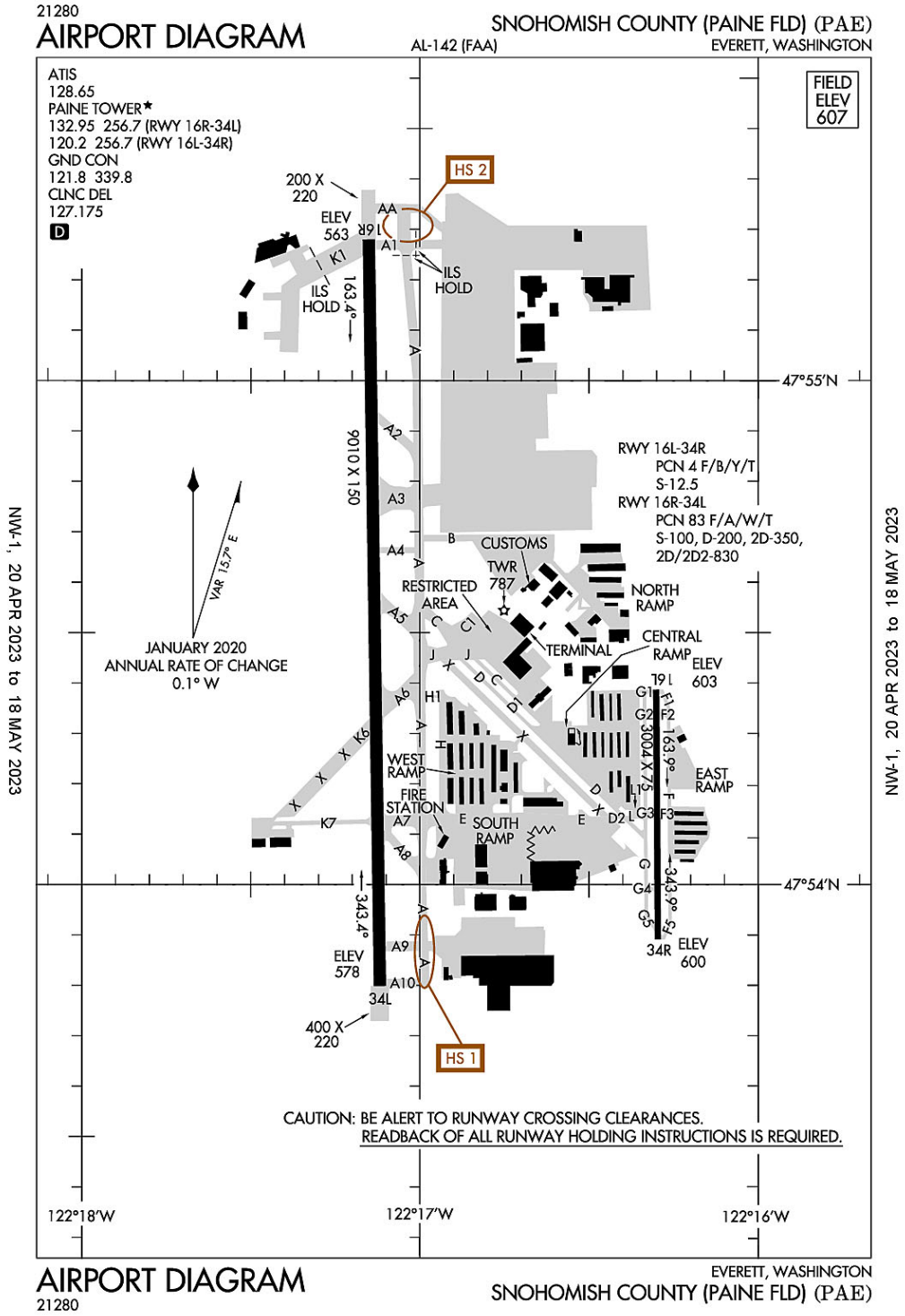
TAXI INTO POSITION AND HOLD PROCEDURES NO LONGER IN EFFECT.

BIRDS & WILDLIFE ON & INVOF ARPT.

AP SFC COND UNMON DLY 2300 – 0600 AST.

WHEN TWR CLSD CTC SAN JUAN CERAP AT 787−253−8664/8665

Everett, Washington
Snohomish County (Paine Field)
ICAO Identifier KPAE



Everett, WA
Snohomish County (Paine Fld)
ICAO Identifier KPAE

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 47−54−26.345N / 122−16−55.538W

2.2.2 From City: 6 miles SW of EVERETT, WA

2.2.3 Elevation: 606.9 ft

2.2.5 Magnetic Variation: 16E (2020)

2.2.6 Airport Contact: ARIF GHOUSE
3220 100TH ST SW
EVERETT, WA 98204 ((425) 388−5100)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 NOV−APR Months, All Days, 0700−2100 Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: NO

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 11/1/1974

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 16L

2.12.2 True Bearing: 180

2.12.3 Dimensions: 3004 ft x 75 ft

2.12.4 PCN: 4 F/B/Y/T

2.12.5 Coordinates: 47−54−23.129N / 122−16−18.0936W

2.12.6 Threshold Elevation: 602.9 ft

2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 34R

2.12.2 True Bearing: 360

2.12.3 Dimensions: 3004 ft x 75 ft

2.12.4 PCN: 4 F/B/Y/T

2.12.5 Coordinates: 47−53−53.4898N / 122−16−17.7647W

2.12.6 Threshold Elevation: 599.8 ft

2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 16R

2.12.2 True Bearing: 179

2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T
2.12.5 Coordinates: 47−55−16.8088N / 122−17−9.0632W
2.12.6 Threshold Elevation: 562.7 ft
2.12.6 Touchdown Zone Elevation: 569.8 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T
2.12.5 Coordinates: 47−53−47.904N / 122−17−7.0916W
2.12.6 Threshold Elevation: 577.6 ft
2.12.6 Touchdown Zone Elevation: 583.4 ft

AD 2.13 Declared Distances

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 3004 ft
2.13.3 Take−off Distance Available: 3004 ft
2.13.4 Accelerate−Stop Distance Available: 3004 ft
2.13.5 Landing Distance Available: 3004 ft

2.13.1 Designation: 34R
2.13.2 Take−off Run Available: 3004 ft
2.13.3 Take−off Distance Available: 3004 ft
2.13.4 Accelerate−Stop Distance Available: 3004 ft
2.13.5 Landing Distance Available: 3004 ft

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 9010 ft
2.13.3 Take−off Distance Available: 9010 ft
2.13.4 Accelerate−Stop Distance Available: 9010 ft
2.13.5 Landing Distance Available: 9010 ft

2.13.1 Designation: 34L
2.13.2 Take−off Run Available: 9010 ft
2.13.3 Take−off Distance Available: 9010 ft
2.13.4 Accelerate−Stop Distance Available: 9010 ft
2.13.5 Landing Distance Available: 9010 ft

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 16L
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P2L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P2L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−55−7.3456N / 122−17−13.6246W
2.19.6 Site Elevation: 566.4 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−53−34.031N / 122−17−6.7829W
2.19.6 Site Elevation: 569.7 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 20E
2.19.2 Navigation Aid Identification: PAE
2.19.5 Coordinates: 47−55−11.3996N / 122−16−40.0864W
2.19.6 Site Elevation: 669.2 ft

General Remarks:
RWY 16L/34R LTD TO HEL 8000 LBS OR LESS.

AVOID INT DEPS FM RWY 16L/34R

IT IS REQ THAT PILOTS ADHERE TO THE FLW NOISE ABATEMENT PROC UNLESS OTRW INSTRD BY ATCT, ITNRNT ARR AND LOW APCH OF SML ACFT OVER 250 HORSEPOWER AUZ ON RWYS 16L AND 34R.

NOISE SENSITIVE ARPT; FOR NOISE ABATEMENT PROC & TFC PROC CALL ARPT OPS 425−388−5125.

TSNT HEL EXP LNDG/TKOF ON TWY B.

RWY 16R/34 TGL PROHIBITED MON−FRI FM 0700−0900.

ITNRNT DEP OF SML ACFT OVER 250 HORSEPOWER ON RWY 34R.

TRNG FLTS DISCOURAGED AFT 2200.

FOR NOISE ABATEMENT FROM 0500−1500Z++ IF ACFT PERFORMANCE/WIND ALLOWS, USE RY 16R FOR ARRIVALS AND RY 34L FOR DEPARTURES.

TWY C BTN TRML RAMP AND CNTRL RAMP RSTRD TO WINGSPAN OF 68 FT OR LESS. TWY D, F, G AND L RSTRD TO WINGSPAN LESS THAN 49 FT. TWY A4, A5, K7 & B RSTRD TO WINGSPAN LESS THAN 118 FT. TAXILANE H RSTRD TO WINGSPAN LESS THAN 49 FT.

LRG ACFT FLY W PAT OVR WTR; SML ACFT FLY E PAT OVR ARPT.

AVOID LOW LVL OVRFLT OF BOEING RAMP; NE CORNER OF ARPT DUE TO JET BLAST.

FLOCKS OF LRG & SML BIRDS INVOF ARPT.

BE ALERT TO CNVG TFC ON BASE TO FINAL LEGS RWY 16R/34L 2100−0700.

FOR CD WHEN ATCT IS CLSD CTC SEATTLE APCH AT 206−214−4722.

PAE HAS FAC CONSTRAINTS THAT LMT ITS ABILITY TO ACCOMMODATE DIVD FLTS AND MNTN THE ARPTS SAFE OPN DUR IREG OPS. ACFT OPR SHOULD CTCT THE ON−DUTY ARPT OPS PSNL (425−388−5125) TO COORD DIVD FLTS EXC IN THE CASE OF A DECLARED IN−FLT EMERG.

PPR RQRD FOR ACES ON BOEING RAMP. CTC BOEING FLT DISPATCH 206−544−5900 FOR APVL. PRIOR TO TAXI ONTO BOEING RAMP CTC BOEING RADIO TWR 123.475 OR CALL 425−342−5900.

TWY K1 CLSD TO ACFT UNDER 30000 LBS.

TKOF CLNC RWY 16R FULL LEN; ENT RWY VIA TWY A1 UNLESS TWY AA SPECIFIED.

USE CTN FOR 80 FT AGL LGT POLES SW EDGE OF BRAVO RAMP.

RWY 16L/34R CLSD BTN 0500−1500Z.

TWY A−2 RSTRD TO 30000 LBS.

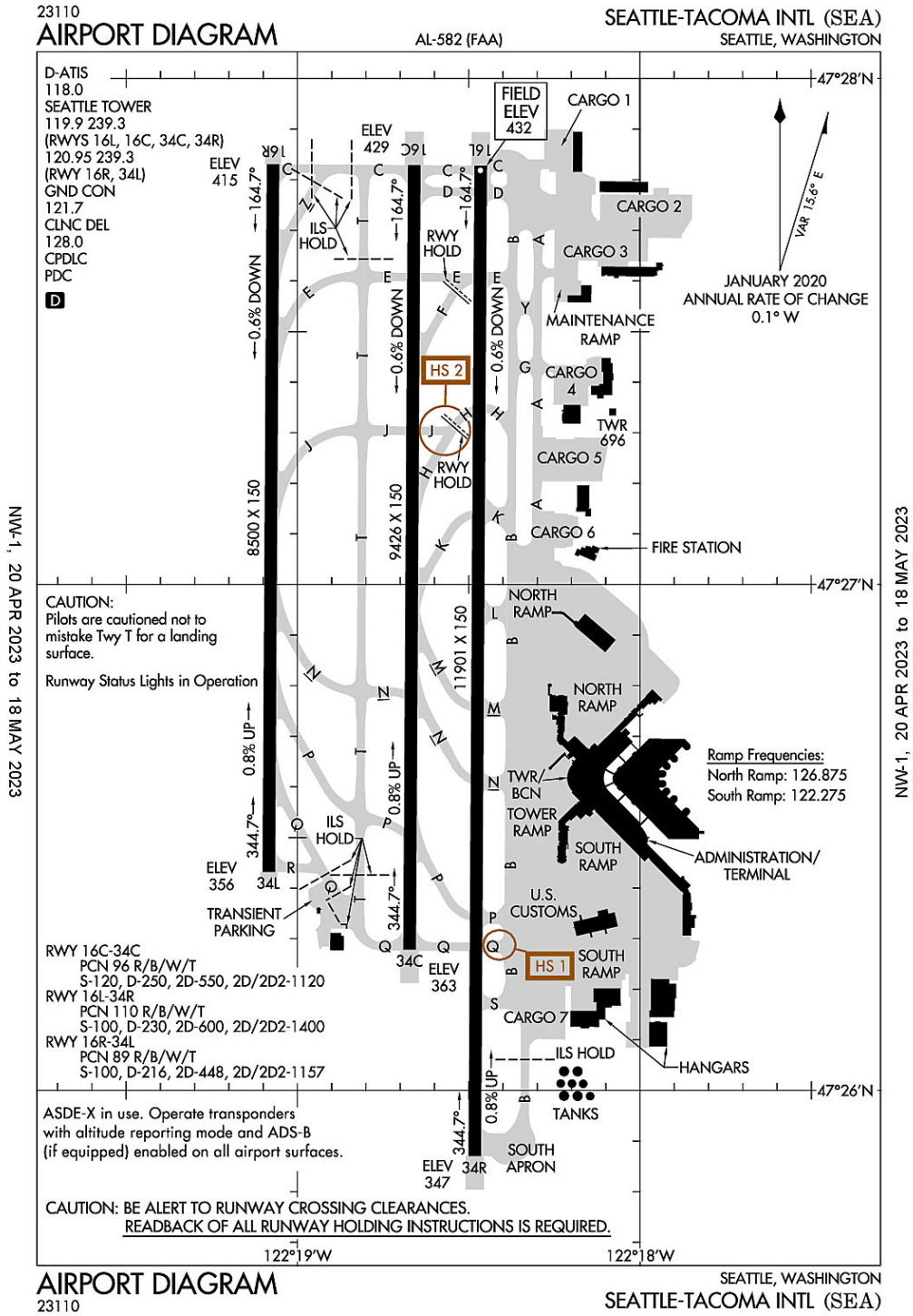
EMERG FREQ 121.5 NOT MNT AT TWR. SEATTLE APP CON−TRACON MNT 121.5 FOR EVERETT (PAE).

AREAS NOT VSB FM ATCT INCL E EDGE OF S 1200 FT OF TWY A, TAXILANE E FM SE CORNER OF W HNGRS TO TWY A, TAXILANE H FROM NW EDGE OF W HNGRS TO TAXILANE E.

TAXILANE E RSTD TO WINGSPAN LESS THAN 171 FT. ACFT WINGSPAN OF 171 FT OR GREATER ON TAXILANE E, TUG OPS ONLY. EAST 500 FT OF TAXILANE E RSTD TO WINGSPAN LESS THAN 49 FT.

AIRFIELD CONDS NOT MNTD BTN 0000−0630.

Seattle, Washington
Seattle–Tacoma International
ICAO Identifier KSEA



Seattle, WA
Seattle–Tacoma Intl
ICAO Identifier KSEA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 47–26–59.6N / 122–18–42.4W
2.2.2 From City: 10 miles S of SEATTLE, WA
2.2.3 Elevation: 432.3 ft
2.2.5 Magnetic Variation: 16E (2020)
2.2.6 Airport Contact: LANCE LYTTLE
BOX 68727
SEATTLE, WA 98168 ((206) 787–5229)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: A,A1
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 16C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47–27–49.7155N / 122–18–39.5415W
2.12.6 Threshold Elevation: 429.4 ft
2.12.6 Touchdown Zone Elevation: 429.5 ft

2.12.1 Designation: 34C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47–26–16.6966N / 122–18–40.3554W
2.12.6 Threshold Elevation: 362.9 ft
2.12.6 Touchdown Zone Elevation: 387 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47–27–49.6628N / 122–18–27.9008W
2.12.6 Threshold Elevation: 432.3 ft
2.12.6 Touchdown Zone Elevation: 432.3 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47−25−52.2202N / 122−18−28.9377W
2.12.6 Threshold Elevation: 346.7 ft
2.12.6 Touchdown Zone Elevation: 371.5 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−27−49.8109N / 122−19−4.2846W
2.12.6 Threshold Elevation: 414.8 ft
2.12.6 Touchdown Zone Elevation: 414.8 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−26−25.9217N / 122−19−5.009W
2.12.6 Threshold Elevation: 356.2 ft
2.12.6 Touchdown Zone Elevation: 379.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 16C
2.13.2 Take−off Run Available: 9426 ft
2.13.3 Take−off Distance Available: 9426 ft
2.13.4 Accelerate−Stop Distance Available: 9426 ft
2.13.5 Landing Distance Available: 9426 ft

2.13.1 Designation: 34C
2.13.2 Take−off Run Available: 9426 ft
2.13.3 Take−off Distance Available: 9426 ft
2.13.4 Accelerate−Stop Distance Available: 9426 ft
2.13.5 Landing Distance Available: 9426 ft

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 11901 ft
2.13.3 Take−off Distance Available: 11901 ft
2.13.4 Accelerate−Stop Distance Available: 11901 ft
2.13.5 Landing Distance Available: 11901 ft

2.13.1 Designation: 34R
2.13.2 Take−off Run Available: 11901 ft
2.13.3 Take−off Distance Available: 11901 ft
2.13.4 Accelerate−Stop Distance Available: 11901 ft
2.13.5 Landing Distance Available: 11901 ft

2.13.1 Designation: 16R

2.13.2 Take−off Run Available: 8500 ft
2.13.3 Take−off Distance Available: 8500 ft
2.13.4 Accelerate−Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

2.13.1 Designation: 34L
2.13.2 Take−off Run Available: 8500 ft
2.13.3 Take−off Distance Available: 8500 ft
2.13.4 Accelerate−Stop Distance Available: 8500 ft
2.13.5 Landing Distance Available: 8500 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 16C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47−26−6.28N / 122−18−39.51W
2.19.6 Site Elevation: 359 ft

2.19.1 ILS Type: Glide Slope for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47−27−38.687N / 122−18−45.462W
2.19.6 Site Elevation: 417.6 ft

2.19.1 ILS Type: Localizer for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47–26–6.703N / 122–18–40.4438W
2.19.6 Site Elevation: 355.7 ft

2.19.1 ILS Type: DME for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47–26–6.28N / 122–18–39.51W
2.19.6 Site Elevation: 359 ft

2.19.1 ILS Type: Glide Slope for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47–26–25.6028N / 122–18–46.1679W
2.19.6 Site Elevation: 366.8 ft

2.19.1 ILS Type: Localizer for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47–27–54.3525N / 122–18–39.5018W
2.19.6 Site Elevation: 421.8 ft

2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47–26–3.5974N / 122–18–22.6779W
2.19.6 Site Elevation: 369.4 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47–27–38.9362N / 122–18–33.8193W
2.19.6 Site Elevation: 425.2 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47–25–42.224N / 122–18–29.0263W
2.19.6 Site Elevation: 335.5 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47–26–3.5974N / 122–18–22.6779W
2.19.6 Site Elevation: 369.4 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47–26–3.3996N / 122–18–23.0248W
2.19.6 Site Elevation: 355.1 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47–27–54.2762N / 122–18–27.8613W
2.19.6 Site Elevation: 428.1 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 16E

2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−26−15.6195N / 122−18−59.9408W
2.19.6 Site Elevation: 344.8 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−27−38.4647N / 122−19−0.5973W
2.19.6 Site Elevation: 405.5 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−26−15.9249N / 122−19−5.0962W
2.19.6 Site Elevation: 343.7 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−26−15.6195N / 122−18−59.9408W
2.19.6 Site Elevation: 344.8 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−26−34.9351N / 122−18−59.9836W
2.19.6 Site Elevation: 358.5 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−27−59.7764N / 122−19−4.1986W
2.19.6 Site Elevation: 409.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 19E
2.19.2 Navigation Aid Identification: SEA
2.19.5 Coordinates: 47−26−7.3434N / 122−18−34.618W
2.19.6 Site Elevation: 348.4 ft

General Remarks:
(E94) WSO/WSFO.

RWY 16L/34R RSTD TO ACFT WITH WINGSPAN 260 FT OR LESS.

TAXILANE W RSTD TO ACFT WITH WINGSPAN 135 FT OR LESS N OF TWY N AND 167 FT OR LESS SOUTH OF TWY N. SEATTLE RAMP TWR PRVDS ADZY CTL ONLY.

AIR CARGO 5 RAMP DUAL ENG TAX ONLY

TWYS J & H E OF TWY T RSTD TO ACFT WITH WINGSPAN 167 FT OR LESS.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY H E OF RWY 16L/34R RSTD TO ACFT WITH WINGSPAN 118 FT OR LESS WHEN EXITING RWY 16L/34R.

HELICOPTERS LANDING & DEPARTING AVOID OVERFLYING FUEL FARM LCTD AT THE SE CORNER OF THE ARPT.

DO NOT MISTAKE TWY T FOR LNDG SFC.

ACES TO AIR CARGO 4 PRKG AND CARGO AREAS RSTD TO ACFT WITH WINGSPAN 170 FT OR LESS.

(E110) CONTINUOUS POWER ARPT.

PPR FOR ALL GA PRKG & SVCS, CTC 206–433–5481. OP HRS 0530L – 2100L, WITH A CALL OUT AVBL UPON REQ.

TWY B SOUTH OF AIR CARGO 7 RAMP RSTD TO ACFT WITH WINGSPAN 260 FT OR LESS.

TWY FOR CORPORATE HNGR RAMP RSTD TO ACFT WITH WINGSPAN 62 FT OR LESS FOR TAXI OPS. GA CUST PKNG IS VERY LTD.

RY STATUS LGTS ARE IN OPN.

TWY A SOUTH OF TWY G RSTD TO ACFT WITH WINGSPAN 225 FT OR LESS.

100LL FUEL NOT AVBL.

TWY B S OF TWY Q RSTD TO ACFT WITH WINGSPAN 260 FT OR LESS.

BIRD FLOCKS WITHIN ARPT VCNTY – CHECK LCL ADZYS.

THE USE OF REVERSE THRUST BYD WHAT IS NEC FOR OPNL OR SAFETY RSNS IS DISCOURAGED AT ALL TIMES. NOISE ABATEMENT FLT PROCS IN EFCT BTN 2200–0600. FOR FURTHER INFO CTC SEA NOISE ABATEMENT OFC AT 206–787–5393.

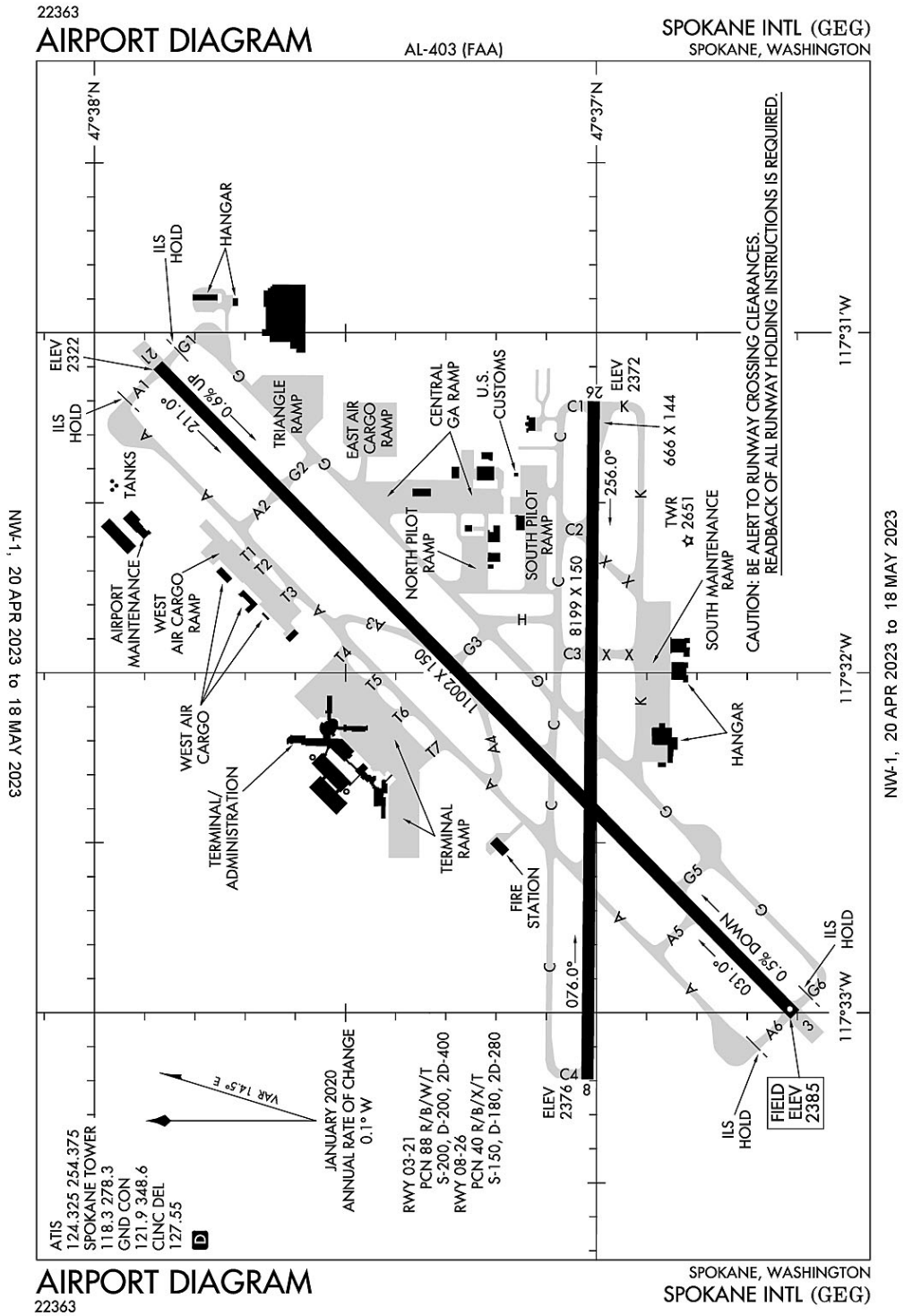
TAXILANE ON N SIDE OF N STLT RSTD TO ACFT WITH WINGSPAN 118 FT OR LESS. TRI–TAXILANES AT N STLT: CNTR (GREEN) TAXILANE RSTD TO ACFT WITH WINGSPAN 135 FT OR LESS. WHEN AN ACFT IS ON THE CNTR (GREEN) OR OTR (ORANGE/BLUE) TAXILANES, NO OTR ACFT CAN SIMUL USE THE ADJ TAXILANE(S). ORANGE & BLUE TAXILANES ARE RSTD TO ACFT WITH WINGSPAN 118 FT OR LESS. TWO ACFT CAN SIMUL USE THE OUTER TAXILANES.

GA LANDING FEES PAYABLE BY MAJOR CREDIT CARDS ONLY.

ACFT WITH WINGSPANS OF 171 FT. OR MORE PARKED AT PAX GATES OR CARGO 7 MUST PROVIDE 30 MIN PPR PRIOR TO PUSHBACK TO SEATTLE RAMP TWR WHEN VSBY LESS THAN 2400 RVR

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

Spokane, Washington
Spokane International
ICAO Identifier KGEG



Spokane, WA
Spokane Intl
ICAO Identifier KGEG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 47–37–8.5N / 117–32–6.8W
2.2.2 From City: 5 miles SW of SPOKANE, WA
2.2.3 Elevation: 2385 ft
2.2.5 Magnetic Variation: 14E (2020)
2.2.6 Airport Contact: LAWRENCE J KRAUTER
9000 W AIRPORT DR.
SPOKANE, WA 99224 ((509) 455–6418)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47–36–36.2909N / 117–33–0.2876W
2.12.6 Threshold Elevation: 2385 ft
2.12.6 Touchdown Zone Elevation: 2385 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47–37–52.3811N / 117–31–5.7573W
2.12.6 Threshold Elevation: 2322.4 ft
2.12.6 Touchdown Zone Elevation: 2346.1 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47–37–1.0687N / 117–33–11.7639W
2.12.6 Threshold Elevation: 2376.2 ft
2.12.6 Touchdown Zone Elevation: 2376.2 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47−37−0.3642N / 117−31−12.1045W
2.12.6 Threshold Elevation: 2371.5 ft
2.12.6 Touchdown Zone Elevation: 2371.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 11002 ft
2.13.3 Take−off Distance Available: 11002 ft
2.13.4 Accelerate−Stop Distance Available: 11002 ft
2.13.5 Landing Distance Available: 11002 ft

2.13.1 Designation: 21
2.13.2 Take−off Run Available: 11002 ft
2.13.3 Take−off Distance Available: 11002 ft
2.13.4 Accelerate−Stop Distance Available: 11002 ft
2.13.5 Landing Distance Available: 11002 ft

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 8199 ft
2.13.3 Take−off Distance Available: 8199 ft
2.13.4 Accelerate−Stop Distance Available: 8199 ft
2.13.5 Landing Distance Available: 8199 ft

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 8199 ft
2.13.3 Take−off Distance Available: 8199 ft
2.13.4 Accelerate−Stop Distance Available: 8199 ft
2.13.5 Landing Distance Available: 8199 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.14.1 Service Designation: APCH/P DEP/P IC (205–025)
2.14.3 Channel: 123.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (026–204)
2.14.3 Channel: 133.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (026–204)
2.14.3 Channel: 263
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (205–025)
2.14.3 Channel: 282.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/S DEP/S
2.14.3 Channel: 372.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 124.325
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ATIS
2.14.3 Channel: 254.375
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 127.55
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (205–025)
2.14.3 Channel: 123.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (026–204)
2.14.3 Channel: 133.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (026–204)
2.14.3 Channel: 263
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (205–025)
2.14.3 Channel: 282.25
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.9
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 348.6
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HILIE STAR
2.14.3 Channel: 133.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: HILIE STAR
2.14.3 Channel: 263
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 118.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 278.3
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ZOOMR STAR
2.14.3 Channel: 123.75
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: ZOOMR STAR
2.14.3 Channel: 282.25
2.14.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−36−32.05N / 117−33−15.1W
2.19.6 Site Elevation: 2380.2 ft

2.19.1 ILS Type: Glide Slope for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−36−47.5569N / 117−32−51.8755W
2.19.6 Site Elevation: 2372 ft

2.19.1 ILS Type: Localizer for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47–37–59.6757N / 117–30–54.7682W
2.19.6 Site Elevation: 2315.7 ft

2.19.1 ILS Type: DME for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47–36–32.05N / 117–33–15.1W
2.19.6 Site Elevation: 2380.2 ft

2.19.1 ILS Type: Glide Slope for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47–37–48.959N / 117–31–19.4519W
2.19.6 Site Elevation: 2324.3 ft

2.19.1 ILS Type: Localizer for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47–36–29.2008N / 117–33–10.9524W
2.19.6 Site Elevation: 2380.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 21E
2.19.2 Navigation Aid Identification: GEG
2.19.5 Coordinates: 47–33–53.805N / 117–37–36.789W
2.19.6 Site Elevation: 2756.3 ft

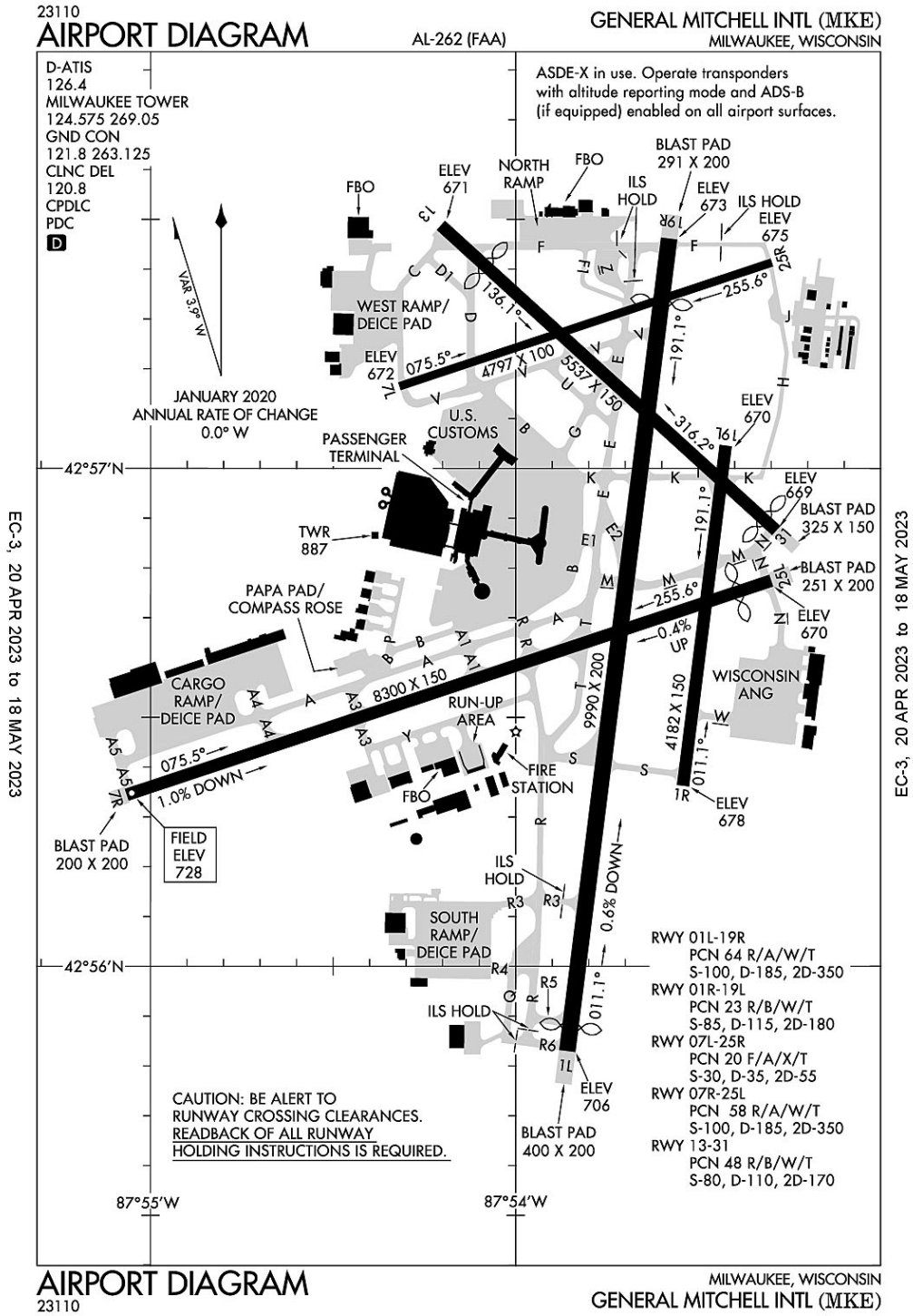
General Remarks:
PORTIONS OF TWY K NOT VISIBLE FM ATCT.

TWY K UNLGTD ON RAMP SIDE ALONG MAINTENANCE RAMP AND IS UNAVBL BELOW 1200 RVR UNLESS UNDER ESCORT BY ”FOLLOW ME”.

BE ALERT TO TURBULENCE OVER SMOKE STACKS 1 MILE EAST OF ARPT.

WATERFOWL & BIRDS ON & INVOF ARPT.

Milwaukee, Wisconsin
General Mitchell International
ICAO Identifier KMKE



Milwaukee, WI
General Mitchell Intl
ICAO Identifier KMKE

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42–56–48.955N / 87–53–49.432W
2.2.2 From City: 5 miles S of MILWAUKEE, WI
2.2.3 Elevation: 728.4 ft
2.2.5 Magnetic Variation: 4W (2020)
2.2.6 Airport Contact: BRIAN DRANZIK
5300 S HOWELL AVE
MILWAUKEE, WI 53207 (414–747–5300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19R
2.12.2 True Bearing: 187
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42–57–27.699N / 87–53–34.7753W
2.12.6 Threshold Elevation: 672.7 ft
2.12.6 Touchdown Zone Elevation: 671.9 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 7
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42–55–49.7963N / 87–53–51.516W
2.12.6 Threshold Elevation: 705.8 ft
2.12.6 Touchdown Zone Elevation: 703.5 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 7
2.12.3 Dimensions: 4182 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42–56–21.766N / 87–53–32.5016W
2.12.6 Threshold Elevation: 677.7 ft
2.12.6 Touchdown Zone Elevation: 677.7 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 187
2.12.3 Dimensions: 4182 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42–57–2.7448N / 87–53–25.4878W
2.12.6 Threshold Elevation: 669.6 ft
2.12.6 Touchdown Zone Elevation: 674.2 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 72
2.12.3 Dimensions: 4797 ft x 100 ft
2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42–57–9.8896N / 87–54–19.1101W
2.12.6 Threshold Elevation: 671.5 ft
2.12.6 Touchdown Zone Elevation: 672 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 252
2.12.3 Dimensions: 4797 ft x 100 ft
2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42–57–24.8031N / 87–53–17.893W
2.12.6 Threshold Elevation: 674.6 ft
2.12.6 Touchdown Zone Elevation: 674.6 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 252
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42–56–46.473N / 87–53–18.0003W
2.12.6 Threshold Elevation: 669.9 ft
2.12.6 Touchdown Zone Elevation: 683.1 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 72
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42–56–20.6652N / 87–55–3.9117W
2.12.6 Threshold Elevation: 728.4 ft
2.12.6 Touchdown Zone Elevation: 728.4 ft

2.12.1 Designation: 13
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5537 ft x 150 ft
2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42–57–29.2767N / 87–54–12.2946W
2.12.6 Threshold Elevation: 671.4 ft
2.12.6 Touchdown Zone Elevation: 670.5 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 312
2.12.3 Dimensions: 5537 ft x 150 ft

2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42–56–52.5074N / 87–53–17.1839W
2.12.6 Threshold Elevation: 668.6 ft
2.12.6 Touchdown Zone Elevation: 670.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19R
2.13.2 Take–off Run Available: 9990 ft
2.13.3 Take–off Distance Available: 9990 ft
2.13.4 Accelerate–Stop Distance Available: 9990 ft
2.13.5 Landing Distance Available: 9205 ft

2.13.1 Designation: 01L
2.13.2 Take–off Run Available: 9990 ft
2.13.3 Take–off Distance Available: 9990 ft
2.13.4 Accelerate–Stop Distance Available: 9380 ft
2.13.5 Landing Distance Available: 9080 ft

2.13.1 Designation: 01R
2.13.2 Take–off Run Available: 4182 ft
2.13.3 Take–off Distance Available: 4182 ft
2.13.4 Accelerate–Stop Distance Available: 4182 ft
2.13.5 Landing Distance Available: 4182 ft

2.13.1 Designation: 19L
2.13.2 Take–off Run Available: 4182 ft
2.13.3 Take–off Distance Available: 4182 ft
2.13.4 Accelerate–Stop Distance Available: 4182 ft
2.13.5 Landing Distance Available: 4182 ft

2.13.1 Designation: 07L
2.13.2 Take–off Run Available: 4797 ft
2.13.3 Take–off Distance Available: 4797 ft
2.13.4 Accelerate–Stop Distance Available: 4797 ft
2.13.5 Landing Distance Available: 4797 ft

2.13.1 Designation: 25R
2.13.2 Take–off Run Available: 4797 ft
2.13.3 Take–off Distance Available: 4797 ft
2.13.4 Accelerate–Stop Distance Available: 4797 ft
2.13.5 Landing Distance Available: 4797 ft

2.13.1 Designation: 25L
2.13.2 Take–off Run Available: 8300 ft
2.13.3 Take–off Distance Available: 8300 ft
2.13.4 Accelerate–Stop Distance Available: 8300 ft
2.13.5 Landing Distance Available: 7867 ft

2.13.1 Designation: 07R
2.13.2 Take–off Run Available: 8300 ft

2.13.3 Take–off Distance Available: 8300 ft
2.13.4 Accelerate–Stop Distance Available: 8012 ft
2.13.5 Landing Distance Available: 8012 ft

2.13.1 Designation: 13
2.13.2 Take–off Run Available: 5537 ft
2.13.3 Take–off Distance Available: 5537 ft
2.13.4 Accelerate–Stop Distance Available: 5537 ft
2.13.5 Landing Distance Available: 4797 ft

2.13.1 Designation: 31
2.13.2 Take–off Run Available: 5537 ft
2.13.3 Take–off Distance Available: 5537 ft
2.13.4 Accelerate–Stop Distance Available: 5537 ft
2.13.5 Landing Distance Available: 5152 ft

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 07L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.14.1 Service Designation: APCH/P (B SE)
2.14.3 Channel: 118
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P (B SE)
2.14.3 Channel: 317.725
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P DEP/P IC (A NW)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: APCH/P IC (A NW)
2.14.3 Channel: 126.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CD/P
2.14.3 Channel: 120.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (B SE)
2.14.3 Channel: 118
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (A NW)
2.14.3 Channel: 126.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (A NW)
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: CLASS C (B SE)
2.14.3 Channel: 317.725
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: COMD POST (128 ARW ANG UPSET CTL)
2.14.3 Channel: 321
2.14.5 Hours of Operation:

2.14.1 Service Designation: COMD POST (28 ARW ANG UPSET CON)
2.14.3 Channel: 6761

2.14.5 Hours of Operation:

2.14.1 Service Designation: D–ATIS
2.14.3 Channel: 126.4
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (A NW)
2.14.3 Channel: 125.35
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: DEP/P (B SE)
2.14.3 Channel: 135.875
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: EMERG
2.14.3 Channel: 121.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: EMERG
2.14.3 Channel: 243
2.14.5 Hours of Operation:

2.14.1 Service Designation: GND/P
2.14.3 Channel: 121.8
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GND/P
2.14.3 Channel: 263.125
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GOPAC STAR
2.14.3 Channel: 126.5
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: GOPAC STAR
2.14.3 Channel: 307
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 124.575
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: LCL/P
2.14.3 Channel: 269.05
2.14.5 Hours of Operation: 24

2.14.1 Service Designation: OPS
2.14.3 Channel: 139.5
2.14.5 Hours of Operation:

2.14.1 Service Designation: OPS

2.14.3 Channel: 311
2.14.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42–57–50.9407N / 87–53–27.4465W
2.19.6 Site Elevation: 725 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42–56–4.4522N / 87–53–43.0463W
2.19.6 Site Elevation: 691.4 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42–55–44.6539N / 87–53–52.3948W
2.19.6 Site Elevation: 706 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42–57–49.9549N / 87–53–30.968W
2.19.6 Site Elevation: 713 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42–57–50.9407N / 87–53–27.4465W
2.19.6 Site Elevation: 725 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42–57–9.1784N / 87–53–32.5226W
2.19.6 Site Elevation: 666.4 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42–55–38.3041N / 87–53–53.4819W
2.19.6 Site Elevation: 709.2 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 4W
2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42–56–18.5074N / 87–55–23.6562W
2.19.6 Site Elevation: 743.1 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 4W
2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42–56–20.4936N / 87–54–47.1205W
2.19.6 Site Elevation: 707.3 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 4W

2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42−56−49.0824N / 87−53−7.2728W
2.19.6 Site Elevation: 669.1 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 4W
2.19.2 ILS Identification: PXY
2.19.5 Coordinates: 42−56−18.5074N / 87−55−23.6562W
2.19.6 Site Elevation: 743.1 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 4W
2.19.2 ILS Identification: PXY
2.19.5 Coordinates: 42−56−16.0665N / 87−55−22.7833W
2.19.6 Site Elevation: 728 ft

General Remarks:
TWY B BTN TWY V AND TWY P CLSD TO AFCT WITH WINGSPAN GREATER THAN 170 FT.

ANG: PPR ALL ACFT, 48HR PN, CTC AFLD OPS DSN 580−8241, C414−944−8241. 128 ARW IS A FULLY OPERATIONAL KC−135R BASE WITH HRS OF OPERATION MON−FRI 1200Z−1930Z++ TUE−FRI, CLSD HOL, SAT−SUN EXC UNIT TMG, CALL FOR AVBL.

RY 19R TODA 8,750 FT FROM INT TWY V.

RY 07L/25R NO ACFT 65,000 LBS OR GREATER ALLOWED TO TAXI BTN TWY D & RY 13/31 AND EAST OF RY 19R.

TWY C CLSD BTWN APCH END OF RWY 7L AND TWY D1 TO ACFT WITH WINGSPAN GTR THAN OR EQUAL TO 118 FT UNLESS PMSN FM ARPT MGR 414−747−5325.

TWY A CLSD FM TWY R TO TWY E AND TWY E CLSD FM TWY T TO TWY E1 AND TWY T CLSD N OF RWY 07R/25L, AND TWY M CLSD FM TWY E TO RWY 01R/19L TO ACFT WITH TAIL HGT GTR THAN 54.5 FT DURG CAT II AND CAT III OPS.

ANG: END OF RUNWAY FACILITIES, AIRCRAFT SHELTERS/REVETMENTS, AND ALERT FACILITIES ARE NOT AVAILABLE. AFLD/ACFT PARKING CONCERNS INCLUDE: LIMITED STATIC GROUNDING POINTS AND NO AIRCRAFT TIE DOWN POINTS.

TWY A CLSD BTN TWY A4 AND TWY A5 TO ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 214' UNLESS PERMISSION FROM ARPT MGR 414−747−5325

ALL AIRCRAFT PUSHBACKS FROM GATES C20, C21, C22, C23, D39 D41 D43, D45, D48, D51, D53, D54, D55, E65, E66, & E67 REQUIRE CLEARANCE FROM GROUND CONTROL. PUSHBACKS FROM ALL OTHER GATES ARE AT RAMP/ PILOT DISCRETION; CONTACT GROUND CONTROL WHEN READY TO TAXI.

ACFT ARE NOT PERMITTED TO MAKE LEFT TURN ONTO TWY E WHEN EXITING TWY E2.

TWY S & TWY T BTN TWY R & RY 07R/25L AND RY 07R/25L BTN RY 1R/19L & TWY R CLSD DURG CAT II & III OPNS.

ANG: ANY MDS'S (OTHER THAN KC−135) IS LIMITED TO STANDARD TRANSIENT MARSHALLING AND PARKING. NO TECHNICAL DATA AVAILABLE FOR TRANSIENT MAINTENANCE. FUEL AND AGE EQUIPMENT SUPPORT AVAILABLE FOR SELF−SERVICE. THERE ARE NO ADDITIONAL CONFIGURATION ITEMS SUPPORTED SUCH AS LANTIRN PODS, EDM PODS, ETC.

HOLDING BAY AT RY 01L CLSD EXCP ACFT WITH WINGSPAN LESS THAN 118 FT.

TWY A BTN TWY R AND TWY A1 CLSD TO ACFT WINGSPAN MORE THAN 171 FT EXC PPR 414–747–5325.

TWY H, J, AND F (E OF RWY 19R) CLSD TO ACFT WITH WINGSPAN GTR THAN 78 FT UNLESS PMSN FM AMGR AT 414–747–5325.

PREFERRED USAGE BY ACFT BTN 2200–0600 IS TKOF RY 19R & LNDG RY 01L.

RY 07L/25R CLSD TO ALL JET ACFT.

DEICE PAD FOR RWY 07R NOT AUTH FOR THRU TAXI.

TRNG FLGTS INVOLVING SUCCESSIVE USE OF ANY RY PROHIBITED 2200–0600.

ANG: NSTD MRK ON PRK APRON FOR WINGTIP CLNC; SEE AFLD MGT FOR DETAILED MAP.

ACFT WITH WINGSPAN GREATER THAN 175 FT CANNOT PASS SIMULTANEOUSLY ON TWY 'E' & TWY 'Z'.

HOLDING BAY AT RY 19R WHEN IN USE, TWY Z ADJACENT TO BAY IS LIMITED TO ACFT WITH WINGSPAN UP TO 170 FT.

TWYS D1, F1, P AND TWY K (E OF RWY 19L) CLSD TO ACFT WITH WINGSPAN GTR THAN 78 FT.

RY 13/31 CLSD JET ACFT, UNLESS PMSN FROM TWR OR AMGR 414–747–5325.

RY 01R–19L AVAILABLE TO AIR CARRIERS FOR TAXI ONLY.

TWY F (WEST OF TWY Z) CLSD TO ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 118 FT UNLESS PERMISSION FROM ARPT DIR AT 414–747–5325.

ANG: NO FLEET SVC/HOT CARGO PARKING AVAILABLE. CTC UPSET CTRL 20 MIN PRIOR TO ARR TO RCV CURRENT BIRD WATCH COND AND PARKING INFO.

ALL APCHS ARE OVER NOISE SENSITIVE AREAS; ALL TURBOJET ACFT SHOULD REFRAIN FM CONDUCTING MULTI VFR TFC PATTERN APCHS & DEPS WO PRIOR APVL FM AMGR CALL C414–747–5325.

BIRDS ON & INVOF ARPT.

RYS 13/31 & 01R/19L & 07L/25R CLSD EXCP LGT WT SINGLE ENG ACFT 0400–1200Z DLY.

TWY V BTN TWY D AND RY 7L/25R CLSD TO ACFT WITH WINGSPAN GREATER THAN 170 FT WHEN RY 7L/25R IN USE.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY B BTN TWY R AND TWY A1 CLSD TO ACFT WINGSPAN MORE THAN 118 FT EXC PPR 414–747–5325.

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Appendix 1. ATS Routes

MINIMUM ENROUTE IFR ALTITUDES OVER PARTICULAR ROUTES AND INTERSECTIONS

1. This is an annual consolidation of all data in Subparts C and D of Part 95 – Subchapter F, which were in effect December 29, 2022, Amendment 569 included.

2. It is not an amendment to Part 95; therefore, it will not appear in the Federal Register.

For updates to these routes and access to additional data products, please visit http://faa.gov/air_traffic/flight_info/aeronav/.

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FROM	TO	MEA

95.0040 COLORED FEDERAL AIRWAYS

95.101 AMBER FEDERAL AIRWAY A1

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	2800
U.S. CANADIAN BORDER	SITKA, AK NDB	*5200
*2300 - MOCA		
SITKA, AK NDB	SPARL, AK FIX	5200
SPARL, AK FIX	OCEAN CAPE, AK NDB	*6000
*2200 - MOCA		
OCEAN CAPE, AK NDB	CAPEM, AK FIX	*6000
*2000 - MOCA		
CAPEM, AK FIX	CORVA, AK FIX	*6000
*4400 - MOCA		
CORVA, AK FIX	EGGER, AK FIX	2000
EGGER, AK FIX	ORCA BAY, AK NDB	5000
TAKOTNA RIVER, AK NDB	NORTH RIVER, AK NDB	*7000
*6000 - MOCA		
NORTH RIVER, AK NDB	FORT DAVIS, AK NDB	3000

95.102 AMBER FEDERAL AIRWAY A2

U.S. CANADIAN BORDER	NABESNA, AK NDB	*8400
*6700 - MOCA		
NABESNA, AK NDB	DELTA JUNCTION, AK NDB	8000

95.103 AMBER FEDERAL AIRWAY A3

EVANSVILLE, AK NDB	PUT RIVER, AK NDB	10000

95.104 AMBER FEDERAL AIRWAY A4

EVANSVILLE, AK NDB	ANAKTUVUK PASS, AK NDB	*10000
*8300 - MOCA		

95.105 AMBER FEDERAL AIRWAY A5

AMBLER, AK NDB	EVANSVILLE, AK NDB	*7500
*6600 - MOCA		

95.106 AMBER FEDERAL AIRWAY A6

ST MARYS, AK NDB	NORTH RIVER, AK NDB	5000

95.109 AMBER FEDERAL AIRWAY A9

CHENA, AK NDB	EVANSVILLE, AK NDB	5500
EVANSVILLE, AK NDB	BROWERVILLE, AK NDB	*10000
*9100 - MOCA		

95.115 AMBER FEDERAL AIRWAY A15

U.S. CANADIAN BORDER	NICHOLS, AK NDB	5000
NICHOLS, AK NDB	SUMNER STRAIT, AK NDB	*7000
*5100 - MOCA		
*6000 - GNSS MEA		
SUMNER STRAIT, AK NDB	COGHLAN ISLAND, AK NDB	7000
COGHLAN ISLAND, AK NDB	HAINES, AK NDB	*9000
*8300 - MOCA		

FROM	TO	MEA

95.115 AMBER FEDERAL AIRWAY A15 - CONTINUED

HAINES, AK NDB	U.S. CANADIAN BORDER	*11000
*9300 - MOCA		
U.S. CANADIAN BORDER	NABESNA, AK NDB	*8400
*6700 - MOCA		
NABESNA, AK NDB	DELTA JUNCTION, AK NDB	8000

95.116 AMBER FEDERAL AIRWAY A16

ACTIVE PASS, CA NDB	WHITE ROCK, CA NDB	*3000
*2100 - MOCA		
*FOR THAT AIRSPACE OVER U.S. TERRITORY		

95.117 AMBER FEDERAL AIRWAY A17

CHENA, AK NDB	*CHANDALAR LAKE, AK NDB	7000
*10000 - MCA CHANDALAR LAKE, AK NDB , NW BND		
CHANDALAR LAKE, AK NDB	*PUT RIVER, AK NDB	10000
*10000 - MCA PUT RIVER, AK NDB , BND		

95.201 RED FEDERAL AIRWAY R1

ST PAUL ISLAND, AK NDB/DME	GARRS, AK FIX	*4600
*2700 - MOCA		
GARRS, AK FIX	CHINOOK, AK NDB	4600

95.202 RED FEDERAL AIRWAY R2

ELFEE, AK NDB	PORT HEIDEN, AK NDB/DME	6000

95.239 RED FEDERAL AIRWAY R39

OSCARVILLE, AK NDB	*ANIAK, AK NDB	**2000
*3500 - MCA ANIAK, AK NDB , NE BND		
**1400 - MOCA		
ANIAK, AK NDB	TAKOTNA RIVER, AK NDB	*6000
*5400 - MOCA		
TAKOTNA RIVER, AK NDB	MINCHUMINA, AK NDB	5000
MINCHUMINA, AK NDB	ICE POOL, AK NDB	4000

95.251 RED FEDERAL AIRWAY R51

SUMNER STRAIT, AK NDB	SITKA, AK NDB	7000

95.299 RED FEDERAL AIRWAY R99

ST PAUL ISLAND, AK NDB/DME	DUTCH HARBOR, AK NDB/DME	*4800
*HF COMMS REQUIRED BELOW 8000 MSL.		
DUTCH HARBOR, AK NDB/DME	CHINOOK, AK NDB	*9000
*6300 - MOCA		
CHINOOK, AK NDB	ILIAMNA, AK NDB/DME	*5000
*4400 - MOCA		
ILIAMNA, AK NDB/DME	KACHEMAK, AK NDB	6100

95.401 GREEN FEDERAL AIRWAY G1

MOUNT MOFFETT, AK NDB/DME	HORTH, AK FIX	8000
HORTH, AK FIX	MORDI, AK FIX	*8000
*2500 - MOCA		
*5000 - GNSS MEA		

FROM	TO	MEA

95.401 GREEN FEDERAL AIRWAY G1 - CONTINUED

MORDI, AK FIX	ELFEE, AK NDB	*8000
*5300 - MOCA		
*7000 - GNSS MEA		

95.402 GREEN FEDERAL AIRWAY G2

BORLAND, AK NDB/DME	WOODY ISLAND, AK NDB	*10000
*6600 - MOCA		

95.404 GREEN FEDERAL AIRWAY G4

WOOD RIVER, AK NDB	ILIAMNA, AK NDB/DME	*4500
*3000 - MOCA		

95.406 GREEN FEDERAL AIRWAY G6

ST MARYS, AK NDB	ANIAK, AK NDB	4000

95.407 GREEN FEDERAL AIRWAY G7

GAMBELL, AK NDB/DME	FORT DAVIS, AK NDB	3000
FORT DAVIS, AK NDB	NORTON BAY, AK NDB	*5000
*4200 - MOCA		

95.408 GREEN FEDERAL AIRWAY G8

SHEMYA, AK NDB	MOUNT MOFFETT, AK NDB/DME	*8000
*6300 - MOCA		
*HF COMMS REQUIRED.		
MOUNT MOFFETT, AK NDB/DME	DUTCH HARBOR, AK NDB/DME	*9000
*8000 - MOCA		
*HF COMMUNICATIONS REQUIRED		
DUTCH HARBOR, AK NDB/DME	MORDI, AK FIX	*9000
*5700 - MOCA		
*6000 - GNSS MEA		
MORDI, AK FIX	ELFEE, AK NDB	*8000
*5300 - MOCA		
*7000 - GNSS MEA		
*VHF COMMS AVBL 5000 MSL AND ABOVE.		
ELFEE, AK NDB	CRACK, AK FIX	*5000
*4100 - MOCA		
*VHF/UHF COMMS AVBL 9000 MSL AND ABOVE		
*HF COMMS ONLY BELOW 5000 MSL		
*VHF COMMS AVBL 5000 MSL AND ABOVE.		
CRACK, AK FIX	CHINOOK, AK NDB	*3000
*2300 - MOCA		
*HF COMMS ONLY BELOW 9000 MSL		
*VHF/UHF COMMS AVBL 9000 MSL AND ABOVE		
CHINOOK, AK NDB	NOSKY, AK FIX	*6000
*4900 - MOCA		
NOSKY, AK FIX	KACHEMAK, AK NDB	6100

95.409 GREEN FEDERAL AIRWAY G9

OSCARVILLE, AK NDB	ZEKEG, AK FIX	
	NE BND	*6000
	SW BND	*3000
*2100 - MOCA		
ZEKEG, AK FIX	CAIRN MOUNTAIN, AK NDB	6000

FROM	TO	MEA

95.410 GREEN FEDERAL AIRWAY G10

CAPE NEWENHAM, AK NDB/DME	ST PAUL ISLAND, AK NDB/DME	4600
ST PAUL ISLAND, AK NDB/DME	BILBE, AK FIX	3000
BILBE, AK FIX	ELFEE, AK NDB	*6000
*3800 - MOCA		
ELFEE, AK NDB	PORT HEIDEN, AK NDB/DME	*5000
*4100 - MOCA		
PORT HEIDEN, AK NDB/DME	WIDTH, AK FIX	9000
	COP 090 RWO	
WIDTH, AK FIX	WOODY ISLAND, AK NDB	*9000
*6300 - MOCA		
WOODY ISLAND, AK NDB	KACHEMAK, AK NDB	6000

95.412 GREEN FEDERAL AIRWAY G12

ELFEE, AK NDB	BORLAND, AK NDB/DME	10000
BORLAND, AK NDB/DME	PORT HEIDEN, AK NDB/DME	10000
PORT HEIDEN, AK NDB/DME	CHINOOK, AK NDB	2500

95.413 GREEN FEDERAL AIRWAY G13

ZOLMN, NC FIX	MANTEO, NC NDB	2000

95.415 GREEN FEDERAL AIRWAY G15

ST MARYS, AK NDB	ANVIK, AK NDB	4000
ANVIK, AK NDB	TAKOTNA RIVER, AK NDB	*9000
*6000 - MOCA		
*7000 - GNSS MEA		

95.416 GREEN FEDERAL AIRWAY G16

POINT LAY, AK NDB	WAINWRIGHT VILLAGE, AK NDB	*1700
*1200 - MOCA		
WAINWRIGHT VILLAGE, AK NDB	BROWERVILLE, AK NDB	*1600
*1100 - MOCA		
BROWERVILLE, AK NDB	NUIQSUT VILLAGE, AK NDB	1600
	COP 050 UQS	
NUIQSUT VILLAGE, AK NDB	PUT RIVER, AK NDB	*1700
*1200 - MOCA		

95.417 GREEN FEDERAL AIRWAY G17

WAINWRIGHT VILLAGE, AK NDB	ATQASUK, AK NDB	*1600
*1100 - MOCA		

95.418 GREEN FEDERAL AIRWAY G18

HOTHAM, AK NDB	POINT LAY, AK NDB	*10000
*6000 - MOCA		
	COP 096 HHM	
POINT LAY, AK NDB	ATQASUK, AK NDB	2300
	COP 050 PIZ	

95.602 BLUE FEDERAL AIRWAY B2

POINT LAY, AK NDB	CAPE LISBURNE, AK NDB/DME	4000
CAPE LISBURNE, AK NDB/DME	HOTHAM, AK NDB	*8000
*4100 - MOCA		
	COP 057 LUR	

FROM	TO	MEA

95.602 BLUE FEDERAL AIRWAY B2 - CONTINUED

HOTHAM, AK NDB	TIN CITY, AK NDB/DME	*5000
*4300 - MOCA		
TIN CITY, AK NDB/DME	FORT DAVIS, AK NDB	*7000
*5900 - MOCA		
*6000 - GNSS MEA		

95.603 BLUE FEDERAL AIRWAY B3

ANIAK, AK NDB	ANVIK, AK NDB	3700
ANVIK, AK NDB	NORTH RIVER, AK NDB	4600
NORTH RIVER, AK NDB	NORTON BAY, AK NDB	3000
NORTON BAY, AK NDB	HOTHAM, AK NDB	4500
HOTHAM, AK NDB	NOATAK, AK NDB/DME	3300

95.604 BLUE FEDERAL AIRWAY B4

UTOPIA CREEK, AK NDB/DME	EVANSVILLE, AK NDB	*8000
*6200 - MOCA		
EVANSVILLE, AK NDB	YUKON RIVER, AK NDB	*8000
*6600 - MOCA		

95.607 BLUE FEDERAL AIRWAY B7

CAPE NEWENHAM, AK NDB/DME	OSCARVILLE, AK NDB	4600

95.608 BLUE FEDERAL AIRWAY B8

TIN CITY, AK NDB/DME	SHISHMAREF, AK NDB	4000

95.609 BLUE FEDERAL AIRWAY B9

*DEEDS, FL FIX	MARATHON, FL NDB	**2000
*4000 - MRA		
**1500 - MOCA		

95.612 BLUE FEDERAL AIRWAY B12

WOODY ISLAND, AK NDB	ILIAMNA, AK NDB/DME	*10000
*9300 - MOCA		

95.626 BLUE FEDERAL AIRWAY B26

CHENA, AK NDB	YUKON RIVER, AK NDB	7000

95.627 BLUE FEDERAL AIRWAY B27

WOODY ISLAND, AK NDB	CHINOOK, AK NDB	10000
CHINOOK, AK NDB	WANIX, AK FIX	*8000
*7500 - MOCA		
WANIX, AK FIX	OSCARVILLE, AK NDB	
	NW BND	4000
	SE BND	8000
OSCARVILLE, AK NDB	ST MARYS, AK NDB	3000
ST MARYS, AK NDB	FORT DAVIS, AK NDB	3000
FORT DAVIS, AK NDB	HOTHAM, AK NDB	6000

95.628 BLUE FEDERAL AIRWAY B28

U.S. CANADIAN BORDER	NICHOLS, AK NDB	5000

FROM	TO	MEA

95.628 BLUE FEDERAL AIRWAY B28 - CONTINUED

NICHOLS, AK NDB	SITKA, AK NDB	*6900
*6000 - MOCA		
*6000 - GNSS MEA		

95.637 BLUE FEDERAL AIRWAY B37

SUMNER STRAIT, AK NDB	ELEPHANT, AK NDB	*7000
*6400 - MOCA		
ELEPHANT, AK NDB	SPARL, AK FIX	*6000
*5000 - MOCA		
*5000 - GNSS MEA		

95.638 BLUE FEDERAL AIRWAY B38

ELEPHANT, AK NDB	CHILL, AK FIX	7300
CHILL, AK FIX	HAINES, AK NDB	9000

95.640 BLUE FEDERAL AIRWAY B40

HAINES, AK NDB	U.S. CANADIAN BORDER	*10000
*9800 - MOCA		

95.679 BLUE FEDERAL AIRWAY B79

U.S. CANADIAN BORDER	NICHOLS, AK NDB	5000

95.1001 DIRECT ROUTES-U.S.

ABILENE, TX VORTAC	WACO, TX VORTAC	*6500
*3300 - MOCA		
ABILENE, TX VORTAC	LLANO, TX VORTAC	7000
	COP 075 ABI	
ALEXANDRIA, MN VOR/DME	JAMESTOWN, ND VOR/DME	18000
		MAA - 22000
ALLENTOWN, PA VORTAC	STILLWATER, NJ VOR/DME	*3300
*3000 - MOCA		
ALLENTOWN, PA VORTAC	POTTSTOWN, PA VORTAC	*2700
*2500 - MOCA		
APPIN, TX FIX	LAKE CHARLES, LA VORTAC	*8000
*1500 - MOCA		
BATTLE MOUNTAIN, NV VORTAC	TWIN FALLS, ID VORTAC	*18000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
BIG SUR, CA VORTAC	AVENAL, CA VOR/DME	*11000
		MAA - 35000
*7900 - MOCA		
BISMARCK, ND VOR/DME	HUMBOLDT, MN TACAN	18000
BISMARCK, ND VOR/DME	DICKINSON, ND VORTAC	18000
		MAA - 24000
BOZEMAN, MT VOR/DME	DUBOIS, ID VORTAC	18000
		MAA - 25000
BOZEMAN, MT VOR/DME	BOYSEN RESERVOIR, WY VOR/DME	19000
		MAA - 35000
BRADFORD, IL VORTAC	DES MOINES, IA VORTAC	18000
		MAA - 41000
BRILO, CA FIX	YAGER, CA FIX	7000
BULLION, NV VOR/DME	BOISE, ID VORTAC	18000
CAJON, CA FIX	HITOP, CA FIX	8000
CALBE, CA FIX	PALMDALE, CA VORTAC	10000
		MAA - 17500
*CAMARILLO, CA VOR/DME	**SANTA MONICA, CA VOR/DME	5000
*3600 - MCA CAMARILLO, CA VOR/DME , E BND		
**3600 - MCA SANTA MONICA, CA VOR/DME , BND		
*CHARM, CO FIX	**PUEBLO, CO VORTAC	8000
		MAA - 45000
*10000 - MCA CHARM, CO FIX , S BND		
**7200 - MCA PUEBLO, CO VORTAC , S BND		
COALDALE, NV VORTAC	WOODSIDE, CA VOR/DME	*18000
		MAA - 45000
*15100 - MOCA		
	COP 068 OAL	
COALDALE, NV VORTAC	SQUAW VALLEY, CA VOR/DME	15000
		MAA - 39000
COLLI, CA FIX	SCAGGS ISLAND, CA VORTAC	3500
COLOM, CA FIX	MINA, NV VORTAC	28000
COLOM, CA FIX	FRIANT, CA VORTAC	18000
		MAA - 45000
COLUMBIA, SC VORTAC	CHARLESTON, WV VOR/DME	18000
		MAA - 45000
CORTEZ, CO VOR/DME	PUEBLO, CO VORTAC	*22000
		MAA - 45000
	COP 080 CEZ	
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
COVEX, LA FIX	APPIN, TX FIX	*8000
*1800 - MOCA		
COVEX, LA FIX	BELCHER, LA VORTAC	*3500
*1900 - MOCA		
DAGGETT, CA VORTAC	PALMDALE, CA VORTAC	7000
DAYTON, OH VOR/DME	GUNNE, OH FIX	18000
		MAA - 39000
DAYTON, OH VOR/DME	FORT WAYNE, IN VORTAC	18000
		MAA - 43000
DAYTON, OH VOR/DME	APPLETON, OH VORTAC	18000
		MAA - 45000
DELLS, WI VORTAC	EAU CLAIRE, WI VORTAC	18000
		MAA - 29000
DES MOINES, IA VORTAC	IOWA CITY, IA VOR/DME	2700
		MAA - 35000

FROM	TO	MEA
DETROIT LAKES, MN VOR/DME	THIEF RIVER FALLS, MN VOR/DME	*3300
*2700 - MOCA		
DICKINSON, ND VORTAC	U.S. CANADIAN BORDER	18000
DICKINSON, ND VORTAC	MINOT, ND VOR/DME	18000
		MAA - 35000
DILLON, MT VOR/DME	SHERIDAN, WY VOR/DME	*33000
		MAA - 45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
DUBOIS, ID VORTAC	BOZEMAN, MT VOR/DME	18000
		MAA - 35000
DULUTH, MN VORTAC	U.S. CANADIAN BORDER	*18000
*3100 - MOCA		
*FOR THAT AIRSPACE OVER U.S. TERRITORY		
DULUTH, MN VORTAC	TRAVERSE CITY, MI VOR/DME	24000
*DUNOIR, WY VOR/DME	**WORLAND, WY VOR/DME	***16000
*12200 - MCA DUNOIR, WY VOR/DME , E BND		
**12200 - MCA WORLAND, WY VOR/DME , BND		
***15200 - MOCA		
	COP 040 DNW	
DUNOIR, WY VOR/DME	BILLINGS, MT VORTAC	18000
		MAA - 45000
DUPREE, SD VOR/DME	BISMARCK, ND VOR/DME	18000
		MAA - 35000
EAU CLAIRE, WI VORTAC	DULUTH, MN VORTAC	18000
		MAA - 29000
EEDEN, AK FIX	FRIED, OP FIX	10000
		MAA - 45000
FARGO, ND VOR/DME	WILLISTON, ND VOR/DME	23000
FELLOWS, CA VOR/DME	GAVIOTA, CA VORTAC	8000
FELLOWS, CA VOR/DME	GUADALUPE, CA VOR	7000
FELLOWS, CA VOR/DME	FILLMORE, CA VORTAC	9500
	COP 042 FLW	
FELLOWS, CA VOR/DME	SAN MARCUS, CA VORTAC	9000
FELLOWS, CA VOR/DME	SHAFTER, CA VORTAC	6400
FELLOWS, CA VOR/DME	GORMAN, CA VORTAC	11000
FILLMORE, CA VORTAC	FELLOWS, CA VOR/DME	9500
FLYING CLOUD, MN VOR/DME	SIOUX FALLS, SD VORTAC	17000
		MAA - 25000
FORT WAYNE, IN VORTAC	KALAMAZOO, MI VOR/DME	18000
		MAA - 43000
GINNA, CA FIX	CAMARILLO, CA VOR/DME	4000
GIPPER, MI VORTAC	LITCHFIELD, MI VOR/DME	*18000
		MAA - 41000
	COP 049 GIJ	
*MAXIMUM CROSSING ALT SBN 075/49 33000.		
GLINA, NM WP	BOLES, NM DME	*13000
		MAA - 24000
*9900 - MOCA		
*RADAR REQUIRED WHEN IN HOLLOMAN APCH CTL ARSPC.		
GOOCH SPRINGS, TX VORTAC	COLLEGE STATION, TX VORTAC	*4000
*3000 - MOCA		
GOPHER, MN VORTAC	MOLINE, IL VOR/DME	13000
		MAA - 35000
GOPHER, MN VORTAC	CEDAR RAPIDS, IA VOR/DME	14500
		MAA - 35000
GRAND ISLAND, NE VOR/DME	LINCOLN, NE VORTAC	*4000
		MAA - 35000
*2900 - MOCA		
GRAND ISLAND, NE VOR/DME	SALINA, KS VORTAC	*7000
		MAA - 17500
*3800 - MOCA		
GROTON, CT VOR/DME	FLIBB, CT FIX	*2000
		MAA - 17500
*1500 - MOCA		
GUADALUPE, CA VOR	HABUT, CA FIX	5000
GULFPORT, MS VORTAC	*PLUGG, MS FIX	**2000
*5000 - MRA		
**1700 - MOCA		
HOMEE, PA WP	REVLOC, PA VOR/DME	4000
HONEZ, CA FIX	MODESTO, CA VOR/DME	2200
HUMBLE, TX VORTAC	QUITMAN, TX DME	*9000
		MAA - 41000
*2200 - MOCA		
JAMESTOWN, ND VOR/DME	BISMARCK, ND VOR/DME	18000
		MAA - 24000

FROM	TO	MEA
JAMESTOWN, ND VOR/DME	GRAND FORKS, ND VOR/DME	18000 MAA - 35000
JULIAN, CA VORTAC	PARADISE, CA VORTAC	8000 MAA - 41000
KALAMAZOO, MI VOR/DME	VICTORY, MI VOR/DME	18000 MAA - 43000
KALISPELL, MT VOR/DME	U.S. CANADIAN BORDER	18000 MAA - 45000
	COP 082 FCA	
KALISPELL, MT VOR/DME *11400 - MOCA	HELENA, MT VORTAC	*15500
	COP 050 FCA	
KEARNEY, NE VOR	MANKATO, KS VORTAC	4200
LAFAYETTE, LA VORTAC	ORICH, LA FIX	1600
LAKE CHARLES, LA VORTAC	LUFKIN, TX VORTAC	*3000 MAA - 1700
*1600 - MOCA		
LAKE CHARLES, LA VORTAC *1600 - MOCA	APPIN, TX FIX	*8000
LAKE HUGHES, CA VORTAC	FILLMORE, CA VORTAC	8000
LAMONI, IA VOR/DME	IOWA CITY, IA VOR/DME	18000 MAA - 42000
LAUGHLIN, TX VORTAC *3000 - MOCA	SAN ANTONIO, TX VORTAC	*5000
LEONA, TX VORTAC *1900 - MOCA	GREGG COUNTY, TX VORTAC	*2500
LINCOLN, NE VORTAC	OMAHA, IA VORTAC	3700 MAA - 35000
LINCOLN, NE VORTAC	DES MOINES, IA VORTAC	*5000 MAA - 45000
*2700 - MOCA		
LONDON, KY VOR/DME	HOLSTON MOUNTAIN, TN VORTAC	18000 MAA - 43000
LUFKIN, TX VORTAC *2000 - MOCA	MONROE, LA VORTAC	*8000
	COP 082 LFK	
MADISON, WI VORTAC	DELLS, WI VORTAC	18000 MAA - 29000
MANKATO, KS VORTAC *3100 - MOCA	SALINA, KS VORTAC	*3400
*MARIC, CA FIX *3400 - MCA MARIC, CA FIX , E BND **3400 - MCA LAKE HUGHES, CA VORTAC , BND	**LAKE HUGHES, CA VORTAC	7800
MEEKER, CO VOR/DME	*FUNDS, CO FIX	**24000 MAA - 37000
*16500 - MRA **15500 - MOCA		
MENDOCINO, CA VORTAC	POINT REYES, CA VOR/DME	5000 MAA - 39000
MENDOCINO, CA VORTAC	BRILO, CA FIX	*11000 MAA - 24000
*7500 - MOCA		
MINA, NV VORTAC	BATTLE MOUNTAIN, NV VORTAC	18000
MINOT, ND VOR/DME	U.S. CANADIAN BORDER	18000 MAA - 45000
MISSOULA, MT VOR/DME	KALISPELL, MT VOR/DME	18000 MAA - 45000
MISSOULA, MT VOR/DME	BOZEMAN, MT VOR/DME	20000 MAA - 35000
MISSOULA, MT VOR/DME	GREAT FALLS, MT VORTAC	18000 MAA - 24000
MISSOULA, MT VOR/DME	DILLON, MT VOR/DME	16500 MAA - 35000
MORMON MESA, NV VORTAC	WILSON CREEK, NV VORTAC	18000
MORRO BAY, CA VORTAC	FILLMORE, CA VORTAC	9500
MORRO BAY, CA VORTAC	SHAFTER, CA VORTAC	6000
MORRO BAY, CA VORTAC	FELLOWS, CA VOR/DME	6400
MUDDY MOUNTAIN, WY VOR/DME	DICKINSON, ND VORTAC	18000 MAA - 35000
MUSTANG, NV VORTAC	TROSE, CA FIX	22000
NORTH BEND, OR VOR/DME	EUGENE, OR VORTAC	18000 MAA - 41000
NORTH BEND, OR VOR/DME	NEWPORT, OR VORTAC	18000 MAA - 45000
NORTH PLATTE, NE VOR/DME *4200 - MOCA	KEARNEY, NE VOR	*5000

FROM	TO	MEA
NORTHBROOK, IL VOR/DME	DES MOINES, IA VORTAC	18000
		MAA - 41000
O'NEILL, NE VORTAC	MASON CITY, IA VOR/DME	24000
		MAA - 41000
OAKLAND, CA VOR/DME	SCAGGS ISLAND, CA VORTAC	4000
OMAHA, IA VORTAC	HILL CITY, KS VORTAC	18000
		MAA - 45000
PACIF, CA FIX	SEAL BEACH, CA VORTAC	3000
PANOCHE, CA VORTAC	*HENCE, CA FIX	**9000
*9000 - MCA HENCE, CA FIX , E BND9000 - MCA HENCE, CA FIX , BND		
**5800 - MOCA		
PANOCHE, CA VORTAC	GORMAN, CA VORTAC	24000
PANOCHE, CA VORTAC	SUNOL, CA FIX	18000
		MAA - 31000
PARADISE, CA VORTAC	*CALBE, CA FIX	6000
		MAA - 17500
*8500 - MCA CALBE, CA FIX , NW BND8500 - MCA CALBE, CA FIX , BND		
PAWNEE CITY, NE VORTAC	KIRKSVILLE, MO VORTAC	18000
		MAA - 41000
PAWNEE CITY, NE VORTAC	KANSAS CITY, MO VORTAC	18000
		MAA - 45000
PEACH SPRINGS, AZ VOR/DME	DOVE CREEK, CO VORTAC	18000
		MAA - 41000
	COP 100 PGS	
PENDLETON, OR VORTAC	DILLON, MT VOR/DME	*24000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
POINT REYES, CA VOR/DME	WOODSIDE, CA VOR/DME	*5000
		MAA - 17000
*4400 - MOCA		
PUEBLO, CO VORTAC	HILL CITY, KS VORTAC	18000
		MAA - 45000
PUEBLO, CO VORTAC	HAYES CENTER, NE VORTAC	18000
		MAA - 41000
PYNON, CO FIX	BLACK FOREST, CO VOR/DME	9400
QUITMAN, TX DME	TULSA, OK VORTAC	*9000
*3000 - MOCA		
RAPID CITY, SD VORTAC	FARGO, ND VOR/DME	24000
RAPID CITY, SD VORTAC	DUPREE, SD VOR/DME	18000
		MAA - 35000
RAPID CITY, SD VORTAC	MINOT, ND VOR/DME	*18000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
RED BLUFF, CA VORTAC	SCAGGS ISLAND, CA VORTAC	*6000
*9000 - MOCA		
	COP 060 RBL	
RED BLUFF, CA VORTAC	REDDING, CA VOR/DME	3000
*REDDING, CA VOR/DME	**TOMAD, CA FIX	
	NE BND	6000
	SW BND	9000
*5000 - MCA REDDING, CA VOR/DME , SW BND		
**5000 - MCA TOMAD, CA FIX , BND		
RIVERTON, WY VOR/DME	LARAMIE, WY VOR/DME	18000
		MAA - 35000
RIVERTON, WY VOR/DME	GREAT FALLS, MT VORTAC	*35000
*14800 - MOCA		
*35000 MRA AT COP.		
ROCK SPRINGS, WY VOR/DME	LARAMIE, WY VOR/DME	*18000
		MAA - 45000
*14000 - MOCA		
ROCK SPRINGS, WY VOR/DME	JACKSON, WY VOR/DME	*18000
		MAA - 45000
*13200 - MOCA		
	COP 118 OCS	
ROGUE VALLEY, OR VORTAC	*ROOTY, OR FIX	11000
*11000 - MRA		
ROME, OR VOR/DME	DONNELLY, ID VOR/DME	24000
		MAA - 45000
ROME, OR VOR/DME	DUBOIS, ID VORTAC	31000
		MAA - 45000
	COP 144 REO	
SACRAMENTO, CA VORTAC	KLAMATH FALLS, OR VORTAC	18000
	COP 130 SAC	
SALINAS, CA VORTAC	LICKE, CA WP	6000
		MAA - 17500
SALINAS, CA VORTAC	GILRO, CA FIX	5000
SALMON, ID VOR/DME	MISSOULA, MT VOR/DME	18000
		MAA - 45000

FROM	TO	MEA
SAN ANGELO, TX VORTAC	BROWNWOOD, TX VOR/DME	4500
SAN ANGELO, TX VORTAC	GOOCH SPRINGS, TX VORTAC	5000
SAN ANGELO, TX VORTAC	BROWNWOOD, TX VOR/DME	3500
SAN ANGELO, TX VORTAC	ROCKSPRINGS, TX VORTAC	4200
SAN JOSE, CA VOR/DME	COLLI, CA FIX	4000
SAN MARCUS, CA VORTAC	GUADALUPE, CA VOR	6700
SAN MARCUS, CA VORTAC	MORRO BAY, CA VORTAC	6800
SANTA CATALINA, CA VORTAC	GAVIOTA, CA VORTAC	6400
SANTY, CA FIX	*TAILS, CA FIX	5000
*7000 - MRA		
SCAPA, PR WP	CRSTL, PR WP	6000
SCOTTSBLUFF, NE VORTAC	WOLBACH, NE VORTAC	18000
		MAA - 45000
SCOTTSBLUFF, NE VORTAC	ABERDEEN, SD VOR/DME	26000
		MAA - 45000
SEAL BEACH, CA VORTAC	ELMOO, CA FIX	*5000
*2400 - MOCA		
*SHAFTER, CA VORTAC	**WRING, CA FIX	5000
*3300 - MCA SHAFTER, CA VORTAC , NE BND		
**5400 - MCA WRING, CA FIX , SE BND		
SHERIDAN, WY VOR/DME	RAPID CITY, SD VORTAC	18000
		MAA - 45000
SIDNEY, NE VOR/DME	ABERDEEN, SD VOR/DME	29000
		MAA - 45000
SIOUX FALLS, SD VORTAC	FARGO, ND VOR/DME	15000
SNOUT, AK FIX	EEDEN, AK FIX	10000
		MAA - 45000
SNOWBIRD, TN VORTAC	LONDON, KY VOR/DME	18000
		MAA - 45000
SPOKANE, WA VORTAC	DONNELLY, ID VOR/DME	18000
		MAA - 41000
SPOKANE, WA VORTAC	MISSOULA, MT VOR/DME	18000
		MAA - 35000
SPOKANE, WA VORTAC	U.S. CANADIAN BORDER	*18000
		MAA - 45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
SQUAW VALLEY, CA VOR/DME	KLAMATH FALLS, OR VORTAC	28000
		MAA - 45000
TONOPAH, NV VORTAC	BRYCE CANYON, UT VORTAC	23000
		MAA - 45000
TROSE, CA FIX	MODESTO, CA VOR/DME	
	SW BND	5000
	NE BND	22000
		MAA - 39000
TUSCOLA, TX VOR/DME	LLANO, TX VORTAC	*4500
*3900 - MOCA		
TWENTYNINE PALMS, CA VORTAC	GOFFS, CA VORTAC	18000
		MAA - 45000
	COP 017 TNP	
UNBAR, MI FIX	SALEM, MI VORTAC	18000
		MAA - 45000
*VAN NUYS, CA VOR/DME	**PALMDALE, CA VORTAC	7800
		MAA - 17500
*6000 - MCA VAN NUYS, CA VOR/DME , NE BND		
**5800 - MCA PALMDALE, CA VORTAC , SW BND		
WAKER, CA FIX	FILLMORE, CA VORTAC	4800
*WESLA, CA FIX	**FILLMORE, CA VORTAC	4800
*4100 - MCA WESLA, CA FIX , N BND		
**4100 - MCA FILLMORE, CA VORTAC , BND		
WICHITA FALLS, TX VORTAC	ARDMORE, OK VORTAC	*4000
*2500 - MOCA		
WILKES-BARRE, PA VORTAC	LATTY, NY FIX	4000
		MAA - 10000
WILL ROGERS, OK VORTAC	WICHITA, KS VORTAC	*6000
		MAA - 17500
*3600 - MOCA		
WILLISTON, ND VOR/DME	U.S. CANADIAN BORDER	*8000
		MAA - 17500
*3400 - MOCA		
WILSON CREEK, NV VORTAC	BULLION, NV VOR/DME	20000
WOLBACH, NE VORTAC	OMAHA, IA VORTAC	3800
		MAA - 35000
WOLBACH, NE VORTAC	DES MOINES, IA VORTAC	10000
		MAA - 17500
WOLBACH, NE VORTAC	PAWNEE CITY, NE VORTAC	18000
		MAA - 45000

FROM	TO	MEA
WOODSIDE, CA VOR/DME *7000 - MRA **4400 - MOCA	*EUGEN, CA FIX	**6000

FROM	TO	MEA

PUERTO RICO ROUTES

ROUTE 1

UTAHS, PR FIX	BORINQUEN, PR VORTAC	*4000
*1300 - MOCA		
BORINQUEN, PR VORTAC	MAYAGUEZ, PR VOR/DME	2500

ROUTE 2

FAJAR, PR FIX	TOURO, PR FIX	2000
TOURO, PR FIX	MALIE, VI FIX	2000

ROUTE 3

UTAHS, PR FIX	JAAWS, PR FIX	12000
JAAWS, PR FIX	SAN JUAN, PR VORTAC	3000

ROUTE 4

*IDAHO, PR FIX	BORINQUEN, PR VORTAC	**2500
*15000 - MRA		
**1800 - MOCA		
BORINQUEN, PR VORTAC	JOSHE, PR FIX	6000
JOSHE, PR FIX	MIGHT, PR FIX	6000
MIGHT, PR FIX	TUUNA, PR FIX	6000
TUUNA, PR FIX	VEDAS, PR FIX	5000
VEDAS, PR FIX	HAKVO, OA FIX	4000
SNOOZ, VI FIX	ST CROIX, VI VOR/DME	2400

ROUTE 5

BORINQUEN, PR VORTAC	ROBLL, PR FIX	*3000
*1800 - MOCA		
ROBLL, PR FIX	PLING, PR FIX	*6000
*1300 - MOCA		

ROUTE 6

*IDAHO, PR FIX	ROBLL, PR FIX	15000
*15000 - MRA		
ROBLL, PR FIX	BEANO, PR FIX	6000
BEANO, PR FIX	CORAF, PR FIX	*3000
*1300 - MOCA		
CORAF, PR FIX	SAN JUAN, PR VORTAC	1500
SAN JUAN, PR VORTAC	CHAKA, PR FIX	2500
CHAKA, PR FIX	PALCO, PR FIX	3000
PALCO, PR FIX	ST THOMAS, VI VOR/DME	2700
		MAA - 45000

ROUTE 7

PLING, PR FIX	SAALR, PR FIX	12000
SAALR, PR FIX	DONKE, PR FIX	3000
DONKE, PR FIX	SAN JUAN, PR VORTAC	3000
SAN JUAN, PR VORTAC	SANLO, PR FIX	4000
SANLO, PR FIX	TUUNA, PR FIX	4000
TUUNA, PR FIX	GESSO, PR FIX	9000

FROM	TO	MEA
ROUTE 9		
BEWIK, PR FIX	*WIGUM, PR FIX	6000
		MAA - 18000
*8500 - MRA		
WIGUM, PR FIX	CLAYO, PR FIX	5500
		MAA - 18000
CLAYO, PR FIX	MIGHT, PR FIX	5500
		MAA - 18000
MIGHT, PR FIX	GANBO, PR FIX	6000
		MAA - 18000
GANBO, PR FIX	SAN JUAN, PR VORTAC	3800
		MAA - 18000
SAN JUAN, PR VORTAC	WALNA, PR FIX	1500
		MAA - 18000
WALNA, PR FIX	*DEEDY, PR FIX	1500
		MAA - 18000
*2500 - MRA		
DEEDY, PR FIX	VERMO, PR FIX	12000
		MAA - 18000
ROUTE 12		
MAYAGUEZ, PR VOR/DME	JOSHE, PR FIX	7000
JOSHE, PR FIX	*VARNA, PR FIX	6000
*6000 - MRA		
*5000 - MCA VARNA, PR FIX , SW BND		
VARNA, PR FIX	SAN JUAN, PR VORTAC	3700
SAN JUAN, PR VORTAC	JETSS, PR FIX	2000
JETSS, PR FIX	ST THOMAS, VI VOR/DME	2800

FROM	TO	MEA

BAHAMA ROUTES

BR1L

JOLTS, BS FIX	FREEPORT, BS VOR/DME	*2000
		MAA - 45000
*1500 - MOCA		
FREEPORT, BS VOR/DME	BARTS, BS FIX	*2000
*1300 - MOCA		
BARTS, BS FIX	MAMML, BS FIX	*2000
*1200 - MOCA		
MAMML, BS FIX	DIAZZ, OA FIX	*2000
*1200 - MOCA		
DIAZZ, OA FIX	LOGVN, OA WP	2000
LOGVN, OA WP	BRRGO, OA FIX	2000
BRRGO, OA FIX	AVNEY, OA WP	*2000
*1200 - MOCA		
AVNEY, OA WP	BENIE, IB FIX	*2000
*1200 - MOCA		
BENIE, IB FIX	OREDE, BS WP	*2000
		MAA - 41000
*1200 - MOCA		
OREDE, BS WP	RAHAM, TC FIX	*2000
*1200 - MOCA		
RAHAM, TC FIX	STRUD, OA FIX	*2000
*1300 - MOCA		
STRUD, OA FIX	BIKIN, IB FIX	2000
BIKIN, IB FIX	GRAND TURK, TC VORTAC	*2000
*1300 - MOCA		

BR2L

SAN SALVADOR, BS NDB	DUKKY, BS WP	5500
DUKKY, BS WP	WRECK, OA FIX	5500
WRECK, OA FIX	SOLEI, OA FIX	5500
SOLEI, OA FIX	TROTR, OA FIX	5500
TROTR, OA FIX	PROVIDENCIALES, TC VOR/DME	5500
PROVIDENCIALES, TC VOR/DME	TOMAZ, OA FIX	5500
TOMAZ, OA FIX	BURTZ, OA FIX	5500
BURTZ, OA FIX	GOVET, OA FIX	5500
GOVET, OA FIX	JUELE, OA FIX	5500
		MAA - 60000

BR9L

TOMAZ, OA FIX	CARAH, OA FIX	*2000
*1300 - MOCA		
CARAH, OA FIX	SKHOT, OA WP	*2000
*1300 - MOCA		
SKHOT, OA WP	KNSLY, OA WP	2000

BR10L

FREEPORT, BS VOR/DME	FLINY, BS FIX	3000
FLINY, BS FIX	HAANA, BS FIX	3000
HAANA, BS FIX	MRRSH, BS FIX	3000
MRRSH, BS FIX	BNTTZ, BS FIX	3000

BR21V

FREEPORT, BS VOR/DME	ULAMA, BS FIX	2000

FROM	TO	MEA
BR21V - CONTINUED		
ULAMA, BS FIX	KIXAL, OA FIX	2000
		MAA - 45000
KIXAL, OA FIX	WALIK, FL FIX	2000
WALIK, FL FIX	PALM BEACH, FL VORTAC	2000
BR22V		
FORT LAUDERDALE, FL VOR/DME	DEKAL, OA FIX	6000
DEKAL, OA FIX	WIERS, BS FIX	6000
		MAA - 45000
WIERS, BS FIX	OYSTA, BS FIX	10000
		MAA - 45000
OYSTA, BS FIX	CAREY, BS FIX	6000
CAREY, BS FIX	MAJUR, OA FIX	3000
MAJUR, OA FIX	NASSAU, BS VOR/DME	*2000
*1500 - MOCA		
BR49V		
DOLPHIN, FL VORTAC	LUVLY, FL FIX	2000
LUVLY, FL FIX	JUNUR, FL FIX	2000
JUNUR, FL FIX	FOWEE, OA FIX	6000
FOWEE, OA FIX	LUCSS, BS FIX	*7000
		MAA - 45000
*1400 - MOCA		
LUCSS, BS FIX	JERRE, OA FIX	*4000
		MAA - 45000
*1400 - MOCA		
JERRE, OA FIX	*TINKY, OA FIX	**4000
		MAA - 45000
*8000 - MRA		
**1400 - MOCA		
TINKY, OA FIX	NICKO, BS FIX	*4000
		MAA - 45000
*1500 - MOCA		
NICKO, BS FIX	NASSAU, BS VOR/DME	*2000
		MAA - 45000
*1500 - MOCA		
BR53V		
VIRGINIA KEY, FL VOR/DME	SKIPS, BS FIX	4000
SKIPS, BS FIX	LEEVI, BS FIX	5000
		MAA - 45000
LEEVI, BS FIX	SWIMM, BS FIX	5000
		MAA - 45000
SWIMM, BS FIX	WOOZE, BS FIX	9000
		MAA - 45000
WOOZE, BS FIX	RAJAY, BS FIX	11000
RAJAY, BS FIX	PRUNE, BS FIX	4000
PRUNE, BS FIX	HINZY, BS FIX	2000
HINZY, BS FIX	NASSAU, BS VOR/DME	2000
NASSAU, BS VOR/DME	GUAVA, BS FIX	3000
GUAVA, BS FIX	BNTTZ, BS FIX	3000
BR54V		
PALM BEACH, FL VORTAC	MRLIN, FL FIX	2000
MRLIN, FL FIX	PREDA, FL FIX	4000
		MAA - 45000

FROM	TO	MEA
BR54V - CONTINUED		
PREDA, FL FIX	ISAAC, BS FIX	6000
		MAA - 45000
ISAAC, BS FIX	OYSTA, BS FIX	8000
OYSTA, BS FIX	CAREY, BS FIX	6000
CAREY, BS FIX	MAJUR, OA FIX	3000
MAJUR, OA FIX	NASSAU, BS VOR/DME	*2000
*1500 - MOCA		
BR55V		
PALM BEACH, FL VORTAC	MRLIN, FL FIX	2000
MRLIN, FL FIX	PREDA, FL FIX	4000
		MAA - 45000
PREDA, FL FIX	BEECH, BS FIX	4000
		MAA - 45000
BEECH, BS FIX	BIMINI, BS VORTAC	4000
		MAA - 45000
BIMINI, BS VORTAC	RAJAY, BS FIX	4000
RAJAY, BS FIX	PRUNE, BS FIX	4000
PRUNE, BS FIX	HINZY, BS FIX	2000
HINZY, BS FIX	NASSAU, BS VOR/DME	2000
NASSAU, BS VOR/DME	BURRL, BS FIX	*3000
*1500 - MOCA		
BURRL, BS FIX	SEAAN, BS FIX	*3000
*1300 - MOCA		
SEAAN, BS FIX	MUVOD, BS FIX	*10000
*1300 - MOCA		
MUVOD, BS FIX	BRRGO, OA FIX	*16000
*1300 - MOCA		
BR57V		
FORT LAUDERDALE, FL VOR/DME	DEKAL, OA FIX	6000
DEKAL, OA FIX	WIERS, BS FIX	6000
WIERS, BS FIX	BIMINI, BS VORTAC	3000
		MAA - 45000
BIMINI, BS VORTAC	CAREY, BS FIX	*3000
		MAA - 45000
*1300 - MOCA		
CAREY, BS FIX	MAJUR, OA FIX	3000
MAJUR, OA FIX	NASSAU, BS VOR/DME	*2000
*1500 - MOCA		
BR58V		
NASSAU, BS VOR/DME	KURAY, BS FIX	*2000
		MAA - 45000
*1500 - MOCA		
KURAY, BS FIX	*MELON, BS FIX	**2000
		MAA - 45000
*8000 - MRA		
**1400 - MOCA		
MELON, BS FIX	HANKX, BS FIX	*2000
		MAA - 45000
*1400 - MOCA		
HANKX, BS FIX	BARTS, BS FIX	*4000
		MAA - 45000
*1400 - MOCA		
BARTS, BS FIX	ANGLL, BS FIX	*10000
		MAA - 45000
*1400 - MOCA		

FROM	TO	MEA
BR62V		
TREASURE, FL VORTAC	ANGEE, FL FIX	2000
ANGEE, FL FIX	FORNL, FL FIX	2000
FORNL, FL FIX	SURFN, FL FIX	2000
SURFN, FL FIX	BERTH, BS FIX	*4000
*1300 - MOCA		
BERTH, BS FIX	JAKEL, BS FIX	*4000
		MAA - 45000
*1400 - MOCA		
JAKEL, BS FIX	FREEPORT, BS VOR/DME	*4000
*1400 - MOCA		
BR63V		
PALM BEACH, FL VORTAC	TURPS, FL FIX	2000
TURPS, FL FIX	MIXAE, BS FIX	3000
		MAA - 45000
MIXAE, BS FIX	HALBI, BS FIX	4000
		MAA - 45000
HALBI, BS FIX	ULAMA, BS FIX	2000
ULAMA, BS FIX	FREEPORT, BS VOR/DME	2000
FREEPORT, BS VOR/DME	CEGUR, BS FIX	*2000
*1400 - MOCA		
CEGUR, BS FIX	BURBO, BS FIX	*2000
*1300 - MOCA		
BURBO, BS FIX	BAYRU, BS FIX	*10000
*1300 - MOCA		
BAYRU, BS FIX	HANKX, BS FIX	*10000
*1300 - MOCA		
HANKX, BS FIX	*MELON, BS FIX	**2000
		MAA - 45000
*8000 - MRA		
**1400 - MOCA		
MELON, BS FIX	KURAY, BS FIX	*2000
		MAA - 45000
*1400 - MOCA		
KURAY, BS FIX	NASSAU, BS VOR/DME	*2000
		MAA - 45000
*1500 - MOCA		
BR64V		
VIRGINIA KEY, FL VOR/DME	KAINS, FL FIX	5000
		MAA - 45000
KAINS, FL FIX	QEPRO, FL FIX	5000
		MAA - 45000
QEPRO, FL FIX	KUCEP, FL WP	5000
		MAA - 45000
KUCEP, FL WP	HEATT, FL FIX	5000
		MAA - 45000
HEATT, FL FIX	MRLIN, FL FIX	5000
		MAA - 45000
MRLIN, FL FIX	MUNRO, OA FIX	5000
		MAA - 45000
MUNRO, OA FIX	FREEPORT, BS VOR/DME	2000
		MAA - 45000
BR65V		
NASSAU, BS VOR/DME	PEACH, OA FIX	*2000
*1500 - MOCA		

FROM	TO	MEA
BR65V - CONTINUED		
PEACH, OA FIX	*SYDNY, BS FIX	**2000
*5000 - MRA		
**1300 - MOCA		
SYDNY, BS FIX	LAUTH, BS FIX	*5000
*1300 - MOCA		
LAUTH, BS FIX	FREEPORT, BS VOR/DME	*2000
*1400 - MOCA		
FREEPORT, BS VOR/DME	RAPPS, BS FIX	3000
		MAA - 45000
RAPPS, BS FIX	STIFF, BS FIX	8000
		MAA - 45000
STIFF, BS FIX	ELDER, FL FIX	8000
		MAA - 45000
ELDER, FL FIX	ADOOR, FL FIX	25000
		MAA - 45000
BR66V		
VIRGINIA KEY, FL VOR/DME	JANUS, OA FIX	2000
JANUS, OA FIX	PADUS, BS FIX	4000
		MAA - 45000
PADUS, BS FIX	FREEPORT, BS VOR/DME	2000
		MAA - 45000
BR68V		
FORT LAUDERDALE, FL VOR/DME	MRLIN, FL FIX	6000
MRLIN, FL FIX	MUNRO, OA FIX	5000
		MAA - 45000
MUNRO, OA FIX	FREEPORT, BS VOR/DME	2000
BR69V		
BIMINI, BS VORTAC	BAHMA, BS FIX	3000
		MAA - 45000
BAHMA, BS FIX	MAYKO, OA FIX	3000
		MAA - 45000
MAYKO, OA FIX	FREEPORT, BS VOR/DME	3000
		MAA - 45000
FREEPORT, BS VOR/DME	JAMAX, BS FIX	*2000
		MAA - 45000
*1400 - MOCA		
JAMAX, BS FIX	BENZI, BS FIX	*3000
		MAA - 45000
*1200 - MOCA		
BENZI, BS FIX	JOLTS, BS FIX	4000
		MAA - 45000
JOLTS, BS FIX	BERTH, BS FIX	4000
		MAA - 45000
BERTH, BS FIX	KIXAL, OA FIX	4000
		MAA - 45000
KIXAL, OA FIX	WALIK, FL FIX	4000
		MAA - 45000
WALIK, FL FIX	PALM BEACH, FL VORTAC	2000
		MAA - 45000
BR70V		
FORT LAUDERDALE, FL VOR/DME	TURBO, OA FIX	2000

FROM	TO	MEA
BR70V - CONTINUED		
TURBO, OA FIX	PADUS, BS FIX	7000 MAA - 45000
PADUS, BS FIX	FREEPORT, BS VOR/DME	2000 MAA - 45000
FREEPORT, BS VOR/DME	GRREG, BS FIX	3500 MAA - 45000
GRREG, BS FIX	MRRSH, BS FIX	3500 MAA - 45000
MRRSH, BS FIX	NASSAU, BS VOR/DME	6000 MAA - 45000
BR71V		
FREEPORT, BS VOR/DME	WOPOP, BS FIX	*2000 MAA - 45000
*1400 - MOCA		
WOPOP, BS FIX	WLKER, BS FIX	*3000 MAA - 45000
*1200 - MOCA		

FROM	TO	MEA

ATLANTIC ROUTES

A301

*URSUS, OA FIX	ZOLLA, OA FIX	10000
*16000 - MRA		
ZOLLA, OA FIX	FOWEE, OA FIX	10000
FOWEE, OA FIX	SKIPS, BS FIX	5000
SKIPS, BS FIX	BIMINI, BS VORTAC	4000

A315

BIMINI, BS VORTAC	SWIMM, BS FIX	5000
SWIMM, BS FIX	*TINKY, OA FIX	8000
*8000 - MRA		
TINKY, OA FIX	*PEKRE, BS FIX	12500
*12500 - MRA		
PEKRE, BS FIX	*JAYEE, BS FIX	14000
*14000 - MRA		
JAYEE, BS FIX	*HODGY, BS FIX	7000
*16500 - MRA		
HODGY, BS FIX	*AMBIS, BS FIX	7000
*16500 - MRA		
AMBIS, BS FIX	DUNNO, BS WP	7000
KNSLY, OA WP	JOSES, OA WP	7000

A509

*URSUS, OA FIX	ELLEE, BS FIX	16000
*16000 - MRA		
ELLEE, BS FIX	EONNS, FL FIX	5000
EONNS, FL FIX	JURER, FL FIX	3000
JURER, FL FIX	DOLPHIN, FL VORTAC	3000
DOLPHIN, FL VORTAC	MARCI, FL FIX	8000

A517

ZPATA, PR FIX	SAINT MAARTEN, AN VOR/DME	6000
		MAA - 45000

A555

ILURI, OA FIX	PORQE, VI FIX	12000
PORQE, VI FIX	DORADO, PR NDB	6000
DORADO, PR NDB	*IDAHO, PR FIX	2000
*15000 - MRA		
IDAHO, PR FIX	HARDE, PR FIX	*2000
*1300 - MOCA		
HARDE, PR FIX	GRADI, OA FIX	*2000
*1300 - MOCA		
GRADI, OA FIX	COCBU, IB FIX	*2000
*1300 - MOCA		
COCBU, IB FIX	GRAND TURK, TC VORTAC	*2000
*1500 - MOCA		
GRAND TURK, TC VORTAC	BTLER, OA FIX	2000
BTLER, OA FIX	GUANA, OA FIX	2000
GUANA, OA FIX	INDEE, OA WP	2000
INDEE, OA WP	DUKKY, BS WP	2000

FROM	TO	MEA
A555 - CONTINUED		
DUKKY, BS WP	GEROT, OA FIX	3000
GEROT, OA FIX	DONEZ, OA FIX	3000
DONEZ, OA FIX	BOSAR, BS FIX	3000
BOSAR, BS FIX	LEPAS, BS FIX	*3000
*1300 - MOCA		
LEPAS, BS FIX	NASSAU, BS VOR/DME	*1500
*1500 - MOCA		
NASSAU, BS VOR/DME	HINZY, BS FIX	2000
HINZY, BS FIX	PRUNE, BS FIX	2000
PRUNE, BS FIX	RAJAY, BS FIX	4000
RAJAY, BS FIX	BIMINI, BS VORTAC	4000
A638		
ST THOMAS, VI VOR/DME	GUYRO, VI FIX	4000
GUYRO, VI FIX	SLUGO, VI FIX	4000
SLUGO, VI FIX	SAINT MAARTEN, AN VOR/DME	3000
A699		
NUCAR, BS FIX	STIFF, BS FIX	8000
STIFF, BS FIX	PERMT, FL FIX	8000
PERMT, FL FIX	PALM BEACH, FL VORTAC	6000
A756		
BODLO, OA WP	KNSLY, OA WP	3000
KNSLY, OA WP	ROSEA, OA WP	3000
ROSEA, OA WP	DUKKY, BS WP	3000
A766		
SABINE PASS, TX VOR/DME	LAURL, OG FIX	11000
LAURL, OG FIX	KLAMS, OG FIX	11000
KLAMS, OG FIX	KENGS, OG WP	4000
KENGS, OG WP	KELPP, OG FIX	4000
KELPP, OG FIX	KEHLI, OG FIX	4000
A770		
LEEVILLE, LA VORTAC	DOLPH, OG FIX	4000 MAA - 45000
DOLPH, OG FIX	ALGAE, OG WP	4000 MAA - 45000
ALGAE, OG WP	KEHLI, OG FIX	4000 MAA - 45000
AR3		
NASSAU, BS VOR/DME	KURAY, BS FIX	*2000 MAA - 45000
*1500 - MOCA		
KURAY, BS FIX	*MELON, BS FIX	**2000 MAA - 45000
*8000 - MRA		
**1400 - MOCA		
MELON, BS FIX	HANKX, BS FIX	*2000 MAA - 45000
*1400 - MOCA		

FROM	TO	MEA
AR3 - CONTINUED		
HANKX, BS FIX	BARTS, BS FIX	*4000 MAA - 45000
*1400 - MOCA		
BARTS, BS FIX	ANGLL, BS FIX	*10000 MAA - 45000
*1400 - MOCA		
ANGLL, BS FIX	NUCAR, BS FIX	*8000 MAA - 45000
*1400 - MOCA		
NUCAR, BS FIX	CASPR, OA FIX	2500 MAA - 60000
CASPR, OA FIX	SCOBY, OA WP	2500 MAA - 60000
SCOBY, OA WP	CARPX, OA WP	2500 MAA - 60000
CARPX, OA WP	ADUCI, OA WP	2500 MAA - 45000
ADUCI, OA WP	JAZZI, OA WP	2500 MAA - 60000
JAZZI, OA WP	DIZNY, OA WP	2500 MAA - 60000
DIZNY, OA WP	FRRAM, OA WP	2500 MAA - 60000
FRRAM, OA WP	JRDAN, OA WP	2500 MAA - 60000
JRDAN, OA WP	KEEKS, OA WP	2500 MAA - 60000
KEEKS, OA WP	OSTNN, OA WP	2500 MAA - 60000
OSTNN, OA WP	GARIC, NC WP	2500 MAA - 60000
AR5		
KOOKK, FL WP	FEMON, FL WP	2500 MAA - 60000
FEMON, FL WP	JAWSS, FL FIX	2500 MAA - 60000
JAWSS, FL FIX	BAHAA, OA WP	2500 MAA - 60000
BAHAA, OA WP	SNABS, OA WP	2500 MAA - 60000
SNABS, OA WP	OZENA, OA WP	2500 MAA - 60000
OZENA, OA WP	OHLAA, OA WP	2500 MAA - 60000
OHLAA, OA WP	CARPX, OA WP	2500 MAA - 60000
CARPX, OA WP	TROUT, FL WP	2500 MAA - 60000
AR6		
ORLANDO, FL VORTAC	BITHO, FL FIX	2700 MAA - 45000
BITHO, FL FIX	MALET, FL FIX	2700 MAA - 45000
MALET, FL FIX	APOLO, FL FIX	4000 MAA - 45000

FROM	TO	MEA
AR6 - CONTINUED		
APOLO, FL FIX	HOBEE, FL FIX	24000 MAA - 45000
AR8		
ELIZABETH CITY, NC VOR/DME	OHPEA, NC FIX	21000 MAA - 41000
OHPEA, NC FIX	TOMMZ, OA FIX	21000 MAA - 41000
TOMMZ, OA FIX	OXANA, OA FIX	21000 MAA - 41000
AR10		
DOLPHIN, FL VORTAC	TURBO, OA FIX	6000
TURBO, OA FIX	PREDA, FL FIX	6000
PREDA, FL FIX	ZAPPA, BS FIX	10000
AR11		
VIRGINIA KEY, FL VOR/DME	JANUS, OA FIX	*2000
*VIRGINIA KEY R-058 UNUSABLE JANUS TO VALLY		
JANUS, OA FIX	VALLY, OA FIX	*5000
*5000 - GNSS MEA		
AR12		
DEDDY, SC WP	PITRW, SC WP	18000 MAA - 60000
PITRW, SC WP	SNNTA, SC WP	18000 MAA - 60000
SNNTA, SC WP	OGGRE, OA WP	18000 MAA - 60000
OGGRE, OA WP	EBEAR, OA WP	18000 MAA - 60000
EBEAR, OA WP	DIZNY, OA WP	18000 MAA - 60000
DIZNY, OA WP	RROOO, OA WP	18000 MAA - 60000
RROOO, OA WP	HARON, OA WP	18000 MAA - 60000
HARON, OA WP	JAINS, OA WP	18000 MAA - 60000
AR15		
BAHAA, OA WP	HIBAC, OA WP S BND	24000 MAA - 60000
HIBAC, OA WP	PETEE, OA WP S BND	24000 MAA - 60000
PETEE, OA WP	APOLO, FL FIX S BND	24000 MAA - 60000
APOLO, FL FIX	MALET, FL FIX S BND	4000 MAA - 60000
MALET, FL FIX	ORLANDO, FL VORTAC S BND	2700 MAA - 60000

FROM	TO	MEA
AR16		
PERMT, FL FIX	LENDS, OA WP	
	N BND	24000
		MAA - 60000
LENDS, OA WP	GRUBR, OA WP	
	N BND	24000
		MAA - 60000
GRUBR, OA WP	SNABS, OA WP	
	N BND	24000
		MAA - 60000
SNABS, OA WP	SEELO, OA WP	
	N BND	24000
		MAA - 60000
AR17		
ZILLS, NC WP	OSTNN, OA WP	
	S BND	24000
		MAA - 60000
OSTNN, OA WP	OGGRE, OA WP	
	S BND	24000
		MAA - 60000
OGGRE, OA WP	NRRSE, OA WP	
	S BND	24000
		MAA - 60000
NRRSE, OA WP	BAHAA, OA WP	
	S BND	24000
		MAA - 60000
BAHAA, OA WP	HIBAC, OA WP	24000
		MAA - 60000
HIBAC, OA WP	VIRGINIA KEY, FL VOR/DME	24000
		MAA - 60000
AR18		
WOLFO, OA WP	RAMJT, OA WP	
	N BND	24000
		MAA - 60000
RAMJT, OA WP	ETECK, OA WP	
	N BND	24000
		MAA - 60000
ETECK, OA WP	PELCN, OA WP	
	N BND	24000
		MAA - 60000
PELCN, OA WP	OZENA, OA WP	
	N BND	24000
		MAA - 60000
OZENA, OA WP	ROWSY, OA WP	
	N BND	24000
		MAA - 60000
ROWSY, OA WP	FLRDA, OA WP	24000
		MAA - 60000
AR19		
MAJIK, OA WP	RAZZL, OA WP	
	S BND	24000
		MAA - 60000
RAZZL, OA WP	JRDAN, OA WP	
	S BND	24000
		MAA - 60000

FROM	TO	MEA
AR19 - CONTINUED		
JRDAN, OA WP	SAGGY, OA WP	
	S BND	24000
		MAA - 60000
SAGGY, OA WP	CHIEZ, NC WP	
	S BND	24000
		MAA - 60000
AR22		
HOAGG, OA WP	DUUNK, OA WP	
	S BND	24000
		MAA - 60000
DUUNK, OA WP	SPOOF, OA WP	
	S BND	24000
		MAA - 60000
SPOOF, OA WP	IDOLS, OA WP	
	S BND	24000
		MAA - 60000
IDOLS, OA WP	SKARP, NC WP	
	S BND	24000
		MAA - 60000
AR23		
*URSUS, OA FIX	FREEPORT, BS VOR/DME	24000
		MAA - 60000
*16000 - MRA		
FREEPORT, BS VOR/DME	CANIT, OA WP	24000
		MAA - 60000
CANIT, OA WP	OZENA, OA WP	24000
		MAA - 60000
AR24		
*URSUS, OA FIX	FREEPORT, BS VOR/DME	24000
		MAA - 60000
*16000 - MRA		
FREEPORT, BS VOR/DME	BRATZ, OA WP	24000
		MAA - 60000
BRATZ, OA WP	OHLAA, OA WP	GNSS - 24000
		MAA - 60000
OHLAA, OA WP	COACH, OA WP	24000
		MAA - 60000
COACH, OA WP	TYCAL, OA WP	GNSS - 24000
		MAA - 60000
TYCAL, OA WP	JAZZI, OA WP	GNSS - 24000
		MAA - 60000
B24		
SEA ISLE, NJ VORTAC	FISSH, NJ FIX	15000
		MAA - 45000
FISSH, NJ FIX	WEBBB, OA WP	15000
		MAA - 45000
B503		
ENAMO, OA FIX	RYDEL, BS FIX	6000
RYDEL, BS FIX	*HODGY, BS FIX	6000
*16500 - MRA		

FROM	TO	MEA
B503 - CONTINUED		
HODGY, BS FIX	NASSAU, BS VOR/DME	7000
B646		
CANOA, FL WP	FISH HOOK, FL NDB	2000 MAA - 45000
FISH HOOK, FL NDB	MARATHON, FL NDB	2000 MAA - 45000
MARATHON, FL NDB	AVION, FL FIX	*6000 MAA - 45000
*1400 - MOCA		
AVION, FL FIX	ELLEE, BS FIX	6000 MAA - 45000
ELLEE, BS FIX	FOWEE, OA FIX	*6000 MAA - 45000
*1400 - MOCA		
FOWEE, OA FIX	LUCSS, BS FIX	*7000 MAA - 45000
*1400 - MOCA		
LUCSS, BS FIX	JERRE, OA FIX	*4000 MAA - 45000
*1400 - MOCA		
JERRE, OA FIX	*TINKY, OA FIX	**4000 MAA - 45000
*8000 - MRA		
**1400 - MOCA		
TINKY, OA FIX	NICKO, BS FIX	*4000 MAA - 45000
*1500 - MOCA		
NICKO, BS FIX	NASSAU, BS VOR/DME	*2000 MAA - 45000
*1500 - MOCA		
NASSAU, BS VOR/DME	OHBEE, BS FIX	*2000 MAA - 45000
*1500 - MOCA		
OHBEE, BS FIX	MAMML, BS FIX	*4000 MAA - 45000
*1400 - MOCA		
MAMML, BS FIX	GRATX, OA WP	*5000 MAA - 45000
*1400 - MOCA		
B760		
BIMINI, BS VORTAC	LEEVI, BS FIX	4000
LEEVI, BS FIX	MENDL, BS FIX	8000
MENDL, BS FIX	BORDO, OA FIX	12000
B891		
POKEG, IB FIX	GRADI, OA FIX	4000
GRADI, OA FIX	WATRS, OA FIX	10000
B892		
ANTEX, PR FIX	MAYAGUEZ, PR VOR/DME	4000
G430		
VIRGINIA KEY, FL VOR/DME	EONNS, FL FIX	3000

FROM	TO	MEA
G430 - CONTINUED		
EONNS, FL FIX	AVION, FL FIX	4000
G437		
*DYNAH, OA FIX	**JAYEE, BS FIX	6000
		MAA - 45000
*14000 - MRA		
**14000 - MRA		
JAYEE, BS FIX	JEFRY, BS FIX	*4000
		MAA - 45000
*1400 - MOCA		
JEFRY, BS FIX	BRONO, BS FIX	*4000
		MAA - 45000
*1500 - MOCA		
BRONO, BS FIX	WELKS, BS FIX	*2000
		MAA - 45000
*1500 - MOCA		
WELKS, BS FIX	NASSAU, BS VOR/DME	*2000
*1500 - MOCA		
NASSAU, BS VOR/DME	INGRA, BS FIX	2000
INGRA, BS FIX	MAPYL, OA WP	8000
G439		
DOLPHIN, FL VORTAC	MNATE, FL FIX	3000
MNATE, FL FIX	TWNNS, FL FIX	5000
TWNNS, FL FIX	DROWN, FL FIX	5000
G444		
BOTES, OA FIX	SAAKO, IB FIX	3000
		MAA - 60000
SAAKO, IB FIX	GRAND TURK, TC VORTAC	3000
		MAA - 60000
G629		
KNSLY, OA WP	RAPPR, OA FIX	3000
CATHI, OA FIX	PROVIDENCIALES, TC VOR/DME	1500
PROVIDENCIALES, TC VOR/DME	EGANN, IB FIX	1500
EGANN, IB FIX	RAHAM, TC FIX	2000
RAHAM, TC FIX	LYMIN, OA FIX	2000
G633		
GABAR, VI FIX	*DANDE, VI FIX	3500
*3500 - MRA		
DANDE, VI FIX	TANZY, VI FIX	3100
TANZY, VI FIX	ST CROIX, VI VOR/DME	2400
ST CROIX, VI VOR/DME	SNOOZ, VI FIX	3300
SNOOZ, VI FIX	TUUNA, PR FIX	3300
TUUNA, PR FIX	DORADO, PR NDB	5000
DORADO, PR NDB	MAYAGUEZ, PR VOR/DME	5000
MAYAGUEZ, PR VOR/DME	ZADAV, PR FIX	6000
ZADAV, PR FIX	MELLA, PR WP	6000
G648		
GRAND TURK, TC VORTAC	PROVIDENCIALES, TC VOR/DME	1500

FROM	TO	MEA
G648 - CONTINUED		
PROVIDENCIALES, TC VOR/DME	MICAS, TC FIX	2000
G765		
MAXIM, FL WP	FISH HOOK, FL NDB	*3000 MAA - 45000
*1300 - MOCA		
L204		
GESSO, PR FIX	ST CROIX, VI VOR/DME	GNSS - 18000 MAA - 60000
ST CROIX, VI VOR/DME	MLIZA, OA WP	GNSS - 18000 MAA - 60000
MLIZA, OA WP	GOUDA, VI FIX	GNSS - 18000 MAA - 60000
GOUDA, VI FIX	SAINT MAARTEN, AN VOR/DME	GNSS - 18000 MAA - 60000
L207		
SCHOLES, TX VOR/DME	MUSYL, OG FIX	4000 MAA - 45000
MUSYL, OG FIX	CATFS, OG WP	4000 MAA - 45000
CATFS, OG WP	SEAGL, OG WP	4000 MAA - 45000
SEAGL, OG WP	IPSEV, OG WP	4000 MAA - 45000
L208		
SABINE PASS, TX VOR/DME	ANKRR, OG WP	4000 MAA - 45000
ANKRR, OG WP	RUMMM, OG WP	4000 MAA - 45000
RUMMM, OG WP	PEGLG, OG WP	4000 MAA - 45000
PEGLG, OG WP	DUTNA, OG WP	4000 MAA - 45000
L214		
LEEVILLE, LA VORTAC	PLNDR, OG WP	4000 MAA - 45000
PLNDR, OG WP	DAGGR, OG WP	4000 MAA - 45000
DAGGR, OG WP	IRDOV, OG WP	4000 MAA - 45000
L216		
GRAND TURK, TC VORTAC	SHRUM, OA WP	GNSS - 3000 MAA - 60000
SHRUM, OA WP	LERED, OA FIX	GNSS - 3000 MAA - 60000
L221		
SATOE, OA WP	TAYOG, PR WP	7000 MAA - 60000

FROM	TO	MEA
L221 - CONTINUED		
TAYOG, PR WP	JOSHE, PR FIX	7000 MAA - 60000
L325		
SCAPA, PR WP	DAKES, PR WP	GNSS - 7000 MAA - 60000
DAKES, PR WP	GABYY, PR WP	GNSS - 7000 MAA - 60000
GABYY, PR WP	JOSHE, PR FIX	GNSS - 7000 MAA - 60000
L327		
SCAPA, PR WP	OPAUL, OA WP	GNSS - 18000 MAA - 45000
L329		
ZPATA, PR FIX	SAINT MAARTEN, AN VOR/DME	GNSS - 18000 MAA - 45000
SAINT MAARTEN, AN VOR/DME	SAULT, PR WP	GNSS - 18000 MAA - 45000
SAULT, PR WP	KEEKA, OA WP	GNSS - 18000 MAA - 45000
L333		
HARVEY, LA VORTAC	HOOCK, OG WP	4000 MAA - 45000
HOOCK, OG WP	TRESR, OG WP	4000 MAA - 45000
TRESR, OG WP	CCUDA, OG WP	4000 MAA - 45000
CCUDA, OG WP	PISAD, OG WP	4000 MAA - 45000
L335		
SCAPA, PR WP	MLIZA, OA WP	GNSS - 18000 MAA - 45000
MLIZA, OA WP	TRNKY, OA WP	GNSS - 18000 MAA - 45000
TRNKY, OA WP	OBIKE, OA WP	GNSS - 18000 MAA - 45000
L337		
ARMUR, PR WP	KBEZA, OA WP	GNSS - 5500 MAA - 60000
KBEZA, OA WP	NEGON, DO FIX	GNSS - 5500 MAA - 60000
L343		
ANADA, OA WP	SATOE, OA WP	GNSS - 5500 MAA - 60000
L349		
GABAR, VI FIX	GESSO, PR FIX	5500 MAA - 60000

FROM	TO	MEA
L349 - CONTINUED		
GESSO, PR FIX	SATOE, OA WP	5500 MAA - 60000
L375		
JAINS, OA WP	FLUPS, OA WP	GNSS - 5500 MAA - 60000
FLUPS, OA WP	GALVN, OA WP	GNSS - 5500 MAA - 60000
GALVN, OA WP	DUNIG, OA WP	GNSS - 5500 MAA - 60000
DUNIG, OA WP	MEGGG, OA WP	GNSS - 5500 MAA - 60000
MEGGG, OA WP	BRKZZ, OA WP	GNSS - 5500 MAA - 60000
BRKZZ, OA WP	KOZIK, OA WP	GNSS - 5500 MAA - 60000
KOZIK, OA WP	FIVZE, OA WP	GNSS - 5500 MAA - 60000
FIVZE, OA WP	DABAK, OA WP	GNSS - 5500 MAA - 60000
L435		
JAINS, OA WP	FLUPS, OA WP	GNSS - 5500 MAA - 60000
FLUPS, OA WP	GALVN, OA WP	GNSS - 5500 MAA - 60000
GALVN, OA WP	DUNIG, OA WP	GNSS - 5500 MAA - 60000
DUNIG, OA WP	MEGGG, OA WP	GNSS - 5500 MAA - 60000
MEGGG, OA WP	BRKZZ, OA WP	GNSS - 5500 MAA - 60000
BRKZZ, OA WP	KOZIK, OA WP	GNSS - 5500 MAA - 60000
KOZIK, OA WP	FIVZE, OA WP	GNSS - 5500 MAA - 60000
FIVZE, OA WP	BUTUX, OA WP	GNSS - 5500 MAA - 60000
L450		
LETON, OA WP	IORIO, OA WP	GNSS - 18000 MAA - 60000
IORIO, OA WP	HELAX, OA WP	GNSS - 18000 MAA - 60000
HELAX, OA WP	COUKY, OA FIX	GNSS - 18000 MAA - 60000
COUKY, OA FIX	FOLLE, OA FIX	GNSS - 18000 MAA - 60000
FOLLE, OA FIX	JEFFO, OA FIX	GNSS - 18000 MAA - 60000
JEFFO, OA FIX	HAGIT, OA WP	GNSS - 18000 MAA - 60000
HAGIT, OA WP	TAANA, OA FIX	GNSS - 18000 MAA - 60000
TAANA, OA FIX	SEKAR, DO FIX	GNSS - 18000 MAA - 60000

FROM	TO	MEA
L451		
ELMUC, OA WP	MYSTR, OA WP	GNSS - 3000 MAA - 60000
MYSTR, OA WP	LERUG, OA FIX	GNSS - 3000 MAA - 60000
LERUG, OA FIX	DUNED, OA FIX	GNSS - 3000 MAA - 60000
DUNED, OA FIX	CERDA, OA WP	GNSS - 3000 MAA - 60000
CERDA, OA WP	JORGG, OA WP	GNSS - 3000 MAA - 60000
JORGG, OA WP	IORIO, OA WP	GNSS - 3000 MAA - 60000
IORIO, OA WP	LETON, OA WP	GNSS - 3000 MAA - 60000
LETON, OA WP	ILIDO, OA WP	GNSS - 5500 MAA - 60000
ILIDO, OA WP	JAINS, OA WP	GNSS - 5500 MAA - 60000
L452		
OXANA, OA FIX	ZZTOP, OA WP	5500 MAA - 60000
ZZTOP, OA WP	OMALA, OA WP	5500 MAA - 60000
OMALA, OA WP	WILYY, OA WP	5500 MAA - 60000
WILYY, OA WP	KANUX, OA WP	5500 MAA - 60000
KANUX, OA WP	GALVN, OA WP	5500 MAA - 60000
GALVN, OA WP	KASAR, OA WP	5500 MAA - 60000
KASAR, OA WP	LNHOM, OA WP	5500 MAA - 60000
LNHOM, OA WP	SLUKA, OA WP	5500 MAA - 60000
SLUKA, OA WP	JORGG, OA WP	5500 MAA - 60000
JORGG, OA WP	CAROX, OA WP	5500 MAA - 60000
CAROX, OA WP	NELSR, OA WP	5500 MAA - 60000
NELSR, OA WP	HAGIT, OA WP	5500 MAA - 60000
HAGIT, OA WP	RNTRY, OA FIX	5500 MAA - 60000
RNTRY, OA FIX	MACKI, OA FIX	5500 MAA - 60000
MACKI, OA FIX	HARBG, OA FIX	5500 MAA - 60000
HARBG, OA FIX	MUNOZ, OA WP	5500 MAA - 60000
MUNOZ, OA WP	BORINQUEN, PR VORTAC	5500 MAA - 60000
BORINQUEN, PR VORTAC	ETEEE, OA WP	5500 MAA - 60000
ETEEE, OA WP	RAFEE, OA WP	5500 MAA - 60000

FROM	TO	MEA
L452 - CONTINUED		
RAFEE, OA WP	ANADA, OA WP	5500 MAA - 60000
L453		
SAUCR, OA WP	ONGOT, OA WP	GNSS - 5500 MAA - 60000
ONGOT, OA WP	LSIER, OA WP	GNSS - 5500 MAA - 60000
LSIER, OA WP	ALOBI, OA WP	GNSS - 5500 MAA - 60000
ALOBI, OA WP	BOREX, OA WP	GNSS - 5500 MAA - 60000
BOREX, OA WP	LAMER, OA WP	GNSS - 5500 MAA - 60000
LAMER, OA WP	RODRK, OA WP	GNSS - 5500 MAA - 60000
RODRK, OA WP	CERDA, OA WP	GNSS - 5500 MAA - 60000
CERDA, OA WP	DETRE, OA WP	GNSS - 5500 MAA - 60000
DETRE, OA WP	FARMN, OA WP	GNSS - 5500 MAA - 60000
FARMN, OA WP	JSTIN, OA WP	GNSS - 5500 MAA - 60000
JSTIN, OA WP	ANTOX, OA WP	GNSS - 5500 MAA - 60000
ANTOX, OA WP	KARRN, OA FIX	GNSS - 5500 MAA - 60000
KARRN, OA FIX	MACKI, OA FIX	GNSS - 5500 MAA - 60000
MACKI, OA FIX	ASIVO, DO WP	GNSS - 5500 MAA - 60000
L454		
OKONU, OA WP	ATUGI, OA WP	GNSS - 5500 MAA - 60000
ATUGI, OA WP	GOUGH, OA WP	GNSS - 5500 MAA - 60000
GOUGH, OA WP	PERDO, OA WP	GNSS - 5500 MAA - 60000
PERDO, OA WP	SAVON, OA WP	GNSS - 5500 MAA - 60000
SAVON, OA WP	GRAMN, OA WP	GNSS - 5500 MAA - 60000
GRAMN, OA WP	SEBIS, OA WP	GNSS - 5500 MAA - 60000
SEBIS, OA WP	RABAL, OA WP	GNSS - 5500 MAA - 60000
RABAL, OA WP	LUCTI, OA WP	GNSS - 5500 MAA - 60000
LUCTI, OA WP	SINGL, OA WP	GNSS - 3000 MAA - 60000
SINGL, OA WP	MNDEZ, OA WP	GNSS - 3000 MAA - 60000
MNDEZ, OA WP	ALERI, OA WP	GNSS - 3000 MAA - 60000
ALERI, OA WP	WOODZ, OA WP	GNSS - 3000 MAA - 60000

FROM	TO	MEA
L454 - CONTINUED		
WOODZ, OA WP	KNDLL, OA WP	GNSS - 3000 MAA - 60000
KNDLL, OA WP	DONQU, OA WP	GNSS - 3000 MAA - 60000
DONQU, OA WP	PANMO, OA WP	GNSS - 5500 MAA - 60000
PANMO, OA WP	GOTAY, PR WP	GNSS - 5500 MAA - 60000
GOTAY, PR WP	LEEOO, OA WP	GNSS - 5500 MAA - 60000
LEEOO, OA WP	ILURI, OA FIX	GNSS - 5500 MAA - 60000
L455		
SAVIK, OA WP	SKPPR, OA WP	GNSS - 5500 MAA - 60000
SKPPR, OA WP	BEXUM, OA WP	GNSS - 5500 MAA - 60000
BEXUM, OA WP	TASNI, OA WP	GNSS - 5500 MAA - 60000
TASNI, OA WP	DUNIG, OA WP	GNSS - 5500 MAA - 60000
DUNIG, OA WP	DUPOX, OA WP	GNSS - 5500 MAA - 60000
DUPOX, OA WP	VESRA, OA WP	GNSS - 5500 MAA - 60000
VESRA, OA WP	MCOOP, OA WP	GNSS - 5500 MAA - 60000
MCOOP, OA WP	MACOR, OA WP	GNSS - 5500 MAA - 60000
MACOR, OA WP	KINCH, OA WP	GNSS - 5500 MAA - 60000
KINCH, OA WP	LENNT, OA WP	GNSS - 5500 MAA - 60000
LENNT, OA WP	JANMA, OA WP	GNSS - 5500 MAA - 60000
JANMA, OA WP	VACHI, OA WP	GNSS - 5500 MAA - 60000
VACHI, OA WP	KBEZA, OA WP	GNSS - 21000 MAA - 60000
KBEZA, OA WP	SCAPA, PR WP	GNSS - 21000 MAA - 60000
L456		
MARIG, OA WP	DARUX, OA WP	GNSS - 5500 MAA - 60000
DARUX, OA WP	NOSID, OA WP	GNSS - 5500 MAA - 60000
NOSID, OA WP	EMAKO, OA WP	GNSS - 5500 MAA - 60000
EMAKO, OA WP	MEGGG, OA WP	GNSS - 5500 MAA - 60000
MEGGG, OA WP	VINSO, OA WP	GNSS - 5500 MAA - 60000
VINSO, OA WP	PRCHA, OA WP	GNSS - 5500 MAA - 60000
PRCHA, OA WP	HANCY, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
L456 - CONTINUED		
HANCY, OA WP	THANK, PR WP	GNSS - 5500 MAA - 60000
THANK, PR WP	FRATT, OA WP	GNSS - 15000 MAA - 60000
FRATT, OA WP	ETEEE, OA WP	GNSS - 15000 MAA - 60000
ETEEE, OA WP	KIKER, OA WP	GNSS - 15000 MAA - 60000
L457		
OKONU, OA WP	SKPPR, OA WP	GNSS - 5500 MAA - 60000
SKPPR, OA WP	NOSID, OA WP	GNSS - 5500 MAA - 60000
NOSID, OA WP	ENAPI, OA WP	GNSS - 5500 MAA - 60000
ENAPI, OA WP	AWSOM, OA WP	GNSS - 5500 MAA - 60000
AWSOM, OA WP	GUICE, OA WP	GNSS - 21000 MAA - 60000
GUICE, OA WP	BERMUDA, BM VOR/DME	GNSS - 21000 MAA - 60000
L458		
GECAL, OA WP	TALSU, OA WP	GNSS - 5500 MAA - 60000
TALSU, OA WP	CHEDR, OA WP	GNSS - 5500 MAA - 60000
CHEDR, OA WP	THANK, PR WP	GNSS - 5500 MAA - 60000
THANK, PR WP	PANMO, OA WP	GNSS - 7000 MAA - 60000
PANMO, OA WP	ARMUR, PR WP	GNSS - 7000 MAA - 60000
L459		
SAVIK, OA WP	DARUX, OA WP	GNSS - 5500 MAA - 60000
DARUX, OA WP	DASER, OA WP	GNSS - 5500 MAA - 60000
DASER, OA WP	AWSOM, OA WP	GNSS - 5500 MAA - 60000
AWSOM, OA WP	BOBBO, OA WP	GNSS - 5500 MAA - 60000
BOBBO, OA WP	QRTET, OA WP	GNSS - 5500 MAA - 60000
QRTET, OA WP	CATZZ, OA WP	GNSS - 5500 MAA - 60000
CATZZ, OA WP	SHEIL, OA WP	GNSS - 5500 MAA - 60000
SHEIL, OA WP	TALSU, OA WP	GNSS - 5500 MAA - 60000
TALSU, OA WP	NUBUS, OA WP	GNSS - 5500 MAA - 60000
NUBUS, OA WP	KEEKA, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
L459 - CONTINUED		
KEEKA, OA WP	ODUCA, OA WP	GNSS - 5500 MAA - 60000
ODUCA, OA WP	CAFFE, OA WP	GNSS - 5500 MAA - 60000
CAFFE, OA WP	LEEOO, OA WP	GNSS - 5500 MAA - 60000
LEEOO, OA WP	ANADA, OA WP	GNSS - 5500 MAA - 60000
L460		
ST THOMAS, VI VOR/DME	ODUCA, OA WP	GNSS - 6000 MAA - 60000
L461		
MARIG, OA WP	TILED, OA WP	GNSS - 5500 MAA - 60000
TILED, OA WP	KINER, OA WP	GNSS - 5500 MAA - 60000
KINER, OA WP	BOVIC, OA WP	GNSS - 5500 MAA - 60000
BOVIC, OA WP	FLAMO, OA WP	GNSS - 15000 MAA - 60000
FLAMO, OA WP	GUICE, OA WP	GNSS - 15000 MAA - 60000
GUICE, OA WP	LITTL, OA WP	GNSS - 15000 MAA - 60000
LITTL, OA WP	PIERC, OA WP	GNSS - 15000 MAA - 60000
PIERC, OA WP	ROOFE, OA WP	GNSS - 15000 MAA - 60000
ROOFE, OA WP	SICKL, OA WP	GNSS - 15000 MAA - 60000
SICKL, OA WP	GECAL, OA WP	GNSS - 15000 MAA - 60000
GECAL, OA WP	BRKZZ, OA WP	GNSS - 5500 MAA - 60000
BRKZZ, OA WP	DUPAN, OA WP	GNSS - 5500 MAA - 60000
DUPAN, OA WP	QNEPA, OA WP	GNSS - 5500 MAA - 60000
QNEPA, OA WP	OPAUL, OA WP	GNSS - 5500 MAA - 60000
OPAUL, OA WP	YIYYO, OA WP	GNSS - 6000 MAA - 60000
YIYYO, OA WP	TRNKY, OA WP	GNSS - 6000 MAA - 60000
TRNKY, OA WP	SAINT MAARTEN, AN VOR/DME	GNSS - 6000 MAA - 60000
L462		
KAYYT, OA WP	OVAPI, OA WP	GNSS - 5500 MAA - 60000
OVAPI, OA WP	ANVER, OA WP	GNSS - 5500 MAA - 60000
KOZIK, OA WP	TARMO, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
L462 - CONTINUED		
TARMO, OA WP	ZABOR, OA WP	GNSS - 5500 MAA - 60000
ZABOR, OA WP	DAWIN, OA WP	GNSS - 5500 MAA - 60000
DAWIN, OA WP	NEYDU, OA WP	GNSS - 5500 MAA - 60000
NEYDU, OA WP	LAMKN, OA WP	GNSS - 5500 MAA - 60000
L463		
NUCAR, BS FIX	BAAGR, OA WP	GNSS - 3000 MAA - 60000
BAAGR, OA WP	DAAST, BS WP	GNSS - 3000 MAA - 60000
DAAST, BS WP	KRTIS, OA WP	GNSS - 3000 MAA - 60000
KRTIS, OA WP	STAAL, OA WP	GNSS - 3000 MAA - 60000
STAAL, OA WP	BRRGO, OA FIX	GNSS - 3000 MAA - 60000
BRRGO, OA FIX	SMTTY, OA WP	GNSS - 3000 MAA - 60000
SMTTY, OA WP	RNDLY, OA WP	GNSS - 3000 MAA - 60000
RNDLY, OA WP	BTLER, OA FIX	GNSS - 3000 MAA - 60000
BTLER, OA FIX	PROVIDENCIALES, TC VOR/DME	GNSS - 3000 MAA - 60000
PROVIDENCIALES, TC VOR/DME	TOMAZ, OA FIX	GNSS - 3000 MAA - 60000
TOMAZ, OA FIX	GOVET, OA FIX	GNSS - 3000 MAA - 60000
GOVET, OA FIX	JUELE, OA FIX	GNSS - 3000 MAA - 60000
L464		
LAMER, OA WP	RODRK, OA WP	GNSS - 3000 MAA - 60000
RODRK, OA WP	CERDA, OA WP	GNSS - 3000 MAA - 60000
CERDA, OA WP	WAROD, OA WP	GNSS - 3000 MAA - 60000
WAROD, OA WP	MANII, OA WP	GNSS - 3000 MAA - 60000
MANII, OA WP	LENUS, OA WP	GNSS - 3000 MAA - 60000
LENUS, OA WP	SEBUG, OA FIX	GNSS - 3000 MAA - 60000
SEBUG, OA FIX	RNTRY, OA FIX	GNSS - 3000 MAA - 60000
RNTRY, OA FIX	LERED, OA FIX	GNSS - 3000 MAA - 60000
L465		
SHARQ, OG WP	NAVVL, OG WP	4000 MAA - 45000

FROM	TO	MEA
L465 - CONTINUED		
NAVVL, OG WP	MINOW, OG FIX	4000 MAA - 45000
MINOW, OG FIX	TRESR, OG WP	4000 MAA - 45000
TRESR, OG WP	PLNDR, OG WP	4000 MAA - 45000
L466		
MEEGL, PR WP	GEECE, OA WP	GNSS - 7000 MAA - 60000
L467		
ANADA, OA WP	ANNER, OA WP	GNSS - 7000 MAA - 60000
ANNER, OA WP	GESSO, PR FIX	GNSS - 7000 MAA - 60000
L576		
BERMUDA, BM VOR/DME	SEAVR, OA WP	5500 MAA - 60000
SEAVR, OA WP	RKDIA, OA WP	5500 MAA - 60000
RKDIA, OA WP	CITRS, OA WP	5500 MAA - 60000
L577		
ELOPO, PR FIX	GOUDA, VI FIX	6000 MAA - 60000
GOUDA, VI FIX	STIIV, OA WP	6000 MAA - 60000
STIIV, OA WP	ANTEX, PR FIX	6000 MAA - 60000
L776		
MACOR, OA WP	FERNA, OA WP	GNSS - 5500 MAA - 60000
FERNA, OA WP	STIIV, OA WP	GNSS - 5500 MAA - 60000
STIIV, OA WP	GEECE, OA WP	GNSS - 5500 MAA - 60000
M201		
VIRST, OA WP	VEGAA, OA WP	GNSS - 3100 MAA - 60000
VEGAA, OA WP	ATUGI, OA WP	GNSS - 3100 MAA - 60000
ATUGI, OA WP	TILED, OA WP	GNSS - 5500 MAA - 60000
TILED, OA WP	DRYED, OA WP	GNSS - 5500 MAA - 60000
DRYED, OA WP	NOVOK, OA WP	GNSS - 5500 MAA - 60000
NOVOK, OA WP	CARAC, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M202		
HOBEE, FL FIX	INDRO, OA WP	GNSS - 5500 MAA - 60000
INDRO, OA WP	BGDOG, OA WP	GNSS - 5500 MAA - 60000
BGDOG, OA WP	LENDS, OA WP	GNSS - 5500 MAA - 60000
LENDS, OA WP	ADOOR, FL FIX	GNSS - 5500 MAA - 60000
ADOOR, FL FIX	ETECK, OA WP	GNSS - 5500 MAA - 60000
ETECK, OA WP	CANIT, OA WP	GNSS - 5500 MAA - 60000
CANIT, OA WP	CARPX, OA WP	GNSS - 5500 MAA - 60000
CARPX, OA WP	UKOKA, OA WP	GNSS - 5500 MAA - 60000
UKOKA, OA WP	OMALA, OA WP	GNSS - 5500 MAA - 60000
OMALA, OA WP	ONGOT, OA WP	GNSS - 5500 MAA - 60000
ONGOT, OA WP	GOUGH, OA WP	GNSS - 5500 MAA - 60000
GOUGH, OA WP	KINER, OA WP	GNSS - 5500 MAA - 60000
KINER, OA WP	OVAPI, OA WP	GNSS - 5500 MAA - 60000
OVAPI, OA WP	MUNEY, OA WP	GNSS - 5500 MAA - 60000
MUNEY, OA WP	JEBBY, CA WP	GNSS - 5500 MAA - 60000
JEBBY, CA WP	LOMPI, OA WP	GNSS - 5500 MAA - 60000
M203		
HOBEE, FL FIX	INDRO, OA WP	GNSS - 5500 MAA - 60000
INDRO, OA WP	BGDOG, OA WP	GNSS - 5500 MAA - 60000
BGDOG, OA WP	LENDS, OA WP	GNSS - 5500 MAA - 60000
LENDS, OA WP	ADOOR, FL FIX	GNSS - 5500 MAA - 60000
ADOOR, FL FIX	CASPR, OA FIX	GNSS - 5500 MAA - 60000
CASPR, OA FIX	SNAGY, OA WP	GNSS - 5500 MAA - 60000
SNAGY, OA WP	LEXIM, OA WP	GNSS - 5500 MAA - 60000
LEXIM, OA WP	WILYY, OA WP	GNSS - 5500 MAA - 60000
WILYY, OA WP	LSIER, OA WP	GNSS - 5500 MAA - 60000
LSIER, OA WP	PERDO, OA WP	GNSS - 5500 MAA - 60000
PERDO, OA WP	SELIM, OA WP	GNSS - 5500 MAA - 60000
SELIM, OA WP	BOBTU, CA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M204		
SUMRS, OA WP	FLUPS, OA WP	5500 MAA - 60000
FLUPS, OA WP	ALOBI, OA WP	5500 MAA - 60000
ALOBI, OA WP	BEXUM, OA WP	5500 MAA - 60000
BEXUM, OA WP	LUNKR, OA WP	5500 MAA - 60000
LUNKR, OA WP	SOORY, OA WP	5500 MAA - 60000
M215		
PISAD, OG WP	MINOW, OG FIX	4000 MAA - 45000
MINOW, OG FIX	SNOMN, OG WP	4000 MAA - 45000
SNOMN, OG WP	CIGAR, OG WP	4000 MAA - 45000
CIGAR, OG WP	KNOST, OG WP	4000 MAA - 45000
M219		
MYDIA, OG WP	NAVVL, OG WP	4000 MAA - 45000
NAVVL, OG WP	SNAKR, OG WP	4000 MAA - 45000
SNAKR, OG WP	BUUOY, OG WP	4000 MAA - 45000
BUUOY, OG WP	CULLY, OG WP	4000 MAA - 45000
CULLY, OG WP	CIGAR, OG WP	4000 MAA - 45000
CIGAR, OG WP	KNOST, OG WP	4000 MAA - 45000
M325		
OXANA, OA FIX	NETSS, OA WP	5500 MAA - 60000
NETSS, OA WP	ONGOT, OA WP	5500 MAA - 60000
ONGOT, OA WP	PERDO, OA WP	5500 MAA - 60000
PERDO, OA WP	ENAPI, OA WP	5500 MAA - 60000
ENAPI, OA WP	AWSOM, OA WP	6000
AWSOM, OA WP	GUICE, OA WP	6000
GUICE, OA WP	BERMUDA, BM VOR/DME	6000
M326		
JAINS, OA WP	LEXIM, OA WP	GNSS - 5500 MAA - 60000
LEXIM, OA WP	ALOBI, OA WP	GNSS - 5500 MAA - 60000
ALOBI, OA WP	JIMAC, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M326 - CONTINUED		
M327		
SUMRS, OA WP	KANUX, OA WP	GNSS - 5500 MAA - 60000
KANUX, OA WP	SAVON, OA WP	GNSS - 5500 MAA - 60000
SAVON, OA WP	JIMAC, OA WP	GNSS - 5500 MAA - 60000
M328		
TANIA, OA FIX	JERRE, OA FIX	GNSS - 5500 MAA - 60000
JERRE, OA FIX	RAJAY, BS FIX	GNSS - 5500 MAA - 60000
RAJAY, BS FIX	BARTS, BS FIX	GNSS - 5500 MAA - 60000
BARTS, BS FIX	NATHY, OA WP	GNSS - 5500 MAA - 60000
NATHY, OA WP	BAAGR, OA WP	GNSS - 5500 MAA - 60000
BAAGR, OA WP	SLEMA, OA WP	GNSS - 5500 MAA - 60000
SLEMA, OA WP	ROTHM, OA WP	GNSS - 5500 MAA - 60000
ROTHM, OA WP	CNNOR, OA WP	GNSS - 5500 MAA - 60000
CNNOR, OA WP	ILIDO, OA WP	GNSS - 5500 MAA - 60000
ILIDO, OA WP	GRAMN, OA WP	GNSS - 5500 MAA - 60000
GRAMN, OA WP	TASNI, OA WP	GNSS - 5500 MAA - 60000
TASNI, OA WP	EMAKO, OA WP	GNSS - 5500 MAA - 60000
EMAKO, OA WP	ANTIG, OA WP	GNSS - 5500 MAA - 60000
M329		
*DYNAH, OA FIX *14000 - MRA NASSAU, BS VOR/DME	NASSAU, BS VOR/DME OHBEE, BS FIX	GNSS - 5500 MAA - 60000 GNSS - 5500 MAA - 60000
OHBEE, BS FIX	MAMML, BS FIX	GNSS - 5500 MAA - 60000
MAMML, BS FIX	EXTER, OA FIX	GNSS - 5500 MAA - 60000
EXTER, OA FIX	DAAST, BS WP	GNSS - 5500 MAA - 60000
DAAST, BS WP	LASEE, OA WP	GNSS - 5500 MAA - 60000
LASEE, OA WP	CLETT, OA WP	GNSS - 5500 MAA - 60000
CLETT, OA WP	GRATX, OA WP	GNSS - 5500 MAA - 60000
GRATX, OA WP	KASAR, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M329 - CONTINUED		
KASAR, OA WP	BOREX, OA WP	GNSS - 5500 MAA - 60000
BOREX, OA WP	BALTN, OA WP	GNSS - 5500 MAA - 60000
M330		
ENAMO, OA FIX	ZWICK, OA WP	GNSS - 5500 MAA - 60000
ZWICK, OA WP	KFFER, OA WP	GNSS - 5500 MAA - 60000
KFFER, OA WP	DONEZ, OA FIX	GNSS - 5500 MAA - 60000
DONEZ, OA FIX	MUVOD, BS FIX	GNSS - 5500 MAA - 60000
MUVOD, BS FIX	DIAZZ, OA FIX	GNSS - 5500 MAA - 60000
DIAZZ, OA FIX	KRTIS, OA WP	GNSS - 5500 MAA - 60000
KRTIS, OA WP	WITOB, OA WP	GNSS - 5500 MAA - 60000
WITOB, OA WP	ALUTE, OA WP	GNSS - 5500 MAA - 60000
ALUTE, OA WP	MLSAP, OA FIX	GNSS - 5500 MAA - 60000
MLSAP, OA FIX	MILLE, OA WP	GNSS - 5500 MAA - 60000
MILLE, OA WP	RUDLI, OA WP	GNSS - 5500 MAA - 60000
RUDLI, OA WP	DUNIG, OA WP	GNSS - 5500 MAA - 60000
DUNIG, OA WP	SHEIL, OA WP	GNSS - 5500 MAA - 60000
SHEIL, OA WP	SICKL, OA WP	GNSS - 5500 MAA - 60000
M345		
AXEXO, OG WP	SEAGL, OG WP	4000 MAA - 45000
SEAGL, OG WP	RUMMM, OG WP	4000 MAA - 45000
RUMMM, OG WP	KENGS, OG WP	4000 MAA - 45000
KENGS, OG WP	WAHOO, OG FIX	4000 MAA - 45000
WAHOO, OG FIX	TIBBY, LA VOR/DME	4000 MAA - 45000
M348		
MEDKO, OA WP	KNSLY, OA WP	GNSS - 2700 MAA - 60000
KNSLY, OA WP	ALBBE, BS FIX	GNSS - 2700 MAA - 60000
KATOK, PR FIX	AQABA, PR FIX	GNSS - 5500 MAA - 60000
AQABA, PR FIX	MEEGL, PR WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M423		
KIKER, OA WP	RAYAS, OA WP	GNSS - 18000 MAA - 60000
RAYAS, OA WP	PLING, PR FIX	GNSS - 18000 MAA - 60000
PLING, PR FIX	LENNT, OA WP	GNSS - 18000 MAA - 60000
M525		
MELLA, PR WP	LEILA, OA WP	GNSS - 5500 MAA - 60000
LEILA, OA WP	VACHI, OA WP	GNSS - 5500 MAA - 60000
VACHI, OA WP	PANMO, OA WP	5500 MAA - 60000
PANMO, OA WP	FRATT, OA WP	GNSS - 5500 MAA - 60000
FRATT, OA WP	CAFFE, OA WP	GNSS - 5500 MAA - 60000
CAFFE, OA WP	YIYYO, OA WP	GNSS - 5500 MAA - 60000
YIYYO, OA WP	SOCCO, OA WP	GNSS - 5500 MAA - 60000
SOCCO, OA WP	ZABOR, OA WP	GNSS - 5500 MAA - 60000
ZABOR, OA WP	KAVAX, OA WP	GNSS - 5500 MAA - 60000
M575		
CLONN, OG FIX	CATFS, OG WP	4000 MAA - 45000
CATFS, OG WP	ANKRR, OG WP	4000 MAA - 45000
ANKRR, OG WP	KENGS, OG WP	4000 MAA - 45000
KENGS, OG WP	WAHOO, OG FIX	4000 MAA - 45000
WAHOO, OG FIX	TIBBY, LA VOR/DME	4000 MAA - 45000
M576		
MILOK, OA WP	RAYAS, OA WP	GNSS - 9000 MAA - 60000
RAYAS, OA WP	RAFEE, OA WP	GNSS - 9000 MAA - 60000
RAFEE, OA WP	ANNER, OA WP	GNSS - 9000 MAA - 60000
ANNER, OA WP	PORQE, VI FIX	GNSS - 9000 MAA - 60000
PORQE, VI FIX	*DANDE, VI FIX	GNSS - 6000 MAA - 60000
*3500 - MRA DANDE, VI FIX	SAINT MAARTEN, AN VOR/DME	GNSS - 6000 MAA - 60000
SAINT MAARTEN, AN VOR/DME	MNOLO, OA WP	GNSS - 6000 MAA - 60000

FROM	TO	MEA
M576 - CONTINUED		
MNOLO, OA WP	NEYDU, OA WP	GNSS - 6000 MAA - 60000
NEYDU, OA WP	OBIKE, OA WP	GNSS - 18000 MAA - 60000
OBIKE, OA WP	RKDIA, OA WP	GNSS - 18000 MAA - 60000
M580		
IRDOV, OG WP	CCUDA, OG WP	4000 MAA - 45000
CCUDA, OG WP	MINOW, OG FIX	4000 MAA - 45000
MINOW, OG FIX	BUUOY, OG WP	4000 MAA - 45000
BUUOY, OG WP	NATLE, OG WP	4000 MAA - 45000
NATLE, OG WP	SHAQQ, FL WP	4000 MAA - 45000
SHAQQ, FL WP	MARCI, FL FIX	4000 MAA - 45000
M593		
GRATX, OA WP	RUDLI, OA WP	GNSS - 5500 MAA - 60000
RUDLI, OA WP	SEBIS, OA WP	GNSS - 5500 MAA - 60000
SEBIS, OA WP	DUPOX, OA WP	GNSS - 5500 MAA - 60000
DUPOX, OA WP	AMENO, OA WP	GNSS - 5500 MAA - 60000
M594		
ALBBE, BS FIX	GOVET, OA FIX	GNSS - 5500 MAA - 60000
GOVET, OA FIX	GRAND TURK, TC VORTAC	GNSS - 5500 MAA - 60000
GRAND TURK, TC VORTAC	NETTA, OA FIX	GNSS - 3000 MAA - 60000
NETTA, OA FIX	EYSEL, OA WP	GNSS - 3000 MAA - 60000
EYSEL, OA WP	CERDA, OA WP	GNSS - 3000 MAA - 60000
CERDA, OA WP	MNDEZ, OA WP	GNSS - 3000 MAA - 60000
MNDEZ, OA WP	MLLER, OA WP	GNSS - 3000 MAA - 60000
MLLER, OA WP	MCOOP, OA WP	GNSS - 5500 MAA - 60000
MCOOP, OA WP	KOZIK, OA WP	GNSS - 5500 MAA - 60000
KOZIK, OA WP	AMENO, OA WP	GNSS - 5500 MAA - 60000
M595		
ERRCA, OA WP	WSSKY, OA WP	GNSS - 3000 MAA - 60000

FROM	TO	MEA
M595 - CONTINUED		
WSSKY, OA WP	LOGVN, OA WP	GNSS - 3000 MAA - 60000
LOGVN, OA WP	STAAL, OA WP	GNSS - 3000 MAA - 60000
STAAL, OA WP	ISOLE, OA WP	GNSS - 3000 MAA - 60000
ISOLE, OA WP	MUSSH, OA WP	GNSS - 3000 MAA - 60000
MUSSH, OA WP	MILLE, OA WP	GNSS - 3000 MAA - 60000
MILLE, OA WP	LFANO, OA WP	GNSS - 5500 MAA - 60000
LFANO, OA WP	RABAL, OA WP	GNSS - 5500 MAA - 60000
RABAL, OA WP	VINSO, OA WP	GNSS - 5500 MAA - 60000
VINSO, OA WP	AYTTE, OA WP	GNSS - 5500 MAA - 60000
M596		
POKEG, IB FIX	MACKI, OA FIX	GNSS - 3000 MAA - 60000
MACKI, OA FIX	GRADI, OA FIX	GNSS - 3000 MAA - 60000
GRADI, OA FIX	NOPIT, OA WP	GNSS - 3000 MAA - 60000
NOPIT, OA WP	CHYLE, OA WP	GNSS - 3000 MAA - 60000
CHYLE, OA WP	FDLEE, OA WP	GNSS - 3000 MAA - 60000
FDLEE, OA WP	MYSTR, OA WP	GNSS - 3000 MAA - 60000
MYSTR, OA WP	KNDLL, OA WP	GNSS - 3000 MAA - 60000
KNDLL, OA WP	WATRS, OA FIX	GNSS - 3000 MAA - 60000
WATRS, OA FIX	MACOR, OA WP	GNSS - 5500 MAA - 60000
MACOR, OA WP	PRCHA, OA WP	GNSS - 5500 MAA - 60000
PRCHA, OA WP	NUBUS, OA WP	GNSS - 5500 MAA - 60000
NUBUS, OA WP	SIFEN, OA WP	GNSS - 5500 MAA - 60000
M597		
BETIR, PR FIX	PUYYA, OA WP	GNSS - 5500 MAA - 60000
PUYYA, OA WP	JANMA, OA WP	GNSS - 5500 MAA - 60000
JANMA, OA WP	THANK, PR WP	GNSS - 5500 MAA - 60000
THANK, PR WP	KEEKA, OA WP	GNSS - 5500 MAA - 60000
KEEKA, OA WP	QNEPA, OA WP	GNSS - 5500 MAA - 60000
QNEPA, OA WP	TARMO, OA WP	GNSS - 5500 MAA - 60000

FROM	TO	MEA
M597 - CONTINUED		
TARMO, OA WP	FIVZE, OA WP	GNSS - 5500 MAA - 60000
N779		
ARMUR, PR WP	CRSTL, PR WP	GNSS - 7000 MAA - 60000
CRSTL, PR WP	ALASK, PR WP	GNSS - 7000 MAA - 60000
ALASK, PR WP	JOSHE, PR FIX	GNSS - 7000 MAA - 60000
Q100		
LEEVILLE, LA VORTAC *1500 - MOCA	REDFN, OG WP	*6000
REDFN, OG WP *1500 - MOCA	NAITE, OG WP	*6000
NAITE, OG WP *1500 - MOCA	ROZZI, OG WP	*6000
ROZZI, OG WP *1500 - MOCA	REMIS, OG WP	*6000
REMIS, OG WP *1500 - MOCA	SARASOTA, FL VOR/DME	*6000
Q102		
LEEVILLE, LA VORTAC *1500 - MOCA	BLVNS, OG WP	*6000
BLVNS, OG WP *1500 - MOCA	BUNNZ, OG WP	*6000
BUNNZ, OG WP *1500 - MOCA	BACCA, OG WP	*6000
BACCA, OG WP *1500 - MOCA	CIGAR, OG WP	*6000
CIGAR, OG WP *1500 - MOCA	BAGGS, OG WP	*6000
BAGGS, OG WP *1500 - MOCA	CYPRESS, FL VOR/DME	*6000
Q105		
HARVEY, LA VORTAC *1500 - MOCA	FATSO, OG WP	*6000
FATSO, OG WP *1500 - MOCA	REDFN, OG WP	*6000
REDFN, OG WP *1500 - MOCA	BLVNS, OG WP	*6000
R56		
LINND, OA FIX	KENDA, OA WP	18000 MAA - 60000
KENDA, OA WP	LARGE, OA WP	18000 MAA - 60000
LARGE, OA WP	PENYT, OA WP	18000 MAA - 60000
PENYT, OA WP	SLATN, OA FIX	18000 MAA - 60000

FROM	TO	MEA
R507		
SAPPO, OA WP	*CONCH, OA FIX	24000
*24000 - MRA		
CONCH, OA FIX	UTAHS, PR FIX	24000
R628		
TANIA, OA FIX	ZOLLA, OA FIX	12000
ZOLLA, OA FIX	MENDL, BS FIX	10000
MENDL, BS FIX	*PEKRE, BS FIX	**6000
		MAA - 45000
*12500 - MRA		
**1400 - MOCA		
PEKRE, BS FIX	SANNS, BS FIX	*2000
		MAA - 45000
*1500 - MOCA		
SANNS, BS FIX	NASSAU, BS VOR/DME	*2000
		MAA - 45000
*1500 - MOCA		
R760		
ST CROIX, VI VOR/DME	GOUDA, VI FIX	5000
		MAA - 18000
GOUDA, VI FIX	SAINT MAARTEN, AN VOR/DME	3000
		MAA - 18000
R763		
GRAND TURK, TC VORTAC	RNTRY, OA FIX	*14000
		MAA - 45000
*1200 - MOCA		
RNTRY, OA FIX	MACKI, OA FIX	14000
MACKI, OA FIX	HARBG, OA FIX	14000
HARBG, OA FIX	MUNOZ, OA WP	14000
MUNOZ, OA WP	BORINQUEN, PR VORTAC	14000
R888		
ST CROIX, VI VOR/DME	MODUX, VI FIX	14000
Y183		
IKBIX, OA WP	PEAKY, FL WP	6000
		MAA - 45000
Y185		
ILURI, OA FIX	ACONY, OA WP	*GNSS - 18000
		MAA - 60000
*4900 - MOCA		
ACONY, OA WP	DOZGO, OA WP	*GNSS - 18000
		MAA - 60000
*4900 - MOCA		
DOZGO, OA WP	DONQU, OA WP	*GNSS - 18000
		MAA - 60000
*4900 - MOCA		
DONQU, OA WP	FARMN, OA WP	GNSS - 18000
		MAA - 60000

FROM	TO	MEA
Y185 - CONTINUED		
FARMN, OA WP	MANII, OA WP	GNSS - 18000 MAA - 60000
MANII, OA WP	NELSR, OA WP	GNSS - 18000 MAA - 60000
NELSR, OA WP	COUKY, OA FIX	GNSS - 18000 MAA - 60000
COUKY, OA FIX	RENAH, OA WP	GNSS - 18000 MAA - 60000
RENAH, OA WP	CVIKK, BS WP	GNSS - 18000 MAA - 60000
CVIKK, BS WP	VENDS, OA WP	GNSS - 18000 MAA - 60000
VENDS, OA WP	BEERD, OA WP	GNSS - 18000 MAA - 60000
BEERD, OA WP	MANLE, FL WP	*GNSS - 18000 MAA - 60000
*1200 - MOCA		
Y196		
CANOA, FL WP	LULLS, FL WP	*GNSS - 18000 MAA - 60000
*1200 - MOCA		
LULLS, FL WP	TUNSL, FL WP	*GNSS - 18000 MAA - 60000
*1200 - MOCA		
Y217		
ZEUSS, OA FIX	FONDS, OA WP	*GNSS - 18000 MAA - 45000
*1300 - MOCA		
FONDS, OA WP	OCTAL, FL WP	GNSS - 18000 MAA - 45000
Y240		
MYDIA, OG WP	NAVVL, OG WP	4000 MAA - 45000
NAVVL, OG WP	SNAKR, OG WP	4000 MAA - 45000
SNAKR, OG WP	YENNE, OG WP	4000 MAA - 45000
YENNE, OG WP	SHAQQ, FL WP	4000 MAA - 45000
SHAQQ, FL WP	MARCI, FL FIX	4000 MAA - 45000
Y259		
BORDO, OA FIX	QUODS, OA WP	*GNSS - 18000 MAA - 60000
*1300 - MOCA		
QUODS, OA WP	OCTAL, FL WP	GNSS - 18000 MAA - 60000
Y260		
ACONY, OA WP	LEEOO, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y260 - CONTINUED		
LEEOO, OA WP	MODUX, VI FIX	GNSS - 18000 MAA - 60000
Y261		
MALVN, OA FIX	BOOZY, OA WP	GNSS - 18000 MAA - 60000
BOOZY, OA WP	MADIZ, OA WP	GNSS - 18000 MAA - 60000
Y262		
MAXIM, FL WP	LULLS, FL WP	GNSS - 18000 MAA - 45000
LULLS, FL WP	TUNSL, FL WP	GNSS - 18000 MAA - 60000
TUNSL, FL WP	GOPEY, FL WP	GNSS - 18000 MAA - 60000
GOPEY, FL WP	LINEY, FL WP	GNSS - 18000 MAA - 60000
LINEY, FL WP	SAXXN, FL WP	GNSS - 18000 MAA - 60000
SAXXN, FL WP	CANVI, OA WP	GNSS - 18000 MAA - 60000
CANVI, OA WP	FREEPORT, BS VOR/DME	GNSS - 18000 MAA - 60000
Y280		
LEEVILLE, LA VORTAC	REDFN, OG WP	GNSS - 6000 MAA - 60000
REDFN, OG WP	NAITE, OG WP	GNSS - 6000 MAA - 60000
NAITE, OG WP	ROZZI, OG WP	GNSS - 6000 MAA - 60000
ROZZI, OG WP	REMIS, OG WP	GNSS - 6000 MAA - 60000
REMIS, OG WP	CHRGE, OG WP	GNSS - 6000 MAA - 60000
CHRGE, OG WP	JONBU, OG WP	GNSS - 6000 MAA - 60000
JONBU, OG WP	SARASOTA, FL VOR/DME	GNSS - 18000 MAA - 60000
SARASOTA, FL VOR/DME	DOLIE, FL WP	GNSS - 18000 MAA - 60000
DOLIE, FL WP	JAYMC, FL WP	GNSS - 18000 MAA - 60000
JAYMC, FL WP	OCTAL, FL WP	GNSS - 18000 MAA - 60000
OCTAL, FL WP	CANVI, OA WP	GNSS - 18000 MAA - 60000
CANVI, OA WP	PEACH, OA FIX	GNSS - 18000 MAA - 60000
PEACH, OA FIX	SUMAC, OA WP	GNSS - 18000 MAA - 60000
SUMAC, OA WP	RUTOC, OA WP	GNSS - 18000 MAA - 60000
RUTOC, OA WP	CHASO, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y280 - CONTINUED		
CHASO, OA WP	JSTIN, OA WP	GNSS - 18000 MAA - 60000
JSTIN, OA WP	CHYLE, OA WP	GNSS - 18000 MAA - 60000
CHYLE, OA WP	SAPPO, OA WP	GNSS - 18000 MAA - 60000
SAPPO, OA WP	ACONY, OA WP	GNSS - 18000 MAA - 60000
ACONY, OA WP	GOTAY, PR WP	GNSS - 18000 MAA - 60000
GOTAY, PR WP	STIIV, OA WP	GNSS - 18000 MAA - 60000
STIIV, OA WP	MLIZA, OA WP	GNSS - 18000 MAA - 60000
MLIZA, OA WP	*DANDE, VI FIX	GNSS - 18000 MAA - 60000
*3500 - MRA		
DANDE, VI FIX	GABAR, VI FIX	GNSS - 18000 MAA - 60000
Y289		
DULEE, OA WP	BAHAA, OA WP	GNSS - 18000 MAA - 45000
BAHAA, OA WP	NRRSE, OA WP	GNSS - 18000 MAA - 60000
NRRSE, OA WP	OGGRE, OA WP	GNSS - 18000 MAA - 60000
OGGRE, OA WP	OSTNN, OA WP	GNSS - 18000 MAA - 60000
OSTNN, OA WP	ZILLS, NC WP	*GNSS - 18000 MAA - 60000
*1300 - MOCA		
Y290		
LEEVILLE, LA VORTAC	BLVNS, OG WP	GNSS - 6000 MAA - 60000
BLVNS, OG WP	BUNNZ, OG WP	GNSS - 6000 MAA - 60000
BUNNZ, OG WP	BACCA, OG WP	GNSS - 6000 MAA - 60000
BACCA, OG WP	CIGAR, OG WP	GNSS - 6000 MAA - 60000
CIGAR, OG WP	GAWKS, OA WP	GNSS - 6000 MAA - 60000
GAWKS, OA WP	BAGGS, OG WP	GNSS - 6000 MAA - 60000
BAGGS, OG WP	THMPR, FL WP	GNSS - 18000 MAA - 60000
THMPR, FL WP	FEMID, FL WP	GNSS - 18000 MAA - 60000
FEMID, FL WP	SAXXN, FL WP	GNSS - 18000 MAA - 60000
SAXXN, FL WP	UCRAZ, OA WP	GNSS - 18000 MAA - 60000
UCRAZ, OA WP	SKIPS, BS FIX	GNSS - 18000 MAA - 60000
SKIPS, BS FIX	BITAC, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y290 - CONTINUED		
BITAC, OA WP	HAGIT, OA WP	GNSS - 18000 MAA - 60000
HAGIT, OA WP	CALTO, OA WP	GNSS - 18000 MAA - 60000
CALTO, OA WP	ZIBER, OA WP	GNSS - 18000 MAA - 60000
ZIBER, OA WP	SAYER, OA WP	GNSS - 18000 MAA - 60000
SAYER, OA WP	BEANO, PR FIX	GNSS - 18000 MAA - 60000
BEANO, PR FIX	JETSS, PR FIX	GNSS - 18000 MAA - 60000
JETSS, PR FIX	SLUGO, VI FIX	GNSS - 18000 MAA - 60000
SLUGO, VI FIX	ELOPO, PR FIX	GNSS - 18000 MAA - 60000
Y291		
MAJIK, OA WP	RAZZL, OA WP	GNSS - 18000 MAA - 60000
RAZZL, OA WP	JRDAN, OA WP	GNSS - 18000 MAA - 60000
JRDAN, OA WP	SAGGY, OA WP	GNSS - 18000 MAA - 60000
SAGGY, OA WP	CHIEZ, NC WP	GNSS - 18000 MAA - 60000
Y292		
MNDEZ, OA WP	FIPEK, OA WP	GNSS - 18000 MAA - 60000
FIPEK, OA WP	PANMO, OA WP	GNSS - 18000 MAA - 60000
Y294		
FIPEK, OA WP	GESSO, PR FIX	GNSS - 18000 MAA - 60000
Y297		
*URSUS, OA FIX *16000 - MRA	UCRAZ, OA WP	GNSS - 18000 MAA - 45000
UCRAZ, OA WP *1300 - MOCA	CANVI, OA WP	*GNSS - 18000 MAA - 60000
CANVI, OA WP	TOVAR, FL WP	GNSS - 18000 MAA - 60000
Y298		
VENDS, OA WP	WISET, OA WP	GNSS - 18000 MAA - 60000
WISET, OA WP	RUMFO, OA WP	GNSS - 18000 MAA - 60000
RUMFO, OA WP	KNSLY, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y298 - CONTINUED		
KNSLY, OA WP	BODLO, OA WP	GNSS - 18000 MAA - 60000
Y299		
GRUBR, OA WP	SNABS, OA WP	GNSS - 18000 MAA - 45000
SNABS, OA WP	SEELO, OA WP	GNSS - 18000 MAA - 60000
Y304		
VENDS, OA WP	RUTOC, OA WP	GNSS - 18000 MAA - 60000
RUTOC, OA WP	SEKAR, DO FIX	GNSS - 18000 MAA - 60000
Y306		
VENDS, OA WP	CHASO, OA WP	GNSS - 18000 MAA - 45000
CHASO, OA WP	HAGIT, OA WP	GNSS - 18000 MAA - 60000
HAGIT, OA WP	POKEG, IB FIX	GNSS - 18000 MAA - 60000
Y307		
ENAMO, OA FIX	NASSAU, BS VOR/DME	GNSS - 18000 MAA - 45000
NASSAU, BS VOR/DME	HANKX, BS FIX	GNSS - 18000 MAA - 60000
HANKX, BS FIX	NUCAR, BS FIX	GNSS - 18000 MAA - 60000
NUCAR, BS FIX	PAAZZ, OA WP	GNSS - 18000 MAA - 60000
PAAZZ, OA WP	HOVAX, OA WP	GNSS - 18000 MAA - 60000
HOVAX, OA WP	CASPR, OA FIX	GNSS - 18000 MAA - 60000
CASPR, OA FIX	CARPX, OA WP	GNSS - 18000 MAA - 60000
CARPX, OA WP	ADUCI, OA WP	GNSS - 18000 MAA - 60000
ADUCI, OA WP	JAZZI, OA WP	GNSS - 18000 MAA - 60000
Y308		
MADIZ, OA WP	FODED, OA WP	GNSS - 18000 MAA - 60000
FODED, OA WP	HAGIT, OA WP	GNSS - 18000 MAA - 60000
HAGIT, OA WP	ANTOX, OA WP	GNSS - 18000 MAA - 60000
ANTOX, OA WP	FEKKO, OA WP	GNSS - 18000 MAA - 60000
FEKKO, OA WP	ACONY, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y309		
PELCN, OA WP	OZENA, OA WP	GNSS - 18000 MAA - 45000
OZENA, OA WP	ROWSY, OA WP	GNSS - 18000 MAA - 60000
ROWSY, OA WP	FLRDA, OA WP	GNSS - 18000 MAA - 60000
Y313		
HOAGG, OA WP	DUUNK, OA WP	GNSS - 18000 MAA - 60000
DUUNK, OA WP	SPOOF, OA WP	GNSS - 18000 MAA - 60000
SPOOF, OA WP	IDOLS, OA WP	GNSS - 18000 MAA - 60000
IDOLS, OA WP	SKARP, NC WP	GNSS - 18000 MAA - 60000
Y315		
CHUMA, OA WP	DOZGO, OA WP	GNSS - 6000 MAA - 45000
DOZGO, OA WP	GEROA, OA WP	GNSS - 6000 MAA - 45000
GEROA, OA WP	KEEKA, OA WP	GNSS - 6000 MAA - 60000
Y318		
RODRK, OA WP	DONQU, OA WP	GNSS - 18000 MAA - 60000
DONQU, OA WP	WEXET, PR WP	GNSS - 18000 MAA - 60000
WEXET, PR WP	LARPP, VI FIX	GNSS - 18000 MAA - 60000
LARPP, VI FIX	ELOPO, PR FIX	GNSS - 18000 MAA - 60000
Y319		
*URSUS, OA FIX *16000 - MRA **1400 - MOCA	FREEPORT, BS VOR/DME	**GNSS - 18000 MAA - 45000
FREEPORT, BS VOR/DME *1400 - MOCA	BRATZ, OA WP	*GNSS - 18000 MAA - 60000
BRATZ, OA WP	OHLAA, OA WP	GNSS - 18000 MAA - 60000
OHLAA, OA WP	COACH, OA WP	GNSS - 18000 MAA - 60000
COACH, OA WP	TYCAL, OA WP	GNSS - 18000 MAA - 60000
TYCAL, OA WP	JAZZI, OA WP	GNSS - 18000 MAA - 60000
Y323		
CARPX, OA WP	WEAKK, OA WP	GNSS - 18000 MAA - 45000

FROM	TO	MEA
Y323 - CONTINUED		
WEAKK, OA WP	RROOO, OA WP	GNSS - 18000 MAA - 60000
Y327		
JAINS, OA WP	CLOWR, OA WP	GNSS - 18000 MAA - 60000
CLOWR, OA WP	PRTHR, OA WP	GNSS - 18000 MAA - 60000
PRTHR, OA WP	IDOLS, OA WP	GNSS - 18000 MAA - 60000
IDOLS, OA WP	SKARP, NC WP	GNSS - 18000 MAA - 60000
Y329		
ZEUSS, OA FIX	FREEPORT, BS VOR/DME	GNSS - 18000 MAA - 60000
Y330		
FODED, OA WP	PURPE, OA WP	GNSS - 18000 MAA - 60000
PURPE, OA WP	HARBG, OA FIX	GNSS - 18000 MAA - 60000
Y350		
NASSAU, BS VOR/DME	CILEX, OA WP	GNSS - 18000 MAA - 60000
CILEX, OA WP	KNSLY, OA WP	GNSS - 18000 MAA - 60000
Y352		
NASSAU, BS VOR/DME	HAGIT, OA WP	GNSS - 18000 MAA - 60000
Y353		
ALBBE, BS FIX	KNSLY, OA WP	GNSS - 18000 MAA - 60000
KNSLY, OA WP	SUMAC, OA WP	GNSS - 18000 MAA - 60000
SUMAC, OA WP	UPOKE, OA WP	GNSS - 18000 MAA - 60000
UPOKE, OA WP	BAHMA, BS FIX	GNSS - 18000 MAA - 60000
Y354		
DONQU, OA WP	GESSO, PR FIX	GNSS - 18000 MAA - 60000
Y355		
ELOPO, PR FIX	SLUGO, VI FIX	GNSS - 6000 MAA - 60000

FROM	TO	MEA
Y355 - CONTINUED		
SLUGO, VI FIX	KOLAO, OA WP	GNSS - 6000 MAA - 60000
KOLAO, OA WP	PLING, PR FIX	GNSS - 6000 MAA - 60000
PLING, PR FIX	PUYYA, OA WP	GNSS - 6000 MAA - 60000
PUYYA, OA WP	FIPEK, OA WP	GNSS - 6000 MAA - 60000
FIPEK, OA WP	DETRE, OA WP	GNSS - 18000 MAA - 60000
DETRE, OA WP	WAROD, OA WP	GNSS - 18000 MAA - 60000
WAROD, OA WP	CAROX, OA WP	GNSS - 18000 MAA - 60000
CAROX, OA WP	HELAX, OA WP	GNSS - 18000 MAA - 60000
HELAX, OA WP	FOSAS, OA WP	GNSS - 18000 MAA - 60000
FOSAS, OA WP	RENAH, OA WP	GNSS - 18000 MAA - 60000
RENAH, OA WP	OMALY, OA FIX	GNSS - 18000 MAA - 60000
OMALY, OA FIX	NUCAR, BS FIX	GNSS - 18000 MAA - 60000
Y356		
IORIO, OA WP	CERDA, OA WP	GNSS - 18000 MAA - 60000
CERDA, OA WP	DONQU, OA WP	GNSS - 18000 MAA - 60000
DONQU, OA WP	MEEGL, PR WP	GNSS - 18000 MAA - 60000
Y374		
NUCAR, BS FIX	WEDER, BS WP	GNSS - 18000 MAA - 60000
WEDER, BS WP	RUMFO, OA WP	GNSS - 18000 MAA - 60000
RUMFO, OA WP	ALBBE, BS FIX	GNSS - 18000 MAA - 60000
Y396		
BITAC, OA WP	RUMFO, OA WP	GNSS - 18000 MAA - 60000
RUMFO, OA WP	MALVN, OA FIX	GNSS - 18000 MAA - 60000
Y397		
SEKAR, DO FIX	RENAH, OA WP	GNSS - 18000 MAA - 60000
Y398		
SAXXN, FL WP	UCRAZ, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y398 - CONTINUED		
UCRAZ, OA WP	SKIPS, BS FIX	GNSS - 18000 MAA - 60000
SKIPS, BS FIX	JAGOR, OA WP	*GNSS - 18000 MAA - 60000
*1300 - MOCA		
JAGOR, OA WP	KNSLY, OA WP	*GNSS - 18000 MAA - 60000
*2200 - MOCA		
KNSLY, OA WP	JOSES, OA WP	GNSS - 18000 MAA - 60000
Y399		
SAPPO, OA WP	CADGE, OA WP	GNSS - 18000 MAA - 45000
CADGE, OA WP	NASSAU, BS VOR/DME	*GNSS - 18000 MAA - 60000
*1500 - MOCA		
Y421		
MEEGL, PR WP	HARBG, OA FIX	GNSS - 18000 MAA - 60000
HARBG, OA FIX	HAGIT, OA WP	GNSS - 18000 MAA - 60000
HAGIT, OA WP	WISET, OA WP	GNSS - 18000 MAA - 60000
WISET, OA WP	SUMAC, OA WP	GNSS - 18000 MAA - 60000
SUMAC, OA WP	PEACH, OA FIX	GNSS - 18000 MAA - 60000
PEACH, OA FIX	KOUGH, OA WP	GNSS - 18000 MAA - 60000
KOUGH, OA WP	CANVI, OA WP	GNSS - 18000 MAA - 60000
CANVI, OA WP	OCTAL, FL WP	GNSS - 18000 MAA - 60000
Y436		
DEDDY, SC WP	PITRW, SC WP	GNSS - 18000 MAA - 60000
PITRW, SC WP	SNNTA, SC WP	GNSS - 18000 MAA - 60000
SNNTA, SC WP	OGGRE, OA WP	GNSS - 18000 MAA - 60000
OGGRE, OA WP	EBEAR, OA WP	GNSS - 18000 MAA - 60000
EBEAR, OA WP	DIZNY, OA WP	GNSS - 18000 MAA - 60000
DIZNY, OA WP	RROOO, OA WP	GNSS - 18000 MAA - 60000
RROOO, OA WP	HARON, OA WP	GNSS - 18000 MAA - 60000
HARON, OA WP	JAINS, OA WP	GNSS - 18000 MAA - 60000
Y438		
KOOKK, FL WP	FEMON, FL WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA
Y438 - CONTINUED		
FEMON, FL WP	JAWSS, FL FIX	GNSS - 18000 MAA - 60000
JAWSS, FL FIX	BAHAA, OA WP	GNSS - 18000 MAA - 60000
BAHAA, OA WP	SNABS, OA WP	GNSS - 18000 MAA - 60000
SNABS, OA WP	OZENA, OA WP	GNSS - 18000 MAA - 60000
OZENA, OA WP	OHLAA, OA WP	GNSS - 18000 MAA - 60000
OHLAA, OA WP	CARPX, OA WP	GNSS - 18000 MAA - 60000
CARPX, OA WP	TROUT, FL WP	GNSS - 18000 MAA - 60000
Y439		
ARMUR, PR WP	MEEGL, PR WP	GNSS - 18000 MAA - 60000
MEEGL, PR WP	SAYER, OA WP	GNSS - 18000 MAA - 60000
SAYER, OA WP	FIPEK, OA WP	GNSS - 18000 MAA - 60000
FIPEK, OA WP	CERDA, OA WP	GNSS - 18000 MAA - 60000
CERDA, OA WP	SLUKA, OA WP	GNSS - 18000 MAA - 60000
Y441		
JUELE, OA FIX	RUMFO, OA WP	GNSS - 18000 MAA - 60000
RUMFO, OA WP	NASSAU, BS VOR/DME	GNSS - 18000 MAA - 60000
Y442		
FUNDI, OA WP	MCLAW, FL WP	6000 MAA - 45000
MCLAW, FL WP	TAZER, FL WP	6000 MAA - 45000
TAZER, FL WP	MNATE, FL FIX	6000 MAA - 45000
Y443		
RUMFO, OA WP	SUMAC, OA WP	GNSS - 18000 MAA - 60000
SUMAC, OA WP	UPOKE, OA WP	GNSS - 18000 MAA - 60000
UPOKE, OA WP	BAHMA, BS FIX	GNSS - 18000 MAA - 60000
Y481		
KINGG, OA WP	OHRYN, OA WP	GNSS - 17000 MAA - 60000
OHRYN, OA WP	POPPN, OA WP	GNSS - 17000 MAA - 60000

FROM	TO	MEA
Y481 - CONTINUED		
POPPN, OA WP	OWENZ, OA FIX	GNSS - 17000 MAA - 60000
OWENZ, OA FIX	DIXIE, NJ FIX	GNSS - 6000 MAA - 60000
Y482		
DIXIE, NJ FIX	OWENZ, OA FIX	GNSS - 6000 MAA - 60000
OWENZ, OA FIX	POPPN, OA WP	GNSS - 17000 MAA - 60000
POPPN, OA WP	OHRYN, OA WP	GNSS - 17000 MAA - 60000
OHRYN, OA WP	SQUAD, OA WP	GNSS - 17000 MAA - 60000
Y483		
MARIG, OA WP	ISLES, OA WP	GNSS - 18000 MAA - 60000
ISLES, OA WP	DUMPR, OA WP	GNSS - 18000 MAA - 60000
DUMPR, OA WP	BLUUU, OA WP	GNSS - 18000 MAA - 60000
BLUUU, OA WP	DOGRS, OA WP	GNSS - 18000 MAA - 60000
DOGRS, OA WP	FATON, OA WP	GNSS - 18000 MAA - 60000
FATON, OA WP	SHERL, NY FIX	GNSS - 18000 MAA - 60000
SHERL, NY FIX	SHIPP, OA FIX	GNSS - 18000 MAA - 60000
SHIPP, OA FIX	KENNEDY, NY VOR/DME	GNSS - 18000 MAA - 60000
Y484		
KENNEDY, NY VOR/DME	CREEL, NY FIX	GNSS - 18000 MAA - 60000
CREEL, NY FIX	BOUNO, NY FIX	GNSS - 18000 MAA - 60000
BOUNO, NY FIX	GEDIC, NJ FIX	GNSS - 18000 MAA - 60000
GEDIC, NJ FIX	OWENZ, OA FIX	GNSS - 18000 MAA - 60000
OWENZ, OA FIX	MOUGH, OA WP	GNSS - 18000 MAA - 60000
MOUGH, OA WP	YETTI, OA WP	GNSS - 18000 MAA - 60000
YETTI, OA WP	YAALE, OA WP	GNSS - 18000 MAA - 60000
YAALE, OA WP	WEBBB, OA WP	GNSS - 18000 MAA - 60000
WEBBB, OA WP	OKONU, OA WP	GNSS - 18000 MAA - 60000
Y485		
SAUCR, OA WP	STERN, OA WP	GNSS - 31000 MAA - 60000

FROM	TO	MEA
Y485 - CONTINUED		
STERN, OA WP	CHUBY, OA WP	GNSS - 31000 MAA - 60000
CHUBY, OA WP	HOBOH, OA WP	GNSS - 31000 MAA - 60000
HOBOH, OA WP	SILLY, OA WP	GNSS - 31000 MAA - 60000
SILLY, OA WP	STINK, OA WP	GNSS - 17000 MAA - 60000
STINK, OA WP	YAALE, OA WP	GNSS - 17000 MAA - 60000
Y486		
KENNEDY, NY VOR/DME	CREEL, NY FIX	GNSS - 18000 MAA - 60000
CREEL, NY FIX	BOUNO, NY FIX	GNSS - 18000 MAA - 60000
BOUNO, NY FIX	GEDIC, NJ FIX	GNSS - 18000 MAA - 60000
GEDIC, NJ FIX	OWENZ, OA FIX	GNSS - 18000 MAA - 60000
OWENZ, OA FIX	MOUGH, OA WP	GNSS - 18000 MAA - 60000
MOUGH, OA WP	SAVIK, OA WP	GNSS - 18000 MAA - 60000
Y487		
KINGG, OA WP	ISLES, OA WP	GNSS - 17000 MAA - 60000
ISLES, OA WP	DUMPR, OA WP	GNSS - 17000 MAA - 60000
DUMPR, OA WP	BLUUU, OA WP	GNSS - 17000 MAA - 60000
BLUUU, OA WP	DOGRS, OA WP	GNSS - 11000 MAA - 60000
DOGRS, OA WP	SPDEY, OA WP	GNSS - 6000 MAA - 60000
SPDEY, OA WP	SHIPP, OA FIX	GNSS - 6000 MAA - 60000
Y488		
SHIPP, OA FIX	SPDEY, OA WP	GNSS - 6000 MAA - 60000
SPDEY, OA WP	DOGRS, OA WP	GNSS - 6000 MAA - 60000
DOGRS, OA WP	BLUUU, OA WP	GNSS - 11000 MAA - 60000
BLUUU, OA WP	DUMPR, OA WP	GNSS - 17000 MAA - 60000
DUMPR, OA WP	ICCEY, OA WP	GNSS - 17000 MAA - 60000
ICCEY, OA WP	OHRYN, OA WP	GNSS - 17000 MAA - 60000
OHRYN, OA WP	BEHHR, OA WP	GNSS - 17000 MAA - 60000
BEHHR, OA WP	WEBBB, OA WP	GNSS - 17000 MAA - 60000

FROM	TO	MEA
Y488 - CONTINUED		
WEBBB, OA WP	HOBOH, OA WP	GNSS - 31000 MAA - 60000
HOBOH, OA WP	CHUBY, OA WP	GNSS - 31000 MAA - 60000
CHUBY, OA WP	STERN, OA WP	GNSS - 31000 MAA - 60000
STERN, OA WP	SAUCR, OA WP	GNSS - 31000 MAA - 60000
Y489		
RESQU, OA WP	BEHHR, OA WP	GNSS - 17000 MAA - 60000
BEHHR, OA WP	OHRYN, OA WP	GNSS - 17000 MAA - 60000
OHRYN, OA WP	ICCEY, OA WP	GNSS - 17000 MAA - 60000
ICCEY, OA WP	DUMPR, OA WP	GNSS - 17000 MAA - 60000
DUMPR, OA WP	BLUUU, OA WP	GNSS - 17000 MAA - 60000
BLUUU, OA WP	DOGRS, OA WP	GNSS - 11000 MAA - 60000
DOGRS, OA WP	SPDEY, OA WP	GNSS - 6000 MAA - 60000
SPDEY, OA WP	SHIPP, OA FIX	GNSS - 6000 MAA - 60000
Y490		
SHIPP, OA FIX	SPDEY, OA WP	GNSS - 6000 MAA - 60000
SPDEY, OA WP	DOGRS, OA WP	GNSS - 6000 MAA - 60000
DOGRS, OA WP	BLUUU, OA WP	GNSS - 11000 MAA - 60000
BLUUU, OA WP	DUMPR, OA WP	GNSS - 17000 MAA - 60000
DUMPR, OA WP	ICCEY, OA WP	GNSS - 17000 MAA - 60000
ICCEY, OA WP	OHRYN, OA WP	GNSS - 17000 MAA - 60000
OHRYN, OA WP	BEHHR, OA WP	GNSS - 17000 MAA - 60000
BEHHR, OA WP	ROLLE, OA WP	GNSS - 17000 MAA - 60000
Y492		
SHIPP, OA FIX	SPDEY, OA WP	GNSS - 6000 MAA - 60000
SPDEY, OA WP	DOGRS, OA WP	GNSS - 6000 MAA - 60000
DOGRS, OA WP	BLUUU, OA WP	GNSS - 11000 MAA - 60000
BLUUU, OA WP	DUMPR, OA WP	GNSS - 17000 MAA - 60000
DUMPR, OA WP	ISLES, OA WP	GNSS - 17000 MAA - 60000

FROM	TO	MEA
Y492 - CONTINUED		
ISLES, OA WP	SQUAD, OA WP	GNSS - 17000 MAA - 60000
Y493		
BAHAA, OA WP	JENKS, OA WP	GNSS - 24000 MAA - 60000
JENKS, OA WP	AYCHB, OA WP	GNSS - 24000 MAA - 60000
AYCHB, OA WP	ROWSY, OA WP	GNSS - 24000 MAA - 60000
ROWSY, OA WP	COACH, OA WP	GNSS - 24000 MAA - 60000
COACH, OA WP	WEAKK, OA WP	GNSS - 24000 MAA - 60000
WEAKK, OA WP	TUBBS, OA WP	GNSS - 24000 MAA - 60000
TUBBS, OA WP	ROBBB, OA WP	GNSS - 31000 MAA - 60000
ROBBB, OA WP	STERN, OA WP	GNSS - 31000 MAA - 60000
STERN, OA WP	VEGAA, OA WP	GNSS - 31000 MAA - 60000
Y494		
AYCHB, OA WP	ROWSY, OA WP	GNSS - 24000 MAA - 60000
ROWSY, OA WP	COACH, OA WP	GNSS - 24000 MAA - 60000
COACH, OA WP	WEAKK, OA WP	GNSS - 24000 MAA - 60000
WEAKK, OA WP	HARON, OA WP	GNSS - 24000 MAA - 60000
HARON, OA WP	WHOOS, OA WP	GNSS - 24000 MAA - 60000
WHOOS, OA WP	OOONN, OA WP	GNSS - 31000 MAA - 60000
OOONN, OA WP	VIRST, OA WP	GNSS - 31000 MAA - 60000
VIRST, OA WP	HOBOH, OA WP	GNSS - 31000 MAA - 60000
HOBOH, OA WP	SILLY, OA WP	GNSS - 31000 MAA - 60000
SILLY, OA WP	STINK, OA WP	GNSS - 17000 MAA - 60000
STINK, OA WP	YAALE, OA WP	GNSS - 17000 MAA - 60000
Y495		
YAALE, OA WP	YETTI, OA WP	GNSS - 17000 MAA - 60000
YETTI, OA WP	MOUGH, OA WP	GNSS - 17000 MAA - 60000
MOUGH, OA WP	OWENZ, OA FIX	GNSS - 17000 MAA - 60000
OWENZ, OA FIX	*PREPI, OA FIX	GNSS - 6000 MAA - 60000

*8000 - MRA

FROM	TO	MEA
Y495 - CONTINUED		
PREPI, OA FIX	LEECY, NJ WP	GNSS - 6000 MAA - 60000
LEECY, NJ WP	CAMRN, NJ FIX	GNSS - 6000 MAA - 60000
Y497		
YAALE, OA WP	YETTI, OA WP	GNSS - 17000 MAA - 60000
YETTI, OA WP	MOUGH, OA WP	GNSS - 17000 MAA - 60000
MOUGH, OA WP	OWENZ, OA FIX	GNSS - 17000 MAA - 60000
OWENZ, OA FIX	*DRIFT, NJ FIX	GNSS - 6000 MAA - 60000
*6000 - MRA		
DRIFT, NJ FIX	SUBBS, NJ WP	GNSS - 6000 MAA - 60000
Y578		
BRUWN, MA FIX	BORQE, OA WP	GNSS - 17000 MAA - 60000
BORQE, OA WP	JENYY, OA WP	GNSS - 17000 MAA - 60000
JENYY, OA WP	KAYYT, OA WP	GNSS - 17000 MAA - 60000
Y585		
ORMOND BEACH, FL VORTAC	ATTIK, OA WP	18000 MAA - 60000
ATTIK, OA WP	BEERD, OA WP	18000 MAA - 60000
BEERD, OA WP	CVIKK, BS WP	18000 MAA - 60000
CVIKK, BS WP	NATHY, OA WP	18000 MAA - 60000
NATHY, OA WP	DAAST, BS WP	18000 MAA - 60000
DAAST, BS WP	WITOB, OA WP	18000 MAA - 60000
WITOB, OA WP	RENAH, OA WP	18000 MAA - 60000
RENAH, OA WP	COUKY, OA FIX	18000 MAA - 60000
COUKY, OA FIX	NELSR, OA WP	18000 MAA - 60000
NELSR, OA WP	EYSEL, OA WP	18000 MAA - 60000
EYSEL, OA WP	FARMN, OA WP	18000 MAA - 60000
FARMN, OA WP	FDLEE, OA WP	18000 MAA - 60000
FDLEE, OA WP	ELMUC, OA WP	18000 MAA - 60000
ELMUC, OA WP	TILDI, PR WP	18000 MAA - 60000
TILDI, PR WP	UTAHS, PR FIX	18000 MAA - 60000

FROM	TO	MEA
Y585 - CONTINUED		
UTAHS, PR FIX	VEDAS, PR FIX	18000 MAA - 60000
Y586		
MADIZ, OA WP	BELAC, OA WP	GNSS - 18000 MAA - 60000
BELAC, OA WP	FORST, BS WP	GNSS - 18000 MAA - 60000
FORST, BS WP	JOSES, OA WP	GNSS - 18000 MAA - 60000
Y587		
SKIPS, BS FIX	RAJAY, BS FIX	18000 MAA - 60000
RAJAY, BS FIX	COZIE, OA WP	18000 MAA - 60000
COZIE, OA WP	DONEZ, OA FIX	18000 MAA - 60000
DONEZ, OA FIX	PAARR, OA WP	18000 MAA - 60000
PAARR, OA WP	RNDLY, OA WP	18000 MAA - 60000
RNDLY, OA WP	GRAND TURK, TC VORTAC	18000 MAA - 60000
GRAND TURK, TC VORTAC	COCBU, IB FIX	18000 MAA - 60000
COCBU, IB FIX	SEBUG, OA FIX	18000 MAA - 60000
SEBUG, OA FIX	GRADI, OA FIX	18000 MAA - 60000
GRADI, OA FIX	HARDE, PR FIX	18000 MAA - 60000
HARDE, PR FIX	GAGDD, OA WP	18000 MAA - 60000
GAGDD, OA WP	ROBLL, PR FIX	18000 MAA - 60000
Y588		
BROOM, OA WP	ROTHM, OA WP	18000 MAA - 60000
ROTHM, OA WP	CLETT, OA WP	18000 MAA - 60000
CLETT, OA WP	MLSAP, OA FIX	18000 MAA - 60000
MLSAP, OA FIX	RENAH, OA WP	18000 MAA - 60000
Y589		
ALBBE, BS FIX	MADIZ, OA WP	GNSS - 18000 MAA - 60000

FROM	TO	MEA

PACIFIC ROUTES

A216

MONPI, OP WP	OATSS, OP WP	18000 MAA - 60000
OATSS, OP WP	RIDLL, OP WP	18000 MAA - 60000
RIDLL, OP WP	LOEBB, OP WP	18000 MAA - 60000
LOEBB, OP WP	HOOVR, OP WP	18000 MAA - 60000
HOOVR, OP WP	GALEE, OP WP	18000 MAA - 60000
GALEE, OP WP	FACED, OP WP	18000 MAA - 60000

A220

MAEVA, OP WP	CRONN, OP WP	5500
CRONN, OP WP	BINGE, OP WP	5500
BINGE, OP WP	AHNDO, OP WP	5500
AHNDO, OP WP	MANEY, OP WP	5500 MAA - 60000
MANEY, OP WP	MAFIC, OP WP	5500 MAA - 60000
MAFIC, OP WP	CINNY, OP WP	5500 MAA - 60000

A221

CULPS, MP FIX	ERTTS, GU FIX	1500 MAA - 60000
ERTTS, GU FIX	MONIE, MP FIX	1500 MAA - 60000
MONIE, MP FIX	LULJY, GU FIX	6000 MAA - 60000
LULJY, GU FIX	HEXUG, OP FIX	6000 MAA - 60000
HEXUG, OP FIX	WILLE, GU FIX	6000 MAA - 60000

A222

NIMITZ, GU VORTAC	CLANS, OP WP	20000 MAA - 60000
CLANS, OP WP	AXIDE, OP WP	20000 MAA - 60000
AXIDE, OP WP	FIBSS, OP WP	20000 MAA - 60000
FIBSS, OP WP	KRONK, OP WP	20000 MAA - 60000
KRONK, OP WP	ADUFO, FM FIX	20000 MAA - 60000
ADUFO, FM FIX	POHNPEI, FM NDB/DME	20000 MAA - 60000
POHNPEI, FM NDB/DME	AXTEN, FM WP	20000 MAA - 60000

FROM	TO	MEA
A222 - CONTINUED		
AXTEN, FM WP	KOSRAE, FM NDB/DME	20000 MAA - 60000
KOSRAE, FM NDB/DME	STEFF, OP WP	20000 MAA - 60000
STEFF, OP WP	BUCHOLZ, MH NDB	18000 MAA - 60000
A331		
ZIGIE, OP FIX	ZOULU, OP WP	5500 MAA - 60000
ZOULU, OP WP	ZEMOM, OP WP	5500 MAA - 60000
ZEMOM, OP WP	ZINNO, OP WP	5500 MAA - 60000
ZINNO, OP WP	ZAGER, OP WP	5500 MAA - 60000
ZAGER, OP WP	ZANNG, OP WP	5500 MAA - 60000
ZANNG, OP WP	SEDAR, OP WP	5500 MAA - 60000
A332		
AUNTI, OP WP	HALLI, OP WP	5500 MAA - 60000
HALLI, OP WP	HELOP, OP WP	5500 MAA - 60000
HELOP, OP WP	HEKAB, OP WP	5500 MAA - 60000
HEKAB, OP WP	HEMLO, OP WP	5500 MAA - 60000
A337		
JUNIE, GU FIX	AXIDE, OP WP	6000 MAA - 60000
AXIDE, OP WP	FONUG, OP WP	6000 MAA - 60000
FONUG, OP WP	SNAPP, GU FIX	6000 MAA - 60000
SNAPP, GU FIX	TEEDE, OP WP	6000 MAA - 60000
TEEDE, OP WP	TEGOD, OP WP	6000 MAA - 60000
A339		
SHREE, OP WP	WRNNR, OP WP	15000 MAA - 60000
WRNNR, OP WP	TILLY, OP WP	15000 MAA - 60000
TILLY, OP WP	KEITH, OP WP	15000 MAA - 60000
A342		
NUZAN, OP WP	OPAKE, OP WP	18000 MAA - 60000

FROM	TO	MEA
A342 - CONTINUED		
OPAKE, OP WP	PINSO, OP WP	18000 MAA - 60000
PINSO, OP WP	AMOND, AK FIX	18000 MAA - 60000
AMOND, AK FIX	DRAPP, AK FIX	18000 MAA - 60000
DRAPP, AK FIX	CRYPT, AK FIX	18000 MAA - 60000
CRYPT, AK FIX	COLD BAY, AK VORTAC	18000 MAA - 60000
A450		
CAHYO, OP WP	TNUGE, OP WP	18000
TNUGE, OP WP	PIGFA, OP WP	18000
PIGFA, OP WP	LOEBB, OP WP	8000
LOEBB, OP WP	BUCAT, OP WP	8000
BUCAT, OP WP	NIMITZ, GU VORTAC	8000
NIMITZ, GU VORTAC	BAGBE, GU FIX	5000
BAGBE, GU FIX	HOPPY, GU FIX	5000
HOPPY, GU FIX	FONUG, OP WP	5000 MAA - 60000
FONUG, OP WP	STINE, GU FIX	5000 MAA - 60000
STINE, GU FIX	DEWSS, OP WP	18000 MAA - 60000
DEWSS, OP WP	JIMOS, OP WP	5500 MAA - 60000
JIMOS, OP WP	NGUEN, OP WP	5500 MAA - 60000
NGUEN, OP WP	NATIE, OP WP	5500 MAA - 60000
NATIE, OP WP	RESEE, OP WP	5500 MAA - 60000
RESEE, OP WP	SYSTA, OP WP	5500 MAA - 60000
SYSTA, OP WP	BRIUN, OP WP	5500 MAA - 60000
BRIUN, OP WP	HOOPA, OP WP	5500 MAA - 60000
HOOPA, OP WP	KATHS, HI FIX	5500 MAA - 60000
A578		
POHNPEI, FM NDB/DME	AFOYU, FM WP	18000 MAA - 60000
AFOYU, FM WP	FENSE, OP WP	18000 MAA - 60000
A590		
PASRO, OP WP	POWAL, OP WP	18000 MAA - 60000
POWAL, OP WP	PLADO, OP WP	18000 MAA - 60000
PLADO, OP WP	PINSO, OP WP	18000 MAA - 60000
PINSO, OP WP	POOFF, OP WP	18000 MAA - 60000

FROM	TO	MEA
A590 - CONTINUED		
POOFF, OP WP	PINTT, OP WP	18000 MAA - 60000
PINTT, OP WP	PTZGR, OP WP	18000 MAA - 60000
PTZGR, OP WP	PUGGY, OP WP	18000 MAA - 60000
PUGGY, OP WP	POETT, OP WP	18000 MAA - 60000
POETT, OP WP	SELDM, OP WP	18000 MAA - 60000
SELDM, OP WP	PORGE, AK WP	18000 MAA - 60000
PORGE, AK WP	HAMND, AK WP	18000 MAA - 60000
A597		
ADBON, OP WP	OKOLE, OP WP	18000
OKOLE, OP WP	GALSS, OP WP	18000
GALSS, OP WP	JUNIE, GU FIX	18000
JUNIE, GU FIX	OPLAR, GU FIX	5000
OPLAR, GU FIX	GUMGE, GU FIX	5000
GUMGE, GU FIX	NIMITZ, GU VORTAC	5000
NIMITZ, GU VORTAC	WUVEN, GU FIX	5000
WUVEN, GU FIX	REEDE, OP WP	5000
REEDE, OP WP	RICHH, OP WP	5000
RICHH, OP WP	MONPI, OP WP	5000
A598		
MARTI, OP WP	MAJURO, MH NDB/DME	2300
B96		
LARSA, RU WP	GAMBELL, AK NDB/DME	5000 MAA - 18000
B200		
BISOX, OP WP	ANJJE, OP WP	5500
ANJJE, OP WP	CARLS, OP WP	5500
CARLS, OP WP	BENTS, OP WP	5500
BENTS, OP WP	AMATT, OP WP	5500
AMATT, OP WP	TONYS, OP WP	5500
TONYS, OP WP	FICKY, OP WP	5500
B233		
GALENA, AK VOR/DME	SANGL, AK WP	18000 MAA - 45000
SANGL, AK WP	KUTAL, RU WP	18000 MAA - 45000
B240		
ERNIK, RU WP	IDROD, AK WP	18000 MAA - 45000
IDROD, AK WP	AVUBA, AK WP	18000 MAA - 45000

FROM	TO	MEA
B240 - CONTINUED		
AVUBA, AK WP	EMMONAK, AK VOR/DME	18000 MAA - 45000
B241		
EMMONAK, AK VOR/DME	ENEGU, AK WP	18000 MAA - 45000
ENEGU, AK WP	ROCET, AK WP	18000 MAA - 45000
ROCET, AK WP	RUSOR, RU WP	18000 MAA - 45000
B244		
FRENK, OP WP	KOTZEBUE, AK VOR/DME	5000 MAA - 40000
B452		
ATIGO, OP WP	KERRY, OP WP	6000
KERRY, OP WP	KRONK, OP WP	6000
KRONK, OP WP	KRASY, OP WP	6000
KRASY, OP WP	DOHRT, OP WP	6000
B453		
BOXER, OP WP	KYLLE, OP WP	18000
KYLLE, OP WP	KANUA, OP WP	18000
KANUA, OP WP	VIDKU, CA FIX	18000
VIDKU, CA FIX	TAMRU, CA FIX	18000
TAMRU, CA FIX	SIMLU, CA FIX	18000
SIMLU, CA FIX	KURTT, OP WP	18000
KURTT, OP WP	PETPA, CA FIX	18000
PETPA, CA FIX	NAKBI, CA FIX	18000
NAKBI, CA FIX	METPA, CA FIX	18000
METPA, CA FIX	KATCH, AK FIX	18000
KATCH, AK FIX	MIDDLETON ISLAND, AK VOR/DME	18000
B454		
UPNAR, OP WP	COMIR, OP WP	5500
COMIR, OP WP	BORIC, OP WP	5500
BORIC, OP WP	ARENS, OP WP	5500
ARENS, OP WP	TONYS, OP WP	5500
B577		
PASSA, OP WP	QUIGG, OP WP	5500
QUIGG, OP WP	SANTA, OP WP	5500
SANTA, OP WP	CANOL, OP WP	5500
CANOL, OP WP	BELAN, OP WP	5500
BELAN, OP WP	AHNDO, OP WP	5500
AHNDO, OP WP	LENNA, OP WP	5500
LENNA, OP WP	FICKY, OP WP	5500
B581		
WOOBY, OP WP	WACOS, OP WP	5500

FROM	TO	MEA
B581 - CONTINUED		
WACOS, OP WP	WOSLU, OP WP	5500
WOSLU, OP WP	WAYSE, OP WP	5500
WAYSE, OP WP	WINTY, OP WP	5500
WINTY, OP WP	CAMOS, OP WP	5500
CAMOS, OP WP	BALKS, OP WP	5500
BALKS, OP WP	AFONE, OP WP	5500
AFONE, OP WP	WEDES, OP WP	5500
WEDES, OP WP	FICKY, OP WP	5500
B586		
OMLET, OP WP	TOESS, OP WP	18000
TOESS, OP WP	WINZR, OP WP	18000
WINZR, OP WP	NIMITZ, GU VORTAC	18000
NIMITZ, GU VORTAC	ASADE, GU FIX	5000
ASADE, GU FIX	KAPOK, GU FIX	5000
KAPOK, GU FIX	HUTEL, OP WP	18000
HUTEL, OP WP	NUTTI, OP WP	18000
NUTTI, OP WP	PIKOK, OP WP	18000
B589		
MAJURO, MH NDB/DME	ELNUR, OP WP	18000
B932		
BAMOK, OP WP	MORLY, AK WP	18000 MAA - 45000
MORLY, AK WP	EPLOS, AK WP	18000 MAA - 45000
EPLOS, AK WP	KIVAK, AK WP	18000 MAA - 45000
KIVAK, AK WP	LESAD, AK WP	18000 MAA - 45000
LESAD, AK WP	ST MARYS, AK NDB	18000 MAA - 45000
ST MARYS, AK NDB	MC GRATH, AK VORTAC	18000 MAA - 45000
G7		
OLTON, RU WP	GAMBELL, AK NDB/DME	5000 MAA - 18000
G205		
RUTUS, OP WP	KISME, OP WP	1500
KISME, OP WP	GOOFI, OP WP	1500
GOOFI, OP WP	JUNIE, GU FIX	1500
JUNIE, GU FIX	OPLAR, GU FIX	5000
OPLAR, GU FIX	GUMGE, GU FIX	5000
GUMGE, GU FIX	NIMITZ, GU VORTAC	5000
NIMITZ, GU VORTAC	GUYES, OP WP	18000
GUYES, OP WP	TERYY, OP WP	18000
TERYY, OP WP	TEGOD, OP WP	18000
G212		
VALDA, OP WP	YUREE, OP WP	5000 MAA - 18000

FROM	TO	MEA
G212 - CONTINUED		
YUREE, OP WP	FORT DAVIS, AK NDB	5000 MAA - 18000
G215		
NRKEY, OP WP	OLCOT, OP WP	18000 MAA - 60000
OLCOT, OP WP	PLADO, OP WP	18000 MAA - 60000
PLADO, OP WP	SHEMYA, AK VORTAC	18000 MAA - 60000
SHEMYA, AK VORTAC	CURVS, AK FIX	18000 MAA - 60000
CURVS, AK FIX	DUTCH HARBOR, AK NDB/DME	18000 MAA - 60000
G223		
MUBIT, OP WP	OLGIS, OP WP	18000
OLGIS, OP WP	PHILY, OP WP	18000
PHILY, OP WP	RISBA, OP WP	6000
G339		
NIMITZ, GU VORTAC	SHAWS, OP WP	6000
SHAWS, OP WP	RIDLL, OP WP	6000
RIDLL, OP WP	NATSS, OP WP	6000
NATSS, OP WP	PAKDO, OP WP	6000
G344		
CUTEE, OP WP	CARTO, AK FIX	18000 MAA - 60000
CARTO, AK FIX	CHIPT, OP WP	18000 MAA - 60000
CHIPT, OP WP	CHIKI, AK FIX	18000 MAA - 60000
CHIKI, AK FIX	CURVS, AK FIX	18000 MAA - 60000
CURVS, AK FIX	CRYPT, AK FIX	18000 MAA - 60000
CRYPT, AK FIX	CAMBO, AK FIX	18000 MAA - 60000
CAMBO, AK FIX	*CUDDA, AK WP	18000 MAA - 60000
*24000 - MRA		
G349		
MARCC, AK WP	KIVAK, AK WP	18000 MAA - 60000
KIVAK, AK WP	PALIN, AK WP	18000 MAA - 60000
PALIN, AK WP	NEONN, AK WP	18000 MAA - 60000
G467		
YELLO, OP WP	KITSS, OP WP	18000

FROM	TO	MEA
G467 - CONTINUED		
KITSS, OP WP	ACRON, GU FIX	18000
ACRON, GU FIX	PULEE, GU FIX	18000
PULEE, GU FIX	NIMITZ, GU VORTAC	5000
G469		
NYMPH, OP WP	ONEIL, OP WP	18000 MAA - 60000
ONEIL, OP WP	RULOY, OP WP	18000 MAA - 60000
RULOY, OP WP	PINTT, OP WP	18000 MAA - 60000
PINTT, OP WP	CREMR, AK FIX	18000 MAA - 60000
CREMR, AK FIX	ST PAUL ISLAND, AK NDB/DME	18000 MAA - 60000
ST PAUL ISLAND, AK NDB/DME	PORT HEIDEN, AK NDB/DME	18000 MAA - 60000
G575		
CINTO, OP WP	BIGBY, OP WP	5500
BIGBY, OP WP	APIDD, OP WP	5500
APIDD, OP WP	HILCO, OP WP	5500
HILCO, OP WP	FICKY, OP WP	5500
G583		
BESAT, OP WP	MARCC, AK WP	18000 MAA - 60000
MARCC, AK WP	MUNRI, AK WP	18000 MAA - 45000
MUNRI, AK WP	EMMONAK, AK VOR/DME	18000 MAA - 60000
H201		
NOME, AK VOR/DME	SLEDD, AK WP	18000 MAA - 45000
SLEDD, AK WP	AVUBA, AK WP	18000 MAA - 45000
AVUBA, AK WP	ENEGU, AK WP	18000 MAA - 45000
ENEGU, AK WP	MUNRI, AK WP	18000 MAA - 45000
MUNRI, AK WP	KIVAK, AK WP	18000 MAA - 45000
KIVAK, AK WP	NAYLD, AK FIX	18000 MAA - 45000
H222		
VALDA, OP WP	ICEEE, AK WP	18000 MAA - 45000
ICEEE, AK WP	SLEDD, AK WP	18000 MAA - 45000
SLEDD, AK WP	MC GRATH, AK VORTAC	18000 MAA - 45000
M756		
OLBIE, OP WP	AIBIE, OP WP	6000

FROM	TO	MEA
M756 - CONTINUED		
AIBIE, OP WP	KEONE, OP WP	6000
R204		
KYWEE, OP WP	KALIN, OP WP	*18000
R220		
NODLE, AK FIX	NICHO, AK WP	18000 MAA - 60000
NICHO, AK WP	NOSHO, AK FIX	18000 MAA - 60000
NOSHO, AK FIX	NEONN, AK WP	18000 MAA - 60000
NEONN, AK WP	NANZA, AK FIX	18000 MAA - 60000
NANZA, AK FIX	NOLTI, OP WP	18000 MAA - 60000
NOLTI, OP WP	NAYLD, AK FIX	18000 MAA - 60000
NAYLD, AK FIX	NULUK, AK FIX	18000 MAA - 60000
NULUK, AK FIX	NANDY, AK FIX	18000 MAA - 60000
NANDY, AK FIX	NATES, OP WP	18000 MAA - 60000
NATES, OP WP	NIKLL, OP WP	18000 MAA - 60000
NIKLL, OP WP	NYMPH, OP WP	18000 MAA - 60000
NYMPH, OP WP	NUZAN, OP WP	18000 MAA - 60000
NUZAN, OP WP	NRKEY, OP WP	18000 MAA - 60000
NRKEY, OP WP	NIPPI, OP WP	18000 MAA - 60000
R330		
POWAL, OP WP	SHEMYA, AK VORTAC	18000 MAA - 60000
R332		
MAJURO, MH NDB/DME	VAVEE, OP WP	6000
R336		
CARTO, AK FIX	LYYLE, AK FIX	18000 MAA - 60000
LYYLE, AK FIX	MOUNT MOFFETT, AK NDB/DME	18000 MAA - 60000
R337		
ISGOG, OP WP	KOROR, PW NDB/DME	6500
R338		
NOME, AK VOR/DME	ICEEE, AK WP	18000 MAA - 60000

FROM	TO	MEA
R338 - CONTINUED		
ICEEE, AK WP	IDROD, AK WP	18000 MAA - 60000
IDROD, AK WP	ROCET, AK WP	18000 MAA - 60000
ROCET, AK WP	MUCLA, AK FIX	18000 MAA - 60000
MUCLA, AK FIX	MARCC, AK WP	18000 MAA - 60000
MARCC, AK WP	MORLY, AK WP	18000 MAA - 60000
MORLY, AK WP	NATES, OP WP	18000 MAA - 60000
NATES, OP WP	OPAKE, OP WP	18000 MAA - 60000
R341		
NATES, OP WP	HAVAM, OP WP	18000 MAA - 60000
HAVAM, OP WP	OFORD, OP WP	18000 MAA - 60000
OFORD, OP WP	HODDY, AK FIX	18000 MAA - 60000
HODDY, AK FIX	PUGGY, OP WP	18000 MAA - 60000
PUGGY, OP WP	CHUUK, AK FIX	18000 MAA - 60000
CHUUK, AK FIX	KODIAK, AK VOR/DME	18000 MAA - 60000
R451		
HIXOR, OP WP	POWAL, OP WP	18000 MAA - 60000
POWAL, OP WP	AAMYY, OP WP	18000 MAA - 60000
AAMYY, OP WP	WALLT, AK FIX	18000 MAA - 60000
WALLT, AK FIX	CHIKI, AK FIX	18000 MAA - 60000
CHIKI, AK FIX	MOUNT MOFFETT, AK NDB/DME	18000 MAA - 60000
R463		
MAGGI, OP FIX	SERYU, OP FIX	5000
SERYU, OP FIX	TOADS, OP FIX	5000
TOADS, OP FIX	APACK, OP FIX	5000
APACK, OP FIX	AUNTI, OP WP	5500
AUNTI, OP WP	ADOPE, OP WP	5500
ADOPE, OP WP	AXELE, OP WP	5500
AXELE, OP WP	ADTIL, OP WP	5500
ADTIL, OP WP	ALLBE, OP WP	5500
ALLBE, OP WP	ALCOA, OP FIX	5500
R464		
MAGGI, OP FIX	BITTA, OP FIX	5500
BITTA, OP FIX	BOARD, OP WP	21000

FROM	TO	MEA
R464 - CONTINUED		
BOARD, OP WP	BEKME, OP WP	5500
BEKME, OP WP	BILLO, OP WP	5500
BILLO, OP WP	BARAZ, OP WP	5500
BARAZ, OP WP	BAART, OP WP	5500
BAART, OP WP	BEBOP, OP FIX	5500
R465		
MAGGI, OP FIX	*SHARK, HI FIX	5500
*16000 - MRA		
SHARK, HI FIX	CLUTS, OP FIX	5500
CLUTS, OP FIX	CEBEN, OP WP	5500
CEBEN, OP WP	CIVIT, OP WP	5500
CIVIT, OP WP	CORTT, OP WP	5500
CORTT, OP WP	CUNDU, OP WP	5500
CUNDU, OP WP	CREAN, OP WP	5500
CREAN, OP WP	CINNY, OP WP	5500
R576		
MAUI, HI VORTAC	ALAFU, HI FIX	9000
ALAFU, HI FIX	WAPPO, HI FIX	14000
WAPPO, HI FIX	ONOVY, HI FIX	26000
ONOVY, HI FIX	DENNS, OP FIX	26000
DENNS, OP FIX	DRAYK, OP WP	24000
DRAYK, OP WP	DUSAC, OP WP	5500
DUSAC, OP WP	DIALO, OP WP	5500
DIALO, OP WP	DADIE, OP WP	5500
DADIE, OP WP	DUETS, OP WP	5500
DUETS, OP WP	DINTY, OP FIX	5500
R577		
MAUI, HI VORTAC	AWAHI, HI FIX	9000
AWAHI, HI FIX	AZIBA, HI FIX	16000
AZIBA, HI FIX	TANFO, HI FIX	35000
TANFO, HI FIX	ALICA, OP FIX	35000
ALICA, OP FIX	EBBER, OP FIX	35000
EBBER, OP FIX	ELOYI, OP WP	21000
ELOYI, OP WP	ERROT, OP WP	5500
ERROT, OP WP	ETNIC, OP WP	5500
ETNIC, OP WP	ETECO, OP WP	5500
ETECO, OP WP	EDSEL, OP WP	5500
EDSEL, OP WP	EDTOO, OP WP	5500
EDTOO, OP WP	*ELKEY, CA FIX	5500
*26000 - MRA		
R578		
DEREC, HI FIX	BYROW, HI FIX	14000
BYROW, HI FIX	FITES, OP FIX	14000
FITES, OP FIX	FAPIS, OP WP	21000
FAPIS, OP WP	FOMAS, OP WP	21000
FOMAS, OP WP	FIZEL, OP WP	5500
FIZEL, OP WP	FLITY, OP WP	5500
FLITY, OP WP	FOOTS, OP WP	5500
FOOTS, OP WP	FICKY, OP WP	5500
R580		
OMOTO, OP WP	OGDEN, OP WP	18000
		MAA - 60000

FROM	TO	MEA
R580 - CONTINUED		
OGDEN, OP WP	OPHET, OP WP	18000 MAA - 60000
OPHET, OP WP	OLCOT, OP WP	18000 MAA - 60000
OLCOT, OP WP	OPAKE, OP WP	18000 MAA - 60000
OPAKE, OP WP	ONEIL, OP WP	18000 MAA - 60000
ONEIL, OP WP	OBOYD, OP WP	18000 MAA - 60000
OBOYD, OP WP	OFORD, OP WP	18000 MAA - 60000
OFORD, OP WP	OGGOE, OP WP	18000 MAA - 60000
OGGOE, OP WP	ONEOX, OP WP	18000 MAA - 60000
ONEOX, OP WP	ORVIL, OP WP	18000 MAA - 60000
ORVIL, OP WP	ORCCA, AK WP	18000 MAA - 60000
ORCCA, AK WP	HAMND, AK WP	18000 MAA - 60000
R584		
CHOKO, OP WP	MCFLY, OP WP	5500
MCFLY, OP WP	MANRE, OP WP	5500
MANRE, OP WP	MAZZA, OP WP	5500
MAZZA, OP WP	MAJURO, MH NDB/DME	18000
MAJURO, MH NDB/DME	CURCH, OP WP	18000
CURCH, OP WP	BUCHOLZ, MH NDB	18000
BUCHOLZ, MH NDB	LOOIS, OP WP	18000
LOOIS, OP WP	HAVNU, FM FIX	18000
HAVNU, FM FIX	TRADD, FM FIX	18000
TRADD, FM FIX	POHNPEI, FM NDB/DME	18000
POHNPEI, FM NDB/DME	BIRUQ, FM FIX	18000
BIRUQ, FM FIX	TRUK, FM NDB/DME	18000
TRUK, FM NDB/DME	GUNSS, OP WP	18000
GUNSS, OP WP	JUNIE, GU FIX	18000
JUNIE, GU FIX	OPLAR, GU FIX	5000
OPLAR, GU FIX	GUMGE, GU FIX	5000
GUMGE, GU FIX	NIMITZ, GU VORTAC	5000
NIMITZ, GU VORTAC	OTTRE, OP WP	6000
OTTRE, OP WP	MIKYY, OP WP	18000
MIKYY, OP WP	KEITH, OP WP	18000
R591		
AKISU, OP WP	ASPIN, OP WP	18000 MAA - 60000
ASPIN, OP WP	AAMYY, OP WP	18000 MAA - 60000
AAMYY, OP WP	SHEMYA, AK VORTAC	18000 MAA - 60000
SHEMYA, AK VORTAC	AMOND, AK FIX	18000 MAA - 60000
AMOND, AK FIX	ALDOZ, AK FIX	18000 MAA - 60000
ALDOZ, AK FIX	ALUFF, AK FIX	18000 MAA - 60000

FROM	TO	MEA
R591 - CONTINUED		
ALUFF, AK FIX	ST PAUL ISLAND, AK NDB/DME	18000 MAA - 60000
ST PAUL ISLAND, AK NDB/DME	CHUUK, AK FIX	18000 MAA - 60000
CHUUK, AK FIX	CAPE NEWENHAM, AK NDB/DME	18000 MAA - 60000
CAPE NEWENHAM, AK NDB/DME	HAMND, AK WP	18000 MAA - 60000
R595		
NIMITZ, GU VORTAC	OTTRE, OP WP	6000
OTTRE, OP WP	MIKYY, OP WP	18000
MIKYY, OP WP	KEITH, OP WP	18000
W21		
KAQTU, MP FIX	SANDO, GU FIX	3000
SANDO, GU FIX	NUJCO, MP FIX	9000
NUJCO, MP FIX	KATQO, GU FIX	9000
KATQO, GU FIX	HIRCH, MP FIX	9000
HIRCH, MP FIX	ANEVY, GU FIX	9000
ANEVY, GU FIX	SNAPP, GU FIX	9000
SNAPP, GU FIX	BESSS, OP WP	9000

FROM	TO	MEA	MAA

§95.3000 LOW ALTITUDE RNAV ROUTES

95.3200 RNAV ROUTE T200

COLLEGE STATION, TX VORTAC	SEALY, TX FIX	2100	17500
SEALY, TX FIX	MOLLR, TX WP	2000	17500
MOLLR, TX WP	SABINE PASS, TX VOR/DME	3100	17500

95.3201 RNAV ROUTE T201

MEVAE, SC WP	TRUEX, SC WP	2200	7000
TRUEX, SC WP	FEGNO, NC WP	2400	7000
FEGNO, NC WP	NUROE, NC WP	2700	7000
NUROE, NC WP	BORTZ, NC WP	3900	7000

95.3202 RNAV ROUTE T202

GURSH, SC WP	AWRYT, SC WP	2400	8000
AWRYT, SC WP	RICHE, SC FIX	2400	8000
RICHE, SC FIX	HUSTN, NC FIX	2500	8000
HUSTN, NC FIX	FEGNO, NC WP	2500	8000
FEGNO, NC WP	GANTS, NC FIX	2600	8000
GANTS, NC FIX	ZADEL, NC WP	2700	8000

95.3203 RNAV ROUTE T203

ANDYS, SC FIX	AWRYT, SC WP	2400	17500
AWRYT, SC WP	ROUTH, NC WP	2800	17500
ROUTH, NC WP	FADOS, NC WP	3400	17500
FADOS, NC WP	OREAD, NC WP	3500	17500

95.3204 RNAV ROUTE T204

TAYLOR, FL VORTAC	BRUNSWICK, GA VORTAC	2100	15000

95.3205 RNAV ROUTE T205

OCALA, FL VORTAC *2500 - MOCA	VALDOSTA, GA VOR/DME	*3000	15000

95.3206 RNAV ROUTE T206

ENADE, NC WP	FADOS, NC WP	3000	17500
FADOS, NC WP	GOTHS, NC WP	3400	17500
GOTHS, NC WP	NUROE, NC WP	3400	17500
NUROE, NC WP	ZADEL, NC WP	3000	17500

95.3207 RNAV ROUTE T207

FOXAM, FL WP	MMKAY, FL WP	1800	17500
MMKAY, FL WP	WALEE, FL WP	2000	17500

95.3208 RNAV ROUTE T208

SIROC, GA WP	SAHND, FL WP	1800	17500
SAHND, FL WP	FOXAM, FL WP	1800	17500
FOXAM, FL WP	SUUGR, FL WP	1800	17500

FROM	TO	MEA	MAA
95.3208 RNAV ROUTE T208 - CONTINUED			
SUUGR, FL WP	SMYRA, FL FIX	1800	17500
SMYRA, FL FIX	OAKIE, FL FIX	1800	17500
OAKIE, FL FIX	MALET, FL FIX	1800	17500
MALET, FL FIX	TICCO, FL FIX	1800	17500
TICCO, FL FIX	INDIA, FL FIX	1800	17500
INDIA, FL FIX	DIMBY, FL WP	1800	17500
DIMBY, FL WP	VALKA, FL FIX	1800	17500
VALKA, FL FIX	SULTY, FL WP	1700	17500
SULTY, FL WP	WIXED, FL WP	1700	17500
WIXED, FL WP	CLEFF, FL WP	1700	17500
CLEFF, FL WP	DURRY, FL WP	1700	17500
DURRY, FL WP	BOBOE, FL WP	1700	17500
BOBOE, FL WP	SHANC, FL FIX	1700	17500
95.3209 RNAV ROUTE T209			
EHEJO, GA FIX	NASDE, GA WP	2000	17500
NASDE, GA WP	YASLU, GA WP	2000	17500
YASLU, GA WP	JAMTA, GA WP	2000	17500
JAMTA, GA WP	COLLIERS, SC VORTAC	2500	17500
95.3210 RNAV ROUTE T210			
HADDE, FL FIX	MISSM, FL WP	1900	17500
MISSM, FL WP	OHLEE, FL WP	2500	17500
OHLEE, FL WP	MMKAY, FL WP	2500	17500
MMKAY, FL WP	MRUTT, FL WP	2500	17500
MRUTT, FL WP	*GUANO, FL FIX	2500	17500
*1900 - MCA GUANO, FL FIX , S BND			
GUANO, FL FIX	KIZER, FL FIX	2800	17500
KIZER, FL FIX	EMSEE, FL WP	2800	17500
EMSEE, FL WP	DAIYL, FL WP	1900	17500
DAIYL, FL WP	AKOJO, FL WP	1800	17500
AKOJO, FL WP	PUNQU, FL WP	2000	17500
PUNQU, FL WP	VARZE, FL WP	1900	17500
95.3211 RNAV ROUTE T211			
OCALA, FL VORTAC	JUTTS, FL WP	2500	15000
JUTTS, FL WP	CARRA, FL WP	1900	15000
CARRA, FL WP	CRAIG, FL VORTAC	2100	15000
95.3212 RNAV ROUTE T212			
RASHE, PA FIX	SELINSGROVE, PA VOR/DME	4000	17500
SELINSGROVE, PA VOR/DME	DIANO, PA FIX	3700	17500
DIANO, PA FIX	WILKES-BARRE, PA VORTAC	5000	17500
WILKES-BARRE, PA VORTAC	LAAYK, PA FIX	4000	17500
LAAYK, PA FIX	WEETS, NY FIX	4700	17500
WEETS, NY FIX	NELIE, CT FIX	3500	17500
NELIE, CT FIX	PUTNAM, CT VOR/DME	3000	17500
95.3213 RNAV ROUTE T213			
LOUISVILLE, KY VORTAC	GAMKE, IN WP	*3600	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			
GAMKE, IN WP	MILAN, IN FIX	*2800	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			

FROM	TO	MEA	MAA

95.3213 RNAV ROUTE T213 - CONTINUED

MILAN, IN FIX	RICHMOND, IN DME	*2800	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			

95.3214 RNAV ROUTE T214

OREAD, NC WP	BORTZ, NC WP	3500	17500
BORTZ, NC WP	THMSN, NC WP	3400	17500
THMSN, NC WP	ZADEL, NC WP	2400	17500
ZADEL, NC WP	ORPEE, NC WP	2700	17500

95.3215 RNAV ROUTE T215

BURGG, SC WP	*GENOD, NC FIX	4000	17500
*4600 - MCA GENOD, NC FIX , N BND			
GENOD, NC FIX	HORAL, TN WP	8500	17500
HORAL, TN WP	HILTO, VA FIX	6700	17500
HILTO, VA FIX	FLENR, VA WP	6500	17500
FLENR, VA WP	*RISTE, KY WP	6000	17500
*4800 - MCA RISTE, KY WP , SE BND			
RISTE, KY WP	DACEL, KY WP	3800	17500
DACEL, KY WP	HUGEN, KY WP	3300	17500
HUGEN, KY WP	LEXINGTON, KY VOR/DME	3100	17500
LEXINGTON, KY VOR/DME	NERVE, KY FIX	2800	8000
NERVE, KY FIX	GAMKE, IN WP	2600	8000
GAMKE, IN WP	MILAN, IN FIX	2800	8000
MILAN, IN FIX	DEEKS, IN FIX	2900	17500
DEEKS, IN FIX	BONOY, IN WP	2700	17500
BONOY, IN WP	CLEFT, IN FIX	2600	17500
CLEFT, IN FIX	MAPPS, IN FIX	2600	17500
MAPPS, IN FIX	SMARS, IL WP	2500	10000
SMARS, IL WP	CPTON, IL WP	2400	10000

95.3216 RNAV ROUTE T216

PHILIPSBURG, PA VORTAC	WILLIAMSPORT, PA VOR/DME	4200	17500
WILLIAMSPORT, PA VOR/DME	ELEXY, PA WP	4500	17500
ELEXY, PA WP	LAAYK, PA FIX	4100	17500
LAAYK, PA FIX	HELON, NY FIX	4000	17500
HELON, NY FIX	KINGSTON, NY VOR/DME	4000	17500
KINGSTON, NY VOR/DME	MOONI, CT FIX	3200	17500
MOONI, CT FIX	HARTFORD, CT VOR/DME	3200	17500
HARTFORD, CT VOR/DME	GROTON, CT VOR/DME	2600	17500
GROTON, CT VOR/DME	SANDY POINT, RI VOR/DME	*2000	17500
*1500 - MOCA			
SANDY POINT, RI VOR/DME	NANTUCKET, MA VOR/DME	2000	17500

95.3217 RNAV ROUTE T217

LEXINGTON, KY VOR/DME	BOSTR, OH FIX	*3000	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			
BOSTR, OH FIX	HEDEN, OH FIX	*2700	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			
HEDEN, OH FIX	PRUDE, OH FIX	*2800	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			
PRUDE, OH FIX	SPRINGFIELD, OH DME	*2800	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			

FROM	TO	MEA	MAA

95.3217 RNAV ROUTE T217 - CONTINUED

SPRINGFIELD, OH DME	BONEE, OH FIX	*2900	8000
*NORTHBOUND EXPECT 7000			
*SOUTHBOUND EXPECT 6000			
BONEE, OH FIX	SJAAY, IN WP	3000	17500
SJAAY, IN WP	DERRF, IN WP	2800	17500
DERRF, IN WP	GETCH, MI WP	2800	17500
GETCH, MI WP	GAYLE, MI WP	2400	17500

95.3218 RNAV ROUTE T218

DLMAR, PA WP	*LAAYK, PA FIX	4900	17500
*4700 - MCA LAAYK, PA FIX , W BND			
LAAYK, PA FIX	SPARTA, NJ VORTAC	4000	17500

95.3219 RNAV ROUTE T219

DILLINGHAM, AK VOR/DME	BROUS, AK WP	*6000	17500
*5000 - MOCA			
BROUS, AK WP	NACIP, AK FIX	*6000	17500
*5400 - MOCA			
NACIP, AK FIX	ACATE, AK WP	*6000	17500
*5400 - MOCA			
ACATE, AK WP	RUFVY, AK WP	*2000	17500
*1300 - MOCA			
RUFVY, AK WP	MKLUK, AK WP	2000	17500
MKLUK, AK WP	HOOPER BAY, AK VOR/DME	*2000	17500
*1300 - MOCA			

95.3220 RNAV ROUTE T220

INDUSTRY, TX VORTAC	SEALY, TX FIX	2100	17500
SEALY, TX FIX	MOLLR, TX WP	2000	17500
MOLLR, TX WP	SABINE PASS, TX VOR/DME	3100	17500

95.3221 RNAV ROUTE T221

*MAZIE, PA FIX	ALLENTOWN, PA VORTAC	**3000	17500
*5000 - MRA			
**2200 - MOCA			
ALLENTOWN, PA VORTAC	LAAYK, PA FIX	4000	17500
LAAYK, PA FIX	BINGHAMTON, NY VOR/DME	4000	17500

95.3222 RNAV ROUTE T222

ST PAUL ISLAND, AK NDB/DME	RUFVY, AK WP	*3000	17500
*2400 - MOCA			
RUFVY, AK WP	BETHEL, AK VORTAC	*3000	17500
*1400 - MOCA			
BETHEL, AK VORTAC	CABOT, AK FIX	*5000	17500
*1500 - MOCA			
CABOT, AK FIX	WOGAX, AK WP	*5000	17500
*1400 - MOCA			
WOGAX, AK WP	IKUFU, AK FIX	*5000	17500
*2600 - MOCA			
IKUFU, AK FIX	JILSI, AK WP	*5000	17500
*3200 - MOCA			
JILSI, AK WP	CYCAS, AK WP	*5000	17500
*3500 - MOCA			
CYCAS, AK WP	UTICE, AK WP	*5000	17500
*3700 - MOCA			

FROM	TO	MEA	MAA

95.3222 RNAV ROUTE T222 - CONTINUED

UTICE, AK WP	MC GRATH, AK VORTAC	5000	17500
MC GRATH, AK VORTAC	NENANA, AK VORTAC	5000	17500
NENANA, AK VORTAC	FAIRBANKS, AK VORTAC	*4000	17500
*3200 - MOCA			

95.3223 RNAV ROUTE T223

CAPE NEWENHAM, AK NDB/DME	DILLINGHAM, AK VOR/DME	4400	17500
DILLINGHAM, AK VOR/DME	FAGIN, AK FIX	4400	17500
FAGIN, AK FIX	NONDA, AK FIX	8400	17500
NONDA, AK FIX	*BLUGA, AK FIX	12400	17500
*10000 - MCA BLUGA, AK FIX , SW BND			
BLUGA, AK FIX	*AMOTT, AK FIX	3000	17500
*7400 - MCA AMOTT, AK FIX , SW BND			
AMOTT, AK FIX	ANCHORAGE, AK VOR/DME	3000	17500

95.3224 RNAV ROUTE T224

PALACIOS, TX VORTAC	MOLLR, TX WP	2500	17500
MOLLR, TX WP	FRYED, TX WP	1800	17500
FRYED, TX WP	MOCKS, TX WP	2100	17500
MOCKS, TX WP	SHWNN, TX WP	2100	17500
SHWNN, TX WP	WASPY, LA FIX	1700	17500
WASPY, LA FIX	KNZLY, LA WP	1700	17500
KNZLY, LA WP	ARTEL, LA FIX	1700	17500
ARTEL, LA FIX	CRISP, LA FIX	1700	17500
CRISP, LA FIX	MICRO, LA FIX	1700	17500
MICRO, LA FIX	ZIROR, LA FIX	1700	17500
ZIROR, LA FIX	DAFLY, LA WP	1800	17500
DAFLY, LA WP	LULEW, LA FIX	2100	17500
LULEW, LA FIX	BUDAM, LA FIX	1700	17500
BUDAM, LA FIX	MYRIC, LA FIX	*1700	17500
*1200 - MOCA			
MYRIC, LA FIX	WOVON, LA FIX	1700	17500
WOVON, LA FIX	DONBE, LA FIX	1700	17500
DONBE, LA FIX	AWDAD, LA FIX	1700	17500
AWDAD, LA FIX	SIMBY, LA FIX	1700	17500
SIMBY, LA FIX	VOODO, LA FIX	1700	17500
VOODO, LA FIX	KJAAY, LA WP	1700	17500
KJAAY, LA WP	SNAKI, LA FIX	1700	17500
SNAKI, LA FIX	SLIDD, LA FIX	1700	17500
SLIDD, LA FIX	CLERY, MS FIX	1700	17500
CLERY, MS FIX	MUDDA, MS FIX	1800	17500
MUDDA, MS FIX	WTERS, MS WP	1800	17500
WTERS, MS WP	NESFE, MS FIX	1800	17500
NESFE, MS FIX	BUGLE, MS FIX	1900	17500
BUGLE, MS FIX	SQWID, MS FIX	1800	17500
SQWID, MS FIX	LYNRD, AL WP	1900	17500
LYNRD, AL WP	AXSIS, AL FIX	2000	17500
AXSIS, AL FIX	AXEJA, AL CN	2000	17500
AXEJA, AL CN	TENSA, AL FIX	1900	17500
TENSA, AL FIX	WIILL, AL WP	2200	17500
WIILL, AL WP	*PICKS, AL FIX	2300	17500
*3500 - MRA			
PICKS, AL FIX	ALOON, AL FIX	2300	17500
ALOON, AL FIX	MGMRY, AL WP	2100	17500
MGMRY, AL WP	GONDR, AL WP	2100	17500
GONDR, AL WP	RSVLT, GA WP	2400	17500
RSVLT, GA WP	CANER, GA FIX	2800	17500

FROM	TO	MEA	MAA

95.3224 RNAV ROUTE T224 - CONTINUED

CANER, GA FIX	GRANT, GA FIX	2800	17500
GRANT, GA FIX	HUZER, GA FIX	2600	17500
HUZER, GA FIX	SMARR, GA FIX	2500	17500
SMARR, GA FIX	SINCA, GA FIX	2500	17500
SINCA, GA FIX	GLOSS, GA FIX	2400	17500
GLOSS, GA FIX	MADDI, GA FIX	2400	17500
MADDI, GA FIX	JOTNO, GA FIX	2500	17500
JOTNO, GA FIX	DACHA, GA FIX	2500	17500
DACHA, GA FIX	UGAAA, GA WP	2500	17500
UGAAA, GA WP	JOSPI, GA FIX	2500	17500
JOSPI, GA FIX	BOWMN, GA FIX	2500	17500
BOWMN, GA FIX	HARTI, GA FIX	2600	17500
HARTI, GA FIX	ECITY, SC WP	2500	17500
ECITY, SC WP	PEDAL, SC FIX	3700	17500
PEDAL, SC FIX	DOODD, SC FIX	3900	17500
DOODD, SC FIX	TUXDO, SC FIX	5200	17500
TUXDO, SC FIX	STYLZ, NC WP	6200	17500
STYLZ, NC WP	GENOD, NC FIX	6200	17500
GENOD, NC FIX	SWENK, NC FIX	5200	17500
SWENK, NC FIX	VAESE, NC FIX	4900	17500
VAESE, NC FIX	BONZE, NC WP	4500	17500
BONZE, NC WP	SANFI, NC FIX	4100	17500
SANFI, NC FIX	JOTTA, NC FIX	4000	17500
JOTTA, NC FIX	INGON, NC FIX	3500	17500
INGON, NC FIX	PROVE, NC FIX	3400	17500
PROVE, NC FIX	MAYOS, NC FIX	4100	17500
MAYOS, NC FIX	LEAKS, NC FIX	4100	17500
LEAKS, NC FIX	UFFIN, NC FIX	3300	17500
UFFIN, NC FIX	MCDON, VA WP	3300	17500
MCDON, VA WP	YUDUG, VA FIX	2400	17500
YUDUG, VA FIX	*NUTTS, VA FIX	2300	17500
*9000 - MRA			
NUTTS, VA FIX	WAVES, VA WP	3400	17500
WAVES, VA WP	TAPPA, VA FIX	2100	17500
TAPPA, VA FIX	COLIN, VA FIX	1900	17500

95.3225 RNAV ROUTE T225

HOOPER BAY, AK VOR/DME	AKELT, AK FIX	4600	17500
AKELT, AK FIX	ALMOT, AK FIX	4400	17500
ALMOT, AK FIX	UNALAKLEET, AK VOR/DME	3700	17500
UNALAKLEET, AK VOR/DME	EDMON, AK FIX	5000	17500
EDMON, AK FIX	VENCE, AK FIX	5900	17500
VENCE, AK FIX	GALENA, AK VOR/DME	3400	17500
GALENA, AK VOR/DME	KUHZE, AK FIX	4400	17500
KUHZE, AK FIX	CHOKK, AK FIX	6800	17500
CHOKK, AK FIX	TANANA, AK VOR/DME	4000	17500
TANANA, AK VOR/DME	*REEBA, AK FIX	4000	17500
*7000 - MRA			
REEBA, AK FIX	*FAIRBANKS, AK VORTAC	5000	17500
*4700 - MCA FAIRBANKS, AK VORTAC , BND			

95.3226 RNAV ROUTE T226

JOHNSTONE POINT, AK VOR/DME	*FIDAL, AK FIX	5000	17500
*7000 - MCA FIDAL, AK FIX , N BND			
FIDAL, AK FIX	*ROBES, AK FIX	8000	17500
*8900 - MCA ROBES, AK FIX , N BND			
ROBES, AK FIX	*KLUNG, AK FIX	10000	17500
*7100 - MCA KLUNG, AK FIX , S BND			

FROM	TO	MEA	MAA

95.3226 RNAV ROUTE T226 - CONTINUED

KLUNG, AK FIX	GULKANA, AK VOR/DME	7000	17500
GULKANA, AK VOR/DME	DOZEY, AK FIX	5000	17500
DOZEY, AK FIX	*PAXON, AK FIX	**8000	17500
*9500 - MCA PAXON, AK FIX , N BND			
**7300 - MOCA			
PAXON, AK FIX	*DONEL, AK FIX	**12000	17500
*10600 - MCA DONEL, AK FIX , S BND			
**11500 - MOCA			
DONEL, AK FIX	BIG DELTA, AK VORTAC	7000	17500
BIG DELTA, AK VORTAC	HEXAX, AK WP	7000	17500
HEXAX, AK WP	FORT YUKON, AK VORTAC	*4000	17500
*3100 - MOCA			

95.3227 RNAV ROUTE T227

SHEMYA, AK VORTAC	JANNT, AK WP	3400	17500
JANNT, AK WP	BAERE, AK WP	*7500	17500
*2900 - MOCA			
BAERE, AK WP	ALEUT, AK WP	*7500	17500
*3300 - MOCA			
ALEUT, AK WP	MORDI, AK FIX	2500	17500
MORDI, AK FIX	GENFU, AK FIX	*4900	17500
*4000 - MOCA			
GENFU, AK FIX	*BINAL, AK FIX	4000	17500
*3300 - MCA BINAL, AK FIX , SW BND			
BINAL, AK FIX	WIXER, AK WP	*3800	17500
*3000 - MOCA			
WIXER, AK WP	CULTI, AK WP	3400	17500
CULTI, AK WP	*ZAFPO, AK WP	4300	17500
*4600 - MCA ZAFPO, AK WP , NE BND			
ZAFPO, AK WP	BATTY, AK FIX	5600	17500
BATTY, AK FIX	GAMIC, AK WP	5700	17500
GAMIC, AK WP	FEDGI, AK WP	5000	17500
FEDGI, AK WP	*WEZZL, AK WP	6300	17500
*2700 - MCA WEZZL, AK WP , SW BND			
WEZZL, AK WP	AMOTT, AK FIX	*2100	17500
*1500 - MOCA			
AMOTT, AK FIX	*BIG LAKE, AK VORTAC	2300	17500
*2700 - MCA BIG LAKE, AK VORTAC , N BND			
BIG LAKE, AK VORTAC	*SURES, AK FIX	7000	17500
*10000 - MRA			
SURES, AK FIX	CAWIN, AK FIX	*9700	17500
*8600 - MOCA			
CAWIN, AK FIX	LIBER, AK FIX	9000	17500
LIBER, AK FIX	*GLOWS, AK FIX	7100	17500
*4800 - MCA GLOWS, AK FIX , S BND			
GLOWS, AK FIX	PERZO, AK WP	*3600	17500
*2300 - MOCA			
PERZO, AK WP	*FAIRBANKS, AK VORTAC	3400	17500
*3600 - MCA FAIRBANKS, AK VORTAC , N BND			
FAIRBANKS, AK VORTAC	*PESGE, AK WP	5400	17500
*5100 - MCA PESGE, AK WP , S BND			
PESGE, AK WP	*JIFFS, AK WP	5000	17500
*8400 - MCA JIFFS, AK WP , N BND			
JIFFS, AK WP	FIPSU, AK WP	*11000	17500
*8400 - MOCA			
FIPSU, AK WP	*CUGOB, AK WP	**11000	17500
*7000 - MCA CUGOB, AK WP , S BND			
**10300 - MOCA			

FROM	TO	MEA	MAA

95.3227 RNAV ROUTE T227 - CONTINUED

CUGOB, AK WP	SIKLV, AK WP	4500	17500
SIKLV, AK WP	DEADHORSE, AK VOR/DME	2200	17500

95.3228 RNAV ROUTE T228

CAPE NEWENHAM, AK NDB/DME	KUCYE, AK WP	4600	17500
KUCYE, AK WP	RUFVY, AK WP	2000	17500
RUFVY, AK WP	HOOPER BAY, AK VOR/DME	3000	17500
HOOPER BAY, AK VOR/DME	NOME, AK VOR/DME	*5000	17500
*4400 - MOCA			
NOME, AK VOR/DME	HIKAX, AK WP	7000	17500
HIKAX, AK WP	SHISHMAREF, AK NDB	4000	17500
SHISHMAREF, AK NDB	ECIPI, AK FIX	*10000	17500
*2000 - MOCA			
ECIPI, AK FIX	JAPKI, AK WP	*8000	17500
*3800 - MOCA			
JAPKI, AK WP	PODKE, AK WP	*13000	17500
*4200 - MOCA			
PODKE, AK WP	CIRSU, AK WP	3800	17500
CIRSU, AK WP	BARROW, AK VOR/DME	2000	17500
BARROW, AK VOR/DME	DEADHORSE, AK VOR/DME	*2000	17500
*1500 - MOCA			
DEADHORSE, AK VOR/DME	ROCES, AK WP	*2000	17500
*1300 - MOCA			

95.3229 RNAV ROUTE T229

**FAIRBANKS, AK VORTAC	*REEBA, AK FIX	5000	17500
*7000 - MRA			
**4700 - MCA FAIRBANKS, AK VORTAC , W BND			
REEBA, AK FIX	TANANA, AK VOR/DME	4000	17500
TANANA, AK VOR/DME	HUSLIA, AK VOR/DME	*6000	17500
*5500 - MOCA			
HUSLIA, AK VOR/DME	SELAWIK, AK VOR/DME	4000	17500
SELAWIK, AK VOR/DME	KOTZEBUE, AK VOR/DME	*3000	17500
*2500 - MOCA			
KOTZEBUE, AK VOR/DME	SUGRE, AK FIX	4000	17500
SUGRE, AK FIX	VANTY, AK WP	3000	17500

95.3230 RNAV ROUTE T230

ST PAUL ISLAND, AK NDB/DME	CHINOOK, AK NDB	*3000	17500
*2700 - MOCA			

95.3231 RNAV ROUTE T231

*FAIRBANKS, AK VORTAC	HOBOM, AK WP	5100	17500
*4300 - MCA FAIRBANKS, AK VORTAC , W BND			
HOBOM, AK WP	MIPMY, AK WP	6300	17500
MIPMY, AK WP	SELAWIK, AK VOR/DME	3300	17500
SELAWIK, AK VOR/DME	KOTZEBUE, AK VOR/DME	*3000	17500
*2500 - MOCA			

95.3232 RNAV ROUTE T232

BARROW, AK VOR/DME	BRONX, AK FIX	*4000	17500
*1900 - MOCA			
BRONX, AK FIX	AKUMY, AK WP	9100	17500
AKUMY, AK WP	*OCOCU, AK FIX	**9000	17500
*5600 - MCA OCOCU, AK FIX , NW BND			
**7800 - MOCA			

FROM	TO	MEA	MAA

95.3232 RNAV ROUTE T232 - CONTINUED

OCOCU, AK FIX	BETTLES, AK VOR/DME	*9000	17500
*4100 - MOCA			
BETTLES, AK VOR/DME	*FAIRBANKS, AK VORTAC	**6000	17500
*3600 - MCA FAIRBANKS, AK VORTAC , NW BND			
**5400 - MOCA			
FAIRBANKS, AK VORTAC	KRNKL, AK FIX	*3200	17500
*2900 - MOCA			
KRNKL, AK FIX	IMARE, AK FIX	*2300	17500
*1900 - MOCA			
IMARE, AK FIX	CUTUB, AK WP	*3900	17500
*3400 - MOCA			
CUTUB, AK WP	*RIVOR, AK FIX	3700	17500
*2800 - MCA RIVOR, AK FIX , W BND			
RIVOR, AK FIX	*BIG DELTA, AK VORTAC	3200	17500
*5100 - MCA BIG DELTA, AK VORTAC , E BND			
BIG DELTA, AK VORTAC	MEYLE, AK FIX	6400	17500
MEYLE, AK FIX	NORTHWAY, AK VORTAC	8000	17500

95.3233 RNAV ROUTE T233

KOTZEBUE, AK VOR/DME	CIBDU, AK WP	2600	17500
CIBDU, AK WP	TOMPY, AK WP	4100	17500
TOMPY, AK WP	KORKY, AK WP	4900	17500
KORKY, AK WP	*ENCOR, AK WP	6800	17500
*4900 - MCA ENCOR, AK WP , W BND			
ENCOR, AK WP	BETTLES, AK VOR/DME	4700	17500

95.3234 RNAV ROUTE T234

*FAIRBANKS, AK VORTAC	TOLLO, AK FIX	5000	17500
*4300 - MCA FAIRBANKS, AK VORTAC , W BND			
TOLLO, AK FIX	RAMPA, AK FIX	7000	17500

95.3235 RNAV ROUTE T235

FILEV, AK WP	ZISDU, AK WP	1800	17500
ZISDU, AK WP	WUPUV, AK WP	*2000	17500
*1400 - MOCA			
WUPUV, AK WP	JATIL, AK WP	*3500	17500
*1500 - MOCA			
JATIL, AK WP	ZADRO, AK WP	1800	17500
ZADRO, AK WP	DEADHORSE, AK VOR/DME	1900	17500

95.3236 RNAV ROUTE T236

NENANA, AK VORTAC	RAMPA, AK FIX	7000	17500

95.3237 RNAV ROUTE T237

*HOMER, AK VOR/DME	WUXAN, AK WP	**9000	17500
*4800 - MCA HOMER, AK VOR/DME , E BND			
**8500 - MOCA			
WUXAN, AK WP	MIDDLETON ISLAND, AK VOR/DME	*5000	17500
*4100 - MOCA			

95.3238 RNAV ROUTE T238

RAMPA, AK FIX	BETTLES, AK VOR/DME	7000	17500

95.3239 RNAV ROUTE T239

PECAN, GA VOR/DME	*SHANY, GA FIX	2000	17500
*4000 - MRA			

FROM	TO	MEA	MAA

95.3239 RNAV ROUTE T239 - CONTINUED

SHANY, GA FIX	EUFAULA, AL VORTAC	2300	17500
EUFAULA, AL VORTAC	MILER, AL FIX	2000	17500
MILER, AL FIX	TUSKEGEE, AL VOR/DME	2300	17500
TUSKEGEE, AL VOR/DME	KENTT, AL FIX	*2600	17500
*2100 - MOCA			
KENTT, AL FIX	VLKNN, AL WP	3200	17500
VLKNN, AL WP	FOGUM, AL WP	2600	17500
FOGUM, AL WP	SWIKI, AL WP	*2600	17500
*2100 - MOCA			
SWIKI, AL WP	GANTT, MS WP	2500	17500
GANTT, MS WP	ICAVY, MS WP	2300	17500
ICAVY, MS WP	GOINS, MS WP	2400	17500

95.3240 RNAV ROUTE T240

BETTLES, AK VOR/DME	TEGDE, AK FIX	7800	17500
TEGDE, AK FIX	*DERIK, AK FIX	9700	17500
*4700 - MCA DERIK, AK FIX , S BND			
DERIK, AK FIX	SHELO, AK FIX	3600	17500
SHELO, AK FIX	DEADHORSE, AK VOR/DME	2000	17500

95.3241 RNAV ROUTE T241

LATCH, AK FIX	*FOROP, AK WP	**1700	17500
*3800 - MCA FOROP, AK WP , NE BND			
**1200 - MOCA			
FOROP, AK WP	AKCAR, AK WP	4600	17500
AKCAR, AK WP	LEVEL ISLAND, AK VOR/DME	4800	17500
LEVEL ISLAND, AK VOR/DME	ZIDRA, AK WP	5800	17500

95.3242 RNAV ROUTE T242

*TALKEETNA, AK VOR/DME	**JOKAP, AK WP	***16000	17500
*12100 - MCA TALKEETNA, AK VOR/DME , N BND			
**11500 - MCA JOKAP, AK WP , S BND			
***15300 - MOCA			
JOKAP, AK WP	KUTDE, AK WP	6000	17500
KUTDE, AK WP	LACIL, AK WP	*15000	17500
*9400 - MOCA			
LACIL, AK WP	BARROW, AK VOR/DME	*8000	17500
*1800 - MOCA			

95.3243 RNAV ROUTE T243

PUNGO, NC FIX	ZOLMN, NC FIX	*4000	17000
*1500 - MOCA			

95.3244 RNAV ROUTE T244

NOME, AK VOR/DME	CONFI, AK WP	3000	17500
CONFI, AK WP	CHEFF, AK WP	5300	17500
CHEFF, AK WP	*BETPE, AK WP	6400	17500
*7800 - MCA BETPE, AK WP , SE BND			
BETPE, AK WP	CEXIX, AK WP	10000	17500
CEXIX, AK WP	*CAKAD, AK WP	6600	17500
*6400 - MCA CAKAD, AK WP , NW BND			
CAKAD, AK WP	ANCHORAGE, AK VOR/DME	3000	17500

95.3245 RNAV ROUTE T245

SEAL BEACH, CA VORTAC	POPPR, CA FIX	2500	17500

FROM	TO	MEA	MAA

95.3245 RNAV ROUTE T245 - CONTINUED

POPPR, CA FIX	*SANTA MONICA, CA VOR/DME	2500	17500
*3200 - MCA SANTA MONICA, CA VOR/DME , NW BND			
SANTA MONICA, CA VOR/DME	SILEX, CA FIX	4600	17500

95.3246 RNAV ROUTE T246

BARROW, AK VOR/DME	GALENA, AK VOR/DME	9200	17500
GALENA, AK VOR/DME	MC GRATH, AK VORTAC	5800	17500
MC GRATH, AK VORTAC	*WINOR, AK FIX	4900	17500
*7500 - MCA WINOR, AK FIX , SE BND			
WINOR, AK FIX	FFITZ, AK FIX	8200	17500
FFITZ, AK FIX	*FRIDA, AK FIX	8800	17500
*9500 - MRA			
*7600 - MCA FRIDA, AK FIX , NW BND			
FRIDA, AK FIX	*IVANN, AK FIX	6600	17500
*5900 - MCA IVANN, AK FIX , W BND			
IVANN, AK FIX	ANCHORAGE, AK VOR/DME	2200	17500

95.3247 RNAV ROUTE T247

SEAL BEACH, CA VORTAC	POPPR, CA FIX	2500	17500
POPPR, CA FIX	*SANTA MONICA, CA VOR/DME	2500	17500
*3200 - MCA SANTA MONICA, CA VOR/DME , NW BND			
SANTA MONICA, CA VOR/DME	CANOG, CA FIX	5000	17500

95.3248 RNAV ROUTE T248

GAMBELL, AK NDB/DME	QAYAQ, AK WP	3600	17500
QAYAQ, AK WP	EMMONAK, AK VOR/DME	3000	17500

95.3249 RNAV ROUTE T249

VAN NUYS, CA VOR/DME	*SANTA MONICA, CA VOR/DME	4700	17500
*3300 - MCA SANTA MONICA, CA VOR/DME , N BND			
SANTA MONICA, CA VOR/DME	POPPR, CA FIX	2500	17500
POPPR, CA FIX	SEAL BEACH, CA VORTAC	2500	17500

95.3250 RNAV ROUTE T250

BETHEL, AK VORTAC	AKELT, AK FIX	3800	17500
AKELT, AK FIX	QAYAQ, AK WP	3000	17500
QAYAQ, AK WP	KUKULIAK, AK VOR/DME	3700	17500

95.3251 RNAV ROUTE T251

FRNIA, MO WP	FARMINGTON, MO VORTAC	2900	17500
FARMINGTON, MO VORTAC	FORISTELL, MO VORTAC	3100	6000
FORISTELL, MO VORTAC	*RIVRS, IL FIX	2700	6000
*6000 - MRA			
RIVRS, IL FIX	KAYUU, MO WP	2700	17500
KAYUU, MO WP	MERKR, IA WP	2500	17500
MERKR, IA WP	AGENS, IA FIX	2500	17500
AGENS, IA FIX	PICRA, IA WP	2700	17500
PICRA, IA WP	HAVOS, IA WP	2800	17500
HAVOS, IA WP	WATERLOO, IA VOR/DME	2800	17500
WATERLOO, IA VOR/DME	ZEZDU, IA FIX	2800	17500
ZEZDU, IA FIX	FALAR, MN FIX	3000	17500
FALAR, MN FIX	KOETZ, WI WP	3100	17500

95.3252 RNAV ROUTE T252

NOME, AK VOR/DME	KOTZEBUE, AK VOR/DME	5900	17500

FROM	TO	MEA	MAA
95.3252 RNAV ROUTE T252 - CONTINUED			
KOTZEBUE, AK VOR/DME	PERCI, AK WP	3000	17500
PERCI, AK WP	WARRT, AK WP	7000	17500
WARRT, AK WP	DEADHORSE, AK VOR/DME	3000	17500
95.3254 RNAV ROUTE T254			
COLLEGE STATION, TX VORTAC	HIPPS, TX WP	3000	15000
HIPPS, TX WP	EAKES, TX WP	3000	15000
EAKES, TX WP	CREPO, TX WP	3100	15000
CREPO, TX WP	LAKE CHARLES, LA VORTAC	2200	15000
95.3255 RNAV ROUTE T255			
MARTHAS VINEYARD, MA VOR/DME	FALMA, RI FIX	2000	17500
FALMA, RI FIX	PROVIDENCE, RI VOR/DME	2000	17500
PROVIDENCE, RI VOR/DME	NOXSE, RI WP	2500	17500
NOXSE, RI WP	BLATT, CT FIX	2500	17500
BLATT, CT FIX	NELIE, CT FIX	2800	17500
95.3256 RNAV ROUTE T256			
SAN ANTONIO, TX VORTAC	LDRET, TX WP	3000	17500
LDRET, TX WP	MOLLR, TX WP	2400	17500
MOLLR, TX WP	SABINE PASS, TX VOR/DME	3100	17500
SABINE PASS, TX VOR/DME	GUSTI, LA FIX	2000	17500
GUSTI, LA FIX	DAFLY, LA WP	2800	17500
95.3257 RNAV ROUTE T257			
VENTURA, CA VOR/DME	SAN MARCUS, CA VORTAC	6300	17500
SAN MARCUS, CA VORTAC	MORRO BAY, CA VORTAC	7300	17500
MORRO BAY, CA VORTAC	CALIS, CA FIX	4100	17500
CALIS, CA FIX	BLANC, CA FIX	3400	17500
BLANC, CA FIX	HNNTR, CA WP	6600	17500
HNNTR, CA WP	DUBSS, CA WP	7000	17500
DUBSS, CA WP	CAATE, CA WP	6900	17500
CAATE, CA WP	CHAWZ, CA WP	3900	17500
CHAWZ, CA WP	PORTE, CA FIX	4200	17500
PORTE, CA FIX	THHEO, CA WP	4200	17500
THHEO, CA WP	JAMIN, CA WP	4300	17500
JAMIN, CA WP	POINT REYES, CA VOR/DME	4300	17500
POINT REYES, CA VOR/DME	FREES, CA FIX	3500	17500
FREES, CA FIX	NACKI, CA WP	4900	17500
NACKI, CA WP	MENDOCINO, CA VORTAC	5600	17500
MENDOCINO, CA VORTAC	MERRI, CA FIX	5600	17500
MERRI, CA FIX	FLUEN, CA FIX	5700	17500
FLUEN, CA FIX	PLYAT, CA FIX	6800	17500
PLYAT, CA FIX	CCHUK, CA WP	6700	17500
CCHUK, CA WP	CICRO, CA WP	4800	17500
CICRO, CA WP	SEGVE, CA FIX	3800	17500
SEGVE, CA FIX	SCUPY, CA WP	2400	17500
SCUPY, CA WP	OLJEK, CA FIX	2200	17500
OLJEK, CA FIX	CIGCA, CA WP	1700	17500
CIGCA, CA WP	FURNS, CA WP	2200	17500
FURNS, CA WP	MITUE, OR FIX	4700	17500
MITUE, OR FIX	JANAS, OR FIX	4600	17500
JANAS, OR FIX	NEWPORT, OR VORTAC	4300	17500
NEWPORT, OR VORTAC	CUTEL, OR FIX	4100	17500
CUTEL, OR FIX	EYCEH, OR WP	4100	17500

FROM	TO	MEA	MAA

95.3257 RNAV ROUTE T257 - CONTINUED

EYCEH, OR WP	ILWAC, WA FIX	2300	17500
ILWAC, WA FIX	ZEDAT, WA FIX	2300	17500
ZEDAT, WA FIX	WAVLU, WA FIX	2900	17500
WAVLU, WA FIX	HOQUIAM, WA VORTAC	2900	17500
HOQUIAM, WA VORTAC	COPLS, WA WP	2600	17500
COPLS, WA WP	WAPTO, WA FIX	2900	17500
WAPTO, WA FIX	OZETT, WA WP	3700	17500
OZETT, WA WP	TATOOSH, WA VORTAC	4300	17500

95.3258 RNAV ROUTE T258

MINIM, AL FIX	CAYAP, AL FIX	2300	17500
CAYAP, AL FIX	CRMSN, AL WP	2200	17500
CRMSN, AL WP	ZIVMU, AL FIX	2300	17500
ZIVMU, AL FIX	DAYVS, AL WP	2500	17500
DAYVS, AL WP	HEENA, AL FIX	2600	17500
HEENA, AL FIX	KYLEE, AL FIX	2900	17500
KYLEE, AL FIX	CAMPP, AL FIX	3200	17500
CAMPP, AL FIX	BRAVS, GA WP	2900	17500
BRAVS, GA WP	LANGA, GA FIX	2600	17500
LANGA, GA FIX	CANER, GA FIX	3500	17500
CANER, GA FIX	GRANT, GA FIX	2900	17500
GRANT, GA FIX	HUZER, GA FIX	2600	17500
HUZER, GA FIX	SMARR, GA FIX	2500	17500
SMARR, GA FIX	SINCA, GA FIX	2500	17500
SINCA, GA FIX	GLOSS, GA FIX	2400	17500
GLOSS, GA FIX	MADDI, GA FIX	2400	17500
MADDI, GA FIX	JOTNO, GA FIX	2500	17500
JOTNO, GA FIX	DACHA, GA FIX	2500	17500
DACHA, GA FIX	UGAAA, GA WP	2500	17500
UGAAA, GA WP	HRTWL, SC WP	2500	17500
HRTWL, SC WP	WILLS, SC FIX	2400	17500
WILLS, SC FIX	TAYSO, SC FIX	2300	17500
TAYSO, SC FIX	RICHE, SC FIX	2400	17500
RICHE, SC FIX	HUNNY, NC WP	2500	17500
HUNNY, NC WP	NATCH, NC FIX	2400	17500
NATCH, NC FIX	GMINI, NC WP	2400	17500

95.3259 RNAV ROUTE T259

LAKE HUGHES, CA VORTAC	SHAFTER, CA VORTAC	8800	17500
SHAFTER, CA VORTAC	AVENAL, CA VOR/DME	*4300	17500
*3600 - MOCA			
AVENAL, CA VOR/DME	MBARI, CA WP	6600	17500
MBARI, CA WP	LKHRN, CA WP	6200	17500
LKHRN, CA WP	SALINAS, CA VORTAC	6000	17500
SALINAS, CA VORTAC	CAATE, CA WP	4000	17500
CAATE, CA WP	SANTY, CA FIX	*4000	17500
*3300 - MOCA			
SANTY, CA FIX	SAPID, CA FIX	5200	17500
SAPID, CA FIX	CRTER, CA WP	5500	17500
CRTER, CA WP	NORCL, CA WP	6000	17500
NORCL, CA WP	*MOVDD, CA WP	6000	17500
*5000 - MCA MOVDD, CA WP , SW BND			
MOVDD, CA WP	OOWEN, CA WP	3500	17500
OOWEN, CA WP	OXJEF, CA WP	2300	17500
OXJEF, CA WP	*SAAGO, CA WP	7000	17500
*9600 - MCA SAAGO, CA WP , E BND			
SAAGO, CA WP	*BNAKI, CA WP	11500	17500
*13200 - MCA BNAKI, CA WP , E BND			

FROM	TO	MEA	MAA

95.3259 RNAV ROUTE T259 - CONTINUED

BNAKI, CA WP	WEXIM, CA WP	14700	17500
WEXIM, CA WP	*NIKOL, CA FIX	14600	17500
*12200 - MCA NIKOL, CA FIX , W BND			
NIKOL, CA FIX	DAYMN, NV WP	13100	17500
DAYMN, NV WP	ELY, NV VOR/DME	12100	17500

95.3260 RNAV ROUTE T260

NOME, AK VOR/DME	TIN CITY, AK NDB/DME	6900	17500
TIN CITY, AK NDB/DME	COGNU, AK WP	5300	17500
COGNU, AK WP	POINT HOPE, AK NDB	3000	17500

95.3261 RNAV ROUTE T261

SANTA CATALINA, CA VORTAC	GAVIOTA, CA VORTAC	6500	17500
GAVIOTA, CA VORTAC	MORRO BAY, CA VORTAC	*6200	17500
*5700 - MOCA			
MORRO BAY, CA VORTAC	CLMNS, CA FIX	4100	17500
CLMNS, CA FIX	HRRNG, CA WP	2300	17500
HRRNG, CA WP	*HMPBK, CA WP	2300	17500
*4300 - MCA HMPBK, CA WP , N BND			
HMPBK, CA WP	*WOZZZ, CA WP	5400	17500
*6600 - MCA WOZZZ, CA WP , N BND			
WOZZZ, CA WP	DUBSS, CA WP	6900	17500
DUBSS, CA WP	SALINAS, CA VORTAC	6900	17500
SALINAS, CA VORTAC	KARNN, CA FIX	5500	17500
KARNN, CA FIX	WINDY, CA FIX	4700	17500
WINDY, CA FIX	SMONE, CA WP	5700	17500
SMONE, CA WP	*MOVDD, CA WP	5700	17500
*4700 - MCA MOVDD, CA WP , SE BND			
MOVDD, CA WP	RBLEW, CA WP	3600	17500
RBLEW, CA WP	GIFME, CA WP	2500	17500
GIFME, CA WP	HNNRY, CA WP	2500	17500
HNNRY, CA WP	*GRIDD, CA FIX	3400	17500
*4000 - MRA			
*2600 - MCA GRIDD, CA FIX , S BND			
GRIDD, CA FIX	TALUM, CA FIX	1800	17500
TALUM, CA FIX	JINGO, CA FIX	1900	17500
JINGO, CA FIX	GONGS, CA FIX	1800	17500
GONGS, CA FIX	HOMAN, CA FIX	4800	17500
HOMAN, CA FIX	GARSA, CA FIX	5500	17500
GARSA, CA FIX	CCAPS, CA WP	9000	17500
CCAPS, CA WP	MUREX, CA FIX	9500	17500
MUREX, CA FIX	MIXUP, OR FIX	8600	17500
MIXUP, OR FIX	PIIKZ, OR WP	8600	17500
PIIKZ, OR WP	TUPSE, OR WP	9400	17500
TUPSE, OR WP	DESCHUTES, OR VORTAC	6800	17500
DESCHUTES, OR VORTAC	HERBS, OR FIX	6300	17500
HERBS, OR FIX	CUPRI, OR FIX	6100	17500
CUPRI, OR FIX	SUPOC, OR WP	5500	17500
SUPOC, OR WP	KUKTE, OR FIX	6000	17500
KUKTE, OR FIX	VECCU, WA FIX	5500	17500
VECCU, WA FIX	SUNSN, WA WP	7000	17500
SUNSN, WA WP	MUDLE, WA FIX	7100	17500
MUDLE, WA FIX	YAKIMA, WA VORTAC	*5300	17500
*4800 - MOCA			
YAKIMA, WA VORTAC	SELAH, WA FIX	5400	17500
SELAH, WA FIX	GEBTE, WA FIX	6000	17500
GEBTE, WA FIX	LARDY, WA WP	6000	17500

FROM	TO	MEA	MAA

95.3261 RNAV ROUTE T261 - CONTINUED

LARDY, WA WP	QUINT, WA FIX	6400	17500
QUINT, WA FIX	KLSEY, WA WP	5200	17500
KLSEY, WA WP	PAWYO, WA WP	5100	17500
PAWYO, WA WP	HVARD, WA WP	5400	17500
HVARD, WA WP	SOFFE, WA WP	6500	17500
SOFFE, WA WP	JSTEN, WA WP	6900	17500

95.3262 RNAV ROUTE T262

KODIAK, AK VOR/DME	*WUXAN, AK WP	**6000	17500
*5200 - MCA WUXAN, AK WP , E BND			
**3800 - MOCA			
WUXAN, AK WP	JOHNSTONE POINT, AK VOR/DME	7000	17500

95.3263 RNAV ROUTE T263

FILLMORE, CA VORTAC	*DERBB, CA FIX	11000	17500
*7200 - MCA DERBB, CA FIX , SE BND			
DERBB, CA FIX	AVENAL, CA VOR/DME	6600	17500
AVENAL, CA VOR/DME	PANOCHE, CA VORTAC	7100	17500
PANOCHE, CA VORTAC	WINDY, CA FIX	6400	17500
WINDY, CA FIX	SMONE, CA WP	5700	17500
SMONE, CA WP	*MOVDD, CA WP	5700	17500
*4700 - MCA MOVDD, CA WP , SE BND			
MOVDD, CA WP	RBLEW, CA WP	3600	17500
RBLEW, CA WP	PITTS, CA FIX	3400	17500
PITTS, CA FIX	SCAGGS ISLAND, CA VORTAC	3400	17500
SCAGGS ISLAND, CA VORTAC	POPES, CA FIX	4800	17500
POPES, CA FIX	NAKPT, CA WP	5400	17500
NAKPT, CA WP	DIBLE, CA FIX	4800	17500
DIBLE, CA FIX	KENDL, CA FIX	*4900	17500
*3200 - MOCA			
KENDL, CA FIX	FOLDS, CA FIX	6900	17500
FOLDS, CA FIX	HOMEG, CA WP	10400	17500
HOMEG, CA WP	ZUNAS, CA FIX	9900	17500
ZUNAS, CA FIX	*TALEM, OR FIX	9500	17500
*9000 - MCA TALEM, OR FIX , S BND			
TALEM, OR FIX	*OREGN, OR WP	7800	17500
*6100 - MCA OREGN, OR WP , SE BND			
OREGN, OR WP	EROWY, OR WP	6000	17500
EROWY, OR WP	NOTTI, OR FIX	5400	17500
NOTTI, OR FIX	CORVALLIS, OR VOR/DME	4200	17500
CORVALLIS, OR VOR/DME	ARTTY, OR FIX	4000	17500
ARTTY, OR FIX	NEWBERG, OR VOR/DME	3900	17500
NEWBERG, OR VOR/DME	LOATH, OR FIX	4400	17500
LOATH, OR FIX	KELNG, WA WP	5200	17500
WINLO, WA FIX	ULESS, WA FIX	5400	17500
ULESS, WA FIX	MTLOK, WA WP	*5800	17500
*5200 - MOCA			
MTLOK, WA WP	*QUIIN, WA WP	7200	17500
*8100 - MCA QUIIN, WA WP , N BND			
QUIIN, WA WP	ARRIE, WA FIX	9100	17500
ARRIE, WA FIX	ELWHA, WA WP	8900	17500

95.3264 RNAV ROUTE T264

KODIAK, AK VOR/DME	ZAXUM, AK WP	*6000	17500
*4000 - MOCA			
ZAXUM, AK WP	MIDDLETON ISLAND, AK VOR/DME	*3000	17500
*2200 - MOCA			

FROM	TO	MEA	MAA

95.3265 RNAV ROUTE T265

JAYBE, WI WP	GRIFT, IL WP	2800	10000
GRIFT, IL WP	START, IL FIX	2700	10000
START, IL FIX	MEITZ, IL FIX	2700	10000
MEITZ, IL FIX	COYAP, IL WP	2400	10000
COYAP, IL WP	MAPPS, IN FIX	2500	10000
MAPPS, IN FIX	KLROY, IN WP	2400	17500
KLROY, IN WP	SMUUV, MI WP	2600	17500
SMUUV, MI WP	GETCH, MI WP	2500	17500
GETCH, MI WP	*LADIN, MI FIX	4000	17500
*5000 - MRA			
LADIN, MI FIX	CARGA, MI FIX	3200	17500
CARGA, MI FIX	BUDHA, MI WP	3200	17500
BUDHA, MI WP	*RONDO, MI FIX	3200	17500
*5000 - MRA			
RONDO, MI FIX	PINES, MI FIX	2700	17500

95.3266 RNAV ROUTE T266

U.S. CANADIAN BORDER	*AKCAP, AK WP	9100	17500
*8300 - MCA AKCAP, AK WP , N BND			
AKCAP, AK WP	ZEDEM, AK WP	8100	17500
ZEDEM, AK WP	*FEDMI, AK WP	8100	17500
*7900 - MCA FEDMI, AK WP , N BND			
FEDMI, AK WP	*BAVKE, AK WP	7400	17500
*7800 - MCA BAVKE, AK WP , SE BND			
BAVKE, AK WP	ROTVE, AK WP	8200	17500
ROTVE, AK WP	*WONOS, AK WP	8200	17500
*7600 - MCA WONOS, AK WP , NW BND			
WONOS, AK WP	COPOG, AK WP	7400	17500
COPOG, AK WP	*JAPOR, AK WP	6900	17500
*5800 - MCA JAPOR, AK WP , NW BND			
JAPOR, AK WP	*NIGPE, AK WP	5700	17500
*5000 - MCA NIGPE, AK WP , NW BND			
NIGPE, AK WP	GUMLE, AK WP	4500	17500
GUMLE, AK WP	ZONPU, AK WP	4200	17500
ZONPU, AK WP	*ZADED, AK WP	4300	17500
*5100 - MCA ZADED, AK WP , SE BND			
ZADED, AK WP	RADKY, AK FIX	6700	17500
RADKY, AK FIX	UNEKY, AK FIX	7000	17500
UNEKY, AK FIX	*XADZY, AK WP	6400	17500
*5900 - MCA XADZY, AK WP , NW BND			
XADZY, AK WP	VULHO, AK WP	5800	17500
VULHO, AK WP	*FOGID, AK WP	5300	17500
*4800 - MCA FOGID, AK WP , NW BND			
FOGID, AK WP	*YICAX, AK WP	4500	17500
*4800 - MCA YICAX, AK WP , SE BND			
YICAX, AK WP	NEREE, AK WP	5000	17500
NEREE, AK WP	*ZIDRA, AK WP	4900	17500
*4900 - MCA ZIDRA, AK WP , SE BND			
ZIDRA, AK WP	*VAZPU, AK WP	4900	17500
*5200 - MCA VAZPU, AK WP , SE BND			
VAZPU, AK WP	DOOZI, AK FIX	6200	17500
DOOZI, AK FIX	GIRTS, AK FIX	5300	17500
GIRTS, AK FIX	ANNETTE ISLAND, AK VOR/DME	5000	17500

95.3267 RNAV ROUTE T267

NOME, AK VOR/DME	*BALIN, AK FIX	**8000	17500
*2300 - MCA BALIN, AK FIX , SW BND			
**5900 - MOCA			

FROM	TO	MEA	MAA

95.3267 RNAV ROUTE T267 - CONTINUED

BALIN, AK FIX	KOTZEBUE, AK VOR/DME	*3300	17500
*2600 - MOCA			
KOTZEBUE, AK VOR/DME	*SICOV, AK WP	3900	17500
*2400 - MCA SICOV, AK WP , SE BND			
SICOV, AK WP	*HIBLA, AK WP	**5000	17500
*2600 - MCA HIBLA, AK WP , NW BND			
**2200 - MOCA			
HIBLA, AK WP	*UBASY, AK WP	**5500	17500
*5300 - MCA UBASY, AK WP , N BND			
**5000 - MOCA			
UBASY, AK WP	*PODKE, AK WP	**6300	17500
*4100 - MCA PODKE, AK WP , S BND			
**5400 - MOCA			
PODKE, AK WP	JODGU, AK WP	4000	17500
JODGU, AK WP	ZISDU, AK WP	*2300	17500
*1300 - MOCA			

95.3268 RNAV ROUTE T268

TATOOSH, WA VORTAC	HEMER, WA WP	3800	17500
HEMER, WA WP	YUCSU, WA FIX	4500	17500
YUCSU, WA FIX	NOOEL, WA WP	4500	17500
NOOEL, WA WP	STVOH, WA WP	4400	17500
STVOH, WA WP	WATTR, WA FIX	2600	17500
WATTR, WA FIX	LEION, WA WP	*3000	17500
*2400 - MOCA			
LEION, WA WP	*AYURU, WA WP	2000	17500
*3500 - MCA AYURU, WA WP , E BND			
AYURU, WA WP	WOODI, WA FIX	5600	17500
WOODI, WA FIX	BANDR, WA FIX	7600	17500
BANDR, WA FIX	*TMBOB, WA WP	7800	17500
*7200 - MCA TMBOB, WA WP , W BND			
TMBOB, WA WP	MERFF, WA WP	*6600	17500
*6600 - MOCA			
MERFF, WA WP	*DOFDO, WA FIX	6800	17500
*5400 - MCA DOFDO, WA FIX , SW BND			
DOFDO, WA FIX	MOSES LAKE, WA VOR/DME	3400	17500
MOSES LAKE, WA VOR/DME	SUBDY, WA FIX	3700	17500
SUBDY, WA FIX	YICUB, WA FIX	4400	17500
YICUB, WA FIX	*SPOKANE, WA VORTAC	4800	17500
*5300 - MCA SPOKANE, WA VORTAC , E BND			
SPOKANE, WA VORTAC	HILIE, ID FIX	7400	17500
HILIE, ID FIX	MULLAN PASS, ID VOR/DME	9000	17500
MULLAN PASS, ID VOR/DME	ALTON, MT FIX	9400	17500
ALTON, MT FIX	MISSOULA, MT VOR/DME	8800	17500
MISSOULA, MT VOR/DME	BAMBE, MT FIX	9500	17500
BAMBE, MT FIX	PIXXI, MT FIX	10000	17500
PIXXI, MT FIX	*RICHD, MT FIX	10600	17500
*10300 - MCA RICHD, MT FIX , W BND			
RICHD, MT FIX	HELENA, MT VORTAC	9700	17500
HELENA, MT VORTAC	SWEDD, MT FIX	10000	17500
SWEDD, MT FIX	CONNS, MT FIX	10800	17500
CONNS, MT FIX	NUKUW, MT FIX	10000	17500
NUKUW, MT FIX	*SUBKY, MT FIX	11700	17500
*10000 - MCA SUBKY, MT FIX , W BND			
SUBKY, MT FIX	*REEPO, MT FIX	8300	17500
*7200 - MCA REEPO, MT FIX , W BND			
REEPO, MT FIX	COLUS, MT FIX	6900	17500
COLUS, MT FIX	BILLINGS, MT VORTAC	6500	17500

FROM	TO	MEA	MAA

95.3268 RNAV ROUTE T268 - CONTINUED

BILLINGS, MT VORTAC	MILES CITY, MT VOR/DME	5800	17500
MILES CITY, MT VOR/DME	QATSA, ND FIX	5200	17500
QATSA, ND FIX	DICKINSON, ND VORTAC	*4700	17500
*4200 - MOCA			
DICKINSON, ND VORTAC	BISMARCK, ND VOR/DME	4500	17500

95.3269 RNAV ROUTE T269

ANNETTE ISLAND, AK VOR/DME	TURTY, AK WP	5600	17500
TURTY, AK WP	TOKEE, AK FIX	4800	17500
TOKEE, AK FIX	AKCAR, AK WP	4700	17500
AKCAR, AK WP	FLIPS, AK FIX	*5600	17500
*5100 - MOCA			
FLIPS, AK FIX	BIORKA ISLAND, AK VORTAC	5300	17500
BIORKA ISLAND, AK VORTAC	SALIS, AK FIX	*4900	17500
*4400 - MOCA			
SALIS, AK FIX	*HAPIT, AK FIX	**1700	17500
*15000 - MRA			
**1200 - MOCA			
HAPIT, AK FIX	*CENTA, AK FIX	**2200	17500
*1700 - MCA CENTA, AK FIX , NW BND			
**1200 - MOCA			
CENTA, AK FIX	*YAKUTAT, AK VOR/DME	2400	17500
*2400 - MCA YAKUTAT, AK VOR/DME , W BND			
YAKUTAT, AK VOR/DME	*MALAS, AK FIX	2700	17500
*2800 - MCA MALAS, AK FIX , W BND			
MALAS, AK FIX	*OXIDS, AK WP	2800	17500
*2200 - MCA OXIDS, AK WP , E BND			
OXIDS, AK WP	FOGNU, AK WP	2000	17500
FOGNU, AK WP	*HORGI, AK WP	2800	17500
*2500 - MCA HORGI, AK WP , E BND			
HORGI, AK WP	*ZIXIM, AK WP	2400	17500
*2500 - MCA ZIXIM, AK WP , W BND			
ZIXIM, AK WP	JOVOM, AK WP	3700	17500
JOVOM, AK WP	OXUGE, AK WP	3700	17500
OXUGE, AK WP	*KATAT, AK FIX	5200	17500
*4900 - MCA KATAT, AK FIX , E BND			
KATAT, AK FIX	CASEL, AK FIX	4700	17500
CASEL, AK FIX	*JOHNSTONE POINT, AK VOR/DME	5100	17500
*5000 - MCA JOHNSTONE POINT, AK VOR/DME , E BND			
JOHNSTONE POINT, AK VOR/DME	*FIMIB, AK WP	4000	17500
*5200 - MCA FIMIB, AK WP , W BND			
FIMIB, AK WP	*ANCHORAGE, AK VOR/DME	8800	17500
*6200 - MCA ANCHORAGE, AK VOR/DME , E BND			
ANCHORAGE, AK VOR/DME	*YONEK, AK FIX	3000	17500
*6000 - MCA YONEK, AK FIX , W BND			
YONEK, AK FIX	*TORTE, AK FIX	5000	17500
*8700 - MCA TORTE, AK FIX , W BND			
TORTE, AK FIX	*VEILL, AK FIX	10400	17500
*8000 - MCA VEILL, AK FIX , E BND			
VEILL, AK FIX	*FAMEK, AK WP	7200	17500
*7200 - MCA FAMEK, AK WP , E BND			
FAMEK, AK WP	SPARREVOHN, AK VOR/DME	*6600	17500
*6000 - MOCA			
SPARREVOHN, AK VOR/DME	ACRAN, AK FIX	5500	17500
ACRAN, AK FIX	ZOKAM, AK WP	5200	17500
ZOKAM, AK WP	*VIDDA, AK FIX	5900	17500
*3100 - MCA VIDDA, AK FIX , E BND			
VIDDA, AK FIX	BETHEL, AK VORTAC	2500	17500

FROM	TO	MEA	MAA

95.3269 RNAV ROUTE T269 - CONTINUED

BETHEL, AK VORTAC	MKLUK, AK WP	*3200	17500
*1500 - MOCA			

95.3270 RNAV ROUTE T270

NORTON BAY, AK NDB	HEXOG, AK WP	*6000	17500
*5400 - MOCA			
HEXOG, AK WP	SHISHMAREF, AK NDB	5000	17500

95.3271 RNAV ROUTE T271

COLD BAY, AK VORTAC	BINAL, AK FIX	4400	17500
BINAL, AK FIX	KING SALMON, AK VORTAC	2700	17500
KING SALMON, AK VORTAC	JIVCO, AK WP	3000	17500
JIVCO, AK WP	WOLCI, AK WP	4000	17500
WOLCI, AK WP	*WIDVA, AK WP	7000	17500
*8000 - MCA WIDVA, AK WP , NE BND			
WIDVA, AK WP	*ZINAM, AK WP	11800	17500
*10700 - MCA ZINAM, AK WP , SW BND			
ZINAM, AK WP	AMOTT, AK FIX	2500	17500

95.3272 RNAV ROUTE T272

HALLSVILLE, MO VORTAC	VANDALIA, IL VOR/DME	2700	6000

95.3273 RNAV ROUTE T273

FAIRBANKS, AK VORTAC	AYKID, AK FIX	6700	17500
AYKID, AK FIX	TUVVO, AK FIX	6400	17500
TUVVO, AK FIX	*SOTGE, AK WP	11300	17500
*8000 - MCA SOTGE, AK WP , S BND			
SOTGE, AK WP	ROCES, AK WP	*4000	17500
*2800 - MOCA			

95.3274 RNAV ROUTE T274

NEWPORT, OR VORTAC	WESHH, OR WP	4200	17500
WESHH, OR WP	CRAAF, OR FIX	4500	17500
CRAAF, OR FIX	JAIME, OR FIX	6100	17500
JAIME, OR FIX	*DBLEY, OR WP	8000	17500
*8200 - MCA DBLEY, OR WP , E BND			
DBLEY, OR WP	MMDSN, OR WP	10000	17500
MMDSN, OR WP	MMASN, OR WP	9000	17500
MMASN, OR WP	POCIT, OR FIX	9000	17500
POCIT, OR FIX	GIFRD, OR WP	9000	17500
GIFRD, OR WP	FASAB, OR WP	10000	17500
FASAB, OR WP	NUSME, CA WP	10000	17500
NUSME, CA WP	RUFUS, CA WP	10100	17500
RUFUS, CA WP	DUCCS, NV WP	10100	17500
DUCCS, NV WP	SEDTO, NV FIX	*10200	17500
*9200 - MOCA			
SEDTO, NV FIX	MUSTANG, NV VORTAC	11000	17500
MUSTANG, NV VORTAC	*YERIN, NV FIX	10000	17500
*10400 - MCA YERIN, NV FIX , SE BND			
YERIN, NV FIX	SCOLA, NV WP	11400	17500
SCOLA, NV WP	BABIT, NV FIX	*10800	17500
*10100 - MOCA			
BABIT, NV FIX	COALDALE, NV VORTAC	10500	17500
COALDALE, NV VORTAC	LIDAT, NV FIX	10000	17500

FROM	TO	MEA	MAA

95.3275 RNAV ROUTE T275

ZIKNI, AK WP	BETHEL, AK VORTAC	*5900	17500
*3600 - MOCA			
BETHEL, AK VORTAC	DAVBE, AK WP	*5900	17500
*3200 - MOCA			
DAVBE, AK WP	YELLW, AK WP	*5900	17500
*4700 - MOCA			
YELLW, AK WP	VUSUY, AK FIX	*5900	17500
*5100 - MOCA			
VUSUY, AK FIX	JERDN, AK WP	*5900	17500
*4400 - MOCA			
JERDN, AK WP	UNALAKLEET, AK VOR/DME	*5900	17500
*4000 - MOCA			

95.3276 RNAV ROUTE T276

WAVLU, WA FIX	WINLO, WA FIX	5400	17500
WINLO, WA FIX	COUGA, WA FIX	5100	17500
COUGA, WA FIX	CARBY, WA FIX	*7000	17500
*6500 - MOCA			
CARBY, WA FIX	VECCU, WA FIX	7000	17500
VECCU, WA FIX	HUNGR, WA WP	5600	17500
HUNGR, WA WP	LAYTN, WA WP	5000	17500
LAYTN, WA WP	WALLA WALLA, WA VOR/DME	4500	17500
WALLA WALLA, WA VOR/DME	RENGO, WA FIX	6400	17500
RENGO, WA FIX	SEVER, WA FIX	7200	17500
POTOR, WA FIX	CUPEV, ID FIX	*6100	17500
*5600 - MOCA			
CUPEV, ID FIX	HENVO, ID WP	6300	17500
HENVO, ID WP	OFINO, ID FIX	6300	17500
OFINO, ID FIX	JIROS, MT FIX	9800	17500
JIROS, MT FIX	MISSOULA, MT VOR/DME	9500	17500
MISSOULA, MT VOR/DME	ARSHO, MT WP	*10700	17500
*10200 - MOCA			
ARSHO, MT WP	*BRCKN, MT WP	11600	17500
*10000 - MCA BRCKN, MT WP , SW BND			
BRCKN, MT WP	FRYMN, MT FIX	8300	17500
FRYMN, MT FIX	YOGOS, MT FIX	*8000	17500
*6600 - MOCA			
YOGOS, MT FIX	EVBUJ, MT WP	8500	17500
EVBUJ, MT WP	ITEVE, MT WP	8000	17500
ITEVE, MT WP	*WUDEY, MT WP	8000	17500
*5200 - MCA WUDEY, MT WP , W BND			
WUDEY, MT WP	GLASGOW, MT VOR/DME	5000	17500

95.3277 RNAV ROUTE T277

BETTLES, AK VOR/DME	JIGTI, AK WP	*6000	17500
*4000 - MOCA			
JIGTI, AK WP	NOKFE, AK WP	*8000	17500
*7000 - MOCA			
NOKFE, AK WP	VOVUY, AK WP	*10300	17500
*9400 - MOCA			
VOVUY, AK WP	EPEHO, AK WP	*16000	17500
*9500 - MOCA			
EPEHO, AK WP	POINT LAY, AK NDB	*6400	17500
*5500 - MOCA			

95.3278 RNAV ROUTE T278

*HAPIT, AK FIX	**CSPER, AK FIX	4000	17500
*15000 - MRA			
**4300 - MCA CSPER, AK FIX , NE BND			

FROM	TO	MEA	MAA
95.3278 RNAV ROUTE T278 - CONTINUED			
CSPER, AK FIX	BIKUW, AK WP	4800	17500
BIKUW, AK WP	SISTERS ISLAND, AK VORTAC	4400	17500
SISTERS ISLAND, AK VORTAC	RADKY, AK FIX	6700	17500
95.3279 RNAV ROUTE T279			
ALEUT, AK WP	BETHEL, AK VORTAC	3200	17500
95.3280 RNAV ROUTE T280			
FLIPS, AK FIX	LEVEL ISLAND, AK VOR/DME	*7000	17500
*6300 - MOCA			
95.3281 RNAV ROUTE T281			
*YOZLE, NE FIX	BOKKI, NE FIX	4700	17500
*7000 - MRA			
BOKKI, NE FIX	AINSWORTH, NE VOR/DME	4600	17500
AINSWORTH, NE VOR/DME	LKOTA, SD WP	4400	17500
LKOTA, SD WP	PIERRE, SD VORTAC	4300	17500
95.3282 RNAV ROUTE T282			
VENCE, AK FIX	HORSI, AK FIX	5000	17500
HORSI, AK FIX	PERZO, AK WP	4700	17500
PERZO, AK WP	FAIRBANKS, AK VORTAC	4300	17500
95.3283 RNAV ROUTE T283			
SCOTTSBLUFF, NE VORTAC	GORDON, NE NDB	6300	17500
GORDON, NE NDB	WNDED, SD WP	*5500	17500
*5000 - MOCA			
WNDED, SD WP	PIERRE, SD VORTAC	5000	17500
95.3285 RNAV ROUTE T285			
NORTH PLATTE, NE VOR/DME	THEDFORD, NE VOR/DME	5000	17500
THEDFORD, NE VOR/DME	MARSS, NE FIX	4900	17500
MARSS, NE FIX	VALENTINE, NE NDB	4800	17500
VALENTINE, NE NDB	LKOTA, SD WP	4500	17500
LKOTA, SD WP	LESNR, SD WP	4300	17500
LESNR, SD WP	HURON, SD DME	4000	17500
95.3286 RNAV ROUTE T286			
RAPID CITY, SD VORTAC	GORDON, NE NDB	5700	17500
GORDON, NE NDB	EFFEX, NE FIX	5600	17500
EFFEX, NE FIX	THEDFORD, NE VOR/DME	5400	17500
THEDFORD, NE VOR/DME	BOKKI, NE FIX	4900	17500
BOKKI, NE FIX	GRAND ISLAND, NE VOR/DME	4600	17500
GRAND ISLAND, NE VOR/DME	PAWNEE CITY, NE VORTAC	3600	17500
PAWNEE CITY, NE VORTAC	ROBINSON, KS DME	3100	17500
ROBINSON, KS DME	BOWLR, KS FIX	2900	17500
95.3287 RNAV ROUTE T287			
DENNN, VA WP	CAARY, VA WP	*5200	10000
*3400 - MOCA			

FROM	TO	MEA	MAA

95.3287 RNAV ROUTE T287 - CONTINUED

CAARY, VA WP	WILMY, VA WP	*6900	10000
*6100 - MOCA			
WILMY, VA WP	KAIJE, VA WP	*5400	10000
*4900 - MOCA			
KAIJE, VA WP	BAMMY, WV WP	5500	10000
BAMMY, WV WP	REEES, PA WP	*5000	10000
*4300 - MOCA			
REEES, PA WP	TOMYD, MD WP	*5000	10000
*3800 - MOCA			

95.3288 RNAV ROUTE T288

GILLETTE, WY VOR/DME	TRTTL, WY WP	7000	17500
TRTTL, WY WP	KARAS, WY FIX	9000	17500
KARAS, WY FIX	*PACTO, SD FIX	10000	17500
*9700 - MRA			
PACTO, SD FIX	RAPID CITY, SD VORTAC	7100	17500
RAPID CITY, SD VORTAC	WNDED, SD WP	5000	17500
WNDED, SD WP	VALENTINE, NE NDB	5000	17500
VALENTINE, NE NDB	AINSWORTH, NE VOR/DME	*4700	17500
*4200 - MOCA			
AINSWORTH, NE VOR/DME	FESNT, NE WP	4500	17500
FESNT, NE WP	WOLBACH, NE VORTAC	4300	17500

95.3290 RNAV ROUTE T290

HABJE, MS FIX	MERIDIAN, MS VORTAC	2300	17500
MERIDIAN, MS VORTAC	KWANE, MS WP	2400	17500
KWANE, MS WP	RABEC, AL WP	2300	17500
RABEC, AL WP	MONTGOMERY, AL VORTAC	2000	17500
MONTGOMERY, AL VORTAC	*SCAIL, AL WP	2600	17500
*3400 - MCA SCAIL, AL WP , E BND			
SCAIL, AL WP	BBAIT, GA WP	4000	17500
BBAIT, GA WP	BBASS, GA WP	3500	17500
BBASS, GA WP	BBOAT, GA WP	2500	17500
BBOAT, GA WP	BOBBR, GA WP	2400	17500
BOBBR, GA WP	JACET, GA WP	2400	17500

95.3291 RNAV ROUTE T291

LOUIE, MD FIX	BAABS, MD WP	*5000	11000
*1800 - MOCA			
BAABS, MD WP	HARRISBURG, PA VORTAC	*5000	11000
*3000 - MOCA			
HARRISBURG, PA VORTAC	SELINSGROVE, PA VOR/DME	3300	17500
SELINSGROVE, PA VOR/DME	MILTON, PA VORTAC	3200	17500
MILTON, PA VORTAC	MEGSS, PA FIX	3500	17500
MEGSS, PA FIX	LAAYK, PA FIX	4000	17500
LAAYK, PA FIX	DELANCEY, NY VOR/DME	4400	17500
DELANCEY, NY VOR/DME	ALBANY, NY VORTAC	5600	17500

95.3292 RNAV ROUTE T292

SEMMES, AL VORTAC	ANTUH, AL WP	2000	17500
ANTUH, AL WP	JANES, AL WP	2000	17500
JANES, AL WP	KWANE, MS WP	2300	17500
KWANE, MS WP	EUTAW, AL FIX	2000	17500
EUTAW, AL FIX	MOVIL, AL WP	2300	17500
MOVIL, AL WP	BROOKWOOD, AL VORTAC	2500	17500

FROM	TO	MEA	MAA

95.3292 RNAV ROUTE T292 - CONTINUED

BROOKWOOD, AL VORTAC	VLKNN, AL WP	2500	17500
VLKNN, AL WP	HOKES, AL FIX	3200	17500
HOKES, AL FIX	MAYES, AL FIX	2900	17500
MAYES, AL FIX	RKMRT, GA WP	3600	17500
RKMRT, GA WP	POLLL, GA WP	2900	17500
POLLL, GA WP	CCATT, GA WP	3600	17500
CCATT, GA WP	REELL, GA WP	3700	17500
REELL, GA WP	TRREE, GA WP	2600	17500
TRREE, GA WP	JACET, GA WP	2400	17500

95.3293 RNAV ROUTE T293

CHUTT, AL WP	NFTRY, GA WP	2500	17500
NFTRY, GA WP	RTLRY, GA WP	3200	17500
RTLRY, GA WP	HONRR, GA WP	3300	17500
HONRR, GA WP	POLLL, GA WP	3300	17500
POLLL, GA WP	DAISI, GA WP	4700	17500

95.3294 RNAV ROUTE T294

HABJE, MS FIX	MERIDIAN, MS VORTAC	2300	17500
MERIDIAN, MS VORTAC	BOYDD, AL WP	2300	17500
BOYDD, AL WP	CRMSN, AL WP	2000	17500
CRMSN, AL WP	VLKNN, AL WP	2500	17500
VLKNN, AL WP	JOTAV, AL FIX	3300	17500
JOTAV, AL FIX	DEGAA, AL WP	2700	17500
DEGAA, AL WP	HEFIN, AL FIX	3400	17500
HEFIN, AL FIX	BBAIT, GA WP	4000	17500
BBAIT, GA WP	JMPPR, GA WP	3500	17500
JMPPR, GA WP	GRANT, GA FIX	3000	17500

95.3295 RNAV ROUTE T295

LOUIE, MD FIX	BAABS, MD WP	*5000	11000
*1800 - MOCA			
BAABS, MD WP	LANCASTER, PA VOR/DME	*5000	11000
*2400 - MOCA			
LANCASTER, PA VOR/DME	WILKES-BARRE, PA VORTAC	4000	17500
WILKES-BARRE, PA VORTAC	LAAYK, PA FIX	4000	17500
LAAYK, PA FIX	SAGES, NY FIX	6400	17500
SAGES, NY FIX	SASHA, MA FIX	6100	17500
SASHA, MA FIX	KEYNN, NH WP	4200	17500
KEYNN, NH WP	CONCORD, NH VOR/DME	5000	17500
CONCORD, NH VOR/DME	KENNEBUNK, ME VOR/DME	3000	17500
KENNEBUNK, ME VOR/DME	BRNNS, ME FIX	3000	17500
BRNNS, ME FIX	BANGOR, ME VORTAC	3000	17500
BANGOR, ME VORTAC	LAUDS, ME WP	2800	17500
LAUDS, ME WP	HULTN, ME WP	2500	17500
HULTN, ME WP	PRESQUE ISLE, ME VOR/DME	3000	17500

95.3296 RNAV ROUTE T296

JMPPR, GA WP	BBASS, GA WP	3000	17500
BBASS, GA WP	TATRS, GA WP	2500	17500
TATRS, GA WP	TACKL, GA WP	2500	17500

95.3297 RNAV ROUTE T297

PAIRA, GA WP	NFTRY, GA WP	3400	17500

FROM	TO	MEA	MAA

95.3297 RNAV ROUTE T297 - CONTINUED

NFTRY, GA WP	HEFIN, AL FIX	3400	17500
HEFIN, AL FIX	RKMRT, GA WP	3200	17500
RKMRT, GA WP	CHTTE, GA WP	2900	17500
CHTTE, GA WP	DAISI, GA WP	4000	17500
DAISI, GA WP	AWSON, GA FIX	5000	17500
AWSON, GA FIX	REELL, GA WP	3300	17500

95.3298 RNAV ROUTE T298

OAKLAND, CA VOR/DME	*SALAD, CA FIX	4300	17500
*4800 - MCA SALAD, CA FIX , E BND			
SALAD, CA FIX	*ALTAM, CA FIX	5000	17500
*4600 - MCA ALTAM, CA FIX , W BND			
ALTAM, CA FIX	*RBLEW, CA WP	4400	17500
*2700 - MCA RBLEW, CA WP , W BND			
RBLEW, CA WP	ORANG, CA FIX	1800	17500
ORANG, CA FIX	*EVETT, CA WP	1800	17500
*2500 - MCA EVETT, CA WP , E BND			
EVETT, CA WP	*ELKHN, CA WP	6300	17500
*7500 - MCA ELKHN, CA WP , E BND			
ELKHN, CA WP	*SMURA, CA WP	9600	17500
*11700 - MCA SMURA, CA WP , E BND			
SMURA, CA WP	*NIKOL, CA FIX	14600	17500
*12200 - MCA NIKOL, CA FIX , W BND			
NIKOL, CA FIX	COALDALE, NV VORTAC	11700	17500
COALDALE, NV VORTAC	KATTS, NV WP	11400	17500
KATTS, NV WP	KITTN, NV WP	13300	17500
KITTN, NV WP	WILSON CREEK, NV VORTAC	11600	17500
WILSON CREEK, NV VORTAC	WOOOP, UT WP	11900	17500
WOOOP, UT WP	MILFORD, UT VORTAC	11700	17500
MILFORD, UT VORTAC	*DETAN, UT FIX	11900	17500
*12700 - MCA DETAN, UT FIX , NE BND			
DETAN, UT FIX	EBOVE, UT WP	13400	17500
EBOVE, UT WP	CARBON, UT VOR/DME	13200	17500
CARBON, UT VOR/DME	MYTON, UT VOR/DME	11700	17500
MYTON, UT VOR/DME	ROCK SPRINGS, WY VOR/DME	13700	17500
ROCK SPRINGS, WY VOR/DME	DORTN, WY WP	10500	17500
DORTN, WY WP	CRAZY WOMAN, WY VOR/DME	9300	17500

95.3299 RNAV ROUTE T299

UCREK, VA WP	KAIJE, VA WP	5000	10000
KAIJE, VA WP	BAMMY, WV WP	5500	10000
BAMMY, WV WP	REEES, PA WP	*5000	10000
*4300 - MOCA			
REEES, PA WP	SCAPE, PA FIX	*5000	10000
*3800 - MOCA			

95.3300 RNAV ROUTE T300

SSENA, NY WP	STANK, NY WP	4100	17500
STANK, NY WP	JONNN, NY FIX	4600	17500
JONNN, NY FIX	*UUBER, NY WP	4500	17500
*5300 - MCA UUBER, NY WP , S BND			
UUBER, NY WP	*OPDIE, NY WP	5800	17500
*6600 - MCA OPDIE, NY WP , S BND			
OPDIE, NY WP	GASSY, NY WP	7500	17500
GASSY, NY WP	*OTOLE, NY WP	4900	17500
*2800 - MCA OTOLE, NY WP , N BND			

FROM	TO	MEA	MAA

95.3300 RNAV ROUTE T300 - CONTINUED

OTOLE, NY WP	ALBANY, NY VORTAC	2200	17500
ALBANY, NY VORTAC	*CANAN, NY FIX	3400	17500
*3600 - MCA CANAN, NY FIX , SE BND			
CANAN, NY FIX	SHIGY, MA FIX	3900	17500
SHIGY, MA FIX	STELA, MA FIX	4000	17500
STELA, MA FIX	MOLDS, MA FIX	3900	17500
MOLDS, MA FIX	TOMES, MA FIX	3500	17500
TOMES, MA FIX	COBOL, MA FIX	3300	17500
COBOL, MA FIX	NELIE, CT FIX	3100	17500
NELIE, CT FIX	WIPOR, CT FIX	2600	17500
WIPOR, CT FIX	YANTC, CT WP	*2300	17500
*1900 - MOCA			
YANTC, CT WP	LAFAY, RI FIX	2300	17500
LAFAY, RI FIX	MINNK, RI FIX	2000	17500
MINNK, RI FIX	NEWBE, RI FIX	*2000	17500
*1200 - MOCA			
NEWBE, RI FIX	DEEPO, MA FIX	2000	17500

95.3301 RNAV ROUTE T301

CAPE GIRARDEAU, MO DME	CENTRALIA, IL VORTAC	3500	17500
CENTRALIA, IL VORTAC	TYMME, IL WP	2400	17500
TYMME, IL WP	SPINNER, IL VORTAC	2500	17500
SPINNER, IL VORTAC	PEORIA, IL VORTAC	2400	17500

95.3302 RNAV ROUTE T302

CUKIS, OR WP	JJACE, OR WP	7300	17500
JJACE, OR WP	JJETT, OR WP	8000	17500
JJETT, OR WP	JERMM, OR WP	8000	17500
JERMM, OR WP	CUPRI, OR FIX	*6600	17500
*5900 - MOCA			
CUPRI, OR FIX	ZUDMI, OR WP	*9000	17500
*8200 - MOCA			
ZUDMI, OR WP	DRYLD, OR WP	9100	17500
DRYLD, OR WP	WILDHORSE, OR VOR/DME	9000	17500
WILDHORSE, OR VOR/DME	JOSTN, OR WP	8100	17500
JOSTN, OR WP	*UKAYI, OR WP	8000	17500
*5500 - MCA UKAYI, OR WP , SW BND			
UKAYI, OR WP	PARMO, ID FIX	5000	17500
PARMO, ID FIX	*ADEXE, ID WP	5000	17500
*5400 - MCA ADEXE, ID WP , E BND			
ADEXE, ID WP	*ALKAL, ID FIX	7000	17500
*6200 - MCA ALKAL, ID FIX , W BND			
ALKAL, ID FIX	FEVDO, ID WP	6000	17500
FEVDO, ID WP	TOXEE, ID FIX	6100	17500
TOXEE, ID FIX	JADUP, ID WP	7000	17500
JADUP, ID WP	*MRILE, ID WP	9100	17500
*10200 - MCA MRILE, ID WP , E BND			
MRILE, ID WP	RAMMM, ID WP	11000	17500
RAMMM, ID WP	MIKAE, WY WP	11700	17500
MIKAE, WY WP	BXTER, WY WP	11700	17500
BXTER, WY WP	EEBEE, WY WP	*10000	17500
*8700 - MOCA			
EEBEE, WY WP	REGVE, WY WP	10200	17500
REGVE, WY WP	ROCK SPRINGS, WY VOR/DME	10200	17500
ROCK SPRINGS, WY VOR/DME	FIKLA, WY WP	10000	17500
FIKLA, WY WP	MEDICINE BOW, WY VOR/DME	10000	17500
MEDICINE BOW, WY VOR/DME	*ZIKRU, NE FIX	10000	17500
*7400 - MCA ZIKRU, NE FIX , W BND			

FROM	TO	MEA	MAA

95.3302 RNAV ROUTE T302 - CONTINUED

ZIKRU, NE FIX	SCOTTSBLUFF, NE VORTAC	6700	17500
SCOTTSBLUFF, NE VORTAC	WAKPA, NE WP	6000	17500
WAKPA, NE WP	ALLIANCE, NE VOR/DME	6000	17500
ALLIANCE, NE VOR/DME	EVENN, NE FIX	6000	17500
EFFEX, NE FIX	MARSS, NE FIX	5400	17500
MARSS, NE FIX	PUKFA, NE WP	4800	17500
PUKFA, NE WP	GIYED, NE FIX	4600	17500
GIYED, NE FIX	LLUKY, NE WP	3900	17500
LLUKY, NE WP	ROKKK, IA WP	4400	17500
ROKKK, IA WP	WATERLOO, IA VOR/DME	3000	17500
WATERLOO, IA VOR/DME	DUBUQUE, IA VORTAC	2900	17500
DUBUQUE, IA VORTAC	JOOLZ, IL WP	*2900	17500
*2500 - MOCA			
JOOLZ, IL WP	GRIFT, IL WP	3000	17500

95.3305 RNAV ROUTE T305

CAPE GIRARDEAU, MO DME	AMART, IL WP	3300	17500
AMART, IL WP	TYMME, IL WP	2400	17500
TYMME, IL WP	DELCO, IL FIX	2400	17500
DELCO, IL FIX	JIBKA, IN WP	2400	17500

95.3306 RNAV ROUTE T306

LOS ANGELES, CA VORTAC	PRADO, CA FIX	4000	17500
PRADO, CA FIX	PARADISE, CA VORTAC	5000	17500
PARADISE, CA VORTAC	*SETER, CA FIX	5500	17500
*12100 - MCA SETER, CA FIX , E BND			
SETER, CA FIX	BANDS, CA FIX	9000	17500
BANDS, CA FIX	*PALM SPRINGS, CA VORTAC	13000	17500
*11800 - MCA PALM SPRINGS, CA VORTAC , W BND			
PALM SPRINGS, CA VORTAC	BLYTHE, CA VORTAC	8000	17500
BLYTHE, CA VORTAC	BUCKEYE, AZ VORTAC	6000	17500
BUCKEYE, AZ VORTAC	PERKY, AZ FIX	5000	17500
PERKY, AZ FIX	PHOENIX, AZ VORTAC	4000	17500
PHOENIX, AZ VORTAC	*TOTEC, AZ FIX	5000	17500
*5500 - MCA TOTEC, AZ FIX , E BND			
TOTEC, AZ FIX	TUCSON, AZ VORTAC	6500	17500
TUCSON, AZ VORTAC	NOCHI, AZ WP	10700	17500
NOCHI, AZ WP	ANIMA, NM FIX	10700	17500
ANIMA, NM FIX	DARCE, NM FIX	9000	17500
DARCE, NM FIX	COLUMBUS, NM VOR/DME	*9000	17500
*8200 - MOCA			
COLUMBUS, NM VOR/DME	EL PASO, TX VORTAC	9000	17500

95.3308 RNAV ROUTE T308

EMMONAK, AK VOR/DME	WEREL, AK WP	5000	17500

95.3310 RNAV ROUTE T310

TUCSON, AZ VORTAC	*SULLI, AZ FIX	**8000	17500
*9200 - MCA SULLI, AZ FIX , E BND			
**7200 - MOCA			
SULLI, AZ FIX	MESCA, AZ FIX	10000	17500
MESCA, AZ FIX	NOCHI, AZ WP	10000	17500
NOCHI, AZ WP	SAN SIMON, AZ VORTAC	10000	17500
SAN SIMON, AZ VORTAC	SILVER CITY, NM VOR/DME	10300	17500
SILVER CITY, NM VOR/DME	*KEAPS, NM FIX	10300	17500
*11600 - MCA KEAPS, NM FIX , NE BND			

FROM	TO	MEA	MAA

95.3310 RNAV ROUTE T310 - CONTINUED

KEAPS, NM FIX	TRUTH OR CONSEQUENCES, NM VORTAC	12300	17500

95.3312 RNAV ROUTE T312

HILL CITY, KS VORTAC	MOZEE, KS WP	4400	17500
MOZEE, KS WP	HUTCHINSON, KS VOR/DME	3800	17500
HUTCHINSON, KS VOR/DME	DROOP, MO WP	3500	17500
DROOP, MO WP	DOGWOOD, MO VORTAC	3300	17500
DOGWOOD, MO VORTAC	FARMINGTON, MO VORTAC	3400	17500
FARMINGTON, MO VORTAC	JEDPA, IL WP	2900	17500
JEDPA, IL WP	POCKET CITY, IN VORTAC	2300	17500

95.3314 RNAV ROUTE T314

BARNES, MA VORTAC	FAIDS, MA FIX	2900	17500
FAIDS, MA FIX	PUDGY, MA FIX	2800	17500
PUDGY, MA FIX	GARDNER, MA VOR/DME	3000	17500
GARDNER, MA VOR/DME	JOHNZ, NH FIX	3500	17500
JOHNZ, NH FIX	MANCH, NH WP	*2600	17500
*2100 - MOCA			
MANCH, NH WP	KHRIS, NH FIX	2300	17500
KHRIS, NH FIX	RAYMY, NH FIX	*2600	17500
*2100 - MOCA			
RAYMY, NH FIX	YUKES, NH WP	2300	17500
YUKES, NH WP	KENNEBUNK, ME VOR/DME	2600	17500

95.3315 RNAV ROUTE T315

HARTFORD, CT VOR/DME	DVANY, CT FIX	2700	17500
DVANY, CT FIX	DARTH, CT WP	2700	17500
DARTH, CT WP	WITNY, MA FIX	*3000	17500
*2500 - MOCA			
WITNY, MA FIX	SPENO, MA FIX	2900	17500
SPENO, MA FIX	GARDNER, MA VOR/DME	3000	17500
GARDNER, MA VOR/DME	*KEYNN, NH WP	3600	17500
*3900 - MCA KEYNN, NH WP , N BND			
KEYNN, NH WP	JAMMA, VT WP	4400	17500
JAMMA, VT WP	*EBERT, VT WP	5600	17500
*6100 - MCA EBERT, VT WP , N BND			
EBERT, VT WP	MUDDI, VT WP	6400	17500
MUDDI, VT WP	BURLINGTON, VT VOR/DME	6000	17500

95.3316 RNAV ROUTE T316

LAMMS, NY WP	*ROOMS, NY WP	3900	17500
*3900 - MCA ROOMS, NY WP , W BND			
ROOMS, NY WP	PAYGE, NY WP	3500	17500
PAYGE, NY WP	GALWA, NY FIX	2900	17500
GALWA, NY FIX	ETZUN, NY WP	3000	17500
ETZUN, NY WP	*CAMBRIDGE, NY VOR/DME	3300	17500
*5000 - MCA CAMBRIDGE, NY VOR/DME , E BND			
CAMBRIDGE, NY VOR/DME	DORIS, VT FIX	6000	17500
DORIS, VT FIX	*BRATS, VT WP	6000	17500
*4700 - MCA BRATS, VT WP , W BND			
BRATS, VT WP	STRUM, NH WP	4100	17500
STRUM, NH WP	*DUBIN, NH WP	4800	17500
*4400 - MCA DUBIN, NH WP , W BND			
DUBIN, NH WP	*MUGGY, NH FIX	**4000	17500
*3100 - MCA MUGGY, NH FIX , W BND			
**3500 - MOCA			

FROM	TO	MEA	MAA

95.3316 RNAV ROUTE T316 - CONTINUED

MUGGY, NH FIX	BASUU, NH FIX	3000	17500
BASUU, NH FIX	MANCH, NH WP	2600	17500

95.3317 RNAV ROUTE T317

NEWMAN, TX VORTAC	*MOLLY, NM FIX	8900	17500
*10000 - MRA			
*7700 - MCA MOLLY, NM FIX , E BND			
MOLLY, NM FIX	FRIAN, NM FIX	*6800	17500
*6300 - MOCA			
FRIAN, NM FIX	*DUCAS, NM FIX	7900	17500
*9200 - MCA DUCAS, NM FIX , NW BND			
DUCAS, NM FIX	TRUTH OR CONSEQUENCES, NM VORTAC	9700	17500
TRUTH OR CONSEQUENCES, NM VORTAC	SOCORRO, NM VORTAC	10100	17500
SOCORRO, NM VORTAC	YECUG, NM WP	7900	17500
YECUG, NM WP	AWASH, NM FIX	*8600	17500
*8100 - MOCA			
AWASH, NM FIX	CABZO, NM FIX	10000	17500
CABZO, NM FIX	TANER, NM FIX	10300	17500
TANER, NM FIX	MISSY, NM FIX	9600	17500
MISSY, NM FIX	RATTLESNAKE, NM VORTAC	8900	17500
RATTLESNAKE, NM VORTAC	*RIZAL, CO FIX	8900	17500
*10000 - MCA RIZAL, CO FIX , N BND			
RIZAL, CO FIX	MANCA, CO FIX	11200	17500
MANCA, CO FIX	HAVWU, CO FIX	12200	17500
GRAND JUNCTION, CO VOR/DME	*TESSY, CO FIX	10100	17500
*10500 - MRA			
*10700 - MCA TESSY, CO FIX , N BND			
TESSY, CO FIX	*RACER, CO FIX	11300	17500
*12000 - MRA			
RACER, CO FIX	*RENAE, CO FIX	10800	17500
*13000 - MRA			
RENAE, CO FIX	*ROCK SPRINGS, WY VOR/DME	11900	17500
*10200 - MCA ROCK SPRINGS, WY VOR/DME , S BND			
ROCK SPRINGS, WY VOR/DME	SWEAT, WY FIX	10000	17500
SWEAT, WY FIX	HONOX, WY FIX	10000	17500
HONOX, WY FIX	RIVERTON, WY VOR/DME	*8300	17500
*7800 - MOCA			
RIVERTON, WY VOR/DME	*FETIK, WY FIX	**7500	17500
*8800 - MCA FETIK, WY FIX , N BND			
**7500 - MOCA			
FETIK, WY FIX	CRANY, WY FIX	9800	17500
CRANY, WY FIX	PECKK, WY FIX	7900	17500
PECKK, WY FIX	*PRYER, MT FIX	11100	17500
*9900 - MCA PRYER, MT FIX , S BND			
PRYER, MT FIX	BILLINGS, MT VORTAC	7500	17500
BILLINGS, MT VORTAC	TASSE, MT FIX	6200	17500
TASSE, MT FIX	*JUGAP, MT FIX	6800	17500
*8400 - MCA JUGAP, MT FIX , NW BND			
JUGAP, MT FIX	ZERZO, MT FIX	9700	17500
ZERZO, MT FIX	*AUBBY, MT WP	10500	17500
*8300 - MCA AUBBY, MT WP , E BND			
AUBBY, MT WP	GREAT FALLS, MT VORTAC	6500	17500
GREAT FALLS, MT VORTAC	TUCKB, MT FIX	7000	17500
TUCKB, MT FIX	ROSOE, MT FIX	*7600	17500
*7600 - MOCA			
ROSOE, MT FIX	*PREEL, MT WP	8600	17500
*10200 - MCA PREEL, MT WP , SW BND			
PREEL, MT WP	KUNZY, MT WP	11200	17500

FROM	TO	MEA	MAA

95.3317 RNAV ROUTE T317 - CONTINUED

KUNZY, MT WP	OCEDA, MT FIX	*9600	17500
*9100 - MOCA			
OCEDA, MT FIX	MISSOULA, MT VOR/DME	10100	17500
MISSOULA, MT VOR/DME	JIROS, MT FIX	9500	17500
JIROS, MT FIX	OFINO, ID FIX	9800	17500
OFINO, ID FIX	NEZ PERCE, ID VOR/DME	6100	17500
NEZ PERCE, ID VOR/DME	POTOR, WA FIX	*6100	17500
*5600 - MOCA			
POTOR, WA FIX	RENGO, WA FIX	7200	17500
RENGO, WA FIX	BUTOC, WA FIX	6400	17500
BUTOC, WA FIX	BACUN, WA FIX	4500	17500
BACUN, WA FIX	PASCO, WA VOR/DME	3300	17500
PASCO, WA VOR/DME	*NIALS, WA FIX	2900	17500
*3300 - MCA NIALS, WA FIX , NW BND			
NIALS, WA FIX	FEBUS, WA FIX	4900	17500
FEBUS, WA FIX	MERFF, WA WP	6200	17500
MERFF, WA WP	THICK, WA FIX	*7900	17500
*7200 - MOCA			
THICK, WA FIX	RADDY, WA FIX	8700	17500
RADDY, WA FIX	MOUNT, WA FIX	8400	17500
MOUNT, WA FIX	*COFAY, WA WP	7700	17500
*4600 - MCA COFAY, WA WP , E BND			
COFAY, WA WP	FESAS, WA WP	2000	17500
FESAS, WA WP	*OZEYO, WA FIX	**3000	17500
*3800 - MCA OZEYO, WA FIX , SW BND			
**2500 - MOCA			
OZEYO, WA FIX	CETUV, WA FIX	4700	17500
CETUV, WA FIX	HEVOL, WA FIX	5200	17500
HEVOL, WA FIX	ASTORIA, OR VOR/DME	*4800	17500
*4300 - MOCA			

95.3319 RNAV ROUTE T319

CCLAY, GA WP	DUNCS, GA WP	2700	17500
DUNCS, GA WP	SHURT, GA WP	2700	17500
SHURT, GA WP	KLOWD, GA WP	3100	17500
KLOWD, GA WP	BLEWW, GA WP	3100	17500

95.3321 RNAV ROUTE T321

BBOAT, GA WP	TACKL, GA WP	2500	17500
TACKL, GA WP	REELL, GA WP	2600	17500
REELL, GA WP	BIGNN, GA WP	3700	17500

95.3322 RNAV ROUTE T322

RAPID CITY, SD VORTAC	PHILIP, SD VOR/DME	5000	17500
PHILIP, SD VOR/DME	PIERRE, SD VORTAC	4000	17500
PIERRE, SD VORTAC	DAKPE, SD WP	3900	17500
DAKPE, SD WP	DIDDL, SD WP	*3700	17500
*2800 - MOCA			
DIDDL, SD WP	OBITT, SD WP	*3700	17500
*3200 - MOCA			
OBITT, SD WP	CARIT, MN WP	3700	17500
CARIT, MN WP	REDWOOD FALLS, MN VOR/DME	*3700	17500
*3200 - MOCA			

95.3323 RNAV ROUTE T323

MARQO, FL WP	LRSEY, GA WP	2300	17500

FROM	TO	MEA	MAA

95.3323 RNAV ROUTE T323 - CONTINUED

LRSEY, GA WP	CROCS, GA WP	2000	17500
CROCS, GA WP	BOBBR, GA WP	2300	17500
BOBBR, GA WP	*BIGNN, GA WP	2700	17500
*3400 - MCA BIGNN, GA WP , N BND			
BIGNN, GA WP	HELNN, NC WP	7000	17500
HELNN, NC WP	OCOEE, NC WP	6600	17500
OCOEE, NC WP	*KNITS, TN FIX	7400	17500
*6200 - MCA KNITS, TN FIX , S BND			
KNITS, TN FIX	CRECY, TN WP	5000	17500
CRECY, TN WP	*ZADOT, TN WP	4200	17500
*5400 - MCA ZADOT, TN WP , N BND			
ZADOT, TN WP	*WELLA, KY WP	5900	17500
*4400 - MCA WELLA, KY WP , S BND			
WELLA, KY WP	DACEL, KY WP	3800	17500

95.3325 RNAV ROUTE T325

BOWLING GREEN, KY DME	RENRO, KY WP	*4500	17500
*2400 - MOCA			
RENRO, KY WP	LOONE, KY WP	*4500	17500
*2100 - MOCA			
LOONE, KY WP	APALO, IN FIX	*4500	17500
*2100 - MOCA			
APALO, IN FIX	BUNKA, IN FIX	2500	17500
BUNKA, IN FIX	JIBKA, IN WP	2400	17500
JIBKA, IN WP	CAPPY, IL WP	2500	17500
CAPPY, IL WP	SMARS, IL WP	3000	17500
SMARS, IL WP	TRENM, IL WP	3100	10000
TRENM, IL WP	START, IL FIX	3100	10000
START, IL FIX	GRIFT, IL WP	2700	10000
GRIFT, IL WP	*DEBOW, WI FIX	2800	10000
*10000 - MRA			
DEBOW, WI FIX	LUNGS, WI WP	2700	10000
LUNGS, WI WP	HOMNY, WI WP	*2800	10000
*2300 - MOCA			
HOMNY, WI WP	OSHKOSH, WI VORTAC	*3900	10000
*2600 - MOCA			

95.3326 RNAV ROUTE T326

MISSION BAY, CA VORTAC	HAILE, CA FIX	3800	17500
HAILE, CA FIX	BLLYJ, CA WP	6400	17500
BLLYJ, CA WP	STAXS, CA WP	8000	17500
STAXS, CA WP	GILYY, CA WP	8600	17500
GILYY, CA WP	KUMBA, CA FIX	8600	17500
KUMBA, CA FIX	IMPERIAL, CA VORTAC	4700	17500

95.3328 RNAV ROUTE T328

ORCUS, WA FIX	*MADEE, WA WP	2000	17500
*4800 - MCA MADEE, WA WP , E BND			
MADEE, WA WP	BOCAT, WA FIX	6000	17500
BOCAT, WA FIX	*BJAAY, WA WP	6300	17500
*8100 - MCA BJAAY, WA WP , E BND			
BJAAY, WA WP	*CREEB, WA FIX	9000	17500
*10200 - MCA CREEB, WA FIX , E BND			
CREEB, WA FIX	*ROZSE, WA WP	11000	17500
*11300 - MCA ROZSE, WA WP , E BND			
ROZSE, WA WP	KRUZR, WA FIX	11700	17500

FROM	TO	MEA	MAA

95.3328 RNAV ROUTE T328 - CONTINUED

KRUZR, WA FIX	*STRDP, WA WP	10800	17500
*8800 - MCA STRDP, WA WP , W BND			
STRDP, WA WP	*KLSEY, WA WP	7600	17500
*6700 - MCA KLSEY, WA WP , W BND			
KLSEY, WA WP	*SINGG, WA WP	5000	17500
*6200 - MCA SINGG, WA WP , E BND			
SINGG, WA WP	ROZTY, WA WP	7000	17500
ROZTY, WA WP	PRRKS, WA WP	7400	17500
PRRKS, WA WP	DAINA, WA WP	7500	17500
DAINA, WA WP	INOBE, ID FIX	7300	17500
INOBE, ID FIX	*RNDDY, ID WP	7700	17500
*8600 - MCA RNDDY, ID WP , E BND			
RNDDY, ID WP	*KAPPN, MT WP	11000	17500
*10200 - MCA KAPPN, MT WP , W BND			
KAPPN, MT WP	KARSH, MT WP	8800	17500

95.3329 RNAV ROUTE T329

MORRO BAY, CA VORTAC	PASO ROBLES, CA VORTAC	5000	17500
PASO ROBLES, CA VORTAC	LKHRN, CA WP	5900	17500
LKHRN, CA WP	PANOCHE, CA VORTAC	6900	17500
PANOCHE, CA VORTAC	MKNNA, CA WP	6400	17500
MKNNA, CA WP	OXJEF, CA WP	*6400	17500
*1600 - MOCA			
OXJEF, CA WP	TIPRE, CA WP	2700	17500
TIPRE, CA WP	OLIPH, CA WP	2700	17500
OLIPH, CA WP	HNNRY, CA WP	2400	17500
HNNRY, CA WP	*ROWWN, CA WP	1800	17500
*3200 - MCA ROWWN, CA WP , W BND			
ROWWN, CA WP	RAGGS, CA FIX	5100	17500
RAGGS, CA FIX	POPES, CA FIX	4900	17500
POPES, CA FIX	NACKI, CA WP	5900	17500

95.3330 RNAV ROUTE T330

GRAND FORKS, ND VOR/DME	BYZIN, MN WP	*3900	17500
*2500 - MOCA			
BYZIN, MN WP	TAMMR, MN WP	*3900	17500
*3000 - MOCA			
TAMMR, MN WP	WATAM, MN WP	*3900	17500
*2900 - MOCA			
WATAM, MN WP	MAFLN, MN WP	*3900	17500
*2900 - MOCA			
MAFLN, MN WP	DAYLE, MN FIX	*3900	17500
*3000 - MOCA			
DAYLE, MN FIX	GOPHER, MN VORTAC	*4000	17500
*3500 - MOCA			

95.3331 RNAV ROUTE T331

FRAME, CA FIX	NTELL, CA WP	2000	17500
NTELL, CA WP	MKNNA, CA WP	2300	17500
MKNNA, CA WP	KARNN, CA FIX	4700	17500
KARNN, CA FIX	VINCO, CA FIX	6600	17500
VINCO, CA FIX	NORCL, CA WP	6300	17500
NORCL, CA WP	*MOVDD, CA WP	6000	17500
*5000 - MCA MOVDD, CA WP , SW BND			
MOVDD, CA WP	EVETT, CA WP	3500	17500
EVETT, CA WP	TIPRE, CA WP	2700	17500

FROM	TO	MEA	MAA

95.3331 RNAV ROUTE T331 - CONTINUED

TIPRE, CA WP	*ESSOH, CA WP	6300	17500
*7800 - MCA ESSOH, CA WP , NE BND			
ESSOH, CA WP	SQUAW VALLEY, CA VOR/DME	11200	17500
SQUAW VALLEY, CA VOR/DME	TRUCK, CA FIX	11200	17500
TRUCK, CA FIX	MUSTANG, NV VORTAC	11600	17500
MUSTANG, NV VORTAC	HIXUP, NV WP	10300	17500
HIXUP, NV WP	LOVELOCK, NV VORTAC	9300	17500
LOVELOCK, NV VORTAC	*CUTVA, NV FIX	10500	17500
*11900 - MCA CUTVA, NV FIX , E BND			
CUTVA, NV FIX	BATTLE MOUNTAIN, NV VORTAC	11900	17500
BATTLE MOUNTAIN, NV VORTAC	PARZZ, NV WP	10900	17500
PARZZ, NV WP	DRYAD, ID FIX	10700	17500
DRYAD, ID FIX	TULIE, ID WP	11400	17500
TULIE, ID WP	AMFAL, ID WP	8300	17500
AMFAL, ID WP	POCATELLO, ID VOR/DME	8300	17500
POCATELLO, ID VOR/DME	VIPUC, ID FIX	7700	17500
VIPUC, ID FIX	IDAHO FALLS, ID VOR/DME	7100	17500
IDAHO FALLS, ID VOR/DME	PULTE, ID FIX	7100	17500
PULTE, ID FIX	*SABAT, ID FIX	7600	17500
*10000 - MRA			
SABAT, ID FIX	WAHNZ, ID WP	9900	17500
WAHNZ, ID WP	BUFVO, WY WP	11700	17500
BUFVO, WY WP	*SPECT, MT WP	14900	17500
*13400 - MCA SPECT, MT WP , SW BND			
SPECT, MT WP	BILLINGS, MT VORTAC	8300	17500
BILLINGS, MT VORTAC	TRUED, MT WP	6100	17500
TRUED, MT WP	EXADE, MT FIX	5900	17500
EXADE, MT FIX	JEKOK, ND WP	4400	17500
JEKOK, ND WP	FONIA, ND FIX	4000	17500

95.3332 RNAV ROUTE T332

ZONUV, WA WP	CRNEL, WA WP	*6100	17500
*4600 - MOCA			
CRNEL, WA WP	AALIX, WA WP	7200	17500
AALIX, WA WP	*BAALE, WA WP	8500	17500
*9400 - MCA BAALE, WA WP , E BND			
BAALE, WA WP	SNNDY, WA WP	*10000	17500
*9500 - MOCA			
SNNDY, WA WP	COADY, WA WP	10400	17500
COADY, WA WP	DYNGO, WA WP	10600	17500
DYNGO, WA WP	*METOO, WA WP	10400	17500
*9500 - MCA METOO, WA WP , W BND			
METOO, WA WP	HVARD, WA WP	7900	17500
HVARD, WA WP	REPII, WA WP	7000	17500
REPII, WA WP	ROZTY, WA WP	7000	17500

95.3333 RNAV ROUTE T333

FELLOWS, CA VOR/DME	REDDE, CA WP	7300	17500
REDDE, CA WP	LKHRN, CA WP	5800	17500
LKHRN, CA WP	*RANCK, CA FIX	6700	17500
*6200 - MCA RANCK, CA FIX , SE BND			
RANCK, CA FIX	*PANOS, CA FIX	6200	17500
*5500 - MCA PANOS, CA FIX , SE BND			
PANOS, CA FIX	*ULENY, CA WP	5200	17500
*4500 - MCA ULENY, CA WP , SE BND			
ULENY, CA WP	HENCE, CA FIX	4300	17500
HENCE, CA FIX	GILRO, CA FIX	4700	17500

FROM	TO	MEA	MAA
95.3333 RNAV ROUTE T333 - CONTINUED			
GILRO, CA FIX	BORED, CA FIX	6100	17500
BORED, CA FIX	SMONE, CA WP	6100	17500
SMONE, CA WP	*OOWEN, CA WP	5700	17500
*4200 - MCA OOWEN, CA WP , S BND			
OOWEN, CA WP	EVETT, CA WP	2300	17500
EVETT, CA WP	TIPRE, CA WP	2700	17500
95.3336 RNAV ROUTE T336			
TROYR, FL WP	FUTSY, FL WP	2500	17500
FUTSY, FL WP	OMMNI, FL WP	1900	17500
OMMNI, FL WP	VIZTA, FL WP	1800	17500
VIZTA, FL WP	PUNQU, FL WP	2000	17500
PUNQU, FL WP	YOJIX, FL FIX	2200	17500
YOJIX, FL FIX	YONMA, FL FIX	2200	17500
YONMA, FL FIX	*ODDEL, FL FIX	1800	17500
*2700 - MCA ODDEL, FL FIX , E BND			
ODDEL, FL FIX	DEARY, FL FIX	2700	17500
DEARY, FL FIX	VALKA, FL FIX	1800	17500
95.3338 RNAV ROUTE T338			
DSIRE, NV WP	LNDIN, NV WP	7200	17500
LNDIN, NV WP	WYLND, NV WP	6600	17500
WYLND, NV WP	BOEGY, AZ WP	7700	17500
95.3339 RNAV ROUTE T339			
CARNU, FL FIX	*DEEDS, FL FIX	1800	17500
*4000 - MRA			
DEEDS, FL FIX	SWAGS, FL FIX	1700	17500
SWAGS, FL FIX	ZAGPO, FL WP	1700	17500
ZAGPO, FL WP	DIDDY, FL FIX	1700	17500
DIDDY, FL FIX	ODDEL, FL FIX	2700	17500
95.3341 RNAV ROUTE T341			
MEAGN, FL WP	ZAGPO, FL WP	1700	17500
ZAGPO, FL WP	CUSEK, FL WP	1700	17500
CUSEK, FL WP	YELLZ, FL WP	1900	17500
YELLZ, FL WP	WEZER, FL WP	2000	17500
WEZER, FL WP	VARZE, FL WP	2000	17500
VARZE, FL WP	DULFN, FL WP	1800	17500
DULFN, FL WP	OMMNI, FL WP	1800	17500
OMMNI, FL WP	WHOOU, FL WP	2100	12000
WHOOU, FL WP	MARQO, FL WP	1900	12000
95.3343 RNAV ROUTE T343			
COOFS, FL FIX	CUSEK, FL WP	1800	17500
CUSEK, FL WP	FEBRO, FL WP	1800	17500
FEBRO, FL WP	TAHRS, FL WP	2000	17500
TAHRS, FL WP	YOJIX, FL FIX	2000	17500
YOJIX, FL FIX	YONMA, FL FIX	2200	17500
YONMA, FL FIX	*ODDEL, FL FIX	1800	17500
*2700 - MCA ODDEL, FL FIX , E BND			
ODDEL, FL FIX	DEARY, FL FIX	2700	17500
DEARY, FL FIX	INDIA, FL FIX	1800	17500
95.3345 RNAV ROUTE T345			
MARKT, FL WP	AIRBT, FL WP	1700	17500

FROM	TO	MEA	MAA
95.3345 RNAV ROUTE T345 - CONTINUED			
AIRBT, FL WP	DOWDI, FL WP	1700	17500
DOWDI, FL WP	LLNCH, FL FIX	1800	17500
LLNCH, FL FIX	VALKA, FL FIX	1800	17500
95.3347 RNAV ROUTE T347			
SHANC, FL FIX	BOBOE, FL WP	1700	17500
BOBOE, FL WP	DURRY, FL WP	1700	17500
DURRY, FL WP	CLEFF, FL WP	1700	17500
CLEFF, FL WP	BAIRN, FL FIX	1800	17500
BAIRN, FL FIX	ODDEL, FL FIX	2700	17500
ODDEL, FL FIX	SABOT, FL FIX	2700	17500
SABOT, FL FIX	*CROPY, FL FIX	1800	17500
*2000 - MCA CROPY, FL FIX , N BND			
CROPY, FL FIX	KIZER, FL FIX	2800	17500
KIZER, FL FIX	GUANO, FL FIX	2800	17500
GUANO, FL FIX	MRUTT, FL WP	1800	17500
MRUTT, FL WP	FOXAM, FL WP	1800	17500
FOXAM, FL WP	*SEBAG, FL FIX	1700	17500
*3000 - MRA			
95.3348 RNAV ROUTE T348			
LESNR, SD WP	TECUD, SD WP	4000	17500
TECUD, SD WP	SIOUX FALLS, SD VORTAC	4100	17500
SIOUX FALLS, SD VORTAC	GRSIS, MN WP	3500	17500
GRSIS, MN WP	FOOLS, MN WP	3200	17500
FOOLS, MN WP	GABDE, MN WP	3100	17500
GABDE, MN WP	KRRTR, IA WP	3200	17500
KRRTR, IA WP	MADISON, WI VORTAC	3000	17500
MADISON, WI VORTAC	LUNGS, WI WP	2800	17500
95.3349 RNAV ROUTE T349			
VARZE, FL WP	MILOW, FL WP	1900	17500
MILOW, FL WP	MURDE, FL WP	1900	17500
MURDE, FL WP	TROYR, FL WP	1900	17500
95.3353 RNAV ROUTE T353			
FEBRO, FL WP	MOANS, FL FIX	1900	17500
MOANS, FL FIX	PUNQU, FL WP	1900	17500
PUNQU, FL WP	AKOJO, FL WP	2000	17500
AKOJO, FL WP	DAIYL, FL WP	1800	17500
DAIYL, FL WP	EMSEE, FL WP	1900	17500
EMSEE, FL WP	KIZER, FL FIX	2800	17500
KIZER, FL FIX	GUANO, FL FIX	2800	17500
GUANO, FL FIX	MRUTT, FL WP	1800	17500
MRUTT, FL WP	FOXAM, FL WP	1800	17500
FOXAM, FL WP	COBOK, FL FIX	1700	17500
COBOK, FL FIX	SUBER, FL FIX	*1700	17500
*1200 - MOCA			
SUBER, FL FIX	STARY, GA FIX	*1700	17500
*1200 - MOCA			
95.3354 RNAV ROUTE T354			
BYZIN, MN WP	PARK RAPIDS, MN DME	3600	17500
PARK RAPIDS, MN DME	BRNRD, MN WP	3300	17500

FROM	TO	MEA	MAA

95.3354 RNAV ROUTE T354 - CONTINUED

BRNRD, MN WP	SSKYY, WI WP	3000	17500
SSKYY, WI WP	TONOC, WI FIX	3000	17500
TONOC, WI FIX	KOETZ, WI WP	3000	17500
KOETZ, WI WP	HRMNN, WI WP	3500	17500
HRMNN, WI WP	FOMAG, WI WP	3000	17500
FOMAG, WI WP	MAYSE, WI WP	3000	10000
MAYSE, WI WP	HOMRC, IL WP	3000	10000
HOMRC, IL WP	CPTON, IL WP	2600	10000
CPTON, IL WP	BLLUE, IL FIX	2700	17500
BLLUE, IL FIX	BOSTN, IL WP	2800	17500
BOSTN, IL WP	BIBLE GROVE, IL VORTAC	2500	17500
BIBLE GROVE, IL VORTAC	NUWAY, IL WP	2100	17500
NUWAY, IL WP	MESSR, KY WP	2300	17500
MESSR, KY WP	AHOYE, KY FIX	2000	17500
AHOYE, KY FIX	SACDO, TN WP	2200	17500
SACDO, TN WP	HAUSS, TN WP	2000	17500

95.3355 RNAV ROUTE T355

FOLDS, CA FIX	*DIMGE, CA WP	11200	17500
*9600 - MCA DIMGE, CA WP , S BND			
DIMGE, CA WP	GRENA, CA FIX	*7600	17500
*6300 - MOCA			
GRENA, CA FIX	ROMAE, CA FIX	9000	17500
ROMAE, CA FIX	*TALEM, OR FIX	9700	17500
*9200 - MCA TALEM, OR FIX , SE BND			
TALEM, OR FIX	SAMIE, OR FIX	7800	17500
SAMIE, OR FIX	BROKN, OR FIX	6900	17500
BROKN, OR FIX	KINZY, OR WP	8900	17500
KINZY, OR WP	SSTRS, OR WP	9800	17500
SSTRS, OR WP	*OCTAD, OR FIX	**8300	17500
*7100 - MCA OCTAD, OR FIX , S BND			
**7700 - MOCA			
OCTAD, OR FIX	HERBS, OR FIX	6900	17500
HERBS, OR FIX	WISSL, OR WP	6400	17500
WISSL, OR WP	JJETT, OR WP	7700	17500
JJETT, OR WP	PUTZZ, OR WP	7700	17500
PUTZZ, OR WP	*GLARA, OR FIX	7300	17500
*5100 - MCA GLARA, OR FIX , E BND			
GLARA, OR FIX	CANBY, OR FIX	*3500	17500
*2800 - MOCA			
CANBY, OR FIX	KKARP, OR WP	5300	17500
KKARP, OR WP	CETUV, WA FIX	5300	17500
CETUV, WA FIX	ZOLGI, WA FIX	4900	17500
ZOLGI, WA FIX	*WUMOX, WA FIX	3400	17500
*3100 - MCA WUMOX, WA FIX , S BND			
WUMOX, WA FIX	PENN COVE, WA VOR/DME	3000	17500
PENN COVE, WA VOR/DME	ZONUV, WA WP	3000	17500
ZONUV, WA WP	UCAKI, WA WP	3000	17500
UCAKI, WA WP	SECOG, WA FIX	2300	17500

95.3356 RNAV ROUTE T356

*WOOLY, MD FIX	DROSA, MD WP	**6000	17500
*6000 - MCA WOOLY, MD FIX , SE BND			
**3100 - MOCA			
DROSA, MD WP	OBWON, MD WP	*6000	17500
*2600 - MOCA			
OBWON, MD WP	SWANN, MD FIX	*6000	17500
*1800 - MOCA			

FROM	TO	MEA	MAA

95.3356 RNAV ROUTE T356 - CONTINUED

SWANN, MD FIX	*GATBY, MD FIX	**6000	17500
*6000 - MCA GATBY, MD FIX , SW BND			
**1500 - MOCA			
GATBY, MD FIX	KERNO, MD FIX	*4000	17500
*1400 - MOCA			
KERNO, MD FIX	ODESA, MD FIX	*4000	17500
*1500 - MOCA			
ODESA, MD FIX	*ELUDE, MD FIX	**4000	17500
*4000 - MCA ELUDE, MD FIX , BND			
**1800 - MOCA			

95.3357 RNAV ROUTE T357

KONNG, NV WP	DICSA, NV FIX	7600	17500
DICSA, NV FIX	WANDR, NV WP	7600	17500
WANDR, NV WP	DSIRE, NV WP	6900	17500

95.3358 RNAV ROUTE T358

MARTINSBURG, WV VORTAC	CPTAL, MD WP	*5000	17500
*3800 - MOCA			
CPTAL, MD WP	HOGZZ, MD WP	*5000	17500
*4300 - MOCA			
HOGZZ, MD WP	MOYRR, MD WP	*5000	17500
*3200 - MOCA			
MOYRR, MD WP	DANII, MD WP	*6000	17500
*3100 - MOCA			
DANII, MD WP	OBWON, MD WP	*6000	17500
*2600 - MOCA			
OBWON, MD WP	SWANN, MD FIX	*6000	17500
*1800 - MOCA			
SWANN, MD FIX	GOLDA, MD FIX	*1800	17500
*1500 - MOCA			
GOLDA, MD FIX	BROSS, MD FIX	*1800	17500
*1500 - MOCA			
BROSS, MD FIX	SMYRNA, DE VORTAC	*1800	17500
*1500 - MOCA			
SMYRNA, DE VORTAC	LEEAH, NJ FIX	*1800	17500
*1400 - MOCA			
LEEAH, NJ FIX	AVALO, NJ FIX	*1800	17500
*1600 - MOCA			

95.3359 RNAV ROUTE T359

DANBY, CA FIX	WOPMA, CA FIX	10500	17500
WOPMA, CA FIX	DICSA, NV FIX	8300	17500
DICSA, NV FIX	RAATT, NV WP	7600	17500
RAATT, NV WP	DSIRE, NV WP	6300	17500

95.3361 RNAV ROUTE T361

BOEGY, AZ WP	PUTTT, AZ WP	7000	17500
PUTTT, AZ WP	DICSA, NV FIX	7600	17500
DICSA, NV FIX	WANDR, NV WP	7600	17500
WANDR, NV WP	LNDIN, NV WP	6300	17500
LNDIN, NV WP	SHIEK, NV WP	7700	17500
SHIEK, NV WP	MORMON MESA, NV VORTAC	*7600	17500
*5900 - MOCA			

95.3363 RNAV ROUTE T363

DICSA, NV FIX	PUTTT, AZ WP	7600	17500

FROM	TO	MEA	MAA

95.3363 RNAV ROUTE T363 - CONTINUED

PUTTT, AZ WP	SHIEK, NV WP	7600	17500
SHIEK, NV WP	MORMON MESA, NV VORTAC	*7600	17500
*5900 - MOCA			

95.3364 RNAV ROUTE T364

COGNU, AK WP	HIPIV, AK WP	*3000	17500
*1700 - MOCA			
HIPIV, AK WP	KOTZEBUE, AK VOR/DME	2600	17500

95.3366 RNAV ROUTE T366

VANTY, AK WP	CABGI, AK WP	4000	17500
CABGI, AK WP	SUPGY, AK WP	4000	17500
SUPGY, AK WP	JODGU, AK WP	2200	17500
JODGU, AK WP	FILEV, AK WP	1900	17500
FILEV, AK WP	BARROW, AK VOR/DME	*1900	17500
*1400 - MOCA			
BARROW, AK VOR/DME	JATIL, AK WP	1800	17500

95.3367 RNAV ROUTE T367

JOPES, AK WP	*WOMEV, AK WP	**2600	17500
*2800 - MCA WOMEV, AK WP , NE BND			
**2100 - MOCA			
WOMEV, AK WP	*JERDN, AK WP	4600	17500
*4200 - MCA JERDN, AK WP , SW BND			
JERDN, AK WP	*MKLUR, AK WP	**4400	17500
*4400 - MCA MKLUR, AK WP , SE BND			
**4000 - MOCA			
MKLUR, AK WP	*HALUS, AK WP	3000	17500
*5000 - MCA HALUS, AK WP , NE BND			
HALUS, AK WP	*FEMEP, AK WP	**5000	17500
*3700 - MCA FEMEP, AK WP , NW BND			
**3000 - MOCA			
FEMEP, AK WP	*JIGUM, AK WP	**6500	17500
*2800 - MCA JIGUM, AK WP , SE BND			
**5200 - MOCA			
JIGUM, AK WP	KOTZEBUE, AK VOR/DME	2700	17500
KOTZEBUE, AK VOR/DME	CABGI, AK WP	4400	17500

95.3368 RNAV ROUTE T368

KING SALMON, AK VORTAC	*CACCA, AK FIX	2300	17500
*3300 - MCA CACCA, AK FIX , E BND			
CACCA, AK FIX	*ICADI, AK FIX	3300	17500
*3900 - MCA ICADI, AK FIX , E BND			
ICADI, AK FIX	*ZAFPO, AK WP	4300	17500
*4900 - MCA ZAFPO, AK WP , E BND			
ZAFPO, AK WP	*KOKOZ, AK FIX	4800	17500
*5900 - MCA KOKOZ, AK FIX , NE BND			
KOKOZ, AK FIX	*WORRI, AK FIX	7000	17500
*7600 - MCA WORRI, AK FIX , E BND			
WORRI, AK FIX	*CIXUL, AK WP	9200	17500
*8500 - MCA CIXUL, AK WP , W BND			
CIXUL, AK WP	*OSBOE, AK FIX	4700	17500
*4700 - MCA OSBOE, AK FIX , NW BND			
OSBOE, AK FIX	KODIAK, AK VOR/DME	4600	17500

95.3369 RNAV ROUTE T369

BETHEL, AK VORTAC	JOPES, AK WP	*3000	17500
*1900 - MOCA			

FROM	TO	MEA	MAA
95.3369 RNAV ROUTE T369 - CONTINUED			
JOPES, AK WP	ZIPIX, AK WP	*3200	17500
*2400 - MOCA			
ZIPIX, AK WP	NOME, AK VOR/DME	2800	17500
95.3370 RNAV ROUTE T370			
WIXER, AK WP	ITAWU, AK WP	3500	17500
ITAWU, AK WP	DILLINGHAM, AK VOR/DME	*2800	17500
*1500 - MOCA			
DILLINGHAM, AK VOR/DME	*DUMZU, AK WP	3500	17500
*4600 - MCA DUMZU, AK WP , NE BND			
DUMZU, AK WP	*AWOMY, AK FIX	6100	17500
*6300 - MCA AWOMY, AK FIX , NE BND			
AWOMY, AK FIX	*MOFOF, AK FIX	8200	17500
*4900 - MCA MOFOF, AK FIX , SW BND			
MOFOF, AK FIX	KENAI, AK VOR/DME	2800	17500
95.3370 RNAV ROUTE T370			
BURBN, TX WP	*ZUMKI, TX FIX	3000	17500
*3700 - MCA ZUMKI, TX FIX , E BND			
ZUMKI, TX FIX	RRORY, TX WP	4000	17500
RRORY, TX WP	RAKOC, TX FIX	2400	17500
RAKOC, TX FIX	TASEY, TX WP	2300	17500
TASEY, TX WP	SLOTH, TX WP	2000	17500
SLOTH, TX WP	LOCUS, AR FIX	2000	17500
LOCUS, AR FIX	HAMPT, AR FIX	1900	17500
HAMPT, AR FIX	RICKG, AR WP	2000	17500
RICKG, AR WP	EJKSN, MS WP	1900	17500
EJKSN, MS WP	IZAAC, MS WP	1800	17500
IZAAC, MS WP	*TOMLN, MS FIX	2000	17500
*2200 - MCA TOMLN, MS FIX , E BND			
TOMLN, MS FIX	CLOUT, MS FIX	2500	17500
CLOUT, MS FIX	SKNRR, MS WP	2000	17500
SKNRR, MS WP	MINIM, AL FIX	2000	17500
MINIM, AL FIX	BESOM, AL FIX	2300	17500
BESOM, AL FIX	NESTS, AL WP	*2500	17500
*2000 - MOCA			
NESTS, AL WP	VLKNN, AL WP	2500	17500
95.3371 RNAV ROUTE T371			
KODIAK, AK VOR/DME	JEKEX, AK FIX	4900	17500
JEKEX, AK FIX	HAMPU, AK WP	4200	17500
HAMPU, AK WP	AMOTT, AK FIX	3100	17500
95.3372 RNAV ROUTE T372			
BIG LAKE, AK VORTAC	*WUNTU, AK WP	6600	17500
*7500 - MCA WUNTU, AK WP , NE BND			
WUNTU, AK WP	CAGOP, AK WP	*10000	17500
*8100 - MOCA			
CAGOP, AK WP	FITAT, AK WP	*10000	17500
*8200 - MOCA			
FITAT, AK WP	TOYOC, AK WP	*10000	17500
*8400 - MOCA			
TOYOC, AK WP	ZAMUP, AK WP	*10000	17500
*9100 - MOCA			
ZAMUP, AK WP	CANGI, AK WP	*10000	17500
*9100 - MOCA			

FROM	TO	MEA	MAA

95.3372 RNAV ROUTE T372 - CONTINUED

CANGI, AK WP	WAPRU, AK WP	*10000	17500
*8600 - MOCA			
WAPRU, AK WP	HOSON, AK WP	*10000	17500
*7700 - MOCA			
HOSON, AK WP	SMOKY, AK FIX	7200	17500
SMOKY, AK FIX	GULKANA, AK VOR/DME	5300	17500
GULKANA, AK VOR/DME	BEFTI, AK WP	5200	17500
BEFTI, AK WP	*CEBUN, AK WP	5200	17500
*5700 - MCA CEBUN, AK WP , NE BND			
CEBUN, AK WP	*HIGOL, AK WP	6900	17500
*7800 - MCA HIGOL, AK WP , NE BND			
HIGOL, AK WP	*JOLOB, AK WP	**11000	17500
*8200 - MCA JOLOB, AK WP , SW BND			
**8600 - MOCA			
JOLOB, AK WP	*WEBOL, AK WP	7100	17500
*6400 - MCA WEBOL, AK WP , SW BND			
WEBOL, AK WP	NORTHWAY, AK VORTAC	5200	17500
NORTHWAY, AK VORTAC	U.S. CANADIAN BORDER	5800	17500

95.3373 RNAV ROUTE T373

KOWOK, AK FIX	RAGES, AK FIX	4400	17500
RAGES, AK FIX	*ZUDSO, AK WP	5500	17500
*6600 - MCA ZUDSO, AK WP , W BND			
ZUDSO, AK WP	MAYHW, AK WP	7400	17500
MAYHW, AK WP	*FEXOP, AK WP	7400	17500
*5200 - MCA FEXOP, AK WP , SE BND			
FEXOP, AK WP	*ZETNU, AK WP	4900	17500
*4800 - MCA ZETNU, AK WP , E BND			
ZETNU, AK WP	BETHEL, AK VORTAC	3700	17500
BETHEL, AK VORTAC	WEREL, AK WP	3900	17500

95.3374 RNAV ROUTE T374

KOTZEBUE, AK VOR/DME	CIBDU, AK WP	2600	17500
CIBDU, AK WP	ZUBES, AK WP	*10000	17500
*4000 - MOCA			
ZUBES, AK WP	CUTIB, AK WP	*10000	17500
*4200 - MOCA			
CUTIB, AK WP	NINGE, AK WP	*10000	17500
*4300 - MOCA			
NINGE, AK WP	WUNED, AK WP	*10000	17500
*5100 - MOCA			
WUNED, AK WP	CEREX, AK WP	5000	17500
CEREX, AK WP	*WEPSI, AK WP	5000	17500
*4600 - MCA WEPSI, AK WP , SW BND			
WEPSI, AK WP	*BETTLES, AK VOR/DME	4600	17500
*4700 - MCA BETTLES, AK VOR/DME , E BND			
BETTLES, AK VOR/DME	FORT YUKON, AK VORTAC	6700	17500

95.3375 RNAV ROUTE T375

BETTLES, AK VOR/DME	*FEDEN, AK WP	4500	17500
*5300 - MCA FEDEN, AK WP , N BND			
FEDEN, AK WP	HEKDU, AK WP	6600	17500
HEKDU, AK WP	*TOUTS, AK WP	6900	17500
*7000 - MCA TOUTS, AK WP , NW BND			
TOUTS, AK WP	ZEBUR, AK WP	7100	17500
ZEBUR, AK WP	RUTTY, AK WP	7300	17500

FROM	TO	MEA	MAA

95.3375 RNAV ROUTE T375 - CONTINUED

RUTTY, AK WP	FERKA, AK WP	7800	17500
FERKA, AK WP	ZENSA, AK WP	8100	17500
ZENSA, AK WP	*HAKSA, AK WP	8100	17500
*6900 - MCA HAKSA, AK WP , S BND			
HAKSA, AK WP	DERIK, AK FIX	5800	17500

95.3377 RNAV ROUTE T377

ANNETTE ISLAND, AK VOR/DME	INEPE, AK WP	5500	17500
INEPE, AK WP	FOROP, AK WP	4900	17500
FOROP, AK WP	BIORKA ISLAND, AK VORTAC	5300	17500

95.3378 RNAV ROUTE T378

BRION, AK FIX	*URIAL, AK WP	5100	17500
*3300 - MCA URIAL, AK WP , SW BND			
URIAL, AK WP	JIFFS, AK WP	2900	17500
JIFFS, AK WP	ZUSPA, AK WP	*2500	17500
*1700 - MOCA			
ZUSPA, AK WP	DUTKE, AK WP	*2500	17500
*1700 - MOCA			
DUTKE, AK WP	FORT YUKON, AK VORTAC	*2500	17500
*1700 - MOCA			

95.3381 RNAV ROUTE T381

BIG LAKE, AK VORTAC	TALKEETNA, AK VOR/DME	3000	17500
TALKEETNA, AK VOR/DME	*HUMUB, AK WP	3000	17500
*4000 - MCA HUMUB, AK WP , NW BND			
HUMUB, AK WP	*WEGNO, AK WP	4600	17500
*5400 - MCA WEGNO, AK WP , N BND			
WEGNO, AK WP	ZALVI, AK WP	6200	17500
ZALVI, AK WP	ZEKLI, AK WP	6400	17500
ZEKLI, AK WP	*CEKED, AK WP	6400	17500
*6600 - MCA CEKED, AK WP , N BND			
CEKED, AK WP	EBIME, AK WP	*9000	17500
*7100 - MOCA			
EBIME, AK WP	JOTSO, AK WP	*9000	17500
*7900 - MOCA			
JOTSO, AK WP	PAWKY, AK WP	*9000	17500
*8200 - MOCA			
PAWKY, AK WP	WIVEN, AK WP	*9000	17500
*7800 - MOCA			
WIVEN, AK WP	*WUKIR, AK WP	**9000	17500
*7100 - MCA WUKIR, AK WP , S BND			
**7700 - MOCA			
WUKIR, AK WP	*SOYAS, AK WP	6700	17500
*5300 - MCA SOYAS, AK WP , S BND			
SOYAS, AK WP	GLOWS, AK FIX	4000	17500
GLOWS, AK FIX	PERZO, AK WP	3600	17500
PERZO, AK WP	*FAIRBANKS, AK VORTAC	3600	17500
*3700 - MCA FAIRBANKS, AK VORTAC , N BND			
FAIRBANKS, AK VORTAC	*CHATA, AK FIX	5000	17500
*5000 - MCA CHATA, AK FIX , N BND			
CHATA, AK FIX	*BURMA, AK FIX	7400	17500
*4100 - MCA BURMA, AK FIX , S BND			
BURMA, AK FIX	BIJOU, AK FIX	3000	17500
BIJOU, AK FIX	FORT YUKON, AK VORTAC	2800	17500

95.3382 RNAV ROUTE T382

HOOPER BAY, AK VOR/DME	MEVIC, AK FIX	*3300	17500
*2400 - MOCA			

FROM	TO	MEA	MAA

95.3382 RNAV ROUTE T382 - CONTINUED

MEVIC, AK FIX	JOPES, AK WP	*3300	17500
*2400 - MOCA			
JOPES, AK WP	*FELSA, AK WP	3400	17500
*3700 - MCA FELSA, AK WP , NE BND			
FELSA, AK WP	*YELLW, AK WP	3800	17500
*3500 - MCA YELLW, AK WP , SW BND			
YELLW, AK WP	WEREL, AK WP	3000	17500
WEREL, AK WP	OTTAC, AK WP	*3600	17500
*3100 - MOCA			
OTTAC, AK WP	*CHEFF, AK WP	3600	17500
*3900 - MCA CHEFF, AK WP , E BND			
CHEFF, AK WP	MC GRATH, AK VORTAC	5400	17500

95.3383 RNAV ROUTE T383

GOPHER, MN VORTAC	BRNRD, MN WP	*3600	17500
*3100 - MOCA			
BRNRD, MN WP	BLUOX, MN FIX	*3900	17500
*3400 - MOCA			
BLUOX, MN FIX	BAUDETTE, MN DME	3500	17500

95.3385 RNAV ROUTE T385

KODIAK, AK VOR/DME	WUMVI, AK WP	*7500	17500
*4700 - MOCA			
WUMVI, AK WP	*GAMIC, AK WP	5400	17500
*4300 - MCA GAMIC, AK WP , E BND			
GAMIC, AK WP	WUXON, AK WP	3000	17500
WUXON, AK WP	CUPTO, AK WP	3000	17500
CUPTO, AK WP	DUMZU, AK WP	4000	17500

95.3390 RNAV ROUTE T390

WANKI, AK WP	RANND, AK FIX	*4800	17500
*2800 - MOCA			
RANND, AK FIX	DIBWO, AK FIX	*4800	17500
*1200 - MOCA			
DIBWO, AK FIX	ALEUT, AK WP	*6600	17500
*1500 - MOCA			
ALEUT, AK WP	ZEBUV, AK FIX	*6600	17500
*3000 - MOCA			
ZEBUV, AK FIX	TESPE, AK FIX	*6000	17500
*2600 - MOCA			
TESPE, AK FIX	KING SALMON, AK VORTAC	*9000	17500
*2200 - MOCA			
KING SALMON, AK VORTAC	*OLAYA, AK FIX	**4100	17500
*4100 - MCA OLAYA, AK FIX , SW BND			
**2100 - MOCA			
OLAYA, AK FIX	*TOMMY, AK FIX	**3100	17500
*6000 - MCA TOMMY, AK FIX , NE BND			
**2600 - MOCA			
TOMMY, AK FIX	BISAY, AK WP	*6000	17500
*2100 - MOCA			
BISAY, AK WP	NUTUW, AK FIX	*6000	17500
*1300 - MOCA			
NUTUW, AK FIX	DUMZU, AK WP	*6000	17500
*3800 - MOCA			

95.3391 RNAV ROUTE T391

HANCOCK, NY VOR/DME	OXFOR, NY WP	4000	17500

FROM	TO	MEA	MAA

95.3391 RNAV ROUTE T391 - CONTINUED

OXFOR, NY WP	PITCH, NY WP	3700	17500
PITCH, NY WP	GTOWN, NY WP	3800	17500
GTOWN, NY WP	POMPY, NY WP	3800	17500
POMPY, NY WP	*FATUP, NY WP	3600	17500
*3100 - MCA FATUP, NY WP , SE BND			
FATUP, NY WP	SYRACUSE, NY VORTAC	2900	17500
SYRACUSE, NY VORTAC	PAGER, NY FIX	2300	17500
PAGER, NY FIX	BRUIN, NY WP	2600	17500
BRUIN, NY WP	WATERTOWN, NY VORTAC	2600	17500
WATERTOWN, NY VORTAC	WILRD, NY WP	2300	17500
WILRD, NY WP	*LETUS, NY FIX	2300	17500
*4000 - MRA			
LETUS, NY FIX	SSENA, NY WP	2200	17500

95.3392 RNAV ROUTE T392

MZEEE, IA WP	KAATO, IA WP	3300	17500
KAATO, IA WP	BERRG, IA WP	3000	17500
BERRG, IA WP	GRSIS, MN WP	3300	17500

95.3393 RNAV ROUTE T393

GAILS, MA FIX	INNDY, MA FIX	2000	17500
INNDY, MA FIX	PROVIDENCE, RI VOR/DME	2000	17500
PROVIDENCE, RI VOR/DME	FOSTY, RI FIX	2400	17500
FOSTY, RI FIX	PUTNM, CT WP	2500	17500
PUTNM, CT WP	GRIPE, MA FIX	2600	17500
GRIPE, MA FIX	GARDNER, MA VOR/DME	3100	17500
GARDNER, MA VOR/DME	KEYNN, NH WP	3500	17500
KEYNN, NH WP	STRUM, NH WP	3500	17500
STRUM, NH WP	*UNKER, NH WP	3800	17500
*4200 - MCA UNKER, NH WP , N BND			
UNKER, NH WP	MCADM, NH WP	5000	17500
MCADM, NH WP	LBNON, NH WP	4100	17500
LBNON, NH WP	*ZIECH, VT WP	4000	17500
*4100 - MCA ZIECH, VT WP , N BND			
ZIECH, VT WP	DAVID, VT WP	4600	17500
DAVID, VT WP	MONTPELIER, VT VOR/DME	4700	17500
MONTPELIER, VT VOR/DME	CEVIB, VT FIX	5200	17500
CEVIB, VT FIX	*POROE, VT WP	5200	17500
*5700 - MCA POROE, VT WP , NW BND			
POROE, VT WP	BURLINGTON, VT VOR/DME	6300	17500

95.3395 RNAV ROUTE T395

CONCORD, NH VOR/DME	*YECKA, NH WP	3300	17500
*3700 - MCA YECKA, NH WP , NE BND			
YECKA, NH WP	*GRUMP, NH WP	4000	17500
*4600 - MCA GRUMP, NH WP , NE BND			
GRUMP, NH WP	LAROE, NH WP	5200	17500
LAROE, NH WP	NOTTY, NH WP	5400	17500
NOTTY, NH WP	WYLIE, NH WP	5900	17500
WYLIE, NH WP	*JOBBY, NH WP	6300	17500
*6200 - MCA JOBBY, NH WP , S BND			
JOBBY, NH WP	BRLIN, NH WP	5800	17500

95.3396 RNAV ROUTE T396

NOME, AK VOR/DME	EZATY, AK FIX	3000	17500

FROM	TO	MEA	MAA

95.3396 RNAV ROUTE T396 - CONTINUED

EZATY, AK FIX	*HALUS, AK WP	4500	17500
*3600 - MCA HALUS, AK WP , W BND			
HALUS, AK WP	*JAYQE, AK FIX	3000	17500
*4000 - MCA JAYQE, AK FIX , E BND			
JAYQE, AK FIX	JAGGU, AK FIX	5900	17500
JAGGU, AK FIX	*DIBVY, AK FIX	2600	17500
*6000 - MRA			
DIBVY, AK FIX	GALENA, AK VOR/DME	3100	17500

95.3397 RNAV ROUTE T397

WALNUT RIDGE, AR VORTAC	VICHY, MO VOR/DME	3000	17500
VICHY, MO VOR/DME	LEWRP, MO WP	3100	17500
LEWRP, MO WP	OHGEE, IA FIX	2800	17500
OHGEE, IA FIX	LACON, IA FIX	2800	17500
LACON, IA FIX	DES MOINES, IA VORTAC	2800	17500
DES MOINES, IA VORTAC	WATERLOO, IA VOR/DME	3100	17500

95.3398 RNAV ROUTE T398

SLOTH, TX WP	MUFRE, AR FIX	2000	17500
MUFRE, AR FIX	CANEY, AR FIX	2300	17500
CANEY, AR FIX	LITTR, AR WP	2200	17500
LITTR, AR WP	ATERS, AR FIX	2000	17500
ATERS, AR FIX	DRAST, AR WP	1900	17500
DRAST, AR WP	EMEEY, AR WP	2000	17500
EMEEY, AR WP	WSTON, MS FIX	2100	17500
WSTON, MS FIX	YUGPU, MS FIX	2000	17500
YUGPU, MS FIX	GOINS, MS WP	2300	17500
GOINS, MS WP	SULLY, MS WP	2400	17500
SULLY, MS WP	KERMI, MS WP	2500	17500
KERMI, MS WP	AYOTE, AL WP	2700	17500
AYOTE, AL WP	HAGIE, AL WP	*2600	17500
*2100 - MOCA			
HAGIE, AL WP	MARZZ, AL WP	2500	17500
MARZZ, AL WP	FILUN, AL WP	3000	17500
FILUN, AL WP	COMAR, AL FIX	4100	17500
COMAR, AL FIX	JILIS, GA WP	4600	17500
JILIS, GA WP	*CRAND, GA FIX	3000	17500
*4900 - MCA CRAND, GA FIX , E BND			
CRAND, GA FIX	*MADOL, GA FIX	6300	17500
*6400 - MCA MADOL, GA FIX , E BND			
MADOL, GA FIX	MELLS, GA FIX	6400	17500
MELLS, GA FIX	*BALNN, GA WP	5900	17500
*6300 - MCA BALNN, GA WP , E BND			
BALNN, GA WP	DAYEL, GA WP	7500	17500
DAYEL, GA WP	DILLA, GA WP	7000	17500
DILLA, GA WP	SUNET, SC WP	6700	17500
SUNET, SC WP	RESTS, SC WP	5800	17500
RESTS, SC WP	*UNMAN, SC FIX	5700	17500
*3400 - MCA UNMAN, SC FIX , W BND			
UNMAN, SC FIX	BURGG, SC WP	2900	17500
BURGG, SC WP	GAFFE, SC WP	2900	17500
GAFFE, SC WP	CRLNA, NC WP	*3400	17500
*2900 - MOCA			
CRLNA, NC WP	LOCAS, NC FIX	3100	17500
LOCAS, NC FIX	ZOPOC, NC FIX	2500	17500
ZOPOC, NC FIX	PEKNN, NC FIX	2300	17500
PEKNN, NC FIX	RELPY, NC WP	2400	17500

FROM	TO	MEA	MAA

95.3398 RNAV ROUTE T398 - CONTINUED

RELPY, NC WP	GMINI, NC WP	2400	17500

95.3399 RNAV ROUTE T399

TALKEETNA, AK VOR/DME	*EGRAM, AK FIX	6000	17500
*6600 - MCA EGRAM, AK FIX , N BND			
EGRAM, AK FIX	*ZEKLI, AK WP	6400	17500
*7000 - MCA ZEKLI, AK WP , N BND			
ZEKLI, AK WP	*AILEE, AK FIX	10000	17500
*9000 - MCA AILEE, AK FIX , S BND			
AILEE, AK FIX	*CRISL, AK WP	8100	17500
*8000 - MCA CRISL, AK WP , S BND			
CRISL, AK WP	*PAWWW, AK WP	6900	17500
*7000 - MCA PAWWW, AK WP , S BND			
PAWWW, AK WP	*EVIEE, AK WP	5800	17500
*6100 - MCA EVIEE, AK WP , S BND			
EVIEE, AK WP	*SEAHK, AK WP	4000	17500
*4600 - MCA SEAHK, AK WP , S BND			
SEAHK, AK WP	NENANA, AK VORTAC	*3300	17500
*2800 - MOCA			

95.3400 RNAV ROUTE T400

LLUKY, NE WP	IMUPP, SD WP	3700	17500
IMUPP, SD WP	DURWN, MN WP	3400	17500
DURWN, MN WP	MEMCO, MN WP	3300	17500
MEMCO, MN WP	ZOSAG, MN WP	*2900	17500
*2400 - MOCA			

95.3403 RNAV ROUTE T403

GENEO, MN WP	TESEE, MN FIX	3100	17500
TESEE, MN FIX	ALEXANDRIA, MN VOR/DME	3200	17500
ALEXANDRIA, MN VOR/DME	PARK RAPIDS, MN DME	3300	17500
PARK RAPIDS, MN DME	BLUOX, MN FIX	3500	17500

95.3404 RNAV ROUTE T404

TYGRR, AL WP	RENFO, GA FIX	2400	17500
RENFO, GA FIX	PREST, GA FIX	2400	17500
PREST, GA FIX	WILMS, GA FIX	2400	17500
WILMS, GA FIX	POTAR, GA FIX	2400	17500
POTAR, GA FIX	BYROE, GA WP	2300	17500
BYROE, GA WP	NOKIE, GA WP	2300	17500
NOKIE, GA WP	RIPPI, GA FIX	2300	17500
RIPPI, GA FIX	HADOC, GA FIX	2300	17500
HADOC, GA FIX	MISTY, GA WP	2300	17500
MISTY, GA WP	HARLE, GA WP	2300	17500
HARLE, GA WP	WANSA, SC WP	2300	17500
WANSA, SC WP	GRAZE, SC WP	2400	17500
GRAZE, SC WP	SAMMI, SC FIX	2400	17500
SAMMI, SC FIX	STEET, SC FIX	2300	17500
STEET, SC FIX	CAYCE, SC WP	2300	17500

95.3405 RNAV ROUTE T405

FIITS, SD WP	MITCHELL, SD VOR/DME	3200	17500
MITCHELL, SD VOR/DME	DIDDL, SD WP	3000	17500
DIDDL, SD WP	ABERDEEN, SD VOR/DME	3000	17500

FROM	TO	MEA	MAA

95.3405 RNAV ROUTE T405 - CONTINUED

ABERDEEN, SD VOR/DME	JAMESTOWN, ND VOR/DME	3300	17500
JAMESTOWN, ND VOR/DME	FARRM, ND FIX	3400	17500
FARRM, ND FIX	GICHI, ND WP	3500	17500

95.3406 RNAV ROUTE T406

KNZLY, LA WP	ARTEL, LA FIX	1700	17500
ARTEL, LA FIX	CRISP, LA FIX	1700	17500
CRISP, LA FIX	MICRO, LA FIX	1700	17500
MICRO, LA FIX	*ZIROR, LA FIX	1700	17500
*1600 - MCA ZIROR, LA FIX , E BND			
ZIROR, LA FIX	DAFLY, LA WP	1800	17500
DAFLY, LA WP	*ROSEY, LA FIX	1700	17500
*5000 - MRA			
ROSEY, LA FIX	TATER, LA FIX	2100	17500
TATER, LA FIX	RCOLA, LA WP	1800	17500
RCOLA, LA WP	DILLS, LA FIX	1900	17500
DILLS, LA FIX	*WALKE, LA FIX	1800	17500
*1700 - MCA WALKE, LA FIX , E BND			
WALKE, LA FIX	TICKS, LA FIX	1800	17500
TICKS, LA FIX	RYTHM, LA FIX	1800	17500
RYTHM, LA FIX	FRANK, LA FIX	1900	17500
FRANK, LA FIX	PELLO, MS WP	1900	17500
PELLO, MS WP	WIGGO, MS FIX	2100	17500
WIGGO, MS FIX	GARTS, MS WP	2000	17500
GARTS, MS WP	ERNON, AL FIX	2100	17500
ERNON, AL FIX	WIILL, AL WP	2200	17500
WIILL, AL WP	CHAFF, AL FIX	2200	17500
CHAFF, AL FIX	RUTEL, AL FIX	2200	17500
RUTEL, AL FIX	BANBI, AL FIX	2300	17500
BANBI, AL FIX	CHIRP, AL FIX	2400	17500
CHIRP, AL FIX	TYGRR, AL WP	2300	17500
TYGRR, AL WP	*LUMPP, GA FIX	2300	17500
*2000 - MCA LUMPP, GA FIX , W BND			
LUMPP, GA FIX	AMAPO, GA FIX	2300	17500
AMAPO, GA FIX	LILLY, GA FIX	2300	17500
LILLY, GA FIX	GUVNR, GA FIX	2100	17500
GUVNR, GA FIX	GAMSE, GA FIX	2100	17500
GAMSE, GA FIX	DOOLY, GA WP	2100	17500
DOOLY, GA WP	OCONE, GA FIX	2100	17500
OCONE, GA FIX	KLICK, GA FIX	2100	17500
KLICK, GA FIX	MILEN, GA FIX	2100	17500
MILEN, GA FIX	DURBE, SC WP	2000	17500

95.3407 RNAV ROUTE T407

SIOUX FALLS, SD VORTAC	FFORT, SD WP	3600	17500
FFORT, SD WP	FARGO, ND VOR/DME	*4500	17500
*3800 - MOCA			
FARGO, ND VOR/DME	GRAND FORKS, ND VOR/DME	2700	17500
GRAND FORKS, ND VOR/DME	WUBED, MN WP	2600	17500
WUBED, MN WP	U.S. CANADIAN BORDER	2500	17500

95.3408 RNAV ROUTE T408

NOKIE, GA WP	OTGUQ, GA WP	2300	17500
OTGUQ, GA WP	GUMPY, GA WP	2000	17500
GUMPY, GA WP	*LOTTS, GA FIX	2000	17500
*11000 - MRA			

FROM	TO	MEA	MAA
95.3408 RNAV ROUTE T408 - CONTINUED			
LOTTS, GA FIX	BROSE, GA FIX	1900	17500
BROSE, GA FIX	TBERT, GA WP	1800	17500
95.3409 RNAV ROUTE T409			
LLUKY, NE WP	ADEDY, SD WP	4000	17500
ADEDY, SD WP	LESNR, SD WP	4000	17500
LESNR, SD WP	PIERRE, SD VORTAC	4200	17500
95.3410 RNAV ROUTE T410			
SINCA, GA FIX	BEYLO, GA FIX	2400	17500
BEYLO, GA FIX	ANNAN, GA FIX	3000	17500
ANNAN, GA FIX	*WANSA, SC WP	3000	17500
*1900 - MCA WANSA, SC WP , W BND			
WANSA, SC WP	TREAD, SC FIX	2200	17500
TREAD, SC FIX	JOKER, SC FIX	2300	17500
JOKER, SC FIX	*MONET, SC FIX	2400	17500
*2000 - MCA MONET, SC FIX , NW BND			
MONET, SC FIX	LEDAS, SC FIX	2400	17500
LEDAS, SC FIX	*WIDER, SC FIX	2200	17500
*4000 - MRA			
95.3411 RNAV ROUTE T411			
RAZORBACK, AR VORTAC	DROOP, MO WP	3200	17500
DROOP, MO WP	BUTLER, MO VORTAC	2800	17500
BUTLER, MO VORTAC	TOPEKA, KS VORTAC	3100	17500
TOPEKA, KS VORTAC	LINCOLN, NE VORTAC	3200	17500
95.3412 RNAV ROUTE T412			
KNZLY, LA WP	HATHA, LA FIX	1700	17500
HATHA, LA FIX	MAXON, LA FIX	1700	17500
MAXON, LA FIX	BOZAN, LA FIX	1800	17500
BOZAN, LA FIX	MOGAN, LA FIX	1800	17500
MOGAN, LA FIX	WRACK, LA FIX	2000	17500
WRACK, LA FIX	LESTE, MS FIX	2100	17500
LESTE, MS FIX	ICEKI, MS WP	2200	17500
ICEKI, MS WP	CETDA, MS FIX	2200	17500
CETDA, MS FIX	WOBAK, MS FIX	2200	17500
WOBAK, MS FIX	SSLAW, MS WP	2100	17500
SSLAW, MS WP	*LIGIC, MS FIX	2100	17500
*2200 - MCA LIGIC, MS FIX , E BND			
LIGIC, MS FIX	PICAN, MS FIX	2300	17500
PICAN, MS FIX	YARBO, AL FIX	2100	17500
YARBO, AL FIX	WIILL, AL WP	2200	17500
WIILL, AL WP	*PICKS, AL FIX	2300	17500
*3500 - MRA			
PICKS, AL FIX	ALOON, AL FIX	2300	17500
ALOON, AL FIX	MGMRY, AL WP	2100	17500
MGMRY, AL WP	PETOC, AL FIX	2000	17500
PETOC, AL FIX	*MARST, AL FIX	2400	17500
*3500 - MRA			
MARST, AL FIX	KENTT, AL FIX	2300	17500
KENTT, AL FIX	YARBE, AL FIX	2500	17500
YARBE, AL FIX	*TIMMY, AL FIX	2500	17500
*2300 - MCA TIMMY, AL FIX , NE BND			
TIMMY, AL FIX	HHRVY, AL WP	2600	17500

FROM	TO	MEA	MAA

95.3412 RNAV ROUTE T412 - CONTINUED

HHRVY, AL WP	BRAVS, GA WP	2600	17500
BRAVS, GA WP	HONIE, GA FIX	2600	17500
HONIE, GA FIX	*TIROE, GA FIX	2600	17500
*4000 - MRA			

95.3413 RNAV ROUTE T413

RAZORBACK, AR VORTAC	DROOP, MO WP	3200	17500
DROOP, MO WP	EMPORIA, KS VORTAC	3100	17500
EMPORIA, KS VORTAC	SALINA, KS VORTAC	3300	17500
SALINA, KS VORTAC	GRAND ISLAND, NE VOR/DME	3900	17500
GRAND ISLAND, NE VOR/DME	ISTIQ, NE WP	3800	17500
ISTIQ, NE WP	LLUKY, NE WP	4000	17500
LLUKY, NE WP	MMINI, NE WP	4000	17500
MMINI, NE WP	JMBAG, SD WP	4300	17500
JMBAG, SD WP	PIERRE, SD VORTAC	4200	17500

95.3414 RNAV ROUTE T414

LOGEN, GA FIX	*MILBY, SC WP	3700	17500
*4000 - MCA MILBY, SC WP , NE BND			
MILBY, SC WP	*SUNET, SC WP	4800	17500
*5600 - MCA SUNET, SC WP , NE BND			
SUNET, SC WP	STYLZ, NC WP	7100	17500
STYLZ, NC WP	BONZE, NC WP	6200	17500
BONZE, NC WP	HENBY, VA FIX	4100	17500
HENBY, VA FIX	AYARA, VA WP	3700	17500
AYARA, VA WP	BOJAR, VA WP	3600	17500

95.3415 RNAV ROUTE T415

WRNGL, AK WP	GRYNE, AK WP	7400	17500
GRYNE, AK WP	*DUYZI, AK WP	7300	17500
*6600 - MCA DUYZI, AK WP , E BND			
DUYZI, AK WP	GULKANA, AK VOR/DME	4700	17500

95.3416 RNAV ROUTE T416

SMYRNA, DE VORTAC	TEBEE, NJ FIX	1800	17500
TEBEE, NJ FIX	LULOO, NJ WP	1900	17500
LULOO, NJ WP	RIDNG, NJ WP	1900	17500
RIDNG, NJ WP	*ALBEK, NJ FIX	1900	17500
*2000 - MCA ALBEK, NJ FIX , E BND			
ALBEK, NJ FIX	COYLE, NJ VORTAC	2100	17500
COYLE, NJ VORTAC	*PREPI, OA FIX	1900	17500
*8000 - MRA			

95.3417 RNAV ROUTE T417

CEBUN, AK WP	HATIX, AK WP	9100	17500
HATIX, AK WP	EGAXE, AK FIX	9100	17500

95.3418 RNAV ROUTE T418

LAMAR, CO VOR/DME	DRAWL, KS FIX	5600	17500
DRAWL, KS FIX	TOTOE, KS WP	5000	17500
TOTOE, KS WP	MITBEE, OK VORTAC	*5000	17500
*4400 - MOCA			

95.3419 RNAV ROUTE T419

MAHTY, AR WP	FRNIA, MO WP	2000	17500

FROM	TO	MEA	MAA
95.3419 RNAV ROUTE T419 - CONTINUED			
FRNIA, MO WP	SNOWD, MO WP	2100	17500
SNOWD, MO WP	MESSR, KY WP	2000	17500
MESSR, KY WP	ROOKE, KY WP	2200	17500
ROOKE, KY WP	WESON, KY FIX	2500	17500
WESON, KY FIX	TERGE, IN WP	2000	17500
95.3420 RNAV ROUTE T420			
DALHART, TX VORTAC	WLBIR, TX WP	5800	17500
WLBIR, TX WP	BRISC, TX FIX	5000	17500
BRISC, TX FIX	BURNS FLAT, OK VORTAC	4700	17500
BURNS FLAT, OK VORTAC	WILL ROGERS, OK VORTAC	4500	17500
95.3421 RNAV ROUTE T421			
LYFEE, AL WP	EGEST, AL FIX	1900	17500
EGEST, AL FIX	SKIPO, AL FIX	2000	17500
SKIPO, AL FIX	CLIOS, AL FIX	2100	17500
CLIOS, AL FIX	BANBI, AL FIX	2100	17500
BANBI, AL FIX	ZOREL, AL WP	2600	17500
ZOREL, AL WP	GUMMP, AL WP	2400	17500
GUMMP, AL WP	VLKNN, AL WP	3100	17500
VLKNN, AL WP	SIPSY, AL FIX	2400	17500
SIPSY, AL FIX	JOHNY, AL FIX	2400	17500
JOHNY, AL FIX	LANER, AL WP	2600	17500
LANER, AL WP	YOSNU, AL WP	2300	17500
YOSNU, AL WP	HAGIE, AL WP	2400	17500
95.3422 RNAV ROUTE T422			
PANHANDLE, TX VORTAC	FASOG, TX FIX	5300	17500
FASOG, TX FIX	WUDPI, TX FIX	5000	17500
WUDPI, TX FIX	ASAZE, OK FIX	4600	17500
ASAZE, OK FIX	BURNS FLAT, OK VORTAC	3600	17500
BURNS FLAT, OK VORTAC	HISLA, OK FIX	3600	17500
HISLA, OK FIX	ZELNU, OK FIX	3500	17500
ZELNU, OK FIX	BISKT, OK WP	*3300	17500
*3000 - MOCA			
BISKT, OK WP	LASTS, OK FIX	2900	17500
LASTS, OK FIX	GULLI, OK FIX	2900	17500
GULLI, OK FIX	SEARS, OK FIX	2800	17500
SEARS, OK FIX	TULSA, OK VORTAC	3400	17500
95.3423 RNAV ROUTE T423			
STYLZ, NC WP	*ROANS, TN FIX	8900	17500
*8200 - MCA ROANS, TN FIX , S BND			
ROANS, TN FIX	HORAL, TN WP	6900	17500
HORAL, TN WP	GAUZY, VA WP	6700	17500
GAUZY, VA WP	ZOMAD, VA FIX	6500	17500
ZOMAD, VA FIX	STACY, VA FIX	5900	17500
STACY, VA FIX	SLINK, WV FIX	4700	17500
SLINK, WV FIX	MACET, WV FIX	4800	17500
MACET, WV FIX	DIPUH, WV FIX	4400	17500
DIPUH, WV FIX	CHARLESTON, WV VOR/DME	4400	17500
95.3425 RNAV ROUTE T425			
SIROC, GA WP	BERTT, GA FIX	1800	17500

FROM	TO	MEA	MAA
95.3425 RNAV ROUTE T425 - CONTINUED			
BERTT, GA FIX	HABLE, GA FIX	1800	17500
HABLE, GA FIX	CROCS, GA WP	2300	17500
CROCS, GA WP	RIPPI, GA FIX	2300	17500
RIPPI, GA FIX	WOGOM, GA FIX	2300	17500
WOGOM, GA FIX	SINCA, GA FIX	2400	17500
SINCA, GA FIX	CANUK, GA FIX	2400	17500
CANUK, GA FIX	WEMOB, GA FIX	2400	17500
WEMOB, GA FIX	HUSKY, GA FIX	2500	17500
95.3427 RNAV ROUTE T427			
CAYCE, SC WP	HUFMN, SC WP	2400	17500
HUFMN, SC WP	BLANE, SC FIX	2400	17500
BLANE, SC FIX	VESTO, GA FIX	2300	17500
VESTO, GA FIX	DNICE, GA WP	2400	17500
DNICE, GA WP	UGAAA, GA WP	2500	17500
UGAAA, GA WP	*CONLY, GA WP	2700	17500
*3500 - MCA CONLY, GA WP , NW BND			
CONLY, GA WP	*WOMAC, GA FIX	4700	17500
*4700 - MCA WOMAC, GA FIX , SE BND			
WOMAC, GA FIX	LOGEN, GA FIX	4100	17500
95.3429 RNAV ROUTE T429			
HOKES, AL FIX	SNEAR, AL FIX	3800	17500
SNEAR, AL FIX	*JOSEP, AL FIX	3700	17500
*3200 - MCA JOSEP, AL FIX , SE BND			
JOSEP, AL FIX	FEWER, AL FIX	2800	17500
FEWER, AL FIX	LEACH, AL WP	2900	17500
LEACH, AL WP	MASHA, AL WP	2500	17500
MASHA, AL WP	JUVLO, AL FIX	2500	17500
JUVLO, AL FIX	HAGIE, AL WP	2600	17500
95.3430 RNAV ROUTE T430			
PHILIPSBURG, PA VORTAC	SELINSGROVE, PA VOR/DME	4900	17500
SELINSGROVE, PA VOR/DME	*PINNA, PA FIX	3500	17500
*3100 - MCA PINNA, PA FIX , NW BND			
PINNA, PA FIX	EAST TEXAS, PA VOR/DME	2700	17500
EAST TEXAS, PA VOR/DME	TROXL, PA FIX	2600	17500
TROXL, PA FIX	BOPLY, PA FIX	2400	17500
BOPLY, PA FIX	*LANNA, NJ FIX	2400	17500
*5000 - MRA			
LANNA, NJ FIX	SOLBERG, NJ VOR/DME	2400	17500
95.3431 RNAV ROUTE T431			
KENTO, NM FIX	ADEOS, OK WP	6700	17500
ADEOS, OK WP	TOTOE, KS WP	5600	17500
TOTOE, KS WP	MOZEE, KS WP	4800	17500
MOZEE, KS WP	KNSAS, KS WP	3900	17500
95.3435 RNAV ROUTE T435			
HOLIM, AK WP	*RAYMD, AK FIX	4200	17500
*5300 - MCA RAYMD, AK FIX , N BND			
RAYMD, AK FIX	*FEPAB, AK WP	8400	17500
*7500 - MCA FEPAB, AK WP , S BND			
FEPAB, AK WP	WIXER, AK WP	6000	17500

FROM	TO	MEA	MAA

95.3435 RNAV ROUTE T435 - CONTINUED

WIXER, AK WP	OBUKE, AK FIX	2600	17500
OBUKE, AK FIX	ZILKO, AK FIX	*3700	17500
*1200 - MOCA			
ZILKO, AK FIX	KING SALMON, AK VORTAC	*3300	17500
*1600 - MOCA			

95.3438 RNAV ROUTE T438

RASHE, PA FIX	*HERDA, PA FIX	4600	17500
*4300 - MCA HERDA, PA FIX , W BND			
HERDA, PA FIX	MORTO, PA FIX	3800	17500
MORTO, PA FIX	RAVINE, PA VORTAC	3500	17500
RAVINE, PA VORTAC	VAYRE, PA FIX	3500	17500
VAYRE, PA FIX	DUMMR, PA FIX	3400	17500
DUMMR, PA FIX	FLOAT, PA FIX	3200	17500
FLOAT, PA FIX	*HIKES, PA FIX	**2900	17500
*4000 - MRA			
**2400 - MOCA			
HIKES, PA FIX	*MAZIE, PA FIX	2800	17500
*5000 - MRA			
MAZIE, PA FIX	YARDLEY, PA VOR/DME	2000	17500
YARDLEY, PA VOR/DME	ROBBINSVILLE, NJ VORTAC	2100	17500
ROBBINSVILLE, NJ VORTAC	CASVI, NJ FIX	2000	17500
CASVI, NJ FIX	ZIGGI, NJ FIX	1900	17500
ZIGGI, NJ FIX	*PREPI, OA FIX	1700	17500
*8000 - MRA			

95.3462 RNAV ROUTE T462

BISMARCK, ND VOR/DME	WISEK, ND FIX	3900	17500
WISEK, ND FIX	IRIWY, ND FIX	4000	17500
IRIWY, ND FIX	ABERDEEN, SD VOR/DME	3900	17500
ABERDEEN, SD VOR/DME	FIBDA, SD WP	3000	17500
FIBDA, SD WP	WICKA, SD FIX	3600	17500
WICKA, SD FIX	FFORT, SD WP	*3700	17500
*3200 - MOCA			
FFORT, SD WP	DAWSO, MN WP	3800	17500
DAWSO, MN WP	CLAPS, MN FIX	2800	17500
CLAPS, MN FIX	FITAS, MN FIX	2900	17500
FITAS, MN FIX	GENEO, MN WP	3000	17500

95.3464 RNAV ROUTE T464

CUSAY, WI WP	TONOC, WI FIX	3400	17500
TONOC, WI FIX	EDGRR, WI WP	3200	17500
EDGRR, WI WP	HEVAV, WI WP	3300	17500
HEVAV, WI WP	CHURP, WI FIX	3100	17500

95.3466 RNAV ROUTE T466

SAN ANGELO, TX VORTAC	CHILD, TX FIX	4000	17500
CHILD, TX FIX	JUNCTION, TX VORTAC	4000	17500
JUNCTION, TX VORTAC	STONEWALL, TX VORTAC	4000	17500
STONEWALL, TX VORTAC	GOBBY, TX FIX	4100	17500
GOBBY, TX FIX	BETTI, TX FIX	3400	17500
BETTI, TX FIX	MARCS, TX FIX	2900	17500
MARCS, TX FIX	SEEDS, TX WP	2400	17500
SEEDS, TX WP	LDRET, TX WP	3000	17500
LDRET, TX WP	KEEDS, TX WP	1900	17500

FROM	TO	MEA	MAA
95.3466 RNAV ROUTE T466 - CONTINUED			
KEEDS, TX WP	SCHOLES, TX VOR/DME	3100	17500
SCHOLES, TX VOR/DME	SABINE PASS, TX VOR/DME	2000	17500
95.3608 RNAV ROUTE T608			
HOCKE, MI WP	U.S. CANADIAN BORDER	*3500	17500
*2900 - MOCA			
U.S. CANADIAN BORDER	WOZEE, NY WP	2400	17500
WOZEE, NY WP	CLUNG, NY WP	2700	17500
CLUNG, NY WP	ROCHESTER, NY VOR/DME	2500	17500
ROCHESTER, NY VOR/DME	LORTH, NY FIX	2500	17500
LORTH, NY FIX	SYRACUSE, NY VORTAC	2400	17500
SYRACUSE, NY VORTAC	STODA, NY FIX	2300	17500
STODA, NY FIX	VASTS, NY WP	3000	17500
VASTS, NY WP	LAMMS, NY WP	3400	17500
LAMMS, NY WP	NORSE, NY WP	3500	17500
NORSE, NY WP	MARIA, NY FIX	3400	17500
MARIA, NY FIX	ALBANY, NY VORTAC	3000	17500
ALBANY, NY VORTAC	*WARUV, NY WP	3100	17500
*3700 - MCA WARUV, NY WP , E BND			
WARUV, NY WP	*GRAVE, NY WP	4100	17500
*4400 - MCA GRAVE, NY WP , SE BND			
GRAVE, NY WP	GRISY, MA WP	5300	17500
GRISY, MA WP	WARIC, MA WP	4700	17500
WARIC, MA WP	HURLY, MA WP	3300	17500
HURLY, MA WP	GARDNER, MA VOR/DME	3000	17500
GARDNER, MA VOR/DME	GRAYM, MA FIX	3000	17500
GRAYM, MA FIX	BLATT, CT FIX	*2800	17500
*2300 - MOCA			
BLATT, CT FIX	MOGUL, CT FIX	2500	17500
MOGUL, CT FIX	YANTC, CT WP	2300	17500
95.3616 RNAV ROUTE T616			
FLINT, MI VORTAC	URSSA, MI WP	2500	17500
URSSA, MI WP	HOCKE, MI WP	2800	17500
HOCKE, MI WP	U.S. CANADIAN BORDER	*6000	17500
*2100 - MOCA			
95.3634 RNAV ROUTE T634			
SYRACUSE, NY VORTAC	PAGER, NY FIX	2300	17500
PAGER, NY FIX	BRUIN, NY WP	2600	17500
BRUIN, NY WP	WATERTOWN, NY VORTAC	2600	17500
WATERTOWN, NY VORTAC	U.S. CANADIAN BORDER	2000	17500
95.3662 RNAV ROUTE T662			
U.S.CANADIAN BORDER	KATAH, ME WP	*7000	17500
*4600 - MOCA			
KATAH, ME WP	HULTN, ME WP	5800	17500
95.3698 RNAV ROUTE T698			
U.S. CANADIAN BORDER	HULTN, ME WP	7600	17500
HULTN, ME WP	U.S. CANADIAN BORDER	2500	17500
95.3705 RNAV ROUTE T705			
DANZI, NY WP	CODDI, NY FIX	4400	17500

FROM	TO	MEA	MAA
95.3705 RNAV ROUTE T705 - CONTINUED			
CODDI, NY FIX	MILID, NY FIX	4000	17500
MILID, NY FIX	LAMMS, NY WP	3800	17500
LAMMS, NY WP	USICI, NY FIX	3400	17500
USICI, NY FIX	GACKE, NY WP	4100	17500
GACKE, NY WP	BECKS, NY WP	5200	17500
BECKS, NY WP	SMAIR, NY WP	5400	17500
SMAIR, NY WP	FOSYU, NY WP	5300	17500
FOSYU, NY WP	SRNAC, NY WP	5400	17500
SRNAC, NY WP	UUBER, NY WP	5100	17500
UUBER, NY WP	*RIGID, NY WP	5400	17500
*4800 - MCA RIGID, NY WP , W BND			
RIGID, NY WP	PBERG, NY WP	3800	17500
PBERG, NY WP	LATTS, NY WP	3200	17500
LATTS, NY WP	U.S. CANADIAN BORDER	2900	17500
95.3768 RNAV ROUTE T768			
INTERNATIONAL FALLS, MN VOR/DME	YUPNU, MN WP	2900	17500
YUPNU, MN WP	CIVLU, MN FIX	3000	17500
CIVLU, MN FIX	U.S. CANADIAN BORDER	3000	17500
95.3781 RNAV ROUTE T781			
FLINT, MI VORTAC	KATTY, MI FIX	*3000	17500
*2300 - MOCA			
KATTY, MI FIX	HANKY, MI WP	*4000	17500
*2900 - MOCA			
HANKY, MI WP	ADRIE, MI WP	*4000	17500
*2800 - MOCA			
ADRIE, MI WP	MARGN, MI FIX	*4000	17500
*2800 - MOCA			
MARGN, MI FIX	BLUEZ, MI WP	*4000	17500
*2800 - MOCA			
BLUEZ, MI WP	U.S. CANADIAN BORDER	*4000	17500
*2800 - MOCA			
U.S. CANADIAN BORDER	HULTN, ME WP	*7000	17500
*4000 - MOCA			
TK502 RNAV ROUTE TK502			
WESTMINSTER, MD VORTAC	TAYLO, MD WP	2700	17500
TAYLO, MD WP	WINGO, PA WP	*2500	17500
*2000 - MOCA			
WINGO, PA WP	SINON, PA WP	2400	17500
SINON, PA WP	GRIBL, PA WP	2400	17500
GRIBL, PA WP	TOLAN, NJ WP	2100	17500
TOLAN, NJ WP	BALDE, NY WP	*2100	17500
*1500 - MOCA			
BALDE, NY WP	SPATE, NY WP	*2100	17500
*1400 - MOCA			
SPATE, NY WP	DECKR, NY WP	2900	17500
TK504 RNAV ROUTE TK504			
RUSEY, MD WP	CIDOB, MD WP	*1800	17500
*1500 - MOCA			
CIDOB, MD WP	HAMOR, PA WP	2300	17500
HAMOR, PA WP	ARCUM, PA WP	*2300	17500
*2000 - MOCA			

FROM	TO	MEA	MAA

TK504 RNAV ROUTE TK504 - CONTINUED

ARCUM, PA WP	TULLY, PA WP	2600	17500
TULLY, PA WP	BORKE, NJ FIX	2000	17500
BORKE, NJ FIX	BANKA, NJ WP	2000	17500

FROM	TO	MEA	MAA

§95.4000 HIGH ALTITUDE RNAV ROUTES

95.4001 RNAV ROUTE Q1

POINT REYES, CA VOR/DME	ETCHY, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ETCHY, CA WP	TOCOS, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TOCOS, CA WP	ENVIE, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENVIE, CA WP	ELENN, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ELENN, CA WP	EBINY, OR WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EBINY, OR WP	EASON, OR WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EASON, OR WP	ERAVE, WA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ERAVE, WA WP	ELMAA, WA FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4002 RNAV ROUTE Q2

BOILE, CA FIX	HEDVI, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEDVI, AZ WP	HOBOL, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOBOL, AZ WP	ITUCO, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ITUCO, AZ WP	NEWMAN, TX VORTAC	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4003 RNAV ROUTE Q3

FEPOT, WA WP	POINT REYES, CA VOR/DME	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4004 RNAV ROUTE Q4

BOILE, CA FIX	SKTTR, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKTTR, AZ WP	EL PASO, TX VORTAC	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4005 RNAV ROUTE Q5

HAROB, WA WP	STIKM, CA WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4006 RNAV ROUTE Q6

TALKEETNA, AK VOR/DME	BARROW, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4007 RNAV ROUTE Q7

JINMO, WA WP	JOGEN, OR WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOGEN, OR WP	JUNEJ, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JUNEJ, CA WP	JAGWA, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAGWA, CA WP	AVENAL, CA VOR/DME	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4008 RNAV ROUTE Q8

GALENA, AK VOR/DME	ANCHORAGE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4009 RNAV ROUTE Q9

SUMMA, WA FIX	DERBB, CA FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4010 RNAV ROUTE Q10

KUKULIAK, AK VOR/DME	EMMONAK, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4011 RNAV ROUTE Q11

PAAGE, WA WP	LOS ANGELES, CA VORTAC	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4012 RNAV ROUTE Q12

KOTZEBUE, AK VOR/DME	DEADHORSE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4013 RNAV ROUTE Q13

EL PASO, TX VORTAC	VERNO, AZ FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VERNO, AZ FIX	NABOB, AZ FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4013 RNAV ROUTE Q13 - CONTINUED

NABOB, AZ FIX	DRAKE, AZ VORTAC	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DRAKE, AZ VORTAC	WOTRO, AZ FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WOTRO, AZ FIX	PRFUM, AZ FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PRFUM, AZ FIX	HOUZZ, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOUZZ, NV WP	FUULL, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FUULL, NV WP	SKANN, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKANN, NV WP	SHUFL, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHUFL, NV WP	LOMIA, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LOMIA, NV WP	RUFUS, CA WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RUFUS, CA WP	PAWLI, OR WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4014 RNAV ROUTE Q14

KODIAK, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4015 RNAV ROUTE Q15

NABOB, AZ FIX	CHILY, AZ FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHILY, AZ FIX	DOVEE, NV FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOVEE, NV FIX	SOTOO, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SOTOO, NV WP	HOUZZ, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOUZZ, NV WP	FUULL, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FUULL, NV WP	SKANN, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKANN, NV WP	SHUFL, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4015 RNAV ROUTE Q15 - CONTINUED

SHUFL, NV WP	LOMIA, NV WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4016 RNAV ROUTE Q16

KODIAK, AK VOR/DME	MIDDLETON ISLAND, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
MIDDLETON ISLAND, AK VOR/DME	YAKUTAT, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4017 RNAV ROUTE Q17

HOMER, AK VOR/DME	MIDDLETON ISLAND, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4018 RNAV ROUTE Q18

GALENA, AK VOR/DME	BARROW, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4019 RNAV ROUTE Q19

BULZI, FL WP	WYATT, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WYATT, GA WP	GOONS, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOONS, GA WP	LAYIN, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAYIN, AL WP	TOJXE, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TOJXE, AL WP	HITMN, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HITMN, TN WP	PLESS, IL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PLESS, IL FIX	ST LOUIS, MO VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ST LOUIS, MO VORTAC	DES MOINES, IA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DES MOINES, IA VORTAC	SIOUX FALLS, SD VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SIOUX FALLS, SD VORTAC	ABERDEEN, SD VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4020 RNAV ROUTE Q20

CORONA, NM VORTAC	HONDS, NM FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4020 RNAV ROUTE Q20 - CONTINUED

HONDS, NM FIX	UNNOS, NM WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UNNOS, NM WP	FUSCO, TX FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FUSCO, TX FIX	JUNCTION, TX VORTAC	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4021 RNAV ROUTE Q21

JONEZ, OK WP	RAZORBACK, AR VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4022 RNAV ROUTE Q22

GUSTI, LA FIX	OYSTY, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OYSTY, LA FIX	ACMES, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ACMES, AL WP	CATLN, AL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CATLN, AL FIX	TWOUP, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TWOUP, GA WP	BURGG, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BURGG, SC WP	NYBLK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NYBLK, NC WP	MASHI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MASHI, NC WP	KIDDO, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KIDDO, NC WP	OMENS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OMENS, VA WP	BEARI, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEARI, VA WP	UMBRE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UMBRE, VA WP	BBOBO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BBOBO, VA WP	SHTGN, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHTGN, MD WP	SYFER, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4022 RNAV ROUTE Q22 - CONTINUED

SYFER, MD WP	DANGR, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DANGR, MD WP	PYTHN, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PYTHN, DE WP	BESSI, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BESSI, NJ FIX	JOEPO, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOEPO, NJ WP	BRAND, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRAND, NJ FIX	ROBBINSVILLE, NJ VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROBBINSVILLE, NJ VORTAC	LAURN, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAURN, NY WP	LLUND, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LLUND, NY FIX	BAYYS, CT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAYYS, CT FIX	FOXWD, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4023 RNAV ROUTE Q23

FORT SMITH, AR VORTAC	RAZORBACK, AR VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4024 RNAV ROUTE Q24

SAN ANTONIO, TX VORTAC	MOLLR, TX WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MOLLR, TX WP	LAKE CHARLES, LA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAKE CHARLES, LA VORTAC	FIGHTING TIGER, LA VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIGHTING TIGER, LA VORTAC	IRUBE, MS WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IRUBE, MS WP	PAYTN, AL FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4025 RNAV ROUTE Q25

MEEOW, AR FIX	WALNUT RIDGE, AR VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4025 RNAV ROUTE Q25 - CONTINUED

WALNUT RIDGE, AR VORTAC	POCKET CITY, IN VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4026 RNAV ROUTE Q26

WALNUT RIDGE, AR VORTAC	DEVAC, AL FIX	*20000	33000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4027 RNAV ROUTE Q27

FORT SMITH, AR VORTAC	ZALDA, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4028 RNAV ROUTE Q28

GRAZN, AR WP	POCKET CITY, IN VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4029 RNAV ROUTE Q29

HARES, LA WP	BAKRE, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAKRE, MS WP	MEMFS, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEMFS, TN WP	OMDUE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OMDUE, TN WP	SIDAE, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SIDAE, KY WP	CREEP, OH FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CREEP, OH FIX	KLYNE, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KLYNE, OH WP	DUTSH, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUTSH, OH WP	WWSHR, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WWSHR, OH WP	DORET, OH FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DORET, OH FIX	JAMESTOWN, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAMESTOWN, NY VOR/DME	HANKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HANKK, NY WP	GONZZ, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4029 RNAV ROUTE Q29 - CONTINUED

GONZZ, NY WP	KRAZZ, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KRAZZ, NY WP	NIPPY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NIPPY, NY WP	CABCI, VT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CABCI, VT WP	EBONY, ME FIX	*18000	45000
*GNSS REQUIRED			
EBONY, ME FIX	U.S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

95.4030 RNAV ROUTE Q30

IZAAC, MS WP	SKNRR, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKNRR, MS WP	VLKNN, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4031 RNAV ROUTE Q31

DHART, AR FIX	MARVELL, AR VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MARVELL, AR VOR/DME	POCKET CITY, IN VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4032 RNAV ROUTE Q32

EL DORADO, AR VOR/DME	GAGLE, MS WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GAGLE, MS WP	CRAMM, MS WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CRAMM, MS WP	NASHVILLE, TN VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NASHVILLE, TN VORTAC	SWAPP, TN FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4033 RNAV ROUTE Q33

DHART, AR FIX	LITTLE ROCK, AR VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LITTLE ROCK, AR VORTAC	PROWL, MO WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4034 RNAV ROUTE Q34

TEXARKANA, AR VORTAC	LOOSE, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4034 RNAV ROUTE Q34 - CONTINUED

LOOSE, AR WP	WASKO, AR FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WASKO, AR FIX	MATIE, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MATIE, AR WP	EDWAH, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EDWAH, AR WP	MEMFS, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEMFS, TN WP	HENSY, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HENSY, TN WP	WAKOL, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAKOL, TN WP	HITMN, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HITMN, TN WP	SWAPP, TN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWAPP, TN FIX	GHATS, KY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GHATS, KY FIX	FOUNT, KY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FOUNT, KY FIX	TONIO, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TONIO, KY WP	KONGO, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KONGO, KY WP	NEALS, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NEALS, WV FIX	SITTR, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SITTR, WV WP	ASBUR, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ASBUR, WV WP	DENNY, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DENNY, VA FIX	MAULS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MAULS, VA WP	GORDONSVILLE, VA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GORDONSVILLE, VA VORTAC	BOOYA, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOOYA, VA WP	DUALY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4034 RNAV ROUTE Q34 - CONTINUED

DUALY, MD WP	BIGRG, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIGRG, MD WP	PNGWN, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PNGWN, NJ WP	HULKK, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HULKK, NJ WP	ROBBINSVILLE, NJ VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4035 RNAV ROUTE Q35

DRAKE, AZ VORTAC	CORKR, AZ FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CORKR, AZ FIX	WINEN, UT WP	*29000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WINEN, UT WP	NEERO, NV WP	*29000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NEERO, NV WP	KOATA, OR WP	*29000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KOATA, OR WP	KIMBERLY, OR VOR/DME	*29000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4036 RNAV ROUTE Q36

RAZORBACK, AR VORTAC	NASHVILLE, TN VORTAC	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NASHVILLE, TN VORTAC	SWAPP, TN FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4037 RNAV ROUTE Q37

FORT STOCKTON, TX VORTAC	CAVRN, TX FIX	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAVRN, TX FIX	YORUB, NM WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YORUB, NM WP	IMMAS, NM WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IMMAS, NM WP	PUEBLO, CO VORTAC	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4038 RNAV ROUTE Q38

ROKIT, TX WP	BESOM, AL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4039 RNAV ROUTE Q39

CLAWD, NC WP	TARCI, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TARCI, WV FIX	ASERY, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4040 RNAV ROUTE Q40

ALEXANDRIA, LA VORTAC	DOOMS, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOOMS, MS WP	WINAP, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WINAP, MS WP	MISLE, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MISLE, AL WP	BFOLO, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BFOLO, AL WP	NIOLA, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NIOLA, GA WP	JAARE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAARE, TN WP	OJESS, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OJESS, TN WP	ALEAN, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ALEAN, VA WP	FEEDS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FEEDS, VA WP	MAULS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MAULS, VA WP	FANPO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4041 RNAV ROUTE Q41

CAWIN, AK FIX	DEADHORSE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4042 RNAV ROUTE Q42

KIRKSVILLE, MO VORTAC	DANVILLE, IL VORTAC	*34000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DANVILLE, IL VORTAC	MUNCIE, IN VOR/DME	*34000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MUNCIE, IN VOR/DME	BRNAN, PA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA
95.4042 RNAV ROUTE Q42 - CONTINUED			
BRNAN, PA WP	HOTEE, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOTEE, PA WP	MIKYG, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MIKYG, PA WP	SPOTZ, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SPOTZ, PA WP	ZIMMZ, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
95.4043 RNAV ROUTE Q43			
ANCHORAGE, AK VOR/DME	BIG LAKE, AK VORTAC	*18000	45000
*GNSS REQUIRED			
BIG LAKE, AK VORTAC	FAIRBANKS, AK VORTAC	*18000	45000
*GNSS REQUIRED			
95.4044 RNAV ROUTE Q44			
NOME, AK VOR/DME	HLBLY, AK WP	*18000	45000
*GNSS REQUIRED			
HLBLY, AK WP	ANCHORAGE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
95.4045 RNAV ROUTE Q45			
DILLINGHAM, AK VOR/DME	NONDA, AK FIX	*18000	45000
*GNSS REQUIRED			
NONDA, AK FIX	AMOTT, AK FIX	*18000	45000
*GNSS REQUIRED			
95.4046 RNAV ROUTE Q46			
POINT HOPE, AK NDB	BARROW, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
95.4047 RNAV ROUTE Q47			
KING SALMON, AK VORTAC	AMOTT, AK FIX	*18000	45000
*GNSS REQUIRED			
95.4048 RNAV ROUTE Q48			
BARROW, AK VOR/DME	DEADHORSE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
DEADHORSE, AK VOR/DME	ROCES, AK WP	*18000	45000
*GNSS REQUIRED			
95.4049 RNAV ROUTE Q49			
KODIAK, AK VOR/DME	AMOTT, AK FIX	*18000	45000
*GNSS REQUIRED			
95.4050 RNAV ROUTE Q50			
LOUISVILLE, KY VORTAC	HELUB, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4050 RNAV ROUTE Q50 - CONTINUED

HELUB, KY WP	ENGRA, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENGRA, KY WP	IBATE, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IBATE, KY WP	CUBIM, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4051 RNAV ROUTE Q51

KING SALMON, AK VORTAC	SLIIM, AK WP	*18000	45000
*GNSS REQUIRED			
SLIIM, AK WP	HLBLY, AK WP	*18000	45000
*GNSS REQUIRED			
HLBLY, AK WP	KOTZEBUE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4052 RNAV ROUTE Q52

CHOPZ, GA WP	IPTAY, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IPTAY, GA WP	AWYAT, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AWYAT, SC WP	COLZI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4053 RNAV ROUTE Q53

KODIAK, AK VOR/DME	ILIAMNA, AK NDB/DME	*18000	45000
*GNSS REQUIRED			
ILIAMNA, AK NDB/DME	KOTZEBUE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4054 RNAV ROUTE Q54

HRTWL, SC WP	NYLLA, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NYLLA, SC WP	CHYPS, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHYPS, NC WP	AHOEY, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AHOEY, NC WP	RAANE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RAANE, NC WP	ASHEL, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ASHEL, NC WP	NUTZE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4055 RNAV ROUTE Q55

KODIAK, AK VOR/DME	SLIIM, AK WP	*18000	45000
*GNSS REQUIRED			

FROM	TO	MEA	MAA

95.4055 RNAV ROUTE Q55 - CONTINUED

SLIIM, AK WP	NOME, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4056 RNAV ROUTE Q56

SAN ANTONIO, TX VORTAC	MOLLR, TX WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MOLLR, TX WP	PEKON, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PEKON, LA FIX	HARVEY, LA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HARVEY, LA VORTAC	SEMMES, AL VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SEMMES, AL VORTAC	CATLN, AL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CATLN, AL FIX	KBLER, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KBLER, GA WP	KELLN, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KELLN, SC WP	KTOWN, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KTOWN, NC WP	BYSCO, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BYSCO, NC WP	JOOLI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOOLI, NC WP	NUUMN, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NUUMN, NC WP	ORACL, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ORACL, NC WP	KIWII, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4057 RNAV ROUTE Q57

KING SALMON, AK VORTAC	MC GRATH, AK VORTAC	*18000	45000
*GNSS REQUIRED			

95.4058 RNAV ROUTE Q58

KELLN, SC WP	GLOVR, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GLOVR, NC WP	LUMAY, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUMAY, NC WP	STUKI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4058 RNAV ROUTE Q58 - CONTINUED

STUKI, NC WP	PEETT, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4059 RNAV ROUTE Q59

COLD BAY, AK VORTAC	BETHEL, AK VORTAC	*18000	45000
*GNSS REQUIRED			

95.4060 RNAV ROUTE Q60

BURGG, SC WP	EVING, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EVING, NC WP	JAXSN, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAXSN, VA FIX	SHIRY, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHIRY, VA WP	HURTS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4061 RNAV ROUTE Q61

FAIRBANKS, AK VORTAC	BARROW, AK VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4062 RNAV ROUTE Q62

WATSN, IN FIX	DAIFE, IN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DAIFE, IN WP	NOLNN, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NOLNN, OH WP	WEEVR, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WEEVR, OH WP	PSKUR, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PSKUR, OH WP	FAALS, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FAALS, OH WP	ALEEE, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ALEEE, OH WP	QUARM, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
QUARM, PA WP	BURNI, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BURNI, PA FIX	MCMAN, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MCMAN, PA FIX	VALLO, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4062 RNAV ROUTE Q62 - CONTINUED

VALLO, PA FIX	RAVINE, PA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RAVINE, PA VORTAC	SUZIE, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SUZIE, PA FIX	SARAA, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4064 RNAV ROUTE Q64

CATLN, AL FIX	FIGEY, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIGEY, GA WP	HRTWL, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HRTWL, SC WP	DARRL, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DARRL, SC WP	IDDAA, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IDDAA, NC WP	DADDS, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DADDS, NC WP	MARCL, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MARCL, NC WP	TAR RIVER, NC VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TAR RIVER, NC VORTAC	GUILD, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GUILD, NC WP	SAWED, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4065 RNAV ROUTE Q65

MGNTY, FL WP	DOFFY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOFFY, FL WP	FETAL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FETAL, FL WP	ENEME, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENEME, GA WP	KERLY, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KERLY, GA WP	DAREE, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DAREE, GA WP	LORNN, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4065 RNAV ROUTE Q65 - CONTINUED

LORNN, TN WP	SOGEE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SOGEE, TN WP	ENGRA, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENGRA, KY WP	OCASE, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OCASE, KY WP	RINTE, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4066 RNAV ROUTE Q66

LITTLE ROCK, AR VORTAC	CIVKI, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CIVKI, AR WP	RICKX, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RICKX, AR WP	TROVE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TROVE, TN WP	BAZOO, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAZOO, TN WP	METWO, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
METWO, TN WP	MXEEN, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MXEEN, TN WP	ALEAN, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4067 RNAV ROUTE Q67

SMTTH, TN WP	TONIO, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TONIO, KY WP	HENDERSON, WV DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4068 RNAV ROUTE Q68

LITTR, AR WP	SOPIE, TN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SOPIE, TN FIX	BOWLING GREEN, KY DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOWLING GREEN, KY DME	YOCKY, KY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YOCKY, KY FIX	SPAYD, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4068 RNAV ROUTE Q68 - CONTINUED

SPAYD, WV FIX	CHARLESTON, WV VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHARLESTON, WV VOR/DME	TOMCA, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TOMCA, WV WP	RONZZ, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RONZZ, WV WP	HHOLZ, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HHOLZ, WV WP	HAMME, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HAMME, WV WP	CAPOE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAPOE, VA WP	OTTTO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4069 RNAV ROUTE Q69

VIYAP, GA WP	OLBEC, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OLBEC, GA WP	ISUZO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ISUZO, GA WP	GURGE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GURGE, SC WP	BLAAN, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLAAN, SC WP	EMCET, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMCET, SC WP	RYCKI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RYCKI, NC WP	LUNDD, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUNDD, VA WP	ILLSA, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ILLSA, VA WP	EWESS, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EWESS, WV WP	RICCS, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4070 RNAV ROUTE Q70

HAILO, CA WP	LAS VEGAS, NV VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4070 RNAV ROUTE Q70 - CONTINUED

LAS VEGAS, NV VORTAC	IFEYE, NV WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IFEYE, NV WP	BLIPP, NV WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLIPP, NV WP	EEVUN, UT WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EEVUN, UT WP	BLOBB, UT WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLOBB, UT WP	BAWER, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAWER, UT WP	SAKES, UT FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4071 RNAV ROUTE Q71

BOBBD, TN WP	ATUME, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ATUME, KY WP	HAPKI, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HAPKI, KY WP	KONGO, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KONGO, KY WP	WISTA, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WISTA, WV WP	GEFFS, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GEFFS, WV FIX	EMNEM, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMNEM, WV WP	PSYKO, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PSYKO, PA WP	PHILIPSBURG, PA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4072 RNAV ROUTE Q72

HACKS, WV FIX	GEQUE, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GEQUE, WV WP	BENSH, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BENSH, WV WP	RAMAY, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4073 RNAV ROUTE Q73

MOMAR, CA FIX	CABIC, CA WP	*18000	45000
*GNSS REQUIRED			

FROM	TO	MEA	MAA

95.4073 RNAV ROUTE Q73 - CONTINUED

CABIC, CA WP	CHADT, CA WP	*18000	45000
*GNSS REQUIRED			
CHADT, CA WP	LVELL, CA WP	*18000	45000
*GNSS REQUIRED			
LVELL, CA WP	BLKWL, CA WP	*18000	45000
*GNSS REQUIRED			
BLKWL, CA WP	ZELMA, CA FIX	*18000	45000
*GNSS REQUIRED			
ZELMA, CA FIX	KRLIE, CA WP	*18000	45000
*GNSS REQUIRED			
KRLIE, CA WP	HAKMN, NV WP	*18000	45000
*GNSS REQUIRED			
HAKMN, NV WP	ZZYZX, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZZYZX, NV WP	LAKRR, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAKRR, NV WP	GUNTR, AZ WP	*18000	45000
*GNSS REQUIRED			
GUNTR, AZ WP	ZAINY, AZ WP	*18000	45000
*GNSS REQUIRED			
ZAINY, AZ WP	EEVUN, UT WP	*18000	45000
*GNSS REQUIRED			
EEVUN, UT WP	WINEN, UT WP	*18000	45000
*GNSS REQUIRED			
WINEN, UT WP	CRITO, NV WP	*18000	45000
*GNSS REQUIRED			
CRITO, NV WP	BROPH, ID WP	*18000	45000
*GNSS REQUIRED			
BROPH, ID WP	DERSO, ID FIX	*18000	45000
*GNSS REQUIRED			
DERSO, ID FIX	SAWTT, ID WP	*18000	45000
*GNSS REQUIRED			
SAWTT, ID WP	ZATIP, ID FIX	*18000	45000
*GNSS REQUIRED			
ZATIP, ID FIX	CORDU, ID FIX	*18000	45000
*GNSS REQUIRED			

95.4074 RNAV ROUTE Q74

NATEE, NV WP	BOULDER CITY, NV VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOULDER CITY, NV VORTAC	ZAINY, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAINY, AZ WP	FIZZL, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIZZL, AZ WP	GARDD, UT WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GARDD, UT WP	DEANN, UT WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4075 RNAV ROUTE Q75

ENEME, GA WP	TEUFL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4075 RNAV ROUTE Q75 - CONTINUED

TEUFL, GA WP	TEEEM, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TEEEM, GA WP	SHRIL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHRIL, GA WP	FISHO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FISHO, SC WP	ILBEE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ILBEE, SC WP	SLOJO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SLOJO, SC WP	GREENSBORO, NC VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GREENSBORO, NC VORTAC	BROSK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BROSK, NC WP	DRAIK, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DRAIK, VA FIX	GORDONSVILLE, VA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GORDONSVILLE, VA VORTAC	HAMMZ, VA WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
HAMMZ, VA WP	TOOBN, MD WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
TOOBN, MD WP	MURPH, MD WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
MURPH, MD WP	SACRI, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SACRI, MD WP	STOEN, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
STOEN, PA FIX	MODENA, PA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MODENA, PA VORTAC	COPES, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
COPES, PA FIX	BIGGY, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIGGY, NJ FIX	SOLBERG, NJ VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SOLBERG, NJ VOR/DME	JERSY, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JERSY, NJ WP	FARLE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4075 RNAV ROUTE Q75 - CONTINUED

FARLE, NY FIX	BIZEX, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIZEX, NY WP	GREKI, CT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GREKI, CT FIX	NELIE, CT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NELIE, CT FIX	SWALO, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWALO, MA WP	BOSTON, MA VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOSTON, MA VOR/DME	COPLY, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4077 RNAV ROUTE Q77

OCTAL, FL WP	MATLK, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MATLK, FL WP	STYMY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
STYMY, FL WP	WAKKO, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAKKO, FL WP	MJAMS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MJAMS, FL WP	ETORE, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ETORE, FL WP	SHRKS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHRKS, FL WP	TEUFL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TEUFL, GA WP	WIGVO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WIGVO, GA WP	MELKR, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MELKR, SC WP	HRTWL, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4078 RNAV ROUTE Q78

MARUE, NV WP	DUGGN, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUGGN, AZ WP	TOADD, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4079 RNAV ROUTE Q79

MCLAW, FL WP	VAULT, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VAULT, FL WP	FEMID, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FEMID, FL WP	WULFF, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WULFF, FL WP	MOLIE, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MOLIE, FL WP	DOFFY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOFFY, FL WP	EVANZ, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EVANZ, FL WP	IISLY, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IISLY, GA WP	ZPLEN, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZPLEN, GA WP	THRSR, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
THRSR, GA WP	KAILL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAILL, GA WP	WUDEE, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WUDEE, GA WP	RESPE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RESPE, TN WP	SWAPP, TN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWAPP, TN FIX	LOUISVILLE, KY VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4080 RNAV ROUTE Q80

FAREV, KY WP	JEDER, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JEDER, KY WP	ENGRA, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENGRA, KY WP	DEWAK, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEWAK, KY WP	CEGMA, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CEGMA, KY WP	JONEN, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4080 RNAV ROUTE Q80 - CONTINUED

JONEN, KY WP	BULVE, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BULVE, WV WP	WISTA, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WISTA, WV WP	LEVII, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEVII, WV WP	RONZZ, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RONZZ, WV WP	HHOLZ, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HHOLZ, WV WP	HAMME, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HAMME, WV WP	CAPOE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAPOE, VA WP	OTTTO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4081 RNAV ROUTE Q81

TUNSL, FL WP	KARTR, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KARTR, FL FIX	FIPES, OG WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIPES, OG WP	ZEILR, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZEILR, FL FIX	PIKKR, OG WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PIKKR, OG WP	FARLU, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FARLU, FL WP	MGNTY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MGNTY, FL WP	ENDEW, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENDEW, FL WP	BITNY, OG WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BITNY, OG WP	NICKI, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NICKI, FL WP	SNAPY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SNAPY, FL WP	BULZI, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4081 RNAV ROUTE Q81 - CONTINUED

BULZI, FL WP	IPOKE, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IPOKE, GA WP	HONID, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4082 RNAV ROUTE Q82

WWSHR, OH WP	DORET, OH FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DORET, OH FIX	JAMESTOWN, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAMESTOWN, NY VOR/DME	WAYLA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAYLA, NY WP	VIEEW, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VIEEW, NY FIX	MEMMS, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEMMS, NY FIX	LOXXE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LOXXE, NY FIX	PONCT, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4083 RNAV ROUTE Q83

JEVED, GA WP	ROYCO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROYCO, GA WP	TAALN, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TAALN, GA WP	KONEY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KONEY, SC WP	WURFL, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WURFL, SC WP	JUSEE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JUSEE, SC WP	EFFAY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EFFAY, SC WP	SLOJO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4084 RNAV ROUTE Q84

JAMESTOWN, NY VOR/DME	AUDIL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4084 RNAV ROUTE Q84 - CONTINUED

AUDIL, NY FIX	PUPPY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PUPPY, NY WP	PAYGE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PAYGE, NY WP	CAMBRIDGE, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4085 RNAV ROUTE Q85

LPERD, FL WP	BEEGE, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEEGE, GA WP	GIPPL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GIPPL, GA WP	ROYCO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROYCO, GA WP	IGARY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IGARY, SC WP	PELIE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PELIE, SC WP	BUMMA, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUMMA, SC WP	KAATT, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAATT, NC WP	SMPRR, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SMPRR, NC WP	PBCUP, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PBCUP, NC WP	MOXXY, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MOXXY, NC WP	CRPLR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4086 RNAV ROUTE Q86

TTRUE, AZ WP	YORRK, AZ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YORRK, AZ WP	SCHLS, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SCHLS, AZ WP	CUTRO, AZ FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CUTRO, AZ FIX	VALEQ, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4086 RNAV ROUTE Q86 - CONTINUED

VALEQ, AZ WP	PLNDL, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4087 RNAV ROUTE Q87

PEAKY, FL WP	GOPEY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOPEY, FL WP	GRIDS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GRIDS, FL WP	TIRCO, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TIRCO, FL WP	MATLK, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MATLK, FL WP	ONEWY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ONEWY, FL WP	ZERBO, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZERBO, FL WP	DUCEN, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUCEN, FL WP	OVENP, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OVENP, FL WP	FEMON, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FEMON, FL WP	VIYAP, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VIYAP, GA WP	SUSYQ, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SUSYQ, GA WP	TAALN, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TAALN, GA WP	JROSS, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JROSS, SC WP	RAYVO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RAYVO, SC WP	HINTZ, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HINTZ, SC WP	REDFH, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
REDFH, SC WP	LCAPE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LCAPE, SC WP	ALWZZ, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4087 RNAV ROUTE Q87 - CONTINUED

ALWZZ, NC WP	ASHEL, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ASHEL, NC WP	DADDS, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DADDS, NC WP	NOWAE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NOWAE, NC WP	RIDDN, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIDDN, VA WP	GEARS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GEARS, VA WP	HURTS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4088 RNAV ROUTE Q88

HAKMN, NV WP	ZZYZX, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZZYZX, NV WP	LAKRR, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAKRR, NV WP	NOOTN, AZ FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NOOTN, AZ FIX	GARDD, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GARDD, UT WP	VERKN, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VERKN, UT WP	PROMT, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PROMT, UT WP	CHESZ, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHESZ, UT WP	SINRY, CO WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SINRY, CO WP	ZAKRY, CO WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAKRY, CO WP	YAMPA, CO WP	*22000	45000
*22000 - GNSS MEA			
*DME/DME/IRU MEA			
YAMPA, CO WP	BICAR, NE WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BICAR, NE WP	CHUWY, NE WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHUWY, NE WP	KEEFF, NE WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4088 RNAV ROUTE Q88 - CONTINUED

KEEFF, NE WP	GUDDY, SD WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GUDDY, SD WP	VIVID, SD FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VIVID, SD FIX	JOYCC, SD WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOYCC, SD WP	DKOTA, SD WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4089 RNAV ROUTE Q89

MANLE, FL WP	WAKUP, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAKUP, FL WP	PRMUS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PRMUS, FL WP	OVENP, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OVENP, FL WP	SHRKS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHRKS, FL WP	YANTI, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YANTI, GA WP	HESPI, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HESPI, GA WP	CULTO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CULTO, GA WP	SMTTH, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4090 RNAV ROUTE Q90

DNERO, CA WP	ESGEE, NV WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ESGEE, NV WP	AREAF, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AREAF, AZ WP	JASSE, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JASSE, AZ WP	NAVJO, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NAVJO, AZ WP	YAMHA, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YAMHA, CO WP	DAAYE, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4090 RNAV ROUTE Q90 - CONTINUED

DAAYE, CO WP	SKWYR, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKWYR, CO WP	HUSQA, KS WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HUSQA, KS WP	VARNE, KS WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VARNE, KS WP	ATIJA, KS WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ATIJA, KS WP	LEFAM, NE WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEFAM, NE WP	BOVEY, MO WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOVEY, MO WP	WELKY, IA WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4092 RNAV ROUTE Q92

CHUWY, NE WP	KUTCH, NE WP	*22000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
KUTCH, NE WP	WYYTE, NE WP	*22000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
WYYTE, NE WP	MAASI, NE WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
MAASI, NE WP	HANKU, IA WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
HANKU, IA WP	JORDY, IA FIX	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4093 RNAV ROUTE Q93

MCLAW, FL WP	VAULT, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VAULT, FL WP	LINEY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LINEY, FL WP	FOBIN, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FOBIN, FL WP	EBAYY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EBAYY, FL WP	MALET, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MALET, FL FIX	DEBRL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4093 RNAV ROUTE Q93 - CONTINUED

DEBRL, FL WP	KENLL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENLL, FL WP	PRMUS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PRMUS, FL WP	WOPNR, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WOPNR, OA WP	GIPPL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GIPPL, GA WP	SUSYQ, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SUSYQ, GA WP	ISUZO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ISUZO, GA WP	GURGE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GURGE, SC WP	FISHO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FISHO, SC WP	QUIWE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
QUIWE, SC WP	JEPEX, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JEPEX, SC WP	BENBY, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BENBY, NC WP	DOOGE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOOGE, VA WP	HAPKI, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HAPKI, KY WP	TONIO, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TONIO, KY WP	OCASE, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OCASE, KY WP	HEVAN, IN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4094 RNAV ROUTE Q94

WELUM, NV WP	MNGGO, AZ WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MNGGO, AZ WP	ROOLL, AZ WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4096 RNAV ROUTE Q96

PURSE, NV WP	DODDL, NV WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4096 RNAV ROUTE Q96 - CONTINUED

DODDL, NV WP	BFUNE, AZ WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BFUNE, AZ WP	GUNTR, AZ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GUNTR, AZ WP	PIIXR, AZ WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PIIXR, AZ WP	FIZZL, AZ WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIZZL, AZ WP	BAWER, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAWER, UT WP	ROCCY, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROCCY, UT WP	SARAF, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SARAF, UT WP	KIMMR, UT WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4097 RNAV ROUTE Q97

TOVAR, FL WP	EBAYY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EBAYY, FL WP	MALET, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MALET, FL FIX	DEBRL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEBRL, FL WP	KENLL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENLL, FL WP	PRMUS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PRMUS, FL WP	WOPNR, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WOPNR, OA WP	JEVED, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JEVED, GA WP	CAKET, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAKET, SC WP	ELMSZ, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ELMSZ, SC WP	YURCK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YURCK, NC WP	ELLDE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4097 RNAV ROUTE Q97 - CONTINUED

ELLDE, NC WP	YEASO, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YEASO, NC WP	PAACK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PAACK, NC WP	KOHLS, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KOHLS, NC WP	SAWED, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SAWED, VA FIX	KALDA, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KALDA, VA FIX	ZJAAY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZJAAY, MD WP	DLAAY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DLAAY, MD WP	BRIGS, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRIGS, NJ FIX	HEADI, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEADI, NJ WP	SAILN, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SAILN, OA WP	CALVERTON, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CALVERTON, NY VOR/DME	NTMEG, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NTMEG, CT WP	VENTE, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VENTE, MA WP	BLENO, NH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLENO, NH WP	BEEKN, ME WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEEKN, ME WP	FRIAR, ME FIX	*18000	45000
*GNSS REQUIRED			
FRIAR, ME FIX	PRESQUE ISLE, ME VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4098 RNAV ROUTE Q98

HAKMN, NV WP	ZZYZX, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZZYZX, NV WP	LAKRR, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAKRR, NV WP	DUZIT, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4098 RNAV ROUTE Q98 - CONTINUED

DUZIT, AZ WP	EEEZY, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EEEZY, AZ WP	PEEWE, AZ WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4099 RNAV ROUTE Q99

KPASA, FL WP	DOFFY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOFFY, FL WP	CAMJO, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAMJO, FL WP	HEPAR, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEPAR, GA WP	TEEEM, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TEEEM, GA WP	BLAAN, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLAAN, SC WP	BWAGS, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BWAGS, SC WP	EFFAY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EFFAY, SC WP	WNGUD, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WNGUD, SC WP	POLYY, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
POLYY, NC WP	RAANE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RAANE, NC WP	OGRAE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OGRAE, NC WP	PEETT, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PEETT, NC WP	SHIRY, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHIRY, VA WP	UMBRE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UMBRE, VA WP	QUART, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
QUART, VA WP	HURLE, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4101 RNAV ROUTE Q101

SKARP, NC WP	PRANK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4101 RNAV ROUTE Q101 - CONTINUED

PRANK, NC WP	BGBRD, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BGBRD, NC WP	HYPAL, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HYPAL, VA WP	TUGGR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4103 RNAV ROUTE Q103

CYNTA, GA WP	PUPYY, GA WP	*30000	45000
*30000 - GNSS MEA			
*DME/DME/IRU MEA			
PUPYY, GA WP	RIELE, SC WP	*30000	45000
*30000 - GNSS MEA			
*DME/DME/IRU MEA			
RIELE, SC WP	GRONK, SC WP	*30000	45000
*30000 - GNSS MEA			
*DME/DME/IRU MEA			
GRONK, SC WP	EMCET, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMCET, SC WP	SLOJO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SLOJO, SC WP	DANCO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DANCO, VA WP	ASBUR, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ASBUR, WV WP	OAKLE, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OAKLE, WV FIX	PERRI, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PERRI, WV FIX	PERKS, WV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PERKS, WV FIX	RICCS, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RICCS, WV WP	EMNEM, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMNEM, WV WP	AIRRA, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4104 RNAV ROUTE Q104

ACORI, AL WP	CABLO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CABLO, GA WP	HEVVN, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4104 RNAV ROUTE Q104 - CONTINUED

HEVVN, FL FIX	LEGGT, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEGGT, FL FIX	PLYER, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PLYER, FL FIX	SWABE, FL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWABE, FL FIX	ENDEW, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ENDEW, FL WP	ST PETERSBURG, FL VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4107 RNAV ROUTE Q107

GARIC, NC WP	ZORDO, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZORDO, NC WP	JAAMS, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAAMS, NC WP	ALINN, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ALINN, NC WP	HURTS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4109 RNAV ROUTE Q109

KNOST, OG WP	DEANR, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEANR, FL WP	BRUTS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRUTS, FL WP	EVANZ, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EVANZ, FL WP	CAMJO, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAMJO, FL WP	HEPAR, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEPAR, GA WP	TEEEM, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TEEEM, GA WP	RIELE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIELE, SC WP	PANDY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PANDY, SC WP	RAYVO, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4109 RNAV ROUTE Q109 - CONTINUED

RAYVO, SC WP	SESUE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SESUE, SC WP	BUMMA, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUMMA, SC WP	YURCK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YURCK, NC WP	LAANA, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAANA, NC WP	TINKK, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TINKK, NC WP	DFENC, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4110 RNAV ROUTE Q110

BLANS, IL WP	BETIE, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BETIE, TN WP	SKIDO, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKIDO, AL WP	BFOLO, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BFOLO, AL WP	JYROD, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JYROD, AL WP	DAWWN, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DAWWN, GA WP	JOKKY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOKKY, FL WP	AMORY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AMORY, FL WP	SMELZ, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SMELZ, FL WP	SHEEK, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHEEK, FL WP	JAYMC, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAYMC, FL WP	OCTAL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4111 RNAV ROUTE Q111

ZORDO, NC WP	LARKE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4111 RNAV ROUTE Q111 - CONTINUED

LARKE, NC WP	RUKRR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RUKRR, VA WP	GEARS, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GEARS, VA WP	SWNGR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWNGR, VA WP	ALXEA, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4113 RNAV ROUTE Q113

RAYVO, SC WP	CEELY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CEELY, SC WP	SARKY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SARKY, SC WP	MARCL, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MARCL, NC WP	AARNN, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AARNN, NC WP	RIDDN, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4114 RNAV ROUTE Q114

NATEE, NV WP	BOULDER CITY, NV VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOULDER CITY, NV VORTAC	ZAINY, AZ WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAINY, AZ WP	AHOWW, UT WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AHOWW, UT WP	BAWER, UT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAWER, UT WP	BUGGG, UT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUGGG, UT WP	ZAKRY, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAKRY, CO WP	BULDG, CO WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
BULDG, CO WP	COUGH, CO WP	*20000	45000
*20000 - GNSS MEA			
*DME/DME/IRU MEA			
COUGH, CO WP	AVVVS, CO FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4114 RNAV ROUTE Q114 - CONTINUED

AVVVS, CO FIX	BRAFF, CO WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRAFF, CO WP	GOORE, CO WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOORE, CO WP	AYOLE, NE WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AYOLE, NE WP	PECKS, NE WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PECKS, NE WP	LEONG, IA WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4116 RNAV ROUTE Q116

SPRINGFIELD, MO VORTAC	ZAVEL, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAVEL, AR WP	LUKKY, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUKKY, AR WP	MEMFS, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEMFS, TN WP	GOOGY, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOOGY, AL WP	LOBBS, AL FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LOBBS, AL FIX	VLKNN, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VLKNN, AL WP	DEEDA, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEEDA, GA WP	JAWJA, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAWJA, FL WP	MICES, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MICES, FL WP	DEANR, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEANR, FL WP	PATOY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PATOY, FL WP	SMELZ, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SMELZ, FL WP	SHEEK, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHEEK, FL WP	JAYMC, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4116 RNAV ROUTE Q116 - CONTINUED

JAYMC, FL WP	OCTAL, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4117 RNAV ROUTE Q117

YLEEE, NC WP	CUDLE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CUDLE, NC WP	SUSSA, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SUSSA, NC WP	KTEEE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KTEEE, NC WP	SAWED, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4118 RNAV ROUTE Q118

BONNT, IN WP	HEVAN, IN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEVAN, IN WP	ROYYZ, IN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROYYZ, IN WP	VOSTK, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VOSTK, KY WP	HELUB, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HELUB, KY WP	JEDER, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JEDER, KY WP	GLAZR, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GLAZR, TN WP	KAILL, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAILL, GA WP	THRSR, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
THRSR, GA WP	JOHNN, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOHNN, GA WP	JAMIZ, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAMIZ, FL WP	BRUTS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRUTS, FL WP	JINOS, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JINOS, FL WP	KPASA, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4118 RNAV ROUTE Q118 - CONTINUED

KPASA, FL WP	SHEEK, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHEEK, FL WP	CHRRI, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHRRI, FL WP	FEMID, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FEMID, FL WP	PEAKY, FL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4119 RNAV ROUTE Q119

SCOOB, VA WP	GROKK, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GROKK, VA WP	RYVRR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RYVRR, VA WP	SHTGN, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHTGN, MD WP	DUALY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUALY, MD WP	HALEX, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HALEX, MD WP	WESTMINSTER, MD VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4120 RNAV ROUTE Q120

ORRCA, CA WP	BETBE, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BETBE, NV WP	ZORUN, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZORUN, NV WP	GALLI, NV WP	*31000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GALLI, NV WP	JAJAY, NV WP	*31000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAJAY, NV WP	TRAKY, NV WP	*31000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRAKY, NV WP	PROXI, UT WP	*29000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PROXI, UT WP	BIG PINEY, WY VOR/DME	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIG PINEY, WY VOR/DME	JUGIV, WY WP	*23000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4120 RNAV ROUTE Q120 - CONTINUED

JUGIV, WY WP	HIKOX, WY FIX	*23000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HIKOX, WY FIX	JASTI, SD WP	*23000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JASTI, SD WP	UFFDA, MN WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4121 RNAV ROUTE Q121

PARZZ, NV WP	POCATELLO, ID VOR/DME	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
POCATELLO, ID VOR/DME	SWTHN, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4122 RNAV ROUTE Q122

MOGEE, CA WP	MACUS, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MACUS, NV WP	MCORD, NV WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MCORD, NV WP	LUCIN, UT VORTAC	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUCIN, UT VORTAC	BEARR, UT FIX	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEARR, UT FIX	KURSE, WY WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KURSE, WY WP	O'NEILL, NE VORTAC	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
O'NEILL, NE VORTAC	KATES, NE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KATES, NE WP	VIRGN, IA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VIRGN, IA WP	VIGGR, IA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4123 RNAV ROUTE Q123

PARZZ, NV WP	COKEE, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4124 RNAV ROUTE Q124

MOGEE, CA WP	MACUS, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4124 RNAV ROUTE Q124 - CONTINUED

MACUS, NV WP	MCORD, NV WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MCORD, NV WP	SLOWN, NV WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SLOWN, NV WP	FASTE, NV WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FASTE, NV WP	BONNEVILLE, UT VORTAC	*23000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BONNEVILLE, UT VORTAC	WAATS, UT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4125 RNAV ROUTE Q125

PARZZ, NV WP	WLLES, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4126 RNAV ROUTE Q126

TIPRE, CA WP	INSLO, NV WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
INSLO, NV WP	CHUKR, NV WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHUKR, NV WP	TTOES, NV WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TTOES, NV WP	GAROT, UT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GAROT, UT WP	KREYK, UT WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KREYK, UT WP	DRRSI, UT WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DRRSI, UT WP	LBATO, UT WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LBATO, UT WP	BASNN, CO WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BASNN, CO WP	BRAFF, CO WP	*19000	45000
*19000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4127 RNAV ROUTE Q127

GORDONSVILLE, VA VORTAC	BUKYY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUKYY, MD WP	BAILZ, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4127 RNAV ROUTE Q127 - CONTINUED

BAILZ, MD WP	GRACO, MD FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GRACO, MD FIX	SMYRNA, DE VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4128 RNAV ROUTE Q128

SYRAH, CA WP	JSICA, NV WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JSICA, NV WP	TABLL, UT WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TABLL, UT WP	EDLES, UT FIX	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EDLES, UT FIX	FLOOD, CO FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FLOOD, CO FIX	ZAROS, CO WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAROS, CO WP	VEGUC, OK WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VEGUC, OK WP	VLUST, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VLUST, AR WP	ECIGE, AR WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ECIGE, AR WP	MUDHO, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MUDHO, MS WP	JILLS, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4129 RNAV ROUTE Q129

GARIC, NC WP	YERBA, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YERBA, NC WP	AARNN, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AARNN, NC WP	THEOO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
THEOO, VA WP	PYTON, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4130 RNAV ROUTE Q130

SYRAH, CA WP	JSICA, NV WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4130 RNAV ROUTE Q130 - CONTINUED

JSICA, NV WP	REANA, NV WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
REANA, NV WP	ROCCY, UT WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROCCY, UT WP	HASSL, UT WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HASSL, UT WP	TAHIB, CO WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TAHIB, CO WP	DIXAN, NM FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DIXAN, NM FIX	MIRME, NM WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MIRME, NM WP	PANHANDLE, TX VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4131 RNAV ROUTE Q131

ZILLS, NC WP	YLEEE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YLEEE, NC WP	EARZZ, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EARZZ, NC WP	ODAWG, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ODAWG, VA WP	KALDA, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KALDA, VA FIX	ZJAAY, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4132 RNAV ROUTE Q132

WEBGO, CA WP	ANAHO, NV FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ANAHO, NV FIX	MYBAD, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MYBAD, NV WP	ZERAM, NV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZERAM, NV WP	MAGPY, NV WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4133 RNAV ROUTE Q133

CHIEZ, NC WP	BENCH, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4133 RNAV ROUTE Q133 - CONTINUED

BENCH, NC WP	KOOKI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KOOKI, NC WP	PYSTN, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PYSTN, VA WP	KALDA, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KALDA, VA FIX	CONFR, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CONFR, MD WP	MGERK, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MGERK, DE WP	LEEAH, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEEAH, NJ FIX	MYRCA, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MYRCA, NJ WP	KENNEDY, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENNEDY, NY VOR/DME	LLUND, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LLUND, NY FIX	FARLE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FARLE, NY FIX	GANDE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GANDE, NY FIX	PONCT, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4134 RNAV ROUTE Q134

DUGLE, CA FIX	TATOO, NV WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TATOO, NV WP	JULIK, UT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JULIK, UT FIX	HERSH, UT WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HERSH, UT WP	VOAXA, CO FIX	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4135 RNAV ROUTE Q135

JROSS, SC WP	PELIE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PELIE, SC WP	ELMSZ, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4135 RNAV ROUTE Q135 - CONTINUED

ELMSZ, SC WP	RAPZZ, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RAPZZ, NC WP	ZORDO, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZORDO, NC WP	CUDLE, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4136 RNAV ROUTE Q136

COALDALE, NV VORTAC	RUMPS, NV WP	*18000	45000
*GNSS REQUIRED			
RUMPS, NV WP	KATTS, NV WP	*18000	45000
*GNSS REQUIRED			
KATTS, NV WP	CRLES, NV WP	*18000	45000
*GNSS REQUIRED			
CRLES, NV WP	GDGET, UT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GDGET, UT WP	TRALP, UT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRALP, UT WP	MANRD, UT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MANRD, UT WP	WEEMN, UT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WEEMN, UT WP	ELLFF, CO WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ELLFF, CO WP	VOAXA, CO FIX	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VOAXA, CO FIX	COUGH, CO WP	*21000	45000
*21000 - GNSS MEA			
*DME/DME/IRU MEA			
COUGH, CO WP	BBULL, CO WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BBULL, CO WP	ZIRKL, NE WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZIRKL, NE WP	KAWWA, NE WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAWWA, NE WP	SYTHH, NE WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SYTHH, NE WP	AYEGI, NE WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AYEGI, NE WP	TURCK, NE WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TURCK, NE WP	WRNCH, IA WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4136 RNAV ROUTE Q136 - CONTINUED

WRNCH, IA WP	BVEEE, IA WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BVEEE, IA WP	HIBAV, IA WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HIBAV, IA WP	DIYAP, IA WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4138 RNAV ROUTE Q138

WILLIAMS, CA VORTAC	FIMUV, CA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FIMUV, CA WP	JENSA, NV WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JENSA, NV WP	PUHGI, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PUHGI, NV WP	ROOHZ, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROOHZ, NV WP	PARZZ, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PARZZ, NV WP	UROCO, WY WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UROCO, WY WP	RICCO, WY WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RICCO, WY WP	MOTLY, SD WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MOTLY, SD WP	DKOTA, SD WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DKOTA, SD WP	WELOK, MN WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WELOK, MN WP	CESNA, WI WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CESNA, WI WP	GUUME, WI WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GUUME, WI WP	SNARG, WI WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SNARG, WI WP	SAULT STE MARIE, MI VOR/DME	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4139 RNAV ROUTE Q139

MGMRY, AL WP	VLKNN, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4139 RNAV ROUTE Q139 - CONTINUED

VLKNN, AL WP	SALMS, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SALMS, TN WP	HITMN, TN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HITMN, TN WP	LOUISVILLE, KY VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LOUISVILLE, KY VORTAC	GBEES, IN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GBEES, IN FIX	HICKI, IN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HICKI, IN FIX	CREEP, OH FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CREEP, OH FIX	RINTE, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4140 RNAV ROUTE Q140

WOBED, WA WP	GETNG, WA WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GETNG, WA WP	CORDU, ID FIX	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CORDU, ID FIX	PETIY, MT WP	*30000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PETIY, MT WP	CHOTE, MT FIX	*32000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHOTE, MT FIX	LEWIT, MT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEWIT, MT WP	SAYOR, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SAYOR, MT WP	WILTN, ND FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WILTN, ND FIX	TTAIL, MN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TTAIL, MN WP	CESNA, WI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CESNA, WI WP	WISCN, WI WP	*19000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WISCN, WI WP	EEGEE, WI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EEGEE, WI WP	DAYYY, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4140 RNAV ROUTE Q140 - CONTINUED

DAYYY, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	AHPAH, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AHPAH, NY WP	HANKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HANKK, NY WP	BEEPS, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEEPS, NY FIX	EXTOL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EXTOL, NY FIX	MEMMS, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEMMS, NY FIX	KODEY, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KODEY, NY FIX	ARRKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ARRKK, NY WP	RODYY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RODYY, NY WP	YODAA, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4142 RNAV ROUTE Q142

METOW, WA WP	MULLAN PASS, ID VOR/DME	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MULLAN PASS, ID VOR/DME	KEETA, MT WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KEETA, MT WP	OKVUJ, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OKVUJ, MT WP	KIXCO, MT FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4144 RNAV ROUTE Q144

ZIRAN, WA WP	ZOOMR, WA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZOOMR, WA FIX	BLOWS, MT WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLOWS, MT WP	KEETA, MT WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KEETA, MT WP	LEWIT, MT WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4145 RNAV ROUTE Q145

KONGO, KY WP	CHARLESTON, WV VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CHARLESTON, WV VOR/DME	CLNTN, OH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CLNTN, OH WP	FOXEE, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4146 RNAV ROUTE Q146

CASHS, WA FIX	BLUNT, WA FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLUNT, WA FIX	DIPHU, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DIPHU, MT FIX	CUSDA, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CUSDA, MT FIX	ZERZO, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZERZO, MT FIX	KIXCO, MT FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KIXCO, MT FIX	TIMMR, ND FIX	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TIMMR, ND FIX	SMERF, SD WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SMERF, SD WP	HUFFR, MN WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4148 RNAV ROUTE Q148

STEVS, WA WP	ZAXUL, WA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAXUL, WA FIX	FINUT, WA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FINUT, WA WP	WEDAK, MT FIX	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WEDAK, MT FIX	WAIDE, MT FIX	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAIDE, MT FIX	JUGIV, WY WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JUGIV, WY WP	MEDICINE BOW, WY VOR/DME	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MEDICINE BOW, WY VOR/DME	MOCTU, WY FIX	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4148 RNAV ROUTE Q148 - CONTINUED

MOCTU, WY FIX	LEWOY, CO WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEWOY, CO WP	CUGGA, KS FIX	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CUGGA, KS FIX	PENUT, KS WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PENUT, KS WP	KIRKE, KS FIX	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KIRKE, KS FIX	MORRR, KS WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MORRR, KS WP	BARTLESVILLE, OK VOR/DME	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4150 RNAV ROUTE Q150

STEVS, WA WP	ZAXUL, WA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAXUL, WA FIX	LEZLE, WA FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEZLE, WA FIX	BAXGO, ID FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BAXGO, ID FIX	LAMON, ID FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAMON, ID FIX	GANNE, WY WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GANNE, WY WP	DDRTH, WY WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DDRTH, WY WP	YAMPA, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YAMPA, CO WP	BBULL, CO WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BBULL, CO WP	DUUZE, KS WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUUZE, KS WP	EXHAS, KS WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4152 RNAV ROUTE Q152

SUNED, WA FIX	LEZLE, WA FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEZLE, WA FIX	WEDAK, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4152 RNAV ROUTE Q152 - CONTINUED

WEDAK, MT FIX	IKFOM, WY WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IKFOM, WY WP	WUVUT, WY FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WUVUT, WY FIX	O'NEILL, NE VORTAC	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4154 RNAV ROUTE Q154

WANTA, WA FIX	JELTI, OR FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JELTI, OR FIX	HOVEL, ID FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOVEL, ID FIX	VELUY, ID WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VELUY, ID WP	BURLEY, ID VOR/DME	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BURLEY, ID VOR/DME	PIMIE, UT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PIMIE, UT FIX	NAGNE, UT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NAGNE, UT FIX	BONGO, UT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BONGO, UT FIX	PITMN, CO FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PITMN, CO FIX	TAYLR, CO FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TAYLR, CO FIX	GOSIP, CO FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOSIP, CO FIX	KENTO, NM FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENTO, NM FIX	NOSEW, TX WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NOSEW, TX WP	BOWIE, TX VORTAC	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4156 RNAV ROUTE Q156

STEVS, WA WP	ZAXUL, WA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZAXUL, WA FIX	FINUT, WA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4156 RNAV ROUTE Q156 - CONTINUED

FINUT, WA WP	TUFFY, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TUFFY, MT FIX	UPUGE, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UPUGE, MT FIX	HEXOL, MT FIX	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HEXOL, MT FIX	SWTHN, MT WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SWTHN, MT WP	JELRO, SD FIX	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JELRO, SD FIX	KEKPE, SD WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KEKPE, SD WP	UFFDA, MN WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
UFFDA, MN WP	HSTIN, MN WP	*28000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HSTIN, MN WP	ZZIPR, IA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4158 RNAV ROUTE Q158

NTELL, CA WP	PPARK, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PPARK, CA WP	TRTIS, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRTIS, CA WP	BIKKR, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIKKR, CA WP	MYCAL, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MYCAL, NV WP	JEDNA, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4160 RNAV ROUTE Q160

SHVVR, CA WP	FAANG, CA FIX	*36000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FAANG, CA FIX	RIVVO, CA WP	*36000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIVVO, CA WP	BIKKR, CA WP	*25000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4164 RNAV ROUTE Q164

NTELL, CA WP	CABAB, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4164 RNAV ROUTE Q164 - CONTINUED

CABAB, CA WP	KICHI, NV WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KICHI, NV WP	KATTS, NV WP	*26000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KATTS, NV WP	KITTN, NV WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KITTN, NV WP	ROCCY, UT WP	*27000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4167 RNAV ROUTE Q167

ZJAAY, MD WP	PAJET, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PAJET, DE WP	CAANO, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAANO, DE WP	TBONN, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TBONN, OA WP	ZIZZI, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZIZZI, NJ FIX	YAZUU, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YAZUU, NJ FIX	TOPRR, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TOPRR, OA WP	EMJAY, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMJAY, NJ FIX	SPDEY, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SPDEY, OA WP	RIFLE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIFLE, NY FIX	HOFFI, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOFFI, NY FIX	ORCHA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ORCHA, NY WP	ALBOW, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ALBOW, NY WP	GRONC, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GRONC, NY WP	NESTT, RI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NESTT, RI WP	BUZRD, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4167 RNAV ROUTE Q167 - CONTINUED

BUZRD, MA WP	SSOXS, MA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4168 RNAV ROUTE Q168

FNNDA, CA WP	SHIVA, AZ WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHIVA, AZ WP	KRINA, AZ WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KRINA, AZ WP	JASSE, AZ WP	*21000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4172 RNAV ROUTE Q172

YUTEE, SC WP	BWAGS, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BWAGS, SC WP	HINTZ, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HINTZ, SC WP	CEELY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CEELY, SC WP	OKNEE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OKNEE, SC WP	KAATT, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAATT, NC WP	RAPZZ, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4174 RNAV ROUTE Q174

NTELL, CA WP	CABAB, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CABAB, CA WP	TTMSN, CA WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TTMSN, CA WP	SKANN, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKANN, NV WP	FLCHR, NV WP	*24000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4176 RNAV ROUTE Q176

CIMARRON, NM VORTAC	KENTO, NM FIX	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENTO, NM FIX	TOTOE, KS WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4176 RNAV ROUTE Q176 - CONTINUED

TOTOE, KS WP	WRIGL, KS WP	*22000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WRIGL, KS WP	BUTLER, MO VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUTLER, MO VORTAC	ST LOUIS, MO VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ST LOUIS, MO VORTAC	GBEES, IN FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GBEES, IN FIX	BICKS, KY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BICKS, KY WP	HENDERSON, WV DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HENDERSON, WV DME	OTTTO, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4184 RNAV ROUTE Q184

RANGER, TX VORTAC	DOBIS, LA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DOBIS, LA WP	BERKE, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BERKE, LA FIX	MIXIE, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MIXIE, LA FIX	STAGE, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
STAGE, LA FIX	KAMEN, LA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KAMEN, LA FIX	SARKK, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SARKK, MS WP	MERDN, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MERDN, MS WP	KWANE, MS WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KWANE, MS WP	ARNNY, AL WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4220 RNAV ROUTE Q220

RIFLE, NY FIX	HOFFI, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOFFI, NY FIX	ORCHA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4220 RNAV ROUTE Q220 - CONTINUED

ORCHA, NY WP	ALBOW, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ALBOW, NY WP	SANDY POINT, RI VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SANDY POINT, RI VOR/DME	SKOWL, RI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SKOWL, RI WP	JAWZZ, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAWZZ, MA WP	LARIE, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4406 RNAV ROUTE Q406

BROADWAY, NJ VOR/DME	DBABE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DBABE, NY WP	BASYE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BASYE, NY FIX	TRIBS, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRIBS, CT WP	BIGGO, CT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIGGO, CT FIX	BARNES, MA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4409 RNAV ROUTE Q409

ENEME, GA WP	PUPYY, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PUPYY, GA WP	ISUZO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ISUZO, GA WP	KONEY, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KONEY, SC WP	JROSS, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JROSS, SC WP	SESUE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SESUE, SC WP	OKNEE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OKNEE, SC WP	MRPIT, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MRPIT, NC WP	DEEEZ, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4409 RNAV ROUTE Q409 - CONTINUED

DEEEZ, NC WP	GUILD, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GUILD, NC WP	CRPLR, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CRPLR, VA WP	TRPOD, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRPOD, MD WP	GNARO, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GNARO, DE WP	VILLS, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VILLS, NJ FIX	COYLE, NJ VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
COYLE, NJ VORTAC	WHITE, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4419 RNAV ROUTE Q419

BROSS, MD FIX	MYFOO, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MYFOO, DE WP	NACYN, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
NACYN, NJ WP	BSERK, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BSERK, NJ WP	HULKK, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HULKK, NJ WP	ROBBINSVILLE, NJ VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROBBINSVILLE, NJ VORTAC	LAURN, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAURN, NY WP	KENNEDY, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENNEDY, NY VOR/DME	DEER PARK, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4430 RNAV ROUTE Q430

ZANDR, OH FIX	BELLAIRE, OH VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BELLAIRE, OH VOR/DME	LEJOY, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEJOY, PA FIX	VINSE, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4430 RNAV ROUTE Q430 - CONTINUED

VINSE, PA FIX	BEETS, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEETS, PA FIX	LARRI, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LARRI, PA FIX	SAAME, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SAAME, PA FIX	BYRDD, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BYRDD, PA FIX	COPES, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
COPES, PA FIX	ROBBINSVILLE, NJ VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ROBBINSVILLE, NJ VORTAC	MYRCA, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MYRCA, NJ WP	CREEL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CREEL, NY FIX	RIFLE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIFLE, NY FIX	KYSKY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KYSKY, NY WP	LIBBE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LIBBE, NY FIX	FLAPE, MA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FLAPE, MA FIX	DEEPO, MA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEEPO, MA FIX	NANTUCKET, MA VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4436 RNAV ROUTE Q436

EMMMA, MI FIX	DIXSN, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DIXSN, MI WP	BOOTT, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOOTT, MI WP	RRONS, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RRONS, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	RAAKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4436 RNAV ROUTE Q436 - CONTINUED

RAAKK, NY WP	HERBA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HERBA, NY WP	REXXY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
REXXY, NY WP	REBBL, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
REBBL, PA FIX	MTCAF, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MTCAF, PA WP	DGRAF, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DGRAF, PA FIX	YYOST, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
YYOST, PA WP	LAAYK, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LAAYK, PA FIX	COATE, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4437 RNAV ROUTE Q437

VILLS, NJ FIX	DITCH, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DITCH, NJ FIX	LUIGI, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUIGI, NJ WP	HNNAH, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HNNAH, NJ WP	LLUND, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LLUND, NY FIX	BIZEX, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BIZEX, NY WP	BINGS, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BINGS, NY WP	WARUV, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WARUV, NY WP	SLANG, VT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4438 RNAV ROUTE Q438

RUBYY, MI WP	BERYS, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BERYS, MI WP	TWIGS, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4438 RNAV ROUTE Q438 - CONTINUED

TWIGS, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	RAAKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4439 RNAV ROUTE Q439

BRIGS, NJ FIX	DRIFT, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DRIFT, NJ FIX	MANTA, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MANTA, NJ FIX	PLUME, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PLUME, NJ FIX	SHERL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHERL, NY FIX	DUNEE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DUNEE, NY FIX	SARDI, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SARDI, NY FIX	RIFLE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RIFLE, NY FIX	FOXWD, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FOXWD, CT WP	BOGRT, MA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BOGRT, MA WP	BLENO, NH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLENO, NH WP	BEEKN, ME WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEEKN, ME WP	FRIAR, ME FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FRIAR, ME FIX	PRESQUE ISLE, ME VOR/DME	*18000	45000
*GNSS REQUIRED			

95.4440 RNAV ROUTE Q440

HUFFR, MN WP	IDIOM, WI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
IDIOM, WI WP	DEANI, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DEANI, MI WP	SLLAP, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4440 RNAV ROUTE Q440 - CONTINUED

SLLAP, MI WP	BERYS, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BERYS, MI WP	TWIGS, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TWIGS, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	RAAKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4445 RNAV ROUTE Q445

PAACK, NC WP	JAMIE, VA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JAMIE, VA FIX	CONFR, MD WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CONFR, MD WP	RADDS, DE FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RADDS, DE FIX	WNSTN, NJ WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WNSTN, NJ WP	AVALO, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AVALO, NJ FIX	BRIGS, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BRIGS, NJ FIX	SHAUP, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SHAUP, OA WP	VALCO, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VALCO, OA WP	KYSKY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4448 RNAV ROUTE Q448

POTTSTOWN, PA VORTAC	LANNA, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LANNA, NJ FIX	DBABE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DBABE, NY WP	BASYE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BASYE, NY FIX	TRIBS, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
TRIBS, CT WP	BIGGO, CT FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4448 RNAV ROUTE Q448 - CONTINUED

BIGGO, CT FIX	BARNES, MA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4450 RNAV ROUTE Q450

HNNAH, NJ WP	KENNEDY, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENNEDY, NY VOR/DME	DEER PARK, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4475 RNAV ROUTE Q475

COPLY, MA WP	SCUPP, OA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SCUPP, OA FIX	CANAL, OA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CANAL, OA WP	U.S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

95.4480 RNAV ROUTE Q480

ZANDR, OH FIX	BELLAIRE, OH VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BELLAIRE, OH VOR/DME	LEJOY, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEJOY, PA FIX	VINSE, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VINSE, PA FIX	BEETS, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEETS, PA FIX	HOTEE, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOTEE, PA WP	MIKYG, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MIKYG, PA WP	SPOTZ, PA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SPOTZ, PA WP	CANDR, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CANDR, NJ FIX	JEFFF, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JEFFF, NJ FIX	KINGSTON, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KINGSTON, NY VOR/DME	LESWL, CT WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4480 RNAV ROUTE Q480 - CONTINUED

LESWL, CT WP	BARNES, MA VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BARNES, MA VORTAC	KYLOH, NH WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KYLOH, NH WP	BEEKN, ME WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BEEKN, ME WP	KENNEBUNK, ME VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4481 RNAV ROUTE Q481

CONFR, MD WP	MGERK, DE WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MGERK, DE WP	LEEAH, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LEEAH, NJ FIX	ZIGGI, NJ FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZIGGI, NJ FIX	DEER PARK, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4806 RNAV ROUTE Q806

U.S. CANADIAN BORDER	MILLINOCKET, ME VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MILLINOCKET, ME VOR/DME	CANME, ME WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CANME, ME WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4811 RNAV ROUTE Q811

DILLINGHAM, AK VOR/DME	KOWOK, AK FIX	*18000	45000
*GNSS REQUIRED			
KOWOK, AK FIX	SAHOK, AK FIX	*18000	45000
*GNSS REQUIRED			
SAHOK, AK FIX	FAGIN, AK FIX	*18000	45000
*GNSS REQUIRED			
FAGIN, AK FIX	NONDA, AK FIX	*18000	45000
*GNSS REQUIRED			
NONDA, AK FIX	AMOTT, AK FIX	*18000	45000
*GNSS REQUIRED			
AMOTT, AK FIX	GASTO, AK FIX	*18000	45000
*GNSS REQUIRED			
GASTO, AK FIX	ANCHORAGE, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
ANCHORAGE, AK VOR/DME	GULKANA, AK VOR/DME	*18000	45000
*GNSS REQUIRED			
GULKANA, AK VOR/DME	U.S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

FROM	TO	MEA	MAA

95.4812 RNAV ROUTE Q812

TIMMR, ND FIX	WELOK, MN WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WELOK, MN WP	CEWDA, WI WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CEWDA, WI WP	ZOHAN, MI WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ZOHAN, MI WP	U.S. CANADIAN BORDER	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	KELTI, NY WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KELTI, NY WP	AHPAH, NY WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AHPAH, NY WP	GOATR, NY WP	*20000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOATR, NY WP	SYRACUSE, NY VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SYRACUSE, NY VORTAC	FABEN, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FABEN, NY WP	LOXXE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LOXXE, NY FIX	ARRKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ARRKK, NY WP	STOMP, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
STOMP, NY FIX	MSLIN, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MSLIN, NY FIX	GAYEL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4816 RNAV ROUTE Q816

HOCKE, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	KELTI, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KELTI, NY WP	AHPAH, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AHPAH, NY WP	GOATR, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GOATR, NY WP	ARNII, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4816 RNAV ROUTE Q816 - CONTINUED

ARNII, NY FIX	HANAA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4818 RNAV ROUTE Q818

FLINT, MI VORTAC	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	WOZEE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WOZEE, NY WP	KELIE, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KELIE, NY FIX	VIEEW, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
VIEEW, NY FIX	BINGHAMTON, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BINGHAMTON, NY VOR/DME	BUFFY, PA FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BUFFY, PA FIX	STOMP, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
STOMP, NY FIX	MSLIN, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
MSLIN, NY FIX	GAYEL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4822 RNAV ROUTE Q822

FLINT, MI VORTAC	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	HOZIR, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOZIR, NY WP	GONZZ, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GONZZ, NY WP	PUPPY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PUPPY, NY WP	PAYGE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PAYGE, NY WP	CAMBRIDGE, NY VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
CAMBRIDGE, NY VOR/DME	KENNEBUNK, ME VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
KENNEBUNK, ME VOR/DME	AJJAY, ME WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4822 RNAV ROUTE Q822 - CONTINUED

AJJAY, ME WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4824 RNAV ROUTE Q824

FLINT, MI VORTAC	HOCKE, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOCKE, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4842 RNAV ROUTE Q842

BEALE, NV FIX	BLIPP, NV WP	*18000	45000
*GNSS REQUIRED			
BLIPP, NV WP	WINEN, UT WP	*18000	45000
*GNSS REQUIRED			
WINEN, UT WP	TABLL, UT WP	*18000	45000
*GNSS REQUIRED			
TABLL, UT WP	PICHO, UT WP	*18000	45000
*GNSS REQUIRED			
PICHO, UT WP	PATIO, UT WP	*18000	45000
*GNSS REQUIRED			
PATIO, UT WP	PROXI, UT WP	*18000	45000
*GNSS REQUIRED			
PROXI, UT WP	VAANE, MT WP	*18000	45000
*GNSS REQUIRED			
VAANE, MT WP	KEETA, MT WP	*18000	45000
*GNSS REQUIRED			
KEETA, MT WP	U.S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

95.4844 RNAV ROUTE Q844

SYRACUSE, NY VORTAC	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4848 RNAV ROUTE Q848

SLLAP, MI WP	HHIPP, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HHIPP, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4864 RNAV ROUTE Q864

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

95.4902 RNAV ROUTE Q902

SEATTLE, WA VORTAC	ORCUS, WA FIX	*18000	45000
*GNSS REQUIRED			
ORCUS, WA FIX	U. S. CANADIAN BORDER	*18000	45000
*GNSS REQUIRED			

FROM	TO	MEA	MAA

95.4902 RNAV ROUTE Q902 - CONTINUED

U. S. CANADIAN BORDER *GNSS REQUIRED	ANNETTE ISLAND, AK VOR/DME	*18000	45000
ANNETTE ISLAND, AK VOR/DME *GNSS REQUIRED	GESTI, AK FIX	*18000	45000
GESTI, AK FIX *GNSS REQUIRED	DOOZI, AK FIX	*18000	45000
DOOZI, AK FIX *GNSS REQUIRED	LEVEL ISLAND, AK VOR/DME	*18000	45000
LEVEL ISLAND, AK VOR/DME *GNSS REQUIRED	HOODS, AK FIX	*18000	45000
HOODS, AK FIX *GNSS REQUIRED	SISTERS ISLAND, AK VORTAC	*18000	45000
SISTERS ISLAND, AK VORTAC *GNSS REQUIRED	U. S. CANADIAN BORDER	*18000	45000
U. S. CANADIAN BORDER *GNSS REQUIRED	NORTHWAY, AK VORTAC	*18000	45000
NORTHWAY, AK VORTAC *GNSS REQUIRED	RDFLG, AK FIX	*18000	45000
RDFLG, AK FIX *GNSS REQUIRED	HRDNG, AK FIX	*18000	45000
HRDNG, AK FIX *GNSS REQUIRED	FAIRBANKS, AK VORTAC	*18000	45000
FAIRBANKS, AK VORTAC *GNSS REQUIRED	KOTZEBUE, AK VOR/DME	*18000	45000

95.4905 RNAV ROUTE Q905

HOCKE, MI WP *18000 - GNSS MEA *DME/DME/IRU MEA	U.S. CANADIAN BORDER	*18000	45000

95.4907 RNAV ROUTE Q907

POSTS, MI WP *18000 - GNSS MEA *DME/DME/IRU MEA	PADDE, MI WP	*18000	45000
PADDE, MI WP *18000 - GNSS MEA *DME/DME/IRU MEA	SALEM, MI VORTAC	*18000	45000
SALEM, MI VORTAC *18000 - GNSS MEA *DME/DME/IRU MEA	U.S. CANADIAN BORDER	*18000	45000
U.S. CANADIAN BORDER *18000 - GNSS MEA *DME/DME/IRU MEA	U.S. CANADIAN BORDER	*18000	45000

95.4913 RNAV ROUTE Q913

U.S. CANADIAN BORDER *18000 - GNSS MEA *DME/DME/IRU MEA	CABCI, VT WP	*18000	45000
CABCI, VT WP *18000 - GNSS MEA *DME/DME/IRU MEA	TOPPS, ME FIX	*18000	45000

95.4917 RNAV ROUTE Q917

SAULT STE MARIE, MI VOR/DME *18000 - GNSS MEA *DME/DME/IRU MEA	U.S. CANADIAN BORDER	*18000	45000

FROM	TO	MEA	MAA

95.4917 RNAV ROUTE Q917 - CONTINUED

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	HOZIR, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOZIR, NY WP	WOZEE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4923 RNAV ROUTE Q923

HOCKE, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4935 RNAV ROUTE Q935

MONEE, MI FIX	HOCKE, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HOCKE, MI WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	WOZEE, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WOZEE, NY WP	HANKK, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
HANKK, NY WP	JOSSY, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
JOSSY, NY WP	AUDIL, NY FIX	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
AUDIL, NY FIX	FABEN, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
FABEN, NY WP	PONCT, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
PONCT, NY WP	GARDNER, MA VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GARDNER, MA VOR/DME	BOSTON, MA VOR/DME	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4937 RNAV ROUTE Q937

U.S. CANADIAN BORDER	WAYGO, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
WAYGO, NY WP	KRAZZ, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

95.4951 RNAV ROUTE Q951

POSTS, MI WP	PADDE, MI WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

FROM	TO	MEA	MAA

95.4951 RNAV ROUTE Q951 - CONTINUED

PADDE, MI WP	SALEM, MI VORTAC	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SALEM, MI VORTAC	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	DAVDA, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
DAVDA, NY WP	SAVAL, NY WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
SAVAL, NY WP	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

§95.5000 GROUND-BASED HIGH ALTITUDE RNAV ROUTES

FROM/TO	TOTAL DISTANCE	CHANGEOVER DISTANCE	POINT FROM	TRACK ANGLE	MEA	MAA
J804R						
ANCHORAGE, AK VOR/DME	60.0				18000	45000
NOWEL, AK RP				133/314 TO NOWEL		
NOWEL, AK RP	90.5				18000	45000
MIDDLETON ISLAND, AK VOR/DME				134/316 TO MIDDLETON ISLAND		
MIDDLETON ISLAND, AK VOR/DME	170.9	121	MIDDLETON ISLAND	095/275 TO COP	24000	45000
SNOUT, AK RP				120/300 TO SNOUT		
SNOUT, AK RP	196.9	197	SNOUT	096/276 TO COP	24000	45000
EEDEN, AK RP				125/305 TO EEDEN		
EEDEN, AK RP	153.9	112	EEDEN	102/282 TO COP	24000	45000
FRIED, AK RP				129/309 TO FRIED		
J889R						
NOWEL, AK RP	75.0	10	NOWEL	112/294 TO COP	18000	45000
ARISE, AK RP				112/294 TO ARISE		
ARISE, AK RP	71.0			112/293 TO KONKS	18000	45000
KONKS, AK WP				293/113 TO KONKS		
KONKS, AK WP	116.0	40	KONKS	111/294 TO COP	18000	45000
LAIRE, AK RP				294/114 TO LAIRE		

§95.6001 VOR FEDERAL AIRWAYS

95.6001 VOR FEDERAL AIRWAY V1

CRAIG, FL VORTAC	STARY, GA FIX	*4000
*2100 - MOCA		
STARY, GA FIX	RUBYS, SC FIX	*11000
*1200 - MOCA		
RUBYS, SC FIX	*BASSO, SC FIX	**11000
*3000 - MRA		
**2300 - MOCA		
BASSO, SC FIX	CHARLESTON, SC VORTAC	2000
CHARLESTON, SC VORTAC	*KIMMY, SC FIX	**5000
*6000 - MRA		
**2000 - GNSS MEA		
KIMMY, SC FIX	INLET, SC FIX	*5000
*2100 - GNSS MEA		
INLET, SC FIX	GRAND STRAND, SC VORTAC	
	NE BND	*2100
	SW BND	*5000
*2100 - GNSS MEA		
GRAND STRAND, SC VORTAC	ASHES, NC FIX	
	NE BND	5000
	SW BND	2000
ASHES, NC FIX	YOAST, NC FIX	*5000
*2100 - MOCA		
YOAST, NC FIX	WALLO, NC FIX	*7000
*1700 - MOCA		
WALLO, NC FIX	KINSTON, NC VORTAC	
	NE BND	*2000
	SW BND	*7000
*SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS		
KINSTON, NC VORTAC	ZAGGY, NC FIX	UNUSABLE
ZAGGY, NC FIX	COFIELD, NC VORTAC	*3000
*1500 - MOCA		
COFIELD, NC VORTAC	DRONE, NC FIX	2000
DRONE, NC FIX	NORFOLK, VA VORTAC	*2500
*1600 - MOCA		
NORFOLK, VA VORTAC	CAPE CHARLES, VA VORTAC	*2500
*1800 - MOCA		
CAPE CHARLES, VA VORTAC	SALISBURY, MD VORTAC	2000
SALISBURY, MD VORTAC	WATERLOO, DE VOR/DME	*2000
*1500 - MOCA		
*SALISBURY R-039 UNUSABLE BELOW 5000 MSL		
WATERLOO, DE VOR/DME	COYLE, NJ VORTAC	1800
COYLE, NJ VORTAC	*DIXIE, NJ FIX	3800
*3800 - MCA DIXIE, NJ FIX , SW BND		
DIXIE, NJ FIX	KENNEDY, NY VOR/DME	*2500
*1700 - MOCA		
KENNEDY, NY VOR/DME	DEER PARK, NY VOR/DME	1800
DEER PARK, NY VOR/DME	MADISON, CT VOR/DME	2000
MADISON, CT VOR/DME	HARTFORD, CT VOR/DME	2500
HARTFORD, CT VOR/DME	DVANY, CT FIX	3000
DVANY, CT FIX	GRAYM, MA FIX	*4000
*2500 - MOCA		
GRAYM, MA FIX	BOSTON, MA VOR/DME	*4000
*2500 - MOCA		
*3000 - GNSS MEA		

FROM	TO	MEA

95.6002 VOR FEDERAL AIRWAY V2

*SEATTLE, WA VORTAC	VAMPS, WA FIX	
	E BND	**8400
	W BND	**4000
*4300 - MCA SEATTLE, WA VORTAC , E BND		
**3100 - MOCA		
**5300 - GNSS MEA		
VAMPS, WA FIX	BANDR, WA FIX	
	E BND	*8400
	W BND	*7700
*7700 - GNSS MEA		
BANDR, WA FIX	*BEEZR, WA FIX	8400
*9000 - MRA		
BEEZR, WA FIX	ELLENSBURG, WA VOR/DME	*8000
*7200 - MOCA		
ELLENSBURG, WA VOR/DME	PLUSS, WA FIX	7000
PLUSS, WA FIX	MOSES LAKE, WA VOR/DME	4000
MOSES LAKE, WA VOR/DME	BATUM, WA FIX	4000
BATUM, WA FIX	SUBDY, WA FIX	5000
SUBDY, WA FIX	*SPOKANE, WA VORTAC	5000
*5200 - MCA SPOKANE, WA VORTAC , E BND		
SPOKANE, WA VORTAC	ROPES, WA FIX	7100
ROPES, WA FIX	MULLAN PASS, ID VOR/DME	9100
MULLAN PASS, ID VOR/DME	ALTON, MT FIX	9600
ALTON, MT FIX	MISSOULA, MT VOR/DME	
	SE BND	*9000
	NW BND	*9600
*8500 - MOCA		
MISSOULA, MT VOR/DME	HELENA, MT VORTAC	*13000
*10300 - MOCA		
HELENA, MT VORTAC	SWEDD, MT FIX	10000
SWEDD, MT FIX	CONNS, MT FIX	10800
CONNS, MT FIX	LIVINGSTON, MT VOR/DME	10000
LIVINGSTON, MT VOR/DME	REEPO, MT FIX	9700
REEPO, MT FIX	COLUS, MT FIX	
	W BND	9700
	E BND	7000
COLUS, MT FIX	BILLINGS, MT VORTAC	
	W BND	9700
	E BND	6400
BILLINGS, MT VORTAC	MILES CITY, MT VOR/DME	6000
MILES CITY, MT VOR/DME	DICKINSON, ND VORTAC	6000
DICKINSON, ND VORTAC	BISMARCK, ND VOR/DME	4600
BISMARCK, ND VOR/DME	JAMESTOWN, ND VOR/DME	4000
JAMESTOWN, ND VOR/DME	*CHAFE, ND FIX	3300
*6000 - MRA		
CHAFE, ND FIX	FARGO, ND VOR/DME	
	W BND	3300
	E BND	2700
FARGO, ND VOR/DME	ALEXANDRIA, MN VOR/DME	*3500
*3000 - MOCA		
ALEXANDRIA, MN VOR/DME	GOPHER, MN VORTAC	3400
GOPHER, MN VORTAC	PEGGS, MN FIX	3400
PEGGS, MN FIX	NODINE, MN VORTAC	3000

95.6003 VOR FEDERAL AIRWAY V3

KEY WEST, FL VORTAC	*BIPIN, FL FIX	**GNSS - 15000
*14500 - MCA BIPIN, FL FIX , W BND		
**KEY WEST R-082 UNUSABLE		

95.6003 VOR FEDERAL AIRWAY V3 - CONTINUED

BIPIN, FL FIX	DROWN, FL FIX	GNSS - 3000
DROWN, FL FIX	MNATE, FL FIX	5000
MNATE, FL FIX	DOLPHIN, FL VORTAC	*5000
*2800 - MOCA		
DOLPHIN, FL VORTAC	FORT LAUDERDALE, FL VOR/DME	2100
FORT LAUDERDALE, FL VOR/DME	PALM BEACH, FL VORTAC	2000
PALM BEACH, FL VORTAC	TREASURE, FL VORTAC	*3000
*2100 - MOCA		
TREASURE, FL VORTAC	MELBOURNE, FL VOR/DME	2000
MELBOURNE, FL VOR/DME	MALET, FL FIX	2000
MALET, FL FIX	ORMOND BEACH, FL VORTAC	*4000
*1600 - MOCA		
ORMOND BEACH, FL VORTAC	*SEBAG, FL FIX	**2000
*3000 - MRA		
**1400 - MOCA		
SEBAG, FL FIX	BRUNSWICK, GA VORTAC	*2000
*1400 - MOCA		
BRUNSWICK, GA VORTAC	*BROUN, GA FIX	**3000
*11000 - MRA		
**2200 - MOCA		
BROUN, GA FIX	*HARPS, GA FIX	**3000
*3800 - MRA		
**2200 - MOCA		
HARPS, GA FIX	KELER, GA FIX	*3000
*2200 - MOCA		
KELER, GA FIX	SAVANNAH, GA VORTAC	*3000
*1900 - MOCA		
SAVANNAH, GA VORTAC	OWENS, SC FIX	*3000
*1500 - MOCA		
OWENS, SC FIX	*VANCE, SC VORTAC	2000
*13000 - MCA VANCE, SC VORTAC , NE BND		
VANCE, SC VORTAC	*FLORENCE, SC VORTAC	**13000
*12000 - MCA FLORENCE, SC VORTAC , SW BND		
**2000 - GNSS MEA		
**VANCE R-047 UNUSABLE, USE FLORENCE R-224		
FLORENCE, SC VORTAC	TOWEY, SC FIX	2000
TOWEY, SC FIX	SANDHILLS, NC VORTAC	*8000
*1900 - MOCA		
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	2500
RALEIGH/DURHAM, NC VORTAC	HARVY, VA FIX	3000
HARVY, VA FIX	*NUTTS, VA FIX	**6000
*9000 - MRA		
**4000 - GNSS MEA		
NUTTS, VA FIX	FLAT ROCK, VA VORTAC	*6000
*4000 - GNSS MEA		
FLAT ROCK, VA VORTAC	GORDONSVILLE, VA VORTAC	2500
GORDONSVILLE, VA VORTAC	LURAY, VA FIX	6100
LURAY, VA FIX	*KERRE, VA FIX	**6000
*7000 - MRA		
**5000 - MOCA		
KERRE, VA FIX	MARTINSBURG, WV VORTAC	*6000
*5000 - MOCA		
MARTINSBURG, WV VORTAC	WESTMINSTER, MD VORTAC	*4000
*3300 - MOCA		
WESTMINSTER, MD VORTAC	VINNY, PA FIX	3000
VINNY, PA FIX	MODENA, PA VORTAC	3500
MODENA, PA VORTAC	*MAZIE, PA FIX	3000
*5000 - MRA		
MAZIE, PA FIX	*HARRS, PA FIX	2500
*5000 - MRA		

FROM	TO	MEA

95.6003 VOR FEDERAL AIRWAY V3 - CONTINUED

HARRS, PA FIX	*BIGGY, NJ FIX	2500
*5000 - MRA		
BIGGY, NJ FIX	SOLBERG, NJ VOR/DME	2500
SOLBERG, NJ VOR/DME	CARMEL, NY VOR/DME	*3000
*2500 - MOCA		
CARMEL, NY VOR/DME	RACEY, CT FIX	2100
RACEY, CT FIX	HARTFORD, CT VOR/DME	3000
HARTFORD, CT VOR/DME	JEWIT, CT FIX	*2600
*2100 - MOCA		
JEWIT, CT FIX	WOONS, RI FIX	2500
WOONS, RI FIX	BOSTON, MA VOR/DME	2000
PRESQUE ISLE, ME VOR/DME	U.S. CANADIAN BORDER	*8000
*4200 - MOCA		

95.6004 VOR FEDERAL AIRWAY V4

TATOOSH, WA VORTAC	JAWBN, WA FIX	5800
JAWBN, WA FIX	LOFAL, WA FIX	*5400
*4300 - MOCA		
LOFAL, WA FIX	*SEATTLE, WA VORTAC	**4000
*6200 - MCA SEATTLE, WA VORTAC , E BND		
**2800 - MOCA		
SEATTLE, WA VORTAC	BLAKO, WA FIX	
	E BND	*10000
	W BND	*4000
*3100 - MOCA		
BLAKO, WA FIX	HUMPP, WA FIX	
	E BND	*10000
	W BND	*6600
*6600 - MOCA		
HUMPP, WA FIX	CHINS, WA FIX	*10000
*9000 - MOCA		
CHINS, WA FIX	TITON, WA FIX	
	E BND	*7000
	W BND	*10000
*7000 - MOCA		
TITON, WA FIX	GLEED, WA FIX	
	W BND	*7000
	E BND	*5500
*5000 - MOCA		
GLEED, WA FIX	YAKIMA, WA VORTAC	
	E BND	5000
	W BND	5500
YAKIMA, WA VORTAC	AMPLE, WA FIX	5000
AMPLE, WA FIX	PENDLETON, OR VORTAC	4000
PENDLETON, OR VORTAC	PIANO, OR FIX	
	SE BND	7000
	NW BND	6000
PIANO, OR FIX	LACED, OR FIX	
	NW BND	7000
	SE BND	10000
LACED, OR FIX	BAKER CITY, OR VOR/DME	10000
BAKER CITY, OR VOR/DME	PAYET, ID FIX	9000
PAYET, ID FIX	*EMETT, ID FIX	
	SE BND	5900
	NW BND	9000
*9400 - MRA		
EMETT, ID FIX	BOISE, ID VORTAC	5900
BOISE, ID VORTAC	CANEK, ID FIX	
	NW BND	7000
	SE BND	9500

95.6004 VOR FEDERAL AIRWAY V4 - CONTINUED

CANEK, ID FIX	ALKAL, ID FIX	*9500
*8500 - MOCA		
ALKAL, ID FIX	GOODE, ID FIX	
	E BND	*8000
	W BND	*9500
*6200 - MOCA		
GOODE, ID FIX	JEROT, ID FIX	*8000
*6500 - MOCA		
JEROT, ID FIX	BURLEY, ID VOR/DME	6500
BURLEY, ID VOR/DME	MEDEA, ID FIX	*8400
*7800 - MOCA		
MEDEA, ID FIX	MALAD CITY, ID VOR/DME	9400
MALAD CITY, ID VOR/DME	FILOB, ID FIX	10900
FILOB, ID FIX	HODNI, ID FIX	*12000
*10800 - MOCA		
*10800 - GNSS MEA		
HODNI, ID FIX	GRIPS, WY FIX	*16000
*11700 - MOCA		
*11700 - GNSS MEA		
GRIPS, WY FIX	ROCK SPRINGS, WY VOR/DME	*11000
*10000 - MOCA		
*10000 - GNSS MEA		
ROCK SPRINGS, WY VOR/DME	CHEROKEE, WY VOR/DME	10000
CHEROKEE, WY VOR/DME	KLASH, WY FIX	
	E BND	13000
	W BND	11000
KLASH, WY FIX	*LARAMIE, WY VOR/DME	13000
*10600 - MCA LARAMIE, WY VOR/DME , W BND		
LARAMIE, WY VOR/DME	FLEMS, WY FIX	11000
FLEMS, WY FIX	BARGR, CO FIX	*11000
*10000 - MOCA		
BARGR, CO FIX	WISER, CO FIX	8400
WISER, CO FIX	GILL, CO VOR/DME	8000
GILL, CO VOR/DME	THURMAN, CO VORTAC	7000
THURMAN, CO VORTAC	GOODLAND, KS VORTAC	*7000
*6300 - MOCA		
GOODLAND, KS VORTAC	HILL CITY, KS VORTAC	5500
HILL CITY, KS VORTAC	*WESAL, KS FIX	**5500
*4500 - MRA		
**4100 - MOCA		
WESAL, KS FIX	SALINA, KS VORTAC	
	E BND	*4000
	W BND	*4500
*2900 - MOCA		
SALINA, KS VORTAC	*VASCO, KS FIX	3000
*5000 - MRA		
VASCO, KS FIX	ALMAS, KS FIX	3000
ALMAS, KS FIX	TOPEKA, KS VORTAC	3600
TOPEKA, KS VORTAC	KANSAS CITY, MO VORTAC	2700
KANSAS CITY, MO VORTAC	LEXIN, MO FIX	2600
LEXIN, MO FIX	HALLSVILLE, MO VORTAC	*6000
*3000 - GNSS MEA		
HALLSVILLE, MO VORTAC	SADEN, MO FIX	2600
SADEN, MO FIX	ST LOUIS, MO VORTAC	*2400
*1700 - MOCA		
ST LOUIS, MO VORTAC	TROY, IL VORTAC	2400
TROY, IL VORTAC	CENTRALIA, IL VORTAC	2300
CENTRALIA, IL VORTAC	POCKET CITY, IN VORTAC	3000
POCKET CITY, IN VORTAC	LAMBS, IN FIX	
	W BND	2500
	E BND	10000

FROM	TO	MEA

95.6004 VOR FEDERAL AIRWAY V4 - CONTINUED

LAMBS, IN FIX	*LOUISVILLE, KY VORTAC	**10000
*10000 - MCA LOUISVILLE, KY VORTAC , W BND		
**3000 - GNSS MEA		
LOUISVILLE, KY VORTAC	LEXINGTON, KY VOR/DME	2800
CHARLESTON, WV VOR/DME	REACH, WV FIX	4000
REACH, WV FIX	*ELKINS, WV VORTAC	4400
*4900 - MCA ELKINS, WV VORTAC , E BND		
ELKINS, WV VORTAC	KESSEL, WV VOR/DME	6400
KESSEL, WV VOR/DME	ARMEL, VA VOR/DME	5000

95.6005 VOR FEDERAL AIRWAY V5

PECAN, GA VOR/DME	VIENNA, GA VORTAC	*2000
*1900 - MOCA		
VIENNA, GA VORTAC	DUBLIN, GA VORTAC	2100
DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	*3000
*2200 - MOCA		
ATHENS, GA VOR/DME	IRMOS, GA FIX	3100
IRMOS, GA FIX	CORCE, GA FIX	3800
CORCE, GA FIX	AWSON, GA FIX	*5400
*4600 - MOCA		
AWSON, GA FIX	*NELLO, GA FIX	**7000
*7000 - MCA NELLO, GA FIX , E BND		
**5500 - MOCA		
NELLO, GA FIX	*HOCHE, GA FIX	5400
*4000 - MCA HOCHE, GA FIX , SE BND		
HOCHE, GA FIX	CHOO CHOO, TN VORTAC	3000
NEW HOPE, KY VOR/DME	*LOUISVILLE, KY VORTAC	2700
*10000 - MCA LOUISVILLE, KY VORTAC , NE BND		
LOUISVILLE, KY VORTAC	*NERVE, KY FIX	**10000
*10000 - MCA NERVE, KY FIX , SW BND		
**2700 - GNSS MEA		
**LOUISVILLE R-036 UNUSABLE BELOW 10000.		
NERVE, KY FIX	CINCINNATI, KY VORTAC	2700
CINCINNATI, KY VORTAC	PRUDE, OH FIX	3000
PRUDE, OH FIX	SHIRT, OH FIX	*4000
*2500 - MOCA		
SHIRT, OH FIX	*GLOOM, OH FIX	3000
*4000 - MRA		
GLOOM, OH FIX	APPLETON, OH VORTAC	3000

95.6006 VOR FEDERAL AIRWAY V6

OAKLAND, CA VOR/DME	COLLI, CA FIX	4000
COLLI, CA FIX	*PITTS, CA FIX	5000
*3800 - MCA PITTS, CA FIX , S BND		
PITTS, CA FIX	REJOY, CA FIX	*4000
*2400 - MOCA		
REJOY, CA FIX	SACRAMENTO, CA VORTAC	2000
SACRAMENTO, CA VORTAC	FOLLY, CA FIX	3000
FOLLY, CA FIX	*COLOM, CA FIX	5000
*9500 - MCA COLOM, CA FIX , NE BND		
COLOM, CA FIX	SQUAW VALLEY, CA VOR/DME	11000
SQUAW VALLEY, CA VOR/DME	*MUSTANG, NV VORTAC	13000
*12000 - MCA MUSTANG, NV VORTAC , SW BND		
MUSTANG, NV VORTAC	WADDS, NV FIX	10300
WADDS, NV FIX	*LOVELOCK, NV VORTAC	**10000
*8500 - MCA LOVELOCK, NV VORTAC , NE BND		
**9500 - MOCA		

FROM	TO	MEA

95.6006 VOR FEDERAL AIRWAY V6 - CONTINUED

LOVELOCK, NV VORTAC	BATTLE MOUNTAIN, NV VORTAC	12000
BATTLE MOUNTAIN, NV VORTAC	WELLS, NV VOR/DME	*11000
*10100 - MOCA		
WELLS, NV VOR/DME	LUCIN, UT VORTAC	10300
LUCIN, UT VORTAC	*OGDEN, UT VORTAC	9000
*10700 - MCA OGDEN, UT VORTAC , E BND		
OGDEN, UT VORTAC	EVIEW, UT FIX	
	E BND	12000
	W BND	7000
EVIEW, UT FIX	FORT BRIDGER, WY VOR/DME	12000
FORT BRIDGER, WY VOR/DME	ROCK SPRINGS, WY VOR/DME	10000
ROCK SPRINGS, WY VOR/DME	CHEROKEE, WY VOR/DME	10000
CHEROKEE, WY VOR/DME	MEDICINE BOW, WY VOR/DME	10000
MEDICINE BOW, WY VOR/DME	MOIST, WY FIX	9500
MOIST, WY FIX	*LITER, WY FIX	**10500
*10500 - MCA LITER, WY FIX , W BND		
**9500 - MOCA		
LITER, WY FIX	SIDNEY, NE VOR/DME	*9500
*7600 - MOCA		
SIDNEY, NE VOR/DME	NORTH PLATTE, NE VOR/DME	*6000
*5700 - MOCA		
NORTH PLATTE, NE VOR/DME	RAGAR, NE FIX	*5000
*4300 - MOCA		
RAGAR, NE FIX	GRAND ISLAND, NE VOR/DME	*5000
*3600 - MOCA		
GRAND ISLAND, NE VOR/DME	HUSKR, NE FIX	*4000
*3200 - MOCA		
HUSKR, NE FIX	OMAHA, IA VORTAC	4000
OMAHA, IA VORTAC	DES MOINES, IA VORTAC	3000
DES MOINES, IA VORTAC	IOWA CITY, IA VOR/DME	2700
IOWA CITY, IA VOR/DME	DAVENPORT, IA VORTAC	2700
DAVENPORT, IA VORTAC	LEECS, IL FIX	2500
LEECS, IL FIX	DUPAGE, IL VOR/DME	*4000
*2700 - GNSS MEA		
NILES, IL FIX	CHETT, MI FIX	*3500
*2500 - MOCA		
CHETT, MI FIX	GIPPER, MI VORTAC	*3000
*2200 - MOCA		
GIPPER, MI VORTAC	MODEM, IN FIX	*4000
*2600 - MOCA		
PHILIPSBURG, PA VORTAC	SELINSGROVE, PA VOR/DME	4100
SELINSGROVE, PA VOR/DME	SNOWY, PA FIX	*5000
*4000 - GNSS MEA		
SNOWY, PA FIX	ALLENTOWN, PA VORTAC	*4000
*3300 - MOCA		
ALLENTOWN, PA VORTAC	SOLBERG, NJ VOR/DME	*3000
*2200 - MOCA		
*ALLENTOWN R-115 UNUSABLE. USE SOLBERG R-295.		
SOLBERG, NJ VOR/DME	EMPYR, NY FIX	2300
EMPYR, NY FIX	NANCI, NY FIX	2700
NANCI, NY FIX	LA GUARDIA, NY VOR/DME	2900

95.6007 VOR FEDERAL AIRWAY V7

DOLPHIN, FL VORTAC	LEE COUNTY, FL VORTAC	2300
LEE COUNTY, FL VORTAC	JOCKS, FL FIX	2600
JOCKS, FL FIX	*CROWD, FL FIX	**2300
*5000 - MRA		
**1600 - MOCA		

FROM	TO	MEA

95.6007 VOR FEDERAL AIRWAY V7 - CONTINUED

CROWD, FL FIX	LAKELAND, FL VORTAC	2300
LAKELAND, FL VORTAC	*DADES, FL FIX	**2300
*5000 - MRA		
**1800 - MOCA		
DADES, FL FIX	NITTS, FL FIX	*2300
*1800 - MOCA		
NITTS, FL FIX	*ORATE, FL FIX	**3000
*3000 - MRA		
**1700 - MOCA		
ORATE, FL FIX	CROSS CITY, FL VORTAC	*2000
*1500 - MOCA		
CROSS CITY, FL VORTAC	SEMINOLE, FL VORTAC	2000
SEMINOLE, FL VORTAC	OALDY, AL FIX	2000
OALDY, AL FIX	WIREGRASS, AL VORTAC	2500
WIREGRASS, AL VORTAC	SKIPO, AL FIX	2300
SKIPO, AL FIX	*BANBI, AL FIX	**4000
*4000 - MCA BANBI, AL FIX , SE BND		
**1900 - MOCA		
**2300 - GNSS MEA		
BANBI, AL FIX	MONTGOMERY, AL VORTAC	2400
MONTGOMERY, AL VORTAC	VULCAN, AL VORTAC	3100
POCKET CITY, IN VORTAC	PRINC, IN FIX	
	N BND	2300
	S BND	4500
PRINC, IN FIX	LISLE, IN FIX	4500
LISLE, IN FIX	TERRE HAUTE, IN VORTAC	3000
TERRE HAUTE, IN VORTAC	*POTES, IN FIX	2500
*4000 - MRA		
POTES, IN FIX	BOILER, IN VORTAC	2500
BOILER, IN VORTAC	CHICAGO HEIGHTS, IL VORTAC	2800
CHICAGO HEIGHTS, IL VORTAC	*LAIRD, IL FIX	3500
*2700 - MCA LAIRD, IL FIX , S BND		
LAIRD, IL FIX	*THORR, IL FIX	2500
*2600 - MCA THORR, IL FIX , S BND		
THORR, IL FIX	PAPPI, IL FIX	*2500
*1800 - MOCA		
PAPPI, IL FIX	*TALOR, WI FIX	**4000
*5300 - MCA TALOR, WI FIX , N BND		
**1800 - MOCA		
TALOR, WI FIX	PETTY, WI FIX	*6000
*1900 - MOCA		

95.6008 VOR FEDERAL AIRWAY V8

DOYLE, CA FIX	LIMBO, CA FIX	3000
LIMBO, CA FIX	*WILMA, CA FIX	3200
*2800 - MCA WILMA, CA FIX , W BND		
WILMA, CA FIX	SEAL BEACH, CA VORTAC	2300
SEAL BEACH, CA VORTAC	AHEIM, CA FIX	*3000
*2200 - MOCA		
AHEIM, CA FIX	*OLLIE, CA FIX	3000
*4300 - MCA OLLIE, CA FIX , NE BND		
OLLIE, CA FIX	PARADISE, CA VORTAC	5300
PARADISE, CA VORTAC	*RAVON, CA FIX	4700
*8800 - MCA RAVON, CA FIX , NE BND		
RAVON, CA FIX	GAREY, CA FIX	
	SW BND	8000
	NE BND	10500
GAREY, CA FIX	*LUCER, CA FIX	10500
*9300 - MCA LUCER, CA FIX , SW BND		

FROM	TO	MEA

95.6008 VOR FEDERAL AIRWAY V8 - CONTINUED

LUCER, CA FIX	BULGY, CA FIX	*9000
*8000 - MOCA		
BULGY, CA FIX	HECTOR, CA VORTAC	*9000
*7000 - MOCA		
HECTOR, CA VORTAC	GOFFS, CA VORTAC	*9000
*8200 - MOCA		
GOFFS, CA VORTAC	LYNSY, NV FIX	7600
LYNSY, NV FIX	MEADS, NV FIX	7500
MEADS, NV FIX	MORMON MESA, NV VORTAC	6000
MORMON MESA, NV VORTAC	MATZO, UT FIX	
	NE BND	12000
	SW BND	9000
MATZO, UT FIX	BRYCE CANYON, UT VORTAC	12300
BRYCE CANYON, UT VORTAC	HANKSVILLE, UT VORTAC	13300
HANKSVILLE, UT VORTAC	GRAND JUNCTION, CO VOR/DME	10000
GRAND JUNCTION, CO VOR/DME	*SQUAT, CO FIX	**10500
*12000 - MCA SQUAT, CO FIX , NE BND		
**9600 - MOCA		
SQUAT, CO FIX	RIFLE, CO VOR/DME	13200
RIFLE, CO VOR/DME	KREMMLING, CO VOR/DME	13400
KREMMLING, CO VOR/DME	*MILE HIGH, CO VORTAC	15500
*10300 - MCA MILE HIGH, CO VORTAC , W BND		
MILE HIGH, CO VORTAC	HOYTT, CO FIX	7600
HOYTT, CO FIX	AKRON, CO VOR/DME	7000
AKRON, CO VOR/DME	HAYES CENTER, NE VORTAC	6500
HAYES CENTER, NE VORTAC	GRAND ISLAND, NE VOR/DME	*5500
*4900 - MOCA		
GRAND ISLAND, NE VOR/DME	HUSKR, NE FIX	*4000
*3200 - MOCA		
HUSKR, NE FIX	OMAHA, IA VORTAC	4000
OMAHA, IA VORTAC	DES MOINES, IA VORTAC	3000
DES MOINES, IA VORTAC	IOWA CITY, IA VOR/DME	2700
IOWA CITY, IA VOR/DME	MOLINE, IL VOR/DME	2700
MOLINE, IL VOR/DME	TRIDE, IL FIX	
	W BND	3300
	E BND	4000
TRIDE, IL FIX	JOLIET, IL VOR/DME	
	E BND	2600
	W BND	3300
JOLIET, IL VOR/DME	CHICAGO HEIGHTS, IL VORTAC	2500
CHICAGO HEIGHTS, IL VORTAC	HALIE, IN FIX	2600
HALIE, IN FIX	INKEN, IN FIX	*4000
*2300 - MOCA		
INKEN, IN FIX	GOSHEN, IN VORTAC	2600
GOSHEN, IN VORTAC	*TWERP, OH FIX	**4500
*5000 - MRA		
**2500 - MOCA		
TWERP, OH FIX	FLAG CITY, OH VORTAC	2700
MARTINSBURG, WV VORTAC	WASHINGTON, DC VOR/DME	3300

95.6009 VOR FEDERAL AIRWAY V9

LEEVILLE, LA VORTAC	SAFES, LA FIX	*2000
*1400 - MOCA		
SAFES, LA FIX	WAVEZ, LA FIX	*4000
*1600 - MOCA		
WAVEZ, LA FIX	OYSTY, LA FIX	*3000
*1800 - MOCA		
OYSTY, LA FIX	MC COMB, MS VORTAC	2000

95.6009 VOR FEDERAL AIRWAY V9 - CONTINUED

MC COMB, MS VORTAC	*ROMAR, MS FIX	**3000
*4000 - MRA		
**1900 - MOCA		
ROMAR, MS FIX	MAGNOLIA, MS VORTAC	*3000
*1900 - MOCA		
MAGNOLIA, MS VORTAC	SIDON, MS VORTAC	2000
SIDON, MS VORTAC	MARVELL, AR VOR/DME	2100
FARMINGTON, MO VORTAC	ARNOL, IL FIX	*3000
*2500 - MOCA		
ARNOL, IL FIX	ST LOUIS, MO VORTAC	2800
ST LOUIS, MO VORTAC	SPINNER, IL VORTAC	*2700
*2100 - MOCA		
SPINNER, IL VORTAC	PONTIAC, IL VOR/DME	*3000
*2300 - MOCA		
JANESVILLE, WI VOR/DME	MADISON, WI VORTAC	3000
MADISON, WI VORTAC	OSHKOSH, WI VORTAC	3000
OSHKOSH, WI VORTAC	GREEN BAY, WI VORTAC	*3000
*2300 - MOCA		
GREEN BAY, WI VORTAC	IRON MOUNTAIN, MI VOR/DME	2900
IRON MOUNTAIN, MI VOR/DME	HOUGHTON, MI VOR/DME	*3800
*3300 - MOCA		

95.6010 VOR FEDERAL AIRWAY V10

PUEBLO, CO VORTAC	LAMAR, CO VOR/DME	7000
LAMAR, CO VOR/DME	ADEER, KS FIX	5700
ADEER, KS FIX	GARDEN CITY, KS VORTAC	
	W BND	*5700
	E BND	*5000
*4400 - MOCA		
GARDEN CITY, KS VORTAC	DODGE CITY, KS VORTAC	4600
DODGE CITY, KS VORTAC	STAFF, KS FIX	4300
STAFF, KS FIX	HUTCHINSON, KS VOR/DME	
	E BND	3800
	W BND	4300
HUTCHINSON, KS VOR/DME	WAIVE, KS FIX	4000
WAIVE, KS FIX	*FLOSS, KS FIX	3300
*5000 - MRA		
FLOSS, KS FIX	EMPORIA, KS VORTAC	3300
EMPORIA, KS VORTAC	WETZL, KS FIX	*5000
*2600 - MOCA		
*3000 - GNSS MEA		
WETZL, KS FIX	NAPOLEON, MO VORTAC	3100
NAPOLEON, MO VORTAC	KIRKSVILLE, MO VORTAC	3000
KIRKSVILLE, MO VORTAC	LOAMY, MO FIX	3000
LOAMY, MO FIX	BURLINGTON, IA VOR/DME	*2700
*2200 - MOCA		
BURLINGTON, IA VOR/DME	BRADFORD, IL VORTAC	2600
BRADFORD, IL VORTAC	PLANO, IL FIX	3000
NILES, IL FIX	CHETT, MI FIX	*3500
*2500 - MOCA		
CHETT, MI FIX	GIPPER, MI VORTAC	*3000
*2200 - MOCA		
GIPPER, MI VORTAC	LITCHFIELD, MI VOR/DME	2800
YOUNGSTOWN, OH VORTAC	VOLAN, PA FIX	*5000
*3000 - MOCA		
*3000 - GNSS MEA		
VOLAN, PA FIX	TALLS, PA FIX	*5000
*3200 - MOCA		
*3300 - GNSS MEA		

FROM	TO	MEA

95.6010 VOR FEDERAL AIRWAY V10 - CONTINUED

TALLS, PA FIX	*REVLOC, PA VOR/DME	
	SE BND	4200
	NW BND	5000
*5000 - MCA REVLOC, PA VOR/DME , SE BND		
REVLOC, PA VOR/DME	JUNEY, PA FIX	*5000
		MAA - 12000
*5000 - GNSS MEA		
JUNEY, PA FIX	LANCASTER, PA VOR/DME	*5000
*3600 - MOCA		

95.6011 VOR FEDERAL AIRWAY V11

BROOKLEY, AL VORTAC	GREENE COUNTY, MS VORTAC	2000
GREENE COUNTY, MS VORTAC	MIZZE, MS FIX	*4000
*1900 - MOCA		
*3000 - GNSS MEA		
MIZZE, MS FIX	MAGNOLIA, MS VORTAC	*3000
*2400 - MOCA		
CUNNINGHAM, KY VOR/DME	POCKET CITY, IN VORTAC	2600
POCKET CITY, IN VORTAC	MACKY, IN FIX	
	N BND	2300
	S BND	3000
MACKY, IN FIX	CLOWN, IN FIX	
	N BND	*3000
	S BND	*6000
*2100 - MOCA		
CLOWN, IN FIX	SCOTO, IN FIX	*6000
*2100 - MOCA		
SCOTO, IN FIX	BRICKYARD, IN VORTAC	*2900
*2200 - MOCA		
BRICKYARD, IN VORTAC	WELDO, IN FIX	2900
WELDO, IN FIX	MARION, IN VOR/DME	2800
MARION, IN VOR/DME	FORT WAYNE, IN VORTAC	2600
FORT WAYNE, IN VORTAC	*GRABI, IN FIX	3000
*4500 - MRA		
GRABI, IN FIX	EDGEE, OH FIX	*3000
*2400 - MOCA		

95.6012 VOR FEDERAL AIRWAY V12

GAVIOTA, CA VORTAC	SAN MARCUS, CA VORTAC	6400
SAN MARCUS, CA VORTAC	PALMDALE, CA VORTAC	9300
PALMDALE, CA VORTAC	HELDE, CA FIX	6000
HELDE, CA FIX	HECTOR, CA VORTAC	7900
HECTOR, CA VORTAC	CLIPP, CA FIX	9000
CLIPP, CA FIX	NEEDLES, CA VORTAC	*8000
*5900 - MOCA		
NEEDLES, CA VORTAC	DRAKE, AZ VORTAC	10000
DRAKE, AZ VORTAC	OATES, AZ FIX	10100
OATES, AZ FIX	WINSLOW, AZ VORTAC	10800
WINSLOW, AZ VORTAC	ZUNI, NM VORTAC	9000
ZUNI, NM VORTAC	*CARTY, NM FIX	11000
*10000 - MCA CARTY, NM FIX , W BND		
CARTY, NM FIX	*ALBUQUERQUE, NM VORTAC	9000
*10700 - MCA ALBUQUERQUE, NM VORTAC , E BND		
ALBUQUERQUE, NM VORTAC	OTTO, NM VOR	12000
OTTO, NM VOR	ANTON CHICO, NM VORTAC	*10000
*9400 - MOCA		
ANTON CHICO, NM VORTAC	TUCUMCARI, NM VORTAC	7700

95.6012 VOR FEDERAL AIRWAY V12 - CONTINUED

TUCUMCARI, NM VORTAC	PANHANDLE, TX VORTAC	6000
PANHANDLE, TX VORTAC	MITBEE, OK VORTAC	5500
WICHITA, KS VORTAC	EMPORIA, KS VORTAC	3600
EMPORIA, KS VORTAC	WETZL, KS FIX	*5000
*2600 - MOCA		
*3000 - GNSS MEA		
WETZL, KS FIX	NAPOLEON, MO VORTAC	3100
NAPOLEON, MO VORTAC	FRANC, MO FIX	3000
FRANC, MO FIX	COLUMBIA, MO VOR/DME	2600
COLUMBIA, MO VOR/DME	STITH, MO FIX	*4000
*2200 - MOCA		
*COU R-096 UNUSABLE, USE FTZ R-272		
STITH, MO FIX	FORISTELL, MO VORTAC	*3000
*2500 - MOCA		
FORISTELL, MO VORTAC	TROY, IL VORTAC	*2600
*2100 - MOCA		
TROY, IL VORTAC	BIBLE GROVE, IL VORTAC	2300
BIBLE GROVE, IL VORTAC	WORKE, IL FIX	
	SW BND	2300
	NE BND	6000
WORKE, IL FIX	OZMOE, IN FIX	*6000
*2600 - MOCA		
OZMOE, IN FIX	SHELBYVILLE, IN VOR/DME	2500
*ALLEGHENY, PA VOR/DME	**JOHNSTOWN, PA VOR/DME	10000
*10000 - MCA ALLEGHENY, PA VOR/DME , E BND		
**10000 - MCA JOHNSTOWN, PA VOR/DME , W BND		
*ALLEGHENY R-096 UNUSABLE USE JOHNSTOWN R-274		
JOHNSTOWN, PA VOR/DME	HARRISBURG, PA VORTAC	5400
HARRISBURG, PA VORTAC	KUPPS, PA FIX	UNUSABLE
KUPPS, PA FIX	BOYER, PA FIX	UNUSABLE
BOYER, PA FIX	POTTSTOWN, PA VORTAC	*3000
*2400 - MOCA		

95.6013 VOR FEDERAL AIRWAY V13

MC ALLEN, TX VOR/DME	MANNY, TX FIX	*5000
*1700 - MOCA		
MANNY, TX FIX	ASCOT, TX FIX	*5000
*1500 - MOCA		
ASCOT, TX FIX	SOLON, TX FIX	
	N BND	*4000
	S BND	*5000
*1600 - MOCA		
SOLON, TX FIX	CORPUS CHRISTI, TX VORTAC	1800
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	1700
PALACIOS, TX VORTAC	HUMBLE, TX VORTAC	2000
HUMBLE, TX VORTAC	CLEEP, TX FIX	3000
CLEEP, TX FIX	*LEGGE, TX FIX	3100
*3000 - MRA		
LEGGE, TX FIX	LUFKIN, TX VORTAC	2100
LUFKIN, TX VORTAC	CARTH, TX FIX	*3800
*2400 - MOCA		
CARTH, TX FIX	BELCHER, LA VORTAC	3100
BELCHER, LA VORTAC	*IDDAS, LA FIX	2000
*3000 - MRA		
IDDAS, LA FIX	*DUBOW, AR FIX	2000
*4000 - MRA		
DUBOW, AR FIX	TEXARKANA, AR VORTAC	2000
TEXARKANA, AR VORTAC	DEENS, AR FIX	
	SE BND	2300
	NW BND	4600

FROM	TO	MEA

95.6013 VOR FEDERAL AIRWAY V13 - CONTINUED

DEENS, AR FIX	RICH MOUNTAIN, OK VORTAC	*4600
*4000 - MOCA		
RICH MOUNTAIN, OK VORTAC	*HADES, AR FIX	**4600
*5000 - MRA		
**3900 - MOCA		
HADES, AR FIX	FORT SMITH, AR VORTAC	2000
FORT SMITH, AR VORTAC	*CHESO, AR FIX	3400
*5000 - MRA		
CHESO, AR FIX	RAZORBACK, AR VORTAC	3700
BUTLER, MO VORTAC	NAPOLEON, MO VORTAC	2900
NAPOLEON, MO VORTAC	LAMONI, IA VOR/DME	2900
LAMONI, IA VOR/DME	*WIVEY, IA FIX	3000
*4300 - MRA		
WIVEY, IA FIX	DES MOINES, IA VORTAC	3000
DES MOINES, IA VORTAC	*ANKEN, IA FIX	2700
*3500 - MCA ANKEN, IA FIX , N BND		
ANKEN, IA FIX	NEVAD, IA FIX	4000
NEVAD, IA FIX	ALOCK, IA FIX	*3300
*2800 - MOCA		
ALOCK, IA FIX	MASON CITY, IA VOR/DME	3000
MASON CITY, IA VOR/DME	FARMINGTON, MN VORTAC	3000
DULUTH, MN VORTAC	WEMAN, MN FIX	4000
WEMAN, MN FIX	BYPOR, MN FIX	5000
BYPOR, MN FIX	U.S. CANADIAN BORDER	4000

95.6014 VOR FEDERAL AIRWAY V14

CHISUM, NM VORTAC	ONSOM, NM FIX	
	W BND	*7000
	E BND	*7500
*6000 - MOCA		
ONSOM, NM FIX	WINNS, TX FIX	*8000
*6400 - MOCA		
WINNS, TX FIX	*FLATT, TX FIX	**8000
*8000 - MRA		
**5400 - MOCA		
FLATT, TX FIX	LUBBOCK, TX VORTAC	*5200
*5000 - MOCA		
LUBBOCK, TX VORTAC	CHILDRESS, TX VORTAC	5100
CHILDRESS, TX VORTAC	HOBART, OK VORTAC	3700
HOBART, OK VORTAC	CARFF, OK FIX	3700
CARFF, OK FIX	WILL ROGERS, OK VORTAC	3000
WILL ROGERS, OK VORTAC	TOTES, OK FIX	3700
TOTES, OK FIX	DROPS, OK FIX	*3700
*2500 - MOCA		
DROPS, OK FIX	TULSA, OK VORTAC	
	NE BND	2800
	SW BND	3800
SPRINGFIELD, MO VORTAC	VICHY, MO VOR/DME	3100
VICHY, MO VOR/DME	STEER, MO FIX	*3000
*2300 - MOCA		
STEER, MO FIX	ST LOUIS, MO VORTAC	2600
ST LOUIS, MO VORTAC	VANDALIA, IL VOR/DME	2500
VANDALIA, IL VOR/DME	TERRE HAUTE, IN VORTAC	2400
TERRE HAUTE, IN VORTAC	BRICKYARD, IN VORTAC	2700
BRICKYARD, IN VORTAC	MUNCIE, IN VOR/DME	2900
MUNCIE, IN VOR/DME	FLAG CITY, OH VORTAC	3000

95.6015 VOR FEDERAL AIRWAY V15

NAVASOTA, TX VOR/DME	COLLEGE STATION, TX VORTAC	2000

FROM	TO	MEA

95.6015 VOR FEDERAL AIRWAY V15 - CONTINUED

COLLEGE STATION, TX VORTAC	SATTY, TX FIX	2200
SATTY, TX FIX	WACO, TX VORTAC	2400
WACO, TX VORTAC	CEDAR CREEK, TX VORTAC	2500
CEDAR CREEK, TX VORTAC	BONHAM, TX VORTAC	*3500
*2200 - MOCA		
ABERDEEN, SD VOR/DME	BISMARCK, ND VOR/DME	*5000
*3700 - MOCA		
BISMARCK, ND VOR/DME	MINOT, ND VOR/DME	4100

95.6016 VOR FEDERAL AIRWAY V16

LOS ANGELES, CA VORTAC	PRADO, CA FIX	4000
PRADO, CA FIX	PARADISE, CA VORTAC	5000
PARADISE, CA VORTAC	*SETER, CA FIX	5500
*12100 - MCA SETER, CA FIX , E BND		
SETER, CA FIX	BANDS, CA FIX	
	E BND	13000
	W BND	9000
BANDS, CA FIX	*PALM SPRINGS, CA VORTAC	13000
*11800 - MCA PALM SPRINGS, CA VORTAC , W BND		
PALM SPRINGS, CA VORTAC	BLYTHE, CA VORTAC	8000
BLYTHE, CA VORTAC	BUCKEYE, AZ VORTAC	6000
BUCKEYE, AZ VORTAC	PERKY, AZ FIX	5000
PERKY, AZ FIX	PHOENIX, AZ VORTAC	4000
PHOENIX, AZ VORTAC	*TOTEC, AZ FIX	5000
*5500 - MCA TOTEC, AZ FIX , E BND		
TOTEC, AZ FIX	TUCSON, AZ VORTAC	6500
TUCSON, AZ VORTAC	SAN SIMON, AZ VORTAC	11500
SAN SIMON, AZ VORTAC	ANIMA, NM FIX	8000
ANIMA, NM FIX	DARCE, NM FIX	9000
DARCE, NM FIX	COLUMBUS, NM VOR/DME	*9000
*8200 - MOCA		
COLUMBUS, NM VOR/DME	EL PASO, TX VORTAC	9000
EL PASO, TX VORTAC	SALT FLAT, TX VORTAC	*8000
*7400 - MOCA		
SALT FLAT, TX VORTAC	DILLI, TX FIX	8000
DILLI, TX FIX	CAVRN, TX FIX	*10000
*7500 - MOCA		
CAVRN, TX FIX	WINK, TX VORTAC	*10000
*5300 - MOCA		
WINK, TX VORTAC	GOMIT, TX FIX	5500
GOMIT, TX FIX	PIZON, TX FIX	5000
PIZON, TX FIX	MERGE, TX FIX	*7000
*4400 - MOCA		
MERGE, TX FIX	BIG SPRING, TX VORTAC	4400
BIG SPRING, TX VORTAC	WEEPE, TX FIX	4200
WEEPE, TX FIX	*LORAN, TX FIX	4500
*6500 - MRA		
LORAN, TX FIX	MERKE, TX FIX	4500
MERKE, TX FIX	ABILENE, TX VORTAC	*4000
*3200 - MOCA		
ABILENE, TX VORTAC	*ROGEE, TX FIX	3600
*5000 - MRA		
ROGEE, TX FIX	BOWIE, TX VORTAC	*4500
*2900 - MOCA		
BOWIE, TX VORTAC	BONHAM, TX VORTAC	4000
BONHAM, TX VORTAC	PARIS, TX VOR/DME	2400
PARIS, TX VOR/DME	TEXARKANA, AR VORTAC	2000
TEXARKANA, AR VORTAC	*HOSES, AR FIX	2000
*3000 - MRA		

95.6016 VOR FEDERAL AIRWAY V16 - CONTINUED

HOSES, AR FIX	SPARO, AR FIX	*4000
*2300 - MOCA		
SPARO, AR FIX	BUNNS, AR FIX	*6000
*1900 - MOCA		
BUNNS, AR FIX	PINE BLUFF, AR VOR/DME	2000
PINE BLUFF, AR VOR/DME	MARVELL, AR VOR/DME	1900
MARVELL, AR VOR/DME	HOLLY SPRINGS, MS VORTAC	2200
SHELBYVILLE, TN VOR/DME	HINCH MOUNTAIN, TN VOR/DME	5000
HINCH MOUNTAIN, TN VOR/DME	BUCKY, TN FIX	5000
BUCKY, TN FIX	VOLUNTEER, TN VORTAC	3500
VOLUNTEER, TN VORTAC	*PENCE, TN FIX	3000
*4000 - MCA PENCE, TN FIX , NE BND		
PENCE, TN FIX	TAKEN, TN FIX	4000
TAKEN, TN FIX	HOLSTON MOUNTAIN, TN VORTAC	6000
HOLSTON MOUNTAIN, TN VORTAC	DAMAS, TN FIX	6000
DAMAS, TN FIX	*STOVE, VA FIX	7500
*7500 - MCA STOVE, VA FIX , SW BND		
STOVE, VA FIX	SPEEL, VA FIX	6000
SPEEL, VA FIX	PULASKI, VA VORTAC	5400
PULASKI, VA VORTAC	ROANOKE, VA VOR/DME	5300
ROANOKE, VA VOR/DME	GOOZE, VA FIX	5000
GOOZE, VA FIX	LYNCHBURG, VA VOR/DME	
	W BND	*5000
	E BND	*3000
*2900 - MOCA		
LYNCHBURG, VA VOR/DME	FLAT ROCK, VA VORTAC	3000
FLAT ROCK, VA VORTAC	RICHMOND, VA VORTAC	2600
RICHMOND, VA VORTAC	*TAPPA, VA FIX	2000
*5000 - MCA TAPPA, VA FIX , NE BND		
TAPPA, VA FIX	PATUXENT, MD VORTAC	*5000
*1500 - MOCA		
*2000 - GNSS MEA		
PATUXENT, MD VORTAC	*GARED, MD FIX	**4500
*8000 - MRA		
**1500 - MOCA		
**4000 - GNSS MEA		
GARED, MD FIX	CHOPS, MD FIX	*4500
*1500 - MOCA		
*4000 - GNSS MEA		
CHOPS, MD FIX	SMYRNA, DE VORTAC	*2000
*1500 - MOCA		
SMYRNA, DE VORTAC	CEDAR LAKE, NJ VOR/DME	1800
CEDAR LAKE, NJ VOR/DME	COYLE, NJ VORTAC	1900
COYLE, NJ VORTAC	*DIXIE, NJ FIX	3800
*3800 - MCA DIXIE, NJ FIX , SW BND		
DIXIE, NJ FIX	KENNEDY, NY VOR/DME	*2500
*1700 - MOCA		
KENNEDY, NY VOR/DME	CALVERTON, NY VOR/DME	2000
CALVERTON, NY VOR/DME	CREAM, NY FIX	2000
CREAM, NY FIX	NORWICH, CT VOR/DME	2500
NORWICH, CT VOR/DME	WOONS, RI FIX	2500
WOONS, RI FIX	BOSTON, MA VOR/DME	2000

95.6017 VOR FEDERAL AIRWAY V17

BROWNSVILLE, TX VORTAC	HARLINGEN, TX VOR/DME	1600
HARLINGEN, TX VOR/DME	MC ALLEN, TX VOR/DME	2400
MC ALLEN, TX VOR/DME	FATOR, TX FIX	*2500
*1700 - MOCA		

FROM	TO	MEA

95.6017 VOR FEDERAL AIRWAY V17 - CONTINUED

FATOR, TX FIX	*NELEE, TX FIX	**4000
*5500 - MRA		
**2800 - MOCA		
NELEE, TX FIX	LAREDO, TX VORTAC	2500
LAREDO, TX VORTAC	*KAHAN, TX FIX	2400
*5000 - MRA		
KAHAN, TX FIX	COTULLA, TX VORTAC	*2400
*1800 - MOCA		
COTULLA, TX VORTAC	MILET, TX FIX	2500
MILET, TX FIX	SOMER, TX FIX	*4000
*2500 - MOCA		
SOMER, TX FIX	SAN ANTONIO, TX VORTAC	*3000
*2400 - MOCA		
SAN ANTONIO, TX VORTAC	CENTEX, TX VORTAC	3500
CENTEX, TX VORTAC	WACO, TX VORTAC	3600
MILLSAP, TX VORTAC	BOWIE, TX VORTAC	3000
BOWIE, TX VORTAC	ARDMORE, OK VORTAC	3000
ARDMORE, OK VORTAC	WILL ROGERS, OK VORTAC	3100
WILL ROGERS, OK VORTAC	ODINS, OK FIX	
	NW BND	4900
	SE BND	3300
ODINS, OK FIX	CAMAR, OK FIX	*4900
*3600 - MOCA		
CAMAR, OK FIX	MITBEE, OK VORTAC	
	W BND	4300
	E BND	4900
MITBEE, OK VORTAC	GARDEN CITY, KS VORTAC	4800
GARDEN CITY, KS VORTAC	*COFFE, KS FIX	**5500
*9000 - MRA		
**4600 - MOCA		
COFFE, KS FIX	GOODLAND, KS VORTAC	5500

95.6018 VOR FEDERAL AIRWAY V18

BELCHER, LA VORTAC	MONROE, LA VORTAC	2000
MONROE, LA VORTAC	MAGNOLIA, MS VORTAC	2500
MAGNOLIA, MS VORTAC	MERIDIAN, MS VORTAC	2500
COLLIERS, SC VORTAC	LASHE, SC FIX	2400
LASHE, SC FIX	NORMS, SC FIX	*3000
*2200 - MOCA		
NORMS, SC FIX	SACKS, SC FIX	*4000
*1700 - MOCA		
SACKS, SC FIX	CHARLESTON, SC VORTAC	2100

95.6019 VOR FEDERAL AIRWAY V19

CINCINNATI, KY VORTAC	APPLETON, OH VORTAC	*4000
*2800 - MOCA		

95.6020 VOR FEDERAL AIRWAY V20

MC ALLEN, TX VOR/DME	LATEX, TX FIX	1700
LATEX, TX FIX	ASCOT, TX FIX	*4000
*1900 - MOCA		
ASCOT, TX FIX	SOLON, TX FIX	
	N BND	*4000
	S BND	*5000
*1600 - MOCA		
SOLON, TX FIX	CORPUS CHRISTI, TX VORTAC	1800

95.6020 VOR FEDERAL AIRWAY V20 - CONTINUED

CORPUS CHRISTI, TX VORTAC	BETZY, TX FIX	1800
BETZY, TX FIX	PALACIOS, TX VORTAC	2000
BEAUMONT, TX VOR/DME	LAKE CHARLES, LA VORTAC	2000
LAKE CHARLES, LA VORTAC	LAFAYETTE, LA VORTAC	1800
LAFAYETTE, LA VORTAC	RESERVE, LA VOR/DME	2000
RESERVE, LA VOR/DME	GULFPORT, MS VORTAC	2000
GULFPORT, MS VORTAC	SEMMES, AL VORTAC	*5000
*1800 - MOCA		
SEMMES, AL VORTAC	MONROEVILLE, AL VORTAC	2000
MONROEVILLE, AL VORTAC	*PICKS, AL FIX	2300
*3500 - MRA		
PICKS, AL FIX	MONTGOMERY, AL VORTAC	2300
MONTGOMERY, AL VORTAC	TUSKEGEE, AL VOR/DME	2000
TUSKEGEE, AL VOR/DME	MARVO, AL FIX	2100
MARVO, AL FIX	COLUMBUS, GA VORTAC	*2600
*2000 - MOCA		
COLUMBUS, GA VORTAC	SINCA, GA FIX	*4500
*2500 - MOCA		
SINCA, GA FIX	ATHENS, GA VOR/DME	*3000
*2200 - MOCA		
ATHENS, GA VOR/DME	ELECTRIC CITY, SC VORTAC	*2800
*2300 - MOCA		
ELECTRIC CITY, SC VORTAC	ELLID, SC FIX	3000
ELLID, SC FIX	CLEVA, SC FIX	3400
CLEVA, SC FIX	TUXDO, SC FIX	5000
TUXDO, SC FIX	SUGARLOAF MOUNTAIN, NC VORTAC	6200
SUGARLOAF MOUNTAIN, NC VORTAC	BARRETTS MOUNTAIN, NC VOR/DME	6200
BARRETTS MOUNTAIN, NC VOR/DME	LEAKS, NC FIX	3600
LEAKS, NC FIX	SOUTH BOSTON, VA VORTAC	3000
SOUTH BOSTON, VA VORTAC	*NUTTS, VA FIX	**3000
*9000 - MRA		
**2000 - MOCA		
NUTTS, VA FIX	MELIA, VA FIX	*3000
*2400 - MOCA		
MELIA, VA FIX	RICHMOND, VA VORTAC	2000
RICHMOND, VA VORTAC	*TAPPA, VA FIX	2000
*5000 - MCA TAPPA, VA FIX , NE BND		
TAPPA, VA FIX	*COLIN, VA FIX	**5000
*10000 - MCA COLIN, VA FIX , N BND		
**1500 - MOCA		
**2000 - GNSS MEA		
COLIN, VA FIX	NOTTINGHAM, MD VORTAC	*10000
*1800 - MOCA		
*2000 - GNSS MEA		

95.6021 VOR FEDERAL AIRWAY V21

SANTA CATALINA, CA VORTAC	SEAL BEACH, CA VORTAC	4000
SEAL BEACH, CA VORTAC	AHEIM, CA FIX	*3000
*2200 - MOCA		
AHEIM, CA FIX	*OLLIE, CA FIX	3000
*4300 - MCA OLLIE, CA FIX , NE BND		
OLLIE, CA FIX	PARADISE, CA VORTAC	5300
PARADISE, CA VORTAC	*RAVON, CA FIX	4700
*8800 - MCA RAVON, CA FIX , NE BND		
RAVON, CA FIX	GAREY, CA FIX	
	NE BND	10500
	SW BND	8000
GAREY, CA FIX	*LUCER, CA FIX	10500
*9300 - MCA LUCER, CA FIX , SW BND		

95.6021 VOR FEDERAL AIRWAY V21 - CONTINUED

LUCER, CA FIX	BULGY, CA FIX	*9000
*8000 - MOCA		
BULGY, CA FIX	*HECTOR, CA VORTAC	**9000
*8200 - MCA HECTOR, CA VORTAC , NE BND		
**7000 - MOCA		
HECTOR, CA VORTAC	*WHIGG, CA FIX	10500
*12000 - MRA		
WHIGG, CA FIX	BOULDER CITY, NV VORTAC	10500
BOULDER CITY, NV VORTAC	MORMON MESA, NV VORTAC	7500
MORMON MESA, NV VORTAC	BERYL, UT FIX	9800
BERYL, UT FIX	MILFORD, UT VORTAC	10000
MILFORD, UT VORTAC	DELTA, UT VORTAC	9600
DELTA, UT VORTAC	FAIRFIELD, UT VORTAC	10300
FAIRFIELD, UT VORTAC	*WASATCH, UT VORTAC	9600
*8000 - MCA WASATCH, UT VORTAC , S BND		
WASATCH, UT VORTAC	OGDEN, UT VORTAC	7000
OGDEN, UT VORTAC	*CORIN, UT FIX	
	N BND	10000
	S BND	7600
*13000 - MRA		
CORIN, UT FIX	MALAD CITY, ID VOR/DME	10000
MALAD CITY, ID VOR/DME	BANNO, ID FIX	10000
BANNO, ID FIX	*POCATELLO, ID VOR/DME	9000
*8000 - MCA POCATELLO, ID VOR/DME , SE BND		
POCATELLO, ID VOR/DME	IDAHO FALLS, ID VOR/DME	7000
IDAHO FALLS, ID VOR/DME	*DUBOIS, ID VORTAC	7600
*8600 - MCA DUBOIS, ID VORTAC , N BND		
DUBOIS, ID VORTAC	DILLON, MT VOR/DME	*12000
*11200 - MOCA		
DILLON, MT VOR/DME	*WHITEHALL, MT VOR/DME	10000
*9300 - MCA WHITEHALL, MT VOR/DME , N BND		
WHITEHALL, MT VOR/DME	*HELENA, MT VORTAC	10600
*10000 - MCA HELENA, MT VORTAC , SE BND		
HELENA, MT VORTAC	GREAT FALLS, MT VORTAC	10000
GREAT FALLS, MT VORTAC	CUT BANK, MT VOR/DME	6000
CUT BANK, MT VOR/DME	U.S. CANADIAN BORDER	6300

95.6023 VOR FEDERAL AIRWAY V23

MISSION BAY, CA VORTAC	OCEANSIDE, CA VORTAC	3000
OCEANSIDE, CA VORTAC	BALBO, CA FIX	4000
BALBO, CA FIX	SEAL BEACH, CA VORTAC	
	NW BND	3000
	SE BND	4000
SEAL BEACH, CA VORTAC	LOS ANGELES, CA VORTAC	2500
LOS ANGELES, CA VORTAC	*CHATY, CA FIX	4000
*5400 - MCA CHATY, CA FIX , NW BND		
CHATY, CA FIX	*CASTA, CA FIX	6000
*8300 - MCA CASTA, CA FIX , NW BND		
CASTA, CA FIX	GORMAN, CA VORTAC	9500
GORMAN, CA VORTAC	*GRAPE, CA FIX	9500
*9500 - MCA GRAPE, CA FIX , S BND		
GRAPE, CA FIX	*LAMPE, CA FIX	
	NW BND	5000
	SE BND	9500
*7800 - MCA LAMPE, CA FIX , SE BND		
LAMPE, CA FIX	SHAFTER, CA VORTAC	
	NW BND	3000
	SE BND	6000

95.6023 VOR FEDERAL AIRWAY V23 - CONTINUED

SHAFTER, CA VORTAC	DELNO, CA FIX	3000
DELNO, CA FIX	PIXEY, CA FIX	*5000
*2000 - MOCA		
*3000 - GNSS MEA		
PIXEY, CA FIX	LATON, CA FIX	*6000
*2000 - MOCA		
*3000 - GNSS MEA		
LATON, CA FIX	FRAME, CA FIX	*6000
*1900 - MOCA		
*2000 - GNSS MEA		
EBTUW, CA FIX	WRAPS, CA FIX	*4000
*3000 - MOCA		
WRAPS, CA FIX	LINDEN, CA VOR/DME	3000
LINDEN, CA VOR/DME	SACRAMENTO, CA VORTAC	2300
SACRAMENTO, CA VORTAC	GRIME, CA FIX	2000
GRIME, CA FIX	YUBBA, CA FIX	*4000
*2000 - MOCA		
YUBBA, CA FIX	*GRIDD, CA FIX	**4000
*4000 - MRA		
**3400 - MOCA		
GRIDD, CA FIX	RED BLUFF, CA VORTAC	*3000
*1700 - MOCA		
RED BLUFF, CA VORTAC	BEIRA, CA FIX	
	NW BND	8000
	SE BND	3000
BEIRA, CA FIX	*SHATA, CA FIX	
	NW BND	**8000
	SE BND	**6500
*8000 - MCA SHATA, CA FIX , NW BND		
**5500 - MOCA		
SHATA, CA FIX	FORT JONES, CA VOR/DME	10000
FORT JONES, CA VOR/DME	TALEM, OR FIX	*10000
*9400 - MOCA		
TALEM, OR FIX	*ROGUE VALLEY, OR VORTAC	
	NW BND	8000
	SE BND	10000
*7000 - MCA ROGUE VALLEY, OR VORTAC , SE BND		
ROGUE VALLEY, OR VORTAC	MOURN, OR FIX	7000
MOURN, OR FIX	*CURTI, OR FIX	**8000
*7000 - MRA		
**6500 - MOCA		
CURTI, OR FIX	EUGENE, OR VORTAC	
	SE BND	*6000
	NW BND	*4000
*4000 - MOCA		
EUGENE, OR VORTAC	TURNO, OR FIX	3000
TURNO, OR FIX	RAWER, OR FIX	5000
RAWER, OR FIX	BATTLE GROUND, WA VORTAC	4100
BATTLE GROUND, WA VORTAC	*MALAY, WA FIX	
	NW BND	6000
	SE BND	5000
*9500 - MRA		
MALAY, WA FIX	*MCKEN, WA FIX	
	S BND	6000
	N BND	5000
*4100 - MCA MCKEN, WA FIX , S BND		
MCKEN, WA FIX	SEATTLE, WA VORTAC	3000
SEATTLE, WA VORTAC	PAINE, WA VOR/DME	3000
PAINE, WA VOR/DME	EGRET, WA FIX	4500

FROM	TO	MEA

95.6023 VOR FEDERAL AIRWAY V23 - CONTINUED

EGRET, WA FIX	ACORD, WA FIX	3500
ACORD, WA FIX	WHATCOM, WA VORTAC	*3000
*2200 - MOCA		
WHATCOM, WA VORTAC	U.S. CANADIAN BORDER	3000

95.6024 VOR FEDERAL AIRWAY V24

REDWOOD FALLS, MN VOR/DME	*ALMAY, MN FIX	**3400
*5000 - MRA		
**2900 - MOCA		
ALMAY, MN FIX	KASPR, MN FIX	3400
KASPR, MN FIX	ROCHESTER, MN VOR/DME	3000
JANESVILLE, WI VOR/DME	FARMM, IL FIX	2900
FARMM, IL FIX	NORTHBROOK, IL VOR/DME	2700
PEOTONE, IL VORTAC	KENLA, IL FIX	2400
KENLA, IL FIX	VAGES, IN FIX	2600
VAGES, IN FIX	*POTES, IN FIX	**4000
*4000 - MRA		
**2300 - MOCA		
POTES, IN FIX	JAKKS, IN FIX	*4000
*2300 - MOCA		
JAKKS, IN FIX	BRICKYARD, IN VORTAC	2700

95.6025 VOR FEDERAL AIRWAY V25

MISSION BAY, CA VORTAC	REDIN, CA FIX	3000
REDIN, CA FIX	PACIF, CA FIX	*6000
*2000 - MOCA		
PACIF, CA FIX	ALBAS, CA FIX	*3000
*2000 - MOCA		
ALBAS, CA FIX	*FERMY, CA FIX	2100
*2700 - MCA FERMY, CA FIX , NW BND		
FERMY, CA FIX	*HERMO, CA FIX	3200
*2700 - MCA HERMO, CA FIX , SE BND		
HERMO, CA FIX	LOS ANGELES, CA VORTAC	2500
LOS ANGELES, CA VORTAC	*MERMA, CA FIX	2000
*3000 - MRA		
MERMA, CA FIX	EXERT, CA FIX	2000
EXERT, CA FIX	VENTURA, CA VOR/DME	5000
VENTURA, CA VOR/DME	DEANO, CA FIX	6000
DEANO, CA FIX	*SAN MARCUS, CA VORTAC	6200
*7600 - MCA SAN MARCUS, CA VORTAC , NW BND		
SAN MARCUS, CA VORTAC	POZOE, CA FIX	8600
POZOE, CA FIX	PASO ROBLES, CA VORTAC	
	NW BND	6000
	SE BND	7000
PASO ROBLES, CA VORTAC	SALINAS, CA VORTAC	5500
SALINAS, CA VORTAC	SANTY, CA FIX	*5000
*4000 - MOCA		
SANTY, CA FIX	WOODSIDE, CA VOR/DME	5100
WOODSIDE, CA VOR/DME	SAN FRANCISCO, CA VOR/DME	4700
SAN FRANCISCO, CA VOR/DME	SUTRO, CA FIX	3500
SUTRO, CA FIX	GOBBS, CA FIX	3000
GOBBS, CA FIX	STINS, CA FIX	3500
STINS, CA FIX	*POINT REYES, CA VOR/DME	3700
*8200 - MCA POINT REYES, CA VOR/DME , N BND		
POINT REYES, CA VOR/DME	*FREES, CA FIX	3500
*10200 - MCA FREES, CA FIX , N BND		
FREES, CA FIX	*GETER, CA FIX	**6000
*12000 - MCA GETER, CA FIX , N BND		
**6000 - GNSS MEA		

95.6025 VOR FEDERAL AIRWAY V25 - CONTINUED

GETER, CA FIX	*LAPED, CA FIX	**12000
*9000 - MRA		
*12000 - MCA LAPED, CA FIX , S BND		
**6500 - MOCA		
LAPED, CA FIX	*GRENY, CA FIX	9000
*9000 - MCA GRENY, CA FIX , S BND		
GRENY, CA FIX	RED BLUFF, CA VORTAC	
	N BND	3200
	S BND	9000
RED BLUFF, CA VORTAC	HOMAN, CA FIX	4000
HOMAN, CA FIX	*ITMOR, CA FIX	**5000
*7000 - MCA ITMOR, CA FIX , N BND		
**4000 - MOCA		
**4000 - GNSS MEA		
ITMOR, CA FIX	MUREX, CA FIX	*11000
*9600 - MOCA		
*10000 - GNSS MEA		
MUREX, CA FIX	KLAMATH FALLS, OR VORTAC	
	N BND	*8500
	S BND	*11000
*8500 - MOCA		
KLAMATH FALLS, OR VORTAC	SPRAG, OR FIX	*12000
*9500 - MOCA		
*10000 - GNSS MEA		
SPRAG, OR FIX	OCTAD, OR FIX	*12000
*9500 - MOCA		
*10000 - GNSS MEA		
OCTAD, OR FIX	DESCHUTES, OR VORTAC	
	N BND	*7000
	S BND	*12000
*7000 - GNSS MEA		
DESCHUTES, OR VORTAC	*GASHE, OR FIX	**7000
*10000 - MRA		
**6500 - MOCA		
GASHE, OR FIX	*KLICKITAT, OR VOR/DME	**7000
*5400 - MCA KLICKITAT, OR VOR/DME , N BND		
**6500 - MOCA		
KLICKITAT, OR VOR/DME	GUBSE, WA FIX	7800
GUBSE, WA FIX	YAKIMA, WA VORTAC	
	N BND	*5000
	S BND	*7800
*4500 - MOCA		
YAKIMA, WA VORTAC	*ELLENSBURG, WA VOR/DME	5900
*6800 - MCA ELLENSBURG, WA VOR/DME , N BND		
ELLENSBURG, WA VOR/DME	*WENATCHEE, WA VOR/DME	8900
*7400 - MCA WENATCHEE, WA VOR/DME , BND		

95.6026 VOR FEDERAL AIRWAY V26

BLUE MESA, CO VOR/DME	MONTROSE, CO VOR/DME	12500
MONTROSE, CO VOR/DME	GRAND JUNCTION, CO VOR/DME	11000
GRAND JUNCTION, CO VOR/DME	RAYMN, CO FIX	
	NE BND	11000
	SW BND	10000
RAYMN, CO FIX	MEEKER, CO VOR/DME	11000
MEEKER, CO VOR/DME	STRIM, CO FIX	11000
STRIM, CO FIX	CHEROKEE, WY VOR/DME	10000
CHEROKEE, WY VOR/DME	ALCOS, WY FIX	11700
ALCOS, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	*10000
*9400 - MOCA		

95.6026 VOR FEDERAL AIRWAY V26 - CONTINUED

MUDDY MOUNTAIN, WY VOR/DME	SALON, WY FIX	
	NE BND	13000
	SW BND	8000
SALON, WY FIX	RULER, SD FIX	*13000
*9500 - MOCA		
RULER, SD FIX	*RAPID CITY, SD VORTAC	
	NE BND	8300
	SW BND	13000
*11300 - MCA RAPID CITY, SD VORTAC , SW BND		
RAPID CITY, SD VORTAC	PHILIP, SD VOR/DME	5000
PHILIP, SD VOR/DME	PIERRE, SD VORTAC	*4400
*3700 - MOCA		
REDWOOD FALLS, MN VOR/DME	BEEGR, MN FIX	*3000
*2500 - MOCA		
BEEGR, MN FIX	LYDIA, MN FIX	*5500
*2400 - MOCA		
LYDIA, MN FIX	FARMINGTON, MN VORTAC	*3500
*2500 - MOCA		
FARMINGTON, MN VORTAC	PRESS, WI FIX	*3500
*2800 - MOCA		
PRESS, WI FIX	ELPAS, WI FIX	*5500
*2600 - MOCA		
ELPAS, WI FIX	EAU CLAIRE, WI VORTAC	*3500
*2800 - MOCA		

95.6027 VOR FEDERAL AIRWAY V27

MISSION BAY, CA VORTAC	REDIN, CA FIX	3000
REDIN, CA FIX	PACIF, CA FIX	*6000
*2000 - MOCA		
PACIF, CA FIX	AVOLS, CA FIX	*3000
*2000 - MOCA		
AVOLS, CA FIX	SANTA CATALINA, CA VORTAC	4000
SANTA CATALINA, CA VORTAC	EXERT, CA FIX	4000
EXERT, CA FIX	VENTURA, CA VOR/DME	5000
VENTURA, CA VOR/DME	KWANG, CA FIX	5000
KWANG, CA FIX	*GOLET, CA FIX	**4000
*5000 - MCA GOLET, CA FIX , NW BND		
**2300 - MOCA		
GOLET, CA FIX	GAVIOTA, CA VORTAC	6400
GAVIOTA, CA VORTAC	*ORCUT, CA FIX	6000
*6000 - MCA ORCUT, CA FIX , SE BND		
ORCUT, CA FIX	MORRO BAY, CA VORTAC	4000
MORRO BAY, CA VORTAC	BLANC, CA FIX	4000
BLANC, CA FIX	BIG SUR, CA VORTAC	7000
BIG SUR, CA VORTAC	CARME, CA FIX	7000
CARME, CA FIX	SHOEY, CA FIX	*6000
*5200 - MOCA		
SHOEY, CA FIX	*EUGEN, CA FIX	**6000
*7000 - MRA		
**3000 - MOCA		
EUGEN, CA FIX	*TAILS, CA FIX	**6000
*7000 - MRA		
**3000 - MOCA		
TAILS, CA FIX	HADLY, CA FIX	*6000
*3000 - MOCA		
HADLY, CA FIX	SEEMS, CA FIX	*4000
*3000 - MOCA		
SEEMS, CA FIX	STINS, CA FIX	*3500
*3000 - MOCA		

FROM	TO	MEA

95.6027 VOR FEDERAL AIRWAY V27 - CONTINUED

STINS, CA FIX	POINT REYES, CA VOR/DME	3700
POINT REYES, CA VOR/DME	FREES, CA FIX	3500
FREES, CA FIX	MENDOCINO, CA VORTAC	6000
MENDOCINO, CA VORTAC	OLRIO, CA FIX	6700
OLRIO, CA FIX	FORTUNA, CA VORTAC	
	NW BND	4000
	SE BND	6700
FORTUNA, CA VORTAC	CRESCENT CITY, CA VORTAC	3000
CRESCENT CITY, CA VORTAC	*ROOTY, OR FIX	6400
*11000 - MRA		
ROOTY, OR FIX	LEDGE, OR FIX	6400
LEDGE, OR FIX	NORTH BEND, OR VOR/DME	
	S BND	6400
	N BND	4000
NORTH BEND, OR VOR/DME	*GAMMA, OR FIX	
	S BND	4000
	N BND	4500
*6200 - MRA		
GAMMA, OR FIX	NEWPORT, OR VORTAC	4500
NEWPORT, OR VORTAC	CUTEL, OR FIX	
	S BND	3300
	N BND	8000
CUTEL, OR FIX	DANES, OR FIX	
	N BND	*8000
	S BND	*5000
*3600 - MOCA		
*4000 - GNSS MEA		
DANES, OR FIX	ASTORIA, OR VOR/DME	*8000
*5000 - MOCA		
*5000 - GNSS MEA		
ASTORIA, OR VOR/DME	HOQUIAM, WA VORTAC	3700
HOQUIAM, WA VORTAC	*CARRO, WA FIX	3200
*4000 - MRA		
CARRO, WA FIX	SEATTLE, WA VORTAC	3000

95.6028 VOR FEDERAL AIRWAY V28

OAKLAND, CA VOR/DME	*SALAD, CA FIX	4000
*4700 - MCA SALAD, CA FIX , NE BND		
SALAD, CA FIX	ALTAM, CA FIX	5000
ALTAM, CA FIX	HAIRE, CA FIX	4500
HAIRE, CA FIX	*LINDEN, CA VOR/DME	**3000
*4000 - MCA LINDEN, CA VOR/DME , NE BND		
**2100 - MOCA		
LINDEN, CA VOR/DME	*KATSO, CA FIX	5000
*12400 - MCA KATSO, CA FIX , NE BND		
KATSO, CA FIX	*SPOOK, CA FIX	**13000
*15000 - MCA SPOOK, CA FIX , N BND		
**12100 - MOCA		
SPOOK, CA FIX	RICHY, CA FIX	*15000
*12000 - MOCA		
RICHY, CA FIX	*MUSTANG, NV VORTAC	13000
*10500 - MCA MUSTANG, NV VORTAC , BND		

95.6029 VOR FEDERAL AIRWAY V29

SNOW HILL, MD VORTAC	*SALISBURY, MD VORTAC	**2000
*5000 - MCA SALISBURY, MD VORTAC , N BND		
**1500 - MOCA		

95.6029 VOR FEDERAL AIRWAY V29 - CONTINUED

SALISBURY, MD VORTAC	*EZIZI, DE FIX	5000
*7000 - MCA EZIZI, DE FIX , N BND		
EZIZI, DE FIX	*LAFLN, DE FIX	**7000
*7000 - MCA LAFLN, DE FIX , S BND		
**5000 - GNSS MEA		
LAFLN, DE FIX	SMYRNA, DE VORTAC	1800
SMYRNA, DE VORTAC	DUPONT, DE VORTAC	*1800
*DUPONT R-181 UNUSABLE BELOW 10000 USE SMYRNA R-360		
DUPONT, DE VORTAC	MODENA, PA VORTAC	*3000
*1800 - MOCA		
*2000 - GNSS MEA		
MODENA, PA VORTAC	POTTSTOWN, PA VORTAC	2400
POTTSTOWN, PA VORTAC	*HIKES, PA FIX	2900
*4000 - MRA		
HIKES, PA FIX	EAST TEXAS, PA VOR/DME	2900
EAST TEXAS, PA VOR/DME	SLATT, PA FIX	4000
SLATT, PA FIX	*WILKES-BARRE, PA VORTAC	4000
*4400 - MCA WILKES-BARRE, PA VORTAC , N BND		
WILKES-BARRE, PA VORTAC	*SCOFF, PA FIX	4800
*4400 - MCA SCOFF, PA FIX , S BND		
SCOFF, PA FIX	BINGHAMTON, NY VOR/DME	3600
BINGHAMTON, NY VOR/DME	CORTA, NY FIX	*4000
*3600 - MOCA		
CORTA, NY FIX	VESPE, NY FIX	4500
VESPE, NY FIX	SYRACUSE, NY VORTAC	
	N BND	4000
	S BND	4500

95.6030 VOR FEDERAL AIRWAY V30

BADGER, WI VOR/DME	SQUIB, MI FIX	2900
SQUIB, MI FIX	PULLMAN, MI VOR/DME	3500
PULLMAN, MI VOR/DME	LITCHFIELD, MI VOR/DME	2800
PHILIPSBURG, PA VORTAC	SELINSGROVE, PA VOR/DME	4100
SELINSGROVE, PA VOR/DME	EAST TEXAS, PA VOR/DME	4000
EAST TEXAS, PA VOR/DME	SOLBERG, NJ VOR/DME	2700

95.6032 VOR FEDERAL AIRWAY V32

MUSTANG, NV VORTAC	HAZEN, NV VORTAC	*10000
*9200 - MOCA		
HAZEN, NV VORTAC	LOVELOCK, NV VORTAC	8000
LOVELOCK, NV VORTAC	BATTLE MOUNTAIN, NV VORTAC	11000
BATTLE MOUNTAIN, NV VORTAC	*BULLION, NV VOR/DME	**10000
*10800 - MCA BULLION, NV VOR/DME , E BND		
**9400 - MOCA		
BULLION, NV VOR/DME	SPATS, NV FIX	13000
SPATS, NV FIX	BONNEVILLE, UT VORTAC	*11000
*10000 - MOCA		
BONNEVILLE, UT VORTAC	*WASATCH, UT VORTAC	9000
*10400 - MCA WASATCH, UT VORTAC , NE BND		
WASATCH, UT VORTAC	FORT BRIDGER, WY VOR/DME	12000

95.6033 VOR FEDERAL AIRWAY V33

HARCUM, VA VORTAC	*COLIN, VA FIX	**4000
*10000 - MCA COLIN, VA FIX , N BND		
**1600 - MOCA		
**2000 - GNSS MEA		

FROM	TO	MEA

95.6033 VOR FEDERAL AIRWAY V33 - CONTINUED

COLIN, VA FIX	NOTTINGHAM, MD VORTAC	*10000
*1800 - MOCA		
*2000 - GNSS MEA		
BALTIMORE, MD VORTAC	VINNY, PA FIX	3000
VINNY, PA FIX	GRAMO, PA FIX	*7000
*5000 - GNSS MEA		
GRAMO, PA FIX	*HARRISBURG, PA VORTAC	**7000
*3600 - MCA HARRISBURG, PA VORTAC , NW BND		
*4600 - MCA HARRISBURG, PA VORTAC , SE BND		
**5000 - GNSS MEA		
HARRISBURG, PA VORTAC	*PHILIPSBURG, PA VORTAC	4900
*4800 - MCA PHILIPSBURG, PA VORTAC , SE BND		
PHILIPSBURG, PA VORTAC	KEATING, PA VORTAC	4000

95.6034 VOR FEDERAL AIRWAY V34

ROCHESTER, NY VOR/DME	HANCOCK, NY VOR/DME	4000
HANCOCK, NY VOR/DME	WEETS, NY FIX	6400
WEETS, NY FIX	PAWLING, NY VOR/DME	
	W BND	6000
	E BND	4000
PAWLING, NY VOR/DME	MADISON, CT VOR/DME	3000
MADISON, CT VOR/DME	SANDY POINT, RI VOR/DME	*2000
*1400 - MOCA		
SANDY POINT, RI VOR/DME	NANTUCKET, MA VOR/DME	2000

95.6035 VOR FEDERAL AIRWAY V35

DOLPHIN, FL VORTAC	CURVE, FL FIX	*2000
*1500 - MOCA		
CURVE, FL FIX	*DEEDS, FL FIX	**5000
*4000 - MRA		
**1300 - MOCA		
DEEDS, FL FIX	LEE COUNTY, FL VORTAC	2200
LEE COUNTY, FL VORTAC	ST PETERSBURG, FL VORTAC	2000
ST PETERSBURG, FL VORTAC	ENDED, FL FIX	2500
ENDED, FL FIX	CROSS CITY, FL VORTAC	*3000
*1500 - MOCA		
CROSS CITY, FL VORTAC	GREENVILLE, FL VORTAC	2000
GREENVILLE, FL VORTAC	*SALER, GA FIX	UNUSABLE
*3000 - MRA		
SALER, GA FIX	PECAN, GA VOR/DME	*2000
*1700 - MOCA		
SINCA, GA FIX	ATHENS, GA VOR/DME	*3000
*2200 - MOCA		
ATHENS, GA VOR/DME	ELECTRIC CITY, SC VORTAC	*2800
*2300 - MOCA		
ELECTRIC CITY, SC VORTAC	ELLID, SC FIX	3000
ELLID, SC FIX	CLEVA, SC FIX	3400
CLEVA, SC FIX	TUXDO, SC FIX	5000
TUXDO, SC FIX	SUGARLOAF MOUNTAIN, NC VORTAC	6200
SUGARLOAF MOUNTAIN, NC VORTAC	*BUSIC, NC FIX	8800
*9000 - MCA BUSIC, NC FIX , N BND		
BUSIC, NC FIX	*ROANS, TN FIX	9000
*9000 - MCA ROANS, TN FIX , S BND		
ROANS, TN FIX	HOLSTON MOUNTAIN, TN VORTAC	7000
HOLSTON MOUNTAIN, TN VORTAC	GLADE SPRING, VA VOR/DME	6700
GLADE SPRING, VA VOR/DME	MACET, WV FIX	*6500

*GZG TO COP UNUSABLE EXCEPT FOR AIRCRAFT WITH SUITABLE RNAV SYSTEM WITH GPS.

FROM	TO	MEA

95.6035 VOR FEDERAL AIRWAY V35 - CONTINUED

MACET, WV FIX	CHARLESTON, WV VOR/DME	
	N BND	4500
	S BND	6500
CHARLESTON, WV VOR/DME	CARLA, WV FIX	*4000
*3000 - MOCA		
CARLA, WV FIX	BENZO, WV FIX	*4000
*3300 - MOCA		
BENZO, WV FIX	CLARKSBURG, WV VOR/DME	3300
CLARKSBURG, WV VOR/DME	MORGANTOWN, WV VOR/DME	4000
PHILIPSBURG, PA VORTAC	STONYFORK, PA VOR/DME	4500
STONYFORK, PA VOR/DME	ELMIRA, NY VOR/DME	*4500
*3900 - MOCA		
ELMIRA, NY VOR/DME	SCIPO, NY FIX	3700
SCIPO, NY FIX	SYRACUSE, NY VORTAC	3500

95.6036 VOR FEDERAL AIRWAY V36

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*8000
*3000 - MOCA		
U.S. CANADIAN BORDER	SAULT STE MARIE, MI VOR/DME	*4600
*3100 - MOCA		
ELMIRA, NY VOR/DME	HAWLY, PA FIX	*GNSS - 4500
*ELMIRA R-122 UNUSABLE BELOW FL180 BEYOND 40 NM		
HAWLY, PA FIX	HOPCE, NJ FIX	*15500
*3600 - MOCA		
*4000 - GNSS MEA		
HOPCE, NJ FIX	NEION, NJ FIX	*13500
*3600 - MOCA		
*4000 - GNSS MEA		

95.6037 VOR FEDERAL AIRWAY V37

CRAIG, FL VORTAC	CARVL, FL FIX	2100
CARVL, FL FIX	BRUNSWICK, GA VORTAC	2000
BRUNSWICK, GA VORTAC	*BROUN, GA FIX	**3000
*11000 - MRA		
**2200 - MOCA		
BROUN, GA FIX	*HARPS, GA FIX	**3000
*3800 - MRA		
**2200 - MOCA		
HARPS, GA FIX	SAVANNAH, GA VORTAC	*3000
*2200 - MOCA		
SAVANNAH, GA VORTAC	ALLENDALE, SC VOR	*6000
*1600 - MOCA		
*4000 - GNSS MEA		
ALLENDALE, SC VOR	COLUMBIA, SC VORTAC	*3000
*2000 - GNSS MEA		
COLUMBIA, SC VORTAC	RICHE, SC FIX	*4000
*2400 - MOCA		
*2400 - GNSS MEA		
RICHE, SC FIX	CHARLOTTE, NC VOR/DME	2500
CHARLOTTE, NC VOR/DME	OWALT, NC FIX	3000
OWALT, NC FIX	JOTTA, NC FIX	*6000
*3500 - MOCA		
JOTTA, NC FIX	DOILY, VA FIX	*7000
*5100 - MOCA		
DOILY, VA FIX	PULASKI, VA VORTAC	*6000
*5000 - MOCA		
PULASKI, VA VORTAC	HAWKI, WV FIX	8000

FROM	TO	MEA

95.6037 VOR FEDERAL AIRWAY V37 - CONTINUED

HAWKI, WV FIX	ELKINS, WV VORTAC	6000
ELKINS, WV VORTAC	CLARKSBURG, WV VOR/DME	*5000
*3900 - MOCA		
CLARKSBURG, WV VOR/DME	TEDDS, WV FIX	*4000
*3400 - MOCA		
TEDDS, WV FIX	CETPU, PA FIX	*5000
*3400 - MOCA		
*4000 - GNSS MEA		
CETPU, PA FIX	ELLWOOD CITY, PA VOR/DME	*4000
*3200 - MOCA		

95.6038 VOR FEDERAL AIRWAY V38

MOLINE, IL VOR/DME	TRIDE, IL FIX	
	W BND	3300
	E BND	4000
TRIDE, IL FIX	MEDAN, IL FIX	*4000
*2200 - MOCA		
MEDAN, IL FIX	PEOTONE, IL VORTAC	2400
PEOTONE, IL VORTAC	LUCIT, IN FIX	2500
LUCIT, IN FIX	CLEFT, IN FIX	*4000
*2400 - MOCA		
CLEFT, IN FIX	FORT WAYNE, IN VORTAC	2800
FORT WAYNE, IN VORTAC	WINES, OH FIX	2500
APPLETON, OH VORTAC	ZANESVILLE, OH VOR/DME	3000
ZANESVILLE, OH VOR/DME	PARKERSBURG, WV VOR/DME	3000
PARKERSBURG, WV VOR/DME	SACKY, WV FIX	3000
SACKY, WV FIX	*JULEA, WV FIX	3000
*5000 - MRA		
JULEA, WV FIX	BENZO, WV FIX	3300
BENZO, WV FIX	ELKINS, WV VORTAC	4000
ELKINS, WV VORTAC	*DEKAY, WV FIX	9000
*9500 - MRA		
DEKAY, WV FIX	CEROL, VA FIX	9000
CEROL, VA FIX	GORDONSVILLE, VA VORTAC	6000
GORDONSVILLE, VA VORTAC	*ROOKY, VA FIX	2500
*2500 - MRA		
ROOKY, VA FIX	RICHMOND, VA VORTAC	2100
RICHMOND, VA VORTAC	HARCUM, VA VORTAC	2000
HARCUM, VA VORTAC	CAPE CHARLES, VA VORTAC	2000

95.6039 VOR FEDERAL AIRWAY V39

SANDHILLS, NC VORTAC	SOUTH BOSTON, VA VORTAC	2500
SOUTH BOSTON, VA VORTAC	SHEPS, VA FIX	*3000
*2000 - MOCA		
SHEPS, VA FIX	GORDONSVILLE, VA VORTAC	3000
GORDONSVILLE, VA VORTAC	LURAY, VA FIX	6100
LURAY, VA FIX	*KERRE, VA FIX	**6000
*7000 - MRA		
**5000 - MOCA		
KERRE, VA FIX	MARTINSBURG, WV VORTAC	*6000
*5000 - MOCA		
MARTINSBURG, WV VORTAC	HYPER, MD FIX	*5000
*3900 - MOCA		
HYPER, MD FIX	BINNS, PA FIX	*9000
*2600 - MOCA		
*4000 - GNSS MEA		
BINNS, PA FIX	DELRO, PA FIX	*9000
*4500 - GNSS MEA		

FROM	TO	MEA

95.6039 VOR FEDERAL AIRWAY V39 - CONTINUED

DELRO, PA FIX	LANCASTER, PA VOR/DME	3000
LANCASTER, PA VOR/DME	BOYER, PA FIX	2900
BOYER, PA FIX	EAST TEXAS, PA VOR/DME	*3000
*2400 - MOCA		
EAST TEXAS, PA VOR/DME	SPARTA, NJ VORTAC	2700
SPARTA, NJ VORTAC	CARMEL, NY VOR/DME	2600
CARMEL, NY VOR/DME	SOARS, CT FIX	*3000
*CARMEL R-057 UNUSABLE		
SOARS, CT FIX	*MOONI, CT FIX	
	N BND	**12000
	S BND	**6000
*12000 - MCA MOONI, CT FIX , N BND		
*6000 - MCA MOONI, CT FIX , S BND		
**6000 - GNSS MEA		
MOONI, CT FIX	*STUBY, CT FIX	**12000
*12000 - MRA		
*12000 - MCA STUBY, CT FIX , S BND		
**4900 - MOCA		
**6000 - GNSS MEA		
STUBY, CT FIX	CHESTER, MA VOR/DME	4000
AUGUSTA, ME VOR/DME	RINTH, ME FIX	*3000
*2000 - MOCA		
RINTH, ME FIX	MILLINOCKET, ME VOR/DME	*3000
*2400 - MOCA		
MILLINOCKET, ME VOR/DME	PRESQUE ISLE, ME VOR/DME	*3000
*2500 - MOCA		
PRESQUE ISLE, ME VOR/DME	U.S. CANADIAN BORDER	*5000
*3000 - MOCA		

95.6041 VOR FEDERAL AIRWAY V41

CUTTA, OH FIX	YOUNGSTOWN, OH VORTAC	*5000
*3600 - GNSS MEA		

95.6044 VOR FEDERAL AIRWAY V44

COLUMBIA, MO VOR/DME	HODGS, MO FIX	2800
HODGS, MO FIX	FORISTELL, MO VORTAC	*2800
*2200 - MOCA		
FORISTELL, MO VORTAC	MOODS, IL FIX	2700
MOODS, IL FIX	CENTRALIA, IL VORTAC	2300
FALMOUTH, KY VOR/DME	YORK, KY VORTAC	3300
YORK, KY VORTAC	PARKERSBURG, WV VOR/DME	3300
PARKERSBURG, WV VOR/DME	BENDS, WV FIX	3000
BENDS, WV FIX	MORGANTOWN, WV VOR/DME	4000
MORGANTOWN, WV VOR/DME	KEYER, WV FIX	5000
KEYER, WV FIX	MARTINSBURG, WV VORTAC	*5000
*4100 - MOCA		
MARTINSBURG, WV VORTAC	WOOLY, MD FIX	3200
WOOLY, MD FIX	BALTIMORE, MD VORTAC	2600
BALTIMORE, MD VORTAC	PALEO, MD FIX	*2200
*1700 - MOCA		
PALEO, MD FIX	SPEAK, MD FIX	*13500
*2000 - GNSS MEA		
SPEAK, MD FIX	SEA ISLE, NJ VORTAC	*7000
*2000 - GNSS MEA		
SEA ISLE, NJ VORTAC	*KARRS, NJ FIX	**6000
*7000 - MCA KARRS, NJ FIX , NE BND		
**1800 - MOCA		
**2000 - GNSS MEA		

FROM	TO	MEA

95.6044 VOR FEDERAL AIRWAY V44 - CONTINUED

KARRS, NJ FIX	GAMBY, NJ FIX	*7000
*1300 - MOCA		
*2500 - GNSS MEA		
GAMBY, NJ FIX	DEER PARK, NY VOR/DME	*5000
*1600 - MOCA		
*2500 - GNSS MEA		
DEER PARK, NY VOR/DME	NESSI, CT FIX	2000
NESSI, CT FIX	BRIDGEPORT, CT VOR/DME	2000
BRIDGEPORT, CT VOR/DME	PAWLING, NY VOR/DME	3000
PAWLING, NY VOR/DME	*ATHOS, NY FIX	3100
*8000 - MCA ATHOS, NY FIX , N BND		
ATHOS, NY FIX	GROUP, NY FIX	*8000
*3000 - GNSS MEA		
GROUP, NY FIX	*ALBANY, NY VORTAC	**6000
*6000 - MCA ALBANY, NY VORTAC , BND		
**2800 - GNSS MEA		

95.6045 VOR FEDERAL AIRWAY V45

NEW BERN, NC VOR/DME	KINSTON, NC VORTAC	*2900
*KINSTON R-130 UNUSABLE USE NEWBERN R-313		
KINSTON, NC VORTAC	BRADE, NC FIX	UNUSABLE
BRADE, NC FIX	RALEIGH/DURHAM, NC VORTAC	2600
RALEIGH/DURHAM, NC VORTAC	*CHAPL, NC FIX	**2400
*2800 - MCA CHAPL, NC FIX , W BND		
**1900 - MOCA		
CHAPL, NC FIX	GREENSBORO, NC VORTAC	3100
GREENSBORO, NC VORTAC	*PROVE, NC FIX	2700
*3500 - MCA PROVE, NC FIX , NW BND		
PROVE, NC FIX	*FREON, NC FIX	4300
*4800 - MCA FREON, NC FIX , NW BND		
FREON, NC FIX	PULASKI, VA VORTAC	6200
PULASKI, VA VORTAC	BLUEFIELD, WV VOR/DME	6000
BLUEFIELD, WV VOR/DME	CHARLESTON, WV VOR/DME	6000
SAGINAW, MI VOR/DME	SEEKS, MI FIX	2200
SEEKS, MI FIX	ALPENA, MI VORTAC	*3500
*2600 - MOCA		
ALPENA, MI VORTAC	SAULT STE MARIE, MI VOR/DME	2900

95.6046 VOR FEDERAL AIRWAY V46

DEER PARK, NY VOR/DME	CALVERTON, NY VOR/DME	1900
CALVERTON, NY VOR/DME	HAMPTON, NY VORTAC	1900
HAMPTON, NY VORTAC	LIBBE, NY FIX	UNUSABLE
LIBBE, NY FIX	CLAMY, MA FIX	*3000
*2000 - MOCA		
CLAMY, MA FIX	NANTUCKET, MA VOR/DME	2000

95.6047 VOR FEDERAL AIRWAY V47

CUNNINGHAM, KY VOR/DME	POCKET CITY, IN VORTAC	2600
CINCINNATI, KY VORTAC	ROSEWOOD, OH VORTAC	3100
ROSEWOOD, OH VORTAC	FLAG CITY, OH VORTAC	3000

95.6048 VOR FEDERAL AIRWAY V48

OTTUMWA, IA VOR/DME	BURLINGTON, IA VOR/DME	2500
BURLINGTON, IA VOR/DME	PEORIA, IL VORTAC	2500
PEORIA, IL VORTAC	MAROC, IL FIX	*3000
*2400 - MOCA		

FROM	TO	MEA

95.6048 VOR FEDERAL AIRWAY V48 - CONTINUED

MAROC, IL FIX	PONTIAC, IL VOR/DME	2500

95.6050 VOR FEDERAL AIRWAY V50

HASTINGS, NE VOR/DME	PAWNEE CITY, NE VORTAC	4000
PAWNEE CITY, NE VORTAC	ST JOSEPH, MO VORTAC	4000
ST JOSEPH, MO VORTAC	KIRKSVILLE, MO VORTAC	3000
KIRKSVILLE, MO VORTAC	QUINCY, IL VORTAC	2700
QUINCY, IL VORTAC	SPINNER, IL VORTAC	*3000
*2100 - MOCA		
SPINNER, IL VORTAC	ADDERS, IL VORTAC	3000
ADDERS, IL VORTAC	TERRE HAUTE, IN VORTAC	2500
TERRE HAUTE, IN VORTAC	BRICKYARD, IN VORTAC	2700
BRICKYARD, IN VORTAC	DAYTON, OH VOR/DME	3000

95.6051 VOR FEDERAL AIRWAY V51

PAHOKEE, FL VOR/DME	*SHEDS, FL FIX	2000
*3000 - MRA		
SHEDS, FL FIX	TREASURE, FL VORTAC	*2000
*1400 - MOCA		
TREASURE, FL VORTAC	OVIDO, FL FIX	*4000
*2800 - MOCA		
OVIDO, FL FIX	ORMOND BEACH, FL VORTAC	3000
ORMOND BEACH, FL VORTAC	BULLI, FL FIX	*2000
*1400 - MOCA		
BULLI, FL FIX	*ASTOR, FL FIX	**2000
*3000 - MRA		
**1400 - MOCA		
ASTOR, FL FIX	CRAIG, FL VORTAC	2100
CRAIG, FL VORTAC	ALMA, GA VORTAC	*5000
*1700 - MOCA		
*4000 - GNSS MEA		
*ALMA R-144 NA BELOW 10000		
ALMA, GA VORTAC	DUBLIN, GA VORTAC	*3000
*2000 - GNSS MEA		
*ALMA R-345 UNUSABLE, USE DUBLIN R-170		
DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	*3000
*2200 - MOCA		
ATHENS, GA VOR/DME	IRMOS, GA FIX	3100
IRMOS, GA FIX	CORCE, GA FIX	3800
CORCE, GA FIX	TALLE, GA FIX	5300
TALLE, GA FIX	HARRIS, GA VORTAC	7000
HARRIS, GA VORTAC	ETOWA, TN FIX	7000
ETOWA, TN FIX	HINCH MOUNTAIN, TN VOR/DME	5000
HINCH MOUNTAIN, TN VOR/DME	LIVINGSTON, TN VOR/DME	5000
LIVINGSTON, TN VOR/DME	LOUISVILLE, KY VORTAC	3200
SHELBYVILLE, IN VOR/DME	*OCKEL, IN FIX	**5000
*4700 - MCA OCKEL, IN FIX , SE BND		
**2900 - MOCA		
OCKEL, IN FIX	BOILER, IN VORTAC	2600
BOILER, IN VORTAC	CHICAGO HEIGHTS, IL VORTAC	2800

95.6052 VOR FEDERAL AIRWAY V52

DES MOINES, IA VORTAC	BUSSY, IA FIX	*4500
*2400 - MOCA		
*2700 - GNSS MEA		
*DES MOINES R-105 UNUSABLE, USE OTTUMWA R-287		

FROM	TO	MEA

95.6052 VOR FEDERAL AIRWAY V52 - CONTINUED

BUSSY, IA FIX	OTTUMWA, IA VOR/DME	2700
OTTUMWA, IA VOR/DME	QUINCY, IL VORTAC	2600
QUINCY, IL VORTAC	*RIVRS, IL FIX	2600
*6000 - MRA		
RIVRS, IL FIX	ST LOUIS, MO VORTAC	2600
ST LOUIS, MO VORTAC	TROY, IL VORTAC	2400
TROY, IL VORTAC	KENBE, IL FIX	3000
KENBE, IL FIX	*CRATS, IL FIX	**4000
*5000 - MCA CRATS, IL FIX , SE BND		
**2600 - MOCA		
CRATS, IL FIX	OFEND, IL FIX	*5000
*1900 - MOCA		
OFEND, IL FIX	POCKET CITY, IN VORTAC	*4500
*2100 - MOCA		

95.6053 VOR FEDERAL AIRWAY V53

CHARLESTON, SC VORTAC	COLUMBIA, SC VORTAC	2100
COLUMBIA, SC VORTAC	WILLS, SC FIX	UNUSABLE
WILLS, SC FIX	*SPARTANBURG, SC VORTAC	2700
*5200 - MCA SPARTANBURG, SC VORTAC , NW BND		
SPARTANBURG, SC VORTAC	CARTT, SC FIX	
	NW BND	6200
	SE BND	3000
CARTT, SC FIX	SUGARLOAF MOUNTAIN, NC VORTAC	6200
SUGARLOAF MOUNTAIN, NC VORTAC	*BUSIC, NC FIX	8800
*9000 - MCA BUSIC, NC FIX , N BND		
BUSIC, NC FIX	*ROANS, TN FIX	9000
*9000 - MCA ROANS, TN FIX , S BND		
ROANS, TN FIX	HOLSTON MOUNTAIN, TN VORTAC	7000
LEXINGTON, KY VOR/DME	*LOUISVILLE, KY VORTAC	2800
*7000 - MCA LOUISVILLE, KY VORTAC , NW BND		
LOUISVILLE, KY VORTAC	HOUSE, IN FIX	*10000
*3000 - MOCA		
HOUSE, IN FIX	MOUTH, IN FIX	*2800
*2300 - MOCA		
MOUTH, IN FIX	BRICKYARD, IN VORTAC	2700

95.6054 VOR FEDERAL AIRWAY V54

WACO, TX VORTAC	CEDAR CREEK, TX VORTAC	2500
TEXARKANA, AR VORTAC	*WASHO, AR FIX	2200
*4000 - MRA		
WASHO, AR FIX	CANEY, AR FIX	*3500
*1800 - MOCA		
CANEY, AR FIX	MALVE, AR FIX	*3500
*1900 - MOCA		
MALVE, AR FIX	LITTLE ROCK, AR VORTAC	2000
SANDHILLS, NC VORTAC	*RAEFO, NC FIX	**6000
*6000 - MRA		
**2000 - MOCA		
**3000 - GNSS MEA		
RAEFO, NC FIX	FAYETTEVILLE, NC VOR/DME	*5000
*1900 - MOCA		
FAYETTEVILLE, NC VOR/DME	KINSTON, NC VORTAC	2000

95.6055 VOR FEDERAL AIRWAY V55

DAYTON, OH VOR/DME	FORT WAYNE, IN VORTAC	2800

FROM	TO	MEA

95.6055 VOR FEDERAL AIRWAY V55 - CONTINUED

FORT WAYNE, IN VORTAC	GOSHEN, IN VORTAC	2700
GOSHEN, IN VORTAC	GIPPER, MI VORTAC	3000
GIPPER, MI VORTAC	KEELER, MI VOR/DME	*4000
*2300 - MOCA		
KEELER, MI VOR/DME	PULLMAN, MI VOR/DME	4000
GRAND FORKS, ND VOR/DME	*BEHQY, ND FIX	**8000
*12000 - MRA		
**3600 - MOCA		
BEHQY, ND FIX	BISMARCK, ND VOR/DME	3900

95.6056 VOR FEDERAL AIRWAY V56

COLLIERS, SC VORTAC	COLUMBIA, SC VORTAC	3000
COLUMBIA, SC VORTAC	FLORENCE, SC VORTAC	2000
FLORENCE, SC VORTAC	FAYETTEVILLE, NC VOR/DME	2300
FAYETTEVILLE, NC VOR/DME	*ROZBO, NC FIX	
	E BND	7000
	W BND	2000
*5000 - MRA		
ROZBO, NC FIX	WALLO, NC FIX	
	E BND	7000
	W BND	2000
WALLO, NC FIX	KROVE, NC FIX	*7000
*2400 - MOCA		
*3000 - GNSS MEA		
KROVE, NC FIX	*NEW BERN, NC VOR/DME	
	E BND	**2400
	W BND	**7000
*3000 - MCA NEW BERN, NC VOR/DME , BND		
**1800 - MOCA		

95.6057 VOR FEDERAL AIRWAY V57

LEXINGTON, KY VOR/DME	FALMOUTH, KY VOR/DME	3000

95.6059 VOR FEDERAL AIRWAY V59

PULASKI, VA VORTAC	SOFTY, WV FIX	6400
SOFTY, WV FIX	BECKLEY, WV VOR/DME	*6000
*BECKLEY R-161 UNUSABLE		
BECKLEY, WV VOR/DME	WARDO, WV FIX	5100
WARDO, WV FIX	*EDSOE, WV FIX	3000
*3500 - MRA		
EDSOE, WV FIX	PARKERSBURG, WV VOR/DME	3000

95.6060 VOR FEDERAL AIRWAY V60

GALLUP, NM VORTAC	*CUBBA, NM FIX	11000
*10000 - MCA CUBBA, NM FIX , W BND		
CUBBA, NM FIX	ALBUQUERQUE, NM VORTAC	8600
ALBUQUERQUE, NM VORTAC	OTTO, NM VOR	10000
OTTO, NM VOR	FORT UNION, NM VORTAC	10000

95.6062 VOR FEDERAL AIRWAY V62

GALLUP, NM VORTAC	CABZO, NM FIX	11000
CABZO, NM FIX	ZIASE, NM FIX	10000
ZIASE, NM FIX	SANTA FE, NM VORTAC	9000
SANTA FE, NM VORTAC	ANTON CHICO, NM VORTAC	10000

95.6062 VOR FEDERAL AIRWAY V62 - CONTINUED

ANTON CHICO, NM VORTAC	FLUTY, NM FIX	8000
FLUTY, NM FIX	TEXICO, TX VORTAC	6500
TEXICO, TX VORTAC	SPADE, TX FIX	5900
SPADE, TX FIX	LUBBOCK, TX VORTAC	5000
LUBBOCK, TX VORTAC	ROTAN, TX FIX	*6000
*5000 - MOCA		
ROTAN, TX FIX	ABILENE, TX VORTAC	
	SE BND	3700
	NW BND	6000

95.6063 VOR FEDERAL AIRWAY V63

RAZORBACK, AR VORTAC	BILIE, MO FIX	*4000
*3200 - MOCA		
BILIE, MO FIX	SPRINGFIELD, MO VORTAC	3000
SPRINGFIELD, MO VORTAC	PLADD, MO FIX	3000
PLADD, MO FIX	BARTI, MO FIX	*6000
*2600 - MOCA		
BARTI, MO FIX	HALLSVILLE, MO VORTAC	3100
HALLSVILLE, MO VORTAC	QUINCY, IL VORTAC	2900
QUINCY, IL VORTAC	BURLINGTON, IA VOR/DME	2600
BURLINGTON, IA VOR/DME	MOLINE, IL VOR/DME	3100
MOLINE, IL VOR/DME	DAVENPORT, IA VORTAC	3100
JANESVILLE, WI VOR/DME	*DEBOW, WI FIX	**4000
*10000 - MRA		
**3000 - GNSS MEA		
**JANESVILLE R-044 UNUSABLE, USE BADGER R-226		

DEBOW, WI FIX	RASTT, WI FIX	*4000
*4000 - GNSS MEA		
RASTT, WI FIX	BADGER, WI VOR/DME	*3000
*3000 - GNSS MEA		
BADGER, WI VOR/DME	OSHKOSH, WI VORTAC	3000
RHINELANDER, WI VOR/DME	HOUGHTON, MI VOR/DME	3600

95.6064 VOR FEDERAL AIRWAY V64

LOS ANGELES, CA VORTAC	LIMBO, CA FIX	3000
LIMBO, CA FIX	*WILMA, CA FIX	3200
*2800 - MCA WILMA, CA FIX , W BND		
WILMA, CA FIX	SEAL BEACH, CA VORTAC	2300
SEAL BEACH, CA VORTAC	*TUSTI, CA FIX	3000
*6200 - MCA TUSTI, CA FIX , E BND		
TUSTI, CA FIX	COREL, CA FIX	
	W BND	6200
	E BND	8000
COREL, CA FIX	PERIS, CA FIX	
	W BND	8000
	E BND	11000
PERIS, CA FIX	HEMET, CA FIX	*11000
*6700 - MOCA		
HEMET, CA FIX	HAPPE, CA FIX	*11000
*10200 - MOCA		
HAPPE, CA FIX	BALDI, CA FIX	10500
BALDI, CA FIX	CORLA, CA FIX	
	W BND	9700
	E BND	8000
CORLA, CA FIX	*THERMAL, CA VORTAC	
	W BND	8400
	E BND	6000
*7700 - MCA THERMAL, CA VORTAC , W BND		

FROM	TO	MEA
95.6064 VOR FEDERAL AIRWAY V64 - CONTINUED		
THERMAL, CA VORTAC	BLYTHE, CA VORTAC	7000
95.6066 VOR FEDERAL AIRWAY V66		
MISSION BAY, CA VORTAC	*RYAHH, CA FIX	
	E BND	7000
	W BND	4000
*6400 - MCA RYAHH, CA FIX , E BND		
RYAHH, CA FIX	BARET, CA FIX	
	E BND	*8400
	W BND	*7000
*6100 - MOCA		
BARET, CA FIX	*KUMBA, CA FIX	8400
*6700 - MCA KUMBA, CA FIX , W BND		
KUMBA, CA FIX	IMPERIAL, CA VORTAC	4300
IMPERIAL, CA VORTAC	BARD, CA VORTAC	3600
BARD, CA VORTAC	*MOHAK, AZ FIX	
	W BND	4000
	E BND	6000
*6000 - MCA MOHAK, AZ FIX , E BND		
MOHAK, AZ FIX	*JUDTH, AZ FIX	**6000
*6000 - MCA JUDTH, AZ FIX , W BND		
**4000 - MOCA		
JUDTH, AZ FIX	GILA BEND, AZ VORTAC	
	W BND	6000
	E BND	4000
GILA BEND, AZ VORTAC	FLIER, AZ FIX	6500
FLIER, AZ FIX	TUCSON, AZ VORTAC	*8000
*6700 - MOCA		
TUCSON, AZ VORTAC	*SULLI, AZ FIX	**8000
*9200 - MCA SULLI, AZ FIX , E BND		
**7200 - MOCA		
SULLI, AZ FIX	DOUGLAS, AZ VORTAC	10000
DOUGLAS, AZ VORTAC	ANIMA, NM FIX	*11000
*8700 - MOCA		
ANIMA, NM FIX	DARCE, NM FIX	9000
DARCE, NM FIX	COLUMBUS, NM VOR/DME	*9000
*8200 - MOCA		
COLUMBUS, NM VOR/DME	EL PASO, TX VORTAC	9000
EL PASO, TX VORTAC	HUDSPETH, TX VORTAC	7500
HUDSPETH, TX VORTAC	PECOS, TX VOR/DME	*9000
*8000 - MOCA		
PECOS, TX VOR/DME	MIDLAND, TX VORTAC	5000
MIDLAND, TX VORTAC	BYPAS, TX FIX	*5000
*4400 - MOCA		
BYPAS, TX FIX	*HYMAN, TX FIX	**6000
*5000 - MRA		
**4400 - MOCA		
HYMAN, TX FIX	TYEES, TX FIX	*7000
*4500 - MOCA		
TYEES, TX FIX	ABILENE, TX VORTAC	*7000
*4300 - MOCA		
ABILENE, TX VORTAC	TRUSS, TX FIX	3500
TRUSS, TX FIX	MILLSAP, TX VORTAC	3700
BROOKWOOD, AL VORTAC	LAGRANGE, GA VORTAC	3400
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	2500
RALEIGH/DURHAM, NC VORTAC	FRANKLIN, VA VORTAC	2600
95.6067 VOR FEDERAL AIRWAY V67		
CHOO CHOO, TN VORTAC	SHELBYVILLE, TN VOR/DME	4000

FROM	TO	MEA

95.6067 VOR FEDERAL AIRWAY V67 - CONTINUED

CORKI, IL FIX	VANDALIA, IL VOR/DME	2500
VANDALIA, IL VOR/DME	SPINNER, IL VORTAC	2500
SPINNER, IL VORTAC	BURLINGTON, IA VOR/DME	2500
BURLINGTON, IA VOR/DME	IOWA CITY, IA VOR/DME	*2600
*2100 - MOCA		
IOWA CITY, IA VOR/DME	CEDAR RAPIDS, IA VOR/DME	2700
CEDAR RAPIDS, IA VOR/DME	*LYERS, IA FIX	3300
*4000 - MRA		
LYERS, IA FIX	WATERLOO, IA VOR/DME	3300
WATERLOO, IA VOR/DME	FOYDE, IA FIX	3000
FOYDE, IA FIX	ROCHESTER, MN VOR/DME	3500

95.6068 VOR FEDERAL AIRWAY V68

MONTROSE, CO VOR/DME	CONES, CO VOR/DME	12000
CONES, CO VOR/DME	DOVE CREEK, CO VORTAC	12000
DOVE CREEK, CO VORTAC	CORTEZ, CO VOR/DME	9800
CORTEZ, CO VOR/DME	PLATA, NM FIX	10600
PLATA, NM FIX	RATTLESNAKE, NM VORTAC	10000
RATTLESNAKE, NM VORTAC	OTINS, NM FIX	9000
OTINS, NM FIX	PEDRA, NM FIX	*11500
*10000 - MOCA		
PEDRA, NM FIX	*ALBUQUERQUE, NM VORTAC	9000
*10000 - MCA ALBUQUERQUE, NM VORTAC , SE BND		
ALBUQUERQUE, NM VORTAC	CORONA, NM VORTAC	12000
CORONA, NM VORTAC	HONDS, NM FIX	9000
HONDS, NM FIX	CHISUM, NM VORTAC	
	NW BND	9000
	SE BND	6500
CHISUM, NM VORTAC	HAGER, NM FIX	
	W BND	6000
	E BND	6500
HAGER, NM FIX	HOBBS, NM VORTAC	6500
HOBBS, NM VORTAC	ANEEL, TX FIX	5200
ANEEL, TX FIX	MIDLAND, TX VORTAC	5000
MIDLAND, TX VORTAC	JOKES, TX FIX	4500
JOKES, TX FIX	STEEP, TX FIX	*5000
*4200 - MOCA		
STEEP, TX FIX	TANKR, TX FIX	4400
TANKR, TX FIX	SAN ANGELO, TX VORTAC	3700
SAN ANGELO, TX VORTAC	JUNCTION, TX VORTAC	4000
JUNCTION, TX VORTAC	CENTER POINT, TX VORTAC	4000
CENTER POINT, TX VORTAC	SAN ANTONIO, TX VORTAC	4100
SAN ANTONIO, TX VORTAC	*BRAUN, TX FIX	3100
*5500 - MRA		
BRAUN, TX FIX	MARCS, TX FIX	3100
MARCS, TX FIX	CRAYS, TX FIX	*2900
*2000 - MOCA		
CRAYS, TX FIX	INDUSTRY, TX VORTAC	2600

95.6069 VOR FEDERAL AIRWAY V69

EL DORADO, AR VOR/DME	PINE BLUFF, AR VOR/DME	2000
PINE BLUFF, AR VOR/DME	BILLI, AR FIX	2000
BILLI, AR FIX	*HILLE, AR FIX	**6000
*6000 - MRA		
**1500 - MOCA		
HILLE, AR FIX	WALNUT RIDGE, AR VORTAC	*4000
*3000 - MOCA		

95.6069 VOR FEDERAL AIRWAY V69 - CONTINUED

WALNUT RIDGE, AR VORTAC	FARMINGTON, MO VORTAC	3000
FARMINGTON, MO VORTAC	TROY, IL VORTAC	*3000
*2500 - MOCA		
TROY, IL VORTAC	SPINNER, IL VORTAC	2500
SPINNER, IL VORTAC	PONTIAC, IL VOR/DME	*3000
*2300 - MOCA		
PONTIAC, IL VOR/DME	JOLIET, IL VOR/DME	*3000
*2300 - MOCA		

95.6070 VOR FEDERAL AIRWAY V70

U.S. MEXICAN BORDER	BROWNSVILLE, TX VORTAC	*5000
*1600 - MOCA		
BROWNSVILLE, TX VORTAC	RAYMO, TX FIX	
	N BND	*3800
	S BND	*1600
*1600 - GNSS MEA		
RAYMO, TX FIX	JIMIE, TX FIX	
	N BND	*6000
	S BND	*4000
*1600 - MOCA		
*2000 - GNSS MEA		
JIMIE, TX FIX	JETTY, TX FIX	*6000
*1800 - MOCA		
*2000 - GNSS MEA		
JETTY, TX FIX	CORPUS CHRISTI, TX VORTAC	
	N BND	*2100
	S BND	*3800
*2100 - GNSS MEA		
CORPUS CHRISTI, TX VORTAC	BETZY, TX FIX	1800
BETZY, TX FIX	PALACIOS, TX VORTAC	2000
PALACIOS, TX VORTAC	SCHOLES, TX VOR/DME	2600
SCHOLES, TX VOR/DME	SABINE PASS, TX VOR/DME	2000
SABINE PASS, TX VOR/DME	LAKE CHARLES, LA VORTAC	1700
LAKE CHARLES, LA VORTAC	LAFAYETTE, LA VORTAC	1800
LAFAYETTE, LA VORTAC	*ROSEY, LA FIX	2100
*5000 - MRA		
ROSEY, LA FIX	FIGHTING TIGER, LA VORTAC	2100
FIGHTING TIGER, LA VORTAC	PICAYUNE, MS VOR/DME	2000
PICAYUNE, MS VOR/DME	GREENE COUNTY, MS VORTAC	2000
GREENE COUNTY, MS VORTAC	MONROEVILLE, AL VORTAC	2000
MONROEVILLE, AL VORTAC	CHAFF, AL FIX	2000
CHAFF, AL FIX	*RUTEL, AL FIX	**2500
*4500 - MCA RUTEL, AL FIX , NE BND		
**1800 - MOCA		
RUTEL, AL FIX	*CRENS, AL FIX	**4500
*4500 - MCA CRENS, AL FIX , SW BND		
**1800 - MOCA		
CRENS, AL FIX	BANBI, AL FIX	2400
BANBI, AL FIX	EUFAULA, AL VORTAC	2400
EUFAULA, AL VORTAC	VIENNA, GA VORTAC	2400
VIENNA, GA VORTAC	OCONE, GA FIX	*3000
*2100 - MOCA		
OCONE, GA FIX	MILEN, GA FIX	*3000
		MAA - 9000
*1900 - MOCA		
MILEN, GA FIX	ALLENDALE, SC VOR	*3000
*1800 - MOCA		
GRAND STRAND, SC VORTAC	WILMINGTON, NC VORTAC	UNUSABLE

95.6070 VOR FEDERAL AIRWAY V70 - CONTINUED

WILMINGTON, NC VORTAC	BEULA, NC FIX	UNUSABLE
BEULA, NC FIX	KINSTON, NC VORTAC	UNUSABLE
KINSTON, NC VORTAC	PEARS, NC FIX	UNUSABLE
PEARS, NC FIX	COFIELD, NC VORTAC	*3000
*2000 - MOCA		

95.6071 VOR FEDERAL AIRWAY V71

FIGHTING TIGER, LA VORTAC	WRACK, LA FIX	*2200
*1800 - MOCA		
WRACK, LA FIX	NATCHEZ, MS VOR/DME	*3500
*2200 - MOCA		
*2200 - GNSS MEA		
NATCHEZ, MS VOR/DME	MONROE, LA VORTAC	2000
MONROE, LA VORTAC	EL DORADO, AR VOR/DME	2200
EL DORADO, AR VOR/DME	SPARO, AR FIX	
	S BND	*2500
	N BND	*4000
*1800 - MOCA		
SPARO, AR FIX	CANEY, AR FIX	*4000
*1700 - MOCA		
CANEY, AR FIX	HOT SPRINGS, AR VOR/DME	
	N BND	3000
	S BND	3500
HOT SPRINGS, AR VOR/DME	OLLAS, AR FIX	*3600
*3100 - MOCA		
OLLAS, AR FIX	*HAAWK, AR FIX	**4500
*10000 - MCA HAAWK, AR FIX , N BND		
**2500 - MOCA		
HAAWK, AR FIX	HARRISON, AR VOR/DME	*10000
*3700 - MOCA		
*4000 - GNSS MEA		
HARRISON, AR VOR/DME	REEDS, MO FIX	3300
REEDS, MO FIX	SPRINGFIELD, MO VORTAC	3000
SPRINGFIELD, MO VORTAC	BUTLER, MO VORTAC	*3000
*2500 - MOCA		
BUTLER, MO VORTAC	TOPEKA, KS VORTAC	3100
TOPEKA, KS VORTAC	PAWNEE CITY, NE VORTAC	*4000
*2900 - MOCA		
PAWNEE CITY, NE VORTAC	LINCOLN, NE VORTAC	3000
LINCOLN, NE VORTAC	DWELL, NE FIX	*3300
*2600 - MOCA		
DWELL, NE FIX	COLUMBUS, NE VOR/DME	*3500
*3000 - MOCA		
COLUMBUS, NE VOR/DME	O'NEILL, NE VORTAC	4000
PIERRE, SD VORTAC	LINTN, ND FIX	*5500
*3600 - MOCA		
LINTN, ND FIX	BISMARCK, ND VOR/DME	
	S BND	5500
	N BND	3600
BISMARCK, ND VOR/DME	CENTR, ND FIX	
	W BND	5600
	E BND	4000
CENTR, ND FIX	WILLISTON, ND VOR/DME	*5600
*3900 - MOCA		

95.6072 VOR FEDERAL AIRWAY V72

RAZORBACK, AR VORTAC	EDUGE, AR FIX	*4000
*3200 - MOCA		

FROM	TO	MEA

95.6072 VOR FEDERAL AIRWAY V72 - CONTINUED

EDUGE, AR FIX	REEDS, MO FIX	*4000
*2900 - MOCA		
REEDS, MO FIX	DOGWOOD, MO VORTAC	*3400
*2900 - MOCA		
FARMINGTON, MO VORTAC	CENTRALIA, IL VORTAC	*3000
*2500 - MOCA		
CENTRALIA, IL VORTAC	BIBLE GROVE, IL VORTAC	2600

95.6073 VOR FEDERAL AIRWAY V73

TULSA, OK VORTAC	FRAKS, OK FIX	3000
FRAKS, OK FIX	WICHITA, KS VORTAC	4000
WICHITA, KS VORTAC	HUTCHINSON, KS VOR/DME	3600
HUTCHINSON, KS VOR/DME	SALINA, KS VORTAC	3400

95.6074 VOR FEDERAL AIRWAY V74

GARDEN CITY, KS VORTAC	DODGE CITY, KS VORTAC	4600
PIONEER, OK VORTAC	MANON, OK FIX	2700
MANON, OK FIX	TULSA, OK VORTAC	2500
TULSA, OK VORTAC	OWETA, OK FIX	3200
OWETA, OK FIX	MALTS, OK FIX	*2800
*1900 - MOCA		
MALTS, OK FIX	FORT SMITH, AR VORTAC	3000
FORT SMITH, AR VORTAC	MAGGA, AR FIX	
	E BND	4500
	W BND	4000
MAGGA, AR FIX	DANIL, AR FIX	*4500
*4000 - MOCA		
DANIL, AR FIX	OLLAS, AR FIX	*4500
*2600 - MOCA		
OLLAS, AR FIX	MAUME, AR FIX	*4500
*2700 - MOCA		
MAUME, AR FIX	LITTLE ROCK, AR VORTAC	3500
LITTLE ROCK, AR VORTAC	PINE BLUFF, AR VOR/DME	2500
PINE BLUFF, AR VOR/DME	GREENVILLE, MS VOR/DME	2000
GREENVILLE, MS VOR/DME	MAGNOLIA, MS VORTAC	2000

95.6075 VOR FEDERAL AIRWAY V75

MORGANTOWN, WV VOR/DME	BELLAIRE, OH VOR/DME	4000
BELLAIRE, OH VOR/DME	ATWOO, OH FIX	*6000
*3000 - MOCA		
ATWOO, OH FIX	BRIGGS, OH VOR/DME	*4000
*3100 - MOCA		
*3100 - GNSS MEA		

95.6076 VOR FEDERAL AIRWAY V76

LUBBOCK, TX VORTAC	*WELCH, TX FIX	5200
*7000 - MRA		
WELCH, TX FIX	PATTS, TX FIX	*6100
*5200 - MOCA		
PATTS, TX FIX	BIG SPRING, TX VORTAC	4700
BIG SPRING, TX VORTAC	*HYMAN, TX FIX	4500
*5000 - MRA		
HYMAN, TX FIX	*WATOR, TX FIX	4500
*7000 - MRA		
WATOR, TX FIX	SAN ANGELO, TX VORTAC	4500

FROM	TO	MEA

95.6076 VOR FEDERAL AIRWAY V76 - CONTINUED

SAN ANGELO, TX VORTAC	EVILE, TX FIX	3700
EVILE, TX FIX	BREDY, TX FIX	3800
BREDY, TX FIX	LLANO, TX VORTAC	3500
LLANO, TX VORTAC	CENTEX, TX VORTAC	3200
CENTEX, TX VORTAC	MOUZE, TX FIX	2200
MOUZE, TX FIX	INDUSTRY, TX VORTAC	2100

95.6077 VOR FEDERAL AIRWAY V77

SAN ANGELO, TX VORTAC	ABILENE, TX VORTAC	4000
ABILENE, TX VORTAC	WICHITA FALLS, TX VORTAC	*3900
*3400 - MOCA		
WICHITA FALLS, TX VORTAC	FOYER, OK FIX	2900
FOYER, OK FIX	*FLECH, OK FIX	3000
*4900 - MRA		
FLECH, OK FIX	*NEADS, OK FIX	**3800
*5400 - MRA		
*3800 - MCA NEADS, OK FIX , S BND		
**3000 - MOCA		
NEADS, OK FIX	WILL ROGERS, OK VORTAC	3000
WILL ROGERS, OK VORTAC	PIONEER, OK VORTAC	*4000
*3200 - MOCA		
PIONEER, OK VORTAC	WICHITA, KS VORTAC	3600
WICHITA, KS VORTAC	*FLOSS, KS FIX	3600
*5000 - MRA		
FLOSS, KS FIX	HEYDN, KS FIX	*5000
*2900 - MOCA		
HEYDN, KS FIX	TOPEKA, KS VORTAC	3700
TOPEKA, KS VORTAC	ST JOSEPH, MO VORTAC	3000
ST JOSEPH, MO VORTAC	LAMONI, IA VOR/DME	2900
LAMONI, IA VOR/DME	*WIVEY, IA FIX	3000
*4300 - MRA		
WIVEY, IA FIX	DES MOINES, IA VORTAC	3000
DES MOINES, IA VORTAC	*MIXIN, IA FIX	3100
*5000 - MRA		
MIXIN, IA FIX	NEWTON, IA VOR/DME	3000
NEWTON, IA VOR/DME	WATERLOO, IA VOR/DME	2800

95.6078 VOR FEDERAL AIRWAY V78

DARWIN, MN VORTAC	GOPHER, MN VORTAC	3000
GOPHER, MN VORTAC	EAU CLAIRE, WI VORTAC	3400
EAU CLAIRE, WI VORTAC	RHINELANDER, WI VOR/DME	3700
RHINELANDER, WI VOR/DME	IRON MOUNTAIN, MI VOR/DME	4400
IRON MOUNTAIN, MI VOR/DME	VUKFI, MI FIX	3300
VUKFI, MI FIX	ESCANABA, MI VOR/DME	*3000
*2300 - MOCA		
PELLSTON, MI VORTAC	ALPENA, MI VORTAC	2700
ALPENA, MI VORTAC	*ZABLE, MI FIX	3000
*5000 - MCA ZABLE, MI FIX , S BND		
ZABLE, MI FIX	BANJO, MI FIX	*5000
*2900 - MOCA		
BANJO, MI FIX	BENNY, MI FIX	*3000
*2300 - MOCA		
BENNY, MI FIX	SAGINAW, MI VOR/DME	2400

95.6079 VOR FEDERAL AIRWAY V79

HASTINGS, NE VOR/DME	LINCOLN, NE VORTAC	4000

FROM	TO	MEA

95.6080 VOR FEDERAL AIRWAY V80

AKRON, CO VOR/DME	HOLYO, CO FIX	6400
HOLYO, CO FIX	NORTH PLATTE, NE VOR/DME	*6500
*5000 - MOCA		
NORTH PLATTE, NE VOR/DME	O'NEILL, NE VORTAC	*5400
*4400 - MOCA		
O'NEILL, NE VORTAC	TYNDA, SD FIX	*4000
*3500 - MOCA		
TYNDA, SD FIX	DOLTS, SD FIX	*4000
*3200 - MOCA		
DOLTS, SD FIX	SIOUX FALLS, SD VORTAC	3400

95.6081 VOR FEDERAL AIRWAY V81

U.S. MEXICAN BORDER	MARFA, TX VOR/DME	10000
MARFA, TX VOR/DME	FORT STOCKTON, TX VORTAC	9000
FORT STOCKTON, TX VORTAC	MIDLAND, TX VORTAC	4500
MIDLAND, TX VORTAC	PATTS, TX FIX	4500
PATTS, TX FIX	*WELCH, TX FIX	**6100
*7000 - MRA		
**5200 - MOCA		
WELCH, TX FIX	LUBBOCK, TX VORTAC	5200
LUBBOCK, TX VORTAC	PLAINVIEW, TX VOR/DME	5000
PLAINVIEW, TX VOR/DME	*YOCAN, TX FIX	**5400
*6500 - MRA		
**4900 - MOCA		
YOCAN, TX FIX	PANHANDLE, TX VORTAC	5400
PANHANDLE, TX VORTAC	DALHART, TX VORTAC	6100
DALHART, TX VORTAC	TOBE, CO VOR/DME	8800
TOBE, CO VOR/DME	PUEBLO, CO VORTAC	7700
PUEBLO, CO VORTAC	*BLACK FOREST, CO VOR/DME	9500
*10000 - MCA BLACK FOREST, CO VOR/DME , NW BND		
BLACK FOREST, CO VOR/DME	HOHUM, CO FIX	*10000
*10000 - GNSS MEA		
*BLACK FOREST R-330 UNUSABLE		
HOHUM, CO FIX	SIGNE, CO FIX	9200
SIGNE, CO FIX	JEFFCO, CO VOR/DME	*9200
*8600 - MOCA		
JEFFCO, CO VOR/DME	WISER, CO FIX	8000
WISER, CO FIX	CHEYENNE, WY VORTAC	9000
CHEYENNE, WY VORTAC	SCOTTSBLUFF, NE VORTAC	8000
SCOTTSBLUFF, NE VORTAC	TOADSTOOL, NE VOR/DME	7000

95.6082 VOR FEDERAL AIRWAY V82

GOPHER, MN VORTAC	FARMINGTON, MN VORTAC	*3500
*2800 - MOCA		
FARMINGTON, MN VORTAC	ROCHESTER, MN VOR/DME	3000
ROCHESTER, MN VOR/DME	NODINE, MN VORTAC	3000
NODINE, MN VORTAC	DELLS, WI VORTAC	3000

95.6083 VOR FEDERAL AIRWAY V83

CARLSBAD, NM VORTAC	*NELON, NM FIX	5900
*7000 - MRA		
NELON, NM FIX	CHISUM, NM VORTAC	5900
CHISUM, NM VORTAC	HONDS, NM FIX	
	NW BND	9000
	SE BND	6500

FROM	TO	MEA

95.6083 VOR FEDERAL AIRWAY V83 - CONTINUED

HONDS, NM FIX	CORONA, NM VORTAC	9000
CORONA, NM VORTAC	OTTO, NM VOR	9000
OTTO, NM VOR	LACRO, NM FIX	9000
LACRO, NM FIX	SANTA FE, NM VORTAC	9000
SANTA FE, NM VORTAC	NAMBE, NM FIX	
	N BND	11000
	S BND	9000
NAMBE, NM FIX	TAOS, NM VORTAC	11000
TAOS, NM VORTAC	*ALAMOSA, CO VORTAC	11600
*10400 - MCA ALAMOSA, CO VORTAC , S BND		
ALAMOSA, CO VORTAC	BLOKE, CO FIX	
	E BND	14000
	W BND	10400
BLOKE, CO FIX	*GOSIP, CO FIX	14000
*14000 - MCA GOSIP, CO FIX , SW BND		
GOSIP, CO FIX	PUEBLO, CO VORTAC	8700
PUEBLO, CO VORTAC	DRAKE, CO FIX	7600
DRAKE, CO FIX	BLACK FOREST, CO VOR/DME	9000

95.6084 VOR FEDERAL AIRWAY V84

NORTHBROOK, IL VOR/DME	*KUBBS, IL FIX	**3000
*4000 - MRA		
**2000 - MOCA		
KUBBS, IL FIX	*STORY, IL FIX	**3000
*3500 - MRA		
**2000 - MOCA		
STORY, IL FIX	PIVOT, IL FIX	*3000
*2000 - MOCA		
PIVOT, IL FIX	JYBEE, MI FIX	*4000
*1900 - MOCA		
JYBEE, MI FIX	PULLMAN, MI VOR/DME	*4000
*2200 - MOCA		
GENESEO, NY VOR/DME	BEEPS, NY FIX	*4000
*3300 - MOCA		
BEEPS, NY FIX	SYRACUSE, NY VORTAC	*3500
*2600 - MOCA		

95.6085 VOR FEDERAL AIRWAY V85

FALCON, CO VORTAC	HYGEN, CO FIX	
	SE BND	9400
	NW BND	16000
HYGEN, CO FIX	LARAMIE, WY VOR/DME	16000
LARAMIE, WY VOR/DME	MEDICINE BOW, WY VOR/DME	9400
MEDICINE BOW, WY VOR/DME	MULTI, WY FIX	10800
MULTI, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	
	N BND	8000
	S BND	10800
MUDDY MOUNTAIN, WY VOR/DME	RIVERTON, WY VOR/DME	8500
RIVERTON, WY VOR/DME	BOYSEN RESERVOIR, WY VOR/DME	9600
BOYSEN RESERVOIR, WY VOR/DME	CODY, WY VOR/DME	9600
CODY, WY VOR/DME	EDDAR, MT FIX	8400
EDDAR, MT FIX	BILLINGS, MT VORTAC	
	S BND	8400
	N BND	7000

95.6086 VOR FEDERAL AIRWAY V86

MISSOULA, MT VOR/DME	COPPERTOWN, MT VOR/DME	*13000
*11300 - MOCA		
*12000 - GNSS MEA		

95.6086 VOR FEDERAL AIRWAY V86 - CONTINUED

COPPERTOWN, MT VOR/DME	*WHITEHALL, MT VOR/DME	10500
*9100 - MCA WHITEHALL, MT VOR/DME , W BND		
WHITEHALL, MT VOR/DME	*BOZEMAN, MT VOR/DME	8500
*10200 - MCA BOZEMAN, MT VOR/DME , SE BND		
BOZEMAN, MT VOR/DME	LIVINGSTON, MT VOR/DME	10900
LIVINGSTON, MT VOR/DME	REEPO, MT FIX	9700
REEPO, MT FIX	COLUS, MT FIX	
	W BND	9700
	E BND	7000
COLUS, MT FIX	BILLINGS, MT VORTAC	
	W BND	9700
	E BND	6400
BILLINGS, MT VORTAC	KRONA, MT FIX	
	NW BND	6200
	SE BND	8000
KRONA, MT FIX	SHERIDAN, WY VOR/DME	8000
SHERIDAN, WY VOR/DME	WETON, WY FIX	*10900
*7000 - MOCA		
*7000 - GNSS MEA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
WETON, WY FIX	*KOCYE, WY FIX	**13000
*15000 - MRA		
**7000 - MOCA		
**7000 - GNSS MEA		
KOCYE, WY FIX	KARAS, WY FIX	*13000
*8600 - MOCA		
*9000 - GNSS MEA		
KARAS, WY FIX	*PACTO, SD FIX	**11100
*9700 - MRA		
**9400 - MOCA		
**10000 - GNSS MEA		
PACTO, SD FIX	RAPID CITY, SD VORTAC	
	E BND	*8000
	W BND	*9700
*7100 - MOCA		

95.6087 VOR FEDERAL AIRWAY V87

PANOCHE, CA VORTAC	SALINAS, CA VORTAC	6200
SALINAS, CA VORTAC	SANTY, CA FIX	*5000
*4000 - MOCA		
SANTY, CA FIX	WOODSIDE, CA VOR/DME	5100
WOODSIDE, CA VOR/DME	SAN FRANCISCO, CA VOR/DME	4700
SAN FRANCISCO, CA VOR/DME	SCAGGS ISLAND, CA VORTAC	4000

95.6088 VOR FEDERAL AIRWAY V88

TULSA, OK VORTAC	*VINTA, OK FIX	2700
*6200 - MCA VINTA, OK FIX , NE BND		
VINTA, OK FIX	SPRINGFIELD, MO VORTAC	*6200
*3100 - MOCA		
*4000 - GNSS MEA		
SPRINGFIELD, MO VORTAC	VICHY, MO VOR/DME	3100
VICHY, MO VOR/DME	STEER, MO FIX	*3000
*2300 - MOCA		
STEER, MO FIX	TROY, IL VORTAC	2700

95.6089 VOR FEDERAL AIRWAY V89

GILL, CO VOR/DME	HAMER, WY FIX	8000

FROM	TO	MEA

95.6089 VOR FEDERAL AIRWAY V89 - CONTINUED

HAMER, WY FIX	CHEYENNE, WY VORTAC	8500
CHEYENNE, WY VORTAC	LITER, WY FIX	8300
LITER, WY FIX	TOADSTOOL, NE VOR/DME	7800

95.6091 VOR FEDERAL AIRWAY V91

SARDI, NY FIX	CALVERTON, NY VOR/DME	*2500
*1900 - MOCA		
CALVERTON, NY VOR/DME	NESSI, CT FIX	2000
NESSI, CT FIX	*BRIDGEPORT, CT VOR/DME	2000
*8800 - MCA BRIDGEPORT, CT VOR/DME , N BND		
BRIDGEPORT, CT VOR/DME	*MOONI, CT FIX	
	N BND	**12000
	S BND	**6000
*12000 - MCA MOONI, CT FIX , N BND		
*6000 - MCA MOONI, CT FIX , S BND		
**5500 - MOCA		
**6000 - GNSS MEA		
MOONI, CT FIX	*BOWAN, NY FIX	**12000
*12000 - MCA BOWAN, NY FIX , S BND		
*12000 - MCA BOWAN, NY FIX , N BND		
**4900 - MOCA		
**6000 - GNSS MEA		
BOWAN, NY FIX	CIRRU, NY FIX	*12000
*4900 - MOCA		
*6000 - GNSS MEA		
CIRRU, NY FIX	*ALBANY, NY VORTAC	
	N BND	**6000
	S BND	**12000
*9700 - MCA ALBANY, NY VORTAC , BND		
**6000 - GNSS MEA		

95.6092 VOR FEDERAL AIRWAY V92

CHICAGO HEIGHTS, IL VORTAC	HALIE, IN FIX	2600
HALIE, IN FIX	INKEN, IN FIX	*4000
*2300 - MOCA		
INKEN, IN FIX	GOSHEN, IN VORTAC	2600

95.6093 VOR FEDERAL AIRWAY V93

PATUXENT, MD VORTAC	*GRACO, MD FIX	**2500
*10000 - MRA		
**1700 - MOCA		
GRACO, MD FIX	PALEO, MD FIX	*10000
*1600 - MOCA		
PALEO, MD FIX	BALTIMORE, MD VORTAC	*2200
*1700 - MOCA		
BALTIMORE, MD VORTAC	VINNY, PA FIX	3000
VINNY, PA FIX	*ROAST, PA FIX	**9000
*10000 - MRA		
**4500 - GNSS MEA		
ROAST, PA FIX	LANCASTER, PA VOR/DME	
	SW BND	*9000
	NE BND	*4500
*2600 - MOCA		
*4500 - GNSS MEA		
LANCASTER, PA VOR/DME	HAILS, PA FIX	3400
HAILS, PA FIX	SNOWY, PA FIX	4000

95.6093 VOR FEDERAL AIRWAY V93 - CONTINUED

SNOWY, PA FIX	LYTEL, PA FIX	4000
LYTEL, PA FIX	WILKES-BARRE, PA VORTAC	4000
WILKES-BARRE, PA VORTAC	LAAYK, PA FIX	
	NE BND	*5000
	SW BND	*4000
*4000 - MOCA		
HELON, NY FIX	KINGSTON, NY VOR/DME	4000
KINGSTON, NY VOR/DME	PAWLING, NY VOR/DME	3000
PAWLING, NY VOR/DME	CHESTER, MA VOR/DME	4000

95.6094 VOR FEDERAL AIRWAY V94

BLYTHE, CA VORTAC	*VICKO, AZ FIX	6000
*9000 - MRA		
VICKO, AZ FIX	GILA BEND, AZ VORTAC	*9000
*5200 - MOCA		
GILA BEND, AZ VORTAC	*POTER, AZ FIX	5000
*8000 - MRA		
POTER, AZ FIX	STANFIELD, AZ VORTAC	5000
STANFIELD, AZ VORTAC	*TOTEC, AZ FIX	**5000
*5500 - MCA TOTEC, AZ FIX , E BND		
**4300 - MOCA		
TOTEC, AZ FIX	CROME, AZ FIX	
	E BND	8000
	W BND	6500
CROME, AZ FIX	SAN SIMON, AZ VORTAC	10000
SAN SIMON, AZ VORTAC	DEMING, NM VORTAC	*9000
*8100 - MOCA		
DEMING, NM VORTAC	*MOLLY, NM FIX	**9000
*10000 - MRA		
**7700 - MOCA		
MOLLY, NM FIX	NEWMAN, TX VORTAC	9000
NEWMAN, TX VORTAC	SALT FLAT, TX VORTAC	8800
SALT FLAT, TX VORTAC	DILLI, TX FIX	8000
DILLI, TX FIX	CAVRN, TX FIX	*10000
*7500 - MOCA		
CAVRN, TX FIX	WINK, TX VORTAC	*10000
*5300 - MOCA		
WINK, TX VORTAC	YOGSU, TX FIX	5500
YOGSU, TX FIX	MIDLAND, TX VORTAC	5000
MIDLAND, TX VORTAC	BYPAS, TX FIX	*5000
*4400 - MOCA		
BYPAS, TX FIX	*HYMAN, TX FIX	**6000
*5000 - MRA		
**4400 - MOCA		
HYMAN, TX FIX	TUSCOLA, TX VOR/DME	*7500
*4200 - MOCA		
CEDAR CREEK, TX VORTAC	GREGG COUNTY, TX VORTAC	2500
GREGG COUNTY, TX VORTAC	ELM GROVE, LA VORTAC	2000
ELM GROVE, LA VORTAC	*WETER, LA FIX	2400
*3000 - MRA		
WETER, LA FIX	MONROE, LA VORTAC	*2400
*1800 - MOCA		
MONROE, LA VORTAC	GREENVILLE, MS VOR/DME	2100
GREENVILLE, MS VOR/DME	HOLLY SPRINGS, MS VORTAC	*3000
*2100 - MOCA		

95.6095 VOR FEDERAL AIRWAY V95

GILA BEND, AZ VORTAC	*POTER, AZ FIX	5000
*8000 - MRA		

95.6095 VOR FEDERAL AIRWAY V95 - CONTINUED

POTER, AZ FIX	PHOENIX, AZ VORTAC	8000
PHOENIX, AZ VORTAC	WINSLOW, AZ VORTAC	10000
WINSLOW, AZ VORTAC	*BUTTE, AZ FIX	
	NE BND	11000
	SW BND	8700
*9600 - MRA		
BUTTE, AZ FIX	CASTI, AZ FIX	
	NE BND	11000
	SW BND	8700
CASTI, AZ FIX	DERMA, NM FIX	*13000
*11400 - MOCA		
DERMA, NM FIX	RATTLESNAKE, NM VORTAC	
	E BND	8300
	W BND	13000
RATTLESNAKE, NM VORTAC	*DURANGO, CO VOR/DME	9700
*13200 - MCA DURANGO, CO VOR/DME , N BND		
DURANGO, CO VOR/DME	ZEANS, CO FIX	
	S BND	12300
	N BND	16500
ZEANS, CO FIX	LAZON, CO FIX	16500
LAZON, CO FIX	POWES, CO FIX	
	N BND	15000
	S BND	16500
POWES, CO FIX	BLUE MESA, CO VOR/DME	
	S BND	16500
	N BND	12800
BLUE MESA, CO VOR/DME	ROMLY, CO FIX	
	E BND	17000
	W BND	12000
ROMLY, CO FIX	*HOHUM, CO FIX	**17000
*13100 - MCA HOHUM, CO FIX , S BND		
**16200 - MOCA		
HOHUM, CO FIX	FALCON, CO VORTAC	9000

95.6096 VOR FEDERAL AIRWAY V96

BRICKYARD, IN VORTAC	KOKOMO, IN VORTAC	2700
KOKOMO, IN VORTAC	FORT WAYNE, IN VORTAC	2600
FORT WAYNE, IN VORTAC	*TWERP, OH FIX	**5000
*5000 - MRA		
**2400 - MOCA		

95.6097 VOR FEDERAL AIRWAY V97

DOLPHIN, FL VORTAC	LA BELLE, FL VORTAC	*3000
*1500 - MOCA		
LA BELLE, FL VORTAC	ROGAN, FL FIX	
	SE BND	*2000
	NW BND	*4000
*2000 - GNSS MEA		
ROGAN, FL FIX	*BRDGE, FL FIX	**5000
*4300 - MCA BRDGE, FL FIX , SE BND		
**1400 - MOCA		
**2000 - GNSS MEA		
BRDGE, FL FIX	*ST PETERSBURG, FL VORTAC	2000
*3600 - MCA ST PETERSBURG, FL VORTAC , NW BND		
ST PETERSBURG, FL VORTAC	DARBS, FL FIX	
	SE BND	*2100
	NW BND	*6000
*2100 - GNSS MEA		

FROM	TO	MEA

95.6097 VOR FEDERAL AIRWAY V97 - CONTINUED

DARBS, FL FIX	PLYER, FL FIX	*8000
*1400 - MOCA		
*4000 - GNSS MEA		
PLYER, FL FIX	CLAMP, FL FIX	*8000
*1400 - MOCA		
*4000 - GNSS MEA		
CLAMP, FL FIX	HEVVN, FL FIX	
	NW BND	*6000
	SE BND	*8000
*1400 - MOCA		
*4000 - GNSS MEA		
HEVVN, FL FIX	ADDAX, FL FIX	
	NW BND	*3000
	SE BND	*6000
*1400 - MOCA		
*2000 - GNSS MEA		
ADDAX, FL FIX	SEMINOLE, FL VORTAC	
	NW BND	*2000
	SE BND	*5000
*2000 - GNSS MEA		
SEMINOLE, FL VORTAC	PECAN, GA VOR/DME	2100
PECAN, GA VOR/DME	AMAPO, GA FIX	*2300
*1900 - MOCA		
AMAPO, GA FIX	*PRATZ, GA FIX	**3000
*3000 - MRA		
*4000 - MCA PRATZ, GA FIX , N BND		
**2300 - MOCA		
NELLO, GA FIX	MELLS, GA FIX	*10000
*6300 - GNSS MEA		
MELLS, GA FIX	*HINDE, TN FIX	7400
*6600 - MCA HINDE, TN FIX , S BND		
HINDE, TN FIX	TALLA, TN FIX	6600
TALLA, TN FIX	VOLUNTEER, TN VORTAC	4200
VOLUNTEER, TN VORTAC	NOISE, TN FIX	3800
NOISE, TN FIX	LONDON, KY VOR/DME	*5000
*4200 - MOCA		
LONDON, KY VOR/DME	REBEL, KY FIX	*3400
*2900 - MOCA		
REBEL, KY FIX	LEXINGTON, KY VOR/DME	2800
LEXINGTON, KY VOR/DME	DARKS, KY FIX	3000
DARKS, KY FIX	CINCINNATI, KY VORTAC	2700
CINCINNATI, KY VORTAC	SHELBYVILLE, IN VOR/DME	2800
SHELBYVILLE, IN VOR/DME	*OCKEL, IN FIX	**5000
*4700 - MCA OCKEL, IN FIX , SE BND		
**2900 - MOCA		
OCKEL, IN FIX	BOILER, IN VORTAC	2600
BOILER, IN VORTAC	CHICAGO HEIGHTS, IL VORTAC	2800
CHICAGO HEIGHTS, IL VORTAC	NILES, IL FIX	3500
NODINE, MN VORTAC	PEGGS, MN FIX	3000
PEGGS, MN FIX	GOPHER, MN VORTAC	3400

95.6099 VOR FEDERAL AIRWAY V99

LA GUARDIA, NY VOR/DME	OUTTE, CT FIX	*4000
*1700 - MOCA		
OUTTE, CT FIX	SORRY, CT FIX	*4000
*2600 - MOCA		
SORRY, CT FIX	HARTFORD, CT VOR/DME	3000

95.6100 VOR FEDERAL AIRWAY V100

MEDICINE BOW, WY VOR/DME	SCOTTSBLUFF, NE VORTAC	9500

95.6100 VOR FEDERAL AIRWAY V100 - CONTINUED

SCOTTSBLUFF, NE VORTAC	ALLIANCE, NE VOR/DME	6300
ALLIANCE, NE VOR/DME	AINSWORTH, NE VOR/DME	*7500
*5600 - MOCA		
AINSWORTH, NE VOR/DME	O'NEILL, NE VORTAC	4500
WATERLOO, IA VOR/DME	DUBUQUE, IA VORTAC	2900
NORTHBROOK, IL VOR/DME	*MINCE, MI FIX	2500
*3500 - MRA		
MINCE, MI FIX	MUSKY, MI FIX	2500
MUSKY, MI FIX	KEELER, MI VOR/DME	2400
KEELER, MI VOR/DME	LITCHFIELD, MI VOR/DME	2600

95.6101 VOR FEDERAL AIRWAY V101

GILL, CO VOR/DME	*LIBEL, CO FIX	**10000
*13500 - MCA LIBEL, CO FIX , W BND		
**8900 - MOCA		
LIBEL, CO FIX	BROCC, CO FIX	16000
BROCC, CO FIX	ECHOA, CO FIX	13200
ECHOA, CO FIX	*HAYDEN, CO VOR/DME	
	E BND	13200
	W BND	11500
*11500 - MCA HAYDEN, CO VOR/DME , E BND		
HAYDEN, CO VOR/DME	STRIM, CO FIX	10000
STRIM, CO FIX	*RENAE, CO FIX	11000
*13000 - MRA		
RENAE, CO FIX	VERNAL, UT VOR/DME	11000
VERNAL, UT VOR/DME	*NEOLA, UT FIX	10000
*12000 - MCA NEOLA, UT FIX , W BND		
NEOLA, UT FIX	*WASATCH, UT VORTAC	15000
*11000 - MCA WASATCH, UT VORTAC , E BND		
WASATCH, UT VORTAC	OGDEN, UT VORTAC	7000
OGDEN, UT VORTAC	*KREBS, UT FIX	9400
*13000 - MRA		
KREBS, UT FIX	BLIDA, UT FIX	9400
BLIDA, UT FIX	MALTT, ID FIX	11400
MALTT, ID FIX	*BURLEY, ID VOR/DME	
	NW BND	**8000
	SE BND	**11400
*9300 - MCA BURLEY, ID VOR/DME , SE BND		
**7400 - MOCA		
BURLEY, ID VOR/DME	REAPS, ID FIX	
	S BND	7000
	N BND	9500
REAPS, ID FIX	HAILEY, ID NDB/DME	*9500
*8900 - MOCA		
HAILEY, ID NDB/DME	SOLDE, ID FIX	
	NE BND	9000
	SW BND	17000

95.6102 VOR FEDERAL AIRWAY V102

*SALT FLAT, TX VORTAC	**CARLSBAD, NM VORTAC	10800
*10000 - MCA SALT FLAT, TX VORTAC , NE BND		
**7000 - MCA CARLSBAD, NM VORTAC , SW BND		
CARLSBAD, NM VORTAC	HOBBS, NM VORTAC	5600
HOBBS, NM VORTAC	LUBBOCK, TX VORTAC	*6000
*5400 - MOCA		

95.6103 VOR FEDERAL AIRWAY V103

CHESTERFIELD, SC VOR/DME	GREENSBORO, NC VORTAC	2500

FROM	TO	MEA

95.6103 VOR FEDERAL AIRWAY V103 - CONTINUED

GREENSBORO, NC VORTAC	HENBY, VA FIX	3500
HENBY, VA FIX	TABER, VA FIX	5100
TABER, VA FIX	ROANOKE, VA VOR/DME	5600
ROANOKE, VA VOR/DME	NATTS, WV FIX	6000
NATTS, WV FIX	VELLI, WV FIX	7000
VELLI, WV FIX	ELKINS, WV VORTAC	*7000
*6400 - MOCA		
ELKINS, WV VORTAC	CLARKSBURG, WV VOR/DME	*5000
*3900 - MOCA		
CLARKSBURG, WV VOR/DME	BELLAIRE, OH VOR/DME	*3400
*CKB R-335 UNUSABLE BELOW 9000, USE AIR R-158.		
BELLAIRE, OH VOR/DME	ATWOO, OH FIX	*6000
*3000 - MOCA		
ATWOO, OH FIX	AKRON, OH VOR/DME	3000

95.6105 VOR FEDERAL AIRWAY V105

TUCSON, AZ VORTAC	STANFIELD, AZ VORTAC	*8000
*6700 - MOCA		
STANFIELD, AZ VORTAC	PHOENIX, AZ VORTAC	5000
PHOENIX, AZ VORTAC	KARLO, AZ FIX	10000
KARLO, AZ FIX	DRAKE, AZ VORTAC	*12000
*10000 - MOCA		
*10000 - GNSS MEA		
DRAKE, AZ VORTAC	WINDS, AZ FIX	10000
WINDS, AZ FIX	BOULDER CITY, NV VORTAC	*7000
*6000 - MOCA		
BOULDER CITY, NV VORTAC	*LAS VEGAS, NV VORTAC	6000
*10500 - MCA LAS VEGAS, NV VORTAC , W BND		
LAS VEGAS, NV VORTAC	HARLS, NV FIX	
	E BND	7000
	W BND	14000
HARLS, NV FIX	LUCKY, NV FIX	
	E BND	11000
	W BND	14000
LUCKY, NV FIX	*HIDEN, CA FIX	14000
*14000 - MRA		
*14000 - MCA HIDEN, CA FIX , E BND		
HIDEN, CA FIX	BEATTY, NV VORTAC	*12000
*8600 - MOCA		
BEATTY, NV VORTAC	COALDALE, NV VORTAC	*11000
*9600 - MOCA		
COALDALE, NV VORTAC	*YERIN, NV FIX	**14000
*12500 - MCA YERIN, NV FIX , SE BND		
**11200 - MOCA		
YERIN, NV FIX	CHIME, NV FIX	
	NW BND	10000
	SE BND	11500
CHIME, NV FIX	MUSTANG, NV VORTAC	10000

95.6106 VOR FEDERAL AIRWAY V106

JOHNSTOWN, PA VOR/DME	HUDON, PA FIX	5300
HUDON, PA FIX	RASHE, PA FIX	*7000
*4600 - MOCA		
*4600 - GNSS MEA		

95.6107 VOR FEDERAL AIRWAY V107

LOS ANGELES, CA VORTAC	STABO, CA FIX	2800

FROM	TO	MEA

95.6107 VOR FEDERAL AIRWAY V107 - CONTINUED

STABO, CA FIX	*SANTA MONICA, CA VOR/DME	3000
*3700 - MCA SANTA MONICA, CA VOR/DME , W BND		
SANTA MONICA, CA VOR/DME	*FILLMORE, CA VORTAC	5000
*7500 - MCA FILLMORE, CA VORTAC , NW BND		
FILLMORE, CA VORTAC	PIRUE, CA FIX	
	SE BND	*8000
	NW BND	*9000
*7200 - MOCA		
PIRUE, CA FIX	REYES, CA FIX	*11000
*9200 - MOCA		
REYES, CA FIX	DERBB, CA FIX	11000
DERBB, CA FIX	AVENAL, CA VOR/DME	*7000
*6500 - MOCA		
AVENAL, CA VOR/DME	PANOCHE, CA VORTAC	8000
PANOCHE, CA VORTAC	*CATHE, CA FIX	**7000
*7000 - MCA CATHE, CA FIX , NW BND		
**5700 - MOCA		
CATHE, CA FIX	VINCO, CA FIX	*7000
*6400 - MOCA		
VINCO, CA FIX	MABRY, CA FIX	
	S BND	7000
	N BND	6000
MABRY, CA FIX	MISON, CA FIX	
	N BND	5500
	S BND	7000
MISON, CA FIX	OAKLAND, CA VOR/DME	
	SE BND	7000
	NW BND	4500
OAKLAND, CA VOR/DME	COMMO, CA FIX	*5000
*4000 - MOCA		
COMMO, CA FIX	POINT REYES, CA VOR/DME	5000
POINT REYES, CA VOR/DME	BOARS, CA FIX	5000

95.6108 VOR FEDERAL AIRWAY V108

ROZZA, CA FIX	SCAGGS ISLAND, CA VORTAC	4700
SCAGGS ISLAND, CA VORTAC	CONCORD, CA VOR/DME	3000
CONCORD, CA VOR/DME	OAKEY, CA FIX	3500
OAKEY, CA FIX	LINDEN, CA VOR/DME	2300
MEEKER, CO VOR/DME	RED TABLE, CO VOR/DME	*14000
*12800 - MOCA		
RED TABLE, CO VOR/DME	*STAMY, CO FIX	16400
*12300 - MCA STAMY, CO FIX , W BND		
STAMY, CO FIX	*BLACK FOREST, CO VOR/DME	12000
*10700 - MCA BLACK FOREST, CO VOR/DME , W BND		
BLACK FOREST, CO VOR/DME	ADANE, CO FIX	9500
ADANE, CO FIX	*HUGO, CO VOR/DME	9000
*7100 - MCA HUGO, CO VOR/DME , W BND		
HUGO, CO VOR/DME	GOODLAND, KS VORTAC	7000
GOODLAND, KS VORTAC	HILL CITY, KS VORTAC	5500

95.6110 VOR FEDERAL AIRWAY V110

DEMING, NM VORTAC	TRUTH OR CONSEQUENCES, NM VORTAC	8000

95.6111 VOR FEDERAL AIRWAY V111

BIG SUR, CA VORTAC	SALINAS, CA VORTAC	7000
SALINAS, CA VORTAC	CATHE, CA FIX	5500

FROM	TO	MEA

95.6111 VOR FEDERAL AIRWAY V111 - CONTINUED

CATHE, CA FIX	KARNN, CA FIX	5500
KARNN, CA FIX	PATYY, CA FIX	5000
PATYY, CA FIX	MODESTO, CA VOR/DME	*3000
*1500 - MOCA		

95.6112 VOR FEDERAL AIRWAY V112

HOQUIAM, WA VORTAC	ILWAC, WA FIX	2500
ILWAC, WA FIX	ASTORIA, OR VOR/DME	3000
ASTORIA, OR VOR/DME	PITER, OR FIX	5000
PITER, OR FIX	*BATTLE GROUND, WA VORTAC	4400
*5000 - MCA BATTLE GROUND, WA VORTAC , E BND		
BATTLE GROUND, WA VORTAC	KLICKITAT, OR VOR/DME	*7000
*6500 - MOCA		
KLICKITAT, OR VOR/DME	*OGPAY, OR FIX	5400
*6000 - MRA		
OGPAY, OR FIX	*LOAMS, OR FIX	5400
*6000 - MRA		
LOAMS, OR FIX	*ECHOD, OR FIX	4100
*6000 - MRA		
ECHOD, OR FIX	PENDLETON, OR VORTAC	4100
PENDLETON, OR VORTAC	LYLES, WA FIX	4000
LYLES, WA FIX	*RODNA, WA FIX	**5000
*6000 - MRA		
**4400 - MOCA		
RODNA, WA FIX	SPOKANE, WA VORTAC	5000
SPOKANE, WA VORTAC	DIANN, WA FIX	
	SW BND	*7000
	NE BND	*11000
*5500 - MOCA		
DIANN, WA FIX	U.S. CANADIAN BORDER	*11000
*9700 - MOCA		

95.6113 VOR FEDERAL AIRWAY V113

MORRO BAY, CA VORTAC	PASO ROBLES, CA VORTAC	5000
PANOCHE, CA VORTAC	*PATYY, CA FIX	5000
*5000 - MCA PATYY, CA FIX , SE BND		
PATYY, CA FIX	MODESTO, CA VOR/DME	*3000
*1500 - MOCA		
MODESTO, CA VOR/DME	*LINDEN, CA VOR/DME	2000
*4000 - MCA LINDEN, CA VOR/DME , NE BND		
LINDEN, CA VOR/DME	*KATSO, CA FIX	5000
*12400 - MCA KATSO, CA FIX , NE BND		
KATSO, CA FIX	*SPOOK, CA FIX	**13000
*15000 - MCA SPOOK, CA FIX , N BND		
**12100 - MOCA		
SPOOK, CA FIX	RICHY, CA FIX	*15000
*12000 - MOCA		
RICHY, CA FIX	*MUSTANG, NV VORTAC	13000
*10500 - MCA MUSTANG, NV VORTAC , S BND		
MUSTANG, NV VORTAC	NICER, NV FIX	10300
NICER, NV FIX	ROBUD, NV FIX	*12000
*10600 - MOCA		
ROBUD, NV FIX	SOD HOUSE, NV VORTAC	*10000
*9000 - MOCA		
SOD HOUSE, NV VORTAC	ROME, OR VOR/DME	10000
ROME, OR VOR/DME	*RENOL, ID FIX	9400
*7300 - MCA RENOL, ID FIX , SW BND		

FROM	TO	MEA

95.6113 VOR FEDERAL AIRWAY V113 - CONTINUED

RENOL, ID FIX	*BOISE, ID VORTAC	6000
*8200 - MCA BOISE, ID VORTAC , NE BND		
BOISE, ID VORTAC	SALMON, ID VOR/DME	16500
SALMON, ID VOR/DME	SLIPP, MT FIX	13000
SLIPP, MT FIX	*COPPERTOWN, MT VOR/DME	
	SW BND	13000
	NE BND	11000
*10200 - MCA COPPERTOWN, MT VOR/DME , SW BND		
COPPERTOWN, MT VOR/DME	HELENA, MT VORTAC	*13000
*10800 - MOCA		
HELENA, MT VORTAC	LEWISTOWN, MT VOR/DME	11100

95.6114 VOR FEDERAL AIRWAY V114

PANHANDLE, TX VORTAC	*DOGIN, TX FIX	**5400
*6500 - MRA		
**5000 - MOCA		
DOGIN, TX FIX	CHILDRESS, TX VORTAC	5000
CHILDRESS, TX VORTAC	VASTY, TX FIX	3700
VASTY, TX FIX	WICHITA FALLS, TX VORTAC	3200
WICHITA FALLS, TX VORTAC	BONHAM, TX VORTAC	3000
GREGG COUNTY, TX VORTAC	CARTH, TX FIX	*2300
*1900 - MOCA		
CARTH, TX FIX	EXITE, LA FIX	*3000
*1700 - MOCA		
EXITE, LA FIX	COVEX, LA FIX	*3500
*1700 - MOCA		
COVEX, LA FIX	NUBOY, LA FIX	*5000
*1900 - MOCA		
NUBOY, LA FIX	ALEXANDRIA, LA VORTAC	
	W BND	5000
	E BND	2000
ALEXANDRIA, LA VORTAC	*MIKLE, LA FIX	2000
*3000 - MRA		
MIKLE, LA FIX	FIGHTING TIGER, LA VORTAC	2000
FIGHTING TIGER, LA VORTAC	VEILS, LA FIX	2800
VEILS, LA FIX	RESERVE, LA VOR/DME	2000
RESERVE, LA VOR/DME	GULFPORT, MS VORTAC	2000
GULFPORT, MS VORTAC	*MINDO, MS FIX	**6000
*6000 - MRA		
**2000 - GNSS MEA		
MINDO, MS FIX	EATON, MS VORTAC	*6000
*2000 - GNSS MEA		

95.6115 VOR FEDERAL AIRWAY V115

CRESTVIEW, FL VORTAC	PIGON, AL FIX	2500
PIGON, AL FIX	*REDDI, AL FIX	2500
*5500 - MRA		
REDDI, AL FIX	MONTGOMERY, AL VORTAC	2500
MONTGOMERY, AL VORTAC	VULCAN, AL VORTAC	3000
VULCAN, AL VORTAC	CHOO CHOO, TN VORTAC	4000
CHOO CHOO, TN VORTAC	ETOWA, TN FIX	3000
ETOWA, TN FIX	GROSS, TN FIX	3100
GROSS, TN FIX	VOLUNTEER, TN VORTAC	3000
CHARLESTON, WV VOR/DME	PARKERSBURG, WV VOR/DME	3000

95.6116 VOR FEDERAL AIRWAY V116

STONYFORK, PA VOR/DME	WILKES-BARRE, PA VORTAC	4000

FROM	TO	MEA

95.6116 VOR FEDERAL AIRWAY V116 - CONTINUED

WILKES-BARRE, PA VORTAC	SPARTA, NJ VORTAC	4000

95.6117 VOR FEDERAL AIRWAY V117

PARKERSBURG, WV VOR/DME	BELLAIRE, OH VOR/DME	3000
BELLAIRE, OH VOR/DME	WISKE, WV FIX	3300

95.6118 VOR FEDERAL AIRWAY V118

MEDICINE BOW, WY VOR/DME	LARAMIE, WY VOR/DME	9400
LARAMIE, WY VOR/DME	*SENSE, WY FIX	11000
*9900 - MCA SENSE, WY FIX , W BND		
SENSE, WY FIX	CHEYENNE, WY VORTAC	8800

95.6119 VOR FEDERAL AIRWAY V119

PARKERSBURG, WV VOR/DME	ANTIO, OH FIX	3000
ANTIO, OH FIX	INDIAN HEAD, PA VORTAC	5000

95.6120 VOR FEDERAL AIRWAY V120

*SEATTLE, WA VORTAC	TAGOR, WA FIX	
	E BND	**8500
	W BND	**5000
*6300 - MCA SEATTLE, WA VORTAC , E BND		
**5000 - MOCA		
TAGOR, WA FIX	CASHS, WA FIX	*12000
*11400 - MOCA		
CASHS, WA FIX	*WENATCHEE, WA VOR/DME	
	E BND	**7500
	W BND	**12000
*8200 - MCA WENATCHEE, WA VOR/DME , W BND		
**6700 - MOCA		
WENATCHEE, WA VOR/DME	EPHRATA, WA VORTAC	5500
EPHRATA, WA VORTAC	WIPES, WA FIX	4000
WIPES, WA FIX	*SPOKANE, WA VORTAC	5000
*5200 - MCA SPOKANE, WA VORTAC , E BND		
SPOKANE, WA VORTAC	KARPS, ID FIX	*9000
*7600 - MOCA		
KARPS, ID FIX	MULLAN PASS, ID VOR/DME	9100
MULLAN PASS, ID VOR/DME	CHARL, MT FIX	*13000
*9600 - MOCA		
CHARL, MT FIX	*SHIMY, MT FIX	**13000
*7000 - MRA		
*7900 - MCA SHIMY, MT FIX , W BND		
**12100 - MOCA		
SHIMY, MT FIX	GREAT FALLS, MT VORTAC	6800
GREAT FALLS, MT VORTAC	LEWISTOWN, MT VOR/DME	8400
LEWISTOWN, MT VOR/DME	ESTRO, MT FIX	7700
ESTRO, MT FIX	MILES CITY, MT VOR/DME	*9000
*7500 - MOCA		
MILES CITY, MT VOR/DME	DUPREE, SD VOR/DME	*10000
*6600 - MOCA		
DUPREE, SD VOR/DME	PIERRE, SD VORTAC	*4300
*3700 - MOCA		
PIERRE, SD VORTAC	MITCHELL, SD VOR/DME	*3900
*3400 - MOCA		
MITCHELL, SD VOR/DME	FRYRE, SD FIX	3700
FRYRE, SD FIX	SIOUX FALLS, SD VORTAC	3700

FROM	TO	MEA

95.6120 VOR FEDERAL AIRWAY V120 - CONTINUED

SIOUX FALLS, SD VORTAC	BILOO, IA FIX	*5000
*3600 - MOCA		
BILOO, IA FIX	*GRUVE, IA FIX	**6800
*8000 - MRA		
**3100 - MOCA		
GRUVE, IA FIX	BANCO, IA FIX	*6800
*3100 - MOCA		
BANCO, IA FIX	MASON CITY, IA VOR/DME	3000
MASON CITY, IA VOR/DME	AREDA, IA FIX	3000
AREDA, IA FIX	*SEATS, IA FIX	3000
*4500 - MRA		
SEATS, IA FIX	WATERLOO, IA VOR/DME	3000

95.6121 VOR FEDERAL AIRWAY V121

FORT JONES, CA VOR/DME	*BAYTS, OR FIX	**10000
*10000 - MRA		
*9000 - MCA BAYTS, OR FIX , S BND		
**9400 - MOCA		
BAYTS, OR FIX	ROGUE VALLEY, OR VORTAC	*8000
*7500 - MOCA		
ROGUE VALLEY, OR VORTAC	MOURN, OR FIX	7000
MOURN, OR FIX	ROSEBURG, OR VOR/DME	
	W BND	6000
	E BND	7000
ROSEBURG, OR VOR/DME	NORTH BEND, OR VOR/DME	6000
NORTH BEND, OR VOR/DME	SCOTY, OR FIX	
	NE BND	5000
	SW BND	4400
SCOTY, OR FIX	*VAUGN, OR FIX	5000
*7000 - MRA		
VAUGN, OR FIX	*EUGENE, OR VORTAC	
	NE BND	4100
	SW BND	5000
*9000 - MCA EUGENE, OR VORTAC , E BND		
EUGENE, OR VORTAC	DOSEE, OR FIX	
	E BND	10000
	W BND	5200
DOSEE, OR FIX	VIDAS, OR FIX	
	E BND	11600
	W BND	6000
VIDAS, OR FIX	WHIFF, OR FIX	*13000
*7500 - MOCA		
*12000 - GNSS MEA		
WHIFF, OR FIX	SNOKY, OR FIX	*13000
*12300 - MOCA		
SNOKY, OR FIX	*DESCHUTES, OR VORTAC	
	E BND	8000
	W BND	13000
*10400 - MCA DESCHUTES, OR VORTAC , W BND		
DESCHUTES, OR VORTAC	JABOT, OR FIX	
	NE BND	9000
	SW BND	7000
JABOT, OR FIX	KIMBERLY, OR VOR/DME	9000
KIMBERLY, OR VOR/DME	*BAKER CITY, OR VOR/DME	12000
*10000 - MCA BAKER CITY, OR VOR/DME , SW BND		
BAKER CITY, OR VOR/DME	DONNELLY, ID VOR/DME	11000
DONNELLY, ID VOR/DME	SALMON, ID VOR/DME	12000
SALMON, ID VOR/DME	NOSEY, MT FIX	12000

95.6121 VOR FEDERAL AIRWAY V121 - CONTINUED

NOSEY, MT FIX	DILLON, MT VOR/DME	
	E BND	*10000
	W BND	*12000
*9100 - MOCA		

95.6122 VOR FEDERAL AIRWAY V122

CRESCENT CITY, CA VORTAC	REFIX, CA FIX	
	SW BND	4000
	NE BND	8000
REFIX, CA FIX	OBRIN, CA FIX	
	NE BND	8000
	SW BND	6000
OBRIN, CA FIX	*PAPLE, OR FIX	8000
*10100 - MRA		
PAPLE, OR FIX	GNATS, OR FIX	8000
GNATS, OR FIX	ROGUE VALLEY, OR VORTAC	
	SW BND	8000
	NE BND	5500
ROGUE VALLEY, OR VORTAC	BRUTE, OR FIX	
	E BND	9000
	W BND	5000
BRUTE, OR FIX	LANKS, OR FIX	
	W BND	*6500
	E BND	*9000
*5800 - MOCA		
LANKS, OR FIX	KLAMATH FALLS, OR VORTAC	*9000
*8500 - MOCA		
KLAMATH FALLS, OR VORTAC	LAKEVIEW, OR VORTAC	9600
LAKEVIEW, OR VORTAC	ROME, OR VOR/DME	12000

95.6123 VOR FEDERAL AIRWAY V123

MITCH, MD FIX	SWANN, MD FIX	*7000
*3000 - GNSS MEA		
SWANN, MD FIX	*TACKS, MD FIX	**7000
*7000 - MCA TACKS, MD FIX , W BND		
**4000 - GNSS MEA		
TACKS, MD FIX	WOODSTOWN, NJ VORTAC	*2000
*1500 - MOCA		
WOODSTOWN, NJ VORTAC	ROBBINSVILLE, NJ VORTAC	*3000
*2000 - MOCA		
ROBBINSVILLE, NJ VORTAC	MINKS, NJ FIX	2000
MINKS, NJ FIX	LA GUARDIA, NY VOR/DME	2900
LA GUARDIA, NY VOR/DME	FAMMA, NY FIX	2000
FAMMA, NY FIX	HAARP, CT FIX	3000
HAARP, CT FIX	*RYMES, CT FIX	**5000
*5000 - MRA		
**2000 - MOCA		
**3000 - GNSS MEA		
RYMES, CT FIX	CARMEL, NY VOR/DME	2500
CARMEL, NY VOR/DME	CASSH, NY FIX	3000
CASSH, NY FIX	*WIGAN, NY FIX	3100
*8000 - MCA WIGAN, NY FIX , N BND		
WIGAN, NY FIX	GROUP, NY FIX	*8000
*3000 - GNSS MEA		
GROUP, NY FIX	*ALBANY, NY VORTAC	**6000
*6000 - MCA ALBANY, NY VORTAC , S BND		
**2800 - GNSS MEA		

FROM	TO	MEA

95.6123 VOR FEDERAL AIRWAY V123 - CONTINUED

ALBANY, NY VORTAC	*CAMBRIDGE, NY VOR/DME	**4000
*4500 - MCA CAMBRIDGE, NY VOR/DME , BND		
**3000 - MOCA		
**ALBANY R-067 UNUSABLE.		

95.6124 VOR FEDERAL AIRWAY V124

BONHAM, TX VORTAC	PARIS, TX VOR/DME	2400
PARIS, TX VOR/DME	DEENS, AR FIX	*4000
*2000 - MOCA		
DEENS, AR FIX	HOT SPRINGS, AR VOR/DME	*5000
*2700 - MOCA		
HOT SPRINGS, AR VOR/DME	LITTLE ROCK, AR VORTAC	3000
LITTLE ROCK, AR VORTAC	TAFTE, AR FIX	*4000
*1700 - MOCA		
TAFTE, AR FIX	*HILLE, AR FIX	**6000
*6000 - MRA		
**1600 - MOCA		
HILLE, AR FIX	GILMORE, AR VOR/DME	*4000
*1700 - MOCA		

95.6126 VOR FEDERAL AIRWAY V126

BEARZ, IN FIX	HALIE, IN FIX	3000
HALIE, IN FIX	INKEN, IN FIX	*4000
*2300 - MOCA		
INKEN, IN FIX	GOSHEN, IN VORTAC	2600
GOSHEN, IN VORTAC	ILTON, IN FIX	*5000
*2400 - MOCA		

95.6128 VOR FEDERAL AIRWAY V128

BRICKYARD, IN VORTAC	DECEE, IN FIX	2600
DECEE, IN FIX	CINCINNATI, KY VORTAC	2800
CINCINNATI, KY VORTAC	CALIF, KY FIX	2600
CALIF, KY FIX	YORK, KY VORTAC	4000
YORK, KY VORTAC	CROUP, OH FIX	*3300
*2300 - MOCA		
CROUP, OH FIX	RULEY, WV FIX	
	NW BND	3600
	SE BND	3300
RULEY, WV FIX	CHARLESTON, WV VOR/DME	3600
CHARLESTON, WV VOR/DME	SWIFT, WV FIX	3400
SWIFT, WV FIX	BITES, WV FIX	
	W BND	5000
	E BND	7000
BITES, WV FIX	VELLI, WV FIX	7000
VELLI, WV FIX	BOIER, WV FIX	*8000
*7100 - MOCA		
*7100 - GNSS MEA		
BOIER, WV FIX	LURAY, VA FIX	*10000
*6900 - MOCA		
*6900 - GNSS MEA		
LURAY, VA FIX	CASANOVA, VA VORTAC	6300

95.6129 VOR FEDERAL AIRWAY V129

SPINNER, IL VORTAC	PEORIA, IL VORTAC	2500
PEORIA, IL VORTAC	GENSO, IL FIX	2600

FROM	TO	MEA

95.6129 VOR FEDERAL AIRWAY V129 - CONTINUED

GENSO, IL FIX	DAVENPORT, IA VORTAC	3000
DAVENPORT, IA VORTAC	DUBUQUE, IA VORTAC	2900
DUBUQUE, IA VORTAC	QUEST, WI FIX	*3100
*2600 - MOCA		
QUEST, WI FIX	NODINE, MN VORTAC	3100
NODINE, MN VORTAC	EAU CLAIRE, WI VORTAC	3000
EAU CLAIRE, WI VORTAC	DULUTH, MN VORTAC	*4000
*3100 - MOCA		
DULUTH, MN VORTAC	HIBBING, MN VOR/DME	3300
HIBBING, MN VOR/DME	INTERNATIONAL FALLS, MN VOR/DME	*3600
*3100 - MOCA		
INTERNATIONAL FALLS, MN VOR/DME	U.S. CANADIAN BORDER	2500

95.6131 VOR FEDERAL AIRWAY V131

OKMULGEE, OK VOR/DME	TULSA, OK VORTAC	3200
TULSA, OK VORTAC	TYROE, KS FIX	3000
TYROE, KS FIX	CHANUTE, KS VOR/DME	2800
CHANUTE, KS VOR/DME	TOPEKA, KS VORTAC	2900

95.6132 VOR FEDERAL AIRWAY V132

MEDICINE BOW, WY VOR/DME	MOIST, WY FIX	9500
MOIST, WY FIX	CHEYENNE, WY VORTAC	9000
CHEYENNE, WY VORTAC	RAYME, CO FIX	8500
RAYME, CO FIX	AKRON, CO VOR/DME	6800
AKRON, CO VOR/DME	GOODLAND, KS VORTAC	6400
GOODLAND, KS VORTAC	ORION, KS FIX	5700
ORION, KS FIX	*RANSO, KS FIX	**10000
*10000 - MRA		
**4200 - MOCA		
RANSO, KS FIX	DISKS, KS FIX	*10000
*4400 - MOCA		
DISKS, KS FIX	*SPELT, KS FIX	**5000
*5000 - MRA		
**3300 - MOCA		
SPELT, KS FIX	HUTCHINSON, KS VOR/DME	3200
HUTCHINSON, KS VOR/DME	WAIVE, KS FIX	4000
WAIVE, KS FIX	*FLOSS, KS FIX	3300
*5000 - MRA		
*5000 - MCA FLOSS, KS FIX , SE BND		
FLOSS, KS FIX	CHANUTE, KS VOR/DME	*5000
*2800 - MOCA		
CHANUTE, KS VOR/DME	NALLY, KS FIX	
	W BND	2800
	E BND	4500
NALLY, KS FIX	SPRINGFIELD, MO VORTAC	*4500
*2800 - MOCA		
*3000 - GNSS MEA		
SPRINGFIELD, MO VORTAC	FORNEY, MO VOR	3100
FORNEY, MO VOR	LENOX, MO FIX	3000

95.6133 VOR FEDERAL AIRWAY V133

LINCO, NC FIX	BARRETTS MOUNTAIN, NC VOR/DME	4000
BARRETTS MOUNTAIN, NC VOR/DME	MULBE, NC FIX	
	S BND	5400
	N BND	7200
MULBE, NC FIX	*STOVE, VA FIX	7200
*11000 - MCA STOVE, VA FIX , N BND		

95.6133 VOR FEDERAL AIRWAY V133 - CONTINUED

STOVE, VA FIX	PINEE, WV FIX	*13000
*7000 - MOCA		
PINEE, WV FIX	*CHARLESTON, WV VOR/DME	
	N BND	**7000
	S BND	**13000
*8500 - MCA CHARLESTON, WV VOR/DME , S BND		
**5600 - MOCA		
**5600 - GNSS MEA		
CHARLESTON, WV VOR/DME	ZANESVILLE, OH VOR/DME	3000
SAGINAW, MI VOR/DME	WHIPP, MI FIX	2400
WHIPP, MI FIX	*LADIN, MI FIX	**5000
*5000 - MRA		
**2800 - MOCA		
LADIN, MI FIX	TRAVERSE CITY, MI VOR/DME	*5000
*2800 - MOCA		
TRAVERSE CITY, MI VOR/DME	ESCANABA, MI VOR/DME	5000
ESCANABA, MI VOR/DME	SAWYER, MI VOR/DME	2800
SAWYER, MI VOR/DME	HOUGHTON, MI VOR/DME	*4500
*3400 - MOCA		
HOUGHTON, MI VOR/DME	U.S. CANADIAN BORDER	*3100
*2500 - MOCA		
U.S. CANADIAN BORDER	INTERNATIONAL FALLS, MN VOR/DME	*3000
*2500 - MOCA		
INTERNATIONAL FALLS, MN VOR/DME	U.S. CANADIAN BORDER	*6500
*2800 - MOCA		

95.6134 VOR FEDERAL AIRWAY V134

*FAIRFIELD, UT VORTAC	**CARBON, UT VOR/DME	***13000
*10800 - MCA FAIRFIELD, UT VORTAC , E BND		
**10200 - MCA CARBON, UT VOR/DME , W BND		
***MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
CARBON, UT VOR/DME	GRAND JUNCTION, CO VOR/DME	11900
GRAND JUNCTION, CO VOR/DME	*PACES, CO FIX	11500
*13000 - MRA		
PACES, CO FIX	*SLOLM, CO FIX	13000
*MTA V134 NE TO V220 NW 12900		
SLOLM, CO FIX	*GLENO, CO FIX	14000
*16000 - MRA		
GLENO, CO FIX	RED TABLE, CO VOR/DME	14000
RED TABLE, CO VOR/DME	HERLS, CO FIX	
	E BND	16000
	W BND	14000
HERLS, CO FIX	*FUNDS, CO FIX	16000
*16500 - MRA		
FUNDS, CO FIX	BREWS, CO FIX	16500
BREWS, CO FIX	*FALCON, CO VORTAC	
	W BND	16500
	E BND	10000
*11600 - MCA FALCON, CO VORTAC , BND		

95.6135 VOR FEDERAL AIRWAY V135

SAYUL, CA FIX	BARD, CA VORTAC	*4000
*2700 - MOCA		
BARD, CA VORTAC	BLYTHE, CA VORTAC	*5000
*3900 - MOCA		
BLYTHE, CA VORTAC	PARKER, CA VORTAC	5400
PARKER, CA VORTAC	NEEDLES, CA VORTAC	6000

95.6135 VOR FEDERAL AIRWAY V135 - CONTINUED

NEEDLES, CA VORTAC	*GOFFS, CA VORTAC	**8000
*9600 - MCA GOFFS, CA VORTAC , NW BND		
**7100 - MOCA		
GOFFS, CA VORTAC	*WHIGG, CA FIX	**12000
*12000 - MRA		
**10000 - MOCA		
WHIGG, CA FIX	CLARR, CA FIX	*12000
*10500 - MOCA		
CLARR, CA FIX	*HIDEN, CA FIX	**12000
*14000 - MRA		
**9100 - MOCA		
HIDEN, CA FIX	BEATTY, NV VORTAC	*12000
*8600 - MOCA		
BEATTY, NV VORTAC	TEZUM, NV FIX	*11000
*9600 - MOCA		
TEZUM, NV FIX	TONOPAH, NV VORTAC	11000

95.6136 VOR FEDERAL AIRWAY V136

HINCH MOUNTAIN, TN VOR/DME	SWELL, TN FIX	5000
SWELL, TN FIX	*VOLUNTEER, TN VORTAC	3000
*5000 - MCA VOLUNTEER, TN VORTAC , E BND		
VOLUNTEER, TN VORTAC	AUBRY, TN FIX	
	W BND	5000
	E BND	6000
AUBRY, TN FIX	*PITTE, TN FIX	6000
*8000 - MCA PITTE, TN FIX , E BND		
PITTE, TN FIX	SNOWBIRD, TN VORTAC	8000
SNOWBIRD, TN VORTAC	AFTEN, TN FIX	7000
AFTEN, TN FIX	HOLSTON MOUNTAIN, TN VORTAC	6000
HOLSTON MOUNTAIN, TN VORTAC	DAMAS, TN FIX	6000
DAMAS, TN FIX	*STOVE, VA FIX	7500
*7500 - MCA STOVE, VA FIX , SW BND		
STOVE, VA FIX	SPEEL, VA FIX	6000
SPEEL, VA FIX	PULASKI, VA VORTAC	5400
PULASKI, VA VORTAC	PIGGS, VA FIX	5500
PIGGS, VA FIX	DUNCE, VA FIX	3500
DUNCE, VA FIX	SOUTH BOSTON, VA VORTAC	2800
SOUTH BOSTON, VA VORTAC	*ALDAN, NC FIX	2600
*3000 - MRA		
ALDAN, NC FIX	RALEIGH/DURHAM, NC VORTAC	2600
RALEIGH/DURHAM, NC VORTAC	LANHO, NC FIX	3100
LANHO, NC FIX	FAYETTEVILLE, NC VOR/DME	2100
FAYETTEVILLE, NC VOR/DME	GRAND STRAND, SC VORTAC	*3000
*2200 - MOCA		
*V136 WITHIN GAMECOCK A MOA 7000 AND ABOVE FROM 17-38 NM S OF FAY VOR DOES NOT EXIST WHEN MOA IS ACTIVATED		

95.6137 VOR FEDERAL AIRWAY V137

NOVOS, CA FIX	IMPERIAL, CA VORTAC	*3000
*1900 - MOCA		
IMPERIAL, CA VORTAC	*BRAWL, CA FIX	**3700
*4500 - MRA		
**2300 - MOCA		
BRAWL, CA FIX	HENOM, CA FIX	3700
HENOM, CA FIX	THERMAL, CA VORTAC	3900
THERMAL, CA VORTAC	*PALM SPRINGS, CA VORTAC	4000
*11200 - MCA PALM SPRINGS, CA VORTAC , NW BND		

95.6137 VOR FEDERAL AIRWAY V137 - CONTINUED

PALM SPRINGS, CA VORTAC	*WHETO, CA FIX	
	NW BND	**12000
	SE BND	**7000
*12400 - MCA WHETO, CA FIX , NW BND		
**6000 - MOCA		
WHETO, CA FIX	MORON, CA FIX	
	SE BND	12000
	NW BND	13500
MORON, CA FIX	*ARRAN, CA FIX	13500
*12000 - MCA ARRAN, CA FIX , E BND		
ARRAN, CA FIX	*PALMDALE, CA VORTAC	10700
*7000 - MCA PALMDALE, CA VORTAC , E BND		
PALMDALE, CA VORTAC	VICKY, CA FIX	*8000
*5800 - MOCA		
VICKY, CA FIX	JEFFY, CA FIX	
	E BND	8000
	W BND	9000
JEFFY, CA FIX	GORMAN, CA VORTAC	
	E BND	8000
	W BND	10100
GORMAN, CA VORTAC	*TAFTO, CA FIX	10000
*9000 - MCA TAFTO, CA FIX , SE BND		
TAFTO, CA FIX	AVENAL, CA VOR/DME	
	SE BND	5500
	NW BND	4500

95.6138 VOR FEDERAL AIRWAY V138

RIVERTON, WY VOR/DME	HUNTZ, WY FIX	9000
HUNTZ, WY FIX	MEDICINE BOW, WY VOR/DME	11200
MEDICINE BOW, WY VOR/DME	MILKY, WY FIX	10600
MILKY, WY FIX	CHEYENNE, WY VORTAC	9200
CHEYENNE, WY VORTAC	PIETY, WY FIX	8000
PIETY, WY FIX	SIDNEY, NE VOR/DME	*7600
*7000 - MOCA		
GRAND ISLAND, NE VOR/DME	BRADY, NE FIX	3600
BRADY, NE FIX	GAMBL, NE FIX	4100
GAMBL, NE FIX	LINCOLN, NE VORTAC	3300
LINCOLN, NE VORTAC	OMAHA, IA VORTAC	4000

95.6139 VOR FEDERAL AIRWAY V139

FLORENCE, SC VORTAC	MOKKA, NC FIX	2000
MOKKA, NC FIX	WILMINGTON, NC VORTAC	*8000
*2100 - MOCA		
*2100 - GNSS MEA		
*WILMINGTON R-273 UNUSABLE. USE FLORENCE R-088		
WILMINGTON, NC VORTAC	NEW BERN, NC VOR/DME	*6000
*1800 - MOCA		
*2000 - GNSS MEA		
*WILMINGTON R-050 UNUSABLE. USE NEW BERN R-232		
NEW BERN, NC VOR/DME	PEARS, NC FIX	
	S BND	*4000
	N BND	*6000
*1800 - MOCA		
*2000 - GNSS MEA		
PEARS, NC FIX	SUNNS, NC FIX	*6000
*2100 - MOCA		
*2100 - GNSS MEA		

95.6139 VOR FEDERAL AIRWAY V139 - CONTINUED

SUNNS, NC FIX	NORFOLK, VA VORTAC	
	NE BND	*2500
	SW BND	*4800
*1600 - MOCA		
*2000 - GNSS MEA		
NORFOLK, VA VORTAC	CAPE CHARLES, VA VORTAC	*2500
*1800 - MOCA		
CAPE CHARLES, VA VORTAC	DUNFE, VA FIX	
	NE BND	*4000
	SW BND	*2000
*1600 - MOCA		
DUNFE, VA FIX	SNOW HILL, MD VORTAC	*4000
*1600 - MOCA		
SNOW HILL, MD VORTAC	CBEAV, MD FIX	2000
CBEAV, MD FIX	SEA ISLE, NJ VORTAC	*2500
*1700 - MOCA		
SEA ISLE, NJ VORTAC	AVALO, NJ FIX	*4500
*4000 - GNSS MEA		
AVALO, NJ FIX	HARBO, NJ FIX	*6000
*4000 - GNSS MEA		
HARBO, NJ FIX	*DRIFT, NJ FIX	**7500
*6000 - MRA		
**3000 - GNSS MEA		
DRIFT, NJ FIX	MANTA, NJ FIX	*12000
*3000 - GNSS MEA		
MANTA, NJ FIX	PLUME, NJ FIX	*7000
*2000 - MOCA		
*3000 - GNSS MEA		
PLUME, NJ FIX	*KOPPY, NY FIX	**4000
*5000 - MRA		
**3000 - MOCA		
**3000 - GNSS MEA		
KOPPY, NY FIX	BEADS, NY FIX	*4000
*3000 - MOCA		
*3000 - GNSS MEA		
BEADS, NY FIX	HAMPTON, NY VORTAC	*2500
*1600 - MOCA		
HAMPTON, NY VORTAC	TRAIT, RI FIX	UNUSABLE
TRAIT, RI FIX	PROVIDENCE, RI VOR/DME	*3000
*2100 - MOCA		
PROVIDENCE, RI VOR/DME	INNDY, MA FIX	*3000
*2000 - GNSS MEA		
INNDY, MA FIX	*TONNI, MA FIX	6000
*6000 - MRA		
TONNI, MA FIX	SEEDY, NH FIX	*5000
*4000 - GNSS MEA		
SEEDY, NH FIX	KENNEBUNK, ME VOR/DME	*5000
*2000 - MOCA		
*2500 - GNSS MEA		

95.6140 VOR FEDERAL AIRWAY V140

PANHANDLE, TX VORTAC	BURNS FLAT, OK VORTAC	5300
TULSA, OK VORTAC	PRYOR, OK FIX	*3400
*2300 - MOCA		
PRYOR, OK FIX	RAZORBACK, AR VORTAC	*3400
*2900 - MOCA		
RAZORBACK, AR VORTAC	SPRAY, AR FIX	*4000
*2900 - MOCA		

95.6140 VOR FEDERAL AIRWAY V140 - CONTINUED

SPRAY, AR FIX	HARRISON, AR VOR/DME	*4000
*3500 - MOCA		
HARRISON, AR VOR/DME	VILLO, AR FIX	3000
VILLO, AR FIX	WALNUT RIDGE, AR VORTAC	
	W BND	3000
	E BND	2500
NASHVILLE, TN VORTAC	HARME, TN FIX	
	W BND	*3000
	E BND	*6000
*2400 - MOCA		
HARME, TN FIX	LIVINGSTON, TN VOR/DME	*6000
*2900 - MOCA		
LIVINGSTON, TN VOR/DME	LONDON, KY VOR/DME	3900
BLUEFIELD, WV VOR/DME	SOFTY, WV FIX	*7000
*5600 - MOCA		
SOFTY, WV FIX	CASTE, VA FIX	6300
CASTE, VA FIX	MONTEBELLO, VA VOR/DME	6000
MONTEBELLO, VA VOR/DME	HOODE, VA FIX	6100
HOODE, VA FIX	CASANOVA, VA VORTAC	3200

95.6141 VOR FEDERAL AIRWAY V141

NANTUCKET, MA VOR/DME	GAILS, MA FIX	1700
GAILS, MA FIX	*CELTS, MA FIX	**3000
*2500 - MRA		
**2000 - MOCA		
CELTS, MA FIX	BOSTON, MA VOR/DME	2000

95.6142 VOR FEDERAL AIRWAY V142

*TWIN FALLS, ID VORTAC	MURTH, ID FIX	
	E BND	13000
	W BND	7800
*12000 - MCA TWIN FALLS, ID VORTAC , E BND		
MURTH, ID FIX	OCLEY, ID FIX	
	E BND	15000
	W BND	9500
OCLEY, ID FIX	*SHEAR, UT FIX	**16500
*16500 - MCA SHEAR, UT FIX , W BND		
**12400 - MOCA		
SHEAR, UT FIX	*MALAD CITY, ID VOR/DME	
	SW BND	11000
	NE BND	10000
*13500 - MCA MALAD CITY, ID VOR/DME , SW BND		
MALAD CITY, ID VOR/DME	*ORNEY, UT FIX	10400
*11200 - MCA ORNEY, UT FIX , E BND		
ORNEY, UT FIX	FORT BRIDGER, WY VOR/DME	12200
FORT BRIDGER, WY VOR/DME	ROCK SPRINGS, WY VOR/DME	10000

95.6143 VOR FEDERAL AIRWAY V143

GIZMO, NC FIX	GREENSBORO, NC VORTAC	3000
GREENSBORO, NC VORTAC	LEAKS, NC FIX	3000
LEAKS, NC FIX	LYNCHBURG, VA VOR/DME	3000
LYNCHBURG, VA VOR/DME	ELLON, VA FIX	
	N BND	5700
	S BND	3200
ELLON, VA FIX	*CLYFF, VA FIX	5700
*6300 - MCA CLYFF, VA FIX , N BND		

95.6143 VOR FEDERAL AIRWAY V143 - CONTINUED

CLYFF, VA FIX	MONTEBELLO, VA VOR/DME	6400
MONTEBELLO, VA VOR/DME	LURAY, VA FIX	6000
LURAY, VA FIX	*KERRE, VA FIX	**6000
*7000 - MRA		
**5000 - MOCA		
KERRE, VA FIX	MARTINSBURG, WV VORTAC	*6000
*5000 - MOCA		
MARTINSBURG, WV VORTAC	HYPER, MD FIX	*5000
*3900 - MOCA		
HYPER, MD FIX	BINNS, PA FIX	*9000
*2600 - MOCA		
*4000 - GNSS MEA		
BINNS, PA FIX	DELRO, PA FIX	*9000
*4500 - GNSS MEA		
DELRO, PA FIX	LANCASTER, PA VOR/DME	3000
LANCASTER, PA VOR/DME	POTTSTOWN, PA VORTAC	4500
POTTSTOWN, PA VORTAC	YARDLEY, PA VOR/DME	*6900
*4000 - GNSS MEA		

95.6144 VOR FEDERAL AIRWAY V144

FORT WAYNE, IN VORTAC	BUZZI, OH FIX	*6000
*3000 - MOCA		
BUZZI, OH FIX	APPLETON, OH VORTAC	*4000
*2600 - MOCA		
APPLETON, OH VORTAC	ZANESVILLE, OH VOR/DME	3000
ZANESVILLE, OH VOR/DME	BEALL, OH FIX	3000
BEALL, OH FIX	*MORGANTOWN, WV VOR/DME	4000
*4600 - MCA MORGANTOWN, WV VOR/DME , SE BND		
MORGANTOWN, WV VOR/DME	KESSEL, WV VOR/DME	5700
KESSEL, WV VOR/DME	LINDEN, VA VORTAC	5500

95.6146 VOR FEDERAL AIRWAY V146

ALBANY, NY VORTAC	CHESTER, MA VOR/DME	4100
CHESTER, MA VOR/DME	BARNES, MA VORTAC	*4000
*3200 - MOCA		
BARNES, MA VORTAC	PUTNAM, CT VOR/DME	*3000
*2500 - MOCA		
PUTNAM, CT VOR/DME	PROVIDENCE, RI VOR/DME	*3000
*2100 - MOCA		
PROVIDENCE, RI VOR/DME	MARTHAS VINEYARD, MA VOR/DME	2100
MARTHAS VINEYARD, MA VOR/DME	NANTUCKET, MA VOR/DME	2000

95.6147 VOR FEDERAL AIRWAY V147

YARDLEY, PA VOR/DME	*SPUDS, PA FIX	5000
*6000 - MRA		
SPUDS, PA FIX	EAST TEXAS, PA VOR/DME	*4100
*2500 - MOCA		
EAST TEXAS, PA VOR/DME	SLATT, PA FIX	4000
SLATT, PA FIX	*WILKES-BARRE, PA VORTAC	4000
*4400 - MCA WILKES-BARRE, PA VORTAC , NW BND		
WILKES-BARRE, PA VORTAC	ELMIRA, NY VOR/DME	4000
ELMIRA, NY VOR/DME	GENESEO, NY VOR/DME	4000
GENESEO, NY VOR/DME	ROCHESTER, NY VOR/DME	2800

95.6148 VOR FEDERAL AIRWAY V148

FALCON, CO VORTAC	*LIMEX, CO FIX	8500
*10000 - MRA		

95.6148 VOR FEDERAL AIRWAY V148 - CONTINUED

LIMEX, CO FIX	THURMAN, CO VORTAC	7500
THURMAN, CO VORTAC	MCJEF, NE FIX	*7000
*6500 - MOCA		
MCJEF, NE FIX	HAYES CENTER, NE VORTAC	*7000
*5600 - MOCA		
HAYES CENTER, NE VORTAC	NORTH PLATTE, NE VOR/DME	*4900
*4500 - MOCA		
NORTH PLATTE, NE VOR/DME	O'NEILL, NE VORTAC	*5400
*4400 - MOCA		
O'NEILL, NE VORTAC	TYNDA, SD FIX	*4000
*3500 - MOCA		
TYNDA, SD FIX	DOLTS, SD FIX	*4000
*3200 - MOCA		
DOLTS, SD FIX	SIOUX FALLS, SD VORTAC	3400
SIOUX FALLS, SD VORTAC	REDWOOD FALLS, MN VOR/DME	3700
REDWOOD FALLS, MN VOR/DME	MAYER, MN FIX	2800
MAYER, MN FIX	GOPHER, MN VORTAC	3000
IRONWOOD, MI VOR/DME	HOUGHTON, MI VOR/DME	*3700
*3200 - MOCA		

95.6150 VOR FEDERAL AIRWAY V150

SAN FRANCISCO, CA VOR/DME	SUTRO, CA FIX	3500
SUTRO, CA FIX	GOBBS, CA FIX	3000
GOBBS, CA FIX	SAUSALITO, CA VOR/DME	4000
SAUSALITO, CA VOR/DME	COMMO, CA FIX	4000
COMMO, CA FIX	REBAS, CA FIX	
	SW BND	4000
	NE BND	3000
REBAS, CA FIX	EMBER, CA FIX	3000
EMBER, CA FIX	SACRAMENTO, CA VORTAC	
	NE BND	2000
	SW BND	3000

95.6152 VOR FEDERAL AIRWAY V152

ST PETERSBURG, FL VORTAC	JENSN, FL FIX	*4000
*2500 - MOCA		
*2500 - GNSS MEA		
JENSN, FL FIX	KIZER, FL FIX	*GNSS - 2800
*ORMOND BEACH R-211 UNUSABLE BYD 26NM		
KIZER, FL FIX	ORMOND BEACH, FL VORTAC	
	NE BND	*3600
	SW BND	*5000
*2800 - MOCA		

95.6154 VOR FEDERAL AIRWAY V154

ROME, GA VORTAC	*TIROE, GA FIX	4000
		MAA - 7000
*4000 - MRA		
DUBLIN, GA VORTAC	OCONE, GA FIX	UNUSABLE
OCONE, GA FIX	*LOTTS, GA FIX	UNUSABLE
*11000 - MRA		
LOTTS, GA FIX	SAVANNAH, GA VORTAC	*3000
*1800 - MOCA		

95.6155 VOR FEDERAL AIRWAY V155

COLUMBUS, GA VORTAC	SINCA, GA FIX	*4500
*2500 - MOCA		

FROM	TO	MEA

95.6155 VOR FEDERAL AIRWAY V155 - CONTINUED

SINCA, GA FIX	BEYLO, GA FIX	*5000
*2400 - MOCA		
*2400 - GNSS MEA		
BEYLO, GA FIX	COLLIERS, SC VORTAC	*3000
*2100 - MOCA		
COLLIERS, SC VORTAC	*WIDER, SC FIX	2500
*4000 - MRA		
WIDER, SC FIX	*BLOTS, SC FIX	2500
*4000 - MRA		
BLOTS, SC FIX	CHESTERFIELD, SC VOR/DME	2300
CHESTERFIELD, SC VOR/DME	LILLS, NC FIX	2300
LILLS, NC FIX	SANDHILLS, NC VORTAC	*8000
*2000 - MOCA		
*2400 - GNSS MEA		
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	2500
RALEIGH/DURHAM, NC VORTAC	WIPER, NC FIX	2300
WIPER, NC FIX	LAWRENCEVILLE, VA VORTAC	*8000
*2000 - MOCA		
*2300 - GNSS MEA		
*LAWRENCEVILLE R-225 UNUSABLE, USE RALEIGH/DURHAM R-046		
LAWRENCEVILLE, VA VORTAC	*MANGE, VA FIX	**4000
*5000 - MRA		
**2000 - GNSS MEA		
**LAWRENCEVILLE R-042 UNUSABLE, USE RICHMOND R-223		
MANGE, VA FIX	FLAT ROCK, VA VORTAC	*5000
*1800 - MOCA		
*2000 - GNSS MEA		
FLAT ROCK, VA VORTAC	FALKO, VA FIX	2000
FALKO, VA FIX	BROOKE, VA VORTAC	*6000
*1700 - MOCA		
*2000 - GNSS MEA		

95.6156 VOR FEDERAL AIRWAY V156

CEDAR RAPIDS, IA VOR/DME	MOSCO, IA FIX	3200
MOSCO, IA FIX	MOLINE, IL VOR/DME	2600
MOLINE, IL VOR/DME	BRADFORD, IL VORTAC	2800
BRADFORD, IL VORTAC	PEOTONE, IL VORTAC	2700
PEOTONE, IL VORTAC	LUCIT, IN FIX	2500
LUCIT, IN FIX	MAPPS, IN FIX	*4000
*2400 - MOCA		
MAPPS, IN FIX	KNOX, IN VOR/DME	*3000
*2200 - MOCA		
KNOX, IN VOR/DME	GIPPER, MI VORTAC	2600
GIPPER, MI VORTAC	KALAMAZOO, MI VOR/DME	3000

95.6157 VOR FEDERAL AIRWAY V157

KEY WEST, FL VORTAC	DVALL, FL FIX	*5000
*1400 - MOCA		
*3000 - GNSS MEA		
DVALL, FL FIX	*FAMIN, FL FIX	**5000
*5700 - MRA		
**1300 - MOCA		
**3000 - GNSS MEA		
FAMIN, FL FIX	DOLPHIN, FL VORTAC	*5000
*1600 - MOCA		
*3000 - GNSS MEA		
DOLPHIN, FL VORTAC	THNDR, FL FIX	*3000
*1500 - MOCA		

95.6157 VOR FEDERAL AIRWAY V157 - CONTINUED

THNDR, FL FIX	LA BELLE, FL VORTAC	*3000
*1600 - MOCA		
LA BELLE, FL VORTAC	RINSE, FL FIX	*2000
*1500 - MOCA		
RINSE, FL FIX	LAKELAND, FL VORTAC	2300
LAKELAND, FL VORTAC	OCALA, FL VORTAC	2000
OCALA, FL VORTAC	TAYLOR, FL VORTAC	2000
TAYLOR, FL VORTAC	WAYCROSS, GA VORTAC	2300
WAYCROSS, GA VORTAC	ALMA, GA VORTAC	*2000
*ALMA R-189 UNUSABLE USE WAYCROSS R-009.		
ALMA, GA VORTAC	*LOTTS, GA FIX	**10000
*11000 - MRA		
*11000 - MCA LOTTS, GA FIX , NE BND		
**2000 - GNSS MEA		
LOTTS, GA FIX	ALLENDALE, SC VOR	*11000
*1800 - MOCA		
*2000 - GNSS MEA		
ALLENDALE, SC VOR	*VANCE, SC VORTAC	**6000
*13000 - MCA VANCE, SC VORTAC , NE BND		
**2000 - GNSS MEA		
VANCE, SC VORTAC	*FLORENCE, SC VORTAC	**13000
*12000 - MCA FLORENCE, SC VORTAC , SW BND		
**2000 - GNSS MEA		
**VANCE R-047 UNUSABLE, USE FLORENCE R-224.		
FLORENCE, SC VORTAC	FAYETTEVILLE, NC VOR/DME	2300
FAYETTEVILLE, NC VOR/DME	KINSTON, NC VORTAC	*2000
*1900 - MOCA		
KINSTON, NC VORTAC	TAR RIVER, NC VORTAC	2200
TAR RIVER, NC VORTAC	LAWRENCEVILLE, VA VORTAC	*4500
*2500 - MOCA		
*LAWRENCEVILLE R-177 UNUSABLE BELOW 6000, USE TAR RIVER R-354.		
LAWRENCEVILLE, VA VORTAC	DALTO, VA FIX	*4000
*2000 - GNSS MEA		
*LAWRENCEVILLE R-042 UNUSABLE.		
DALTO, VA FIX	RICHMOND, VA VORTAC	2000
RICHMOND, VA VORTAC	*TAPPA, VA FIX	2000
*5000 - MCA TAPPA, VA FIX , NE BND		
TAPPA, VA FIX	PATUXENT, MD VORTAC	*5000
*1500 - MOCA		
*2000 - GNSS MEA		
PATUXENT, MD VORTAC	*GARED, MD FIX	**4500
*8000 - MRA		
**1500 - MOCA		
**4000 - GNSS MEA		
GARED, MD FIX	CHOPS, MD FIX	*4500
*1500 - MOCA		
*4000 - GNSS MEA		
CHOPS, MD FIX	SMYRNA, DE VORTAC	*2000
*1500 - MOCA		
SMYRNA, DE VORTAC	WOODSTOWN, NJ VORTAC	*1900
*1500 - MOCA		
WOODSTOWN, NJ VORTAC	ROBBINSVILLE, NJ VORTAC	*3000
*2000 - MOCA		
ROBBINSVILLE, NJ VORTAC	MINKS, NJ FIX	2000
MINKS, NJ FIX	LA GUARDIA, NY VOR/DME	2900
LA GUARDIA, NY VOR/DME	FAMMA, NY FIX	2000
FAMMA, NY FIX	HAARP, CT FIX	3000
HAARP, CT FIX	KINGSTON, NY VOR/DME	*7000
*2800 - MOCA		
*4000 - GNSS MEA		

FROM	TO	MEA

95.6157 VOR FEDERAL AIRWAY V157 - CONTINUED

KINGSTON, NY VOR/DME	*WIGAN, NY FIX	3100
*8000 - MCA WIGAN, NY FIX , N BND		
WIGAN, NY FIX	GROUP, NY FIX	*8000
*3000 - GNSS MEA		
GROUP, NY FIX	*ALBANY, NY VORTAC	**6000
*6000 - MCA ALBANY, NY VORTAC , BND		
**2800 - GNSS MEA		

95.6158 VOR FEDERAL AIRWAY V158

MASON CITY, IA VOR/DME	POUND, IA FIX	3000
POUND, IA FIX	DUBUQUE, IA VORTAC	*6000
*3100 - MOCA		
DUBUQUE, IA VORTAC	POLO, IL VOR/DME	2800
POLO, IL VOR/DME	SHOOF, IL FIX	2700

95.6159 VOR FEDERAL AIRWAY V159

VIRGINIA KEY, FL VOR/DME	*NITNY, FL FIX	2100
*3000 - MCA NITNY, FL FIX , N BND		
NITNY, FL FIX	JUPEM, FL FIX	3000
JUPEM, FL FIX	TREASURE, FL VORTAC	2600
TREASURE, FL VORTAC	*PRESK, FL FIX	3000
*2500 - MRA		
PRESK, FL FIX	ORLANDO, FL VORTAC	2000
ORLANDO, FL VORTAC	*SHIMM, FL FIX	2000
*3000 - MRA		
SHIMM, FL FIX	OCALA, FL VORTAC	2000
OCALA, FL VORTAC	*PERSE, FL FIX	2000
*3000 - MRA		
PERSE, FL FIX	*WILON, FL FIX	2000
*3000 - MRA		
WILON, FL FIX	CROSS CITY, FL VORTAC	2000
CROSS CITY, FL VORTAC	GREENVILLE, FL VORTAC	2000
GREENVILLE, FL VORTAC	*SALER, GA FIX	UNUSABLE
*3000 - MRA		
SALER, GA FIX	PECAN, GA VOR/DME	*2000
*1700 - MOCA		
PECAN, GA VOR/DME	*SHANY, GA FIX	2200
*4000 - MRA		
SHANY, GA FIX	EUFAULA, AL VORTAC	2200
EUFAULA, AL VORTAC	TUSKEGEE, AL VOR/DME	2000
TUSKEGEE, AL VOR/DME	KENTT, AL FIX	*2600
*1900 - MOCA		
KENTT, AL FIX	KYLEE, AL FIX	3800
KYLEE, AL FIX	VULCAN, AL VORTAC	3800
HOLLY SPRINGS, MS VORTAC	GILMORE, AR VOR/DME	2500
GILMORE, AR VOR/DME	WALNUT RIDGE, AR VORTAC	2800
WALNUT RIDGE, AR VORTAC	DOGWOOD, MO VORTAC	*3400
*3000 - MOCA		
DOGWOOD, MO VORTAC	SPRINGFIELD, MO VORTAC	4300
SPRINGFIELD, MO VORTAC	TRALE, MO FIX	3000
TRALE, MO FIX	HODEN, MO FIX	*4000
*2400 - MOCA		
HODEN, MO FIX	NAPOLEON, MO VORTAC	3000
NAPOLEON, MO VORTAC	ST JOSEPH, MO VORTAC	2900
ST JOSEPH, MO VORTAC	VIKKI, IA FIX	3000
VIKKI, IA FIX	OMAHA, IA VORTAC	3400

95.6160 VOR FEDERAL AIRWAY V160

*BLUE MESA, CO VOR/DME	MURFE, CO FIX	16400
*13100 - MCA BLUE MESA, CO VOR/DME , NE BND		

FROM	TO	MEA

95.6160 VOR FEDERAL AIRWAY V160 - CONTINUED

MURFE, CO FIX	*LARKS, CO FIX	**15000
*15600 - MRA		
**14400 - MOCA		
LARKS, CO FIX	*SIGNE, CO FIX	**14400
*11500 - MCA SIGNE, CO FIX , SW BND		
**13800 - MOCA		
SIGNE, CO FIX	FALCON, CO VORTAC	8800
FALCON, CO VORTAC	WITNE, CO FIX	8000
WITNE, CO FIX	SAYGE, CO FIX	*8000
*7200 - MOCA		
SAYGE, CO FIX	TUMBL, CO FIX	*8000
*6800 - MOCA		
TUMBL, CO FIX	SIDNEY, NE VOR/DME	*8000
*6800 - MOCA		

95.6161 VOR FEDERAL AIRWAY V161

THREE RIVERS, TX VORTAC	LEMIG, TX FIX	2000
LEMIG, TX FIX	CENTER POINT, TX VORTAC	4100
CENTER POINT, TX VORTAC	LLANO, TX VORTAC	4000
LLANO, TX VORTAC	BUILT, TX FIX	*6000
*3400 - MOCA		
BUILT, TX FIX	*DUFFA, TX FIX	**6000
*6000 - MRA		
**2900 - MOCA		
DUFFA, TX FIX	MILLSAP, TX VORTAC	3000
MILLSAP, TX VORTAC	BOWIE, TX VORTAC	3000
BOWIE, TX VORTAC	ARDMORE, OK VORTAC	3000
ARDMORE, OK VORTAC	OKMULGEE, OK VOR/DME	3000
OKMULGEE, OK VOR/DME	TULSA, OK VORTAC	3200
BUTLER, MO VORTAC	NAPOLEON, MO VORTAC	2900
NAPOLEON, MO VORTAC	LAMONI, IA VOR/DME	2900
LAMONI, IA VOR/DME	*WIVEY, IA FIX	3000
*4300 - MRA		
WIVEY, IA FIX	DES MOINES, IA VORTAC	3000
DES MOINES, IA VORTAC	*ANKEN, IA FIX	2700
*3500 - MCA ANKEN, IA FIX , N BND		
ANKEN, IA FIX	NEVAD, IA FIX	4000
NEVAD, IA FIX	ALOCK, IA FIX	*3300
*2800 - MOCA		
ALOCK, IA FIX	MASON CITY, IA VOR/DME	3000
MASON CITY, IA VOR/DME	ROCHESTER, MN VOR/DME	3000
ROCHESTER, MN VOR/DME	FARMINGTON, MN VORTAC	3000
FARMINGTON, MN VORTAC	GOPHER, MN VORTAC	*3500
*2800 - MOCA		
INTERNATIONAL FALLS, MN VOR/DME	U.S. CANADIAN BORDER	3000
U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*11000
*2400 - MOCA		

95.6162 VOR FEDERAL AIRWAY V162

HARRISBURG, PA VORTAC	BOBSS, PA FIX	UNUSABLE
BOBSS, PA FIX	EAST TEXAS, PA VOR/DME	3000
EAST TEXAS, PA VOR/DME	ALLENTOWN, PA VORTAC	*3000
*ALLENTOWN R-240 UNUSABLE BELOW 9000 USE EAST TEXAS R-059		
ALLENTOWN, PA VORTAC	HUGUENOT, NY VOR/DME	3500

95.6163 VOR FEDERAL AIRWAY V163

U.S. MEXICAN BORDER	BROWNSVILLE, TX VORTAC	*2000
*1400 - MOCA		

FROM	TO	MEA

95.6163 VOR FEDERAL AIRWAY V163 - CONTINUED

BROWNSVILLE, TX VORTAC	RELAX, TX FIX	1800
RELAX, TX FIX	MANNY, TX FIX	*5000
*1800 - MOCA		
*1800 - GNSS MEA		
MANNY, TX FIX	ASCOT, TX FIX	*5000
*1500 - MOCA		
ASCOT, TX FIX	SOLON, TX FIX	
	N BND	*4000
	S BND	*5000
*1600 - MOCA		
SOLON, TX FIX	CORPUS CHRISTI, TX VORTAC	1800
CORPUS CHRISTI, TX VORTAC	SINTO, TX FIX	1800
SINTO, TX FIX	THREE RIVERS, TX VORTAC	2000
THREE RIVERS, TX VORTAC	YENNS, TX FIX	
	S BND	2000
	N BND	3000
YENNS, TX FIX	SAN ANTONIO, TX VORTAC	*3000
*2500 - MOCA		
SAN ANTONIO, TX VORTAC	SLIMM, TX FIX	*3500
*2900 - MOCA		
SLIMM, TX FIX	GOOCH SPRINGS, TX VORTAC	*3500
*3000 - MOCA		

95.6164 VOR FEDERAL AIRWAY V164

STONYFORK, PA VOR/DME	WILLIAMSPORT, PA VOR/DME	4000
WILLIAMSPORT, PA VOR/DME	DIANO, PA FIX	4000
DIANO, PA FIX	EAST TEXAS, PA VOR/DME	*4000
*3500 - MOCA		

95.6165 VOR FEDERAL AIRWAY V165

MISSION BAY, CA VORTAC	SARGS, CA FIX	3000
SARGS, CA FIX	OCEANSIDE, CA VORTAC	2500
OCEANSIDE, CA VORTAC	BALBO, CA FIX	4000
BALBO, CA FIX	SEAL BEACH, CA VORTAC	
	NW BND	3000
	SE BND	4000
SEAL BEACH, CA VORTAC	LOS ANGELES, CA VORTAC	2500
LOS ANGELES, CA VORTAC	*VALEY, CA FIX	4000
*5600 - MCA VALEY, CA FIX , N BND		
VALEY, CA FIX	*SAUGS, CA FIX	6200
*6700 - MCA SAUGS, CA FIX , NW BND		
SAUGS, CA FIX	LAKE HUGHES, CA VORTAC	8000
LAKE HUGHES, CA VORTAC	JEFFY, CA FIX	8000
JEFFY, CA FIX	*LOPES, CA FIX	9000
*8600 - MCA LOPES, CA FIX , S BND		
LOPES, CA FIX	*ARVIN, CA FIX	8500
*7300 - MCA ARVIN, CA FIX , SE BND		
ARVIN, CA FIX	SHAFTER, CA VORTAC	3000
SHAFTER, CA VORTAC	TULE, CA VOR/DME	3000
TULE, CA VOR/DME	EXTRA, CA FIX	3500
MARRI, CA FIX	*MUSTANG, NV VORTAC	**13000
*10000 - MCA MUSTANG, NV VORTAC , S BND		
**11000 - MOCA		
MUSTANG, NV VORTAC	PYRAM, NV FIX	*11000
*9700 - MOCA		
*10000 - GNSS MEA		
PYRAM, NV FIX	BINNZ, NV FIX	
	NW BND	*14000
	SE BND	*12000
*11000 - MOCA		
*11000 - GNSS MEA		

95.6165 VOR FEDERAL AIRWAY V165 - CONTINUED

BINNZ, NV FIX	CHOIR, CA FIX	*14000
*12200 - MOCA		
CHOIR, CA FIX	LAKEVIEW, OR VORTAC	
	SE BND	*14000
	NW BND	*11000
*10500 - MOCA		
LAKEVIEW, OR VORTAC	URBIA, OR FIX	9500
URBIA, OR FIX	*DESCHUTES, OR VORTAC	
	SE BND	9500
	NW BND	7000
*9300 - MCA DESCHUTES, OR VORTAC , NW BND		
DESCHUTES, OR VORTAC	BOTTL, OR FIX	
	NW BND	12500
	SE BND	7000
BOTTL, OR FIX	WALDO, OR FIX	12500
WALDO, OR FIX	ELKES, OR FIX	
	NW BND	7800
	SE BND	12500
ELKES, OR FIX	*MAVER, OR FIX	
	SE BND	12500
	NW BND	7000
*9400 - MCA MAVER, OR FIX , SE BND		
MAVER, OR FIX	RAWER, OR FIX	*5000
*3600 - MOCA		
RAWER, OR FIX	NEWBERG, OR VOR/DME	4000
NEWBERG, OR VOR/DME	PITER, OR FIX	4400
PITER, OR FIX	CETRA, WA FIX	6000
CETRA, WA FIX	OLYMPIA, WA VORTAC	
	N BND	4000
	S BND	6000
OLYMPIA, WA VORTAC	*CARRO, WA FIX	**4000
*4000 - MRA		
**2000 - MOCA		
CARRO, WA FIX	DIGGN, WA FIX	*6000
*5000 - MOCA		
DIGGN, WA FIX	PENN COVE, WA VOR/DME	*5000
*2600 - MOCA		
PENN COVE, WA VOR/DME	ISLND, WA FIX	*5000
*1500 - MOCA		
ISLND, WA FIX	CANDL, WA FIX	*5000
*2800 - MOCA		
CANDL, WA FIX	WHATCOM, WA VORTAC	*4000
*1900 - MOCA		

95.6166 VOR FEDERAL AIRWAY V166

PARKERSBURG, WV VOR/DME	MOSIC, WV FIX	3000
MOSIC, WV FIX	CLARKSBURG, WV VOR/DME	*3600
*3100 - MOCA		
CLARKSBURG, WV VOR/DME	TYGAR, WV FIX	3600
TYGAR, WV FIX	UGJOB, WV FIX	4700
UGJOB, WV FIX	KESSEL, WV VOR/DME	6300
KESSEL, WV VOR/DME	CAPON, WV FIX	*5000
*4500 - MOCA		
CAPON, WV FIX	MARTINSBURG, WV VORTAC	*5000
*3500 - MOCA		
MARTINSBURG, WV VORTAC	WESTMINSTER, MD VORTAC	*4000
*3300 - MOCA		
WESTMINSTER, MD VORTAC	BELAY, MD FIX	*3000
*2500 - MOCA		

FROM	TO	MEA

95.6166 VOR FEDERAL AIRWAY V166 - CONTINUED

BELAY, MD FIX	*BAINS, MD FIX	2000
*6000 - MRA		
BAINS, MD FIX	DUPONT, DE VORTAC	2000
DUPONT, DE VORTAC	WOODSTOWN, NJ VORTAC	2000
		MAA - 8000
WOODSTOWN, NJ VORTAC	BRIEF, NJ FIX	1900
BRIEF, NJ FIX	SEA ISLE, NJ VORTAC	3000

95.6167 VOR FEDERAL AIRWAY V167

HANCOCK, NY VOR/DME	HELON, NY FIX	4100
HELON, NY FIX	KINGSTON, NY VOR/DME	4000
KINGSTON, NY VOR/DME	HARTFORD, CT VOR/DME	3200
HARTFORD, CT VOR/DME	JEWIT, CT FIX	*2600
*2100 - MOCA		
JEWIT, CT FIX	PROVIDENCE, RI VOR/DME	2500
PROVIDENCE, RI VOR/DME	ZUNUX, MA FIX	*2500
*1800 - MOCA		
ZUNUX, MA FIX	PEAKE, MA FIX	*3000
*1800 - MOCA		
PEAKE, MA FIX	MARCONI, MA VOR/DME	*3000
*1600 - MOCA		
MARCONI, MA VOR/DME	KENNEBUNK, ME VOR/DME	*6000
*1600 - MOCA		
*4000 - GNSS MEA		

95.6168 VOR FEDERAL AIRWAY V168

VULCAN, AL VORTAC	LAGRANGE, GA VORTAC	4000
LAGRANGE, GA VORTAC	*MILER, AL FIX	2600
*6000 - MCA MILER, AL FIX , S BND		
*2600 - MCA MILER, AL FIX , N BND		
MILER, AL FIX	*WIREGRASS, AL VORTAC	**6000
*6000 - MCA WIREGRASS, AL VORTAC , BND		
**3000 - GNSS MEA		

95.6169 VOR FEDERAL AIRWAY V169

TOBE, CO VOR/DME	HUGO, CO VOR/DME	8100
HUGO, CO VOR/DME	THURMAN, CO VORTAC	7300
THURMAN, CO VORTAC	AKRON, CO VOR/DME	*7000
*6200 - MOCA		
AKRON, CO VOR/DME	SIDNEY, NE VOR/DME	6400
SIDNEY, NE VOR/DME	SCOTTSBLUFF, NE VORTAC	*7000
*6000 - MOCA		
SCOTTSBLUFF, NE VORTAC	TOADSTOOL, NE VOR/DME	7000
TOADSTOOL, NE VOR/DME	WAXER, NE FIX	7000
WAXER, NE FIX	RAPID CITY, SD VORTAC	6000
RAPID CITY, SD VORTAC	DUPREE, SD VOR/DME	5000
DUPREE, SD VOR/DME	BISMARCK, ND VOR/DME	4700
BISMARCK, ND VOR/DME	DEVILS LAKE, ND VOR/DME	4000

95.6170 VOR FEDERAL AIRWAY V170

DEVILS LAKE, ND VOR/DME	JAMESTOWN, ND VOR/DME	3500
JAMESTOWN, ND VOR/DME	ABERDEEN, SD VOR/DME	3300
ABERDEEN, SD VOR/DME	SIOUX FALLS, SD VORTAC	*5000
*3400 - MOCA		
ROCHESTER, MN VOR/DME	NODINE, MN VORTAC	3000

FROM	TO	MEA

95.6170 VOR FEDERAL AIRWAY V170 - CONTINUED

NODINE, MN VORTAC	DELLS, WI VORTAC	3000
DELLS, WI VORTAC	BADGER, WI VOR/DME	3000
BADGER, WI VOR/DME	PETTY, WI FIX	2700
PETTY, WI FIX	RAINE, MI WP	UNUSABLE
RAINE, MI WP	PULLMAN, MI VOR/DME	UNUSABLE
PULLMAN, MI VOR/DME	HEBEL, MI FIX	UNUSABLE
HEBEL, MI FIX	LESSY, MI FIX	UNUSABLE
LESSY, MI FIX	SALEM, MI VORTAC	3000
SLATE RUN, PA VORTAC	SELINSGROVE, PA VOR/DME	4000
SELINSGROVE, PA VOR/DME	RAVINE, PA VORTAC	*4000
*3400 - MOCA		
RAVINE, PA VORTAC	BOYER, PA FIX	3500
BOYER, PA FIX	MODENA, PA VORTAC	*3000
*2400 - MOCA		
MODENA, PA VORTAC	DUPONT, DE VORTAC	*3000
*1800 - MOCA		
*2000 - GNSS MEA		
DUPONT, DE VORTAC	ODESA, MD FIX	*2000
*2000 - GNSS MEA		
*DUPONT R 233 UNUSABLE BEYOND 22 NM.		
ODESA, MD FIX	SWANN, MD FIX	UNUSABLE
SWANN, MD FIX	PALEO, MD FIX	UNUSABLE
PALEO, MD FIX	POLLA, MD FIX	2200
		MAA - 13000

95.6171 VOR FEDERAL AIRWAY V171

LEXINGTON, KY VOR/DME	MCFEE, KY FIX	3000
MCFEE, KY FIX	LOUISVILLE, KY VORTAC	2600
LOUISVILLE, KY VORTAC	SCOTO, IN FIX	*10000
*3000 - MOCA		
SCOTO, IN FIX	TERRE HAUTE, IN VORTAC	*4000
*3000 - MOCA		
TERRE HAUTE, IN VORTAC	DANVILLE, IL VORTAC	2500
DANVILLE, IL VORTAC	PEOTONE, IL VORTAC	2500
PEOTONE, IL VORTAC	MEDAN, IL FIX	2400
MEDAN, IL FIX	JOLIET, IL VOR/DME	2400
NODINE, MN VORTAC	EMILS, MN FIX	3000
EMILS, MN FIX	FARMINGTON, MN VORTAC	*5500
*3000 - GNSS MEA		
FARMINGTON, MN VORTAC	JONNA, MN FIX	*3500
*2500 - MOCA		
*3000 - GNSS MEA		
JONNA, MN FIX	DARWIN, MN VORTAC	2900
DARWIN, MN VORTAC	ALEXANDRIA, MN VOR/DME	3000
ALEXANDRIA, MN VOR/DME	STARR, MN FIX	*3500
*3000 - MOCA		
STARR, MN FIX	*SHELS, MN FIX	**6000
*4000 - MRA		
**3500 - MOCA		
SHELS, MN FIX	GRAND FORKS, ND VOR/DME	3000
GRAND FORKS, ND VOR/DME	ROSEAU, MN VOR/DME	2900

95.6172 VOR FEDERAL AIRWAY V172

NORTH PLATTE, NE VOR/DME	WOLBACH, NE VORTAC	*5400
*4500 - MOCA		
WOLBACH, NE VORTAC	COLUMBUS, NE VOR/DME	3800
COLUMBUS, NE VOR/DME	OMAHA, IA VORTAC	3700

FROM	TO	MEA

95.6172 VOR FEDERAL AIRWAY V172 - CONTINUED

OMAHA, IA VORTAC	WUNOT, IA FIX	
	NE BND	5500
	SW BND	4000
WUNOT, IA FIX	*LINDE, IA FIX	**5500
*5500 - MRA		
**3800 - MOCA		
LINDE, IA FIX	GUMBO, IA FIX	3500
GUMBO, IA FIX	NEWTON, IA VOR/DME	3300
NEWTON, IA VOR/DME	CEDAR RAPIDS, IA VOR/DME	2800
CEDAR RAPIDS, IA VOR/DME	LISBO, IA FIX	2700
LISBO, IA FIX	LOTTE, IA FIX	3300
LOTTE, IA FIX	MIHAL, IL FIX	2700
MIHAL, IL FIX	POLO, IL VOR/DME	2700
POLO, IL VOR/DME	DUPAGE, IL VOR/DME	2600

95.6173 VOR FEDERAL AIRWAY V173

SPINNER, IL VORTAC	PEOTONE, IL VORTAC	4500

95.6175 VOR FEDERAL AIRWAY V175

VICHY, MO VOR/DME	ZIPUR, MO FIX	*3000
*2500 - MOCA		
ZIPUR, MO FIX	HALLSVILLE, MO VORTAC	2700
KIRKSVILLE, MO VORTAC	OHGEE, IA FIX	2800
OHGEE, IA FIX	DES MOINES, IA VORTAC	*7000
*2500 - MOCA		
*DES MOINES R-141 UNUSABLE, USE KIRKSVILLE R-323		
REDWOOD FALLS, MN VOR/DME	ALEXANDRIA, MN VOR/DME	3600

95.6178 VOR FEDERAL AIRWAY V178

HALLSVILLE, MO VORTAC	BNTON, MO FIX	2800
BNTON, MO FIX	VICHY, MO VOR/DME	*2800
*2200 - MOCA		
VICHY, MO VOR/DME	FARMINGTON, MO VORTAC	3300
NEW HOPE, KY VOR/DME	MAUDD, KY FIX	2700
MAUDD, KY FIX	MCFEE, KY FIX	5000
MCFEE, KY FIX	LEXINGTON, KY VOR/DME	3000
LEXINGTON, KY VOR/DME	TRENT, KY FIX	
	W BND	3400
	E BND	8000
TRENT, KY FIX	SLINK, WV FIX	*8000
*4200 - GNSS MEA		
SLINK, WV FIX	BLUEFIELD, WV VOR/DME	
	E BND	6300
	W BND	8000

95.6179 VOR FEDERAL AIRWAY V179

BRUNSWICK, GA VORTAC	DUBLIN, GA VORTAC	2000
DUBLIN, GA VORTAC	HUSKY, GA FIX	*3000
*2200 - MOCA		

95.6181 VOR FEDERAL AIRWAY V181

KIRKSVILLE, MO VORTAC	LAMONI, IA VOR/DME	2900
LAMONI, IA VOR/DME	OMAHA, IA VORTAC	3000
OMAHA, IA VORTAC	NORFOLK, NE VOR/DME	3600

95.6181 VOR FEDERAL AIRWAY V181 - CONTINUED

NORFOLK, NE VOR/DME	YANKTON, SD VOR/DME	3700
YANKTON, SD VOR/DME	SIOUX FALLS, SD VORTAC	3400
FARGO, ND VOR/DME	GRAND FORKS, ND VOR/DME	2600

95.6182 VOR FEDERAL AIRWAY V182

NORTH BEND, OR VOR/DME	*GAMMA, OR FIX	
	S BND	4000
	N BND	4500
*6200 - MRA		
GAMMA, OR FIX	NEWPORT, OR VORTAC	4500
NEWPORT, OR VORTAC	NEWBERG, OR VOR/DME	6000
NEWBERG, OR VOR/DME	*BATTLE GROUND, WA VORTAC	4100
*5000 - MCA BATTLE GROUND, WA VORTAC , E BND		
BATTLE GROUND, WA VORTAC	KLICKITAT, OR VOR/DME	*7000
*6500 - MOCA		
KLICKITAT, OR VOR/DME	*BREED, OR FIX	5300
*5700 - MRA		
BREED, OR FIX	*UKIAH, OR FIX	8000
*9400 - MCA UKIAH, OR FIX , E BND		
UKIAH, OR FIX	*BAKER CITY, OR VOR/DME	**13000
*10000 - MCA BAKER CITY, OR VOR/DME , W BND		
**11000 - MOCA		
BAKER CITY, OR VOR/DME	*IBEAM, OR FIX	9000
*12000 - MCA IBEAM, OR FIX , NE BND		
IBEAM, OR FIX	LEZLE, WA FIX	*12000
*8100 - MOCA		
LEZLE, WA FIX	NEZ PERCE, ID VOR/DME	*7000
*6200 - MOCA		

95.6183 VOR FEDERAL AIRWAY V183

*SAN MARCUS, CA VORTAC	**TAFTO, CA FIX	9000
*7500 - MCA SAN MARCUS, CA VORTAC , N BND		
**6000 - MCA TAFTO, CA FIX , S BND		
TAFTO, CA FIX	*MARIC, CA FIX	**6000
*5000 - MCA MARIC, CA FIX , S BND		
**4500 - MOCA		
MARIC, CA FIX	*SHAFTER, CA VORTAC	3000
*5000 - MCA SHAFTER, CA VORTAC , BND		

95.6184 VOR FEDERAL AIRWAY V184

*PHILIPSBURG, PA VORTAC	*HARRISBURG, PA VORTAC	4900
*3600 - MCA HARRISBURG, PA VORTAC , NW BND		
*4800 MCA PHILIPSBURG, PA VORTAC, SE BND		
HARRISBURG, PA VORTAC	*DELRO, PA FIX	3000
*10000 - MCA DELRO, PA FIX , E BND		
DELRO, PA FIX	*MODENA, PA VORTAC	**10000
*10000 - MCA MODENA, PA VORTAC , W BND		
**4000 - GNSS MEA		
MODENA, PA VORTAC	WOODSTOWN, NJ VORTAC	2000
WOODSTOWN, NJ VORTAC	CEDAR LAKE, NJ VOR/DME	1900
CEDAR LAKE, NJ VOR/DME	ATLANTIC CITY, NJ VORTAC	1800
ATLANTIC CITY, NJ VORTAC	PANZE, NJ FIX	2100
PANZE, NJ FIX	FALON, NJ FIX	*5000
*1500 - MOCA		
*2000 - GNSS MEA		
FALON, NJ FIX	ZIGGI, NJ FIX	*2500
*1600 - MOCA		

FROM	TO	MEA

95.6185 VOR FEDERAL AIRWAY V185

SAVANNAH, GA VORTAC	*SPONG, GA FIX	**3000
*5000 - MRA		
**2200 - MOCA		
SPONG, GA FIX	COLLIERS, SC VORTAC	*3000
*2200 - MOCA		
COLLIERS, SC VORTAC	GREENWOOD, SC VORTAC	2400
GREENWOOD, SC VORTAC	*UNMAN, SC FIX	3000
*4000 - MCA UNMAN, SC FIX , N BND		
UNMAN, SC FIX	SUGARLOAF MOUNTAIN, NC VORTAC	6000
SUGARLOAF MOUNTAIN, NC VORTAC	MUMMI, NC FIX	7000
MUMMI, NC FIX	SNOWBIRD, TN VORTAC	8000
SNOWBIRD, TN VORTAC	*PENCE, TN FIX	7000
*4000 - MCA PENCE, TN FIX , SE BND		
PENCE, TN FIX	VOLUNTEER, TN VORTAC	3000

95.6186 VOR FEDERAL AIRWAY V186

SAN MARCUS, CA VORTAC	DEANO, CA FIX	6200
DEANO, CA FIX	*HENER, CA FIX	5000
*5100 - MCA HENER, CA FIX , E BND		
HENER, CA FIX	FILLMORE, CA VORTAC	6300
FILLMORE, CA VORTAC	VAN NUYS, CA VOR/DME	6000
VAN NUYS, CA VOR/DME	TIFNI, CA FIX	5500
TIFNI, CA FIX	PARADISE, CA VORTAC	4000
PARADISE, CA VORTAC	TANNR, CA FIX	6000
TANNR, CA FIX	POGGI, CA VORTAC	5000

95.6187 VOR FEDERAL AIRWAY V187

SOCORRO, NM VORTAC	ALBUQUERQUE, NM VORTAC	8000
ALBUQUERQUE, NM VORTAC	*CURLY, NM FIX	9000
*9500 - MCA CURLY, NM FIX , NW BND		
CURLY, NM FIX	MISSY, NM FIX	11000
MISSY, NM FIX	RATTLESNAKE, NM VORTAC	
	NW BND	9100
	SE BND	11000
RATTLESNAKE, NM VORTAC	RIZAL, CO FIX	9200
RIZAL, CO FIX	*MANCA, CO FIX	10900
*11200 - MCA MANCA, CO FIX , N BND		
MANCA, CO FIX	HERRM, CO FIX	*15000
*12800 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
HERRM, CO FIX	*GRAND JUNCTION, CO VOR/DME	**15000
*10700 - MCA GRAND JUNCTION, CO VOR/DME , S BND		
**12100 - MOCA		
GRAND JUNCTION, CO VOR/DME	*TESSY, CO FIX	10000
*10500 - MRA		
*10700 - MCA TESSY, CO FIX , N BND		
TESSY, CO FIX	*RACER, CO FIX	**12000
*12000 - MRA		
**11000 - MOCA		
RACER, CO FIX	*RENAE, CO FIX	**13000
*13000 - MRA		
**10700 - MOCA		
RENAE, CO FIX	ROCK SPRINGS, WY VOR/DME	*13000
*11700 - MOCA		
ROCK SPRINGS, WY VOR/DME	RIVERTON, WY VOR/DME	*12000
*10000 - MOCA		
*10000 - GNSS MEA		

FROM	TO	MEA

95.6187 VOR FEDERAL AIRWAY V187 - CONTINUED

RIVERTON, WY VOR/DME	BOYSEN RESERVOIR, WY VOR/DME	9600
BOYSEN RESERVOIR, WY VOR/DME	PRYER, MT FIX	11000
PRYER, MT FIX	*BILLINGS, MT VORTAC	
	SE BND	11000
	NW BND	7000
*6500 - MCA BILLINGS, MT VORTAC , S BND		
BILLINGS, MT VORTAC	TASSE, MT FIX	
	NW BND	8000
	SE BND	6200
TASSE, MT FIX	*JUGAP, MT FIX	8000
*11200 - MCA JUGAP, MT FIX , NW BND		
JUGAP, MT FIX	GREAT FALLS, MT VORTAC	13000
GREAT FALLS, MT VORTAC	ROSOE, MT FIX	
	NE BND	8000
	SW BND	10000
ROSOE, MT FIX	MISSOULA, MT VOR/DME	*13000
*11400 - MOCA		
MISSOULA, MT VOR/DME	LOLLO, MT FIX	
	NE BND	*10000
	SW BND	*13000
*9300 - MOCA		
LOLLO, MT FIX	RIVAL, MT FIX	
	NE BND	*12000
	SW BND	*13000
*9000 - MOCA		
RIVAL, MT FIX	OFINO, ID FIX	*13000
*9900 - MOCA		
OFINO, ID FIX	NEZ PERCE, ID VOR/DME	
	SW BND	5500
	NE BND	10000
NEZ PERCE, ID VOR/DME	POTOR, WA FIX	*6000
*5400 - MOCA		
POTOR, WA FIX	*DATES, WA FIX	7200
*4500 - MCA DATES, WA FIX , E BND		
DATES, WA FIX	PASCO, WA VOR/DME	4000
PASCO, WA VOR/DME	NIALS, WA FIX	2900
NIALS, WA FIX	FEBUS, WA FIX	4400
FEBUS, WA FIX	*ELLENSBURG, WA VOR/DME	6000
*6700 - MCA ELLENSBURG, WA VOR/DME , W BND		
ELLENSBURG, WA VOR/DME	THICK, WA FIX	
	E BND	7700
	W BND	10000
OLYMPIA, WA VORTAC	RINDS, WA FIX	4000
RINDS, WA FIX	ASTORIA, OR VOR/DME	5000

95.6188 VOR FEDERAL AIRWAY V188

SLATE RUN, PA VORTAC	WILLIAMSPORT, PA VOR/DME	4000
WILLIAMSPORT, PA VOR/DME	SWANK, PA FIX	4500
SWANK, PA FIX	WILKES-BARRE, PA VORTAC	
	E BND	*4000
	W BND	*4500
*3700 - MOCA		
WILKES-BARRE, PA VORTAC	SPARTA, NJ VORTAC	4000
SPARTA, NJ VORTAC	CARMEL, NY VOR/DME	*3000
*2500 - MOCA		
CARMEL, NY VOR/DME	GROTON, CT VOR/DME	3000

95.6189 VOR FEDERAL AIRWAY V189

WRIGHT BROTHERS, NC VOR/DME	*DAREZ, NC FIX	**8000
*8000 - MCA DAREZ, NC FIX , E BND		
**3000 - GNSS MEA		

FROM	TO	MEA

95.6189 VOR FEDERAL AIRWAY V189 - CONTINUED

DAREZ, NC FIX	TAR RIVER, NC VORTAC	*6000
*3000 - MOCA		
*4000 - GNSS MEA		
TAR RIVER, NC VORTAC	FRANKLIN, VA VORTAC	2000
FRANKLIN, VA VORTAC	HOPEWELL, VA VORTAC	3000

95.6190 VOR FEDERAL AIRWAY V190

PHOENIX, AZ VORTAC	*LAKEY, AZ FIX	5000
*7800 - MCA LAKEY, AZ FIX , NE BND		
LAKEY, AZ FIX	GRINE, AZ FIX	
	NE BND	*9000
	SW BND	*6000
*5300 - MOCA		
GRINE, AZ FIX	PEAKS, AZ FIX	*10000
*6700 - MOCA		
PEAKS, AZ FIX	TEDDI, AZ FIX	
	NE BND	13000
	SW BND	10000
TEDDI, AZ FIX	ST JOHNS, AZ VORTAC	*13000
*11000 - MOCA		
*11000 - GNSS MEA		
ST JOHNS, AZ VORTAC	ACOMA, NM FIX	11500
ACOMA, NM FIX	*ALBUQUERQUE, NM VORTAC	9000
*11500 - MCA ALBUQUERQUE, NM VORTAC , NE BND		
ALBUQUERQUE, NM VORTAC	RENCO, NM FIX	13000
RENCO, NM FIX	*FORT UNION, NM VORTAC	12000
*11300 - MCA FORT UNION, NM VORTAC , SW BND		
FORT UNION, NM VORTAC	DALHART, TX VORTAC	*10000
*9200 - MOCA		
DALHART, TX VORTAC	MITBEE, OK VORTAC	*7000
*5400 - MOCA		
MITBEE, OK VORTAC	CARON, OK FIX	
	SW BND	*5000
	NE BND	*8000
*3700 - MOCA		
CARON, OK FIX	FIRET, OK FIX	*8000
*2800 - MOCA		
FIRET, OK FIX	PIONEER, OK VORTAC	
	E BND	3000
	W BND	8000
PIONEER, OK VORTAC	BARTLESVILLE, OK VOR/DME	3000

95.6191 VOR FEDERAL AIRWAY V191

TROY, IL VORTAC	ADDERS, IL VORTAC	2500
ADDERS, IL VORTAC	ROBERTS, IL VOR/DME	2800
ROBERTS, IL VOR/DME	NEWTT, IL FIX	2500
NEWTT, IL FIX	*BOJAK, IL FIX	**5000
*5000 - MRA		
**2200 - MOCA		
BOJAK, IL FIX	NORTHBROOK, IL VOR/DME	2500
NORTHBROOK, IL VOR/DME	BADGER, WI VOR/DME	2900
BADGER, WI VOR/DME	OSHKOSH, WI VORTAC	3000
OSHKOSH, WI VORTAC	RHINELANDER, WI VOR/DME	*4500
*3100 - MOCA		
RHINELANDER, WI VOR/DME	IRONWOOD, MI VOR/DME	*8000
*3200 - MOCA		
IRONWOOD, MI VOR/DME	DULUTH, MN VORTAC	*3500
*3100 - MOCA		

FROM	TO	MEA

95.6191 VOR FEDERAL AIRWAY V191 - CONTINUED

DULUTH, MN VORTAC	HIBBING, MN VOR/DME	3300
HIBBING, MN VOR/DME	GRAND RAPIDS, MN VOR/DME	3000

95.6192 VOR FEDERAL AIRWAY V192

CHAMPAIGN, IL VORTAC	TERRE HAUTE, IN VORTAC	2500
TERRE HAUTE, IN VORTAC	BRICKYARD, IN VORTAC	2700
BRICKYARD, IN VORTAC	MUNCIE, IN VOR/DME	2900
MUNCIE, IN VOR/DME	DAYTON, OH VOR/DME	2800

95.6193 VOR FEDERAL AIRWAY V193

TRAVERSE CITY, MI VOR/DME	PELLSTON, MI VORTAC	3000
PELLSTON, MI VORTAC	SAULT STE MARIE, MI VOR/DME	3000

95.6194 VOR FEDERAL AIRWAY V194

CEDAR CREEK, TX VORTAC	KISER, TX FIX	2300
KISER, TX FIX	COLLEGE STATION, TX VORTAC	4000
SABINE PASS, TX VOR/DME	GUSTI, LA FIX	*4000
*1600 - MOCA		
GUSTI, LA FIX	LAFAYETTE, LA VORTAC	2800
LAFAYETTE, LA VORTAC	*ROSEY, LA FIX	2100
*5000 - MRA		
ROSEY, LA FIX	FIGHTING TIGER, LA VORTAC	2100
FIGHTING TIGER, LA VORTAC	MC COMB, MS VORTAC	2300
MC COMB, MS VORTAC	MIZZE, MS FIX	*3000
*2000 - MOCA		
MIZZE, MS FIX	*PAULD, MS FIX	3000
*5000 - MRA		
*3000 - MCA PAULD, MS FIX , SW BND		
PAULD, MS FIX	MERIDIAN, MS VORTAC	2100
LIBERTY, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	3100
RALEIGH/DURHAM, NC VORTAC	TAR RIVER, NC VORTAC	2600
TAR RIVER, NC VORTAC	COFIELD, NC VORTAC	1800
COFIELD, NC VORTAC	SUNNS, NC FIX	*2000
*1600 - MOCA		

95.6195 VOR FEDERAL AIRWAY V195

OAKLAND, CA VOR/DME	CROIT, CA FIX	4000
CROIT, CA FIX	*CORDD, CA FIX	**5000
*7200 - MCA CORDD, CA FIX , N BND		
**3400 - MOCA		
CORDD, CA FIX	RAGGS, CA FIX	*8500
*5000 - MOCA		
RAGGS, CA FIX	*BESSA, CA FIX	**8500
*8500 - MCA BESSA, CA FIX , S BND		
**4800 - MOCA		
BESSA, CA FIX	WILLIAMS, CA VORTAC	5300
WILLIAMS, CA VORTAC	RED BLUFF, CA VORTAC	*3000
*1700 - MOCA		
RED BLUFF, CA VORTAC	BURRS, CA FIX	3000
BURRS, CA FIX	*TOMAD, CA FIX	**6000
*7300 - MCA TOMAD, CA FIX , W BND		
**4600 - MOCA		
TOMAD, CA FIX	*YAGER, CA FIX	**11000
*7700 - MCA YAGER, CA FIX , E BND		
**8300 - MOCA		

FROM	TO	MEA

95.6195 VOR FEDERAL AIRWAY V195 - CONTINUED

YAGER, CA FIX	FORTUNA, CA VORTAC	6000

95.6197 VOR FEDERAL AIRWAY V197

PARADISE, CA VORTAC	*POMONA, CA VORTAC	4500
*10500 - MCA POMONA, CA VORTAC , NW BND		
POMONA, CA VORTAC	HASSA, CA FIX	
	NW BND	10500
	SE BND	6600
HASSA, CA FIX	*PALMDALE, CA VORTAC	10500
*8700 - MCA PALMDALE, CA VORTAC , SE BND		
PALMDALE, CA VORTAC	*FISCH, CA FIX	5000
*8300 - MCA FISCH, CA FIX , NW BND		
FISCH, CA FIX	*KELEN, CA FIX	**10200
*9300 - MCA KELEN, CA FIX , SE BND		
**10200 - MOCA		
KELEN, CA FIX	*ARVIN, CA FIX	8500
*7300 - MCA ARVIN, CA FIX , SE BND		
ARVIN, CA FIX	SHAFTER, CA VORTAC	3000

95.6198 VOR FEDERAL AIRWAY V198

SAN SIMON, AZ VORTAC	COLUMBUS, NM VOR/DME	8700
COLUMBUS, NM VOR/DME	EL PASO, TX VORTAC	9000
EL PASO, TX VORTAC	HUDSPETH, TX VORTAC	7500
HUDSPETH, TX VORTAC	AGAZY, TX FIX	*11000
*8900 - MOCA		
AGAZY, TX FIX	DOWES, TX FIX	*9000
*6400 - MOCA		
DOWES, TX FIX	FORT STOCKTON, TX VORTAC	5100
FORT STOCKTON, TX VORTAC	KEMPL, TX FIX	*8000
*5500 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
KEMPL, TX FIX	JUNCTION, TX VORTAC	*6000
*4000 - MOCA		
JUNCTION, TX VORTAC	SAN ANTONIO, TX VORTAC	4100
SABINE PASS, TX VOR/DME	WHITE LAKE, LA VOR/DME	*4000
*1700 - MOCA		
*2000 - GNSS MEA		
WHITE LAKE, LA VOR/DME	TIBBY, LA VOR/DME	2000
TIBBY, LA VOR/DME	HARVEY, LA VORTAC	2100
HARVEY, LA VORTAC	PEARL, LA FIX	2000
PEARL, LA FIX	MINNI, MS FIX	*2300
*1300 - MOCA		
MINNI, MS FIX	ELSIE, MS FIX	*3500
*1300 - MOCA		
ELSIE, MS FIX	*ROMMY, MS FIX	**2800
*4000 - MRA		
**1300 - MOCA		
ROMMY, MS FIX	BROOKLEY, AL VORTAC	2000
BROOKLEY, AL VORTAC	CRESTVIEW, FL VORTAC	3100
CRESTVIEW, FL VORTAC	DEFUN, FL FIX	
	W BND	2000
	E BND	3000
DEFUN, FL FIX	*CHEWS, FL FIX	**3000
*2500 - MCA CHEWS, FL FIX , W BND		
**1800 - MOCA		
CHEWS, FL FIX	MARIANNA, FL VORTAC	2000
MARIANNA, FL VORTAC	*SNEAD, FL FIX	2000
*3000 - MRA		

95.6198 VOR FEDERAL AIRWAY V198 - CONTINUED

SNEAD, FL FIX	SEMINOLE, FL VORTAC	2000
SEMINOLE, FL VORTAC	GREENVILLE, FL VORTAC	*2100
*GREENVILLE R-270 UNUSABLE USE SEMINOLE R-088		
GREENVILLE, FL VORTAC	TAYLOR, FL VORTAC	2000
TAYLOR, FL VORTAC	CRAIG, FL VORTAC	*3000
*2100 - MOCA		

95.6199 VOR FEDERAL AIRWAY V199

SAN FRANCISCO, CA VOR/DME	SUTRO, CA FIX	3500
SUTRO, CA FIX	GOBBS, CA FIX	3000
GOBBS, CA FIX	STINS, CA FIX	3500
STINS, CA FIX	DUBRY, CA FIX	4500
DUBRY, CA FIX	MENDOCINO, CA VORTAC	6000
MENDOCINO, CA VORTAC	*HENLE, CA FIX	9000
*9000 - MCA HENLE, CA FIX , S BND		
HENLE, CA FIX	RED BLUFF, CA VORTAC	
	N BND	3200
	S BND	9000

95.6200 VOR FEDERAL AIRWAY V200

MENDOCINO, CA VORTAC	WILLIAMS, CA VORTAC	6200
WILLIAMS, CA VORTAC	YUBBA, CA FIX	4000
YUBBA, CA FIX	*RANGO, CA FIX	5000
*8500 - MCA RANGO, CA FIX , E BND		
RANGO, CA FIX	SIGNA, CA FIX	*11000
*10000 - MOCA		
SIGNA, CA FIX	MUSTANG, NV VORTAC	11500
BONNEVILLE, UT VORTAC	*STACO, UT FIX	9000
*11000 - MCA STACO, UT FIX , SE BND		
STACO, UT FIX	*FAIRFIELD, UT VORTAC	12100
*10700 - MCA FAIRFIELD, UT VORTAC , NW BND		
*12500 - MCA FAIRFIELD, UT VORTAC , E BND		
FAIRFIELD, UT VORTAC	PANEL, UT FIX	
	W BND	*11000
	E BND	*13300
*9900 - MOCA		
PANEL, UT FIX	MYTON, UT VOR/DME	13300
MYTON, UT VOR/DME	*RACER, CO FIX	
	W BND	**10000
	E BND	**10500
*12000 - MRA		
**8700 - MOCA		
RACER, CO FIX	*MEEKER, CO VOR/DME	10500
*11300 - MCA MEEKER, CO VOR/DME , E BND		
MEEKER, CO VOR/DME	*KREMMLING, CO VOR/DME	14600
*12500 - MCA KREMMLING, CO VOR/DME , BND		

95.6201 VOR FEDERAL AIRWAY V201

LOS ANGELES, CA VORTAC	*BERRI, CA FIX	5000
*7600 - MCA BERRI, CA FIX , N BND		
BERRI, CA FIX	*SOLED, CA FIX	8800
*8400 - MCA SOLED, CA FIX , S BND		
SOLED, CA FIX	PALMDALE, CA VORTAC	7500

95.6202 VOR FEDERAL AIRWAY V202

SAN SIMON, AZ VORTAC	SILVER CITY, NM VOR/DME	10300

FROM	TO	MEA

95.6202 VOR FEDERAL AIRWAY V202 - CONTINUED

SILVER CITY, NM VOR/DME	*KEAPS, NM FIX	10300
*11600 - MCA KEAPS, NM FIX , NE BND		
KEAPS, NM FIX	TRUTH OR CONSEQUENCES, NM VORTAC	12300

95.6204 VOR FEDERAL AIRWAY V204

HOQUIAM, WA VORTAC	*OLYMPIA, WA VORTAC	4500
*3200 - MCA OLYMPIA, WA VORTAC , W BND		
OLYMPIA, WA VORTAC	*MCKEN, WA FIX	4000
*5000 - MCA MCKEN, WA FIX , E BND		
MCKEN, WA FIX	*ALDER, WA FIX	5800
*5800 - MCA ALDER, WA FIX , E BND		
ALDER, WA FIX	TAMPO, WA FIX	10000
TAMPO, WA FIX	*YAKIMA, WA VORTAC	
	W BND	8000
	E BND	6000
*5300 - MCA YAKIMA, WA VORTAC , W BND		
YAKIMA, WA VORTAC	*PAIDS, WA FIX	6000
*5300 - MCA PAIDS, WA FIX , W BND		
PAIDS, WA FIX	PASCO, WA VOR/DME	4000
PASCO, WA VOR/DME	WATSY, WA FIX	3500
WATSY, WA FIX	SPOKANE, WA VORTAC	5000

95.6206 VOR FEDERAL AIRWAY V206

NAPOLEON, MO VORTAC	KIRKSVILLE, MO VORTAC	3000
KIRKSVILLE, MO VORTAC	OTTUMWA, IA VOR/DME	3100

95.6207 VOR FEDERAL AIRWAY V207

GILL, CO VOR/DME	SCOTTSBLUFF, NE VORTAC	7500

95.6208 VOR FEDERAL AIRWAY V208

VENTURA, CA VOR/DME	WEEZL, CA FIX	5000
WEEZL, CA FIX	SANTA CATALINA, CA VORTAC	4000
SANTA CATALINA, CA VORTAC	AVOLS, CA FIX	4000
AVOLS, CA FIX	PACIF, CA FIX	*3000
*2000 - MOCA		
PACIF, CA FIX	OCEANSIDE, CA VORTAC	3000
OCEANSIDE, CA VORTAC	*VISTA, CA FIX	3000
*5000 - MCA VISTA, CA FIX , E BND		
VISTA, CA FIX	JULIAN, CA VORTAC	7700
JULIAN, CA VORTAC	THERMAL, CA VORTAC	9000
THERMAL, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	7000
TWENTYNINE PALMS, CA VORTAC	NEEDLES, CA VORTAC	7800
NEEDLES, CA VORTAC	PEACH SPRINGS, AZ VOR/DME	9000
PEACH SPRINGS, AZ VOR/DME	GRAND CANYON, AZ VOR/DME	10000
GRAND CANYON, AZ VOR/DME	TUBA CITY, AZ VORTAC	9500
TUBA CITY, AZ VORTAC	PAGE, AZ VOR/DME	9000
PAGE, AZ VOR/DME	*HANKSVILLE, UT VORTAC	14000
*11500 - MCA HANKSVILLE, UT VORTAC , S BND		
HANKSVILLE, UT VORTAC	CARBON, UT VOR/DME	10000
CARBON, UT VOR/DME	MYTON, UT VOR/DME	11300
MYTON, UT VOR/DME	VERNAL, UT VOR/DME	8400
VERNAL, UT VOR/DME	CHEROKEE, WY VOR/DME	11700

95.6209 VOR FEDERAL AIRWAY V209

SEMMES, AL VORTAC	YARBO, AL FIX	*3000
*1800 - MOCA		
*2000 - GNSS MEA		

95.6209 VOR FEDERAL AIRWAY V209 - CONTINUED

EUTAW, AL FIX	BROOKWOOD, AL VORTAC	*5000
*2300 - MOCA		
*2500 - GNSS MEA		
BROOKWOOD, AL VORTAC	VULCAN, AL VORTAC	2500
VULCAN, AL VORTAC	TRUST, AL FIX	3500
TRUST, AL FIX	GADSDEN, AL VOR/DME	3600
GADSDEN, AL VOR/DME	*MENLA, AL FIX	**5000
*5000 - MCA MENLA, AL FIX , SW BND		
**3700 - MOCA		
MENLA, AL FIX	CHOO CHOO, TN VORTAC	4000

95.6210 VOR FEDERAL AIRWAY V210

LOS ANGELES, CA VORTAC	PIRRO, CA FIX	3500
PIRRO, CA FIX	*POMONA, CA VORTAC	4500
*10400 - MCA POMONA, CA VORTAC , NE BND		
POMONA, CA VORTAC	CALBE, CA FIX	
	SW BND	5700
	NE BND	10800
CALBE, CA FIX	MEANT, CA FIX	
	SW BND	10700
	NE BND	11500
MEANT, CA FIX	*APLES, CA FIX	11800
*9200 - MCA APLES, CA FIX , SW BND		
APLES, CA FIX	HECTOR, CA VORTAC	7900
HECTOR, CA VORTAC	GOFFS, CA VORTAC	*9000
*8200 - MOCA		
GOFFS, CA VORTAC	UNPAS, NV FIX	8000
UNPAS, NV FIX	PEACH SPRINGS, AZ VOR/DME	10500
PEACH SPRINGS, AZ VOR/DME	*GRAND CANYON, AZ VOR/DME	10000
*14500 - MCA GRAND CANYON, AZ VOR/DME , E BND		
GRAND CANYON, AZ VOR/DME	*TUBA CITY, AZ VORTAC	**14500
*14500 - MCA TUBA CITY, AZ VORTAC , W BND		
**9600 - MOCA		
TUBA CITY, AZ VORTAC	FULLY, NM FIX	12000
FULLY, NM FIX	RATTLESNAKE, NM VORTAC	
	NE BND	9000
	SW BND	12000
RATTLESNAKE, NM VORTAC	RESER, NM FIX	9000
RESER, NM FIX	MRKKO, CO FIX	15000
MRKKO, CO FIX	*ALAMOSA, CO VORTAC	
	W BND	14800
	E BND	10000
*11200 - MCA ALAMOSA, CO VORTAC , W BND		
ALAMOSA, CO VORTAC	BLOKE, CO FIX	
	E BND	14000
	W BND	10400
BLOKE, CO FIX	*GOSIP, CO FIX	14000
*14000 - MCA GOSIP, CO FIX , SW BND		
GOSIP, CO FIX	*RADIO, CO FIX	**12000
*10900 - MCA RADIO, CO FIX , SW BND		
**8500 - MOCA		
RADIO, CO FIX	BLOOM, CO FIX	*9400
*8000 - MOCA		
BLOOM, CO FIX	LAMAR, CO VOR/DME	7000
WILL ROGERS, OK VORTAC	MINGG, OK FIX	*4000
*3100 - MOCA		
MINGG, OK FIX	OKMULGEE, OK VOR/DME	*4000
*2600 - MOCA		

FROM	TO	MEA

95.6210 VOR FEDERAL AIRWAY V210 - CONTINUED

BRICKYARD, IN VORTAC	MUNCIE, IN VOR/DME	2900
MUNCIE, IN VOR/DME	ROSEWOOD, OH VORTAC	2800
REVLOC, PA VOR/DME	BLINK, PA FIX	4500
BLINK, PA FIX	HARRISBURG, PA VORTAC	4000
HARRISBURG, PA VORTAC	LANCASTER, PA VOR/DME	3000
LANCASTER, PA VOR/DME	SPERY, PA FIX	2800
SPERY, PA FIX	YARDLEY, PA VOR/DME	*3000
*2200 - MOCA		

95.6211 VOR FEDERAL AIRWAY V211

BRAZO, NM FIX	DURANGO, CO VOR/DME	
	W BND	11300
	E BND	13000
DURANGO, CO VOR/DME	CORTEZ, CO VOR/DME	11300

95.6212 VOR FEDERAL AIRWAY V212

INDUSTRY, TX VORTAC	NAVASOTA, TX VOR/DME	2200
NAVASOTA, TX VOR/DME	OSCER, TX FIX	3000
OSCER, TX FIX	LUFKIN, TX VORTAC	*4000
*2000 - MOCA		
LUFKIN, TX VORTAC	COSGO, LA FIX	*4000
*1900 - MOCA		
COSGO, LA FIX	COCOS, LA FIX	*4000
*1800 - MOCA		
COCOS, LA FIX	ALEXANDRIA, LA VORTAC	*3000
*1900 - MOCA		
ALEXANDRIA, LA VORTAC	JOHON, LA FIX	2000
JOHON, LA FIX	SETTA, MS FIX	*4000
*2000 - MOCA		
SETTA, MS FIX	MC COMB, MS VORTAC	*3000
*2000 - MOCA		

95.6213 VOR FEDERAL AIRWAY V213

GRAND STRAND, SC VORTAC	WILMINGTON, NC VORTAC	UNUSABLE
WILMINGTON, NC VORTAC	WALLO, NC FIX	UNUSABLE
WALLO, NC FIX	JOSCH, NC FIX	*6000
*1700 - MOCA		
*2000 - GNSS MEA		
JOSCH, NC FIX	ESTER, NC FIX	*6000
*1700 - MOCA		
*2000 - GNSS MEA		
ESTER, NC FIX	TAR RIVER, NC VORTAC	*6000
*2000 - GNSS MEA		
TAR RIVER, NC VORTAC	GUMBE, NC FIX	2000
GUMBE, NC FIX	HOPEWELL, VA VORTAC	*2000
*1500 - MOCA		
HOPEWELL, VA VORTAC	*TAPPA, VA FIX	2000
*5000 - MCA TAPPA, VA FIX , NE BND		
TAPPA, VA FIX	PATUXENT, MD VORTAC	*5000
*1500 - MOCA		
*2000 - GNSS MEA		
PATUXENT, MD VORTAC	*GARED, MD FIX	**4500
*8000 - MRA		
**1500 - MOCA		
**4000 - GNSS MEA		
GARED, MD FIX	CHOPS, MD FIX	*4500
*1500 - MOCA		
*4000 - GNSS MEA		

95.6213 VOR FEDERAL AIRWAY V213 - CONTINUED

CHOPS, MD FIX	SMYRNA, DE VORTAC	*2000
*1500 - MOCA		
SMYRNA, DE VORTAC	HOLEY, NJ FIX	*3000
*1600 - MOCA		
HOLEY, NJ FIX	ROBBINSVILLE, NJ VORTAC	*3000
*2000 - MOCA		
ROBBINSVILLE, NJ VORTAC	WARRD, NJ FIX	*3000
		MAA - 10000
*1900 - MOCA		
WARRD, NJ FIX	SHOTT, NJ FIX	*3000
		MAA - 10000
*2500 - MOCA		
SHOTT, NJ FIX	SPARTA, NJ VORTAC	*3500
		MAA - 10000
*2600 - MOCA		
SPARTA, NJ VORTAC	FLOSI, NY FIX	*4000
*3200 - MOCA		
FLOSI, NY FIX	WEETS, NY FIX	*5500
*4000 - MOCA		
WEETS, NY FIX	ALBANY, NY VORTAC	*10000
*6100 - MOCA		
*8000 - GNSS MEA		

95.6214 VOR FEDERAL AIRWAY V214

KOKOMO, IN VORTAC	MARION, IN VOR/DME	2600
MARION, IN VOR/DME	MUNCIE, IN VOR/DME	2800
*GLOOM, OH FIX	ZANESVILLE, OH VOR/DME	**4000
*4000 - MRA		
**2600 - MOCA		
**3000 - GNSS MEA		
ZANESVILLE, OH VOR/DME	BELLAIRE, OH VOR/DME	3000

95.6216 VOR FEDERAL AIRWAY V216

LAMAR, CO VOR/DME	ORION, KS FIX	*6300
*5200 - MOCA		
ORION, KS FIX	HILL CITY, KS VORTAC	*5000
*4300 - MOCA		
HILL CITY, KS VORTAC	MANKATO, KS VORTAC	*4500
*3900 - MOCA		
MANKATO, KS VORTAC	PAWNEE CITY, NE VORTAC	3600
PAWNEE CITY, NE VORTAC	LAMONI, IA VOR/DME	3400
LAMONI, IA VOR/DME	OTTUMWA, IA VOR/DME	2900
OTTUMWA, IA VOR/DME	IOWA CITY, IA VOR/DME	3000
IOWA CITY, IA VOR/DME	LOTTE, IA FIX	*3500
*2600 - MOCA		
LOTTE, IA FIX	WACKS, IL FIX	*4000
*2200 - MOCA		
WACKS, IL FIX	JANESVILLE, WI VOR/DME	2800

95.6217 VOR FEDERAL AIRWAY V217

*BESIE, IL FIX	BADGER, WI VOR/DME	2900
*10000 - MRA		
BADGER, WI VOR/DME	CHING, WI FIX	3000
CHING, WI FIX	SHOOD, WI FIX	2700
SHOOD, WI FIX	GREEN BAY, WI VORTAC	2500
GREEN BAY, WI VORTAC	WISOM, WI FIX	
	SE BND	*2700
	NW BND	*3600
*2400 - MOCA		

FROM	TO	MEA

95.6217 VOR FEDERAL AIRWAY V217 - CONTINUED

WISOM, WI FIX	RHINELANDER, WI VOR/DME	3600
RHINELANDER, WI VOR/DME	DULUTH, MN VORTAC	*6000
*4100 - MOCA		
DULUTH, MN VORTAC	HIBBING, MN VOR/DME	3300

95.6218 VOR FEDERAL AIRWAY V218

*INTERNATIONAL FALLS, MN VOR/DME	JIBDU, MN FIX	
	N BND	4000
	S BND	10000
*7800 - MCA INTERNATIONAL FALLS, MN VOR/DME , S BND		
JIBDU, MN FIX	BEBEL, MN FIX	
	N BND	7000
	S BND	10000
BEBEL, MN FIX	SQEAK, MN FIX	10000
SQEAK, MN FIX	GRAND RAPIDS, MN VOR/DME	*5000
*3100 - MOCA		
GRAND RAPIDS, MN VOR/DME	GOPHER, MN VORTAC	*5500
*3000 - MOCA		

95.6219 VOR FEDERAL AIRWAY V219

HAYES CENTER, NE VORTAC	*YOZLE, NE FIX	**7000
*7000 - MRA		
**4500 - MOCA		
**5000 - GNSS MEA		
YOZLE, NE FIX	WOLBACH, NE VORTAC	
	NE BND	*5000
	SW BND	*7000
*4500 - MOCA		
*5000 - GNSS MEA		
WOLBACH, NE VORTAC	NORFOLK, NE VOR/DME	4000

95.6220 VOR FEDERAL AIRWAY V220

GRAND JUNCTION, CO VOR/DME	*PACES, CO FIX	11500
*13000 - MRA		
PACES, CO FIX	*SLOLM, CO FIX	13000
*MTA V220 NE TO V220 NW 12900		
SLOLM, CO FIX	RIFLE, CO VOR/DME	12400
RIFLE, CO VOR/DME	MEEKER, CO VOR/DME	12400
MEEKER, CO VOR/DME	AXIAL, CO FIX	11000
AXIAL, CO FIX	HAYDEN, CO VOR/DME	
	SW BND	11000
	NE BND	10000
HAYDEN, CO VOR/DME	HABRO, CO FIX	10000
HABRO, CO FIX	KREMMLING, CO VOR/DME	13000
KREMMLING, CO VOR/DME	NIWOT, CO FIX	*17000
*15900 - MOCA		
NIWOT, CO FIX	*GILL, CO VOR/DME	
	NE BND	7400
	SW BND	17000
*14500 - MCA GILL, CO VOR/DME , SW BND		
GILL, CO VOR/DME	AKRON, CO VOR/DME	7000
AKRON, CO VOR/DME	MCJEF, NE FIX	*7000
*6000 - MOCA		
MCJEF, NE FIX	MC COOK, NE VOR/DME	*7500
*5000 - MOCA		
MC COOK, NE VOR/DME	SPRIT, NE FIX	*5000
*4100 - MOCA		

FROM	TO	MEA

95.6220 VOR FEDERAL AIRWAY V220 - CONTINUED

SPRIT, NE FIX	KEARNEY, NE VOR	*5000
*3700 - MOCA		
KEARNEY, NE VOR	HASTINGS, NE VOR/DME	4300
HASTINGS, NE VOR/DME	COLUMBUS, NE VOR/DME	4000

95.6221 VOR FEDERAL AIRWAY V221

BIBLE GROVE, IL VORTAC	HOOSIER, IN VORTAC	3000
HOOSIER, IN VORTAC	SHELBYVILLE, IN VOR/DME	*6000
*3100 - MOCA		
*4000 - GNSS MEA		
*HOOSIER R-053 UNUSABLE		
SHELBYVILLE, IN VOR/DME	MUNCIE, IN VOR/DME	*2800
*2600 - MOCA		
MUNCIE, IN VOR/DME	FORT WAYNE, IN VORTAC	2700
FORT WAYNE, IN VORTAC	*GAREN, IN FIX	3000
*4500 - MRA		
GAREN, IN FIX	ILTON, IN FIX	*3000
*2400 - MOCA		

95.6222 VOR FEDERAL AIRWAY V222

EL PASO, TX VORTAC	SALT FLAT, TX VORTAC	*8000
*7400 - MOCA		
SALT FLAT, TX VORTAC	HOBAN, TX FIX	*9000
*7900 - MOCA		
HOBAN, TX FIX	FORT STOCKTON, TX VORTAC	5100
FORT STOCKTON, TX VORTAC	KEMPL, TX FIX	*8000
*5500 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
KEMPL, TX FIX	JUNCTION, TX VORTAC	*6000
*4000 - MOCA		
JUNCTION, TX VORTAC	STONEWALL, TX VORTAC	4000
STONEWALL, TX VORTAC	MARCS, TX FIX	4500
MARCS, TX FIX	CRAYS, TX FIX	*2900
*2000 - MOCA		
CRAYS, TX FIX	INDUSTRY, TX VORTAC	2600
INDUSTRY, TX VORTAC	SEALY, TX FIX	2100
SEALY, TX FIX	HUMBLE, TX VORTAC	2000
HUMBLE, TX VORTAC	BEAUMONT, TX VOR/DME	3100
BEAUMONT, TX VOR/DME	LAKE CHARLES, LA VORTAC	2000
LAKE CHARLES, LA VORTAC	MAXON, LA FIX	2000
MAXON, LA FIX	WRACK, LA FIX	*6000
*1800 - MOCA		
*2000 - GNSS MEA		
WRACK, LA FIX	MC COMB, MS VORTAC	*4000
*2000 - MOCA		
*2000 - GNSS MEA		
MC COMB, MS VORTAC	EATON, MS VORTAC	2000
EATON, MS VORTAC	PICAN, MS FIX	
	W BND	2300
	E BND	3000
PICAN, MS FIX	MONROEVILLE, AL VORTAC	*3000
*1900 - MOCA		
MONROEVILLE, AL VORTAC	MONTGOMERY, AL VORTAC	2300
MONTGOMERY, AL VORTAC	*MARST, AL FIX	2300
*3500 - MRA		
MARST, AL FIX	KENTT, AL FIX	2100
KENTT, AL FIX	LAGRANGE, GA VORTAC	2500

FROM	TO	MEA

95.6222 VOR FEDERAL AIRWAY V222 - CONTINUED

LAGRANGE, GA VORTAC	*TIROE, GA FIX	2600
*4000 - MRA		

95.6223 VOR FEDERAL AIRWAY V223

FLAT ROCK, VA VORTAC	*HANEY, VA FIX	2800
*7000 - MRA		
HANEY, VA FIX	FLUKY, VA FIX	2600

95.6225 VOR FEDERAL AIRWAY V225

KEY WEST, FL VORTAC	RIGOR, FL FIX	1700
RIGOR, FL FIX	MARCI, FL FIX	*4000
*1400 - MOCA		
*1700 - GNSS MEA		
MARCI, FL FIX	LEE COUNTY, FL VORTAC	
	N BND	2100
	S BND	4000
LEE COUNTY, FL VORTAC	LA BELLE, FL VORTAC	*2000
*1500 - MOCA		
LA BELLE, FL VORTAC	DIDDY, FL FIX	*2000
*1500 - MOCA		
DIDDY, FL FIX	TREASURE, FL VORTAC	2000

95.6226 VOR FEDERAL AIRWAY V226

KEATING, PA VORTAC	WILLIAMSPORT, PA VOR/DME	*4500
*3900 - MOCA		
WILLIAMSPORT, PA VOR/DME	SWANK, PA FIX	4500
SWANK, PA FIX	WILKES-BARRE, PA VORTAC	
	E BND	*4000
	W BND	*4500
*3700 - MOCA		
WILKES-BARRE, PA VORTAC	STILLWATER, NJ VOR/DME	4000

95.6227 VOR FEDERAL AIRWAY V227

BOILER, IN VORTAC	ROBERTS, IL VOR/DME	2600
ROBERTS, IL VOR/DME	PONTIAC, IL VOR/DME	3000
PONTIAC, IL VOR/DME	PLANO, IL FIX	3000

95.6228 VOR FEDERAL AIRWAY V228

DELLS, WI VORTAC	MADISON, WI VORTAC	3300
MADISON, WI VORTAC	*DEBOW, WI FIX	10000
*10000 - MRA		
DEBOW, WI FIX	*BESIE, IL FIX	10000
*10000 - MRA		
FARMM, IL FIX	NORTHBROOK, IL VOR/DME	2700
NORTHBROOK, IL VOR/DME	*NEPTS, MI FIX	2500
*3000 - MRA		
NEPTS, MI FIX	GIPPER, MI VORTAC	2600

95.6229 VOR FEDERAL AIRWAY V229

PATUXENT, MD VORTAC	*GARED, MD FIX	**4500
*8000 - MRA		
**1500 - MOCA		
**4000 - GNSS MEA		

FROM	TO	MEA

95.6229 VOR FEDERAL AIRWAY V229 - CONTINUED

GARED, MD FIX	DONIL, DE FIX	*8000
*1600 - MOCA		
*4000 - GNSS MEA		
DONIL, DE FIX	ATLANTIC CITY, NJ VORTAC	*2000
*1500 - MOCA		
ATLANTIC CITY, NJ VORTAC	PANZE, NJ FIX	2100
PANZE, NJ FIX	DIXIE, NJ FIX	2500
DIXIE, NJ FIX	KENNEDY, NY VOR/DME	*2500
*1700 - MOCA		
KENNEDY, NY VOR/DME	KEEPM, NY FIX	2000
KEEPM, NY FIX	TRANZ, NY FIX	2000
TRANZ, NY FIX	PUGGS, NY FIX	*2500
*2000 - GNSS MEA		
PUGGS, NY FIX	BRIDGEPORT, CT VOR/DME	*2500
*2000 - GNSS MEA		
BRIDGEPORT, CT VOR/DME	HARTFORD, CT VOR/DME	2000

95.6230 VOR FEDERAL AIRWAY V230

SHOEY, CA FIX	*SALINAS, CA VORTAC	**5000
*6000 - MCA SALINAS, CA VORTAC , E BND		
**4100 - MOCA		
SALINAS, CA VORTAC	*PANOS, CA FIX	**6500
*8000 - MCA PANOS, CA FIX , E BND		
**5500 - MOCA		
PANOS, CA FIX	FIDDO, CA FIX	9000
FIDDO, CA FIX	*PANOCHE, CA VORTAC	**7000
*8500 - MCA PANOCHE, CA VORTAC , W BND		
**5800 - MOCA		
PANOCHE, CA VORTAC	MENDO, CA FIX	4500
MENDO, CA FIX	BLEAR, CA FIX	*4000
*1600 - MOCA		
BLEAR, CA FIX	*FRIANT, CA VORTAC	**5500
*10400 - MCA FRIANT, CA VORTAC , NE BND		
**4700 - MOCA		
FRIANT, CA VORTAC	CAINS, CA FIX	
	NE BND	14300
	SW BND	11000
CAINS, CA FIX	NIKOL, CA FIX	14300
NIKOL, CA FIX	MINA, NV VORTAC	
	NE BND	11000
	SW BND	13000

95.6231 VOR FEDERAL AIRWAY V231

BURLEY, ID VOR/DME	*MENIN, ID FIX	
	S BND	**7000
	N BND	**9500
*10600 - MCA MENIN, ID FIX , N BND		
**7000 - MOCA		
MENIN, ID FIX	SALMON, ID VOR/DME	14000
SALMON, ID VOR/DME	TUFFY, MT FIX	*12000
*11300 - MOCA		
TUFFY, MT FIX	*MISSOULA, MT VOR/DME	
	S BND	12000
	N BND	9000
*10000 - MCA MISSOULA, MT VOR/DME , S BND		
MISSOULA, MT VOR/DME	ARLEE, MT FIX	9700
ARLEE, MT FIX	*JESSY, MT FIX	**11000
*13000 - MCA JESSY, MT FIX , N BND		
**9400 - MOCA		

FROM	TO	MEA

95.6231 VOR FEDERAL AIRWAY V231 - CONTINUED

JESSY, MT FIX	*SKOTT, MT FIX	**13000
*12000 - MRA		
**8700 - MOCA		
SKOTT, MT FIX	KALISPELL, MT VOR/DME	
	N BND	8600
	S BND	10000

95.6232 VOR FEDERAL AIRWAY V232

KEATING, PA VORTAC	WATSO, PA FIX	4700
WATSO, PA FIX	MILTON, PA VORTAC	*4000
*2900 - MOCA		
MILTON, PA VORTAC	SOLBERG, NJ VOR/DME	4000
SOLBERG, NJ VOR/DME	TYKES, NJ FIX	2300
TYKES, NJ FIX	COLTS NECK, NJ VOR/DME	2000

95.6233 VOR FEDERAL AIRWAY V233

SPINNER, IL VORTAC	ROBERTS, IL VOR/DME	2600
ROBERTS, IL VOR/DME	KNOX, IN VOR/DME	*3000
*2200 - MOCA		
KNOX, IN VOR/DME	GOSHEN, IN VORTAC	2600
GOSHEN, IN VORTAC	LITCHFIELD, MI VOR/DME	3000
MOUNT PLEASANT, MI VOR/DME	CARGA, MI FIX	5500
CARGA, MI FIX	GAYLORD, MI VOR/DME	4000
GAYLORD, MI VOR/DME	PELLSTON, MI VORTAC	3200

95.6234 VOR FEDERAL AIRWAY V234

ST JOHNS, AZ VORTAC	*STONY, NM FIX	**12000
*9500 - MCA STONY, NM FIX , SW BND		
**10500 - MOCA		
STONY, NM FIX	ALBUQUERQUE, NM VORTAC	9000
ALBUQUERQUE, NM VORTAC	ANTON CHICO, NM VORTAC	10000
ANTON CHICO, NM VORTAC	DALHART, TX VORTAC	*8500
*7500 - MOCA		
HUTCHINSON, KS VOR/DME	WAIVE, KS FIX	4000
WAIVE, KS FIX	*FLOSS, KS FIX	3300
*5000 - MRA		
FLOSS, KS FIX	EMPORIA, KS VORTAC	3300
EMPORIA, KS VORTAC	BUTLER, MO VORTAC	3000
BUTLER, MO VORTAC	AUGIE, MO FIX	2700
AUGIE, MO FIX	VICHY, MO VOR/DME	*3200
*2400 - MOCA		
VICHY, MO VOR/DME	DELMA, MO FIX	3000
DELMA, MO FIX	GLASS, MO FIX	*3500
*2800 - MOCA		
GLASS, MO FIX	CENTRALIA, IL VORTAC	*3000
*2200 - MOCA		

95.6235 VOR FEDERAL AIRWAY V235

PEACH SPRINGS, AZ VOR/DME	MORMON MESA, NV VORTAC	10000
MORMON MESA, NV VORTAC	MATZO, UT FIX	
	NE BND	12000
	SW BND	9000
MATZO, UT FIX	*ENOCH, UT VOR/DME	12400
*11400 - MCA ENOCH, UT VOR/DME , S BND		
ENOCH, UT VOR/DME	MILFORD, UT VORTAC	10000

FROM	TO	MEA

95.6235 VOR FEDERAL AIRWAY V235 - CONTINUED

MILFORD, UT VORTAC	DELTA, UT VORTAC	9600
DELTA, UT VORTAC	*FAIRFIELD, UT VORTAC	10300
*12500 - MCA FAIRFIELD, UT VORTAC , NE BND		
FAIRFIELD, UT VORTAC	GRODI, WY FIX	14000
GRODI, WY FIX	FORT BRIDGER, WY VOR/DME	11000
ROCK SPRINGS, WY VOR/DME	BORGG, WY FIX	9500
BORGG, WY FIX	OILLY, WY FIX	11200
OILLY, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	9000
MUDDY MOUNTAIN, WY VOR/DME	NEWCASTLE, WY VOR	8300

95.6236 VOR FEDERAL AIRWAY V236

CEVAR, UT FIX	EMONT, UT FIX	9000
EMONT, UT FIX	OGDEN, UT VORTAC	*8000
*7000 - MOCA		

95.6237 VOR FEDERAL AIRWAY V237

NEEDLES, CA VORTAC	BOULDER CITY, NV VORTAC	7600
BOULDER CITY, NV VORTAC	LAS VEGAS, NV VORTAC	6000

95.6239 VOR FEDERAL AIRWAY V239

FORNEY, MO VOR	BNTON, MO FIX	2900
BNTON, MO FIX	HALLSVILLE, MO VORTAC	2800

95.6240 VOR FEDERAL AIRWAY V240

HARVEY, LA VORTAC	PEARL, LA FIX	2000
PEARL, LA FIX	MINNI, MS FIX	*2300
*1300 - MOCA		
MINNI, MS FIX	ELSIE, MS FIX	*3500
*1300 - MOCA		
ELSIE, MS FIX	*ROMMY, MS FIX	**2800
*4000 - MRA		
**1300 - MOCA		
ROMMY, MS FIX	SEMMES, AL VORTAC	2000

95.6241 VOR FEDERAL AIRWAY V241

SEMMES, AL VORTAC	CRESTVIEW, FL VORTAC	3100
CRESTVIEW, FL VORTAC	*WIREGRASS, AL VORTAC	2000
*3000 - MCA WIREGRASS, AL VORTAC , N BND		
WIREGRASS, AL VORTAC	EUFAULA, AL VORTAC	*3000
*2000 - MOCA		
*WIREGRASS R-019 UNSABLE BELOW 6000 USE EUFAULA R-199		
EUFAULA, AL VORTAC	COLUMBUS, GA VORTAC	2400
COLUMBUS, GA VORTAC	*TIROE, GA FIX	3000
*4000 - MRA		

95.6243 VOR FEDERAL AIRWAY V243

CRAIG, FL VORTAC	WAYCROSS, GA VORTAC	*3000
*2300 - MOCA		
WAYCROSS, GA VORTAC	VIENNA, GA VORTAC	2300
VIENNA, GA VORTAC	*PRATZ, GA FIX	**3000
*3000 - MRA		
**2000 - MOCA		
PRATZ, GA FIX	LAGRANGE, GA VORTAC	3500

95.6243 VOR FEDERAL AIRWAY V243 - CONTINUED

LAGRANGE, GA VORTAC	HEFIN, AL FIX	*4000
*3400 - MOCA		
HEFIN, AL FIX	FELTO, GA FIX	*6000
*3400 - MOCA		
FELTO, GA FIX	GORGO, GA FIX	*5000
*4000 - MOCA		
GORGO, GA FIX	CHOO CHOO, TN VORTAC	4000

95.6244 VOR FEDERAL AIRWAY V244

OAKLAND, CA VOR/DME	*SALAD, CA FIX	4000
*4700 - MCA SALAD, CA FIX , NE BND		
SALAD, CA FIX	ALTAM, CA FIX	5000
ALTAM, CA FIX	HAIRE, CA FIX	4500
HAIRE, CA FIX	*LINDEN, CA VOR/DME	**3000
*3300 - MCA LINDEN, CA VOR/DME , E BND		
**2100 - MOCA		
LINDEN, CA VOR/DME	*MERPH, CA FIX	
	W BND	6400
	E BND	15300
*9800 - MCA MERPH, CA FIX , E BND		
MERPH, CA FIX	*NIKOL, CA FIX	15300
*13100 - MCA NIKOL, CA FIX , W BND		
NIKOL, CA FIX	COALDALE, NV VORTAC	12500
COALDALE, NV VORTAC	TONOPAH, NV VORTAC	11000
TONOPAH, NV VORTAC	WILSON CREEK, NV VORTAC	12200
WILSON CREEK, NV VORTAC	*MILFORD, UT VORTAC	12000
*12000 - MCA MILFORD, UT VORTAC , E BND		
MILFORD, UT VORTAC	DETAN, UT FIX	14000
DETAN, UT FIX	HANKSVILLE, UT VORTAC	*16000
*14200 - MOCA		
HANKSVILLE, UT VORTAC	*ANIUM, UT FIX	**10500
*12300 - MCA ANIUM, UT FIX , E BND		
**8500 - MOCA		
ANIUM, UT FIX	*PAROX, CO FIX	**15500
*13300 - MCA PAROX, CO FIX , W BND		
**14800 - MOCA		
PAROX, CO FIX	*NADIN, CO FIX	**13000
*12000 - MCA NADIN, CO FIX , W BND		
**12000 - MOCA		
NADIN, CO FIX	MONTROSE, CO VOR/DME	11000
MONTROSE, CO VOR/DME	BLUE MESA, CO VOR/DME	12500
BLUE MESA, CO VOR/DME	DUFEL, CO FIX	
	E BND	16000
	W BND	12000
DUFEL, CO FIX	*FLOOD, CO FIX	16000
*10000 - MRA		
FLOOD, CO FIX	STANO, CO FIX	
	W BND	12000
	E BND	9000
STANO, CO FIX	PUEBLO, CO VORTAC	7800
PUEBLO, CO VORTAC	LAMAR, CO VOR/DME	7000
LAMAR, CO VOR/DME	*COFFE, KS FIX	**9000
*9000 - MRA		
*9000 - MCA COFFE, KS FIX , SW BND		
*9700 - MCA COFFE, KS FIX , NE BND		
**5400 - MOCA		
COFFE, KS FIX	*RANSO, KS FIX	**10000
*10000 - MRA		
**4700 - MOCA		

FROM	TO	MEA

95.6244 VOR FEDERAL AIRWAY V244 - CONTINUED

RANSO, KS FIX	HAYS, KS VORTAC	*5000
*3900 - MOCA		
HAYS, KS VORTAC	*GLIDE, KS FIX	3900
*4500 - MRA		
GLIDE, KS FIX	SALINA, KS VORTAC	*3900
*3200 - MOCA		

95.6245 VOR FEDERAL AIRWAY V245

ALEXANDRIA, LA VORTAC	NATCHEZ, MS VOR/DME	2000
NATCHEZ, MS VOR/DME	MAGNOLIA, MS VORTAC	3500
MAGNOLIA, MS VORTAC	BIGBEE, MS VORTAC	*5000
*2000 - MOCA		
*3000 - GNSS MEA		

95.6246 VOR FEDERAL AIRWAY V246

JANESVILLE, WI VOR/DME	DUBUQUE, IA VORTAC	3000

95.6247 VOR FEDERAL AIRWAY V247

SCOTTSBLUFF, NE VORTAC	HIPSHER, WY VOR/DME	8100
HIPSHER, WY VOR/DME	*WAPAP, WY FIX	**9000
*9000 - MCA WAPAP, WY FIX , SE BND		
**8300 - MOCA		
**8000 - GNSS MEA		
WAPAP, WY FIX	CRAZY WOMAN, WY VOR/DME	8000
CRAZY WOMAN, WY VOR/DME	SHERIDAN, WY VOR/DME	7000
SHERIDAN, WY VOR/DME	ARDMO, MT FIX	8000
ARDMO, MT FIX	BILLINGS, MT VORTAC	
	E BND	8000
	W BND	6000
BILLINGS, MT VORTAC	PELJE, MT FIX	
	W BND	10500
	E BND	6400
PELJE, MT FIX	BAXTA, MT FIX	
	E BND	7000
	W BND	10500
BAXTA, MT FIX	WAUTS, MT FIX	*13000
*11200 - MOCA		
WAUTS, MT FIX	HELENA, MT VORTAC	
	W BND	9600
	E BND	13000

95.6248 VOR FEDERAL AIRWAY V248

SALINAS, CA VORTAC	*SARDO, CA FIX	**6000
*7000 - MRA		
**5500 - MOCA		
SARDO, CA FIX	FIKDU, CA FIX	*6000
*5500 - MOCA		
FIKDU, CA FIX	PASO ROBLES, CA VORTAC	
	SE BND	5000
	NW BND	6000
PASO ROBLES, CA VORTAC	AVENAL, CA VOR/DME	4500
AVENAL, CA VOR/DME	SCRAP, CA FIX	4000
SCRAP, CA FIX	SHAFTER, CA VORTAC	
	W BND	*4000
	E BND	*3000
*3000 - MOCA		

FROM	TO	MEA

95.6249 VOR FEDERAL AIRWAY V249

ROBBINSVILLE, NJ VORTAC	JERYY, NJ FIX	4000
JERYY, NJ FIX	SOLBERG, NJ VOR/DME	*3000
*2000 - MOCA		
SOLBERG, NJ VOR/DME	SPARTA, NJ VORTAC	3000
SPARTA, NJ VORTAC	FLOSI, NY FIX	*4000
*3200 - MOCA		
FLOSI, NY FIX	WEETS, NY FIX	*5500
*4000 - MOCA		
WEETS, NY FIX	RIMBA, NY FIX	6400
RIMBA, NY FIX	DELANCEY, NY VOR/DME	5500

95.6250 VOR FEDERAL AIRWAY V250

O'NEILL, NE VORTAC	YANKTON, SD VOR/DME	3700

95.6251 VOR FEDERAL AIRWAY V251

ADDERS, IL VORTAC	CHAMPAIGN, IL VORTAC	2500
CHAMPAIGN, IL VORTAC	DANVILLE, IL VORTAC	2500
DANVILLE, IL VORTAC	BOILER, IN VORTAC	2500

95.6252 VOR FEDERAL AIRWAY V252

AIRCO, NY FIX	GENESEO, NY VOR/DME	*4000
*2800 - MOCA		
GENESEO, NY VOR/DME	GIBBE, NY FIX	4000
GIBBE, NY FIX	BINGHAMTON, NY VOR/DME	3800
BINGHAMTON, NY VOR/DME	HUGIE, PA FIX	4000
HUGIE, PA FIX	RAGER, NY FIX	4400
RAGER, NY FIX	HUGUENOT, NY VOR/DME	4000
HUGUENOT, NY VOR/DME	COATE, NJ FIX	*4000
*3300 - MOCA		
COATE, NJ FIX	SLYNG, NJ FIX	*5000
*2700 - MOCA		
SLYNG, NJ FIX	ROBBINSVILLE, NJ VORTAC	2600
ROBBINSVILLE, NJ VORTAC	DUPONT, DE VORTAC	2000

95.6253 VOR FEDERAL AIRWAY V253

LUCIN, UT VORTAC	ROGET, ID FIX	11000
ROGET, ID FIX	*TWIN FALLS, ID VORTAC	
	NW BND	9000
	SE BND	11000
*9000 - MCA TWIN FALLS, ID VORTAC , SE BND		
TWIN FALLS, ID VORTAC	LITKE, ID FIX	6200
LITKE, ID FIX	ALKAL, ID FIX	
	SE BND	6000
	NW BND	9500
ALKAL, ID FIX	CANEK, ID FIX	*9500
*8500 - MOCA		
CANEK, ID FIX	*BOISE, ID VORTAC	
	NW BND	7000
	SE BND	9500
*7500 - MCA BOISE, ID VORTAC , N BND		
BOISE, ID VORTAC	BANGS, ID FIX	
	S BND	9100
	N BND	10500
BANGS, ID FIX	DONNELLY, ID VOR/DME	10500

95.6253 VOR FEDERAL AIRWAY V253 - CONTINUED

DONNELLY, ID VOR/DME	OXLEY, ID FIX	12000
OXLEY, ID FIX	*NEZ PERCE, ID VOR/DME	
	SE BND	12000
	NW BND	7400
*6400 - MCA NEZ PERCE, ID VOR/DME , SE BND		
NEZ PERCE, ID VOR/DME	PULLMAN, WA VOR/DME	6000
PULLMAN, WA VOR/DME	SPOKANE, WA VORTAC	*6000
*5600 - MOCA		

95.6254 VOR FEDERAL AIRWAY V254

HIPSHER, WY VOR/DME	TOOKE, WY FIX	*10000
*7500 - MOCA		
TOOKE, WY FIX	GILLETTE, WY VOR/DME	7000
GILLETTE, WY VOR/DME	MILES CITY, MT VOR/DME	*9000
*6900 - MOCA		
MILES CITY, MT VOR/DME	GLASGOW, MT VOR/DME	6000

95.6255 VOR FEDERAL AIRWAY V255

GARDEN CITY, KS VORTAC	HAYS, KS VORTAC	4600

95.6256 VOR FEDERAL AIRWAY V256

TULSA, OK VORTAC	PIONEER, OK VORTAC	3000
PIONEER, OK VORTAC	HUTCHINSON, KS VOR/DME	3300

95.6257 VOR FEDERAL AIRWAY V257

**PHOENIX, AZ VORTAC	*AVENT, AZ FIX	
	NW BND	14000
	SE BND	5000
*8000 - MRA		
**9400 - MCA PHOENIX, AZ VORTAC , NW BND		
AVENT, AZ FIX	*BANYO, AZ FIX	
	NW BND	14000
	SE BND	5000
*6000 - MRA		
BANYO, AZ FIX	COYOT, AZ FIX	
	NW BND	*14000
	SE BND	*9000
*8100 - MOCA		
COYOT, AZ FIX	*MAIER, AZ FIX	**14000
*14000 - MCA MAIER, AZ FIX , SE BND		
**9000 - GNSS MEA		
MAIER, AZ FIX	*DRAKE, AZ VORTAC	
	NW BND	10000
	SE BND	14000
*12000 - MCA DRAKE, AZ VORTAC , SE BND		
DRAKE, AZ VORTAC	*KACEE, AZ FIX	**10000
*11000 - MCA KACEE, AZ FIX , W BND		
*11000 - MCA KACEE, AZ FIX , E BND		
**8600 - MOCA		
**9000 - GNSS MEA		
KACEE, AZ FIX	*BISOP, AZ FIX	**10000
*11000 - MRA		
**8400 - MOCA		
**9000 - GNSS MEA		
BISOP, AZ FIX	*GRAND CANYON, AZ VOR/DME	10000
*14500 - MCA GRAND CANYON, AZ VOR/DME , N BND		

FROM	TO	MEA

95.6257 VOR FEDERAL AIRWAY V257 - CONTINUED

GRAND CANYON, AZ VOR/DME	*DOZIT, AZ FIX	**14500
*14500 - MCA DOZIT, AZ FIX , S BND		
**11200 - MOCA		
DOZIT, AZ FIX	JALMA, AZ FIX	*14500
*11200 - MOCA		
JALMA, AZ FIX	KACIR, AZ FIX	*13000
*11000 - MOCA		
KACIR, AZ FIX	BRYCE CANYON, UT VORTAC	11600
BRYCE CANYON, UT VORTAC	DELTA, UT VORTAC	12000
DELTA, UT VORTAC	*VERNE, UT FIX	11500
*12200 - MCA VERNE, UT FIX , N BND		
VERNE, UT FIX	*STACO, UT FIX	13000
*10500 - MCA STACO, UT FIX , S BND		
STACO, UT FIX	MOINT, UT FIX	*13000
*8900 - MOCA		
MOINT, UT FIX	*KREBS, UT FIX	**13000
*13000 - MRA		
**9600 - MOCA		
KREBS, UT FIX	MALAD CITY, ID VOR/DME	*11000
*10000 - MOCA		
MALAD CITY, ID VOR/DME	BANNO, ID FIX	10000
BANNO, ID FIX	*POCATELLO, ID VOR/DME	9000
*8000 - MCA POCATELLO, ID VOR/DME , SE BND		
POCATELLO, ID VOR/DME	ROCCA, ID FIX	7000
ROCCA, ID FIX	*DUBOIS, ID VORTAC	7500
*8600 - MCA DUBOIS, ID VORTAC , N BND		
DUBOIS, ID VORTAC	DILLON, MT VOR/DME	*12000
*11200 - MOCA		
DILLON, MT VOR/DME	DIVID, MT FIX	11000
DIVID, MT FIX	*COPPERTOWN, MT VOR/DME	10000
*10000 - MCA COPPERTOWN, MT VOR/DME , SE BND		
COPPERTOWN, MT VOR/DME	GLUES, MT FIX	9200
GLUES, MT FIX	SCAAT, MT FIX	*16000
*9200 - MOCA		
SCAAT, MT FIX	SIEBE, MT FIX	*13000
*9800 - MOCA		
*9800 - GNSS MEA		
SIEBE, MT FIX	WOKEN, MT FIX	9000
WOKEN, MT FIX	GREAT FALLS, MT VORTAC	8800
GREAT FALLS, MT VORTAC	SHONK, MT FIX	6200
SHONK, MT FIX	HAVRE, MT VOR/DME	6000

95.6258 VOR FEDERAL AIRWAY V258

CHARLESTON, WV VOR/DME	BECKLEY, WV VOR/DME	5500
BECKLEY, WV VOR/DME	ZOOMS, WV FIX	UNUSABLE
ZOOMS, WV FIX	ROANOKE, VA VOR/DME	6400
ROANOKE, VA VOR/DME	PIGGS, VA FIX	5400
PIGGS, VA FIX	ENTUK, VA FIX	*4000
*3400 - MOCA		
ENTUK, VA FIX	DANVILLE, VA VOR	3000

95.6259 VOR FEDERAL AIRWAY V259

GRAND STRAND, SC VORTAC	*CLETA, SC FIX	2000
*3000 - MRA		
CLETA, SC FIX	FLORENCE, SC VORTAC	2000
FLORENCE, SC VORTAC	CHESTERFIELD, SC VOR/DME	2000
CHESTERFIELD, SC VOR/DME	HUSTN, NC FIX	2500

95.6259 VOR FEDERAL AIRWAY V259 - CONTINUED

MOPED, NC FIX	BARRETTS MOUNTAIN, NC VOR/DME	4000
BARRETTS MOUNTAIN, NC VOR/DME	GOWBE, NC FIX	
	SE BND	5000
	NW BND	7500
GOWBE, NC FIX	*HOLSTON MOUNTAIN, TN VORTAC	7500
*6600 - MCA HOLSTON MOUNTAIN, TN VORTAC , BND		

95.6260 VOR FEDERAL AIRWAY V260

CHARLESTON, WV VOR/DME	MONTS, WV FIX	3400
MONTS, WV FIX	RAINELLE, WV VOR	5100
RAINELLE, WV VOR	ROANOKE, VA VOR/DME	*6000
*5400 - MOCA		
ROANOKE, VA VOR/DME	GOOZE, VA FIX	5000
GOOZE, VA FIX	LYNCHBURG, VA VOR/DME	
	W BND	*5000
	E BND	*3000
*2900 - MOCA		
LYNCHBURG, VA VOR/DME	FLAT ROCK, VA VORTAC	3000
FLAT ROCK, VA VORTAC	RICHMOND, VA VORTAC	2600
RICHMOND, VA VORTAC	HOPEWELL, VA VORTAC	1900
HOPEWELL, VA VORTAC	WAIKS, VA FIX	3000
WAIKS, VA FIX	FRANKLIN, VA VORTAC	3000
FRANKLIN, VA VORTAC	COFIELD, NC VORTAC	1800

95.6261 VOR FEDERAL AIRWAY V261

WICHITA, KS VORTAC	CEKIS, KS FIX	3600
CEKIS, KS FIX	MANHATTAN, KS VOR/DME	3000

95.6262 VOR FEDERAL AIRWAY V262

PEORIA, IL VORTAC	*DULAP, IL FIX	2700
*3000 - MRA		
DULAP, IL FIX	BRADFORD, IL VORTAC	2700
BRADFORD, IL VORTAC	MOTIF, IL FIX	2700
MOTIF, IL FIX	JOLIET, IL VOR/DME	*3000
*2300 - MOCA		

95.6263 VOR FEDERAL AIRWAY V263

CORONA, NM VORTAC	ENCIA, NM FIX	9700
ENCIA, NM FIX	ALBUQUERQUE, NM VORTAC	8000
ALBUQUERQUE, NM VORTAC	*SANTA FE, NM VORTAC	9000
*11600 - MCA SANTA FE, NM VORTAC , E BND		
SANTA FE, NM VORTAC	*FORT UNION, NM VORTAC	12500
*10900 - MCA FORT UNION, NM VORTAC , N BND		
*11300 - MCA FORT UNION, NM VORTAC , W BND		
FORT UNION, NM VORTAC	CIMARRON, NM VORTAC	*12000
*11100 - MOCA		
CIMARRON, NM VORTAC	TOBE, CO VOR/DME	*11600
*10700 - MOCA		
TOBE, CO VOR/DME	LAMAR, CO VOR/DME	*7400
*6700 - MOCA		
LAMAR, CO VOR/DME	HUGO, CO VOR/DME	*6900
*6200 - MOCA		
HUGO, CO VOR/DME	KANDO, CO FIX	*10000
*8500 - MOCA		
*9000 - GNSS MEA		

95.6263 VOR FEDERAL AIRWAY V263 - CONTINUED

KANDO, CO FIX	AKRON, CO VOR/DME	
	NE BND	*8500
	SW BND	*10000
*7500 - MOCA		
PIERRE, SD VORTAC	ABERDEEN, SD VOR/DME	4000

95.6264 VOR FEDERAL AIRWAY V264

LOS ANGELES, CA VORTAC	*STABO, CA FIX	2800
*3300 - MCA STABO, CA FIX , NE BND		
STABO, CA FIX	*AMTRA, CA FIX	3400
*3700 - MCA AMTRA, CA FIX , E BND		
AMTRA, CA FIX	*POMONA, CA VORTAC	4800
*5600 - MCA POMONA, CA VORTAC , E BND		
*MTA V264 E TO V197 NW 11800		
POMONA, CA VORTAC	*RAVON, CA FIX	6000
*11400 - MCA RAVON, CA FIX , E BND		
RAVON, CA FIX	REANS, CA FIX	
	E BND	12800
	W BND	9000
REANS, CA FIX	*YUCCA, CA FIX	13700
*12300 - MCA YUCCA, CA FIX , W BND		
YUCCA, CA FIX	TWENTYNINE PALMS, CA VORTAC	*8500
*7700 - MOCA		
TWENTYNINE PALMS, CA VORTAC	PARKER, CA VORTAC	6000
DRAKE, AZ VORTAC	OATES, AZ FIX	10100
OATES, AZ FIX	WINSLOW, AZ VORTAC	10800
WINSLOW, AZ VORTAC	ST JOHNS, AZ VORTAC	8900
ST JOHNS, AZ VORTAC	*SOCORRO, NM VORTAC	**12000
*10000 - MCA SOCORRO, NM VORTAC , W BND		
**11100 - MOCA		
SOCORRO, NM VORTAC	CORONA, NM VORTAC	9500
CORONA, NM VORTAC	TUCUMCARI, NM VORTAC	*11000
*9000 - MOCA		

95.6265 VOR FEDERAL AIRWAY V265

KRANT, MD FIX	WESTMINSTER, MD VORTAC	2600
WESTMINSTER, MD VORTAC	*HARRISBURG, PA VORTAC	3400
*3600 - MCA HARRISBURG, PA VORTAC , NW BND		
HARRISBURG, PA VORTAC	*PHILIPSBURG, PA VORTAC	4900
*4800 - MCA PHILIPSBURG, PA VORTAC , SE BND		
PHILIPSBURG, PA VORTAC	KEATING, PA VORTAC	4000

95.6266 VOR FEDERAL AIRWAY V266

ELECTRIC CITY, SC VORTAC	PELZE, SC FIX	2800
PELZE, SC FIX	SPARTANBURG, SC VORTAC	2900
GREENSBORO, NC VORTAC	SOUTH BOSTON, VA VORTAC	2700
SOUTH BOSTON, VA VORTAC	LAWRENCEVILLE, VA VORTAC	*3000
*2000 - MOCA		
*2300 - GNSS MEA		
*LAWRENCEVILLE R-269 UNUSABLE, USE SOUTH BOSTON R-086		
LAWRENCEVILLE, VA VORTAC	FRANKLIN, VA VORTAC	UNUSABLE
FRANKLIN, VA VORTAC	*SUNNS, NC FIX	UNUSABLE
*5000 - MCA SUNNS, NC FIX , SE BND		
SUNNS, NC FIX	ELIZABETH CITY, NC VOR/DME	*5000
*4000 - MOCA		
ELIZABETH CITY, NC VOR/DME	WRIGHT BROTHERS, NC VOR/DME	4000

FROM	TO	MEA

95.6267 VOR FEDERAL AIRWAY V267

DOLPHIN, FL VORTAC	PAHOKEE, FL VOR/DME	*2000
*1500 - MOCA		
PAHOKEE, FL VOR/DME	DIDDY, FL FIX	*2000
*1500 - MOCA		
DIDDY, FL FIX	ORLANDO, FL VORTAC	2700
ORLANDO, FL VORTAC	PAOLA, FL FIX	
	N BND	*2800
	S BND	*1900
*1600 - MOCA		
PAOLA, FL FIX	WORMS, FL FIX	2800
WORMS, FL FIX	CRAIG, FL VORTAC	*3000
*2100 - MOCA		
CRAIG, FL VORTAC	*BAXLY, GA FIX	**5000
*10000 - MRA		
**3000 - GNSS MEA		
BAXLY, GA FIX	DUBLIN, GA VORTAC	
	N BND	*3000
	S BND	*5000
*2300 - MOCA		
*2500 - GNSS MEA		
DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	*3000
*2200 - MOCA		
ATHENS, GA VOR/DME	IRMOS, GA FIX	3100
IRMOS, GA FIX	CORCE, GA FIX	3800
CORCE, GA FIX	TALLE, GA FIX	5300
TALLE, GA FIX	HARRIS, GA VORTAC	7000
HARRIS, GA VORTAC	FORMS, NC FIX	7800
FORMS, NC FIX	*KNITS, TN FIX	7500
*6200 - MCA KNITS, TN FIX , S BND		
KNITS, TN FIX	VOLUNTEER, TN VORTAC	4200

95.6268 VOR FEDERAL AIRWAY V268

NESTO, PA FIX	PLEEZ, PA FIX	*4000
*3100 - MOCA		
PLEEZ, PA FIX	INDIAN HEAD, PA VORTAC	*5000
*4500 - MOCA		
INDIAN HEAD, PA VORTAC	HAGERSTOWN, MD VOR	*12000
*4600 - MOCA		
*4700 - GNSS MEA		
HAGERSTOWN, MD VOR	KEMAR, MD FIX	5000
KEMAR, MD FIX	WESTMINSTER, MD VORTAC	*4000
*2600 - MOCA		
*2700 - GNSS MEA		
WESTMINSTER, MD VORTAC	BALTIMORE, MD VORTAC	2500
BALTIMORE, MD VORTAC	SMYRNA, DE VORTAC	2000
SMYRNA, DE VORTAC	LEEAH, NJ FIX	*1800
*1300 - MOCA		
LEEAH, NJ FIX	AVALO, NJ FIX	2000
AVALO, NJ FIX	HARBO, NJ FIX	*6000
*4000 - GNSS MEA		
HARBO, NJ FIX	*DRIFT, NJ FIX	**7500
*6000 - MRA		
**3000 - GNSS MEA		
DRIFT, NJ FIX	MANTA, NJ FIX	*12000
*3000 - GNSS MEA		
MANTA, NJ FIX	PLUME, NJ FIX	*7000
*2000 - MOCA		
*3000 - GNSS MEA		

95.6268 VOR FEDERAL AIRWAY V268 - CONTINUED

PLUME, NJ FIX	*KOPPY, NY FIX	**4000
*5000 - MRA		
**3000 - MOCA		
**3000 - GNSS MEA		
KOPPY, NY FIX	BEADS, NY FIX	*4000
*3000 - MOCA		
*3000 - GNSS MEA		
BEADS, NY FIX	HAMPTON, NY VORTAC	*2500
*1600 - MOCA		
HAMPTON, NY VORTAC	SANDY POINT, RI VOR/DME	2000
SANDY POINT, RI VOR/DME	INNDY, MA FIX	2000
INNDY, MA FIX	*TONNI, MA FIX	6000
*6000 - MRA		
TONNI, MA FIX	*MESHL, ME FIX	**5000
*5000 - MRA		
**4000 - GNSS MEA		
MESHL, ME FIX	SAPPE, ME FIX	3000
SAPPE, ME FIX	AUGUSTA, ME VOR/DME	*3000
*1800 - MOCA		

95.6269 VOR FEDERAL AIRWAY V269

ELY, NV VOR/DME	*SPATS, NV FIX	**13000
*13000 - MCA SPATS, NV FIX , S BND		
**12200 - MOCA		
SPATS, NV FIX	WELLS, NV VOR/DME	11000
WELLS, NV VOR/DME	*TWIN FALLS, ID VORTAC	**13000
*7700 - MCA TWIN FALLS, ID VORTAC , S BND		
**11000 - MOCA		
**11000 - GNSS MEA		
TWIN FALLS, ID VORTAC	BURLEY, ID VOR/DME	7000
BURLEY, ID VOR/DME	POCATELLO, ID VOR/DME	7000
POCATELLO, ID VOR/DME	*JATTS, ID FIX	8000
*9700 - MCA JATTS, ID FIX , NW BND		
JATTS, ID FIX	YOYYU, ID FIX	*16000
*13300 - MOCA		
*13300 - GNSS MEA		
YOYYU, ID FIX	SALMON, ID VOR/DME	*14000
*13500 - MOCA		
*13500 - GNSS MEA		
SALMON, ID VOR/DME	DONNELLY, ID VOR/DME	12000
DONNELLY, ID VOR/DME	HOVEL, ID FIX	12000
HOVEL, ID FIX	FONNA, OR FIX	*12000
*8700 - MOCA		
*9000 - GNSS MEA		
FONNA, OR FIX	WILDHORSE, OR VOR/DME	9000
WILDHORSE, OR VOR/DME	DESCHUTES, OR VORTAC	9500
DESCHUTES, OR VORTAC	MANTE, OR FIX	10000
MANTE, OR FIX	MOBIL, OR FIX	*10000
*7600 - MOCA		
*8000 - GNSS MEA		
MOBIL, OR FIX	COBUR, OR FIX	
	NE BND	7000
	SW BND	5200
COBUR, OR FIX	*EUGENE, OR VORTAC	
	NE BND	5000
	SW BND	4400
*3800 - MCA EUGENE, OR VORTAC , BND		

95.6270 VOR FEDERAL AIRWAY V270

ELMIRA, NY VOR/DME	BINGHAMTON, NY VOR/DME	3500

FROM	TO	MEA

95.6270 VOR FEDERAL AIRWAY V270 - CONTINUED

BINGHAMTON, NY VOR/DME	DELANCEY, NY VOR/DME	
	W BND	4500
	E BND	4800
DELANCEY, NY VOR/DME	*ACOVE, NY FIX	6300
*8000 - MRA		
ACOVE, NY FIX	*ATHOS, NY FIX	6300
*6000 - MCA ATHOS, NY FIX , W BND		
ATHOS, NY FIX	CHESTER, MA VOR/DME	4500
CHESTER, MA VOR/DME	GLYDE, MA FIX	4000
GLYDE, MA FIX	BOSTON, MA VOR/DME	*4000
*3000 - MOCA		

95.6272 VOR FEDERAL AIRWAY V272

BURNS FLAT, OK VORTAC	WILL ROGERS, OK VORTAC	4500

95.6273 VOR FEDERAL AIRWAY V273

FALLZ, NJ FIX	HUGUENOT, NY VOR/DME	3200
HUGUENOT, NY VOR/DME	HANCOCK, NY VOR/DME	4000

95.6274 VOR FEDERAL AIRWAY V274

PULLMAN, MI VOR/DME	VICTORY, MI VOR/DME	3000
VICTORY, MI VOR/DME	SAGINAW, MI VOR/DME	2600

95.6275 VOR FEDERAL AIRWAY V275

CINCINNATI, KY VORTAC	DAYTON, OH VOR/DME	3000
DAYTON, OH VOR/DME	KLOEE, OH FIX	*6000
*2500 - MOCA		

95.6276 VOR FEDERAL AIRWAY V276

RASHE, PA FIX	MORTO, PA FIX	4000
MORTO, PA FIX	RAVINE, PA VORTAC	4000
RAVINE, PA VORTAC	*HIKES, PA FIX	**4000
*4000 - MRA		
**3500 - MOCA		
HIKES, PA FIX	YARDLEY, PA VOR/DME	*4000
*2400 - MOCA		
YARDLEY, PA VOR/DME	ROBBINSVILLE, NJ VORTAC	2100
ROBBINSVILLE, NJ VORTAC	CASVI, NJ FIX	1900
CASVI, NJ FIX	*GAMBY, NJ FIX	**3000
*6000 - MCA GAMBY, NJ FIX , SE BND		
**1500 - MOCA		
GAMBY, NJ FIX	*PREPI, OA FIX	**6000
*8000 - MRA		
**2000 - MOCA		
**3000 - GNSS MEA		

95.6277 VOR FEDERAL AIRWAY V277

ROSEWOOD, OH VORTAC	FORT WAYNE, IN VORTAC	3000
FORT WAYNE, IN VORTAC	BAGEL, IN FIX	2800
BAGEL, IN FIX	KEELER, MI VOR/DME	4000

95.6278 VOR FEDERAL AIRWAY V278

TEXICO, TX VORTAC	PLAINVIEW, TX VOR/DME	5800

FROM	TO	MEA

95.6278 VOR FEDERAL AIRWAY V278 - CONTINUED

BOWIE, TX VORTAC	BONHAM, TX VORTAC	4000
BONHAM, TX VORTAC	PARIS, TX VOR/DME	2400
PARIS, TX VOR/DME	TEXARKANA, AR VORTAC	2000
TEXARKANA, AR VORTAC	WEEBR, AR FIX	2200
WEEBR, AR FIX	WARLO, AR FIX	4000
WARLO, AR FIX	HAMPT, AR FIX	*9000
*1700 - MOCA		
GREENVILLE, MS VOR/DME	SIDON, MS VORTAC	2000
SIDON, MS VORTAC	BIGBEE, MS VORTAC	2400
BIGBEE, MS VORTAC	MINIM, AL FIX	2000
MINIM, AL FIX	VULCAN, AL VORTAC	2600

95.6279 VOR FEDERAL AIRWAY V279

GUNNE, OH FIX	FLAG CITY, OH VORTAC	3000

95.6280 VOR FEDERAL AIRWAY V280

U.S. MEXICAN BORDER	EL PASO, TX VORTAC	*8000
*6300 - MOCA		
EL PASO, TX VORTAC	PINON, NM VOR/DME	8800
PINON, NM VOR/DME	*HOPET, NM FIX	8800
*7400 - MCA HOPET, NM FIX , SW BND		
HOPET, NM FIX	CHISUM, NM VORTAC	7000
CHISUM, NM VORTAC	FRAIZ, NM FIX	
	NE BND	7500
	SW BND	6500
FRAIZ, NM FIX	DEBRA, NM FIX	*7500
*6000 - MOCA		
DEBRA, NM FIX	TEXICO, TX VORTAC	
	NE BND	*6500
	SW BND	*7500
*6000 - MOCA		
TEXICO, TX VORTAC	PANHANDLE, TX VORTAC	*5900
*5600 - MOCA		
PANHANDLE, TX VORTAC	MITBEE, OK VORTAC	5500
MITBEE, OK VORTAC	*CARKO, KS FIX	4000
*5000 - MCA CARKO, KS FIX , NE BND		
CARKO, KS FIX	WIPET, KS FIX	*8000
*3500 - MOCA		
WIPET, KS FIX	HUTCHINSON, KS VOR/DME	
	E BND	3400
	W BND	8000
HUTCHINSON, KS VOR/DME	BUHLS, KS FIX	4000
BUHLS, KS FIX	STONS, KS FIX	*4500
*2900 - MOCA		
STONS, KS FIX	HEYDN, KS FIX	*5000
*2900 - MOCA		
HEYDN, KS FIX	TOPEKA, KS VORTAC	3700

95.6281 VOR FEDERAL AIRWAY V281

PASCO, WA VOR/DME	MOSES LAKE, WA VOR/DME	4000

95.6283 VOR FEDERAL AIRWAY V283

SEAL BEACH, CA VORTAC	*JOGIT, CA FIX	4000
*6800 - MCA JOGIT, CA FIX , E BND		
JOGIT, CA FIX	KAYOH, CA FIX	
	W BND	6200
	E BND	8000

FROM	TO	MEA

95.6283 VOR FEDERAL AIRWAY V283 - CONTINUED

KAYOH, CA FIX	HOMELAND, CA VOR	8000
HOMELAND, CA VOR	*LUCER, CA FIX	10500
*9300 - MCA LUCER, CA FIX , SW BND		
LUCER, CA FIX	BULGY, CA FIX	*9000
*8000 - MOCA		
BULGY, CA FIX	*HECTOR, CA VORTAC	**9000
*8200 - MCA HECTOR, CA VORTAC , NE BND		
**7000 - MOCA		
HECTOR, CA VORTAC	*WHIGG, CA FIX	10500
*12000 - MRA		
WHIGG, CA FIX	BOULDER CITY, NV VORTAC	10500

95.6284 VOR FEDERAL AIRWAY V284

SEA ISLE, NJ VORTAC	CEDAR LAKE, NJ VOR/DME	*2500
*1800 - MOCA		

95.6285 VOR FEDERAL AIRWAY V285

BRICKYARD, IN VORTAC	KOKOMO, IN VORTAC	2700
KOKOMO, IN VORTAC	GOSHEN, IN VORTAC	2600
GOSHEN, IN VORTAC	KALAMAZOO, MI VOR/DME	2600
KALAMAZOO, MI VOR/DME	VICTORY, MI VOR/DME	3000

95.6286 VOR FEDERAL AIRWAY V286

ELKINS, WV VORTAC	DERIN, WV FIX	
	W BND	5700
	E BND	6200
DERIN, WV FIX	TEAKK, VA FIX	6900
TEAKK, VA FIX	CASANOVA, VA VORTAC	
	W BND	*6900
	E BND	*6500
*5800 - MOCA		
CASANOVA, VA VORTAC	FLUKY, VA FIX	*3000
*2300 - MOCA		
FLUKY, VA FIX	BROOKE, VA VORTAC	2000
BROOKE, VA VORTAC	*ZUNAR, VA FIX	**3000
*5000 - MCA ZUNAR, VA FIX , SE BND		
**2000 - GNSS MEA		
ZUNAR, VA FIX	FAGED, VA FIX	*5000
*2000 - GNSS MEA		
FAGED, VA FIX	GWYNN, VA FIX	2000
GWYNN, VA FIX	CAPE CHARLES, VA VORTAC	*2000
*1500 - MOCA		

95.6287 VOR FEDERAL AIRWAY V287

FORT JONES, CA VOR/DME	KLAMA, OR FIX	*12000
*9800 - MOCA		
KLAMA, OR FIX	*ROGUE VALLEY, OR VORTAC	
	SE BND	12000
	NW BND	8000
*7000 - MCA ROGUE VALLEY, OR VORTAC , SE BND		
ROGUE VALLEY, OR VORTAC	KOLER, OR FIX	*8000
*7400 - MOCA		
KOLER, OR FIX	CAMAS, OR FIX	*8500
*6000 - MOCA		
CAMAS, OR FIX	DEROY, OR FIX	
	NW BND	5500
	SE BND	8000

FROM	TO	MEA

95.6287 VOR FEDERAL AIRWAY V287 - CONTINUED

DEROY, OR FIX	NORTH BEND, OR VOR/DME	
	NW BND	4000
	SE BND	8000
NORTH BEND, OR VOR/DME	*RARES, OR FIX	
	N BND	6000
	S BND	3700
*5500 - MRA		
RARES, OR FIX	CRAAF, OR FIX	6000
CRAAF, OR FIX	MCCOY, OR FIX	*4000
*3400 - MOCA		
MCCOY, OR FIX	NEWBERG, OR VOR/DME	3600
NEWBERG, OR VOR/DME	BATTLE GROUND, WA VORTAC	4000
BATTLE GROUND, WA VORTAC	*MALAY, WA FIX	
	NW BND	6000
	SE BND	5000
*9500 - MRA		
MALAY, WA FIX	*TONNO, WA FIX	6000
*5000 - MRA		
TONNO, WA FIX	OLYMPIA, WA VORTAC	4000
OLYMPIA, WA VORTAC	*CARRO, WA FIX	**4000
*4000 - MRA		
**2000 - MOCA		
CARRO, WA FIX	*LOFAL, WA FIX	**6000
*5000 - MCA LOFAL, WA FIX , SW BND		
**5000 - MOCA		
LOFAL, WA FIX	PAINE, WA VOR/DME	*3000
*1900 - MOCA		
PAINE, WA VOR/DME	PENN COVE, WA VOR/DME	*3000
*1800 - MOCA		

95.6288 VOR FEDERAL AIRWAY V288

LUCIN, UT VORTAC	*CORIN, UT FIX	**13000
*13000 - MRA		
*16000 - MCA CORIN, UT FIX , E BND		
**9400 - MOCA		
CORIN, UT FIX	FORT BRIDGER, WY VOR/DME	*16000
*11600 - MOCA		
*12000 - GNSS MEA		

95.6289 VOR FEDERAL AIRWAY V289

BEAUMONT, TX VOR/DME	HONEE, TX FIX	2000
HONEE, TX FIX	LUFKIN, TX VORTAC	*3000
*2000 - MOCA		
LUFKIN, TX VORTAC	*PIPES, TX FIX	2400
*2400 - MRA		
PIPES, TX FIX	GREGG COUNTY, TX VORTAC	2000
GREGG COUNTY, TX VORTAC	TEXARKANA, AR VORTAC	2000
TEXARKANA, AR VORTAC	*PROVO, AR FIX	
	N BND	4300
	S BND	2200
*4500 - MRA		
PROVO, AR FIX	UMPIR, AR FIX	
	N BND	*4300
	S BND	*3900
*3400 - MOCA		
UMPIR, AR FIX	BATEZ, AR FIX	*4300
*3800 - MOCA		

FROM	TO	MEA

95.6289 VOR FEDERAL AIRWAY V289 - CONTINUED

BATEZ, AR FIX	FORT SMITH, AR VORTAC	*4100
*3600 - MOCA		
FORT SMITH, AR VORTAC	MULBY, AR FIX	
	SW BND	3300
	NE BND	4000
MULBY, AR FIX	HARRISON, AR VOR/DME	4000
HARRISON, AR VOR/DME	DOGWOOD, MO VORTAC	3400
DOGWOOD, MO VORTAC	PEKLE, MO FIX	*3900
*3000 - MOCA		
PEKLE, MO FIX	VICHY, MO VOR/DME	3000

95.6290 VOR FEDERAL AIRWAY V290

RAINELLE, WV VOR	*MONTEBELLO, VA VOR/DME	6500
*6000 - MCA MONTEBELLO, VA VOR/DME , SE BND		
MONTEBELLO, VA VOR/DME	ROMAN, VA FIX	6300
ROMAN, VA FIX	ARVON, VA FIX	4000
ARVON, VA FIX	FLAT ROCK, VA VORTAC	*5000
*2200 - GNSS MEA		
*FLAT ROCK R-297 UNUSABLE.		
TAR RIVER, NC VORTAC	KENIR, NC FIX	*4000
*1600 - MOCA		
*2000 - GNSS MEA		
KENIR, NC FIX	PUNGO, NC FIX	*5000
*1500 - MOCA		
*2000 - GNSS MEA		

95.6291 VOR FEDERAL AIRWAY V291

HOBBS, NM VORTAC	CHISUM, NM VORTAC	*6000
*5500 - MOCA		
CHISUM, NM VORTAC	DUPAL, NM FIX	
	NW BND	9000
	SE BND	6000
DUPAL, NM FIX	CORONA, NM VORTAC	9000
CORONA, NM VORTAC	ALBUQUERQUE, NM VORTAC	10000
ALBUQUERQUE, NM VORTAC	AROYO, NM FIX	8300
AROYO, NM FIX	*LORAT, NM FIX	9500
*12400 - MCA LORAT, NM FIX , W BND		
LORAT, NM FIX	BLINI, NM FIX	13300
BLINI, NM FIX	GALLUP, NM VORTAC	11000
GALLUP, NM VORTAC	FORAN, AZ FIX	9400
FORAN, AZ FIX	*WINSLOW, AZ VORTAC	9000
*MTA V327 N TO V291 E 11000		
*WINSLOW, AZ VORTAC	*FLAGSTAFF, AZ VOR/DME	10100
*11000 - MCA FLAGSTAFF, AZ VOR/DME , NE BND		
FLAGSTAFF, AZ VOR/DME	KACEE, AZ FIX	11000
KACEE, AZ FIX	PEACH SPRINGS, AZ VOR/DME	*11000
*10000 - MOCA		

95.6292 VOR FEDERAL AIRWAY V292

HANCOCK, NY VOR/DME	SAGES, NY FIX	6400
SAGES, NY FIX	WIGAN, NY FIX	UNUSABLE
WIGAN, NY FIX	BARNES, MA VORTAC	*10000
*4900 - MOCA		
*BARNES R-279 UNUSABLE BYD 50 NM		
BARNES, MA VORTAC	GLYDE, MA FIX	*7000
*2700 - MOCA		
*4000 - GNSS MEA		

95.6292 VOR FEDERAL AIRWAY V292 - CONTINUED

GLYDE, MA FIX	BOSTON, MA VOR/DME	*4000
*3000 - MOCA		

95.6293 VOR FEDERAL AIRWAY V293

*GRAND CANYON, AZ VOR/DME	**KLIFF, AZ FIX	***14500
*14500 - MCA GRAND CANYON, AZ VOR/DME , N BND		
**14500 - MCA KLIFF, AZ FIX , S BND		
***10900 - MOCA		
KLIFF, AZ FIX	PAGE, AZ VOR/DME	8700
PAGE, AZ VOR/DME	CABER, UT FIX	8500
CABER, UT FIX	BRYCE CANYON, UT VORTAC	11000
BRYCE CANYON, UT VORTAC	*ENOCH, UT VOR/DME	13300
*12100 - MCA ENOCH, UT VOR/DME , E BND		
ENOCH, UT VOR/DME	BERYL, UT FIX	9000
BERYL, UT FIX	WILSON CREEK, NV VORTAC	11600
WILSON CREEK, NV VORTAC	ELY, NV VOR/DME	12000
ELY, NV VOR/DME	*BULLION, NV VOR/DME	**14000
*12000 - MCA BULLION, NV VOR/DME , S BND		
**13100 - MOCA		
**MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
BULLION, NV VOR/DME	SAMAN, ID FIX	10600
SAMAN, ID FIX	*TWIN FALLS, ID VORTAC	
	N BND	7500
	S BND	8600
*6500 - MCA TWIN FALLS, ID VORTAC , S BND		
TWIN FALLS, ID VORTAC	GOODE, ID FIX	6000
GOODE, ID FIX	*TORIN, ID FIX	6600
*8700 - MCA TORIN, ID FIX , NW BND		
TORIN, ID FIX	DERSO, ID FIX	
	NW BND	11500
	SE BND	9200
DERSO, ID FIX	DONNELLY, ID VOR/DME	11700

95.6294 VOR FEDERAL AIRWAY V294

DES MOINES, IA VORTAC	CEDAR RAPIDS, IA VOR/DME	2700
CEDAR RAPIDS, IA VOR/DME	DAVENPORT, IA VORTAC	2600

95.6295 VOR FEDERAL AIRWAY V295

VIRGINIA KEY, FL VOR/DME	HEATT, FL FIX	*5000
*2100 - MOCA		
HEATT, FL FIX	*BLUFI, FL FIX	**6000
*6000 - MCA BLUFI, FL FIX , S BND		
**2000 - MOCA		
BLUFI, FL FIX	STOOP, FL FIX	*5000
*2000 - MOCA		
STOOP, FL FIX	TREASURE, FL VORTAC	2000
TREASURE, FL VORTAC	BAIRN, FL FIX	2600
BAIRN, FL FIX	ORLANDO, FL VORTAC	2700
ORLANDO, FL VORTAC	*SHIMM, FL FIX	2000
*3000 - MRA		
SHIMM, FL FIX	OCALA, FL VORTAC	2000
OCALA, FL VORTAC	*PERSE, FL FIX	2000
*3000 - MRA		
PERSE, FL FIX	*WILON, FL FIX	2000
*3000 - MRA		
WILON, FL FIX	CROSS CITY, FL VORTAC	2000

FROM	TO	MEA

95.6295 VOR FEDERAL AIRWAY V295 - CONTINUED

CROSS CITY, FL VORTAC	SEMINOLE, FL VORTAC	2000

95.6296 VOR FEDERAL AIRWAY V296

HUSTN, NC FIX	*RAEFO, NC FIX	**5000
*6000 - MRA		
**2300 - MOCA		
**2400 - GNSS MEA		
RAEFO, NC FIX	FAYETTEVILLE, NC VOR/DME	*5000
*1900 - MOCA		
FAYETTEVILLE, NC VOR/DME	WILMINGTON, NC VORTAC	*3000
*2100 - MOCA		

95.6298 VOR FEDERAL AIRWAY V298

*SEATTLE, WA VORTAC	VAMPS, WA FIX	
	W BND	**4000
	E BND	**8400
*4300 - MCA SEATTLE, WA VORTAC , E BND		
**3100 - MOCA		
**5300 - GNSS MEA		
VAMPS, WA FIX	BANDR, WA FIX	
	E BND	*8400
	W BND	*7700
*7700 - GNSS MEA		
BANDR, WA FIX	*BEEZR, WA FIX	8400
*9000 - MRA		
BEEZR, WA FIX	PERTT, WA FIX	*9000
*7500 - MOCA		
PERTT, WA FIX	YAKIMA, WA VORTAC	6600
YAKIMA, WA VORTAC	*SUNED, WA FIX	**5000
*5500 - MRA		
**4300 - MOCA		
SUNED, WA FIX	BENTY, WA FIX	*5000
*4300 - MOCA		
BENTY, WA FIX	PASCO, WA VOR/DME	*4000
*3500 - MOCA		
PASCO, WA VOR/DME	PENDLETON, OR VORTAC	4000
PENDLETON, OR VORTAC	CABAN, OR FIX	6000
CABAN, OR FIX	IBEAM, OR FIX	8300
IBEAM, OR FIX	DONNELLY, ID VOR/DME	12000
DONNELLY, ID VOR/DME	*DUBOIS, ID VORTAC	**16000
*9800 - MCA DUBOIS, ID VORTAC , W BND		
**13600 - MOCA		
DUBOIS, ID VORTAC	*SABAT, ID FIX	
	W BND	**9000
	E BND	**13000
*10000 - MRA		
*11100 - MCA SABAT, ID FIX , E BND		
**8100 - MOCA		
SABAT, ID FIX	LAMON, ID FIX	
	W BND	*10000
	E BND	*13000
*8100 - MOCA		
LAMON, ID FIX	*QUIRT, WY FIX	15000
*14100 - MCA QUIRT, WY FIX , W BND		
QUIRT, WY FIX	DUNOIR, WY VOR/DME	*12000
*10800 - MOCA		
DUNOIR, WY VOR/DME	*BOYSEN RESERVOIR, WY VOR/DME	14000
*11000 - MCA BOYSEN RESERVOIR, WY VOR/DME , W BND		

95.6298 VOR FEDERAL AIRWAY V298 - CONTINUED

BOYSEN RESERVOIR, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	*11000
*10300 - MOCA		
MUDDY MOUNTAIN, WY VOR/DME	CHANG, WY FIX	8500
CHANG, WY FIX	GILLETTE, WY VOR/DME	7200

95.6299 VOR FEDERAL AIRWAY V299

*LOS ANGELES, CA VORTAC	VENTURA, CA VOR/DME	5000
*3200 - MCA LOS ANGELES, CA VORTAC , W BND		
VENTURA, CA VOR/DME	*FILLMORE, CA VORTAC	5000
*7200 - MCA FILLMORE, CA VORTAC , N BND		
FILLMORE, CA VORTAC	GORMAN, CA VORTAC	9500

95.6300 VOR FEDERAL AIRWAY V300

U.S. CANADIAN BORDER	AVALE, MI FIX	*9000
*2400 - MOCA		
AVALE, MI FIX	U.S. CANADIAN BORDER	*3000
*2400 - MOCA		
U.S. CANADIAN BORDER	SAULT STE MARIE, MI VOR/DME	*3000
*2400 - MOCA		
SAULT STE MARIE, MI VOR/DME	U.S. CANADIAN BORDER	*3000
*2500 - MOCA		
U.S. CANADIAN BORDER	NAASH, MI FIX	*3000
*2500 - MOCA		
NAASH, MI FIX	U.S. CANADIAN BORDER	*6000
*2500 - MOCA		
U.S. CANADIAN BORDER	CAMPO, ME FIX	*9000
*5900 - MOCA		
*5900 - GNSS MEA		
CAMPO, ME FIX	WRAPT, ME FIX	*9000
*6000 - MOCA		
*6000 - GNSS MEA		
WRAPT, ME FIX	MILLINOCKET, ME VOR/DME	*7000
*5900 - MOCA		
*5900 - GNSS MEA		
MILLINOCKET, ME VOR/DME	U.S. CANADIAN BORDER	*3000
*2200 - MOCA		

95.6301 VOR FEDERAL AIRWAY V301

PANOCHE, CA VORTAC	*SUNOL, CA FIX	6500
*6500 - MCA SUNOL, CA FIX , SE BND		
SUNOL, CA FIX	OAKLAND, CA VOR/DME	4000
OAKLAND, CA VOR/DME	COMMO, CA FIX	*5000
*4000 - MOCA		
COMMO, CA FIX	POINT REYES, CA VOR/DME	5000
POINT REYES, CA VOR/DME	*ROZZA, CA FIX	3500
*11000 - MCA ROZZA, CA FIX , N BND		
ROZZA, CA FIX	KLOGE, CA FIX	*11000
*4500 - MOCA		
*5000 - GNSS MEA		
KLOGE, CA FIX	RUMSY, CA FIX	*11000
*6600 - MOCA		
*7000 - GNSS MEA		
RUMSY, CA FIX	WILLIAMS, CA VORTAC	
	SW BND	11000
	NE BND	5300

95.6302 VOR FEDERAL AIRWAY V302

AUGUSTA, ME VOR/DME	ANCOR, ME FIX	*5000
*3000 - GNSS MEA		

FROM	TO	MEA

95.6303 VOR FEDERAL AIRWAY V303

HOT SPRINGS, AR VOR/DME	*BLURB, AR FIX	**3500
*5000 - MRA		
**3000 - MOCA		
BLURB, AR FIX	BLIMP, AR FIX	*4100
*3600 - MOCA		
BLIMP, AR FIX	FORT SMITH, AR VORTAC	*2900
*2400 - MOCA		

95.6305 VOR FEDERAL AIRWAY V305

EL DORADO, AR VOR/DME	LITTLE ROCK, AR VORTAC	3300
LITTLE ROCK, AR VORTAC	DUMPI, AR FIX	
	S BND	2000
	N BND	4000
DUMPI, AR FIX	WALNUT RIDGE, AR VORTAC	*4000
*2200 - MOCA		
CUNNINGHAM, KY VOR/DME	POCKET CITY, IN VORTAC	2600
POCKET CITY, IN VORTAC	AUGUS, IN FIX	
	N BND	2400
	S BND	3500
AUGUS, IN FIX	WEGEE, IN FIX	*3500
*1900 - MOCA		
WEGEE, IN FIX	HOOSIER, IN VORTAC	2700
HOOSIER, IN VORTAC	BRICKYARD, IN VORTAC	*2700
*2700 - GNSS MEA		
*HOOSIER R-027 UNUSABLE.		
BRICKYARD, IN VORTAC	WELDO, IN FIX	2900
WELDO, IN FIX	KOKOMO, IN VORTAC	2700

95.6306 VOR FEDERAL AIRWAY V306

JUNCTION, TX VORTAC	*AMUSE, TX FIX	**7000
*5000 - MCA AMUSE, TX FIX , W BND		
**5000 - MOCA		
AMUSE, TX FIX	CENTEX, TX VORTAC	3300
CENTEX, TX VORTAC	NAVASOTA, TX VOR/DME	2400
NAVASOTA, TX VOR/DME	ZMSKL, TX FIX	2000
ZMSKL, TX FIX	CLEEP, TX FIX	*5000
*2400 - MOCA		
CLEEP, TX FIX	DAISETTA, TX VORTAC	3100
DAISETTA, TX VORTAC	KUUPR, TX FIX	
	W BND	2300
	E BND	2800
KUUPR, TX FIX	OFERS, LA FIX	2800
OFERS, LA FIX	LAKE CHARLES, LA VORTAC	2000

95.6307 VOR FEDERAL AIRWAY V307

CHANUTE, KS VOR/DME	EMPORIA, KS VORTAC	3000
EMPORIA, KS VORTAC	*ALMAS, KS FIX	3300
*5000 - MCA ALMAS, KS FIX , N BND		
ALMAS, KS FIX	PAWNEE CITY, NE VORTAC	*5000
*3000 - MOCA		
PAWNEE CITY, NE VORTAC	OMAHA, IA VORTAC	3000

95.6308 VOR FEDERAL AIRWAY V308

NOTTINGHAM, MD VORTAC	*BILIT, MD FIX	**6000
*6000 - MCA BILIT, MD FIX , W BND		
**1600 - MOCA		
**2000 - GNSS MEA		

FROM	TO	MEA

95.6308 VOR FEDERAL AIRWAY V308 - CONTINUED

BILIT, MD FIX	WATERLOO, DE VOR/DME	*2000
*1500 - MOCA		
WATERLOO, DE VOR/DME	SEA ISLE, NJ VORTAC	*2000
*1500 - MOCA		
SEA ISLE, NJ VORTAC	AVALO, NJ FIX	*4500
*4000 - GNSS MEA		
AVALO, NJ FIX	HARBO, NJ FIX	*6000
*4000 - GNSS MEA		
HARBO, NJ FIX	*DRIFT, NJ FIX	**7500
*6000 - MRA		
**3000 - GNSS MEA		
DRIFT, NJ FIX	MANTA, NJ FIX	*12000
*3000 - GNSS MEA		
MANTA, NJ FIX	PLUME, NJ FIX	*7000
*2000 - MOCA		
*3000 - GNSS MEA		
PLUME, NJ FIX	*KOPPY, NY FIX	**4000
*5000 - MRA		
**3000 - MOCA		
**3000 - GNSS MEA		
KOPPY, NY FIX	BEADS, NY FIX	*4000
*3000 - MOCA		
*3000 - GNSS MEA		
BEADS, NY FIX	HAMPTON, NY VORTAC	*2500
*1600 - MOCA		
HAMPTON, NY VORTAC	GROTON, CT VOR/DME	2000
GROTON, CT VOR/DME	NORWICH, CT VOR/DME	2000

95.6309 VOR FEDERAL AIRWAY V309

CHARLESTON, WV VOR/DME	*JULEA, WV FIX	**5000
*5000 - MRA		
*5700 - MCA JULEA, WV FIX , NE BND		
**3200 - MOCA		
**3200 - GNSS MEA		
JULEA, WV FIX	RANDE, WV FIX	*7000
*3200 - MOCA		
*3200 - GNSS MEA		
RANDE, WV FIX	BURGS, WV FIX	*7000
*3300 - MOCA		
*3400 - GNSS MEA		
BURGS, WV FIX	BELLAIRE, OH VOR/DME	3400

95.6310 VOR FEDERAL AIRWAY V310

LOUISVILLE, KY VORTAC	*DARBY, KY FIX	**3300
*5000 - MRA		
**2900 - MOCA		
DARBY, KY FIX	LONDON, KY VOR/DME	*3300
*3000 - MOCA		
LONDON, KY VOR/DME	ROSAR, KY FIX	
	SE BND	*6900
	NW BND	*5500
*4100 - MOCA		
ROSAR, KY FIX	*HOLSTON MOUNTAIN, TN VORTAC	6900
*6900 - MCA HOLSTON MOUNTAIN, TN VORTAC , E BND		
HOLSTON MOUNTAIN, TN VORTAC	STAIN, TN FIX	6900
STAIN, TN FIX	*BURCH, NC FIX	8500
*8500 - MCA BURCH, NC FIX , W BND		

FROM	TO	MEA

95.6310 VOR FEDERAL AIRWAY V310 - CONTINUED

BURCH, NC FIX	GREENSBORO, NC VORTAC	3500
GREENSBORO, NC VORTAC	*CHAPL, NC FIX	3100
*2800 - MCA CHAPL, NC FIX , W BND		
CHAPL, NC FIX	RALEIGH/DURHAM, NC VORTAC	*2400
*1900 - MOCA		
RALEIGH/DURHAM, NC VORTAC	TAR RIVER, NC VORTAC	2600
TAR RIVER, NC VORTAC	ELIZABETH CITY, NC VOR/DME	*4000
*1600 - MOCA		
*2000 - GNSS MEA		

95.6311 VOR FEDERAL AIRWAY V311

HINCH MOUNTAIN, TN VOR/DME	DUBBS, TN FIX	5000
DUBBS, TN FIX	MADOL, GA FIX	*7000
*6400 - MOCA		
MADOL, GA FIX	*NELLO, GA FIX	**8000
*8000 - MCA NELLO, GA FIX , N BND		
*7000 - MCA NELLO, GA FIX , E BND		
**6400 - MOCA		
NELLO, GA FIX	AWSON, GA FIX	*7000
*5500 - MOCA		
AWSON, GA FIX	CORCE, GA FIX	*5400
*4600 - MOCA		
CORCE, GA FIX	ELECTRIC CITY, SC VORTAC	3800
ELECTRIC CITY, SC VORTAC	GREENWOOD, SC VORTAC	2500
GREENWOOD, SC VORTAC	COLUMBIA, SC VORTAC	2400
COLUMBIA, SC VORTAC	*ERNIE, SC FIX	2000
*2500 - MRA		
ERNIE, SC FIX	SACKS, SC FIX	2000
SACKS, SC FIX	CHARLESTON, SC VORTAC	2100

95.6312 VOR FEDERAL AIRWAY V312

POLLA, MD FIX	TACKS, MD FIX	2200
		MAA - 13000
TACKS, MD FIX	WOODSTOWN, NJ VORTAC	*2000
*1500 - MOCA		
WOODSTOWN, NJ VORTAC	COYLE, NJ VORTAC	2100
COYLE, NJ VORTAC	*DRIFT, NJ FIX	2000
*6000 - MRA		
DRIFT, NJ FIX	*PREPI, OA FIX	**4800
*8000 - MRA		
**2500 - GNSS MEA		

95.6313 VOR FEDERAL AIRWAY V313

CENTRALIA, IL VORTAC	ADDERS, IL VORTAC	2500
ADDERS, IL VORTAC	PONTIAC, IL VOR/DME	3000

95.6314 VOR FEDERAL AIRWAY V314

U.S. CANADIAN BORDER	PATTA, ME WP	*6000
*3900 - MOCA		
PATTA, ME WP	MILLINOCKET, ME VOR/DME	*6000
*3900 - MOCA		

95.6315 VOR FEDERAL AIRWAY V315

PARIS, TX VOR/DME	RICH MOUNTAIN, OK VORTAC	4200

FROM	TO	MEA

95.6316 VOR FEDERAL AIRWAY V316

IRONWOOD, MI VOR/DME	SAWYER, MI VOR/DME	*6000
*3700 - MOCA		

95.6317 VOR FEDERAL AIRWAY V317

MISSION BAY, CA VORTAC	POGGI, CA VORTAC	4500
POGGI, CA VORTAC	IMPERIAL, CA VORTAC	7000

95.6319 VOR FEDERAL AIRWAY V319

BOYSEN RESERVOIR, WY VOR/DME	WORLAND, WY VOR/DME	9600
WORLAND, WY VOR/DME	ALVIL, WY FIX	7000
ALVIL, WY FIX	CODY, WY VOR/DME	8500

95.6320 VOR FEDERAL AIRWAY V320

PELLSTON, MI VORTAC	TRAVERSE CITY, MI VOR/DME	3000
TRAVERSE CITY, MI VOR/DME	MOUNT PLEASANT, MI VOR/DME	5000
MOUNT PLEASANT, MI VOR/DME	SAGINAW, MI VOR/DME	2600

95.6321 VOR FEDERAL AIRWAY V321

PECAN, GA VOR/DME	KUTVE, GA FIX	2000
KUTVE, GA FIX	*PREST, GA FIX	2600
*5000 - MCA PREST, GA FIX , NW BND		
PREST, GA FIX	*COLUMBUS, GA VORTAC	**5000
*5000 - MCA COLUMBUS, GA VORTAC , SE BND		
**3300 - MOCA		
COLUMBUS, GA VORTAC	LAGRANGE, GA VORTAC	2500
LAGRANGE, GA VORTAC	HEFIN, AL FIX	*4000
*3400 - MOCA		
HEFIN, AL FIX	GADSDEN, AL VOR/DME	4000
GADSDEN, AL VOR/DME	ALBER, AL FIX	3100
ALBER, AL FIX	ROCKET, AL VORTAC	3700
ROCKET, AL VORTAC	SHELBYVILLE, TN VOR/DME	3000
SHELBYVILLE, TN VOR/DME	LIVINGSTON, TN VOR/DME	3800

95.6323 VOR FEDERAL AIRWAY V323

MONTGOMERY, AL VORTAC	EUFAULA, AL VORTAC	2400
EUFAULA, AL VORTAC	WILMS, GA FIX	*3000
*2100 - MOCA		

95.6324 VOR FEDERAL AIRWAY V324

GILLETTE, WY VOR/DME	*CRAZY WOMAN, WY VOR/DME	7500
*9500 - MCA CRAZY WOMAN, WY VOR/DME , W BND		
CRAZY WOMAN, WY VOR/DME	CHAPY, WY FIX	12000
CHAPY, WY FIX	WORLAND, WY VOR/DME	
	E BND	12000
	W BND	8000

95.6325 VOR FEDERAL AIRWAY V325

COLUMBIA, SC VORTAC	*VESTO, GA FIX	8000
*8000 - MCA VESTO, GA FIX , E BND		
VESTO, GA FIX	ATHENS, GA VOR/DME	
	W BND	2500
	E BND	8000

FROM	TO	MEA

95.6325 VOR FEDERAL AIRWAY V325 - CONTINUED

DALAS, GA FIX	CARAN, GA FIX	*GNSS - 5000
*3700 - MOCA		
*GADSDEN R-089 UNUSABLE BYD 47NM EXCEPT FOR ACFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS		
CARAN, GA FIX	GADSDEN, AL VOR/DME	*5000
*4200 - MOCA		
GADSDEN, AL VOR/DME	FEWER, AL FIX	3500
		MAA - 17500

95.6326 VOR FEDERAL AIRWAY V326

FILLMORE, CA VORTAC	VAN NUYS, CA VOR/DME	5000

95.6327 VOR FEDERAL AIRWAY V327

PHOENIX, AZ VORTAC	KNOBB, AZ FIX	8000
KNOBB, AZ FIX	RADOM, AZ FIX	
	S BND	8000
	N BND	11000
RADOM, AZ FIX	*FERER, AZ FIX	
	N BND	**12000
	S BND	**11000
*12000 - MRA		
*11000 - MCA FERER, AZ FIX , S BND		
**8400 - MOCA		
**9000 - GNSS MEA		
FERER, AZ FIX	OATES, AZ FIX	*12000
*9400 - MOCA		
*10000 - GNSS MEA		
OATES, AZ FIX	*FLAGSTAFF, AZ VOR/DME	10500
*11000 - MCA FLAGSTAFF, AZ VOR/DME , BND		

95.6328 VOR FEDERAL AIRWAY V328

JACKSON, WY VOR/DME	BIG PINEY, WY VOR/DME	13500
MTA V328 NW TO V465 SW 15100		
BIG PINEY, WY VOR/DME	ROCK SPRINGS, WY VOR/DME	*10000
*9700 - MOCA		
ROCK SPRINGS, WY VOR/DME	SNAKY, WY FIX	11000
SNAKY, WY FIX	CELIA, CO FIX	*12000
*10000 - GNSS MEA		
CELIA, CO FIX	HAYDEN, CO VOR/DME	10000
HAYDEN, CO VOR/DME	HABRO, CO FIX	10000
HABRO, CO FIX	KREMMLING, CO VOR/DME	13000
KREMMLING, CO VOR/DME	*SKEED, CO FIX	**16500
*16500 - MRA		
**15800 - MOCA		
SKEED, CO FIX	*POWDR, CO FIX	14500
*15600 - MRA		
POWDR, CO FIX	MILE HIGH, CO VORTAC	14000

95.6330 VOR FEDERAL AIRWAY V330

WILDHORSE, OR VOR/DME	BOISE, ID VORTAC	8000
BOISE, ID VORTAC	CANEK, ID FIX	
	NW BND	7000
	SE BND	9500
CANEK, ID FIX	ALKAL, ID FIX	*9500
*8500 - MOCA		

FROM	TO	MEA

95.6330 VOR FEDERAL AIRWAY V330 - CONTINUED

ALKAL, ID FIX	TORIN, ID FIX	
	E BND	*8000
	W BND	*9500
*6700 - MOCA		
TORIN, ID FIX	*KINZE, ID FIX	8000
*8000 - MCA KINZE, ID FIX , W BND		
IDAHO FALLS, ID VOR/DME	*OSITY, ID FIX	8000
*9500 - MCA OSITY, ID FIX , E BND		
OSITY, ID FIX	*JACKSON, WY VOR/DME	14000
*13400 - MCA JACKSON, WY VOR/DME , W BND		
*MTA V330 E TO V520 W 16000		
*		
JACKSON, WY VOR/DME	DUNOIR, WY VOR/DME	13000
DUNOIR, WY VOR/DME	*ROWEY, WY FIX	**14000
*11000 - MCA ROWEY, WY FIX , W BND		
**13500 - MOCA		
ROWEY, WY FIX	RIVERTON, WY VOR/DME	8800
RIVERTON, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	8500

95.6332 VOR FEDERAL AIRWAY V332

FRIANT, CA VORTAC	HANGTOWN, CA VOR/DME	8500
HANGTOWN, CA VOR/DME	RED BLUFF, CA VORTAC	6000

95.6333 VOR FEDERAL AIRWAY V333

DALAS, GA FIX	ROME, GA VORTAC	*4000
*3200 - MOCA		
ROME, GA VORTAC	CHOO CHOO, TN VORTAC	4000
CHOO CHOO, TN VORTAC	*BOOPS, TN FIX	3500
*4500 - MRA		
BOOPS, TN FIX	HINCH MOUNTAIN, TN VOR/DME	5000
HINCH MOUNTAIN, TN VOR/DME	JELLO, TN FIX	5000
JELLO, TN FIX	*WNSOR, KY FIX	**5100
*5100 - MCA WNSOR, KY FIX , S BND		
*5100 - MCA WNSOR, KY FIX , N BND		
**4000 - MOCA		
**4000 - GNSS MEA		
WNSOR, KY FIX	DOLLY, KY FIX	*5100
*4000 - MOCA		
*4000 - GNSS MEA		
DOLLY, KY FIX	LEXINGTON, KY VOR/DME	3800

95.6334 VOR FEDERAL AIRWAY V334

SAN JOSE, CA VOR/DME	*OAKEY, CA FIX	5000
*3000 - MCA OAKEY, CA FIX , S BND		
OAKEY, CA FIX	SACRAMENTO, CA VORTAC	2500

95.6336 VOR FEDERAL AIRWAY V336

ELLENSBURG, WA VOR/DME	*QUINT, WA FIX	7100
*6500 - MCA QUINT, WA FIX , SW BND		
QUINT, WA FIX	EPHRATA, WA VORTAC	5000

95.6338 VOR FEDERAL AIRWAY V338

LINDEN, CA VOR/DME	*HANGTOWN, CA VOR/DME	5000
*7000 - MCA HANGTOWN, CA VOR/DME , NE BND		

FROM	TO	MEA

95.6338 VOR FEDERAL AIRWAY V338 - CONTINUED

HANGTOWN, CA VOR/DME	SQUAW VALLEY, CA VOR/DME	11000

95.6340 VOR FEDERAL AIRWAY V340

BEARZ, IN FIX	KNOX, IN VOR/DME	3000
KNOX, IN VOR/DME	FORT WAYNE, IN VORTAC	3000

95.6341 VOR FEDERAL AIRWAY V341

CEDAR RAPIDS, IA VOR/DME	DUBUQUE, IA VORTAC	2900
DUBUQUE, IA VORTAC	MADISON, WI VORTAC	4000
MADISON, WI VORTAC	OSHKOSH, WI VORTAC	3000
OSHKOSH, WI VORTAC	GREEN BAY, WI VORTAC	*3000
*2300 - MOCA		
IRON MOUNTAIN, MI VOR/DME	SAWYER, MI VOR/DME	3100
SAWYER, MI VOR/DME	HOUGHTON, MI VOR/DME	*4500
*3400 - MOCA		

95.6343 VOR FEDERAL AIRWAY V343

*DUBOIS, ID VORTAC	RANEY, MT FIX	**15000
*8500 - MCA DUBOIS, ID VORTAC , N BND		
**13200 - MOCA		
RANEY, MT FIX	*GATEY, MT FIX	
	S BND	14000
	N BND	10200
*11500 - MCA GATEY, MT FIX , S BND		
GATEY, MT FIX	*BOZEMAN, MT VOR/DME	
	S BND	11500
	N BND	8000
*10500 - MCA BOZEMAN, MT VOR/DME , S BND		
BOZEMAN, MT VOR/DME	THESE, MT FIX	8000
THESE, MT FIX	SUZZY, MT FIX	
	E BND	8300
	W BND	10800
SUZZY, MT FIX	EVVER, MT FIX	11000

95.6344 VOR FEDERAL AIRWAY V344

DUPREE, SD VOR/DME	ABERDEEN, SD VOR/DME	*6500
*4100 - MOCA		
ABERDEEN, SD VOR/DME	FARGO, ND VOR/DME	*3900
*3000 - MOCA		

95.6345 VOR FEDERAL AIRWAY V345

DELLS, WI VORTAC	*MILTO, WI FIX	**3500
*4700 - MCA MILTO, WI FIX , NW BND		
**2800 - MOCA		
MILTO, WI FIX	EAU CLAIRE, WI VORTAC	*4700
*3500 - MOCA		
*3500 - GNSS MEA		

95.6347 VOR FEDERAL AIRWAY V347

LONDON, KY VOR/DME	HINCH MOUNTAIN, TN VOR/DME	4700

95.6348 VOR FEDERAL AIRWAY V348

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*15000
*2800 - MOCA		

FROM	TO	MEA

95.6348 VOR FEDERAL AIRWAY V348 - CONTINUED

U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	*15000
*2800 - MOCA		
U.S. CANADIAN BORDER	SAULT STE MARIE, MI VOR/DME	*15000
*2800 - MOCA		
SAULT STE MARIE, MI VOR/DME	U.S. CANADIAN BORDER	*7000
*3000 - MOCA		

95.6349 VOR FEDERAL AIRWAY V349

WHATCOM, WA VORTAC	U.S. CANADIAN BORDER	*3000
*2600 - MOCA		

95.6350 VOR FEDERAL AIRWAY V350

WICHITA, KS VORTAC	CHANUTE, KS VOR/DME	3600

95.6354 VOR FEDERAL AIRWAY V354

WILL ROGERS, OK VORTAC	PIONEER, OK VORTAC	4000
PIONEER, OK VORTAC	EMPORIA, KS VORTAC	3500

95.6355 VOR FEDERAL AIRWAY V355

BOWIE, TX VORTAC	WICHITA FALLS, TX VORTAC	3100

95.6356 VOR FEDERAL AIRWAY V356

RED TABLE, CO VOR/DME	FISTR, CO FIX	
	NE BND	15200
	SW BND	14200
FISTR, CO FIX	FIDLE, CO FIX	15200
FIDLE, CO FIX	*ELORE, CO FIX	**16500
*12400 - MCA ELORE, CO FIX , W BND		
**15600 - MOCA		
ELORE, CO FIX	MILE HIGH, CO VORTAC	7800

95.6357 VOR FEDERAL AIRWAY V357

LAKEVIEW, OR VORTAC	WILDHORSE, OR VOR/DME	*10000
*9500 - MOCA		
WILDHORSE, OR VOR/DME	*POTSY, OR FIX	10000
*15000 - MRA		
POTSY, OR FIX	BAKER CITY, OR VOR/DME	12000
BAKER CITY, OR VOR/DME	*TOLGA, OR FIX	9000
*7000 - MCA TOLGA, OR FIX , SE BND		
TOLGA, OR FIX	*WALLA WALLA, WA VOR/DME	6700
*5300 - MCA WALLA WALLA, WA VOR/DME , SE BND		
WALLA WALLA, WA VOR/DME	MOSES LAKE, WA VOR/DME	4000
MOSES LAKE, WA VOR/DME	QUINT, WA FIX	4000
QUINT, WA FIX	WENATCHEE, WA VOR/DME	5500

95.6358 VOR FEDERAL AIRWAY V358

SAN ANTONIO, TX VORTAC	GUADA, TX FIX	*4000
*2800 - MOCA		
GUADA, TX FIX	STONEWALL, TX VORTAC	4000
STONEWALL, TX VORTAC	GOOCH SPRINGS, TX VORTAC	*3800
*3200 - MOCA		

FROM	TO	MEA

95.6358 VOR FEDERAL AIRWAY V358 - CONTINUED

GOOCH SPRINGS, TX VORTAC	SONET, TX FIX	3000
SONET, TX FIX	WACO, TX VORTAC	2700

95.6359 VOR FEDERAL AIRWAY V359

U.S. MEXICAN BORDER	LAREDO, TX VORTAC	*3000
*2500 - MOCA		

95.6360 VOR FEDERAL AIRWAY V360

SAULT STE MARIE, MI VOR/DME	U.S. CANADIAN BORDER	*6000
*2600 - MOCA		

95.6361 VOR FEDERAL AIRWAY V361

RATTLESNAKE, NM VORTAC	MARKE, CO FIX	
	NE BND	16300
	SW BND	9500
MARKE, CO FIX	UNLAP, CO FIX	
	NE BND	*16300
	SW BND	*11000
*10400 - MOCA		
UNLAP, CO FIX	SCRUB, CO FIX	16300
SCRUB, CO FIX	LYZZA, CO FIX	
	SW BND	16300
	NE BND	12400
LYZZA, CO FIX	MONTROSE, CO VOR/DME	
	SW BND	16300
	NE BND	9600
MONTROSE, CO VOR/DME	ICIES, CO FIX	
	S BND	10600
	N BND	15000
ICIES, CO FIX	RED TABLE, CO VOR/DME	15000
RED TABLE, CO VOR/DME	KREMMLING, CO VOR/DME	14000
KREMMLING, CO VOR/DME	BARGR, CO FIX	*16000
*15600 - MOCA		
BARGR, CO FIX	CHEYENNE, WY VORTAC	
	NE BND	9200
	SW BND	16000

95.6363 VOR FEDERAL AIRWAY V363

MISSION BAY, CA VORTAC	HURSI, CA FIX	3000
HURSI, CA FIX	OORAH, CA FIX	*4000
*2600 - MOCA		
OORAH, CA FIX	OFREE, CA FIX	*4000
*2300 - MOCA		
OFREE, CA FIX	EL TORO, CA VOR/DME	4000
EL TORO, CA VOR/DME	POMONA, CA VORTAC	4000

95.6364 VOR FEDERAL AIRWAY V364

LINCO, NC FIX	SUGARLOAF MOUNTAIN, NC VORTAC	6000
SUGARLOAF MOUNTAIN, NC VORTAC	WEAKS, NC FIX	8000
WEAKS, NC FIX	UNICO, TN FIX	*9000
*7700 - MOCA		
*7700 - GNSS MEA		
UNICO, TN FIX	HOLSTON MOUNTAIN, TN VORTAC	7000

95.6365 VOR FEDERAL AIRWAY V365

BURLEY, ID VOR/DME	IDAHO FALLS, ID VOR/DME	8000

FROM	TO	MEA

95.6365 VOR FEDERAL AIRWAY V365 - CONTINUED

IDAHO FALLS, ID VOR/DME	RIGBY, ID FIX	7600
RIGBY, ID FIX	*SABAT, ID FIX	8000
*10000 - MRA		
LIVINGSTON, MT VOR/DME	*BOZEMAN, MT VOR/DME	10900
*10200 - MCA BOZEMAN, MT VOR/DME , E BND		
BOZEMAN, MT VOR/DME	*MENAR, MT FIX	8700
*9200 - MCA MENAR, MT FIX , NW BND		
MENAR, MT FIX	SWEDD, MT FIX	*10000
*9400 - MOCA		
SWEDD, MT FIX	HELENA, MT VORTAC	10000
HELENA, MT VORTAC	WOKEN, MT FIX	9000
WOKEN, MT FIX	*SHIMY, MT FIX	**9500
*7000 - MRA		
**7500 - MOCA		
SHIMY, MT FIX	CHOTE, MT FIX	*9500
*7000 - MOCA		
CHOTE, MT FIX	CUT BANK, MT VOR/DME	7000

95.6366 VOR FEDERAL AIRWAY V366

HUGO, CO VOR/DME	FALCON, CO VORTAC	8500

95.6367 VOR FEDERAL AIRWAY V367

INTERNATIONAL FALLS, MN VOR/DME	U.S. CANADIAN BORDER	3000

95.6368 VOR FEDERAL AIRWAY V368

ALAMOSA, CO VORTAC	RODDS, CO FIX	
	W BND	13000
	E BND	10000
RODDS, CO FIX	MANUL, NM FIX	13000
MANUL, NM FIX	TURLY, NM FIX	
	E BND	11000
	W BND	9700
TURLY, NM FIX	RATTLESNAKE, NM VORTAC	9000

95.6370 VOR FEDERAL AIRWAY V370

LOS ANGELES, CA VORTAC	PRADO, CA FIX	4000
PRADO, CA FIX	PARADISE, CA VORTAC	5000
PARADISE, CA VORTAC	*SETER, CA FIX	5500
*12100 - MCA SETER, CA FIX , E BND		
SETER, CA FIX	BANDS, CA FIX	
	E BND	13000
	W BND	9000
BANDS, CA FIX	*PALM SPRINGS, CA VORTAC	13000
*11800 - MCA PALM SPRINGS, CA VORTAC , W BND		
*6200 - MCA PALM SPRINGS, CA VORTAC , N BND		
PALM SPRINGS, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	7600

95.6371 VOR FEDERAL AIRWAY V371

BOILER, IN VORTAC	KNOX, IN VOR/DME	2500

95.6372 VOR FEDERAL AIRWAY V372

SEAL BEACH, CA VORTAC	*JOGIT, CA FIX	4000
*6800 - MCA JOGIT, CA FIX , E BND		

FROM	TO	MEA

95.6372 VOR FEDERAL AIRWAY V372 - CONTINUED

JOGIT, CA FIX	KAYOH, CA FIX	
	W BND	6200
	E BND	8000
KAYOH, CA FIX	*HOMELAND, CA VOR	8000
*11200 - MCA HOMELAND, CA VOR , NE BND		
HOMELAND, CA VOR	BANDS, CA FIX	
	E BND	13000
	W BND	8000
BANDS, CA FIX	*PALM SPRINGS, CA VORTAC	13000
*11800 - MCA PALM SPRINGS, CA VORTAC , W BND		
PALM SPRINGS, CA VORTAC	BLYTHE, CA VORTAC	8000

95.6373 VOR FEDERAL AIRWAY V373

GREENSBORO, NC VORTAC	SANDHILLS, NC VORTAC	3600

95.6374 VOR FEDERAL AIRWAY V374

BINGHAMTON, NY VOR/DME	*GAYEL, NY FIX	**10000
*10000 - MCA GAYEL, NY FIX , NW BND		
**4400 - MOCA		
**4400 - GNSS MEA		
GAYEL, NY FIX	VOLLU, NY FIX	*5000
*3200 - MOCA		
VOLLU, NY FIX	CARMEL, NY VOR/DME	2600
CARMEL, NY VOR/DME	*BETHA, CT FIX	2500
*8000 - MRA		
BETHA, CT FIX	CREAM, NY FIX	2500
CREAM, NY FIX	KURTY, CT FIX	2500
KURTY, CT FIX	GROTON, CT VOR/DME	3000
GROTON, CT VOR/DME	MINNK, RI FIX	*3000
*1500 - MOCA		
MINNK, RI FIX	MARTHAS VINEYARD, MA VOR/DME	*3000
*1600 - MOCA		

95.6375 VOR FEDERAL AIRWAY V375

ROANOKE, VA VOR/DME	PROSE, VA FIX	
	E BND	6500
	W BND	5400
PROSE, VA FIX	ROMAN, VA FIX	6500
ROMAN, VA FIX	GORDONSVILLE, VA VORTAC	4000
GORDONSVILLE, VA VORTAC	*HANEY, VA FIX	2800
*7000 - MRA		
HANEY, VA FIX	FLUKY, VA FIX	2600

95.6376 VOR FEDERAL AIRWAY V376

RICHMOND, VA VORTAC	*GRUBY, VA FIX	2000
*3000 - MCA GRUBY, VA FIX , N BND		
GRUBY, VA FIX	IRONS, MD FIX	*4500
*1700 - MOCA		

95.6377 VOR FEDERAL AIRWAY V377

MONTEBELLO, VA VOR/DME	KESSEL, WV VOR/DME	*6000
*5500 - MOCA		
KESSEL, WV VOR/DME	*TOMAC, WV FIX	4900
*4300 - MCA TOMAC, WV FIX , SW BND		

FROM	TO	MEA

95.6377 VOR FEDERAL AIRWAY V377 - CONTINUED

TOMAC, WV FIX	HAGERSTOWN, MD VOR	4000
HAGERSTOWN, MD VOR	HARRISBURG, PA VORTAC	*5000
*3800 - MOCA		
*4000 - GNSS MEA		

95.6378 VOR FEDERAL AIRWAY V378

BALTIMORE, MD VORTAC	*BELAY, MD FIX	2300
*9500 - MCA BELAY, MD FIX , NE BND		
BELAY, MD FIX	TROYZ, MD FIX	*9500
*4000 - GNSS MEA		
TROYZ, MD FIX	NUGGY, PA FIX	*7500
*4000 - GNSS MEA		
NUGGY, PA FIX	MODENA, PA VORTAC	*6000
*2000 - MOCA		
*4000 - GNSS MEA		

95.6379 VOR FEDERAL AIRWAY V379

NOTTINGHAM, MD VORTAC	JETTA, MD FIX	1900
JETTA, MD FIX	*GRACO, MD FIX	**3000
*10000 - MRA		
**1600 - MOCA		
GRACO, MD FIX	SMYRNA, DE VORTAC	1800

95.6380 VOR FEDERAL AIRWAY V380

O'NEILL, NE VORTAC	WOLBACH, NE VORTAC	*4000
*3500 - MOCA		
WOLBACH, NE VORTAC	GRAND ISLAND, NE VOR/DME	*4000
*3300 - MOCA		
GRAND ISLAND, NE VOR/DME	HASTINGS, NE VOR/DME	4000
HASTINGS, NE VOR/DME	MANKATO, KS VORTAC	3900

95.6381 VOR FEDERAL AIRWAY V381

BISHOP, CA VOR/DME	*NIKOL, CA FIX	**13000
*13000 - MCA NIKOL, CA FIX , BND		
**12300 - MOCA		

95.6382 VOR FEDERAL AIRWAY V382

GRAND JUNCTION, CO VOR/DME	*CONES, CO VOR/DME	12100
*14200 - MCA CONES, CO VOR/DME , SE BND		
CONES, CO VOR/DME	*DURANGO, CO VOR/DME	15500
*12500 - MCA DURANGO, CO VOR/DME , BND		

95.6384 VOR FEDERAL AIRWAY V384

LIVINGSTON, TN VOR/DME	VOLUNTEER, TN VORTAC	6100

95.6385 VOR FEDERAL AIRWAY V385

LUBBOCK, TX VORTAC	WAGUN, TX FIX	*8000
*4700 - MOCA		
WAGUN, TX FIX	ABILENE, TX VORTAC	*8000
*3900 - MOCA		

95.6386 VOR FEDERAL AIRWAY V386

SAN MARCUS, CA VORTAC	*OHIGH, CA FIX	8000
*9000 - MRA		

FROM	TO	MEA

95.6386 VOR FEDERAL AIRWAY V386 - CONTINUED

OHIGH, CA FIX	*FILLMORE, CA VORTAC	8000
*6100 - MCA FILLMORE, CA VORTAC , W BND		
FILLMORE, CA VORTAC	*SAUGS, CA FIX	6000
*6300 - MCA SAUGS, CA FIX , NE BND		
SAUGS, CA FIX	PALMDALE, CA VORTAC	7000
PALMDALE, CA VORTAC	APLES, CA FIX	7000
APLES, CA FIX	SOGGI, CA FIX	
	E BND	11000
	W BND	9000
SOGGI, CA FIX	YUCCA, CA FIX	*11000
*9400 - MOCA		
YUCCA, CA FIX	*PALM SPRINGS, CA VORTAC	**9000
*7600 - MCA PALM SPRINGS, CA VORTAC , BND		
**8200 - MOCA		

95.6387 VOR FEDERAL AIRWAY V387

MC ALLEN, TX VOR/DME	U.S. MEXICAN BORDER	2000

95.6388 VOR FEDERAL AIRWAY V388

PARADISE, CA VORTAC	ACINS, CA FIX	
	E BND	7000
	W BND	5000
ACINS, CA FIX	DEWAY, CA FIX	9500
DEWAY, CA FIX	*PALM SPRINGS, CA VORTAC	9500
*6300 - MCA PALM SPRINGS, CA VORTAC , BND		

95.6389 VOR FEDERAL AIRWAY V389

CIMARRON, NM VORTAC	*FOGLE, NM FIX	**11600
*15600 - MCA FOGLE, NM FIX , N BND		
**10700 - MOCA		
FOGLE, NM FIX	*EARLS, CO FIX	**15600
*11600 - MRA		
**12000 - MOCA		
EARLS, CO FIX	RADIO, CO FIX	*11600
*8500 - MOCA		
RADIO, CO FIX	PUEBLO, CO VORTAC	8200
PUEBLO, CO VORTAC	DRAKE, CO FIX	7600
DRAKE, CO FIX	FALCON, CO VORTAC	9000

95.6391 VOR FEDERAL AIRWAY V391

RATTLESNAKE, NM VORTAC	PLATA, NM FIX	10000
PLATA, NM FIX	CORTEZ, CO VOR/DME	10600
CORTEZ, CO VOR/DME	DOVE CREEK, CO VORTAC	9800
DOVE CREEK, CO VORTAC	PAROX, CO FIX	*12000
*10500 - MOCA		
PAROX, CO FIX	*GRAND JUNCTION, CO VOR/DME	12000
*10700 - MCA GRAND JUNCTION, CO VOR/DME , S BND		
GRAND JUNCTION, CO VOR/DME	BONGO, UT FIX	10800
BONGO, UT FIX	*VERNAL, UT VOR/DME	8400
*9500 - MCA VERNAL, UT VOR/DME , N BND		
VERNAL, UT VOR/DME	ROCK SPRINGS, WY VOR/DME	11800

95.6392 VOR FEDERAL AIRWAY V392

OAKLAND, CA VOR/DME	*SALAD, CA FIX	4000
*4700 - MCA SALAD, CA FIX , NE BND		

95.6392 VOR FEDERAL AIRWAY V392 - CONTINUED

SALAD, CA FIX	*OAKEY, CA FIX	5000
*3000 - MCA OAKEY, CA FIX , S BND		
OAKEY, CA FIX	SACRAMENTO, CA VORTAC	2500
SACRAMENTO, CA VORTAC	ROZZY, CA FIX	*3500
*2300 - MOCA		
ROZZY, CA FIX	HAGAN, CA FIX	4000
HAGAN, CA FIX	*AUDIO, CA FIX	**6000
*9000 - MCA AUDIO, CA FIX , NE BND		
**4500 - MOCA		
AUDIO, CA FIX	CONYO, CA FIX	
	N BND	10000
	S BND	8000
CONYO, CA FIX	SIGNA, CA FIX	11000
SIGNA, CA FIX	MUSTANG, NV VORTAC	11500

95.6393 VOR FEDERAL AIRWAY V393

*TUCSON, AZ VORTAC	NOGALES, AZ VOR/DME	11500
*9000 - MCA TUCSON, AZ VORTAC , S BND		
NOGALES, AZ VOR/DME	U.S. MEXICAN BORDER	*13000
*8800 - MOCA		

95.6394 VOR FEDERAL AIRWAY V394

SEAL BEACH, CA VORTAC	AHEIM, CA FIX	*3000
*2200 - MOCA		
AHEIM, CA FIX	*POMONA, CA VORTAC	4000
*10400 - MCA POMONA, CA VORTAC , NE BND		
POMONA, CA VORTAC	CALBE, CA FIX	
	SW BND	5700
	NE BND	10800
CALBE, CA FIX	MEANT, CA FIX	
	SW BND	10700
	NE BND	11500
MEANT, CA FIX	*APLES, CA FIX	11800
*9200 - MCA APLES, CA FIX , SW BND		
APLES, CA FIX	BASAL, CA FIX	7900
BASAL, CA FIX	DAGGETT, CA VORTAC	7500
DAGGETT, CA VORTAC	*OASYS, NV FIX	**12000
*10400 - MCA OASYS, NV FIX , SW BND		
**9500 - MOCA		
**10000 - GNSS MEA		
OASYS, NV FIX	LAS VEGAS, NV VORTAC	9000
LAS VEGAS, NV VORTAC	MORMON MESA, NV VORTAC	*7500
*6500 - MOCA		

95.6395 VOR FEDERAL AIRWAY V395

*TUCSON, AZ VORTAC	NOGALES, AZ VOR/DME	10000
*9000 - MCA TUCSON, AZ VORTAC , S BND		
NOGALES, AZ VOR/DME	U.S. MEXICAN BORDER	*10000
*6500 - MOCA		

95.6398 VOR FEDERAL AIRWAY V398

REDWOOD FALLS, MN VOR/DME	*ALMAY, MN FIX	**3400
*5000 - MRA		
**2900 - MOCA		
ALMAY, MN FIX	KASPR, MN FIX	3400

FROM	TO	MEA

95.6398 VOR FEDERAL AIRWAY V398 - CONTINUED

KASPR, MN FIX	ROCHESTER, MN VOR/DME	3000

95.6399 VOR FEDERAL AIRWAY V399

BRICKYARD, IN VORTAC	JAKKS, IN FIX	2700
JAKKS, IN FIX	BOILER, IN VORTAC	2500
BOILER, IN VORTAC	KENLA, IL FIX	2600
KENLA, IL FIX	PEOTONE, IL VORTAC	2400

95.6401 VOR FEDERAL AIRWAY V401

WORLAND, WY VOR/DME	RANKK, WY FIX	
	SE BND	11000
	NW BND	7000
RANKK, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	11000

95.6402 VOR FEDERAL AIRWAY V402

TUCUMCARI, NM VORTAC	MOSER, TX FIX	6300
MOSER, TX FIX	PANHANDLE, TX VORTAC	*6000
*5500 - MOCA		
PANHANDLE, TX VORTAC	*BRISC, TX FIX	**8000
*8000 - MCA BRISC, TX FIX , NE BND		
**5000 - MOCA		
BRISC, TX FIX	*MITBEE, OK VORTAC	**8000
*8000 - MCA MITBEE, OK VORTAC , BND		
**4500 - MOCA		

95.6403 VOR FEDERAL AIRWAY V403

BELAY, MD FIX	SPERY, PA FIX	*10000
*2100 - MOCA		
*3000 - GNSS MEA		
SPERY, PA FIX	POTTSTOWN, PA VORTAC	*3000
*2100 - MOCA		
POTTSTOWN, PA VORTAC	SOLBERG, NJ VOR/DME	*6000
*2200 - MOCA		

95.6404 VOR FEDERAL AIRWAY V404

CHILDRESS, TX VORTAC	*SNEED, TX FIX	4700
*5000 - MRA		
SNEED, TX FIX	WICHITA FALLS, TX VORTAC	
	E BND	3000
	W BND	4700

95.6405 VOR FEDERAL AIRWAY V405

BELAY, MD FIX	SPERY, PA FIX	*10000
*2100 - MOCA		
*3000 - GNSS MEA		
SPERY, PA FIX	POTTSTOWN, PA VORTAC	*3000
*2100 - MOCA		
POTTSTOWN, PA VORTAC	*LANNA, NJ FIX	6000
*5000 - MRA		
*6000 - MCA LANNA, NJ FIX , SW BND		
LANNA, NJ FIX	SOLBERG, NJ VOR/DME	2700
SOLBERG, NJ VOR/DME	CARMEL, NY VOR/DME	*3000
*2500 - MOCA		

FROM	TO	MEA

95.6405 VOR FEDERAL AIRWAY V405 - CONTINUED

CARMEL, NY VOR/DME	CASSH, NY FIX	3000
CASSH, NY FIX	PAWLING, NY VOR/DME	3100
PAWLING, NY VOR/DME	COBOL, MA FIX	*4000
*3500 - MOCA		
COBOL, MA FIX	BARNES, MA VORTAC	3500
BARNES, MA VORTAC	PUTNAM, CT VOR/DME	*3000
*2500 - MOCA		
PUTNAM, CT VOR/DME	PROVIDENCE, RI VOR/DME	*3000
*2100 - MOCA		
PROVIDENCE, RI VOR/DME	FALMA, RI FIX	*3000
*1700 - MOCA		
*2000 - GNSS MEA		
FALMA, RI FIX	MARTHAS VINEYARD, MA VOR/DME	*3000
*1600 - MOCA		

95.6407 VOR FEDERAL AIRWAY V407

BROWNSVILLE, TX VORTAC	HARLINGEN, TX VOR/DME	1600
HARLINGEN, TX VOR/DME	JIMIE, TX FIX	
	N BND	*6000
	S BND	*1700
*1700 - GNSS MEA		
JIMIE, TX FIX	JETTY, TX FIX	*6000
*1800 - MOCA		
*2000 - GNSS MEA		
JETTY, TX FIX	CORPUS CHRISTI, TX VORTAC	
	N BND	*2100
	S BND	*3800
*2100 - GNSS MEA		
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	1700
PALACIOS, TX VORTAC	GLAND, TX FIX	*4000
*1600 - MOCA		
GLAND, TX FIX	HUMBLE, TX VORTAC	*2500
*1900 - MOCA		
HUMBLE, TX VORTAC	DAISETTA, TX VORTAC	2000
DAISETTA, TX VORTAC	LUFKIN, TX VORTAC	2000
LUFKIN, TX VORTAC	ELM GROVE, LA VORTAC	*4000
*2000 - MOCA		
ELM GROVE, LA VORTAC	EL DORADO, AR VOR/DME	2000

95.6408 VOR FEDERAL AIRWAY V408

ROBRT, MD FIX	VINNY, PA FIX	5000
VINNY, PA FIX	MODENA, PA VORTAC	3500
MODENA, PA VORTAC	POTTSTOWN, PA VORTAC	2400
POTTSTOWN, PA VORTAC	*HIKES, PA FIX	2900
*4000 - MRA		
HIKES, PA FIX	EAST TEXAS, PA VOR/DME	2900
EAST TEXAS, PA VOR/DME	ALLENTOWN, PA VORTAC	*3000
*ALLENTOWN R-240 UNUSABLE BELOW 9000 USE EAST TEXAS R-059		

95.6409 VOR FEDERAL AIRWAY V409

CHARLOTTE, NC VOR/DME	LOCAS, NC FIX	3100
LOCAS, NC FIX	LIBERTY, NC VORTAC	*3000
*2400 - MOCA		
LIBERTY, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	3100

95.6412 VOR FEDERAL AIRWAY V412

REDWOOD FALLS, MN VOR/DME	FLYING CLOUD, MN VOR/DME	*4000
*2800 - MOCA		

FROM	TO	MEA

95.6413 VOR FEDERAL AIRWAY V413

GOPHER, MN VORTAC	BITLR, WI FIX	3500
BITLR, WI FIX	EAU CLAIRE, WI VORTAC	*3500
*2800 - MOCA		
EAU CLAIRE, WI VORTAC	RUSSH, WI FIX	
	SW BND	*6000
	NE BND	*8000
		MAA - 17500
*2900 - MOCA		
RUSSH, WI FIX	IRONWOOD, MI VOR/DME	8000

95.6415 VOR FEDERAL AIRWAY V415

MONTGOMERY, AL VORTAC	SEMAN, AL FIX	2300
SEMAN, AL FIX	GIFFY, AL FIX	*4000
*3300 - MOCA		
GIFFY, AL FIX	FELTO, GA FIX	*6000
*3400 - MOCA		
FELTO, GA FIX	GORGO, GA FIX	*5000
*4000 - MOCA		
GORGO, GA FIX	ROME, GA VORTAC	4000
ROME, GA VORTAC	*NELLO, GA FIX	5600
*6000 - MCA NELLO, GA FIX , E BND		
NELLO, GA FIX	ANNYE, GA FIX	6000
ANNYE, GA FIX	FOOTHILLS, SC VOR/DME	5000
FOOTHILLS, SC VOR/DME	PELAM, SC FIX	4000
PELAM, SC FIX	SPARTANBURG, SC VORTAC	*3000
*2400 - MOCA		
SPARTANBURG, SC VORTAC	LOCKS, SC FIX	2300

95.6417 VOR FEDERAL AIRWAY V417

VULCAN, AL VORTAC	ROME, GA VORTAC	4000
ROME, GA VORTAC	NELLO, GA FIX	5600
ATHENS, GA VOR/DME	COLLIERS, SC VORTAC	2500
COLLIERS, SC VORTAC	ALLENDALE, SC VOR	3000
ALLENDALE, SC VOR	*STOAS, SC FIX	**6000
*6000 - MCA STOAS, SC FIX , W BND		
**2000 - GNSS MEA		
STOAS, SC FIX	CHARLESTON, SC VORTAC	2000

95.6419 VOR FEDERAL AIRWAY V419

WESTMINSTER, MD VORTAC	MODENA, PA VORTAC	*3000
*2400 - MOCA		
MODENA, PA VORTAC	*MAZIE, PA FIX	3000
*5000 - MRA		
MAZIE, PA FIX	*HARRS, PA FIX	2500
*5000 - MRA		
HARRS, PA FIX	*BIGGY, NJ FIX	2500
*5000 - MRA		
BIGGY, NJ FIX	SOLBERG, NJ VOR/DME	2500
SOLBERG, NJ VOR/DME	CARMEL, NY VOR/DME	*3000
*2500 - MOCA		
CARMEL, NY VOR/DME	BRISS, CT FIX	*3000
*CARMEL R-057 UNUSABLE		

95.6420 VOR FEDERAL AIRWAY V420

GREEN BAY, WI VORTAC	TRAVERSE CITY, MI VOR/DME	3500

FROM	TO	MEA

95.6420 VOR FEDERAL AIRWAY V420 - CONTINUED

TRAVERSE CITY, MI VOR/DME	GAYLORD, MI VOR/DME	*3000
*TRAVERSE CITY R-062 UNUSABLE USE GAYLORD R-247 *		
GAYLORD, MI VOR/DME	ALPENA, MI VORTAC	3200

95.6421 VOR FEDERAL AIRWAY V421

ZUNI, NM VORTAC	GALLUP, NM VORTAC	9000
GALLUP, NM VORTAC	RATTLESNAKE, NM VORTAC	10000
RATTLESNAKE, NM VORTAC	*DURANGO, CO VOR/DME	9700
*13200 - MCA DURANGO, CO VOR/DME , N BND		
DURANGO, CO VOR/DME	ZEANS, CO FIX	
	N BND	16500
	S BND	12300
ZEANS, CO FIX	LAZON, CO FIX	16500
LAZON, CO FIX	POWES, CO FIX	
	S BND	16500
	N BND	15000
POWES, CO FIX	BLUE MESA, CO VOR/DME	
	S BND	16500
	N BND	12800
BLUE MESA, CO VOR/DME	*WENDT, CO FIX	
	N BND	16300
	S BND	13400
*13900 - MCA WENDT, CO FIX , N BND		
WENDT, CO FIX	CAZUU, CO FIX	*16300
*14700 - MOCA		
CAZUU, CO FIX	SKIER, CO FIX	16300
SKIER, CO FIX	RED TABLE, CO VOR/DME	*16300
*14900 - MOCA		
RED TABLE, CO VOR/DME	KREMMLING, CO VOR/DME	14000
KREMMLING, CO VOR/DME	ROBERT, CO VOR/DME	12900
ROBERT, CO VOR/DME	HAHNS, CO FIX	*13000
*12300 - MOCA		

95.6422 VOR FEDERAL AIRWAY V422

NILES, IL FIX	CHICAGO HEIGHTS, IL VORTAC	3500
CHICAGO HEIGHTS, IL VORTAC	KNOX, IN VOR/DME	2800
KNOX, IN VOR/DME	WEBSTER LAKE, IN VOR	2700
WEBSTER LAKE, IN VOR	FLAG CITY, OH VORTAC	2700

95.6423 VOR FEDERAL AIRWAY V423

WILLIAMSPORT, PA VOR/DME	BINGHAMTON, NY VOR/DME	*4300
*3800 - MOCA		

95.6425 VOR FEDERAL AIRWAY V425

BROOKLEY, AL VORTAC	AXSIS, AL FIX	2000

95.6429 VOR FEDERAL AIRWAY V429

CHAMPAIGN, IL VORTAC	ROBERTS, IL VOR/DME	2600
ROBERTS, IL VOR/DME	MEDAN, IL FIX	2500
MEDAN, IL FIX	JOLIET, IL VOR/DME	2400

95.6430 VOR FEDERAL AIRWAY V430

CUT BANK, MT VOR/DME	HAVRE, MT VOR/DME	6800

95.6430 VOR FEDERAL AIRWAY V430 - CONTINUED

HAVRE, MT VOR/DME	GLASGOW, MT VOR/DME	*6500
*5500 - MOCA		
GLASGOW, MT VOR/DME	WILLISTON, ND VOR/DME	*6000
*5000 - MOCA		
WILLISTON, ND VOR/DME	MINOT, ND VOR/DME	*6000
*3900 - MOCA		
MINOT, ND VOR/DME	DEVILS LAKE, ND VOR/DME	3600
DEVILS LAKE, ND VOR/DME	GRAND FORKS, ND VOR/DME	3300
GRAND FORKS, ND VOR/DME	THIEF RIVER FALLS, MN VOR/DME	2900
THIEF RIVER FALLS, MN VOR/DME	GRAND RAPIDS, MN VOR/DME	*7000
*3400 - GNSS MEA		
GRAND RAPIDS, MN VOR/DME	DULUTH, MN VORTAC	3000
DULUTH, MN VORTAC	IRONWOOD, MI VOR/DME	3500
IRONWOOD, MI VOR/DME	DINER, MI FIX	3600
DINER, MI FIX	IRON MOUNTAIN, MI VOR/DME	*5000
*4000 - GNSS MEA		
IRON MOUNTAIN, MI VOR/DME	VUKFI, MI FIX	3300
VUKFI, MI FIX	ESCANABA, MI VOR/DME	*3000
*2300 - MOCA		

95.6431 VOR FEDERAL AIRWAY V431

REVER, MA FIX	LOBBY, MA FIX	2000
LOBBY, MA FIX	GARDNER, MA VOR/DME	3500

95.6432 VOR FEDERAL AIRWAY V432

*THERMAL, CA VORTAC	**PARKER, CA VORTAC	***9000
*4500 - MCA THERMAL, CA VORTAC , NE BND		
**4500 - MCA PARKER, CA VORTAC , BND		
***7300 - MOCA		

95.6433 VOR FEDERAL AIRWAY V433

NOTTINGHAM, MD VORTAC	SWANN, MD FIX	UNUSABLE
SWANN, MD FIX	ODESA, MD FIX	UNUSABLE
ODESA, MD FIX	DUPONT, DE VORTAC	*2000
*2000 - GNSS MEA		
*DUPONT R-233 UNUSABLE BEYOND 22NM.		
DUPONT, DE VORTAC	YARDLEY, PA VOR/DME	*6000
*3000 - GNSS MEA		
YARDLEY, PA VOR/DME	METRO, NJ FIX	*3000
		MAA - 10000
*2000 - MOCA		
METRO, NJ FIX	GRITY, NJ FIX	*4000
*1700 - MOCA		
GRITY, NJ FIX	TICKL, NY FIX	4000
TICKL, NY FIX	LA GUARDIA, NY VOR/DME	2900
LA GUARDIA, NY VOR/DME	DUNBO, NY FIX	2000
DUNBO, NY FIX	BRIDGEPORT, CT VOR/DME	*2000
*1500 - MOCA		
BRIDGEPORT, CT VOR/DME	*PAWLING, NY VOR/DME	3000
*5700 - MCA PAWLING, NY VOR/DME , NW BND		
PAWLING, NY VOR/DME	*CYPER, NY FIX	
	SE BND	6100
	NW BND	10000
*15000 - MRA		
CYPER, NY FIX	*PETER, NY FIX	**10000
*10000 - MCA PETER, NY FIX , NW BND		
*10000 - MCA PETER, NY FIX , SE BND		
**6100 - GNSS MEA		

FROM	TO	MEA

95.6433 VOR FEDERAL AIRWAY V433 - CONTINUED

PETER, NY FIX	*ROCKDALE, NY VOR/DME	**10000
*10000 - MCA ROCKDALE, NY VOR/DME , SE BND		
**6100 - GNSS MEA		
**ROCKDALE R-127 UNUSABLE BELOW 10000		
ROCKDALE, NY VOR/DME	STODA, NY FIX	4000
STODA, NY FIX	SYRACUSE, NY VORTAC	2400

95.6434 VOR FEDERAL AIRWAY V434

OTTUMWA, IA VOR/DME	MOLINE, IL VOR/DME	*3000
*2500 - MOCA		
MOLINE, IL VOR/DME	PEORIA, IL VORTAC	2600
PEORIA, IL VORTAC	CHAMPAIGN, IL VORTAC	2800
CHAMPAIGN, IL VORTAC	BRICKYARD, IN VORTAC	2700

95.6436 VOR FEDERAL AIRWAY V436

HOBART, OK VORTAC	*NEADS, OK FIX	**5400
*5400 - MRA		
*5400 - MCA NEADS, OK FIX , W BND		
**3600 - MOCA		
NEADS, OK FIX	WILL ROGERS, OK VORTAC	3000
WILL ROGERS, OK VORTAC	JABDO, OK FIX	*4500
*3000 - MOCA		
JABDO, OK FIX	SAPPA, OK FIX	*4000
*2400 - MOCA		
SAPPA, OK FIX	TULSA, OK VORTAC	2500

95.6437 VOR FEDERAL AIRWAY V437

DOLPHIN, FL VORTAC	PAHOKEE, FL VOR/DME	*2000
*1500 - MOCA		
PAHOKEE, FL VOR/DME	MELBOURNE, FL VOR/DME	*2100
*1600 - MOCA		
MELBOURNE, FL VOR/DME	AWINY, FL FIX	*3000
*1600 - MOCA		
AWINY, FL FIX	OVIDO, FL FIX	
	NW BND	5000
	SE BND	3000
OVIDO, FL FIX	KIZER, FL FIX	*5000
*2800 - MOCA		
KIZER, FL FIX	ORMOND BEACH, FL VORTAC	
	SW BND	*5000
	NE BND	*3600
*2800 - MOCA		
ORMOND BEACH, FL VORTAC	JETSO, FL FIX	*3000
*1400 - MOCA		
JETSO, FL FIX	*SUBER, FL FIX	**5000
*8000 - MCA SUBER, FL FIX , N BND		
**1300 - MOCA		
SUBER, FL FIX	HOTAR, FL FIX	*8000
*1300 - MOCA		
HOTAR, FL FIX	STARY, GA FIX	*8000
*1200 - MOCA		
STARY, GA FIX	SAVANNAH, GA VORTAC	*3000
*1900 - MOCA		
SAVANNAH, GA VORTAC	CHARLESTON, SC VORTAC	2000
CHARLESTON, SC VORTAC	WESEL, SC FIX	
	S BND	1800
	N BND	4000

FROM	TO	MEA

95.6437 VOR FEDERAL AIRWAY V437 - CONTINUED

WESEL, SC FIX	*FILLI, SC FIX	**4000
*4500 - MRA		
**1900 - MOCA		
FILLI, SC FIX	FLORENCE, SC VORTAC	4000

95.6438 VOR FEDERAL AIRWAY V438

HAGERSTOWN, MD VOR	LUCKE, VA FIX	*3800
*3300 - MOCA		

95.6439 VOR FEDERAL AIRWAY V439

DICKINSON, ND VORTAC	WILLISTON, ND VOR/DME	4500

95.6440 VOR FEDERAL AIRWAY V440

PANHANDLE, TX VORTAC	*BRISC, TX FIX	**8000
*11000 - MCA BRISC, TX FIX , E BND		
**5000 - MOCA		
BRISC, TX FIX	BURNS FLAT, OK VORTAC	*11000
*4500 - MOCA		
*5000 - GNSS MEA		
BURNS FLAT, OK VORTAC	CARFF, OK FIX	3600
CARFF, OK FIX	WILL ROGERS, OK VORTAC	3000

95.6441 VOR FEDERAL AIRWAY V441

MELBOURNE, FL VOR/DME	LAKELAND, FL VORTAC	2600
LAKELAND, FL VORTAC	ST PETERSBURG, FL VORTAC	2000
ST PETERSBURG, FL VORTAC	BAYPO, FL FIX	2000
BAYPO, FL FIX	NITTS, FL FIX	*4000
*1500 - MOCA		
NITTS, FL FIX	OCALA, FL VORTAC	
	NE BND	2000
	SW BND	4000
OCALA, FL VORTAC	*LEJKO, FL FIX	2000
*3000 - MRA		
LEJKO, FL FIX	GATORS, FL VORTAC	2000
GATORS, FL VORTAC	BRUNSWICK, GA VORTAC	3000
BRUNSWICK, GA VORTAC	STARY, GA FIX	*3000
*1500 - MOCA		
STARY, GA FIX	SAVANNAH, GA VORTAC	*3000
*1900 - MOCA		

95.6442 VOR FEDERAL AIRWAY V442

PARADISE, CA VORTAC	APLES, CA FIX	*10000
*8100 - MOCA		
*9000 - GNSS MEA		
APLES, CA FIX	HECTOR, CA VORTAC	*10000
*8500 - MOCA		
HECTOR, CA VORTAC	CLIPP, CA FIX	9000
CLIPP, CA FIX	PARKER, CA VORTAC	8000

95.6444 VOR FEDERAL AIRWAY V444

SPOKANE, WA VORTAC	DATES, WA FIX	5000
DATES, WA FIX	WALLA WALLA, WA VOR/DME	4000
BAKER CITY, OR VOR/DME	PAYET, ID FIX	9000

95.6444 VOR FEDERAL AIRWAY V444 - CONTINUED

PAYET, ID FIX	*EMETT, ID FIX	
	SE BND	5900
	NW BND	9000
*9400 - MRA		
EMETT, ID FIX	*BOISE, ID VORTAC	5900
*7400 - MCA BOISE, ID VORTAC , E BND		
BOISE, ID VORTAC	AROWS, ID FIX	
	W BND	8000
	E BND	9000
AROWS, ID FIX	*DERSO, ID FIX	**12500
*15200 - MCA DERSO, ID FIX , E BND		
**10000 - MOCA		
DERSO, ID FIX	SOLDE, ID FIX	*17000
*10400 - MOCA		
SOLDE, ID FIX	*KINZE, ID FIX	
	SE BND	8000
	NW BND	17000
*15900 - MCA KINZE, ID FIX , NW BND		
KINZE, ID FIX	BURLEY, ID VOR/DME	*8000
*7000 - MOCA		

95.6448 VOR FEDERAL AIRWAY V448

ROGUE VALLEY, OR VORTAC	ROSEBURG, OR VOR/DME	7000
ROSEBURG, OR VOR/DME	*DRAIN, OR FIX	5000
*6000 - MRA		
DRAIN, OR FIX	EUGENE, OR VORTAC	
	N BND	*4000
	S BND	*5000
*3900 - MOCA		
EUGENE, OR VORTAC	GLORR, OR FIX	4000
GLORR, OR FIX	MAVER, OR FIX	6000
MAVER, OR FIX	*BATTLE GROUND, WA VORTAC	5000
*9400 - MCA BATTLE GROUND, WA VORTAC , NE BND		
BATTLE GROUND, WA VORTAC	LEARN, WA FIX	
	SW BND	*10500
	NE BND	*14500
*8000 - MOCA		
LEARN, WA FIX	ANGOO, WA FIX	14500
ANGOO, WA FIX	SIMCO, WA FIX	
	SW BND	*14500
	NE BND	*8500
*7500 - MOCA		
SIMCO, WA FIX	*YAKIMA, WA VORTAC	
	SW BND	12000
	NE BND	6300
*9500 - MCA YAKIMA, WA VORTAC , SW BND		
YAKIMA, WA VORTAC	RUBEL, WA FIX	6000
RUBEL, WA FIX	MOSES LAKE, WA VOR/DME	
	SW BND	6000
	NE BND	4000
MOSES LAKE, WA VOR/DME	BATUM, WA FIX	4000
BATUM, WA FIX	*SPOKANE, WA VORTAC	5000
*5200 - MCA SPOKANE, WA VORTAC , NE BND		
SPOKANE, WA VORTAC	CLASS, ID FIX	*9000
*7600 - MOCA		
CLASS, ID FIX	KILLY, MT FIX	*13000
*9900 - MOCA		
*10000 - GNSS MEA		

FROM	TO	MEA

95.6448 VOR FEDERAL AIRWAY V448 - CONTINUED

KILLY, MT FIX	KALISPELL, MT VOR/DME	*12000
*8600 - MOCA		
*8600 - GNSS MEA		

95.6452 VOR FEDERAL AIRWAY V452

NEWPORT, OR VORTAC	*HORTE, OR FIX	6000
*4300 - MCA HORTE, OR FIX , W BND		
HORTE, OR FIX	EUGENE, OR VORTAC	4000
EUGENE, OR VORTAC	CHEEZ, OR FIX	
	SE BND	7000
	NW BND	5200
CHEEZ, OR FIX	MANSN, OR FIX	
	SE BND	*11000
	NW BND	*8000
*7400 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
MANSN, OR FIX	MIXUP, OR FIX	*11000
*9800 - MOCA		
MIXUP, OR FIX	KLAMATH FALLS, OR VORTAC	
	NW BND	11000
	SE BND	9100
KLAMATH FALLS, OR VORTAC	TULIP, CA FIX	9000
TULIP, CA FIX	BACHS, CA FIX	
	S BND	*14000
	N BND	*9000
*11000 - GNSS MEA		
BACHS, CA FIX	HALLE, NV FIX	*14000
*10200 - MOCA		
*11000 - GNSS MEA		
HALLE, NV FIX	MUSTANG, NV VORTAC	*11000
*9600 - MOCA		

95.6453 VOR FEDERAL AIRWAY V453

GORDONSVILLE, VA VORTAC	CASANOVA, VA VORTAC	4500
CASANOVA, VA VORTAC	LINDEN, VA VORTAC	5000

95.6454 VOR FEDERAL AIRWAY V454

BROOKLEY, AL VORTAC	MONROEVILLE, AL VORTAC	2000
GIZMO, NC FIX	LIBERTY, NC VORTAC	3000
LIBERTY, NC VORTAC	NOKIY, VA FIX	*6000
*3000 - GNSS MEA		
NOKIY, VA FIX	LAWRENCEVILLE, VA VORTAC	*8000
*3000 - GNSS MEA		
*LAWRENCEVILLE R-242 UNUSABLE, USE LIBERTY R-056		
LAWRENCEVILLE, VA VORTAC	JUNKI, VA FIX	*6000
*1900 - MOCA		
*2000 - GNSS MEA		
*LAWRENCEVILLE R-059 UNUSABLE, USE HOPEWELL R-237		
JUNKI, VA FIX	HOPEWELL, VA VORTAC	2000

95.6455 VOR FEDERAL AIRWAY V455

RESERVE, LA VOR/DME	PICAYUNE, MS VOR/DME	2000
PICAYUNE, MS VOR/DME	*PLUGG, MS FIX	2000
*5000 - MRA		
PLUGG, MS FIX	EATON, MS VORTAC	2000

FROM	TO	MEA

95.6455 VOR FEDERAL AIRWAY V455 - CONTINUED

EATON, MS VORTAC	MERIDIAN, MS VORTAC	2300

95.6456 VOR FEDERAL AIRWAY V456

MANKATO, MN VOR/DME	FLYING CLOUD, MN VOR/DME	*2900
*2400 - MOCA		

95.6457 VOR FEDERAL AIRWAY V457

BROADWAY, NJ VOR/DME	LANCASTER, PA VOR/DME	3000
LANCASTER, PA VOR/DME	*ROAST, PA FIX	
	SW BND	**9000
	NE BND	**4500
*10000 - MRA		
**2600 - MOCA		
**4500 - GNSS MEA		
ROAST, PA FIX	VINNY, PA FIX	*9000
*4500 - GNSS MEA		
VINNY, PA FIX	WESTMINSTER, MD VORTAC	3000
WESTMINSTER, MD VORTAC	MARTINSBURG, WV VORTAC	*4000
*3300 - MOCA		

95.6458 VOR FEDERAL AIRWAY V458

SANTA CATALINA, CA VORTAC	AVOLS, CA FIX	4000
AVOLS, CA FIX	PACIF, CA FIX	*3000
*2000 - MOCA		
PACIF, CA FIX	OCEANSIDE, CA VORTAC	3000
OCEANSIDE, CA VORTAC	*VISTA, CA FIX	3000
*5000 - MCA VISTA, CA FIX , E BND		
VISTA, CA FIX	JULIAN, CA VORTAC	7700
JULIAN, CA VORTAC	*KUMBA, CA FIX	7900
*5600 - MCA KUMBA, CA FIX , NW BND		
KUMBA, CA FIX	IMPERIAL, CA VORTAC	4300
IMPERIAL, CA VORTAC	BARD, CA VORTAC	3600

95.6459 VOR FEDERAL AIRWAY V459

SEAL BEACH, CA VORTAC	DARTS, CA FIX	
	SE BND	4000
	NW BND	6000
DARTS, CA FIX	*SAUGS, CA FIX	7000
*6600 - MCA SAUGS, CA FIX , NW BND		
SAUGS, CA FIX	LAKE HUGHES, CA VORTAC	8000
LAKE HUGHES, CA VORTAC	JEFFY, CA FIX	8000
JEFFY, CA FIX	*LOPES, CA FIX	9000
*8600 - MCA LOPES, CA FIX , S BND		
LOPES, CA FIX	*WRING, CA FIX	8500
*5800 - MCA WRING, CA FIX , SE BND		
WRING, CA FIX	TULE, CA VOR/DME	5000
TULE, CA VOR/DME	EXTRA, CA FIX	3500
EXTRA, CA FIX	FRIANT, CA VORTAC	5700
FRIANT, CA VORTAC	BAGBY, CA FIX	*8500
*6600 - MOCA		
BAGBY, CA FIX	LINDEN, CA VOR/DME	7000

95.6460 VOR FEDERAL AIRWAY V460

MISSION BAY, CA VORTAC	*RYAHH, CA FIX	
	E BND	7000
	W BND	4000
*6400 - MCA RYAHH, CA FIX , E BND		

FROM	TO	MEA

95.6460 VOR FEDERAL AIRWAY V460 - CONTINUED

RYAHH, CA FIX	BARET, CA FIX	
	E BND	*8400
	W BND	*7000
*6100 - MOCA		
BARET, CA FIX	CANNO, CA FIX	8400
CANNO, CA FIX	JULIAN, CA VORTAC	8800
JULIAN, CA VORTAC	*MOMAR, CA FIX	8500
*7300 - MCA MOMAR, CA FIX , SW BND		
MOMAR, CA FIX	BLYTHE, CA VORTAC	7000

95.6461 VOR FEDERAL AIRWAY V461

GILA BEND, AZ VORTAC	BUCKEYE, AZ VORTAC	4000

95.6463 VOR FEDERAL AIRWAY V463

WOMAC, GA FIX	*ANNYE, GA FIX	**5000
*5900 - MCA ANNYE, GA FIX , N BND		
**4100 - MOCA		
ANNYE, GA FIX	HARRIS, GA VORTAC	7000

95.6465 VOR FEDERAL AIRWAY V465

BULLION, NV VOR/DME	*WELLS, NV VOR/DME	13000
*11800 - MCA WELLS, NV VOR/DME , SW BND		
WELLS, NV VOR/DME	SHEAR, UT FIX	12000
SHEAR, UT FIX	*MALAD CITY, ID VOR/DME	
	SW BND	11000
	NE BND	10000
*10700 - MCA MALAD CITY, ID VOR/DME , NE BND		
MALAD CITY, ID VOR/DME	LUNDI, ID FIX	11500
LUNDI, ID FIX	*JACKSON, WY VOR/DME	**15000
**13300 - MOCA		
**13300 - GNSS MEA		
*MTA V465 NE TO V520 W OR V330 W 16000		
**MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
JACKSON, WY VOR/DME	DUNOIR, WY VOR/DME	13000
DUNOIR, WY VOR/DME	REDLO, MT FIX	*17000
*14500 - MOCA		
REDLO, MT FIX	LAREI, MT FIX	
	N BND	7200
	S BND	17000
LAREI, MT FIX	*BILLINGS, MT VORTAC	
	S BND	17000
	N BND	6000
*7000 - MCA BILLINGS, MT VORTAC , S BND		
BILLINGS, MT VORTAC	MILES CITY, MT VOR/DME	6000
MILES CITY, MT VOR/DME	WILLISTON, ND VOR/DME	*7000
*5200 - MOCA		
*6000 - GNSS MEA		

95.6466 VOR FEDERAL AIRWAY V466

VOLUNTEER, TN VORTAC	TAMPI, TN FIX	3500
TAMPI, TN FIX	YUMMY, VA FIX	4500
YUMMY, VA FIX	GLADE SPRING, VA VOR/DME	6000
GLADE SPRING, VA VOR/DME	*DORFF, VA FIX	6600
*7000 - MRA		
DORFF, VA FIX	PULASKI, VA VORTAC	6000

FROM	TO	MEA

95.6468 VOR FEDERAL AIRWAY V468

*BATTLE GROUND, WA VORTAC	**TROTS, WA FIX	***10000
*5300 - MCA BATTLE GROUND, WA VORTAC , NE BND		
**11500 - MCA TROTS, WA FIX , NE BND		
***7200 - MOCA		
***8000 - GNSS MEA		
TROTS, WA FIX	*SWANY, WA FIX	**11500
*11500 - MCA SWANY, WA FIX , SW BND		
**6800 - MOCA		
**7000 - GNSS MEA		
SWANY, WA FIX	HITCH, WA FIX	*8500
*6800 - MOCA		
*7000 - GNSS MEA		
HITCH, WA FIX	YAKIMA, WA VORTAC	
	SW BND	*8500
	NE BND	*5000
*4400 - MOCA		
*5000 - GNSS MEA		
YAKIMA, WA VORTAC	GLEED, WA FIX	
	NW BND	5500
	SE BND	5000
GLEED, WA FIX	ELLENSBURG, WA VOR/DME	6000

95.6469 VOR FEDERAL AIRWAY V469

DANVILLE, VA VOR	LYNCHBURG, VA VOR/DME	3000
LYNCHBURG, VA VOR/DME	RADIA, VA FIX	*
*LYNCHBURG R-352 UNUSABLE		
RELEE, VA FIX	EXRAS, VA FIX	*GNSS - 5200
*LYNCHBURG R-352 UNUSABLE		
EXRAS, VA FIX	BRUCY, VA FIX	*GNSS - 6900
*LYNCHBURG R-352 UNUSABLE		
BRUCY, VA FIX	BOIER, WV FIX	*10000
*6900 - MOCA		
*6900 - GNSS MEA		
BOIER, WV FIX	ELKINS, WV VORTAC	6800
ELKINS, WV VORTAC	TYGAR, WV FIX	*5000
*4400 - MOCA		
TYGAR, WV FIX	MORGANTOWN, WV VOR/DME	4000
MORGANTOWN, WV VOR/DME	*NESTO, PA FIX	**5000
*10000 - MCA NESTO, PA FIX , E BND		
**4300 - MOCA		
NESTO, PA FIX	*JOHNSTOWN, PA VOR/DME	10000
*10000 - MCA JOHNSTOWN, PA VOR/DME , W BND		
JOHNSTOWN, PA VOR/DME	ST THOMAS, PA VORTAC	*5000
*JOHNSTOWN R-125 UNUSABLE USE ST THOMAS R-307		
ST THOMAS, PA VORTAC	BADDI, PA FIX	*5000
*4000 - MOCA		
BADDI, PA FIX	HARRISBURG, PA VORTAC	4000
HARRISBURG, PA VORTAC	JOANE, PA FIX	4000
JOANE, PA FIX	DUPONT, DE VORTAC	3000
DUPONT, DE VORTAC	WOODSTOWN, NJ VORTAC	2000
		MAA - 8000

95.6470 VOR FEDERAL AIRWAY V470

PULASKI, VA VORTAC	TABER, VA FIX	5500
TABER, VA FIX	*MONAT, VA FIX	**5600
*4000 - MRA		
**5100 - MOCA		

FROM	TO	MEA

95.6470 VOR FEDERAL AIRWAY V470 - CONTINUED

MONAT, VA FIX	LYNCHBURG, VA VOR/DME	
	W BND	*4000
	E BND	*3000
*2900 - MOCA		

95.6471 VOR FEDERAL AIRWAY V471

BANGOR, ME VORTAC	MILLINOCKET, ME VOR/DME	*2500
*2100 - MOCA		

95.6472 VOR FEDERAL AIRWAY V472

ELIZABETH CITY, NC VOR/DME	BERTI, NC FIX	*4000
*1600 - MOCA		
BERTI, NC FIX	*ZAGGY, NC FIX	**7000
*7000 - MCA ZAGGY, NC FIX , NE BND		
**2100 - MOCA		
**2100 - GNSS MEA		
ZAGGY, NC FIX	KINSTON, NC VORTAC	UNUSABLE

95.6473 VOR FEDERAL AIRWAY V473

ROANOKE, VA VOR/DME	HOBOS, VA FIX	*6000
*5100 - MOCA		
HOBOS, VA FIX	MONTEBELLO, VA VOR/DME	6000
MONTEBELLO, VA VOR/DME	GORDONSVILLE, VA VORTAC	*6000
*5500 - MOCA		

95.6474 VOR FEDERAL AIRWAY V474

NESTO, PA FIX	PLEEZ, PA FIX	*4000
*3100 - MOCA		
PLEEZ, PA FIX	INDIAN HEAD, PA VORTAC	*5000
*4500 - MOCA		
INDIAN HEAD, PA VORTAC	ST THOMAS, PA VORTAC	*5000
*4500 - MOCA		
ST THOMAS, PA VORTAC	NOENO, PA FIX	*5000
*4000 - MOCA		
NOENO, PA FIX	DELRO, PA FIX	*5000
*3400 - MOCA		
*3400 - GNSS MEA		
DELRO, PA FIX	*MODENA, PA VORTAC	**10000
*10000 - MCA MODENA, PA VORTAC , BND		
**4000 - GNSS MEA		

95.6476 VOR FEDERAL AIRWAY V476

LYNCHBURG, VA VOR/DME	GORDONSVILLE, VA VORTAC	3300

95.6477 VOR FEDERAL AIRWAY V477

HUMBLE, TX VORTAC	LEONA, TX VORTAC	*3000
*2100 - MOCA		
LEONA, TX VORTAC	CEDAR CREEK, TX VORTAC	2100

95.6479 VOR FEDERAL AIRWAY V479

DUPONT, DE VORTAC	WILJR, NJ FIX	2100

FROM	TO	MEA

95.6479 VOR FEDERAL AIRWAY V479 - CONTINUED

WILJR, NJ FIX	MENGE, NJ FIX	*4000
*1600 - MOCA		
*2000 - GNSS MEA		
MENGE, NJ FIX	YARDLEY, PA VOR/DME	2000

95.6481 VOR FEDERAL AIRWAY V481

EUGENE, OR VORTAC	CORVALLIS, OR VOR/DME	3500
CORVALLIS, OR VOR/DME	CRAAF, OR FIX	4000

95.6483 VOR FEDERAL AIRWAY V483

DEER PARK, NY VOR/DME	*RYMES, CT FIX	**2500
*5000 - MRA		
**2000 - MOCA		
RYMES, CT FIX	CARMEL, NY VOR/DME	2500
CARMEL, NY VOR/DME	KINGSTON, NY VOR/DME	3000
KINGSTON, NY VOR/DME	WEETS, NY FIX	
	NW BND	*6000
	SE BND	*4000
*3200 - MOCA		
WEETS, NY FIX	RIMBA, NY FIX	6400
RIMBA, NY FIX	DELANCEY, NY VOR/DME	5500
DELANCEY, NY VOR/DME	ROCKDALE, NY VOR/DME	4200
ROCKDALE, NY VOR/DME	STODA, NY FIX	4000
STODA, NY FIX	SYRACUSE, NY VORTAC	2400
SYRACUSE, NY VORTAC	*LYSAN, NY FIX	2300
*3000 - MRA		
LYSAN, NY FIX	ROCHESTER, NY VOR/DME	2300

95.6484 VOR FEDERAL AIRWAY V484

HAILEY, ID NDB/DME	KINZE, ID FIX	9300
KINZE, ID FIX	*TWIN FALLS, ID VORTAC	7000
*8000 - MCA TWIN FALLS, ID VORTAC , E BND		
TWIN FALLS, ID VORTAC	WODEN, ID FIX	8800
WODEN, ID FIX	*DRYAD, ID FIX	**12000
*13000 - MCA DRYAD, ID FIX , SE BND		
**9500 - MOCA		
DRYAD, ID FIX	SWITZ, UT FIX	*16000
*11900 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
SWITZ, UT FIX	CAUSE, UT FIX	*11500
*8600 - MOCA		
CAUSE, UT FIX	*WASATCH, UT VORTAC	8600
*11000 - MCA WASATCH, UT VORTAC , E BND		
WASATCH, UT VORTAC	PARLE, UT FIX	11500
PARLE, UT FIX	MYTON, UT VOR/DME	13000
MYTON, UT VOR/DME	*WINDO, UT FIX	**10500
*13000 - MRA		
**9000 - MOCA		
WINDO, UT FIX	GRAND JUNCTION, CO VOR/DME	10500
GRAND JUNCTION, CO VOR/DME	BATTZ, CO FIX	12300
BATTZ, CO FIX	BLUE MESA, CO VOR/DME	14000
BLUE MESA, CO VOR/DME	HOMME, CO FIX	14600
HOMME, CO FIX	ALAMOSA, CO VORTAC	
	S BND	10000
	N BND	14600

95.6485 VOR FEDERAL AIRWAY V485

VENTURA, CA VOR/DME	*HENER, CA FIX	5000
*6500 - MCA HENER, CA FIX , NW BND		

95.6485 VOR FEDERAL AIRWAY V485 - CONTINUED

HENER, CA FIX	FELLOWS, CA VOR/DME	9000

95.6487 VOR FEDERAL AIRWAY V487

LA GUARDIA, NY VOR/DME	DUNBO, NY FIX	2000
DUNBO, NY FIX	*BRIDGEPORT, CT VOR/DME	**2000
*8800 - MCA BRIDGEPORT, CT VOR/DME , N BND		
**1500 - MOCA		
BRIDGEPORT, CT VOR/DME	*MOONI, CT FIX	
	N BND	**12000
	S BND	**6000
*12000 - MCA MOONI, CT FIX , N BND		
*6000 - MCA MOONI, CT FIX , S BND		
**5500 - MOCA		
**6000 - GNSS MEA		
MOONI, CT FIX	*BOWAN, NY FIX	**12000
*12000 - MCA BOWAN, NY FIX , S BND		
**4900 - MOCA		
**6000 - GNSS MEA		
BOWAN, NY FIX	CAMBRIDGE, NY VOR/DME	
	N BND	5000
	S BND	6000
CAMBRIDGE, NY VOR/DME	WEIGH, VT FIX	4600
WEIGH, VT FIX	BURLINGTON, VT VOR/DME	
	N BND	3000
	S BND	4600

95.6489 VOR FEDERAL AIRWAY V489

COATE, NJ FIX	HUGUENOT, NY VOR/DME	*4000
*3300 - MOCA		
HUGUENOT, NY VOR/DME	*WEARD, NY FIX	**4000
*15000 - MCA WEARD, NY FIX , NE BND		
**3500 - MOCA		
WEARD, NY FIX	*FILPS, NY FIX	**15000
*15000 - MRA		
*15000 - MCA FILPS, NY FIX , NE BND		
*15000 - MCA FILPS, NY FIX , SW BND		
**6000 - MOCA		
**7000 - GNSS MEA		
FILPS, NY FIX	*SAGES, NY FIX	**15000
*15000 - MCA SAGES, NY FIX , NE BND		
*15000 - MCA SAGES, NY FIX , SW BND		
**6400 - MOCA		
**7000 - GNSS MEA		
SAGES, NY FIX	*CYPER, NY FIX	**15000
*15000 - MRA		
*15000 - MCA CYPER, NY FIX , NE BND		
*15000 - MCA CYPER, NY FIX , SW BND		
**6100 - GNSS MEA		
CYPER, NY FIX	*AGNEZ, NY FIX	**15000
*15000 - MRA		
*15000 - MCA AGNEZ, NY FIX , SW BND		
*15000 - MCA AGNEZ, NY FIX , NE BND		
**6300 - GNSS MEA		
AGNEZ, NY FIX	*ALBANY, NY VORTAC	**15000
*13300 - MCA ALBANY, NY VORTAC , BND		
**6200 - GNSS MEA		

95.6491 VOR FEDERAL AIRWAY V491

RAPID CITY, SD VORTAC	BFFLO, SD FIX	5000

FROM	TO	MEA

95.6491 VOR FEDERAL AIRWAY V491 - CONTINUED

BFFLO, SD FIX	HAYNI, ND FIX	*9000
*5000 - MOCA		
HAYNI, ND FIX	DICKINSON, ND VORTAC	*5000
*4500 - MOCA		
DICKINSON, ND VORTAC	MINOT, ND VOR/DME	*6000
*4400 - MOCA		

95.6492 VOR FEDERAL AIRWAY V492

LA BELLE, FL VORTAC	PAHOKEE, FL VOR/DME	*2000
*1500 - MOCA		
PAHOKEE, FL VOR/DME	PALM BEACH, FL VORTAC	*2000
*1500 - MOCA		
PALM BEACH, FL VORTAC	STOOP, FL FIX	*3000
*2000 - MOCA		
STOOP, FL FIX	MELBOURNE, FL VOR/DME	3000

95.6493 VOR FEDERAL AIRWAY V493

LIVINGSTON, TN VOR/DME	LEXINGTON, KY VOR/DME	3600
LEXINGTON, KY VOR/DME	BEAER, KY FIX	3000
BEAER, KY FIX	YORK, KY VORTAC	3300
YORK, KY VORTAC	TARTO, OH FIX	3300
TARTO, OH FIX	APPLETON, OH VORTAC	3000

95.6494 VOR FEDERAL AIRWAY V494

CRESCENT CITY, CA VORTAC	FORTUNA, CA VORTAC	*6000
*3500 - MOCA		
FORTUNA, CA VORTAC	MENDOCINO, CA VORTAC	*13000
*6100 - MOCA		
MENDOCINO, CA VORTAC	*ROZZA, CA FIX	6000
*7000 - MCA ROZZA, CA FIX , E BND		
ROZZA, CA FIX	POPES, CA FIX	*7000
*5000 - MOCA		
*5000 - GNSS MEA		
POPES, CA FIX	RAGGS, CA FIX	5000
RAGGS, CA FIX	SACRAMENTO, CA VORTAC	5000
SACRAMENTO, CA VORTAC	ROZZY, CA FIX	*3500
*2300 - MOCA		
ROZZY, CA FIX	HAGAN, CA FIX	4000
HAGAN, CA FIX	*AUDIO, CA FIX	**6000
*9000 - MCA AUDIO, CA FIX , NE BND		
**4500 - MOCA		
AUDIO, CA FIX	SQUAW VALLEY, CA VOR/DME	11000
SQUAW VALLEY, CA VOR/DME	*VIKES, NV FIX	12000
*11000 - MCA VIKES, NV FIX , SW BND		
VIKES, NV FIX	*HAZEN, NV VORTAC	**10000
*9000 - MCA HAZEN, NV VORTAC , BND		
**9300 - MOCA		

95.6495 VOR FEDERAL AIRWAY V495

U.S. CANADIAN BORDER	WHATCOM, WA VORTAC	*3000
*1900 - MOCA		
WHATCOM, WA VORTAC	U.S. CANADIAN BORDER	3000
U.S. CANADIAN BORDER	*JAWBN, WA FIX	**5400
**4300 - MOCA		
*MTA V495 SE TO V4 W 8000		

95.6495 VOR FEDERAL AIRWAY V495 - CONTINUED

JAWBN, WA FIX	LOFAL, WA FIX	*5400
*4300 - MOCA		
LOFAL, WA FIX	*SEATTLE, WA VORTAC	**4000
*4700 - MCA SEATTLE, WA VORTAC , S BND		
**2800 - MOCA		
SEATTLE, WA VORTAC	CIDUG, WA FIX	
	S BND	*9000
	N BND	*5000
*3000 - GNSS MEA		
CIDUG, WA FIX	*ALDER, WA FIX	
	S BND	**9000
	N BND	**5000
*9000 - MCA ALDER, WA FIX , S BND		
**4200 - GNSS MEA		
ALDER, WA FIX	*TOUTL, WA FIX	**9000
*9000 - MCA TOUTL, WA FIX , N BND		
**7000 - GNSS MEA		
TOUTL, WA FIX	BATTLE GROUND, WA VORTAC	
	N BND	*9000
	S BND	*5300
*5300 - GNSS MEA		
BATTLE GROUND, WA VORTAC	NEWBERG, OR VOR/DME	4000
NEWBERG, OR VOR/DME	CORVALLIS, OR VOR/DME	*4000
*3400 - MOCA		
CORVALLIS, OR VOR/DME	HORTE, OR FIX	4000
HORTE, OR FIX	*VAUGN, OR FIX	
	S BND	7000
	N BND	4000
*7000 - MRA		
VAUGN, OR FIX	ROSEBURG, OR VOR/DME	*7000
*4400 - MOCA		
ROSEBURG, OR VOR/DME	MERLI, OR FIX	*8000
*7500 - MOCA		
MERLI, OR FIX	*PAPLE, OR FIX	**9000
*10100 - MRA		
**6500 - MOCA		
PAPLE, OR FIX	*BAYTS, OR FIX	**10100
*10000 - MRA		
**7300 - MOCA		
BAYTS, OR FIX	FORT JONES, CA VOR/DME	*10000
*9400 - MOCA		

95.6497 VOR FEDERAL AIRWAY V497

ROME, OR VOR/DME	WILDHORSE, OR VOR/DME	9000
WILDHORSE, OR VOR/DME	KIMBERLY, OR VOR/DME	9000
KIMBERLY, OR VOR/DME	KLICKITAT, OR VOR/DME	7300
KLICKITAT, OR VOR/DME	*SUNED, WA FIX	7000
*5500 - MRA		
SUNED, WA FIX	MOSES LAKE, WA VOR/DME	6000
MOSES LAKE, WA VOR/DME	EPHRATA, WA VORTAC	4000

95.6499 VOR FEDERAL AIRWAY V499

BALTIMORE, MD VORTAC	BELAY, MD FIX	2300
BELAY, MD FIX	LANCASTER, PA VOR/DME	2500
LANCASTER, PA VOR/DME	CHLSE, PA FIX	*8000
*4000 - MOCA		
CHLSE, PA FIX	*MEGSS, PA FIX	**8000
*8000 - MCA MEGSS, PA FIX , S BND		
**4300 - MOCA		

FROM	TO	MEA

95.6499 VOR FEDERAL AIRWAY V499 - CONTINUED

MEGSS, PA FIX	BINGHAMTON, NY VOR/DME	4900

95.6500 VOR FEDERAL AIRWAY V500

BATTLE GROUND, WA VORTAC	NEWBERG, OR VOR/DME	4000
NEWBERG, OR VOR/DME	GLARA, OR FIX	4000
GLARA, OR FIX	HARZL, OR FIX	
	W BND	*7200
	E BND	*10000
*6700 - MOCA		
*7000 - GNSS MEA		
HARZL, OR FIX	RATZZ, OR FIX	
	E BND	*10000
	W BND	*8000
*7400 - MOCA		
*8000 - GNSS MEA		
RATZZ, OR FIX	*GASHE, OR FIX	**10000
*10000 - MRA		
**8000 - MOCA		
**8000 - GNSS MEA		
GASHE, OR FIX	*KIMBERLY, OR VOR/DME	**9200
*8500 - MCA KIMBERLY, OR VOR/DME , E BND		
**8200 - MOCA		
KIMBERLY, OR VOR/DME	*POTSY, OR FIX	
	E BND	15000
	W BND	11100
*15000 - MRA		
POTSY, OR FIX	FONNA, OR FIX	*15000
*10000 - MOCA		
FONNA, OR FIX	*HOSTS, OR FIX	
	E BND	**11000
	W BND	**15000
*11700 - MRA		
**7800 - MOCA		
HOSTS, OR FIX	PARMO, ID FIX	
	E BND	7200
	W BND	15000
PARMO, ID FIX	*BOISE, ID VORTAC	
	E BND	5400
	W BND	15000
*7400 - MCA BOISE, ID VORTAC , E BND		
BOISE, ID VORTAC	AROWS, ID FIX	
	E BND	9000
	W BND	8000
AROWS, ID FIX	*DERSO, ID FIX	**12500
*15200 - MCA DERSO, ID FIX , E BND		
**10000 - MOCA		
DERSO, ID FIX	SOLDE, ID FIX	*17000
*10400 - MOCA		
SOLDE, ID FIX	*REAPS, ID FIX	
	E BND	**14000
	W BND	**17000
*15400 - MCA REAPS, ID FIX , W BND		
**8200 - MOCA		
REAPS, ID FIX	BETRE, ID FIX	*9500
*7000 - MOCA		
BETRE, ID FIX	POCATELLO, ID VOR/DME	7500

95.6501 VOR FEDERAL AIRWAY V501

MARTINSBURG, WV VORTAC	HAGERSTOWN, MD VOR	3500

FROM	TO	MEA

95.6501 VOR FEDERAL AIRWAY V501 - CONTINUED

HAGERSTOWN, MD VOR	ST THOMAS, PA VORTAC	4000
ST THOMAS, PA VORTAC	PHILIPSBURG, PA VORTAC	*4500
*4000 - MOCA		

95.6502 VOR FEDERAL AIRWAY V502

DODGE CITY, KS VORTAC	*DISKS, KS FIX	**4500
*5000 - MCA DISKS, KS FIX , E BND		
**4000 - MOCA		
DISKS, KS FIX	*SPELT, KS FIX	**5000
*5000 - MRA		
**3300 - MOCA		
SPELT, KS FIX	HUTCHINSON, KS VOR/DME	3200
HUTCHINSON, KS VOR/DME	WAIVE, KS FIX	4000
WAIVE, KS FIX	*FLOSS, KS FIX	3300
*5000 - MRA		
FLOSS, KS FIX	EMPORIA, KS VORTAC	3300
EMPORIA, KS VORTAC	KANSAS CITY, MO VORTAC	3100
KANSAS CITY, MO VORTAC	BRAYMER, MO VOR/DME	2600
BRAYMER, MO VOR/DME	KIRKSVILLE, MO VORTAC	2900

95.6503 VOR FEDERAL AIRWAY V503

ROCHESTER, MN VOR/DME	CEDAR RAPIDS, IA VOR/DME	*4500
*3600 - MOCA		

95.6505 VOR FEDERAL AIRWAY V505

MASON CITY, IA VOR/DME	FREED, MN FIX	3000
FREED, MN FIX	*ALMAY, MN FIX	**4600
*5000 - MRA		
**2800 - MOCA		
ALMAY, MN FIX	PRAGS, MN FIX	*5000
*2500 - MOCA		
PRAGS, MN FIX	GOPHER, MN VORTAC	3000
DULUTH, MN VORTAC	HIBBING, MN VOR/DME	3300
HIBBING, MN VOR/DME	SQEAK, MN FIX	*5000
*3100 - MOCA		
SQEAK, MN FIX	BEBEL, MN FIX	10000
BEBEL, MN FIX	JIBDU, MN FIX	
	N BND	7000
	S BND	10000
JIBDU, MN FIX	*INTERNATIONAL FALLS, MN VOR/DME	
	N BND	4000
	S BND	10000
*7800 - MCA INTERNATIONAL FALLS, MN VOR/DME , BND		

95.6507 VOR FEDERAL AIRWAY V507

ARDMORE, OK VORTAC	WILL ROGERS, OK VORTAC	3100
WILL ROGERS, OK VORTAC	WAXEY, OK FIX	
	W BND	*9300
	E BND	*5000
*3400 - MOCA		
*4000 - GNSS MEA		
WAXEY, OK FIX	ROLLS, OK FIX	
	W BND	*11000
	E BND	*9300
*3800 - MOCA		
*4000 - GNSS MEA		

FROM	TO	MEA

95.6507 VOR FEDERAL AIRWAY V507 - CONTINUED

ROLLS, OK FIX	MITBEE, OK VORTAC	
	N BND	*4000
	S BND	*9300
*4000 - GNSS MEA		

95.6508 VOR FEDERAL AIRWAY V508

HILL CITY, KS VORTAC	HAYS, KS VORTAC	*4500
*3900 - MOCA		
HAYS, KS VORTAC	*GLIDE, KS FIX	3900
*4500 - MRA		
GLIDE, KS FIX	SALINA, KS VORTAC	*3900
*3200 - MOCA		
SALINA, KS VORTAC	*VASCO, KS FIX	3000
*5000 - MRA		
VASCO, KS FIX	MANHATTAN, KS VOR/DME	3000
MANHATTAN, KS VOR/DME	TOPEKA, KS VORTAC	3000
TOPEKA, KS VORTAC	RUGBB, KS FIX	2800

95.6509 VOR FEDERAL AIRWAY V509

ST PETERSBURG, FL VORTAC	*CROWD, FL FIX	**5000
*5000 - MRA		
**2700 - MOCA		
CROWD, FL FIX	HALLR, FL FIX	*6000
*1800 - MOCA		

95.6510 VOR FEDERAL AIRWAY V510

DICKINSON, ND VORTAC	BISMARCK, ND VOR/DME	4600
BISMARCK, ND VOR/DME	*BEHQY, ND FIX	3900
*12000 - MRA		
BEHQY, ND FIX	JAMESTOWN, ND VOR/DME	3900
JAMESTOWN, ND VOR/DME	*CHAFE, ND FIX	3300
*6000 - MRA		
CHAFE, ND FIX	FARGO, ND VOR/DME	
	W BND	3300
	E BND	2700
FARGO, ND VOR/DME	ALEXANDRIA, MN VOR/DME	
	E BND	*3600
	NW BND	*6000
*3100 - MOCA		
ALEXANDRIA, MN VOR/DME	*DAYLE, MN FIX	5000
*5000 - MCA DAYLE, MN FIX , NW BND		
DAYLE, MN FIX	GOPHER, MN VORTAC	4000
GOPHER, MN VORTAC	*BITLR, WI FIX	3500
*5500 - MCA BITLR, WI FIX , SE BND		
BITLR, WI FIX	NODINE, MN VORTAC	5500
NODINE, MN VORTAC	DELLS, WI VORTAC	3000

95.6511 VOR FEDERAL AIRWAY V511

LAKELAND, FL VORTAC	HALLR, FL FIX	*4000
*2300 - MOCA		
HALLR, FL FIX	THNDR, FL FIX	*7000
*1700 - MOCA		
*5000 - GNSS MEA		
THNDR, FL FIX	DOLPHIN, FL VORTAC	*3000
*1500 - MOCA		

FROM	TO	MEA

95.6512 VOR FEDERAL AIRWAY V512

POCKET CITY, IN VORTAC	HOLAN, IN FIX	2600
HOLAN, IN FIX	*SACKO, IN FIX	**3500
*10000 - MCA SACKO, IN FIX , E BND		
**2100 - MOCA		
**3000 - GNSS MEA		
SACKO, IN FIX	LOUISVILLE, KY VORTAC	10000
LOUISVILLE, KY VORTAC	*CLEGG, KY FIX	10000
*10000 - MCA CLEGG, KY FIX , W BND		
CLEGG, KY FIX	LEXINGTON, KY VOR/DME	2800

95.6513 VOR FEDERAL AIRWAY V513

LIVINGSTON, TN VOR/DME	NEW HOPE, KY VOR/DME	4000
NEW HOPE, KY VOR/DME	LOUISVILLE, KY VORTAC	2700

95.6514 VOR FEDERAL AIRWAY V514

MISSION BAY, CA VORTAC	*RYAHH, CA FIX	
	E BND	7000
	W BND	4000
*6400 - MCA RYAHH, CA FIX , E BND		
RYAHH, CA FIX	BARET, CA FIX	
	E BND	*8400
	W BND	*7000
*6100 - MOCA		
BARET, CA FIX	CANNO, CA FIX	8400
CANNO, CA FIX	JULIAN, CA VORTAC	8800
JULIAN, CA VORTAC	THERMAL, CA VORTAC	9000
THERMAL, CA VORTAC	*TWENTYNINE PALMS, CA VORTAC	7000
*10200 - MCA TWENTYNINE PALMS, CA VORTAC , NE BND		
TWENTYNINE PALMS, CA VORTAC	GOFFS, CA VORTAC	*12000
*7900 - MOCA		
*8000 - GNSS MEA		
GOFFS, CA VORTAC	BOULDER CITY, NV VORTAC	7600

95.6517 VOR FEDERAL AIRWAY V517

SNOWBIRD, TN VORTAC	MIAMI, TN FIX	6900
MIAMI, TN FIX	*LONDON, KY VOR/DME	5500
*6000 - MCA LONDON, KY VOR/DME , N BND		
LONDON, KY VOR/DME	*LOGIC, KY FIX	**6000
*6000 - MCA LOGIC, KY FIX , S BND		
**3700 - MOCA		
LOGIC, KY FIX	*CODEL, KY FIX	2800
*3000 - MRA		
CODEL, KY FIX	FALMOUTH, KY VOR/DME	2800
FALMOUTH, KY VOR/DME	CINCINNATI, KY VORTAC	2700

95.6518 VOR FEDERAL AIRWAY V518

LANGE, CA FIX	*PALMDALE, CA VORTAC	7000
*6300 - MCA PALMDALE, CA VORTAC , BND		

95.6519 VOR FEDERAL AIRWAY V519

VOLUNTEER, TN VORTAC	TAMPI, TN FIX	3500
TAMPI, TN FIX	YUMMY, VA FIX	4500
YUMMY, VA FIX	GLADE SPRING, VA VOR/DME	6000

95.6519 VOR FEDERAL AIRWAY V519 - CONTINUED

GLADE SPRING, VA VOR/DME	*TELOC, VA FIX	6900
*13000 - MRA		
TELOC, VA FIX	BLUEFIELD, WV VOR/DME	
	NE BND	6100
	SW BND	6900
BLUEFIELD, WV VOR/DME	BECKLEY, WV VOR/DME	*9000
*5900 - MOCA		
*5900 - GNSS MEA		
*BECKLEY R-193 UNUSABLE USE BLUEFIELD R-010		

95.6520 VOR FEDERAL AIRWAY V520

*BATTLE GROUND, WA VORTAC	KLICKITAT, OR VOR/DME	7000
*4700 - MCA BATTLE GROUND, WA VORTAC , E BND		
KLICKITAT, OR VOR/DME	AMPLE, WA FIX	6000
AMPLE, WA FIX	VIRTU, WA FIX	
	NE BND	4000
	SW BND	5000
VIRTU, WA FIX	PASCO, WA VOR/DME	4000
PASCO, WA VOR/DME	*WALLA WALLA, WA VOR/DME	3200
*5800 - MCA WALLA WALLA, WA VOR/DME , NE BND		
WALLA WALLA, WA VOR/DME	CLOVA, WA FIX	8000
CLOVA, WA FIX	*NEZ PERCE, ID VOR/DME	
	NE BND	6000
	SW BND	8000
*10000 - MCA NEZ PERCE, ID VOR/DME , E BND		
NEZ PERCE, ID VOR/DME	ZATIP, ID FIX	
	E BND	12000
	W BND	6800
ZATIP, ID FIX	SALMON, ID VOR/DME	12000
SALMON, ID VOR/DME	*DUBOIS, ID VORTAC	13600
*9000 - MCA DUBOIS, ID VORTAC , E BND		
*10600 - MCA DUBOIS, ID VORTAC , W BND		
DUBOIS, ID VORTAC	*JACKSON, WY VOR/DME	15300
*15200 - MCA JACKSON, WY VOR/DME , BND		

95.6521 VOR FEDERAL AIRWAY V521

DOLPHIN, FL VORTAC	RUTHY, FL FIX	*3000
*1500 - MOCA		
RUTHY, FL FIX	LEE COUNTY, FL VORTAC	2300
LEE COUNTY, FL VORTAC	QUNCY, FL FIX	2600
QUNCY, FL FIX	LAKELAND, FL VORTAC	2300
LAKELAND, FL VORTAC	*DADES, FL FIX	**2300
*5000 - MRA		
**1800 - MOCA		
DADES, FL FIX	NITTS, FL FIX	*2300
*1800 - MOCA		
NITTS, FL FIX	*ORATE, FL FIX	**3000
*3000 - MRA		
**1700 - MOCA		
ORATE, FL FIX	CROSS CITY, FL VORTAC	*2000
*1500 - MOCA		
CROSS CITY, FL VORTAC	HEVVN, FL FIX	*5000
*1400 - MOCA		
*2000 - GNSS MEA		
*CROSS CITY R-289 UNUSABLE BEYOND 60 NM.		
HEVVN, FL FIX	*TERES, FL FIX	**GNSS - 2000
*7000 - MRA		
**1300 - MOCA		
**GNSS REQUIRED		

FROM	TO	MEA

95.6521 VOR FEDERAL AIRWAY V521 - CONTINUED

TERES, FL FIX	CRESS, FL FIX	*4000
*1400 - MOCA		
*2000 - GNSS MEA		
CRESS, FL FIX	MARIANNA, FL VORTAC	2000
MARIANNA, FL VORTAC	WIREGRASS, AL VORTAC	2000
WIREGRASS, AL VORTAC	SKIPO, AL FIX	2300
SKIPO, AL FIX	*BANBI, AL FIX	**4000
*4000 - MCA BANBI, AL FIX , SE BND		
**1900 - MOCA		
**2300 - GNSS MEA		
BANBI, AL FIX	MONTGOMERY, AL VORTAC	2400
MONTGOMERY, AL VORTAC	KYLEE, AL FIX	3000
KYLEE, AL FIX	VULCAN, AL VORTAC	3800

95.6524 VOR FEDERAL AIRWAY V524

HAYDEN, CO VOR/DME	LARAMIE, WY VOR/DME	14200
LARAMIE, WY VOR/DME	SCOTTSBLUFF, NE VORTAC	*12000
*10900 - MOCA		
*11000 - GNSS MEA		
SCOTTSBLUFF, NE VORTAC	NORTH PLATTE, NE VOR/DME	7000

95.6526 VOR FEDERAL AIRWAY V526

NORTHBROOK, IL VOR/DME	*MINCE, MI FIX	2500
*3500 - MRA		
MINCE, MI FIX	MUSKY, MI FIX	2500
MUSKY, MI FIX	MAPER, MI FIX	*3500
*1700 - MOCA		
*2600 - GNSS MEA		
MAPER, MI FIX	GIPPER, MI VORTAC	2600

95.6527 VOR FEDERAL AIRWAY V527

*HOT SPRINGS, AR VOR/DME	HIDER, AR FIX	
	SE BND	3200
	NW BND	9500
*5700 - MCA HOT SPRINGS, AR VOR/DME , NW BND		
HIDER, AR FIX	ROVER, AR FIX	
	SE BND	*5500
	NW BND	*9500
*3200 - MOCA		
ROVER, AR FIX	*SCRAN, AR FIX	**9500
*6500 - MRA		
*9500 - MCA SCRAN, AR FIX , SE BND		
**3600 - MOCA		
SCRAN, AR FIX	CASKS, AR FIX	*6500
*3700 - MOCA		
CASKS, AR FIX	RAZORBACK, AR VORTAC	4000
RAZORBACK, AR VORTAC	BILIE, MO FIX	*4000
*3200 - MOCA		
BILIE, MO FIX	SPRINGFIELD, MO VORTAC	3000

95.6528 VOR FEDERAL AIRWAY V528

*PHOENIX, AZ VORTAC	EAGUL, AZ FIX	**14500
*8000 - MCA PHOENIX, AZ VORTAC , NE BND		
**9400 - MOCA		
**10000 - GNSS MEA		

FROM	TO	MEA

95.6528 VOR FEDERAL AIRWAY V528 - CONTINUED

EAGUL, AZ FIX	*PAYSO, AZ FIX	**16000
*16000 - MCA PAYSO, AZ FIX , SW BND		
**10000 - MOCA		
PAYSO, AZ FIX	ST JOHNS, AZ VORTAC	*13000
*9800 - MOCA		

95.6529 VOR FEDERAL AIRWAY V529

*FAMIN, FL FIX	SWAGS, FL FIX	**5700
*5700 - MRA		
**1500 - MOCA		
SWAGS, FL FIX	LA BELLE, FL VORTAC	*2000
*1400 - MOCA		

95.6530 VOR FEDERAL AIRWAY V530

TEXICO, TX VORTAC	CHILDRESS, TX VORTAC	6000

95.6531 VOR FEDERAL AIRWAY V531

PALM BEACH, FL VORTAC	*SHEDS, FL FIX	3000
*3000 - MRA		
SHEDS, FL FIX	CUSMO, FL FIX	*6000
*2000 - MOCA		
*2000 - GNSS MEA		
CUSMO, FL FIX	BAIRN, FL FIX	*6000
*2000 - MOCA		
*2000 - GNSS MEA		
*PALM BEACH R-327 UNUSABLE CUSMO-BAIRN		
BAIRN, FL FIX	ORLANDO, FL VORTAC	2700

95.6532 VOR FEDERAL AIRWAY V532

LITTLE ROCK, AR VORTAC	*PARON, AR FIX	2600
*3500 - MRA		
PARON, AR FIX	*GATZY, AR FIX	**3700
*4800 - MCA GATZY, AR FIX , W BND		
**3100 - MOCA		
GATZY, AR FIX	*BLURB, AR FIX	**5500
*5000 - MRA		
*5500 - MCA BLURB, AR FIX , E BND		
**3200 - MOCA		
BLURB, AR FIX	BLIMP, AR FIX	*4100
*3600 - MOCA		
BLIMP, AR FIX	FORT SMITH, AR VORTAC	*2900
*2400 - MOCA		
FORT SMITH, AR VORTAC	*AKINS, OK FIX	2500
*3000 - MRA		
AKINS, OK FIX	OKMULGEE, OK VOR/DME	*3000
*2200 - MOCA		
OKMULGEE, OK VOR/DME	PIONEER, OK VORTAC	3000
PIONEER, OK VORTAC	WICHITA, KS VORTAC	3600
WICHITA, KS VORTAC	SALINA, KS VORTAC	3600
SALINA, KS VORTAC	LINCOLN, NE VORTAC	*5000
*3000 - MOCA		

95.6533 VOR FEDERAL AIRWAY V533

ST PETERSBURG, FL VORTAC	LAKELAND, FL VORTAC	2000

FROM	TO	MEA

95.6533 VOR FEDERAL AIRWAY V533 - CONTINUED

LAKELAND, FL VORTAC	*CAMBE, FL FIX	2000
*4000 - MRA		
CAMBE, FL FIX	ORLANDO, FL VORTAC	2000
ORLANDO, FL VORTAC	OAKIE, FL FIX	2000
OAKIE, FL FIX	ORMOND BEACH, FL VORTAC	*4000
*1600 - MOCA		

95.6534 VOR FEDERAL AIRWAY V534

LITTLE ROCK, AR VORTAC	BIBBS, AR FIX	3500
BIBBS, AR FIX	HAAWK, AR FIX	*4500
*2500 - MOCA		
HAAWK, AR FIX	*SCRAN, AR FIX	**4500
*6500 - MRA		
**3100 - MOCA		
SCRAN, AR FIX	FORT SMITH, AR VORTAC	
	W BND	*3500
	E BND	*4500
*3000 - MOCA		

95.6535 VOR FEDERAL AIRWAY V535

SIDON, MS VORTAC	HOLLY SPRINGS, MS VORTAC	*3000
*2100 - MOCA		

95.6536 VOR FEDERAL AIRWAY V536

NORTH BEND, OR VOR/DME	*RARES, OR FIX	
	N BND	6000
	S BND	3700
*5500 - MRA		
RARES, OR FIX	CORVALLIS, OR VOR/DME	6000
CORVALLIS, OR VOR/DME	SHEDD, OR FIX	3000
SHEDD, OR FIX	LATHE, OR FIX	4000
LATHE, OR FIX	*JAIME, OR FIX	6000
*8300 - MCA JAIME, OR FIX , E BND		
JAIME, OR FIX	MANTE, OR FIX	*10000
*7800 - MOCA		
MANTE, OR FIX	DESCHUTES, OR VORTAC	10000
DESCHUTES, OR VORTAC	ZORNS, OR FIX	
	NE BND	10000
	SW BND	7000
ZORNS, OR FIX	*RENCE, OR FIX	**10000
*10000 - MRA		
**7700 - MOCA		
RENCE, OR FIX	HEPPE, OR FIX	*10000
*7700 - MOCA		
HEPPE, OR FIX	PENDLETON, OR VORTAC	
	NE BND	6000
	SW BND	10000
PENDLETON, OR VORTAC	WALLA WALLA, WA VOR/DME	4100
WALLA WALLA, WA VOR/DME	PULLMAN, WA VOR/DME	*6000
*5700 - MOCA		
PULLMAN, WA VOR/DME	MULLAN PASS, ID VOR/DME	9100
MULLAN PASS, ID VOR/DME	KALISPELL, MT VOR/DME	*11500
*9700 - MOCA		
*10000 - GNSS MEA		
KALISPELL, MT VOR/DME	GAPAR, MT FIX	*13000
*10900 - MOCA		

FROM	TO	MEA

95.6536 VOR FEDERAL AIRWAY V536 - CONTINUED

GAPAR, MT FIX	*PIKUN, MT FIX	**12000
*10600 - MCA PIKUN, MT FIX , W BND		
**11400 - MOCA		
PIKUN, MT FIX	*CHOTE, MT FIX	
	W BND	**10000
	E BND	**9000
*9200 - MCA CHOTE, MT FIX , W BND		
**6900 - MOCA		
CHOTE, MT FIX	GREAT FALLS, MT VORTAC	7000
GREAT FALLS, MT VORTAC	SWEDD, MT FIX	*12000
*9700 - MOCA		
SWEDD, MT FIX	*MENAR, MT FIX	**10000
*9200 - MCA MENAR, MT FIX , NW BND		
**9400 - MOCA		
MENAR, MT FIX	*BOZEMAN, MT VOR/DME	8700
*9300 - MCA BOZEMAN, MT VOR/DME , SE BND		
SHERIDAN, WY VOR/DME	GILLETTE, WY VOR/DME	7000
GILLETTE, WY VOR/DME	NEWCASTLE, WY VOR	7500
NEWCASTLE, WY VOR	*ZAMBI, SD FIX	9300
*9300 - MRA		
ZAMBI, SD FIX	*RAPID CITY, SD VORTAC	
	E BND	8000
	W BND	9300
*6500 - MCA RAPID CITY, SD VORTAC , BND		

95.6537 VOR FEDERAL AIRWAY V537

PALM BEACH, FL VORTAC	STOOP, FL FIX	*3000
*2000 - MOCA		
STOOP, FL FIX	TREASURE, FL VORTAC	2000
TREASURE, FL VORTAC	*PRESK, FL FIX	3000
*2500 - MRA		
PRESK, FL FIX	CERMO, FL FIX	*8000
*2000 - MOCA		
CERMO, FL FIX	OCALA, FL VORTAC	
	NW BND	2000
	SE BND	8000
OCALA, FL VORTAC	*LEJKO, FL FIX	2000
*3000 - MRA		
LEJKO, FL FIX	GATORS, FL VORTAC	2000
GATORS, FL VORTAC	ALVIN, FL FIX	*3000
*2000 - MOCA		
ALVIN, FL FIX	GREENVILLE, FL VORTAC	2000

95.6538 VOR FEDERAL AIRWAY V538

*TWENTYNINE PALMS, CA VORTAC	GOFFS, CA VORTAC	**12000
*10200 - MCA TWENTYNINE PALMS, CA VORTAC , NE BND		
**7900 - MOCA		
**8000 - GNSS MEA		
GOFFS, CA VORTAC	LAS VEGAS, NV VORTAC	9000

95.6539 VOR FEDERAL AIRWAY V539

KEY WEST, FL VORTAC	CORGI, FL FIX	1500
CORGI, FL FIX	GOODY, FL FIX	*4000
*1200 - MOCA		
GOODY, FL FIX	LEE COUNTY, FL VORTAC	
	N BND	2100
	S BND	4000

FROM	TO	MEA

95.6540 VOR FEDERAL AIRWAY V540

CUNNINGHAM, KY VOR/DME	TAMMS, IL FIX	
	NW BND	3500
	SE BND	2800
TAMMS, IL FIX	FARMINGTON, MO VORTAC	3500

95.6541 VOR FEDERAL AIRWAY V541

GADSDEN, AL VOR/DME	EDDIE, AL FIX	3600

95.6543 VOR FEDERAL AIRWAY V543

LEEVILLE, LA VORTAC	SAFES, LA FIX	*2000
*1400 - MOCA		
SAFES, LA FIX	WAVEZ, LA FIX	*4000
*1600 - MOCA		
WAVEZ, LA FIX	OYSTY, LA FIX	*3000
*1800 - MOCA		
OYSTY, LA FIX	*RYTHM, LA FIX	2000
*4200 - MCA RYTHM, LA FIX , NE BND		
RYTHM, LA FIX	EATON, MS VORTAC	*4200
*2000 - MOCA		
EATON, MS VORTAC	BAING, MS FIX	*3000
*2000 - MOCA		
BAING, MS FIX	*PAULD, MS FIX	3000
*5000 - MRA		
*3000 - MCA PAULD, MS FIX , SW BND		
PAULD, MS FIX	MERIDIAN, MS VORTAC	2100

95.6545 VOR FEDERAL AIRWAY V545

MILES CITY, MT VOR/DME	WILLISTON, ND VOR/DME	*7000
*5300 - MOCA		
*6000 - GNSS MEA		

95.6546 VOR FEDERAL AIRWAY V546

WINK, TX VORTAC	YOGSU, TX FIX	5500
YOGSU, TX FIX	MIDLAND, TX VORTAC	5000
MIDLAND, TX VORTAC	BIG SPRING, TX VORTAC	4400

95.6547 VOR FEDERAL AIRWAY V547

CHEYENNE, WY VORTAC	HIPSHER, WY VOR/DME	9000
HIPSHER, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	7900

95.6548 VOR FEDERAL AIRWAY V548

COLLEGE STATION, TX VORTAC	BARBA, TX FIX	2500
BARBA, TX FIX	BOSEL, TX FIX	3600
BOSEL, TX FIX	WACO, TX VORTAC	
	N BND	2800
	S BND	3600

95.6549 VOR FEDERAL AIRWAY V549

HAYS, KS VORTAC	MANKATO, KS VORTAC	4100

95.6550 VOR FEDERAL AIRWAY V550

COTULLA, TX VORTAC	LEMIG, TX FIX	2500

FROM	TO	MEA
95.6550 VOR FEDERAL AIRWAY V550 - CONTINUED		
LEMIG, TX FIX	SAN ANTONIO, TX VORTAC	3000
SAN ANTONIO, TX VORTAC	CENTEX, TX VORTAC	3300
95.6551 VOR FEDERAL AIRWAY V551		
SALINA, KS VORTAC	MANKATO, KS VORTAC	6000
95.6552 VOR FEDERAL AIRWAY V552		
BEAUMONT, TX VOR/DME	LAKE CHARLES, LA VORTAC	2000
LAKE CHARLES, LA VORTAC	HATHA, LA FIX	2000
HATHA, LA FIX	LAFAYETTE, LA VORTAC	2800
LAFAYETTE, LA VORTAC	*GRICE, LA FIX	**2000
*4000 - MRA		
**1500 - MOCA		
GRICE, LA FIX	TIBBY, LA VOR/DME	2000
TIBBY, LA VOR/DME	HARVEY, LA VORTAC	2100
HARVEY, LA VORTAC	PICAYUNE, MS VOR/DME	2000
PICAYUNE, MS VOR/DME	*MINDO, MS FIX	2000
*6000 - MRA		
MINDO, MS FIX	SEMMES, AL VORTAC	2000
SEMMES, AL VORTAC	MONROEVILLE, AL VORTAC	2000
95.6553 VOR FEDERAL AIRWAY V553		
SALINA, KS VORTAC	PAWNEE CITY, NE VORTAC	3400
95.6554 VOR FEDERAL AIRWAY V554		
NATCHEZ, MS VOR/DME	*TULLO, LA FIX	**6000
*6000 - MCA TULLO, LA FIX , SE BND		
**1800 - MOCA		
TULLO, LA FIX	MONROE, LA VORTAC	2000
95.6555 VOR FEDERAL AIRWAY V555		
PICAYUNE, MS VOR/DME	MC COMB, MS VORTAC	2000
95.6556 VOR FEDERAL AIRWAY V556		
SAN ANGELO, TX VORTAC	CHILD, TX FIX	4000
CHILD, TX FIX	JUNCTION, TX VORTAC	*5000
*4000 - MOCA		
JUNCTION, TX VORTAC	STONEWALL, TX VORTAC	4000
SCHOLES, TX VOR/DME	SABINE PASS, TX VOR/DME	2000
95.6558 VOR FEDERAL AIRWAY V558		
LLANO, TX VORTAC	SLIMM, TX FIX	3100
SLIMM, TX FIX	CENTEX, TX VORTAC	4100
CENTEX, TX VORTAC	MOUZE, TX FIX	2200
MOUZE, TX FIX	INDUSTRY, TX VORTAC	2100
95.6559 VOR FEDERAL AIRWAY V559		
LAFAYETTE, LA VORTAC	FIGHTING TIGER, LA VORTAC	2100
95.6560 VOR FEDERAL AIRWAY V560		
NEWMAN, TX VORTAC	MAYFY, TX FIX	9000

FROM	TO	MEA

95.6560 VOR FEDERAL AIRWAY V560 - CONTINUED

MAYFY, TX FIX	*CONNE, TX FIX	**10500
*10500 - MRA		
**9000 - MOCA		
CONNE, TX FIX	SALT FLAT, TX VORTAC	9000
SALT FLAT, TX VORTAC	CARLSBAD, NM VORTAC	8000

95.6561 VOR FEDERAL AIRWAY V561

GRAND FORKS, ND VOR/DME	JAMESTOWN, ND VOR/DME	*4000
*3000 - MOCA		
JAMESTOWN, ND VOR/DME	PIERRE, SD VORTAC	*10000
*3400 - MOCA		

95.6562 VOR FEDERAL AIRWAY V562

PHOENIX, AZ VORTAC	KNOBB, AZ FIX	8000
KNOBB, AZ FIX	RADOM, AZ FIX	
	S BND	8000
	N BND	11000
RADOM, AZ FIX	*FERER, AZ FIX	
	N BND	**12000
	S BND	**11000
*12000 - MRA		
*11000 - MCA FERER, AZ FIX , S BND		
**8400 - MOCA		
**9000 - GNSS MEA		
FERER, AZ FIX	DRAKE, AZ VORTAC	*10000
*9200 - MOCA		
DRAKE, AZ VORTAC	PEACH SPRINGS, AZ VOR/DME	9200
PEACH SPRINGS, AZ VOR/DME	*MEADS, NV FIX	9000
*9000 - MCA MEADS, NV FIX , SE BND		
MEADS, NV FIX	LAS VEGAS, NV VORTAC	6000

95.6563 VOR FEDERAL AIRWAY V563

LUBBOCK, TX VORTAC	BIG SPRING, TX VORTAC	5200

95.6564 VOR FEDERAL AIRWAY V564

YERIN, NV FIX	CHIME, NV FIX	
	NW BND	10000
	SE BND	11500
CHIME, NV FIX	MUSTANG, NV VORTAC	10000

95.6565 VOR FEDERAL AIRWAY V565

LLANO, TX VORTAC	AMUSE, TX FIX	3500
AMUSE, TX FIX	CENTEX, TX VORTAC	*3300
*2900 - MOCA		
CENTEX, TX VORTAC	COLLEGE STATION, TX VORTAC	2400
COLLEGE STATION, TX VORTAC	LUFKIN, TX VORTAC	*4000
*2000 - MOCA		

95.6566 VOR FEDERAL AIRWAY V566

GREGG COUNTY, TX VORTAC	*WORKS, TX FIX	2300
*3000 - MRA		
WORKS, TX FIX	BELCHER, LA VORTAC	3100
BELCHER, LA VORTAC	KNELT, LA FIX	2300

FROM	TO	MEA

95.6566 VOR FEDERAL AIRWAY V566 - CONTINUED

KNELT, LA FIX	COVEX, LA FIX	*3500
*1800 - MOCA		
COVEX, LA FIX	NUBOY, LA FIX	*5000
*1900 - MOCA		
NUBOY, LA FIX	ALEXANDRIA, LA VORTAC	
	W BND	5000
	E BND	2000
ALEXANDRIA, LA VORTAC	MUSHE, LA FIX	*3000
*1700 - MOCA		
*ALEXANDRIA R-106 UNUSABLE BEYOND 48 NM		
MUSHE, LA FIX	FISTY, LA FIX	*4000
*1700 - MOCA		
FISTY, LA FIX	WRACK, LA FIX	UNUSABLE
WRACK, LA FIX	VEILS, LA FIX	*3000
*2100 - MOCA		
VEILS, LA FIX	RESERVE, LA VOR/DME	2000

95.6567 VOR FEDERAL AIRWAY V567

RADOM, AZ FIX	*FERER, AZ FIX	
	N BND	**12000
	S BND	**11000
*12000 - MRA		
*14000 - MCA FERER, AZ FIX , NE BND		
*11000 - MCA FERER, AZ FIX , S BND		
**8400 - MOCA		
**9000 - GNSS MEA		
FERER, AZ FIX	WINSLOW, AZ VORTAC	*14000
*10000 - GNSS MEA		

95.6568 VOR FEDERAL AIRWAY V568

CORPUS CHRISTI, TX VORTAC	THREE RIVERS, TX VORTAC	1800
THREE RIVERS, TX VORTAC	LEMIG, TX FIX	2000
LEMIG, TX FIX	SAN ANTONIO, TX VORTAC	3000
SAN ANTONIO, TX VORTAC	GUADA, TX FIX	*4000
*2800 - MOCA		
GUADA, TX FIX	STONEWALL, TX VORTAC	4000
STONEWALL, TX VORTAC	LLANO, TX VORTAC	3700
MILLSAP, TX VORTAC	KARYN, TX FIX	3000
KARYN, TX FIX	WICHITA FALLS, TX VORTAC	3100

95.6569 VOR FEDERAL AIRWAY V569

BEAUMONT, TX VOR/DME	SILBE, TX FIX	2000
SILBE, TX FIX	LUFKIN, TX VORTAC	2500
LUFKIN, TX VORTAC	FRANKSTON, TX VOR/DME	2300
FRANKSTON, TX VOR/DME	CEDAR CREEK, TX VORTAC	2500

95.6570 VOR FEDERAL AIRWAY V570

ALEXANDRIA, LA VORTAC	NATCHEZ, MS VOR/DME	2000
NATCHEZ, MS VOR/DME	MC COMB, MS VORTAC	2000

95.6571 VOR FEDERAL AIRWAY V571

HUMBLE, TX VORTAC	NAVASOTA, TX VOR/DME	2000
NAVASOTA, TX VOR/DME	LEONA, TX VORTAC	3000
LEONA, TX VORTAC	CEDAR CREEK, TX VORTAC	2300

FROM	TO	MEA

95.6572 VOR FEDERAL AIRWAY V572

WINSLOW, AZ VORTAC	*FRISY, AZ FIX	10000
*10500 - MCA FRISY, AZ FIX , W BND		
FRISY, AZ FIX	FLAGSTAFF, AZ VOR/DME	11500

95.6573 VOR FEDERAL AIRWAY V573

WILL ROGERS, OK VORTAC	*ALEXX, OK FIX	3100
*7000 - MRA		
ALEXX, OK FIX	ARDMORE, OK VORTAC	UNUSABLE
ARDMORE, OK VORTAC	BONHAM, TX VORTAC	3600
BONHAM, TX VORTAC	SULPHUR SPRINGS, TX VOR/DME	2500
SULPHUR SPRINGS, TX VOR/DME	TEXARKANA, AR VORTAC	2000
TEXARKANA, AR VORTAC	ELMMO, AR FIX	
	SW BND	*3500
	NE BND	*5500
*2600 - MOCA		
ELMMO, AR FIX	MARKI, AR FIX	*5500
*2600 - MOCA		
MARKI, AR FIX	HOT SPRINGS, AR VOR/DME	
	NE BND	*3500
	SW BND	*5500
*2700 - MOCA		
HOT SPRINGS, AR VOR/DME	LITTLE ROCK, AR VORTAC	3000

95.6574 VOR FEDERAL AIRWAY V574

CENTEX, TX VORTAC	MOUZE, TX FIX	2200
MOUZE, TX FIX	NAVASOTA, TX VOR/DME	2100
NAVASOTA, TX VOR/DME	HUMBLE, TX VORTAC	2000
HUMBLE, TX VORTAC	DAISETTA, TX VORTAC	2000
DAISETTA, TX VORTAC	BEAUMONT, TX VOR/DME	2300
BEAUMONT, TX VOR/DME	LAKE CHARLES, LA VORTAC	2000

95.6575 VOR FEDERAL AIRWAY V575

LARAMIE, WY VOR/DME	*NIWOT, CO FIX	11300
*9500 - MCA NIWOT, CO FIX , NW BND		
NIWOT, CO FIX	MILE HIGH, CO VORTAC	8000

95.6576 VOR FEDERAL AIRWAY V576

PHILIPSBURG, PA VORTAC	WILLIAMSPORT, PA VOR/DME	4000
WILLIAMSPORT, PA VOR/DME	HANCOCK, NY VOR/DME	4000
HANCOCK, NY VOR/DME	DELANCEY, NY VOR/DME	4000

95.6577 VOR FEDERAL AIRWAY V577

CEDAR LAKE, NJ VOR/DME	BRIGS, NJ FIX	
	E BND	6000
	W BND	1700

95.6578 VOR FEDERAL AIRWAY V578

PECAN, GA VOR/DME	TIFT MYERS, GA VOR	*2500
*2300 - MOCA		
TIFT MYERS, GA VOR	ALMA, GA VORTAC	*3000
*2100 - MOCA		
*2100 - GNSS MEA		
*ALMA R-263 UNUSABLE USE TIFT MYERS R-083.		

FROM	TO	MEA

95.6578 VOR FEDERAL AIRWAY V578 - CONTINUED

ALMA, GA VORTAC	SAVANNAH, GA VORTAC	*10000
*2600 - MOCA		
*3000 - GNSS MEA		

95.6579 VOR FEDERAL AIRWAY V579

LEE COUNTY, FL VORTAC	VIOLA, FL FIX	2000
VIOLA, FL FIX	SARASOTA, FL VOR/DME	*3000
*1600 - MOCA		
SARASOTA, FL VOR/DME	ST PETERSBURG, FL VORTAC	2000
ST PETERSBURG, FL VORTAC	BAYPO, FL FIX	2000
BAYPO, FL FIX	NITTS, FL FIX	*4000
*1500 - MOCA		
NITTS, FL FIX	GATORS, FL VORTAC	
	S BND	*4000
	N BND	*3000
*2100 - MOCA		
GATORS, FL VORTAC	CROSS CITY, FL VORTAC	2000
CROSS CITY, FL VORTAC	VALDOSTA, GA VOR/DME	2000
VALDOSTA, GA VOR/DME	TIFT MYERS, GA VOR	2200
TIFT MYERS, GA VOR	VIENNA, GA VORTAC	2100

95.6580 VOR FEDERAL AIRWAY V580

ST LOUIS, MO VORTAC	LEBOY, IL FIX	*3000
*2200 - MOCA		
LEBOY, IL FIX	SEXTN, IL FIX	4500
SEXTN, IL FIX	BURLINGTON, IA VOR/DME	*3000
*2200 - MOCA		

95.6581 VOR FEDERAL AIRWAY V581

ST PETERSBURG, FL VORTAC	TUMPY, FL FIX	2000
TUMPY, FL FIX	*DADES, FL FIX	**5000
*5000 - MRA		
**2000 - GNSS MEA		
DADES, FL FIX	OCALA, FL VORTAC	2000

95.6582 VOR FEDERAL AIRWAY V582

ST LOUIS, MO VORTAC	LEBOY, IL FIX	*3000
*2200 - MOCA		
LEBOY, IL FIX	QUINCY, IL VORTAC	3000

95.6583 VOR FEDERAL AIRWAY V583

CENTEX, TX VORTAC	COLLEGE STATION, TX VORTAC	2200
COLLEGE STATION, TX VORTAC	LEONA, TX VORTAC	2000
LEONA, TX VORTAC	FRANKSTON, TX VOR/DME	2300

95.6586 VOR FEDERAL AIRWAY V586

QUINCY, IL VORTAC	PEORIA, IL VORTAC	2500
PEORIA, IL VORTAC	MAROC, IL FIX	*3000
*2400 - MOCA		
MAROC, IL FIX	PONTIAC, IL VOR/DME	2500
PONTIAC, IL VOR/DME	JOLIET, IL VOR/DME	*3000
*2300 - MOCA		

95.6587 VOR FEDERAL AIRWAY V587

HOMELAND, CA VOR	*LUCER, CA FIX	10500
*9300 - MCA LUCER, CA FIX , SW BND		

FROM	TO	MEA

95.6587 VOR FEDERAL AIRWAY V587 - CONTINUED

LUCER, CA FIX	BULGY, CA FIX	*9000
*8000 - MOCA		
BULGY, CA FIX	DAGGETT, CA VORTAC	8000
DAGGETT, CA VORTAC	*WHIGG, CA FIX	10500
*12000 - MRA		
WHIGG, CA FIX	BOULDER CITY, NV VORTAC	10500

95.6589 VOR FEDERAL AIRWAY V589

MEDICINE BOW, WY VOR/DME	ALCOS, WY FIX	10100
ALCOS, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	*10000
*9400 - MOCA		

95.6591 VOR FEDERAL AIRWAY V591

GRAND JUNCTION, CO VOR/DME	*PACES, CO FIX	11500
*13000 - MRA		
PACES, CO FIX	*SLOLM, CO FIX	13000
*MTA V591 NE TO V220 NW 12900		
SLOLM, CO FIX	*GLENO, CO FIX	14000
*16000 - MRA		
GLENO, CO FIX	SNOW, CO VOR/DME	14000
SNOW, CO VOR/DME	*KREMMLING, CO VOR/DME	14600
*12500 - MCA KREMMLING, CO VOR/DME , BND		

95.6595 VOR FEDERAL AIRWAY V595

*ROGUE VALLEY, OR VORTAC	CUTTR, OR FIX	
	NE BND	10500
	SW BND	6100
*5100 - MCA ROGUE VALLEY, OR VORTAC , NE BND		
CUTTR, OR FIX	COPPR, OR FIX	10500
COPPR, OR FIX	DRACK, OR FIX	
	NE BND	9900
	SW BND	10500
DRACK, OR FIX	*DESCHUTES, OR VORTAC	
	NE BND	6200
	SW BND	10500
*7900 - MCA DESCHUTES, OR VORTAC , BND		

95.6597 VOR FEDERAL AIRWAY V597

SAN MARCUS, CA VORTAC	*OHIGH, CA FIX	8000
*9000 - MRA		
OHIGH, CA FIX	*FILLMORE, CA VORTAC	8000
*6100 - MCA FILLMORE, CA VORTAC , W BND		
FILLMORE, CA VORTAC	VAN NUYS, CA VOR/DME	6000
VAN NUYS, CA VOR/DME	DARTS, CA FIX	5500
DARTS, CA FIX	SEAL BEACH, CA VORTAC	
	NW BND	6000
	SE BND	4000
SEAL BEACH, CA VORTAC	BALBO, CA FIX	
	NW BND	3000
	SE BND	4000
BALBO, CA FIX	OCEANSIDE, CA VORTAC	4000
OCEANSIDE, CA VORTAC	MISSION BAY, CA VORTAC	3000

95.6599 VOR FEDERAL AIRWAY V599

LEE COUNTY, FL VORTAC	THNDR, FL FIX	*3000
*1500 - MOCA		

FROM	TO	MEA

95.6599 VOR FEDERAL AIRWAY V599 - CONTINUED

THNDR, FL FIX	DOLPHIN, FL VORTAC	*3000
*1500 - MOCA		

95.6601 VOR FEDERAL AIRWAY V601

PAHOKEE, FL VOR/DME	*DEEDS, FL FIX	**4000
*4000 - MRA		
*7000 - MCA DEEDS, FL FIX , S BND		
**1600 - MOCA		
**2000 - GNSS MEA		
DEEDS, FL FIX	KEY WEST, FL VORTAC	*7000
*1400 - MOCA		
*2000 - GNSS MEA		

95.6605 VOR FEDERAL AIRWAY V605

SPARTANBURG, SC VORTAC	*GENOD, NC FIX	**7000
*10000 - MCA GENOD, NC FIX , N BND		
**6000 - MOCA		
**6000 - GNSS MEA		
**5200 - MCA SPARTANBURG, SC VORTAC , N BND		
**		
GENOD, NC FIX	*HOLSTON MOUNTAIN, TN VORTAC	**10000
*8500 - MCA HOLSTON MOUNTAIN, TN VORTAC , BND		
**8500 - MOCA		

95.6607 VOR FEDERAL AIRWAY V607

MENDOCINO, CA VORTAC	YAGER, CA FIX	9000
YAGER, CA FIX	ARCATA, CA VOR/DME	8000

95.6609 VOR FEDERAL AIRWAY V609

SAGINAW, MI VOR/DME	BENNY, MI FIX	2400
BENNY, MI FIX	BANJO, MI FIX	*3000
*2300 - MOCA		
BANJO, MI FIX	*ZABLE, MI FIX	**5000
*5000 - MCA ZABLE, MI FIX , S BND		
**2900 - MOCA		
ZABLE, MI FIX	*RONDO, MI FIX	3200
*5000 - MRA		
RONDO, MI FIX	PELLSTON, MI VORTAC	*3200
*2500 - MOCA		

95.6611 VOR FEDERAL AIRWAY V611

NEWMAN, TX VORTAC	*MOLLY, NM FIX	9000
*10000 - MRA		
MOLLY, NM FIX	TRUTH OR CONSEQUENCES, NM VORTAC	10000
TRUTH OR CONSEQUENCES, NM VORTAC	SOCORRO, NM VORTAC	9000
SOCORRO, NM VORTAC	ALBUQUERQUE, NM VORTAC	8000
ALBUQUERQUE, NM VORTAC	*SANTA FE, NM VORTAC	9000
*11600 - MCA SANTA FE, NM VORTAC , E BND		
SANTA FE, NM VORTAC	*FORT UNION, NM VORTAC	12500
*10900 - MCA FORT UNION, NM VORTAC , N BND		
*11300 - MCA FORT UNION, NM VORTAC , W BND		
FORT UNION, NM VORTAC	CIMARRON, NM VORTAC	*12000
*11100 - MOCA		
CIMARRON, NM VORTAC	GOSIP, CO FIX	*11000
*10200 - MOCA		

FROM	TO	MEA

95.6611 VOR FEDERAL AIRWAY V611 - CONTINUED

GOSIP, CO FIX	PUEBLO, CO VORTAC	8700
PUEBLO, CO VORTAC	*BLACK FOREST, CO VOR/DME	9500
*10000 - MCA BLACK FOREST, CO VOR/DME , NE BND		
BLACK FOREST, CO VOR/DME	LUFSE, CO FIX	*GNSS - 10000
*BLACK FOREST R-028 UNUSABLE		
LUFSE, CO FIX	JEFEL, CO FIX	GNSS - 10500
JEFEL, CO FIX	*LIMEX, CO FIX	GNSS - 8500
*10000 - MRA		
LIMEX, CO FIX	GILL, CO VOR/DME	7900
GILL, CO VOR/DME	CHEYENNE, WY VORTAC	8500
CHEYENNE, WY VORTAC	MOIST, WY FIX	9000
MOIST, WY FIX	DEALT, WY FIX	11500
DEALT, WY FIX	MUDDY MOUNTAIN, WY VOR/DME	
	NW BND	9000
	SE BND	10000
MUDDY MOUNTAIN, WY VOR/DME	CRAZY WOMAN, WY VOR/DME	7600
CRAZY WOMAN, WY VOR/DME	SHERIDAN, WY VOR/DME	9000
SHERIDAN, WY VOR/DME	KRONA, MT FIX	8000
KRONA, MT FIX	BILLINGS, MT VORTAC	
	SE BND	8000
	NW BND	6200
BILLINGS, MT VORTAC	SHELA, MT FIX	
	S BND	*6100
	N BND	*7700
*6000 - MOCA		
SHELA, MT FIX	LEWISTOWN, MT VOR/DME	7700
LEWISTOWN, MT VOR/DME	SHONK, MT FIX	7700
SHONK, MT FIX	HAVRE, MT VOR/DME	6000

95.6613 VOR FEDERAL AIRWAY V613

ALLENTOWN, PA VORTAC	WILKES-BARRE, PA VORTAC	4000

95.6615 VOR FEDERAL AIRWAY V615

RALEIGH/DURHAM, NC VORTAC	DUFFI, NC FIX	2600
DUFFI, NC FIX	HOPEWELL, VA VORTAC	*5000
*2500 - MOCA		
*2500 - GNSS MEA		

95.6623 VOR FEDERAL AIRWAY V623

SPARTA, NJ VORTAC	CARMEL, NY VOR/DME	3000

95.6625 VOR FEDERAL AIRWAY V625

U.S. MEXICAN BORDER	NOGALES, AZ VOR/DME	*10000
*9500 - MOCA		

95.6626 VOR FEDERAL AIRWAY V626

YMONT, UT FIX	MYTON, UT VOR/DME	*15000
*12600 - MOCA		
*12600 - GNSS MEA		

95.6629 VOR FEDERAL AIRWAY V629

SHUSS, NV FIX	BOULDER CITY, NV VORTAC	7600

§95.6301 ALASKA VOR FEDERAL AIRWAYS

95.6301 ALASKA VOR FEDERAL AIRWAY V301

FAIRBANKS, AK VORTAC	DIFER, AK FIX	*8000
*7300 - MOCA		
DIFER, AK FIX	FORT YUKON, AK VORTAC	
	SE BND	8000
	NW BND	2300

95.6302 ALASKA VOR FEDERAL AIRWAY V302

FAIRBANKS, AK VORTAC	MAYPO, AK FIX	7000
MAYPO, AK FIX	FORT YUKON, AK VORTAC	
	SW BND	7000
	NE BND	2300

95.6308 ALASKA VOR FEDERAL AIRWAY V308

BETHEL, AK VORTAC	FISHH, AK FIX	
	E BND	*8000
	W BND	*2000
*1400 - MOCA		
FISHH, AK FIX	SPARREVOHN, AK VOR/DME	*8000
*6000 - MOCA		
*6000 - GNSS MEA		

95.6309 ALASKA VOR FEDERAL AIRWAY V309

U.S. CANADIAN BORDER	ANNETTE ISLAND, AK VOR/DME	*5000
*4900 - MOCA		

95.6311 ALASKA VOR FEDERAL AIRWAY V311

ANNETTE ISLAND, AK VOR/DME	*TOKEE, AK FIX	6000
*9000 - MCA TOKEE, AK FIX , NW BND		
TOKEE, AK FIX	WIBTA, AK FIX	*9000
*4700 - MOCA		
WIBTA, AK FIX	FLIPS, AK FIX	
	W BND	*7500
	E BND	*9000
*6300 - MOCA		
FLIPS, AK FIX	BIORKA ISLAND, AK VORTAC	
	W BND	6100
	E BND	7500

95.6317 ALASKA VOR FEDERAL AIRWAY V317

U.S. CANADIAN BORDER	ANNETTE ISLAND, AK VOR/DME	5000
ANNETTE ISLAND, AK VOR/DME	GESTI, AK FIX	
	SE BND	5000
	NW BND	7000
GESTI, AK FIX	LEVEL ISLAND, AK VOR/DME	*7000
*5300 - MOCA		
LEVEL ISLAND, AK VOR/DME	HOODS, AK FIX	*10000
*6000 - MOCA		
HOODS, AK FIX	SISTERS ISLAND, AK VORTAC	
	SE BND	*10000
	NW BND	*7000
*5500 - MOCA		

95.6317 ALASKA VOR FEDERAL AIRWAY V317 - CONTINUED

SISTERS ISLAND, AK VORTAC	CSPER, AK FIX	
	NE BND	*7000
	SW BND	*15000
*5300 - MOCA		
CSPER, AK FIX	*HAPIT, AK FIX	**15000
*15000 - MRA		
**4000 - MOCA		

95.6318 ALASKA VOR FEDERAL AIRWAY V318

ANNETTE ISLAND, AK VOR/DME	LEVEL ISLAND, AK VOR/DME	6000

95.6319 ALASKA VOR FEDERAL AIRWAY V319

YAKUTAT, AK VOR/DME	MALAS, AK FIX	
	E BND	2400
	W BND	10000
MALAS, AK FIX	KATAT, AK FIX	*10000
*5600 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
KATAT, AK FIX	CASEL, AK FIX	*7000
*3400 - MOCA		
CASEL, AK FIX	*JOHNSTONE POINT, AK VOR/DME	4800
*4800 - MCA JOHNSTONE POINT, AK VOR/DME , E BND		
JOHNSTONE POINT, AK VOR/DME	EDELE, AK FIX	
	E BND	4400
	W BND	10000
EDELE, AK FIX	SNRIS, AK FIX	10000
SNRIS, AK FIX	*ANCHORAGE, AK VOR/DME	
	W BND	8200
	E BND	10000
*8000 - MCA ANCHORAGE, AK VOR/DME , E BND		
ANCHORAGE, AK VOR/DME	YONEK, AK FIX	3000
YONEK, AK FIX	*TORTE, AK FIX	
	W BND	12000
	E BND	7000
*11400 - MCA TORTE, AK FIX , W BND		
TORTE, AK FIX	*VEILL, AK FIX	12000
*8000 - MCA VEILL, AK FIX , E BND		
VEILL, AK FIX	SPARREVOHN, AK VOR/DME	
	E BND	12000
	W BND	6600
SPARREVOHN, AK VOR/DME	ACRAN, AK FIX	
	W BND	*6000
	E BND	*5200
*5200 - MOCA		
ACRAN, AK FIX	VIDDA, AK FIX	6000
VIDDA, AK FIX	WEEKE, AK FIX	
	SW BND	*3000
	NE BND	*6000
*2100 - MOCA		
WEEKE, AK FIX	BETHEL, AK VORTAC	2000
BETHEL, AK VORTAC	ARSEN, AK FIX	2000
ARSEN, AK FIX	FANCI, AK FIX	*4000
*2000 - MOCA		
*2000 - GNSS MEA		
FANCI, AK FIX	HOOPER BAY, AK VOR/DME	2000

95.6320 ALASKA VOR FEDERAL AIRWAY V320

MC GRATH, AK VORTAC	ERLAN, AK FIX	
	E BND	10000
	W BND	5000

95.6320 ALASKA VOR FEDERAL AIRWAY V320 - CONTINUED

ERLAN, AK FIX	WINOR, AK FIX	
	E BND	10000
	W BND	8000
WINOR, AK FIX	*FRIDA, AK FIX	**10000
*9500 - MRA		
*7600 - MCA FRIDA, AK FIX , W BND		
**MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
FRIDA, AK FIX	RUNTL, AK FIX	8500
RUNTL, AK FIX	KAYTI, AK FIX	6400
KAYTI, AK FIX	*ANCHORAGE, AK VOR/DME	3700
*6000 - MCA ANCHORAGE, AK VOR/DME , SE BND		
ANCHORAGE, AK VOR/DME	HOPER, AK FIX	
	SE BND	10000
	NW BND	6500
HOPER, AK FIX	NELLI, AK FIX	10000
NELLI, AK FIX	KEBAB, AK FIX	
	NW BND	10000
	SE BND	5000
KEBAB, AK FIX	JOHNSTONE POINT, AK VOR/DME	5000

95.6321 ALASKA VOR FEDERAL AIRWAY V321

CAPE NEWENHAM, AK NDB/DME	KING SALMON, AK VORTAC	*5000
*4300 - MOCA		
KING SALMON, AK VORTAC	BATTY, AK FIX	
	NE BND	7000
	SW BND	6000
BATTY, AK FIX	AUGEY, AK FIX	7000
AUGEY, AK FIX	HOMER, AK VOR/DME	*4000
*3000 - MOCA		

95.6322 ALASKA VOR FEDERAL AIRWAY V322

KING SALMON, AK VORTAC	KONIC, AK FIX	
	W BND	5000
	E BND	9000
KONIC, AK FIX	WORRI, AK FIX	*9000
*7700 - MOCA		
*7700 - GNSS MEA		
WORRI, AK FIX	MALLT, AK FIX	*9000
*8500 - MOCA		
MALLT, AK FIX	HOMER, AK VOR/DME	
	SW BND	9000
	NE BND	4000

95.6333 ALASKA VOR FEDERAL AIRWAY V333

HOOPER BAY, AK VOR/DME	HALEM, AK FIX	4500
HALEM, AK FIX	FAIRE, AK FIX	*8000
*2300 - MOCA		
FAIRE, AK FIX	NOME, AK VOR/DME	3000
NOME, AK VOR/DME	GAITS, AK FIX	
	N BND	10000
	S BND	4000
GAITS, AK FIX	SHISHMAREF, AK NDB	*10000
*6700 - MOCA		

95.6334 ALASKA VOR FEDERAL AIRWAY V334

AUGEY, AK FIX	CLAMS, AK FIX	*7000
*2000 - MOCA		
*2000 - GNSS MEA		

FROM	TO	MEA

95.6334 ALASKA VOR FEDERAL AIRWAY V334 - CONTINUED

CLAMS, AK FIX	KENAI, AK VOR/DME	2000
KENAI, AK VOR/DME	ANCHORAGE, AK VOR/DME	2000

95.6350 ALASKA VOR FEDERAL AIRWAY V350

DILLINGHAM, AK VOR/DME	TOGIAK, AK NDB/DME	5000
TOGIAK, AK NDB/DME	BAFIN, AK FIX	5400
BAFIN, AK FIX	BETHEL, AK VORTAC	
	SE BND	5400
	NW BND	2000
BETHEL, AK VORTAC	DAHLS, AK FIX	
	W BND	3600
	E BND	2000
DAHLS, AK FIX	EMMONAK, AK VOR/DME	*3600
*3000 - MOCA		
*3000 - GNSS MEA		
EMMONAK, AK VOR/DME	NOME, AK VOR/DME	3000

95.6351 ALASKA VOR FEDERAL AIRWAY V351

DILLINGHAM, AK VOR/DME	PORT HEIDEN, AK NDB/DME	3000

95.6357 ALASKA VOR FEDERAL AIRWAY V357

KODIAK, AK VOR/DME	INNOL, AK FIX	3500
INNOL, AK FIX	MOCHO, AK FIX	*4000
*3000 - MOCA		
MOCHO, AK FIX	GERKS, AK FIX	*7500
*2300 - MOCA		
*7000 - GNSS MEA		
GERKS, AK FIX	SANER, AK FIX	*9000
*3700 - MOCA		
*7000 - GNSS MEA		
SANER, AK FIX	HOMER, AK VOR/DME	
	N BND	6000
	S BND	9000

95.6385 ALASKA VOR FEDERAL AIRWAY V385

HOOPER BAY, AK VOR/DME	EMMONAK, AK VOR/DME	4500
EMMONAK, AK VOR/DME	UNALAKLEET, AK VOR/DME	*3500
*2800 - MOCA		
*3000 - GNSS MEA		

95.6388 ALASKA VOR FEDERAL AIRWAY V388

ANCHORAGE, AK VOR/DME	NAPTO, AK FIX	2300
NAPTO, AK FIX	KENAI, AK VOR/DME	2400

95.6401 ALASKA VOR FEDERAL AIRWAY V401

AMBLER, AK NDB	FARME, AK FIX	*5500
*4700 - MOCA		
FARME, AK FIX	KOTZEBUE, AK VOR/DME	2000
KOTZEBUE, AK VOR/DME	SHISHMAREF, AK NDB	*2500
*2000 - MOCA		

95.6414 ALASKA VOR FEDERAL AIRWAY V414

GAMBELL, AK NDB/DME	KUKULIAK, AK VOR/DME	3000

95.6427 ALASKA VOR FEDERAL AIRWAY V427

*KING SALMON, AK VORTAC	TOMMY, AK FIX	
	SW BND	**3000
	NE BND	**16000
*7200 - MCA KING SALMON, AK VORTAC , NE BND		
**3000 - GNSS MEA		
TOMMY, AK FIX	NUTUW, AK FIX	
	SW BND	*7000
	NE BND	*16000
*5300 - MOCA		
*6000 - GNSS MEA		
NUTUW, AK FIX	RINGO, AK FIX	
	SW BND	*9000
	NE BND	*16000
*5300 - MOCA		
*6000 - GNSS MEA		
RINGO, AK FIX	*NONDA, AK FIX	**16000
*16000 - MCA NONDA, AK FIX , BND		
**9000 - MOCA		
**9000 - GNSS MEA		

95.6428 ALASKA VOR FEDERAL AIRWAY V428

BIORKA ISLAND, AK VORTAC	SISTERS ISLAND, AK VORTAC	*7000
*6000 - MOCA		
*6000 - GNSS MEA		
SISTERS ISLAND, AK VORTAC	HAINES, AK NDB	*10000
*8500 - MOCA		
*8500 - GNSS MEA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
HAINES, AK NDB	U.S. CANADIAN BORDER	*10000
*9600 - MOCA		

95.6435 ALASKA VOR FEDERAL AIRWAY V435

HOMER, AK VOR/DME	KASSI, AK FIX	4400
KASSI, AK FIX	KENAI, AK VOR/DME	
	S BND	*4400
	N BND	*2000
*1700 - MOCA		
*2000 - GNSS MEA		

95.6436 ALASKA VOR FEDERAL AIRWAY V436

ANCHORAGE, AK VOR/DME	TAGER, AK FIX	2200
TAGER, AK FIX	*TALKEETNA, AK VOR/DME	3000
*3800 - MCA TALKEETNA, AK VOR/DME , N BND		
TALKEETNA, AK VOR/DME	*EGRAM, AK FIX	6000
*7000 - MCA EGRAM, AK FIX , N BND		
EGRAM, AK FIX	*AILEE, AK FIX	10000
*9000 - MCA AILEE, AK FIX , S BND		
AILEE, AK FIX	*DATAY, AK FIX	
	N BND	8400
	S BND	10000
*7500 - MCA DATAY, AK FIX , S BND		
DATAY, AK FIX	*ENTTA, AK FIX	
	N BND	6400
	S BND	8400
*5100 - MCA ENTTA, AK FIX , S BND		

95.6436 ALASKA VOR FEDERAL AIRWAY V436 - CONTINUED

ENTTA, AK FIX	FAIRBANKS, AK VORTAC	3400

95.6438 ALASKA VOR FEDERAL AIRWAY V438

KODIAK, AK VOR/DME	SHUYA, AK FIX	4000
SHUYA, AK FIX	HOMER, AK VOR/DME	*6000
*5900 - MOCA		
HOMER, AK VOR/DME	SKILA, AK FIX	5000
SKILA, AK FIX	NAPTO, AK FIX	2400
NAPTO, AK FIX	ANCHORAGE, AK VOR/DME	2300
ANCHORAGE, AK VOR/DME	*BIG LAKE, AK VORTAC	2000
*2600 - MCA BIG LAKE, AK VORTAC , N BND		
BIG LAKE, AK VORTAC	*SURES, AK FIX	7500
*10000 - MRA		
SURES, AK FIX	LIBER, AK FIX	*11000
*8900 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
LIBER, AK FIX	*GLOWS, AK FIX	7500
*4800 - MCA GLOWS, AK FIX , S BND		
GLOWS, AK FIX	FAIRBANKS, AK VORTAC	3400
FAIRBANKS, AK VORTAC	CHATA, AK FIX	
	N BND	*8000
	S BND	*7000
*5000 - MOCA		
CHATA, AK FIX	BURMA, AK FIX	*8000
*7200 - MOCA		
BURMA, AK FIX	BIJOU, AK FIX	5000
BIJOU, AK FIX	FORT YUKON, AK VORTAC	2300
FORT YUKON, AK VORTAC	*UVALL, AK FIX	10000
*10000 - MCA UVALL, AK FIX , SE BND		
UVALL, AK FIX	DEADHORSE, AK VOR/DME	
	NW BND	2300
	SE BND	10000
DEADHORSE, AK VOR/DME	OOSIK, AK FIX	
	W BND	*6000
	E BND	*2000
*1300 - MOCA		
OOSIK, AK FIX	TUNDA, AK FIX	*6000
*1300 - MOCA		
TUNDA, AK FIX	BARROW, AK VOR/DME	
	E BND	*6000
	W BND	*3000
*1500 - MOCA		

95.6439 ALASKA VOR FEDERAL AIRWAY V439

KODIAK, AK VOR/DME	BAREL, AK FIX	*6000
*4300 - MOCA		
BAREL, AK FIX	HOMER, AK VOR/DME	*6000
*5300 - MOCA		

95.6440 ALASKA VOR FEDERAL AIRWAY V440

NOME, AK VOR/DME	*GOLOS, AK FIX	3000
*4500 - MRA		
GOLOS, AK FIX	UNALAKLEET, AK VOR/DME	3000
UNALAKLEET, AK VOR/DME	YUCON, AK FIX	
	W BND	4600
	E BND	8000

95.6440 ALASKA VOR FEDERAL AIRWAY V440 - CONTINUED

YUCON, AK FIX	GANES, AK FIX	*8000
*5600 - MOCA		
*7000 - GNSS MEA		
GANES, AK FIX	MC GRATH, AK VORTAC	
	E BND	6000
	W BND	8000
MC GRATH, AK VORTAC	ERLAN, AK FIX	
	E BND	10000
	W BND	5000
ERLAN, AK FIX	WINOR, AK FIX	
	E BND	10000
	W BND	8000
WINOR, AK FIX	*FRIDA, AK FIX	**10000
*9500 - MRA		
*7600 - MCA FRIDA, AK FIX , W BND		
**MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
FRIDA, AK FIX	*IVANN, AK FIX	6600
*5900 - MCA IVANN, AK FIX , W BND		
IVANN, AK FIX	*ANCHORAGE, AK VOR/DME	2200
*6000 - MCA ANCHORAGE, AK VOR/DME , SE BND		
ANCHORAGE, AK VOR/DME	HOPER, AK FIX	
	SE BND	10000
	NW BND	6500
HOPER, AK FIX	MODDS, AK FIX	10000
MODDS, AK FIX	MIDDLETON ISLAND, AK VOR/DME	
	SE BND	6000
	NW BND	10000
MIDDLETON ISLAND, AK VOR/DME	OCULT, AK FIX	*8000
*2000 - MOCA		
*7000 - GNSS MEA		
OCULT, AK FIX	YAKUTAT, AK VOR/DME	2000
YAKUTAT, AK VOR/DME	CENTA, AK FIX	
	SE BND	9000
	NW BND	2000
CENTA, AK FIX	SALIS, AK FIX	*9000
*2000 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
SALIS, AK FIX	BIORKA ISLAND, AK VORTAC	
	NW BND	9000
	SE BND	5100
BIORKA ISLAND, AK VORTAC	LATCH, AK FIX	
	NW BND	4500
	SE BND	12000
LATCH, AK FIX	U.S. CANADIAN BORDER	*12000
*4200 - MOCA		
*8000 - GNSS MEA		

95.6441 ALASKA VOR FEDERAL AIRWAY V441

MIDDLETON ISLAND, AK VOR/DME	DEALS, AK FIX	6000
DEALS, AK FIX	*SEWAR, AK FIX	**9000
*10000 - MRA		
**8400 - MOCA		
SEWAR, AK FIX	BROIL, AK FIX	*10000
*7700 - MOCA		
*7700 - GNSS MEA		
BROIL, AK FIX	*HATUL, AK FIX	7100
*5600 - MCA HATUL, AK FIX , SE BND		
HATUL, AK FIX	*ANCHORAGE, AK VOR/DME	4600
*4200 - MCA ANCHORAGE, AK VOR/DME , BND		

95.6444 ALASKA VOR FEDERAL AIRWAY V444

BARROW, AK VOR/DME	CHIPS, AK FIX	*2000
*1200 - MOCA		
CHIPS, AK FIX	BRONX, AK FIX	*5000
*1200 - MOCA		
BRONX, AK FIX	EVANSVILLE, AK NDB	*10000
*9100 - MOCA		
EVANSVILLE, AK NDB	BETTLES, AK VOR/DME	3500
BETTLES, AK VOR/DME	*CYCLE, AK FIX	3500
*4400 - MCA CYCLE, AK FIX , SE BND		
CYCLE, AK FIX	BRION, AK FIX	*6000
*5200 - MOCA		
BRION, AK FIX	LIVEN, AK FIX	*9000
*5200 - MOCA		
LIVEN, AK FIX	HESSE, AK FIX	*5000
*4400 - MOCA		
HESSE, AK FIX	FAIRBANKS, AK VORTAC	*5000
*4900 - MOCA		
FAIRBANKS, AK VORTAC	BIG DELTA, AK VORTAC	*5000
*4200 - MOCA		
BIG DELTA, AK VORTAC	NORTHWAY, AK VORTAC	*8000
*7800 - MOCA		
NORTHWAY, AK VORTAC	U.S. CANADIAN BORDER	*8400
*5800 - MOCA		

95.6445 ALASKA VOR FEDERAL AIRWAY V445

*FAIRBANKS, AK VORTAC	WILTS, AK FIX	5000
*4000 - MCA FAIRBANKS, AK VORTAC , W BND		
WILTS, AK FIX	TOLLO, AK FIX	*5000
*4200 - MOCA		
TOLLO, AK FIX	KANUT, AK FIX	7000
KANUT, AK FIX	BETTLES, AK VOR/DME	
	SE BND	7000
	NW BND	3500

95.6447 ALASKA VOR FEDERAL AIRWAY V447

FAIRBANKS, AK VORTAC	*DOMEY, AK FIX	**5000
*7000 - MRA		
**4400 - MOCA		
DOMEY, AK FIX	TATTA, AK FIX	
	NW BND	*11000
	SE BND	*7000
*5400 - MOCA		
TATTA, AK FIX	CHANDALAR LAKE, AK NDB	*11000
*8000 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		

95.6452 ALASKA VOR FEDERAL AIRWAY V452

KUKULIAK, AK VOR/DME	NOME, AK VOR/DME	3000
NOME, AK VOR/DME	MOSES POINT, AK VOR/DME	*5000
*4200 - MOCA		
MOSES POINT, AK VOR/DME	*DIBVY, AK FIX	**6000
*6000 - MRA		
**5200 - MOCA		
DIBVY, AK FIX	GALENA, AK VOR/DME	3000
GALENA, AK VOR/DME	HORSI, AK FIX	
	E BND	*8000
	W BND	*4000
*4000 - GNSS MEA		

95.6452 ALASKA VOR FEDERAL AIRWAY V452 - CONTINUED

HORSI, AK FIX — BONET, AK FIX — *8000
*4000 - MOCA
*4000 - GNSS MEA
BONET, AK FIX — NENANA, AK VORTAC — *7000
*4400 - MOCA
*4400 - GNSS MEA

95.6453 ALASKA VOR FEDERAL AIRWAY V453

KING SALMON, AK VORTAC — *DILLINGHAM, AK VOR/DME — 2100
*2500 - MCA DILLINGHAM, AK VOR/DME , NW BND
DILLINGHAM, AK VOR/DME — ALTEY, AK FIX
SE BND *7000
NW BND *8000
*6500 - MOCA
*3600 - GNSS MEA
ALTEY, AK FIX — *EDUCE, AK FIX — **8000
*3600 - MCA EDUCE, AK FIX , SE BND
**6500 - MOCA
EDUCE, AK FIX — BETHEL, AK VORTAC
NW BND *4000
SE BND *8000
*2500 - MOCA
*3000 - GNSS MEA
BETHEL, AK VORTAC — WAPRO, AK FIX — *9000
*4300 - MOCA
WAPRO, AK FIX — UNALAKLEET, AK VOR/DME — *11000
*5100 - MOCA

95.6454 ALASKA VOR FEDERAL AIRWAY V454

KING SALMON, AK VORTAC — DILLINGHAM, AK VOR/DME — *5000
*4300 - MOCA

95.6456 ALASKA VOR FEDERAL AIRWAY V456

COLD BAY, AK VORTAC — BINAL, AK FIX
SW BND *4000
NE BND *14000
*3400 - MOCA
BINAL, AK FIX — TANIE, AK FIX — *14000
*3400 - MOCA
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE
TANIE, AK FIX — *KING SALMON, AK VORTAC — **3000
*5400 - MCA KING SALMON, AK VORTAC , NW BND
**1600 - MOCA
**MEA 14000 SW WHEN DLG FSS SHUT DOWN
KING SALMON, AK VORTAC — STREW, AK FIX
SW BND *3000
NE BND *11000
*2300 - MOCA
STREW, AK FIX — BITOP, AK FIX
SW BND *5000
NE BND *11000
*5000 - MOCA
*6000 - GNSS MEA
BITOP, AK FIX — *NOSKY, AK FIX — **11000
*15000 - MCA NOSKY, AK FIX , NE BND
**5900 - MOCA
**6000 - GNSS MEA

95.6456 ALASKA VOR FEDERAL AIRWAY V456 - CONTINUED

NOSKY, AK FIX	*TUCKS, AK FIX	**15000
*10300 - MCA TUCKS, AK FIX , SW BND		
**12300 - MOCA		
**13000 - GNSS MEA		
TUCKS, AK FIX	KENAI, AK VOR/DME	*5000
*3300 - MOCA		
KENAI, AK VOR/DME	ANCHORAGE, AK VOR/DME	2000
ANCHORAGE, AK VOR/DME	*BIG LAKE, AK VORTAC	2000
*5000 - MCA BIG LAKE, AK VORTAC , NE BND		
BIG LAKE, AK VORTAC	MATTA, AK FIX	7000
MATTA, AK FIX	*UREKA, AK FIX	**10000
*7200 - MCA UREKA, AK FIX , SW BND		
**9400 - MOCA		
UREKA, AK FIX	SMOKY, AK FIX	
	NE BND	*7000
	SW BND	*10000
*6300 - MOCA		
*7000 - GNSS MEA		
SMOKY, AK FIX	GULKANA, AK VOR/DME	
	NE BND	*5000
	SW BND	*10000
*5000 - GNSS MEA		
GULKANA, AK VOR/DME	*SANKA, AK FIX	
	NE BND	11000
	SW BND	6000
*8000 - MCA SANKA, AK FIX , NE BND		
SANKA, AK FIX	NORTHWAY, AK VORTAC	*11000
*10500 - MOCA		

95.6457 ALASKA VOR FEDERAL AIRWAY V457

ILIAMNA, AK NDB/DME	*AWOMY, AK FIX	
	W BND	5700
	E BND	9000
*7000 - MCA AWOMY, AK FIX , E BND		
AWOMY, AK FIX	*MOFOF, AK FIX	9000
*7000 - MCA MOFOF, AK FIX , W BND		
MOFOF, AK FIX	KENAI, AK VOR/DME	
	W BND	9000
	E BND	3000

95.6459 ALASKA VOR FEDERAL AIRWAY V459

EMMONAK, AK VOR/DME	ST MARYS, AK NDB	3000

95.6462 ALASKA VOR FEDERAL AIRWAY V462

CAPE NEWENHAM, AK NDB/DME	DILLINGHAM, AK VOR/DME	*5000
*4300 - MOCA		
DILLINGHAM, AK VOR/DME	KOWOK, AK FIX	*3000
*2500 - MOCA		
KOWOK, AK FIX	SAHOK, AK FIX	*5000
*3800 - MOCA		
SAHOK, AK FIX	NONDA, AK FIX	*14000
*8800 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
NONDA, AK FIX	*BLUGA, AK FIX	**14000
*10000 - MCA BLUGA, AK FIX , SW BND		
**12400 - MOCA		

95.6462 ALASKA VOR FEDERAL AIRWAY V462 - CONTINUED

BLUGA, AK FIX	*AMOTT, AK FIX	7000
*7400 - MCA AMOTT, AK FIX , SW BND		
AMOTT, AK FIX	ANCHORAGE, AK VOR/DME	4000

95.6473 ALASKA VOR FEDERAL AIRWAY V473

LEVEL ISLAND, AK VOR/DME	*FLIPS, AK FIX	**9000
*9000 - MCA FLIPS, AK FIX , E BND		
**6300 - MOCA		
FLIPS, AK FIX	BIORKA ISLAND, AK VORTAC	
	W BND	6100
	E BND	7500

95.6477 ALASKA VOR FEDERAL AIRWAY V477

GALENA, AK VOR/DME	HUSLIA, AK VOR/DME	3000
HUSLIA, AK VOR/DME	ATAGO, AK FIX	
	W BND	*4000
	E BND	*3500
*2500 - MOCA		
ATAGO, AK FIX	DESOY, AK FIX	4000
DESOY, AK FIX	SELAWIK, AK VOR/DME	
	W BND	2500
	E BND	4000
SELAWIK, AK VOR/DME	JELLE, AK FIX	3500
JELLE, AK FIX	AMBLER, AK NDB	
	NE BND	5000
	SW BND	4000

95.6480 ALASKA VOR FEDERAL AIRWAY V480

MOUNT MOFFETT, AK NDB/DME	ST PAUL ISLAND, AK NDB/DME	6000
ST PAUL ISLAND, AK NDB/DME	ZESKA, AK FIX	*10000
*1800 - MOCA		
ZESKA, AK FIX	BETHEL, AK VORTAC	
	NE BND	*2000
	SW BND	*10000
*1500 - MOCA		
BETHEL, AK VORTAC	CABOT, AK FIX	
	NE BND	*8000
	SW BND	*2000
*1400 - MOCA		
CABOT, AK FIX	ANIAK, AK FIX	
	NE BND	*9000
	SW BND	*8000
*2400 - MOCA		
ANIAK, AK FIX	JOANY, AK FIX	*9000
*5600 - MOCA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
JOANY, AK FIX	MC GRATH, AK VORTAC	
	NE BND	*6000
	SW BND	*9000
*4700 - MOCA		
MC GRATH, AK VORTAC	MEFRA, AK FIX	
	W BND	4000
	E BND	8000
MEFRA, AK FIX	NENANA, AK VORTAC	*8000
*5000 - MOCA		
NENANA, AK VORTAC	FAIRBANKS, AK VORTAC	*4000
*3000 - MOCA		

FROM	TO	MEA

95.6481 ALASKA VOR FEDERAL AIRWAY V481

*JOHNSTONE POINT, AK VOR/DME	FIDAL, AK FIX	14000
*14000 - MCA JOHNSTONE POINT, AK VOR/DME , N BND		
FIDAL, AK FIX	ROBES, AK FIX	14000
ROBES, AK FIX	*KLUNG, AK FIX	14000
*11200 - MCA KLUNG, AK FIX , S BND		
KLUNG, AK FIX	GULKANA, AK VOR/DME	
	S BND	10000
	N BND	7000
GULKANA, AK VOR/DME	DOZEY, AK FIX	
	N BND	12000
	S BND	4000
DOZEY, AK FIX	PAXON, AK FIX	
	S BND	7000
	N BND	12000
PAXON, AK FIX	*DONEL, AK FIX	**12000
*10500 - MCA DONEL, AK FIX , S BND		
**11500 - MOCA		
DONEL, AK FIX	*BIG DELTA, AK VORTAC	
	N BND	7000
	S BND	12000
*7800 - MCA BIG DELTA, AK VORTAC , S BND		
BIG DELTA, AK VORTAC	FORT YUKON, AK VORTAC	*7000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		

95.6488 ALASKA VOR FEDERAL AIRWAY V488

HOOPER BAY, AK VOR/DME	AKELT, AK FIX	
	NE BND	10000
	SW BND	4000
AKELT, AK FIX	ALMOT, AK FIX	*10000
*4000 - MOCA		
ALMOT, AK FIX	UNALAKLEET, AK VOR/DME	
	SW BND	10000
	NE BND	3000
UNALAKLEET, AK VOR/DME	EDMON, AK FIX	
	NE BND	*5500
	SW BND	*4000
*4000 - MOCA		
EDMON, AK FIX	VENCE, AK FIX	*5500
*4900 - MOCA		
VENCE, AK FIX	GALENA, AK VOR/DME	
	SW BND	*5500
	NE BND	*3000
*2500 - MOCA		
GALENA, AK VOR/DME	KUHZE, AK FIX	*5000
*4400 - MOCA		
KUHZE, AK FIX	CHOKK, AK FIX	6000
CHOKK, AK FIX	TANANA, AK VOR/DME	
	SW BND	6000
	NE BND	3000
TANANA, AK VOR/DME	*REEBA, AK FIX	
	E BND	**7000
	W BND	**4000
*7000 - MRA		
**4000 - MOCA		
REEBA, AK FIX	GOLLY, AK FIX	*7000
*5000 - MOCA		
GOLLY, AK FIX	*FAIRBANKS, AK VORTAC	5000
*4700 - MCA FAIRBANKS, AK VORTAC , BND		

FROM	TO	MEA

95.6489 ALASKA VOR FEDERAL AIRWAY V489

GALENA, AK VOR/DME	HORSI, AK FIX	
	E BND	*8000
	W BND	*4000
*4000 - GNSS MEA		
HORSI, AK FIX	ROSII, AK FIX	
	NE BND	*6000
	SW BND	*8000
*4000 - MOCA		
ROSII, AK FIX	TANANA, AK VOR/DME	
	NE BND	3400
	SW BND	6000

95.6491 ALASKA VOR FEDERAL AIRWAY V491

BIG LAKE, AK VORTAC	TALKEETNA, AK VOR/DME	3000

95.6496 ALASKA VOR FEDERAL AIRWAY V496

HOOPER BAY, AK VOR/DME	ST MARYS, AK NDB	3500

95.6498 ALASKA VOR FEDERAL AIRWAY V498

MC GRATH, AK VORTAC	NIXON, AK FIX	
	NW BND	*6000
	SE BND	*4500
*4500 - MOCA		
NIXON, AK FIX	AHVUH, AK FIX	*6000
*5500 - MOCA		
AHVUH, AK FIX	*KATEL, AK FIX	
	SE BND	**6000
	NW BND	**4000
*8000 - MRA		
**4000 - MOCA		
KATEL, AK FIX	BALIN, AK FIX	*8000
*5300 - MOCA		
BALIN, AK FIX	KOTZEBUE, AK VOR/DME	
	SE BND	*8000
	NW BND	*2000
*2000 - MOCA		

95.6504 ALASKA VOR FEDERAL AIRWAY V504

NENANA, AK VORTAC	KANUT, AK FIX	7000
KANUT, AK FIX	BETTLES, AK VOR/DME	
	NW BND	3500
	SE BND	7000
BETTLES, AK VOR/DME	EVANSVILLE, AK NDB	3500
EVANSVILLE, AK NDB	DERIK, AK FIX	*10000
*9500 - MOCA		
DERIK, AK FIX	MUKTU, AK FIX	
	S BND	*10000
	N BND	*7000
*3800 - MOCA		
MUKTU, AK FIX	SHELO, AK FIX	
	S BND	*10000
	N BND	*5000
*3000 - MOCA		
SHELO, AK FIX	DEADHORSE, AK VOR/DME	
	S BND	10000
	N BND	2000

FROM	TO	MEA

95.6506 ALASKA VOR FEDERAL AIRWAY V506

CJAYY, AK FIX	KODIAK, AK VOR/DME	4000
KODIAK, AK VOR/DME	BREMI, AK FIX	*12000
*9900 - MOCA		
*10000 - GNSS MEA		
BREMI, AK FIX	KING SALMON, AK VORTAC	
	E BND	12000
	W BND	5000
KING SALMON, AK VORTAC	KOWOK, AK FIX	*3000
*2400 - MOCA		
KOWOK, AK FIX	CAYON, AK FIX	*8000
*7000 - MOCA		
*7000 - GNSS MEA		
CAYON, AK FIX	BETHEL, AK VORTAC	
	E BND	8000
	W BND	4000
BETHEL, AK VORTAC	MARSI, AK FIX	
	W BND	16000
	E BND	2000
MARSI, AK FIX	JOHNI, AK FIX	*16000
*3200 - MOCA		
*4000 - GNSS MEA		
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE		
JOHNI, AK FIX	DACIA, AK FIX	*8000
*3200 - MOCA		
*4000 - GNSS MEA		
DACIA, AK FIX	NOME, AK VOR/DME	
	S BND	*8000
	N BND	*4000
*3200 - MOCA		
NOME, AK VOR/DME	BAIME, AK FIX	
	N BND	7000
	S BND	6000
BAIME, AK FIX	SETUP, AK FIX	*7000
*5700 - MOCA		
*6000 - GNSS MEA		
SETUP, AK FIX	KOTZEBUE, AK VOR/DME	
	S BND	7000
	N BND	2000
KOTZEBUE, AK VOR/DME	HOTHAM, AK NDB	2000
HOTHAM, AK NDB	SHOKK, AK FIX	*6000
*5000 - MOCA		
*5000 - GNSS MEA		
SHOKK, AK FIX	MEADE, AK FIX	*10000
*7000 - MOCA		
*8000 - GNSS MEA		
MEADE, AK FIX	BARROW, AK VOR/DME	
	S BND	*10000
	N BND	*2000
*1100 - MOCA		

95.6507 ALASKA VOR FEDERAL AIRWAY V507

NOME, AK VOR/DME	PHOTO, AK FIX	
	NW BND	*13000
	SE BND	*6000
*5700 - MOCA		
PHOTO, AK FIX	ESKAR, AK FIX	*13000
*6000 - MOCA		
*6000 - GNSS MEA		

95.6507 ALASKA VOR FEDERAL AIRWAY V507 - CONTINUED

ESKAR, AK FIX	KOTZEBUE, AK VOR/DME	
	SW BND	*13000
	NE BND	*2100
*2100 - MOCA		

95.6508 ALASKA VOR FEDERAL AIRWAY V508

MIDDLETON ISLAND, AK VOR/DME	DEALS, AK FIX	6000
DEALS, AK FIX	*SEWAR, AK FIX	**9000
*10000 - MRA		
**8400 - MOCA		
SEWAR, AK FIX	*SKILA, AK FIX	**9000
*5100 - MCA SKILA, AK FIX , E BND		
**7800 - MOCA		
**8000 - GNSS MEA		
SKILA, AK FIX	ROJAR, AK FIX	2400
ROJAR, AK FIX	KENAI, AK VOR/DME	2000
KENAI, AK VOR/DME	*NEARR, AK FIX	**3000
*7600 - MCA NEARR, AK FIX , W BND		
**2500 - MOCA		
NEARR, AK FIX	AKGAS, AK FIX	12000
AKGAS, AK FIX	SPARREVOHN, AK VOR/DME	
	W BND	6000
	E BND	12000
SPARREVOHN, AK VOR/DME	ANIAK, AK NDB	6000

95.6510 ALASKA VOR FEDERAL AIRWAY V510

EMMONAK, AK VOR/DME	ANVIK, AK NDB	3900
ANVIK, AK NDB	SABOC, AK FIX	
	E BND	*10000
	W BND	*9000
*6200 - MOCA		
*7000 - GNSS MEA		
SABOC, AK FIX	MC GRATH, AK VORTAC	*10000
*6200 - MOCA		
*7000 - GNSS MEA		
MC GRATH, AK VORTAC	ERLAN, AK FIX	
	E BND	10000
	W BND	5000
ERLAN, AK FIX	WINOR, AK FIX	
	E BND	10000
	W BND	8000
WINOR, AK FIX	FFITZ, AK FIX	10000
FFITZ, AK FIX	ROHHN, AK FIX	*10000
*8800 - MOCA		
*9000 - GNSS MEA		
ROHHN, AK FIX	BIG LAKE, AK VORTAC	*4000
*3400 - MOCA		

95.6515 ALASKA VOR FEDERAL AIRWAY V515

MERIE, AK FIX	*BIG DELTA, AK VORTAC	12000
*8100 - MCA BIG DELTA, AK VORTAC , BND		

95.6531 ALASKA VOR FEDERAL AIRWAY V531

*FAIRBANKS, AK VORTAC	GOLLY, AK FIX	5000
*4700 - MCA FAIRBANKS, AK VORTAC , W BND		

95.6531 ALASKA VOR FEDERAL AIRWAY V531 - CONTINUED

GOLLY, AK FIX	*REEBA, AK FIX	**7000
*7000 - MRA		
**5000 - MOCA		
REEBA, AK FIX	TANANA, AK VOR/DME	
	E BND	*7000
	W BND	*4000
*4000 - MOCA		
TANANA, AK VOR/DME	ELCON, AK FIX	
	W BND	*6500
	E BND	*5400
*5400 - MOCA		
ELCON, AK FIX	CENSE, AK FIX	*6500
*5700 - MOCA		
CENSE, AK FIX	HUSLIA, AK VOR/DME	
	W BND	*3500
	E BND	*6500
*3000 - MOCA		
HUSLIA, AK VOR/DME	ATAGO, AK FIX	
	W BND	*4000
	E BND	*3500
*2500 - MOCA		
ATAGO, AK FIX	DESOY, AK FIX	*4000
*3900 - MOCA		
DESOY, AK FIX	SELAWIK, AK VOR/DME	
	W BND	*2500
	E BND	*4000
*2500 - MOCA		
SELAWIK, AK VOR/DME	KOTZEBUE, AK VOR/DME	2500
KOTZEBUE, AK VOR/DME	BERJO, AK FIX	
	SE BND	*2500
	NW BND	*8000
*2500 - MOCA		
BERJO, AK FIX	POINT HOPE, AK NDB	*8000
*4000 - MOCA		

95.6593 ALASKA VOR FEDERAL AIRWAY V593

BIORKA ISLAND, AK VORTAC	LYRIC, AK FIX	
	SE BND	*6000
	NW BND	*8000
*4800 - MOCA		
LYRIC, AK FIX	SISTERS ISLAND, AK VORTAC	*8000
*5800 - MOCA		
*5800 - GNSS MEA		

95.6603 ALASKA VOR FEDERAL AIRWAY V603

ELFEE, AK NDB	DILLINGHAM, AK VOR/DME	2700

95.6617 ALASKA VOR FEDERAL AIRWAY V617

HOMER, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	*12000
*8600 - MOCA		
*9000 - GNSS MEA		

95.6619 ALASKA VOR FEDERAL AIRWAY V619

PORT HEIDEN, AK NDB/DME	CHINOOK, AK NDB	4000
CHINOOK, AK NDB	DILLINGHAM, AK VOR/DME	3000

FROM	TO	MEA

95.6621 ALASKA VOR FEDERAL AIRWAY V621

BARROW, AK VOR/DME	ATQASUK, AK NDB	2000

§95.6401 HAWAII VOR FEDERAL AIRWAYS

95.6401 HAWAII VOR FEDERAL AIRWAY V1

KONA, HI VORTAC	*REEFS, HI FIX	5000
*4100 - MCA REEFS, HI FIX , SE BND		
REEFS, HI FIX	MOANA, HI FIX	*2000
*1300 - MOCA		
MOANA, HI FIX	ROWIN, HI FIX	*4000
*1300 - MOCA		
ROWIN, HI FIX	*LAVAS, HI FIX	**8000
*7000 - MRA		
**1300 - MOCA		
LAVAS, HI FIX	MAKEN, HI FIX	*7000
*5000 - MOCA		
MAKEN, HI FIX	HARPO, HI FIX	6300
HARPO, HI FIX	MAUI, HI VORTAC	6000

95.6402 HAWAII VOR FEDERAL AIRWAY V2

HONOLULU, HI VORTAC	PALAY, HI FIX	3500
PALAY, HI FIX	LANAI, HI VORTAC	4000
LANAI, HI VORTAC	KEIKI, HI FIX	5500
KEIKI, HI FIX	*HARPO, HI FIX	**5000
*5600 - MCA HARPO, HI FIX , SE BND		
**2500 - MOCA		
HARPO, HI FIX	UPOLU POINT, HI VORTAC	6300
UPOLU POINT, HI VORTAC	WAPIO, HI FIX	*7000
*6000 - MOCA		
WAPIO, HI FIX	PARIS, HI FIX	
	E BND	*4500
	W BND	*6000
*4000 - MOCA		
PARIS, HI FIX	*ARBOR, HI FIX	**4000
*8000 - MRA		
**3000 - MOCA		
ARBOR, HI FIX	HILO, HI VORTAC	3000

95.6403 HAWAII VOR FEDERAL AIRWAY V3

MYNAH, HI FIX	*JASON, HI FIX	3500
*5400 - MCA JASON, HI FIX , NE BND		
JASON, HI FIX	KAMUELA, HI VOR/DME	6700
KAMUELA, HI VOR/DME	TIGAH, HI FIX	6500
TIGAH, HI FIX	PARIS, HI FIX	5000

95.6404 HAWAII VOR FEDERAL AIRWAY V4

HONOLULU, HI VORTAC	*GECKO, HI FIX	**4000
*10000 - MRA		
**2800 - MOCA		
GECKO, HI FIX	*ZUKEY, HI FIX	
	W BND	16000
	E BND	4000
*16000 - MRA		
ZUKEY, HI FIX	BINJO, HI FIX	
	W BND	29000
	E BND	16000

FROM	TO	MEA

95.6405 HAWAII VOR FEDERAL AIRWAY V5

KONA, HI VORTAC	*MYNAH, HI FIX	5200
*4400 - MCA MYNAH, HI FIX , SE BND		
MYNAH, HI FIX	*HEFTI, HI FIX	**2000
*4100 - MCA HEFTI, HI FIX , NW BND		
**1300 - MOCA		
HEFTI, HI FIX	MAKEN, HI FIX	7600

95.6406 HAWAII VOR FEDERAL AIRWAY V6

BLUSH, HI FIX	PLUMB, HI FIX	*5000
*1200 - MOCA		
PLUMB, HI FIX	MAUI, HI VORTAC	4400

95.6407 HAWAII VOR FEDERAL AIRWAY V7

KONA, HI VORTAC	*REEFS, HI FIX	5000
*4100 - MCA REEFS, HI FIX , SE BND		
REEFS, HI FIX	MOANA, HI FIX	*2000
*1300 - MOCA		
MOANA, HI FIX	ROWIN, HI FIX	*4000
*1300 - MOCA		
ROWIN, HI FIX	LANAI, HI VORTAC	4000
LANAI, HI VORTAC	MOLOKAI, HI VORTAC	4000
JOELE, OP FIX	ATINE, HI FIX	4000
ATINE, HI FIX	BERLE, HI FIX	7000
BERLE, HI FIX	ZIGIE, OP FIX	22000

95.6408 HAWAII VOR FEDERAL AIRWAY V8

HONOLULU, HI VORTAC	*ALANA, HI FIX	3000
*5000 - MRA		
ALANA, HI FIX	HAUNA, HI FIX	3000
HAUNA, HI FIX	LOKIE, HI FIX	2000
LOKIE, HI FIX	MOLOKAI, HI VORTAC	3500
MOLOKAI, HI VORTAC	BLUSH, HI FIX	5000
BLUSH, HI FIX	FISHE, HI FIX	*4000
*1200 - MOCA		

95.6411 HAWAII VOR FEDERAL AIRWAY V11

REEFS, HI FIX	*FLITT, HI FIX	**3000
*4600 - MCA FLITT, HI FIX , N BND		
**2000 - MOCA		
**2000 - GNSS MEA		
FLITT, HI FIX	UPOLU POINT, HI VORTAC	5700
UPOLU POINT, HI VORTAC	LNBRG, HI FIX	5400
LNBRG, HI FIX	BARBY, HI FIX	5500
BARBY, HI FIX	*SWEEP, HI FIX	5400
*5400 - MCA SWEEP, HI FIX , S BND		
SWEEP, HI FIX	MAUI, HI VORTAC	5000

95.6412 HAWAII VOR FEDERAL AIRWAY V12

KATHS, HI FIX	*NONNI, OP FIX	29000
*29000 - MRA		
NONNI, OP FIX	*LEANE, HI FIX	
	W BND	29000
	E BND	16000
*16000 - MRA		

95.6412 HAWAII VOR FEDERAL AIRWAY V12 - CONTINUED

LEANE, HI FIX	*KEOLA, HI FIX	
	W BND	16000
	E BND	5000
*10000 - MRA		
KEOLA, HI FIX	*SHIGI, HI FIX	4000
*5000 - MRA		
SHIGI, HI FIX	HONOLULU, HI VORTAC	4000
HONOLULU, HI VORTAC	*KOKO HEAD, HI VORTAC	5000
*4500 - MCA KOKO HEAD, HI VORTAC , W BND		
KOKO HEAD, HI VORTAC	BAMBO, OP FIX	4500
BAMBO, OP FIX	MAGGI, OP FIX	5000
MAGGI, OP FIX	*SHARK, HI FIX	
	NE BND	**16000
	SW BND	**5000
*16000 - MRA		
**1200 - MOCA		

95.6413 HAWAII VOR FEDERAL AIRWAY V13

KOKO HEAD, HI VORTAC	BAMBO, OP FIX	4500
BAMBO, OP FIX	TOADS, OP FIX	5000

95.6415 HAWAII VOR FEDERAL AIRWAY V15

CANON, HI FIX	LILIA, OP FIX	
	W BND	32000
	E BND	8000
LILIA, OP FIX	SOUTH KAUAI, HI VORTAC	*8000
*4800 - MOCA		
SOUTH KAUAI, HI VORTAC	LIHUE, HI VORTAC	5000
LIHUE, HI VORTAC	BOOKE, HI FIX	4000
BOOKE, HI FIX	*SHIGI, HI FIX	5000
*5000 - MRA		
SHIGI, HI FIX	HONOLULU, HI VORTAC	4000
HONOLULU, HI VORTAC	*KOKO HEAD, HI VORTAC	5000
*4500 - MCA KOKO HEAD, HI VORTAC , W BND		
KOKO HEAD, HI VORTAC	MABBL, HI FIX	
	E BND	3500
	W BND	4500
MABBL, HI FIX	*MOLOKAI, HI VORTAC	
	E BND	3500
	W BND	4500
*5000 - MCA MOLOKAI, HI VORTAC , E BND		
MOLOKAI, HI VORTAC	*LORET, HI FIX	7000
*7800 - MCA LORET, HI FIX , E BND		
LORET, HI FIX	*MAUI, HI VORTAC	8000
*6800 - MCA MAUI, HI VORTAC , W BND		
MAUI, HI VORTAC	*BARBY, HI FIX	8400
*9800 - MCA BARBY, HI FIX , E BND		
BARBY, HI FIX	*RABAT, HI FIX	**10000
*10000 - MCA RABAT, HI FIX , W BND		
**2700 - MOCA		
RABAT, HI FIX	*PUMIC, HI FIX	6000
*10000 - MRA		
PUMIC, HI FIX	PARIS, HI FIX	4000
PARIS, HI FIX	*ARBOR, HI FIX	**4000
*8000 - MRA		
**3000 - MOCA		
ARBOR, HI FIX	HILO, HI VORTAC	3000

FROM	TO	MEA

95.6415 HAWAII VOR FEDERAL AIRWAY V15 - CONTINUED

HILO, HI VORTAC	HODAY, HI FIX	2000
HODAY, HI FIX	EELIC, HI FIX	10000
EELIC, HI FIX	KUMME, HI FIX	
	W BND	10000
	E BND	31000
KUMME, HI FIX	MAITI, HI FIX	31000

95.6416 HAWAII VOR FEDERAL AIRWAY V16

*SYVAD, OP FIX	**PUPPI, OP FIX	
	W BND	32000
	E BND	14000
*32000 - MRA		
**11000 - MRA		
PUPPI, OP FIX	*OHANA, HI FIX	
	W BND	14000
	E BND	5000
*5000 - MRA		
OHANA, HI FIX	SOUTH KAUAI, HI VORTAC	
	W BND	14000
	SE BND	5000
SOUTH KAUAI, HI VORTAC	MORKE, HI FIX	
	NW BND	5000
	SE BND	3000
MORKE, HI FIX	*NAPUA, HI FIX	3000
*6000 - MRA		
NAPUA, HI FIX	*GRAIL, HI FIX	6000
*9000 - MRA		
GRAIL, HI FIX	*KEOLA, HI FIX	9000
*10000 - MRA		
KEOLA, HI FIX	*GECKO, HI FIX	10000
*10000 - MRA		
GECKO, HI FIX	*ALANA, HI FIX	7000
*5000 - MRA		
ALANA, HI FIX	JULLE, HI FIX	5000
JULLE, HI FIX	GRAMY, HI FIX	2000
GRAMY, HI FIX	LANAI, HI VORTAC	4000
LANAI, HI VORTAC	*LAVAS, HI FIX	4300
*7000 - MRA		
LAVAS, HI FIX	*UPOLU POINT, HI VORTAC	6000
*5800 - MCA UPOLU POINT, HI VORTAC , E BND		
UPOLU POINT, HI VORTAC	TIGAH, HI FIX	7000
TIGAH, HI FIX	*OKALA, HI FIX	**8000
*6500 - MCA OKALA, HI FIX , W BND		
**5500 - MOCA		
OKALA, HI FIX	*ARBOR, HI FIX	**8000
*8000 - MRA		
**5500 - MOCA		
ARBOR, HI FIX	HILO, HI VORTAC	3000

95.6417 HAWAII VOR FEDERAL AIRWAY V17

HARPO, HI FIX	MAUI, HI VORTAC	6000
STAIT, HI FIX	FREDI, HI FIX	*17000
*1200 - MOCA		
FREDI, HI FIX	REXIE, OP FIX	*28000
*1200 - MOCA		

95.6420 HAWAII VOR FEDERAL AIRWAY V20

HONOLULU, HI VORTAC	HAUNA, HI FIX	3000

95.6420 HAWAII VOR FEDERAL AIRWAY V20 - CONTINUED

HAUNA, HI FIX	JULLE, HI FIX	4000
JULLE, HI FIX	JORDA, HI FIX	5000
JORDA, HI FIX	*FIRES, HI FIX	
	NW BND	**10000
	SE BND	**13000
*13000 - MRA		
**1300 - MOCA		
FIRES, HI FIX	*HOKLA, HI FIX	**13000
*13000 - MRA		
**1300 - MOCA		
HOKLA, HI FIX	TYPHO, HI FIX	*8000
*1300 - MOCA		
TYPHO, HI FIX	*ROBYN, HI FIX	
	SE BND	**3000
	NW BND	**8000
*3900 - MCA ROBYN, HI FIX , SE BND		
**1300 - MOCA		
ROBYN, HI FIX	KONA, HI VORTAC	5000

95.6421 HAWAII VOR FEDERAL AIRWAY V21

HONOLULU, HI VORTAC	*ALANA, HI FIX	3000
*5000 - MRA		
ALANA, HI FIX	JULLE, HI FIX	5000
JULLE, HI FIX	GRAMY, HI FIX	2000
GRAMY, HI FIX	LANAI, HI VORTAC	4000
LANAI, HI VORTAC	KEIKI, HI FIX	5500
KEIKI, HI FIX	*HARPO, HI FIX	**5000
*8200 - MCA HARPO, HI FIX , E BND		
**2500 - MOCA		
HARPO, HI FIX	FUNKI, HI FIX	*10000
*9000 - MOCA		
FUNKI, HI FIX	*PUMIC, HI FIX	10000
*10000 - MRA		
PUMIC, HI FIX	BISEN, HI FIX	14000
BISEN, HI FIX	CUTLE, HI FIX	21000
CUTLE, HI FIX	OSTAH, HI FIX	24000
OSTAH, HI FIX	SCOON, OP FIX	22000

95.6422 HAWAII VOR FEDERAL AIRWAY V22

*MOLOKAI, HI VORTAC	PLUMB, HI FIX	7000
*5000 - MCA MOLOKAI, HI VORTAC , E BND		
PLUMB, HI FIX	*MAUI, HI VORTAC	4400
*6300 - MCA MAUI, HI VORTAC , E BND		
MAUI, HI VORTAC	*BARBY, HI FIX	8400
*12000 - MCA BARBY, HI FIX , SE BND		
BARBY, HI FIX	SARDS, HI FIX	12000
SARDS, HI FIX	BONUS, HI FIX	8000
BONUS, HI FIX	HILO, HI VORTAC	6000
HILO, HI VORTAC	SESAW, HI FIX	2000
SESAW, HI FIX	BATES, HI FIX	8000
BATES, HI FIX	OSTAH, HI FIX	10000
OSTAH, HI FIX	SCOON, OP FIX	22000

95.6423 HAWAII VOR FEDERAL AIRWAY V23

UPOLU POINT, HI VORTAC	JESSI, HI FIX	*6000
*5000 - MOCA		

FROM	TO	MEA

95.6423 HAWAII VOR FEDERAL AIRWAY V23 - CONTINUED

JESSI, HI FIX	*FIRES, HI FIX	8000
*13000 - MRA		

95.6424 HAWAII VOR FEDERAL AIRWAY V24

*LANAI, HI VORTAC	**MAUI, HI VORTAC	***9000
*5100 - MCA LANAI, HI VORTAC , NE BND		
**5100 - MCA MAUI, HI VORTAC , BND		
***7800 - MOCA		

95.6425 HAWAII VOR FEDERAL AIRWAY V25

HILO, HI VORTAC	COOKE, HI FIX	3000
COOKE, HI FIX	BASSY, HI FIX	6000
BASSY, HI FIX	CODDY, OP FIX	9000
CODDY, OP FIX	ARROW, HI FIX	26000
ARROW, HI FIX	CLUTS, OP FIX	*26000
*1200 - MOCA		

§95.7001 JET ROUTES

95.7001 JET ROUTE J1

U.S. MEXICAN BORDER	MISSION BAY, CA VORTAC	18000	45000
MISSION BAY, CA VORTAC	OCEANSIDE, CA VORTAC	18000	45000
OCEANSIDE, CA VORTAC	LOS ANGELES, CA VORTAC	18000	45000
LOS ANGELES, CA VORTAC	FILLMORE, CA VORTAC	18000	45000
FILLMORE, CA VORTAC	AVENAL, CA VOR/DME	18000	45000
AVENAL, CA VOR/DME	OAKLAND, CA VOR/DME	18000	45000
OAKLAND, CA VOR/DME	RED BLUFF, CA VORTAC	18000	45000
RED BLUFF, CA VORTAC	ROGUE VALLEY, OR VORTAC	18000	45000
ROGUE VALLEY, OR VORTAC	BATTLE GROUND, WA VORTAC	18000	45000
BATTLE GROUND, WA VORTAC	SEATTLE, WA VORTAC	18000	45000

95.7002 JET ROUTE J2

MISSION BAY, CA VORTAC	IMPERIAL, CA VORTAC	18000	45000
IMPERIAL, CA VORTAC	BARD, CA VORTAC	18000	45000
BARD, CA VORTAC	GILA BEND, AZ VORTAC	18000	45000
GILA BEND, AZ VORTAC	TUCSON, AZ VORTAC	18000	45000
TUCSON, AZ VORTAC	EL PASO, TX VORTAC	*25000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
EL PASO, TX VORTAC	FORT STOCKTON, TX VORTAC	18000	45000
FORT STOCKTON, TX VORTAC	JUNCTION, TX VORTAC	18000	45000
JUNCTION, TX VORTAC	SAN ANTONIO, TX VORTAC	18000	45000
SAN ANTONIO, TX VORTAC	HUMBLE, TX VORTAC	18000	45000
HUMBLE, TX VORTAC	LAKE CHARLES, LA VORTAC	18000	45000
LAKE CHARLES, LA VORTAC	FIGHTING TIGER, LA VORTAC	18000	45000
FIGHTING TIGER, LA VORTAC	SEMMES, AL VORTAC	18000	45000
SEMMES, AL VORTAC	CRESTVIEW, FL VORTAC	18000	45000
CRESTVIEW, FL VORTAC	DEFUN, FL FIX	18000	45000

95.7003 JET ROUTE J3

OAKLAND, CA VOR/DME	RED BLUFF, CA VORTAC	18000	45000
RED BLUFF, CA VORTAC	LAKEVIEW, OR VORTAC	18000	45000
LAKEVIEW, OR VORTAC	KIMBERLY, OR VOR/DME	18000	45000
KIMBERLY, OR VOR/DME	SPOKANE, WA VORTAC	18000	45000

95.7004 JET ROUTE J4

LOS ANGELES, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	18000	45000
TWENTYNINE PALMS, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	BUCKEYE, AZ VORTAC	18000	45000
BUCKEYE, AZ VORTAC	SAN SIMON, AZ VORTAC	18000	45000
SAN SIMON, AZ VORTAC	NEWMAN, TX VORTAC	18000	45000
NEWMAN, TX VORTAC	WINK, TX VORTAC	18000	45000
WINK, TX VORTAC	ABILENE, TX VORTAC	18000	45000
ABILENE, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	BELCHER, LA VORTAC	18000	45000
BELCHER, LA VORTAC	MAGNOLIA, MS VORTAC	18000	45000

95.7005 JET ROUTE J5

LOS ANGELES, CA VORTAC	SHAFTER, CA VORTAC	18000	45000
SHAFTER, CA VORTAC	MUSTANG, NV VORTAC	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			

FROM	TO	MEA	MAA

95.7005 JET ROUTE J5 - CONTINUED

MUSTANG, NV VORTAC	LAKEVIEW, OR VORTAC	18000	45000
LAKEVIEW, OR VORTAC	POWEL, OR FIX	18000	45000
POWEL, OR FIX	SUMMA, WA FIX	24000	45000
SUMMA, WA FIX	SEATTLE, WA VORTAC	18000	45000
SEATTLE, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	18000	45000

95.7006 JET ROUTE J6

SALINAS, CA VORTAC	AVENAL, CA VOR/DME	18000	45000
AVENAL, CA VOR/DME	PALMDALE, CA VORTAC	18000	45000
PALMDALE, CA VORTAC	HECTOR, CA VORTAC	18000	45000
HECTOR, CA VORTAC	NEEDLES, CA VORTAC	18000	45000
NEEDLES, CA VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	PYRIT, AZ FIX	22000	45000
PYRIT, AZ FIX	ZUNI, NM VORTAC	18000	45000
ZUNI, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	TUCUMCARI, NM VORTAC	18000	45000
TUCUMCARI, NM VORTAC	PANHANDLE, TX VORTAC	18000	45000
PANHANDLE, TX VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	LITTLE ROCK, AR VORTAC	18000	45000
CHARLESTON, WV VOR/DME	MARTINSBURG, WV VORTAC	18000	45000
MARTINSBURG, WV VORTAC	LANCASTER, PA VOR/DME	18000	32000
LANCASTER, PA VOR/DME	BROADWAY, NJ VOR/DME	18000	45000
BROADWAY, NJ VOR/DME	SPARTA, NJ VORTAC	18000	45000
SPARTA, NJ VORTAC	ALBANY, NY VORTAC	18000	45000

95.7007 JET ROUTE J7

LOS ANGELES, CA VORTAC	FILLMORE, CA VORTAC	18000	45000
FILLMORE, CA VORTAC	FRIANT, CA VORTAC	18000	45000
FRIANT, CA VORTAC	MUSTANG, NV VORTAC	18000	45000
MUSTANG, NV VORTAC	ROME, OR VOR/DME	*19000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
ROME, OR VOR/DME	BOISE, ID VORTAC	18000	45000
BOISE, ID VORTAC	SALMON, ID VOR/DME	18000	45000
SALMON, ID VOR/DME	GREAT FALLS, MT VORTAC	18000	45000
GREAT FALLS, MT VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7008 JET ROUTE J8

NEEDLES, CA VORTAC	FLAGSTAFF, AZ VOR/DME	18000	45000
FLAGSTAFF, AZ VOR/DME	GALLUP, NM VORTAC	18000	45000
GALLUP, NM VORTAC	FORT UNION, NM VORTAC	18000	45000
SPRINGFIELD, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	LOUISVILLE, KY VORTAC	18000	45000
LOUISVILLE, KY VORTAC	CHARLESTON, WV VOR/DME	18000	45000
CHARLESTON, WV VOR/DME	CASANOVA, VA VORTAC	18000	45000

95.7009 JET ROUTE J9

LOS ANGELES, CA VORTAC	DAGGETT, CA VORTAC	18000	45000
DAGGETT, CA VORTAC	LAS VEGAS, NV VORTAC	18000	45000
LAS VEGAS, NV VORTAC	MILFORD, UT VORTAC	18000	45000
MILFORD, UT VORTAC	FAIRFIELD, UT VORTAC	18000	45000
FAIRFIELD, UT VORTAC	WASATCH, UT VORTAC	18000	45000
WASATCH, UT VORTAC	DUBOIS, ID VORTAC	18000	45000
DUBOIS, ID VORTAC	DILLON, MT VOR/DME	18000	45000
DILLON, MT VOR/DME	GREAT FALLS, MT VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7010 JET ROUTE J10

LOS ANGELES, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	18000	45000
TWENTYNINE PALMS, CA VORTAC	HIPPI, AZ FIX	23000	40000
HIPPI, AZ FIX	FLAGSTAFF, AZ VOR/DME	23000	40000
FLAGSTAFF, AZ VOR/DME	RATTLESNAKE, NM VORTAC	18000	40000
RATTLESNAKE, NM VORTAC	BLUE MESA, CO VOR/DME	18000	45000
BLUE MESA, CO VOR/DME	FALCON, CO VORTAC	18000	45000
FALCON, CO VORTAC	NORTH PLATTE, NE VOR/DME	18000	45000
NORTH PLATTE, NE VOR/DME	WOLBACH, NE VORTAC	18000	41000
WOLBACH, NE VORTAC	DES MOINES, IA VORTAC	18000	45000
DES MOINES, IA VORTAC	IOWA CITY, IA VOR/DME	18000	45000

95.7011 JET ROUTE J11

TUCSON, AZ VORTAC	PHOENIX, AZ VORTAC	18000	45000
PHOENIX, AZ VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	BRYCE CANYON, UT VORTAC	18000	45000
BRYCE CANYON, UT VORTAC	FAIRFIELD, UT VORTAC	18000	45000
FAIRFIELD, UT VORTAC	WASATCH, UT VORTAC	18000	45000

95.7012 JET ROUTE J12

SEATTLE, WA VORTAC	EPHRATA, WA VORTAC	18000	45000
EPHRATA, WA VORTAC	DONNELLY, ID VOR/DME	18000	45000
DONNELLY, ID VOR/DME	TWIN FALLS, ID VORTAC	18000	45000
TWIN FALLS, ID VORTAC	WASATCH, UT VORTAC	22000	45000
WASATCH, UT VORTAC	FAIRFIELD, UT VORTAC	18000	45000
FAIRFIELD, UT VORTAC	GRAND JUNCTION, CO VOR/DME	18000	45000

95.7013 JET ROUTE J13

U.S. MEXICAN BORDER	TRUTH OR CONSEQUENCES, NM VORTAC	18000	45000
TRUTH OR CONSEQUENCES, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	ALAMOSA, CO VORTAC	18000	45000
ALAMOSA, CO VORTAC	FALCON, CO VORTAC	23000	45000
FALCON, CO VORTAC	CHEYENNE, WY VORTAC	18000	45000
CHEYENNE, WY VORTAC	MUDDY MOUNTAIN, WY VOR/DME	18000	45000
MUDDY MOUNTAIN, WY VOR/DME	BILLINGS, MT VORTAC	18000	45000
BILLINGS, MT VORTAC	GREAT FALLS, MT VORTAC	18000	45000
GREAT FALLS, MT VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7014 JET ROUTE J14

PANHANDLE, TX VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	LITTLE ROCK, AR VORTAC	18000	45000
LITTLE ROCK, AR VORTAC	VULCAN, AL VORTAC	18000	45000

95.7015 JET ROUTE J15

HUMBLE, TX VORTAC	MARCS, TX FIX	19000	45000
MARCS, TX FIX	JUNCTION, TX VORTAC	18000	45000
JUNCTION, TX VORTAC	WINK, TX VORTAC	18000	45000
WINK, TX VORTAC	CHISUM, NM VORTAC	18000	45000
CHISUM, NM VORTAC	CORONA, NM VORTAC	18000	45000
CORONA, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	RATTLESNAKE, NM VORTAC	18000	45000
RATTLESNAKE, NM VORTAC	GRAND JUNCTION, CO VOR/DME	18000	45000
GRAND JUNCTION, CO VOR/DME	WASATCH, UT VORTAC	*18000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

FROM	TO	MEA	MAA

95.7015 JET ROUTE J15 - CONTINUED

WASATCH, UT VORTAC	TWIN FALLS, ID VORTAC	22000	45000
TWIN FALLS, ID VORTAC	BOISE, ID VORTAC	18000	45000
BOISE, ID VORTAC	KIMBERLY, OR VOR/DME	18000	45000
KIMBERLY, OR VOR/DME	BATTLE GROUND, WA VORTAC	18000	45000

95.7016 JET ROUTE J16

BATTLE GROUND, WA VORTAC	PENDLETON, OR VORTAC	18000	45000
PENDLETON, OR VORTAC	WHITEHALL, MT VOR/DME	*29000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
WHITEHALL, MT VOR/DME	BILLINGS, MT VORTAC	18000	45000
BILLINGS, MT VORTAC	DUPREE, SD VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DUPREE, SD VOR/DME	SIOUX FALLS, SD VORTAC	18000	45000
SIOUX FALLS, SD VORTAC	MASON CITY, IA VOR/DME	18000	45000
MASON CITY, IA VOR/DME	BADGER, WI VOR/DME	18000	45000

95.7017 JET ROUTE J17

SAN ANTONIO, TX VORTAC	ABILENE, TX VORTAC	18000	45000
ABILENE, TX VORTAC	PANHANDLE, TX VORTAC	18000	45000
PANHANDLE, TX VORTAC	TOBE, CO VOR/DME	18000	45000
TOBE, CO VOR/DME	PUEBLO, CO VORTAC	18000	45000
PUEBLO, CO VORTAC	FALCON, CO VORTAC	18000	45000
FALCON, CO VORTAC	CHEYENNE, WY VORTAC	18000	45000
CHEYENNE, WY VORTAC	RAPID CITY, SD VORTAC	18000	45000

95.7018 JET ROUTE J18

MISSION BAY, CA VORTAC	IMPERIAL, CA VORTAC	18000	45000
IMPERIAL, CA VORTAC	BARD, CA VORTAC	18000	45000
BARD, CA VORTAC	GILA BEND, AZ VORTAC	18000	45000
GILA BEND, AZ VORTAC	PHOENIX, AZ VORTAC	18000	45000
PHOENIX, AZ VORTAC	ST JOHNS, AZ VORTAC	18000	45000
ST JOHNS, AZ VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	FORT UNION, NM VORTAC	18000	45000
FORT UNION, NM VORTAC	GARDEN CITY, KS VORTAC	18000	45000
GARDEN CITY, KS VORTAC	SALINA, KS VORTAC	18000	45000
SALINA, KS VORTAC	ST JOSEPH, MO VORTAC	18000	45000
ST JOSEPH, MO VORTAC	MOLINE, IL VOR/DME	18000	35000
MOLINE, IL VOR/DME	JOLIET, IL VOR/DME	18000	35000

95.7019 JET ROUTE J19

ST LOUIS, MO VORTAC	ROBERTS, IL VOR/DME	18000	35000
ROBERTS, IL VOR/DME	NORTHBROOK, IL VOR/DME	18000	35000

95.7020 JET ROUTE J20

SEATTLE, WA VORTAC	YAKIMA, WA VORTAC	18000	45000
YAKIMA, WA VORTAC	PENDLETON, OR VORTAC	18000	45000
PENDLETON, OR VORTAC	DONNELLY, ID VOR/DME	18000	45000
DONNELLY, ID VOR/DME	POCATELLO, ID VOR/DME	18000	45000
POCATELLO, ID VOR/DME	ROCK SPRINGS, WY VOR/DME	21000	45000
ROCK SPRINGS, WY VOR/DME	FALCON, CO VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
FALCON, CO VORTAC	HUGO, CO VOR/DME	18000	45000
HUGO, CO VOR/DME	LAMAR, CO VOR/DME	18000	45000
WILL ROGERS, OK VORTAC	BELCHER, LA VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7020 JET ROUTE J20 - CONTINUED			
BELCHER, LA VORTAC	MAGNOLIA, MS VORTAC	18000	45000
MAGNOLIA, MS VORTAC	MERIDIAN, MS VORTAC	18000	45000
MERIDIAN, MS VORTAC	MONTGOMERY, AL VORTAC	18000	45000
95.7021 JET ROUTE J21			
U.S. MEXICAN BORDER	LAREDO, TX VORTAC	18000	45000
LAREDO, TX VORTAC	SAN ANTONIO, TX VORTAC	18000	45000
SAN ANTONIO, TX VORTAC	CENTEX, TX VORTAC	18000	45000
CENTEX, TX VORTAC	WACO, TX VORTAC	18000	45000
WACO, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	ARDMORE, OK VORTAC	18000	45000
ARDMORE, OK VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	WICHITA, KS VORTAC	18000	45000
WICHITA, KS VORTAC	OMAHA, IA VORTAC	18000	45000
OMAHA, IA VORTAC	GOPHER, MN VORTAC	18000	45000
GOPHER, MN VORTAC	DULUTH, MN VORTAC	18000	45000
95.7022 JET ROUTE J22			
U.S. MEXICAN BORDER	LAREDO, TX VORTAC	18000	45000
LAREDO, TX VORTAC	CORPUS CHRISTI, TX VORTAC	18000	45000
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	18000	45000
PALACIOS, TX VORTAC	LAKE CHARLES, LA VORTAC	18000	45000
LAKE CHARLES, LA VORTAC	MC COMB, MS VORTAC	18000	45000
MC COMB, MS VORTAC	MERIDIAN, MS VORTAC	18000	45000
95.7023 JET ROUTE J23			
SAN ANTONIO, TX VORTAC	MILLSAP, TX VORTAC	18000	45000
MILLSAP, TX VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	PIONEER, OK VORTAC	18000	45000
PIONEER, OK VORTAC	WICHITA, KS VORTAC	18000	45000
95.7024 JET ROUTE J24			
MYTON, UT VOR/DME	HAYDEN, CO VOR/DME	18000	45000
HUGO, CO VOR/DME	HAYS, KS VORTAC	18000	45000
HAYS, KS VORTAC	SALINA, KS VORTAC	18000	45000
SALINA, KS VORTAC	KANSAS CITY, MO VORTAC	18000	45000
KANSAS CITY, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	BRICKYARD, IN VORTAC	18000	45000
BRICKYARD, IN VORTAC	FALMOUTH, KY VOR/DME	18000	45000
FALMOUTH, KY VOR/DME	CHARLESTON, WV VOR/DME	18000	45000
CHARLESTON, WV VOR/DME	MONTEBELLO, VA VOR/DME	18000	41000
95.7025 JET ROUTE J25			
U.S. MEXICAN BORDER	BROWNSVILLE, TX VORTAC	18000	45000
BROWNSVILLE, TX VORTAC	CORPUS CHRISTI, TX VORTAC	18000	45000
CORPUS CHRISTI, TX VORTAC	SAN ANTONIO, TX VORTAC	18000	45000
SAN ANTONIO, TX VORTAC	CENTEX, TX VORTAC	18000	45000
CENTEX, TX VORTAC	WACO, TX VORTAC	18000	45000
WACO, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	TULSA, OK VORTAC	18000	45000
TULSA, OK VORTAC	KANSAS CITY, MO VORTAC	18000	45000
KANSAS CITY, MO VORTAC	DES MOINES, IA VORTAC	18000	45000
DES MOINES, IA VORTAC	MASON CITY, IA VOR/DME	18000	45000
MASON CITY, IA VOR/DME	GOPHER, MN VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7026 JET ROUTE J26			
U.S. MEXICAN BORDER	EL PASO, TX VORTAC	18000	45000
EL PASO, TX VORTAC	CHISUM, NM VORTAC	18000	45000
CHISUM, NM VORTAC	PANHANDLE, TX VORTAC	18000	45000
PANHANDLE, TX VORTAC	MITBEE, OK VORTAC	18000	45000
MITBEE, OK VORTAC	WICHITA, KS VORTAC	18000	45000
WICHITA, KS VORTAC	KANSAS CITY, MO VORTAC	18000	45000
KANSAS CITY, MO VORTAC	KIRKSVILLE, MO VORTAC	18000	45000
KIRKSVILLE, MO VORTAC	BRADFORD, IL VORTAC	18000	45000
BRADFORD, IL VORTAC	JOLIET, IL VOR/DME	18000	45000
95.7027 JET ROUTE J27			
SAN ANTONIO, TX VORTAC	LUFKIN, TX VORTAC	18000	45000
95.7028 JET ROUTE J28			
MILFORD, UT VORTAC	HANKSVILLE, UT VORTAC	18000	45000
HANKSVILLE, UT VORTAC	BLUE MESA, CO VOR/DME	18000	45000
BLUE MESA, CO VOR/DME	PUEBLO, CO VORTAC	18000	45000
PUEBLO, CO VORTAC	GARDEN CITY, KS VORTAC	18000	45000
GARDEN CITY, KS VORTAC	WICHITA, KS VORTAC	18000	45000
95.7029 JET ROUTE J29			
U.S. MEXICAN BORDER	CORPUS CHRISTI, TX VORTAC	24000	45000
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	18000	45000
PALACIOS, TX VORTAC	HUMBLE, TX VORTAC	18000	45000
HUMBLE, TX VORTAC	EL DORADO, AR VOR/DME	18000	45000
EL DORADO, AR VOR/DME	MEMPHIS, TN VORTAC	18000	45000
MEMPHIS, TN VORTAC	POCKET CITY, IN VORTAC	18000	45000
95.7030 JET ROUTE J30			
NODINE, MN VORTAC	JOLIET, IL VOR/DME	18000	45000
JOLIET, IL VOR/DME	APPLETON, OH VORTAC	18000	45000
APPLETON, OH VORTAC	BUCKO, WV FIX	20000	39000
BUCKO, WV FIX	KESSEL, WV VOR/DME	18000	45000
KESSEL, WV VOR/DME	TRIXY, VA FIX	19000	29000
95.7031 JET ROUTE J31			
LEEVILLE, LA VORTAC	HARVEY, LA VORTAC	18000	45000
HARVEY, LA VORTAC	MERIDIAN, MS VORTAC	18000	45000
95.7032 JET ROUTE J32			
OAKLAND, CA VOR/DME	SACRAMENTO, CA VORTAC	18000	45000
SACRAMENTO, CA VORTAC	MUSTANG, NV VORTAC	18000	45000
MUSTANG, NV VORTAC	LOVELOCK, NV VORTAC	18000	45000
LOVELOCK, NV VORTAC	BATTLE MOUNTAIN, NV VORTAC	18000	45000
BATTLE MOUNTAIN, NV VORTAC	MALAD CITY, ID VOR/DME	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
MALAD CITY, ID VOR/DME	BOYSEN RESERVOIR, WY VOR/DME	18000	45000
BOYSEN RESERVOIR, WY VOR/DME	CRAZY WOMAN, WY VOR/DME	18000	45000
CRAZY WOMAN, WY VOR/DME	DUPREE, SD VOR/DME	18000	45000
DUPREE, SD VOR/DME	ABERDEEN, SD VOR/DME	18000	45000
ABERDEEN, SD VOR/DME	DULUTH, MN VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7033 JET ROUTE J33

HUMBLE, TX VORTAC	DONIE, TX FIX	18000	45000
DONIE, TX FIX	RANGER, TX VORTAC	18000	45000

95.7034 JET ROUTE J34

HOQUIAM, WA VORTAC	OLYMPIA, WA VORTAC	18000	45000
OLYMPIA, WA VORTAC	MOSES LAKE, WA VOR/DME	18000	45000
MOSES LAKE, WA VOR/DME	HELENA, MT VORTAC	*28000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
HELENA, MT VORTAC	BILLINGS, MT VORTAC	18000	45000
BILLINGS, MT VORTAC	DUPREE, SD VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DUPREE, SD VOR/DME	REDWOOD FALLS, MN VOR/DME	18000	45000
REDWOOD FALLS, MN VOR/DME	NODINE, MN VORTAC	18000	45000
NODINE, MN VORTAC	DELLS, WI VORTAC	18000	45000
DELLS, WI VORTAC	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	VICTORY, MI VOR/DME	18000	45000
VICTORY, MI VOR/DME	CARLETON, MI VOR/DME	18000	45000
CARLETON, MI VOR/DME	DRYER, OH VOR/DME	18000	45000
DRYER, OH VOR/DME	BELLAIRE, OH VOR/DME	18000	45000
BELLAIRE, OH VOR/DME	BUCKO, WV FIX	18000	45000
BUCKO, WV FIX	KESSEL, WV VOR/DME	18000	45000
KESSEL, WV VOR/DME	TRIXY, VA FIX	19000	29000

95.7035 JET ROUTE J35

LEEVILLE, LA VORTAC	MC COMB, MS VORTAC	18000	45000
MC COMB, MS VORTAC	SIDON, MS VORTAC	18000	45000
SIDON, MS VORTAC	MEMPHIS, TN VORTAC	18000	45000
MEMPHIS, TN VORTAC	FARMINGTON, MO VORTAC	18000	45000
FARMINGTON, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	SPINNER, IL VORTAC	18000	45000
SPINNER, IL VORTAC	PONTIAC, IL VOR/DME	18000	31000
PONTIAC, IL VOR/DME	JOLIET, IL VOR/DME	18000	35000
JOLIET, IL VOR/DME	NORTHBROOK, IL VOR/DME	18000	45000

95.7036 JET ROUTE J36

MULLAN PASS, ID VOR/DME	GREAT FALLS, MT VORTAC	18000	45000
GREAT FALLS, MT VORTAC	HILGR, MT FIX	18000	45000
HILGR, MT FIX	DICKINSON, ND VORTAC	*28000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DICKINSON, ND VORTAC	FARGO, ND VOR/DME	18000	45000
FARGO, ND VOR/DME	GOPHER, MN VORTAC	18000	45000
GOPHER, MN VORTAC	NODINE, MN VORTAC	18000	45000
NODINE, MN VORTAC	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	FLINT, MI VORTAC	18000	45000

95.7037 JET ROUTE J37

HARVEY, LA VORTAC	SEMMES, AL VORTAC	18000	45000
SEMMES, AL VORTAC	MONTGOMERY, AL VORTAC	18000	
LYNCHBURG, VA VOR/DME	GORDONSVILLE, VA VORTAC	18000	45000
GORDONSVILLE, VA VORTAC	BROOKE, VA VORTAC	18000	45000
BROOKE, VA VORTAC	NALES, DE FIX	18000	31000
NALES, DE FIX	COYLE, NJ VORTAC	18000	45000
KENNEDY, NY VOR/DME	KINGSTON, NY VOR/DME	18000	45000
KINGSTON, NY VOR/DME	ALBANY, NY VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7041 JET ROUTE J41

MONTGOMERY, AL VORTAC	VULCAN, AL VORTAC	18000	45000
VULCAN, AL VORTAC	MEMPHIS, TN VORTAC	18000	45000
MEMPHIS, TN VORTAC	SPRINGFIELD, MO VORTAC	18000	45000
SPRINGFIELD, MO VORTAC	KANSAS CITY, MO VORTAC	18000	45000
KANSAS CITY, MO VORTAC	OMAHA, IA VORTAC	18000	45000

95.7042 JET ROUTE J42

U.S. MEXICAN BORDER	FORT STOCKTON, TX VORTAC	18000	45000
FORT STOCKTON, TX VORTAC	ABILENE, TX VORTAC	18000	45000
ABILENE, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	TEXARKANA, AR VORTAC	18000	45000

95.7043 JET ROUTE J43

VOLUNTEER, TN VORTAC	FALMOUTH, KY VOR/DME	18000	45000
FALMOUTH, KY VOR/DME	ROSEWOOD, OH VORTAC	18000	45000
ROSEWOOD, OH VORTAC	CARLETON, MI VOR/DME	18000	45000

95.7044 JET ROUTE J44

PHOENIX, AZ VORTAC	WINSLOW, AZ VORTAC	18000	45000
WINSLOW, AZ VORTAC	RATTLESNAKE, NM VORTAC	18000	45000
RATTLESNAKE, NM VORTAC	ALAMOSA, CO VORTAC	18000	45000
ALAMOSA, CO VORTAC	FALCON, CO VORTAC	23000	45000
FALCON, CO VORTAC	MC COOK, NE VOR/DME	18000	45000
MC COOK, NE VOR/DME	LINCOLN, NE VORTAC	18000	41000

95.7045 JET ROUTE J45

NASHVILLE, TN VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	KIRKSVILLE, MO VORTAC	18000	45000
KIRKSVILLE, MO VORTAC	DES MOINES, IA VORTAC	*18000	45000
*DES MOINES R-141 UNUSABLE, USE KIRKVILLE R-323			
DES MOINES, IA VORTAC	SIOUX FALLS, SD VORTAC	18000	45000
SIOUX FALLS, SD VORTAC	ABERDEEN, SD VOR/DME	18000	45000

95.7046 JET ROUTE J46

TULSA, OK VORTAC	WALNUT RIDGE, AR VORTAC	18000	45000
WALNUT RIDGE, AR VORTAC	NASHVILLE, TN VORTAC	18000	45000
NASHVILLE, TN VORTAC	VOLUNTEER, TN VORTAC	18000	45000

95.7048 JET ROUTE J48

*LANNA, NJ FIX	POTTSTOWN, PA VORTAC	18000	45000
*5000 - MRA			
POTTSTOWN, PA VORTAC	WESTMINSTER, MD VORTAC	18000	45000
WESTMINSTER, MD VORTAC	CASANOVA, VA VORTAC	18000	45000
CASANOVA, VA VORTAC	MONTEBELLO, VA VOR/DME	18000	41000

95.7049 JET ROUTE J49

PHILIPSBURG, PA VORTAC	HANCOCK, NY VOR/DME	18000	45000
HANCOCK, NY VOR/DME	ALBANY, NY VORTAC	18000	45000
ALBANY, NY VORTAC	BANGOR, ME VORTAC	18000	45000
BANGOR, ME VORTAC	PRESQUE ISLE, ME VOR/DME	18000	45000

FROM	TO	MEA	MAA

95.7050 JET ROUTE J50

SHAFTER, CA VORTAC	PARADISE, CA VORTAC	18000	45000
PARADISE, CA VORTAC	BLYTHE, CA VORTAC	18000	45000
BLYTHE, CA VORTAC	GILA BEND, AZ VORTAC	18000	45000
GILA BEND, AZ VORTAC	STANFIELD, AZ VORTAC	18000	45000
STANFIELD, AZ VORTAC	SAN SIMON, AZ VORTAC	18000	45000
SAN SIMON, AZ VORTAC	EL PASO, TX VORTAC	18000	45000
EL PASO, TX VORTAC	WINK, TX VORTAC	18000	45000
WINK, TX VORTAC	ABILENE, TX VORTAC	18000	45000
ABILENE, TX VORTAC	WACO, TX VORTAC	18000	45000
WACO, TX VORTAC	LUFKIN, TX VORTAC	18000	45000
LUFKIN, TX VORTAC	ALEXANDRIA, LA VORTAC	18000	45000
ALEXANDRIA, LA VORTAC	MC COMB, MS VORTAC	18000	45000
MC COMB, MS VORTAC	CRESTVIEW, FL VORTAC	18000	45000

95.7052 JET ROUTE J52

U.S. CANADIAN BORDER	SPOKANE, WA VORTAC	18000	45000
SPOKANE, WA VORTAC	SALMON, ID VOR/DME	18000	45000
SALMON, ID VOR/DME	DUBOIS, ID VORTAC	18000	45000
DUBOIS, ID VORTAC	ROCK SPRINGS, WY VOR/DME	18000	45000
ROCK SPRINGS, WY VOR/DME	FALCON, CO VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
FALCON, CO VORTAC	HUGO, CO VOR/DME	18000	45000
HUGO, CO VOR/DME	LAMAR, CO VOR/DME	18000	45000
ARDMORE, OK VORTAC	TEXARKANA, AR VORTAC	18000	45000
TEXARKANA, AR VORTAC	SIDON, MS VORTAC	18000	45000

95.7054 JET ROUTE J54

TATOOSH, WA VORTAC	OLYMPIA, WA VORTAC	18000	45000
OLYMPIA, WA VORTAC	BAKER CITY, OR VOR/DME	*24000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BAKER CITY, OR VOR/DME	BOISE, ID VORTAC	18000	45000
BOISE, ID VORTAC	POCATELLO, ID VOR/DME	18000	45000
POCATELLO, ID VOR/DME	CHEROKEE, WY VOR/DME	25000	45000
CHEROKEE, WY VOR/DME	LARAMIE, WY VOR/DME	18000	45000

95.7055 JET ROUTE J55

TUBAS, NC FIX	RALEIGH/DURHAM, NC VORTAC	18000	45000
RALEIGH/DURHAM, NC VORTAC	HOPEWELL, VA VORTAC	18000	45000
HOPEWELL, VA VORTAC	HUBBS, VA FIX	18000	20000
SEA ISLE, NJ VORTAC	HAMPTON, NY VORTAC	18000	45000
HAMPTON, NY VORTAC	PROVIDENCE, RI VOR/DME	18000	45000
PROVIDENCE, RI VOR/DME	BOSTON, MA VOR/DME	18000	45000
BOSTON, MA VOR/DME	KENNEBUNK, ME VOR/DME	18000	45000
KENNEBUNK, ME VOR/DME	PRESQUE ISLE, ME VOR/DME	19000	45000

95.7056 JET ROUTE J56

MINA, NV VORTAC	WASATCH, UT VORTAC	*33000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
WASATCH, UT VORTAC	HAYDEN, CO VOR/DME	25000	45000
HAYDEN, CO VOR/DME	FALCON, CO VORTAC	18000	45000

95.7057 JET ROUTE J57

TRUTH OR CONSEQUENCES, NM VORTAC	SOCORRO, NM VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7057 JET ROUTE J57 - CONTINUED			
SOCORRO, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
95.7058 JET ROUTE J58			
COALDALE, NV VORTAC	WILSON CREEK, NV VORTAC	18000	45000
WILSON CREEK, NV VORTAC	MILFORD, UT VORTAC	18000	45000
MILFORD, UT VORTAC	RATTLESNAKE, NM VORTAC	33000	45000
RATTLESNAKE, NM VORTAC	FORT UNION, NM VORTAC	18000	45000
FORT UNION, NM VORTAC	PANHANDLE, TX VORTAC	18000	45000
PANHANDLE, TX VORTAC	WICHITA FALLS, TX VORTAC	18000	45000
WICHITA FALLS, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	ALEXANDRIA, LA VORTAC	18000	45000
ALEXANDRIA, LA VORTAC	HARVEY, LA VORTAC	18000	45000
95.7059 JET ROUTE J59			
PHILIPSBURG, PA VORTAC	SYRACUSE, NY VORTAC	18000	45000
95.7060 JET ROUTE J60			
LOS ANGELES, CA VORTAC	PARADISE, CA VORTAC	18000	45000
PARADISE, CA VORTAC	HECTOR, CA VORTAC	18000	45000
HECTOR, CA VORTAC	BOULDER CITY, NV VORTAC	18000	45000
BOULDER CITY, NV VORTAC	BRYCE CANYON, UT VORTAC	18000	45000
BRYCE CANYON, UT VORTAC	HANKSVILLE, UT VORTAC	18000	45000
HANKSVILLE, UT VORTAC	RED TABLE, CO VOR/DME	18000	45000
RED TABLE, CO VOR/DME	MILE HIGH, CO VORTAC	18000	45000
MILE HIGH, CO VORTAC	HAYES CENTER, NE VORTAC	18000	45000
HAYES CENTER, NE VORTAC	LINCOLN, NE VORTAC	18000	45000
LINCOLN, NE VORTAC	IOWA CITY, IA VOR/DME	18000	45000
IOWA CITY, IA VOR/DME	JOLIET, IL VOR/DME	18000	45000
JOLIET, IL VOR/DME	GOSHEN, IN VORTAC	18000	45000
GOSHEN, IN VORTAC	DRYER, OH VOR/DME	18000	45000
DRYER, OH VOR/DME	PHILIPSBURG, PA VORTAC	18000	45000
PHILIPSBURG, PA VORTAC	SPARTA, NJ VORTAC	18000	45000
95.7061 JET ROUTE J61			
WESTMINSTER, MD VORTAC	PHILIPSBURG, PA VORTAC	18000	45000
95.7064 JET ROUTE J64			
LOS ANGELES, CA VORTAC	HECTOR, CA VORTAC	18000	45000
HECTOR, CA VORTAC	PEACH SPRINGS, AZ VOR/DME	18000	45000
PEACH SPRINGS, AZ VOR/DME	TUBA CITY, AZ VORTAC	18000	45000
TUBA CITY, AZ VORTAC	RATTLESNAKE, NM VORTAC	18000	45000
RATTLESNAKE, NM VORTAC	PUEBLO, CO VORTAC	20000	45000
PUEBLO, CO VORTAC	HILL CITY, KS VORTAC	18000	45000
HILL CITY, KS VORTAC	PAWNEE CITY, NE VORTAC	18000	45000
PAWNEE CITY, NE VORTAC	LAMONI, IA VOR/DME	18000	45000
LAMONI, IA VOR/DME	BRADFORD, IL VORTAC	18000	45000
BRADFORD, IL VORTAC	FORT WAYNE, IN VORTAC	18000	45000
FORT WAYNE, IN VORTAC	ELLWOOD CITY, PA VOR/DME	18000	45000
ELLWOOD CITY, PA VOR/DME	RAVINE, PA VORTAC	18000	45000
RAVINE, PA VORTAC	SARAA, PA FIX	18000	45000
95.7065 JET ROUTE J65			
SAN ANTONIO, TX VORTAC	ABILENE, TX VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7065 JET ROUTE J65 - CONTINUED

ABILENE, TX VORTAC	CHISUM, NM VORTAC	25000	45000
CHISUM, NM VORTAC	TRUTH OR CONSEQUENCES, NM VORTAC	24000	45000
TRUTH OR CONSEQUENCES, NM VORTAC	PHOENIX, AZ VORTAC	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
PHOENIX, AZ VORTAC	BLYTHE, CA VORTAC	18000	45000
BLYTHE, CA VORTAC	PALMDALE, CA VORTAC	18000	45000
PALMDALE, CA VORTAC	SHAFTER, CA VORTAC	18000	45000
SACRAMENTO, CA VORTAC	RED BLUFF, CA VORTAC	18000	45000
RED BLUFF, CA VORTAC	KLAMATH FALLS, OR VORTAC	18000	45000
KLAMATH FALLS, OR VORTAC	SEATTLE, WA VORTAC	*31000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			

95.7066 JET ROUTE J66

NEWMAN, TX VORTAC	BIG SPRING, TX VORTAC	*19000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BIG SPRING, TX VORTAC	ABILENE, TX VORTAC	18000	45000
ABILENE, TX VORTAC	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	BONHAM, TX VORTAC	18000	45000
BONHAM, TX VORTAC	LITTLE ROCK, AR VORTAC	18000	45000
LITTLE ROCK, AR VORTAC	MEMPHIS, TN VORTAC	18000	45000
MEMPHIS, TN VORTAC	ROME, GA VORTAC	18000	45000

95.7067 JET ROUTE J67

LINDEN, CA VOR/DME	LAKEVIEW, OR VORTAC	18000	45000
LAKEVIEW, OR VORTAC	BATTLE GROUND, WA VORTAC	18000	45000

95.7068 JET ROUTE J68

GOPHER, MN VORTAC	DELLS, WI VORTAC	18000	45000
DELLS, WI VORTAC	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	FLINT, MI VORTAC	18000	45000

95.7070 JET ROUTE J70

HOQUIAM, WA VORTAC	SEATTLE, WA VORTAC	18000	45000
SEATTLE, WA VORTAC	EPHRATA, WA VORTAC	18000	45000
EPHRATA, WA VORTAC	MULLAN PASS, ID VOR/DME	18000	45000
MULLAN PASS, ID VOR/DME	LEWISTOWN, MT VOR/DME	18000	45000
LEWISTOWN, MT VOR/DME	DICKINSON, ND VORTAC	18000	45000
DICKINSON, ND VORTAC	ABERDEEN, SD VOR/DME	24000	45000
ABERDEEN, SD VOR/DME	GOPHER, MN VORTAC	18000	45000
GOPHER, MN VORTAC	NICKL, WI FIX	18000	45000
NICKL, WI FIX	*AUGER, WI FIX	25000	45000
*25000 - MCA AUGER, WI FIX , W BND			
AUGER, WI FIX	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	PULLMAN, MI VOR/DME	18000	45000
PULLMAN, MI VOR/DME	SALEM, MI VORTAC	18000	45000
SALEM, MI VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	JAMESTOWN, NY VOR/DME	18000	45000
JAMESTOWN, NY VOR/DME	WILKES-BARRE, PA VORTAC	18000	45000
WILKES-BARRE, PA VORTAC	STILLWATER, NJ VOR/DME	18000	45000
STILLWATER, NJ VOR/DME	LA GUARDIA, NY VOR/DME	18000	24000
LA GUARDIA, NY VOR/DME	KENNEDY, NY VOR/DME	18000	45000

95.7071 JET ROUTE J71

MEMPHIS, TN VORTAC	CENTRALIA, IL VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7071 JET ROUTE J71 - CONTINUED

CENTRALIA, IL VORTAC	ROBERTS, IL VOR/DME	18000	35000
ROBERTS, IL VOR/DME	NORTHBROOK, IL VOR/DME	18000	35000

95.7072 JET ROUTE J72

BOULDER CITY, NV VORTAC	PEACH SPRINGS, AZ VOR/DME	18000	45000
PEACH SPRINGS, AZ VOR/DME	GALLUP, NM VORTAC	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
GALLUP, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	TEXICO, TX VORTAC	18000	45000
TEXICO, TX VORTAC	WICHITA FALLS, TX VORTAC	18000	45000

95.7073 JET ROUTE J73

LAGRANGE, GA VORTAC	NASHVILLE, TN VORTAC	18000	45000
NASHVILLE, TN VORTAC	POCKET CITY, IN VORTAC	18000	45000
POCKET CITY, IN VORTAC	NORTHBROOK, IL VOR/DME	18000	45000

95.7074 JET ROUTE J74

LOS ANGELES, CA VORTAC	PARADISE, CA VORTAC	18000	45000
PARADISE, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	NABOB, AZ FIX	21000	45000
NABOB, AZ FIX	ST JOHNS, AZ VORTAC	18000	45000
ST JOHNS, AZ VORTAC	CORONA, NM VORTAC	18000	45000
CORONA, NM VORTAC	TEXICO, TX VORTAC	18000	45000
TEXICO, TX VORTAC	WILL ROGERS, OK VORTAC	18000	45000

95.7076 JET ROUTE J76

LAS VEGAS, NV VORTAC	TUBA CITY, AZ VORTAC	18000	45000
TUBA CITY, AZ VORTAC	FORT UNION, NM VORTAC	*27000	45000
*MEA GAP			
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
FORT UNION, NM VORTAC	TUCUMCARI, NM VORTAC	18000	45000
TUCUMCARI, NM VORTAC	WICHITA FALLS, TX VORTAC	18000	45000

95.7078 JET ROUTE J78

LOS ANGELES, CA VORTAC	SEAL BEACH, CA VORTAC	18000	45000
SEAL BEACH, CA VORTAC	THERMAL, CA VORTAC	18000	45000
THERMAL, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	PYRIT, AZ FIX	22000	45000
PYRIT, AZ FIX	ZUNI, NM VORTAC	18000	45000
ZUNI, NM VORTAC	ALBUQUERQUE, NM VORTAC	18000	45000
ALBUQUERQUE, NM VORTAC	TUCUMCARI, NM VORTAC	18000	45000
TUCUMCARI, NM VORTAC	PANHANDLE, TX VORTAC	18000	45000
PANHANDLE, TX VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	TULSA, OK VORTAC	18000	45000
TULSA, OK VORTAC	FARMINGTON, MO VORTAC	18000	45000
FARMINGTON, MO VORTAC	POCKET CITY, IN VORTAC	18000	45000
POCKET CITY, IN VORTAC	LOUISVILLE, KY VORTAC	18000	45000
LOUISVILLE, KY VORTAC	CHARLESTON, WV VOR/DME	18000	45000

95.7079 JET ROUTE J79

CHARLESTON, SC VORTAC	TAR RIVER, NC VORTAC	18000	45000
TAR RIVER, NC VORTAC	FRANKLIN, VA VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7079 JET ROUTE J79 - CONTINUED

FRANKLIN, VA VORTAC	SALISBURY, MD VORTAC	18000	45000
SALISBURY, MD VORTAC	KENNEDY, NY VOR/DME	18000	45000
KENNEDY, NY VOR/DME	CUJKE, MA FIX	18000	45000
CUJKE, MA FIX	MARCONI, MA VOR/DME	UNUSABLE	
MARCONI, MA VOR/DME	BANGOR, ME VORTAC	18000	45000

95.7080 JET ROUTE J80

COALDALE, NV VORTAC	WILSON CREEK, NV VORTAC	18000	45000
WILSON CREEK, NV VORTAC	MILFORD, UT VORTAC	18000	45000
MILFORD, UT VORTAC	GRAND JUNCTION, CO VOR/DME	18000	45000
GRAND JUNCTION, CO VOR/DME	RED TABLE, CO VOR/DME	18000	45000
RED TABLE, CO VOR/DME	FALCON, CO VORTAC	18000	45000
FALCON, CO VORTAC	GOODLAND, KS VORTAC	18000	45000
GOODLAND, KS VORTAC	HILL CITY, KS VORTAC	18000	45000
HILL CITY, KS VORTAC	KANSAS CITY, MO VORTAC	18000	45000
KANSAS CITY, MO VORTAC	SPINNER, IL VORTAC	18000	45000
SPINNER, IL VORTAC	BRICKYARD, IN VORTAC	18000	45000
BRICKYARD, IN VORTAC	BELLAIRE, OH VOR/DME	18000	45000

95.7082 JET ROUTE J82

BATTLE GROUND, WA VORTAC	DONNELLY, ID VOR/DME	22000	45000
DONNELLY, ID VOR/DME	DUBOIS, ID VORTAC	18000	45000
DUBOIS, ID VORTAC	CRAZY WOMAN, WY VOR/DME	*25000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
CRAZY WOMAN, WY VOR/DME	RAPID CITY, SD VORTAC	18000	45000
RAPID CITY, SD VORTAC	SIOUX FALLS, SD VORTAC	18000	45000
DUBUQUE, IA VORTAC	JOLIET, IL VOR/DME	18000	45000
JOLIET, IL VOR/DME	GOSHEN, IN VORTAC	18000	45000

95.7083 JET ROUTE J83

SPARTANBURG, SC VORTAC	APPLETON, OH VORTAC	23000	45000
APPLETON, OH VORTAC	DRYER, OH VOR/DME	*18000	45000
*APPLETON R-021 UNUSABLE.			

95.7084 JET ROUTE J84

OAKLAND, CA VOR/DME	LINDEN, CA VOR/DME	18000	45000
LINDEN, CA VOR/DME	MINA, NV VORTAC	18000	45000
MINA, NV VORTAC	DELTA, UT VORTAC	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DELTA, UT VORTAC	MEEKER, CO VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
MEEKER, CO VOR/DME	SIDNEY, NE VOR/DME	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
SIDNEY, NE VOR/DME	WOLBACH, NE VORTAC	18000	45000
WOLBACH, NE VORTAC	DUBUQUE, IA VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DUBUQUE, IA VORTAC	NORTHBROOK, IL VOR/DME	18000	45000
NORTHBROOK, IL VOR/DME	DANVILLE, IL VORTAC	18000	35000

95.7085 JET ROUTE J85

SPARTANBURG, SC VORTAC	CHARLESTON, WV VOR/DME	18000	45000
CHARLESTON, WV VOR/DME	DRYER, OH VOR/DME	18000	45000

95.7086 JET ROUTE J86

BEATTY, NV VORTAC	FUZZY, NV FIX	18000	45000

FROM	TO	MEA	MAA

95.7086 JET ROUTE J86 - CONTINUED

FUZZY, NV FIX	BOULDER CITY, NV VORTAC	29000	45000
BOULDER CITY, NV VORTAC	PEACH SPRINGS, AZ VOR/DME	18000	45000
PEACH SPRINGS, AZ VOR/DME	BAVPE, AZ FIX	18000	45000
BAVPE, AZ FIX	WINSLOW, AZ VORTAC	18000	45000
WINSLOW, AZ VORTAC	EL PASO, TX VORTAC	*27000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
EL PASO, TX VORTAC	FORT STOCKTON, TX VORTAC	18000	45000
FORT STOCKTON, TX VORTAC	JUNCTION, TX VORTAC	18000	45000
JUNCTION, TX VORTAC	HUMBLE, TX VORTAC	18000	45000
HUMBLE, TX VORTAC	LEEVILLE, LA VORTAC	18000	45000

95.7087 JET ROUTE J87

HUMBLE, TX VORTAC	NAVASOTA, TX VOR/DME	18000	45000
NAVASOTA, TX VOR/DME	TORNN, TX FIX	18000	45000
TORNN, TX FIX	COWBOY, TX VOR/DME	18000	45000
COWBOY, TX VOR/DME	TULSA, OK VORTAC	18000	45000
TULSA, OK VORTAC	BUTLER, MO VORTAC	18000	45000
BUTLER, MO VORTAC	KIRKSVILLE, MO VORTAC	18000	45000
KIRKSVILLE, MO VORTAC	MOLINE, IL VOR/DME	18000	35000
MOLINE, IL VOR/DME	JOLIET, IL VOR/DME	18000	35000
JOLIET, IL VOR/DME	NORTHBROOK, IL VOR/DME	18000	45000

95.7088 JET ROUTE J88

LOS ANGELES, CA VORTAC	SAN MARCUS, CA VORTAC	18000	45000
SAN MARCUS, CA VORTAC	SALINAS, CA VORTAC	18000	45000
SALINAS, CA VORTAC	POINT REYES, CA VOR/DME	18000	45000

95.7089 JET ROUTE J89

LOUISVILLE, KY VORTAC	BOILER, IN VORTAC	18000	45000
BOILER, IN VORTAC	NORTHBROOK, IL VOR/DME	18000	45000
NORTHBROOK, IL VOR/DME	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	DULUTH, MN VORTAC	*18000	45000
*BADGER R-322 UNUSABLE			
DULUTH, MN VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7090 JET ROUTE J90

SEATTLE, WA VORTAC	MOSES LAKE, WA VOR/DME	18000	45000
MOSES LAKE, WA VOR/DME	HELENA, MT VORTAC	*28000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
HELENA, MT VORTAC	MILES CITY, MT VOR/DME	28000	45000
MILES CITY, MT VOR/DME	ABERDEEN, SD VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
ABERDEEN, SD VOR/DME	REDWOOD FALLS, MN VOR/DME	18000	45000
REDWOOD FALLS, MN VOR/DME	MASON CITY, IA VOR/DME	18000	45000
MASON CITY, IA VOR/DME	NORTHBROOK, IL VOR/DME	18000	45000

95.7092 JET ROUTE J92

KLAMATH FALLS, OR VORTAC	MUSTANG, NV VORTAC	18000	45000
MUSTANG, NV VORTAC	COALDALE, NV VORTAC	18000	45000
COALDALE, NV VORTAC	BEATTY, NV VORTAC	18000	45000
BEATTY, NV VORTAC	BOULDER CITY, NV VORTAC	24000	45000
BOULDER CITY, NV VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	PHOENIX, AZ VORTAC	18000	45000
PHOENIX, AZ VORTAC	STANFIELD, AZ VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7092 JET ROUTE J92 - CONTINUED			
STANFIELD, AZ VORTAC	TUCSON, AZ VORTAC	18000	45000
TUCSON, AZ VORTAC	U.S. MEXICAN BORDER	18000	45000
95.7093 JET ROUTE J93			
U.S. MEXICAN BORDER	JULIAN, CA VORTAC	18000	37000
JULIAN, CA VORTAC	PARADISE, CA VORTAC	18000	45000
PARADISE, CA VORTAC	LOS ANGELES, CA VORTAC	18000	45000
95.7094 JET ROUTE J94			
MUSTANG, NV VORTAC	LOVELOCK, NV VORTAC	18000	45000
LOVELOCK, NV VORTAC	BATTLE MOUNTAIN, NV VORTAC	18000	45000
BATTLE MOUNTAIN, NV VORTAC	LUCIN, UT VORTAC	18000	45000
LUCIN, UT VORTAC	ROCK SPRINGS, WY VOR/DME	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
ROCK SPRINGS, WY VOR/DME	SCOTTSBLUFF, NE VORTAC	18000	45000
SCOTTSBLUFF, NE VORTAC	O'NEILL, NE VORTAC	18000	45000
DUBUQUE, IA VORTAC	NORTHBROOK, IL VOR/DME	18000	45000
NORTHBROOK, IL VOR/DME	PULLMAN, MI VOR/DME	18000	45000
PULLMAN, MI VOR/DME	FLINT, MI VORTAC	18000	45000
95.7095 JET ROUTE J95			
DEER PARK, NY VOR/DME	GAYEL, NY FIX	18000	45000
GAYEL, NY FIX	BINGHAMTON, NY VOR/DME	18000	45000
95.7096 JET ROUTE J96			
LOS ANGELES, CA VORTAC	PARADISE, CA VORTAC	18000	45000
PARADISE, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	GALLUP, NM VORTAC	18000	45000
GALLUP, NM VORTAC	CIMARRON, NM VORTAC	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
CIMARRON, NM VORTAC	GARDEN CITY, KS VORTAC	18000	45000
GARDEN CITY, KS VORTAC	SALINA, KS VORTAC	18000	45000
SALINA, KS VORTAC	KIRKSVILLE, MO VORTAC	18000	45000
KIRKSVILLE, MO VORTAC	PEORIA, IL VORTAC	18000	35000
PEORIA, IL VORTAC	JOLIET, IL VOR/DME	18000	35000
95.7098 JET ROUTE J98			
MITBEE, OK VORTAC	WILL ROGERS, OK VORTAC	18000	45000
WILL ROGERS, OK VORTAC	TULSA, OK VORTAC	18000	45000
TULSA, OK VORTAC	SPRINGFIELD, MO VORTAC	18000	45000
SPRINGFIELD, MO VORTAC	FARMINGTON, MO VORTAC	18000	45000
95.7099 JET ROUTE J99			
COLLIERS, SC VORTAC	VOLUNTEER, TN VORTAC	18000	45000
VOLUNTEER, TN VORTAC	LOUISVILLE, KY VORTAC	18000	45000
95.7100 JET ROUTE J100			
LOS ANGELES, CA VORTAC	DAGGETT, CA VORTAC	18000	45000
DAGGETT, CA VORTAC	LAS VEGAS, NV VORTAC	18000	45000
LAS VEGAS, NV VORTAC	BRYCE CANYON, UT VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7100 JET ROUTE J100 - CONTINUED

BRYCE CANYON, UT VORTAC	MEEKER, CO VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
MEEKER, CO VOR/DME	SIDNEY, NE VOR/DME	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
SIDNEY, NE VOR/DME	WOLBACH, NE VORTAC	18000	45000
WOLBACH, NE VORTAC	DUBUQUE, IA VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DUBUQUE, IA VORTAC	NORTHBROOK, IL VOR/DME	18000	45000

95.7101 JET ROUTE J101

HUMBLE, TX VORTAC	LUFKIN, TX VORTAC	18000	45000
LUFKIN, TX VORTAC	LITTLE ROCK, AR VORTAC	18300	45000
LITTLE ROCK, AR VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	SPINNER, IL VORTAC	18000	45000
SPINNER, IL VORTAC	PONTIAC, IL VOR/DME	18000	31000
PONTIAC, IL VOR/DME	JOLIET, IL VOR/DME	18000	35000
JOLIET, IL VOR/DME	NORTHBROOK, IL VOR/DME	18000	45000
NORTHBROOK, IL VOR/DME	BADGER, WI VOR/DME	18000	45000
BADGER, WI VOR/DME	GREEN BAY, WI VORTAC	18000	45000
GREEN BAY, WI VORTAC	SAULT STE MARIE, MI VOR/DME	18000	45000

95.7102 JET ROUTE J102

PHOENIX, AZ VORTAC	ZUNI, NM VORTAC	18000	45000
ZUNI, NM VORTAC	GALLUP, NM VORTAC	18000	45000
GALLUP, NM VORTAC	ALAMOSA, CO VORTAC	18000	45000
ALAMOSA, CO VORTAC	LAMAR, CO VOR/DME	18000	45000
LAMAR, CO VOR/DME	SALINA, KS VORTAC	18000	45000

95.7104 JET ROUTE J104

LOS ANGELES, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	18000	45000
TWENTYNINE PALMS, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	GILA BEND, AZ VORTAC	18000	45000
GILA BEND, AZ VORTAC	TUCSON, AZ VORTAC	18000	45000
TUCSON, AZ VORTAC	SAN SIMON, AZ VORTAC	18000	45000
SAN SIMON, AZ VORTAC	SOCORRO, NM VORTAC	20000	45000
SOCORRO, NM VORTAC	FORT UNION, NM VORTAC	18000	45000
FORT UNION, NM VORTAC	PUEBLO, CO VORTAC	18000	45000

95.7106 JET ROUTE J106

JAMESTOWN, NY VOR/DME	WILKES-BARRE, PA VORTAC	18000	45000
WILKES-BARRE, PA VORTAC	STILLWATER, NJ VOR/DME	18000	45000
STILLWATER, NJ VOR/DME	LA GUARDIA, NY VOR/DME	18000	24000

95.7107 JET ROUTE J107

LOS ANGELES, CA VORTAC	HECTOR, CA VORTAC	18000	45000
HECTOR, CA VORTAC	BOULDER CITY, NV VORTAC	18000	45000
BOULDER CITY, NV VORTAC	MILFORD, UT VORTAC	18000	45000
MILFORD, UT VORTAC	ROCK SPRINGS, WY VOR/DME	*33000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
ROCK SPRINGS, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	18000	45000
MUDDY MOUNTAIN, WY VOR/DME	DUPREE, SD VOR/DME	18000	45000

95.7108 JET ROUTE J108

WINSLOW, AZ VORTAC	ST JOHNS, AZ VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7108 JET ROUTE J108 - CONTINUED			
ST JOHNS, AZ VORTAC	TRUTH OR CONSEQUENCES, NM VORTAC	18000	45000
TRUTH OR CONSEQUENCES, NM VORTAC	WINK, TX VORTAC	24000	45000
95.7110 JET ROUTE J110			
BOULDER CITY, NV VORTAC	RATTLESNAKE, NM VORTAC	*28000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
RATTLESNAKE, NM VORTAC	ALAMOSA, CO VORTAC	18000	45000
ALAMOSA, CO VORTAC	GARDEN CITY, KS VORTAC	*19000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
GARDEN CITY, KS VORTAC	BUTLER, MO VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BUTLER, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	BRICKYARD, IN VORTAC	18000	45000
BRICKYARD, IN VORTAC	BELLAIRE, OH VOR/DME	18000	45000
BELLAIRE, OH VOR/DME	VINSE, PA FIX	18000	45000
VINSE, PA FIX	KIPPI, PA FIX	26000	45000
KIPPI, PA FIX	COYLE, NJ VORTAC	22000	45000
95.7111 JET ROUTE J111			
NOME, AK VOR/DME	UNALAKLEET, AK VOR/DME	18000	45000
UNALAKLEET, AK VOR/DME	MC GRATH, AK VORTAC	18000	45000
MC GRATH, AK VORTAC	ANCHORAGE, AK VOR/DME	18000	45000
95.7112 JET ROUTE J112			
BUTLER, MO VORTAC	FARMINGTON, MO VORTAC	18000	45000
FARMINGTON, MO VORTAC	POCKET CITY, IN VORTAC	18000	45000
POCKET CITY, IN VORTAC	LOUISVILLE, KY VORTAC	18000	45000
95.7114 JET ROUTE J114			
MILE HIGH, CO VORTAC	SIDNEY, NE VOR/DME	18000	45000
SIDNEY, NE VOR/DME	O'NEILL, NE VORTAC	23000	45000
O'NEILL, NE VORTAC	SIOUX FALLS, SD VORTAC	18000	45000
SIOUX FALLS, SD VORTAC	GOPHER, MN VORTAC	18000	45000
95.7115 JET ROUTE J115			
SHEMYA, AK NDB	MOUNT MOFFETT, AK NDB/DME	18000	45000
MOUNT MOFFETT, AK NDB/DME	DUTCH HARBOR, AK NDB/DME	18000	45000
DUTCH HARBOR, AK NDB/DME	COLD BAY, AK VORTAC	18000	45000
COLD BAY, AK VORTAC	KING SALMON, AK VORTAC	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
KING SALMON, AK VORTAC	KENAI, AK VOR/DME	18000	45000
KENAI, AK VOR/DME	ANCHORAGE, AK VOR/DME	18000	45000
ANCHORAGE, AK VOR/DME	BIG LAKE, AK VORTAC	18000	45000
BIG LAKE, AK VORTAC	FAIRBANKS, AK VORTAC	18000	45000
FAIRBANKS, AK VORTAC	CHANDALAR LAKE, AK NDB	18000	45000
CHANDALAR LAKE, AK NDB	DEADHORSE, AK VOR/DME	18000	45000
95.7116 JET ROUTE J116			
WASATCH, UT VORTAC	FAIRFIELD, UT VORTAC	18000	45000
FAIRFIELD, UT VORTAC	MEEKER, CO VOR/DME	18000	45000
MEEKER, CO VOR/DME	FALCON, CO VORTAC	20000	45000
95.7117 JET ROUTE J117			
MC GRATH, AK VORTAC	GALENA, AK VOR/DME	18000	45000

FROM	TO	MEA	MAA
95.7117 JET ROUTE J117 - CONTINUED			
GALENA, AK VOR/DME	KOTZEBUE, AK VOR/DME	18000	45000
95.7120 JET ROUTE J120			
MOUNT MOFFETT, AK NDB/DME	ST PAUL ISLAND, AK NDB/DME	18000	45000
ST PAUL ISLAND, AK NDB/DME	BETHEL, AK VORTAC	28000	45000
BETHEL, AK VORTAC	MC GRATH, AK VORTAC	18000	45000
MC GRATH, AK VORTAC	FAIRBANKS, AK VORTAC	18000	45000
FAIRBANKS, AK VORTAC	FORT YUKON, AK VORTAC	18000	45000
95.7121 JET ROUTE J121			
CHARLESTON, SC VORTAC	KINSTON, NC VORTAC	18000	45000
KINSTON, NC VORTAC	NORFOLK, VA VORTAC	18000	45000
NORFOLK, VA VORTAC	SNOW HILL, MD VORTAC	18000	45000
SNOW HILL, MD VORTAC	SEA ISLE, NJ VORTAC	18000	45000
SEA ISLE, NJ VORTAC	BRIGS, NJ FIX	18000	45000
95.7122 JET ROUTE J122			
FAIRBANKS, AK VORTAC	GALENA, AK VOR/DME	18000	45000
GALENA, AK VOR/DME	NOME, AK VOR/DME	18000	45000
95.7123 JET ROUTE J123			
CJAYY, AK FIX	KODIAK, AK VOR/DME	18000	45000
KODIAK, AK VOR/DME	KING SALMON, AK VORTAC	18000	45000
KING SALMON, AK VORTAC	BETHEL, AK VORTAC	18000	45000
BETHEL, AK VORTAC	NOME, AK VOR/DME	18000	45000
NOME, AK VOR/DME	KOTZEBUE, AK VOR/DME	18000	45000
KOTZEBUE, AK VOR/DME	BARROW, AK VOR/DME	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
95.7124 JET ROUTE J124			
BIG LAKE, AK VORTAC	GULKANA, AK VOR/DME	18000	45000
GULKANA, AK VOR/DME	NORTHWAY, AK VORTAC	18000	45000
95.7125 JET ROUTE J125			
KODIAK, AK VOR/DME	ANCHORAGE, AK VOR/DME	18000	45000
95.7126 JET ROUTE J126			
LOS ANGELES, CA VORTAC	SAN MARCUS, CA VORTAC	18000	45000
SAN MARCUS, CA VORTAC	SALINAS, CA VORTAC	18000	45000
SALINAS, CA VORTAC	SACRAMENTO, CA VORTAC	18000	45000
SACRAMENTO, CA VORTAC	RED BLUFF, CA VORTAC	18000	45000
RED BLUFF, CA VORTAC	ROGUE VALLEY, OR VORTAC	18000	45000
ROGUE VALLEY, OR VORTAC	EUGENE, OR VORTAC	18000	45000
EUGENE, OR VORTAC	NEWBERG, OR VOR/DME	18000	45000
NEWBERG, OR VOR/DME	OLYMPIA, WA VORTAC	18000	45000
OLYMPIA, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	U.S. CANADIAN BORDER	18000	45000
95.7127 JET ROUTE J127			
KING SALMON, AK VORTAC	RINGO, AK FIX	18000	45000

FROM	TO	MEA	MAA
95.7127 JET ROUTE J127 - CONTINUED			
RINGO, AK FIX	NONDA, AK FIX	18000	45000
95.7128 JET ROUTE J128			
LOS ANGELES, CA VORTAC	RUSTT, CA FIX	18000	45000
RUSTT, CA FIX	PEACH SPRINGS, AZ VOR/DME	25000	45000
PEACH SPRINGS, AZ VOR/DME	TUBA CITY, AZ VORTAC	18000	45000
TUBA CITY, AZ VORTAC	BLUE MESA, CO VOR/DME	*20000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BLUE MESA, CO VOR/DME	FALCON, CO VORTAC	18000	45000
FALCON, CO VORTAC	HAYES CENTER, NE VORTAC	18000	45000
HAYES CENTER, NE VORTAC	WOLBACH, NE VORTAC	18000	45000
WOLBACH, NE VORTAC	DUBUQUE, IA VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DUBUQUE, IA VORTAC	NORTHBROOK, IL VOR/DME	18000	45000
95.7129 JET ROUTE J129			
NOME, AK VOR/DME	KOTZEBUE, AK VOR/DME	18000	45000
95.7130 JET ROUTE J130			
MC COOK, NE VOR/DME	PAWNEE CITY, NE VORTAC	18000	41000
95.7131 JET ROUTE J131			
SAN ANTONIO, TX VORTAC	EDNAS, TX FIX	18000	45000
EDNAS, TX FIX	RANGER, TX VORTAC	18000	45000
RANGER, TX VORTAC	TEXARKANA, AR VORTAC	18000	45000
TEXARKANA, AR VORTAC	LITTLE ROCK, AR VORTAC	18000	45000
LITTLE ROCK, AR VORTAC	POCKET CITY, IN VORTAC	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
95.7132 JET ROUTE J132			
ELMIRA, NY VOR/DME	HUGUENOT, NY VOR/DME	18000	45000
95.7133 JET ROUTE J133			
SITKA, AK NDB	ORCA BAY, AK NDB	18000	45000
ORCA BAY, AK NDB	JOHNSTONE POINT, AK VOR/DME	18000	45000
JOHNSTONE POINT, AK VOR/DME	ANCHORAGE, AK VOR/DME	18000	45000
ANCHORAGE, AK VOR/DME	GALENA, AK VOR/DME	18000	45000
95.7134 JET ROUTE J134			
LOS ANGELES, CA VORTAC	SEAL BEACH, CA VORTAC	18000	45000
SEAL BEACH, CA VORTAC	THERMAL, CA VORTAC	18000	45000
THERMAL, CA VORTAC	PARKER, CA VORTAC	18000	45000
PARKER, CA VORTAC	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	GALLUP, NM VORTAC	18000	45000
GALLUP, NM VORTAC	CIMARRON, NM VORTAC	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
WICHITA, KS VORTAC	BUTLER, MO VORTAC	18000	45000
BUTLER, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	FALMOUTH, KY VOR/DME	18000	45000
95.7135 JET ROUTE J135			
BETHEL, AK VORTAC	UNALAKLEET, AK VOR/DME	18000	45000

FROM	TO	MEA	MAA
95.7136 JET ROUTE J136			
NEWPORT, OR VORTAC	BATTLE GROUND, WA VORTAC	18000	45000
BATTLE GROUND, WA VORTAC	YAKIMA, WA VORTAC	18000	45000
YAKIMA, WA VORTAC	SPOKANE, WA VORTAC	18000	45000
SPOKANE, WA VORTAC	MULLAN PASS, ID VOR/DME	18000	45000
MULLAN PASS, ID VOR/DME	HELENA, MT VORTAC	18000	45000
HELENA, MT VORTAC	BILLINGS, MT VORTAC	18000	45000
BILLINGS, MT VORTAC	MEDICINE BOW, WY VOR/DME	28000	45000
95.7137 JET ROUTE J137			
SPINNER, IL VORTAC	FARMINGTON, MO VORTAC	18000	45000
FARMINGTON, MO VORTAC	WALNUT RIDGE, AR VORTAC	18000	45000
WALNUT RIDGE, AR VORTAC	LITTLE ROCK, AR VORTAC	18000	45000
95.7138 JET ROUTE J138			
FORT STOCKTON, TX VORTAC	CENTER POINT, TX VORTAC	18000	45000
CENTER POINT, TX VORTAC	SAN ANTONIO, TX VORTAC	18000	45000
LAKE CHARLES, LA VORTAC	FIGHTING TIGER, LA VORTAC	18000	45000
FIGHTING TIGER, LA VORTAC	SEMMES, AL VORTAC	18000	45000
95.7139 JET ROUTE J139			
BETTLES, AK VOR/DME	DEADHORSE, AK VOR/DME	18000	45000
95.7140 JET ROUTE J140			
FARGO, ND VOR/DME	DULUTH, MN VORTAC	18000	45000
DULUTH, MN VORTAC	SAULT STE MARIE, MI VOR/DME	18000	45000
95.7141 JET ROUTE J141			
EL PASO, TX VORTAC	U.S. MEXICAN BORDER	18000	45000
95.7143 JET ROUTE J143			
POINT REYES, CA VOR/DME	MENDOCINO, CA VORTAC	18000	45000
MENDOCINO, CA VORTAC	ROSEBURG, OR VOR/DME	18000	45000
ROSEBURG, OR VOR/DME	EUGENE, OR VORTAC	18000	45000
EUGENE, OR VORTAC	KLICKITAT, OR VOR/DME	18000	45000
KLICKITAT, OR VOR/DME	SPOKANE, WA VORTAC	18000	45000
95.7144 JET ROUTE J144			
WOLBACH, NE VORTAC	DES MOINES, IA VORTAC	18000	45000
DES MOINES, IA VORTAC	DUBUQUE, IA VORTAC	18000	45000
95.7146 JET ROUTE J146			
LOS ANGELES, CA VORTAC	DAGGETT, CA VORTAC	18000	45000
DAGGETT, CA VORTAC	LAS VEGAS, NV VORTAC	18000	45000
LAS VEGAS, NV VORTAC	NOOTN, AZ FIX	18000	45000
NOOTN, AZ FIX	DOVE CREEK, CO VORTAC	*25000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
DOVE CREEK, CO VORTAC	BLUE MESA, CO VOR/DME	18000	45000
BLUE MESA, CO VOR/DME	GOODLAND, KS VORTAC	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			

FROM	TO	MEA	MAA

95.7146 JET ROUTE J146 - CONTINUED

GOODLAND, KS VORTAC	LINCOLN, NE VORTAC	18000	45000
LINCOLN, NE VORTAC	IOWA CITY, IA VOR/DME	18000	45000
IOWA CITY, IA VOR/DME	JOLIET, IL VOR/DME	18000	45000
JOLIET, IL VOR/DME	GIPPER, MI VORTAC	18000	45000
GIPPER, MI VORTAC	CHARDON, OH VOR/DME	18000	45000
CHARDON, OH VOR/DME	KEATING, PA VORTAC	18000	45000
KEATING, PA VORTAC	MILTON, PA VORTAC	18000	45000
MILTON, PA VORTAC	ALLENTOWN, PA VORTAC	18000	45000
ALLENTOWN, PA VORTAC	KENNEDY, NY VOR/DME	*18000	45000
*ALLENTOWN R-104 UNUSABLE. USE KENNEDY R-287.			

95.7148 JET ROUTE J148

COALDALE, NV VORTAC	DELTA, UT VORTAC	27000	45000
DELTA, UT VORTAC	MYTON, UT VOR/DME	18000	45000
MYTON, UT VOR/DME	CHEYENNE, WY VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
CHEYENNE, WY VORTAC	O'NEILL, NE VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
O'NEILL, NE VORTAC	MASON CITY, IA VOR/DME	18000	45000

95.7149 JET ROUTE J149

ARMEL, VA VOR/DME	EYTEE, WV FIX	*31000	41000
*18000 - GNSS MEA			
*ARMEL R-281 UNUSABLE BYD 119 NM. NA EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS.			
EYTEE, WV FIX	GEFFS, WV FIX	*31000	41000
*18000 - GNSS MEA			
*GNSS REQUIRED			
GEFFS, WV FIX	HACKS, WV FIX	*29000	41000
*18000 - GNSS MEA			
HACKS, WV FIX	ROSEWOOD, OH VORTAC	*23000	45000
*18000 - GNSS MEA			
ROSEWOOD, OH VORTAC	FORT WAYNE, IN VORTAC	18000	45000

95.7151 JET ROUTE J151

VULCAN, AL VORTAC	FARMINGTON, MO VORTAC	25000	41000
FARMINGTON, MO VORTAC	ST LOUIS, MO VORTAC	18000	45000
ST LOUIS, MO VORTAC	KIRKSVILLE, MO VORTAC	18000	45000
KIRKSVILLE, MO VORTAC	OMAHA, IA VORTAC	18000	45000
OMAHA, IA VORTAC	O'NEILL, NE VORTAC	18000	45000
O'NEILL, NE VORTAC	RAPID CITY, SD VORTAC	18000	45000
RAPID CITY, SD VORTAC	BILLINGS, MT VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BILLINGS, MT VORTAC	WHITEHALL, MT VOR/DME	18000	45000

95.7152 JET ROUTE J152

ROSEWOOD, OH VORTAC	JOHNSTOWN, PA VOR/DME	18000	45000
JOHNSTOWN, PA VOR/DME	HARRISBURG, PA VORTAC	18000	40000

95.7153 JET ROUTE J153

ROME, OR VOR/DME	BAKER CITY, OR VOR/DME	18000	45000
BAKER CITY, OR VOR/DME	SPOKANE, WA VORTAC	18000	45000

95.7154 JET ROUTE J154

BATTLE MOUNTAIN, NV VORTAC	BONNEVILLE, UT VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7154 JET ROUTE J154 - CONTINUED			
BONNEVILLE, UT VORTAC	WASATCH, UT VORTAC	18000	45000
WASATCH, UT VORTAC	ROCK SPRINGS, WY VOR/DME	18000	45000
ROCK SPRINGS, WY VOR/DME	MILE HIGH, CO VORTAC	*21000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
MILE HIGH, CO VORTAC	GARDEN CITY, KS VORTAC	21000	45000
95.7155 JET ROUTE J155			
CHANDALAR LAKE, AK NDB	NENANA, AK VORTAC	18000	45000
95.7156 JET ROUTE J156			
WILSON CREEK, NV VORTAC	MEEKER, CO VOR/DME	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
95.7157 JET ROUTE J157			
MYTON, UT VOR/DME	LARAMIE, WY VOR/DME	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
LARAMIE, WY VOR/DME	SCOTTSBLUFF, NE VORTAC	18000	45000
SCOTTSBLUFF, NE VORTAC	RAPID CITY, SD VORTAC	18000	45000
95.7158 JET ROUTE J158			
MINA, NV VORTAC	LUCIN, UT VORTAC	*23000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
LUCIN, UT VORTAC	MALAD CITY, ID VOR/DME	18000	45000
MALAD CITY, ID VOR/DME	BIG PINEY, WY VOR/DME	18000	45000
BIG PINEY, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	18000	45000
MUDDY MOUNTAIN, WY VOR/DME	RAPID CITY, SD VORTAC	18000	45000
RAPID CITY, SD VORTAC	ABERDEEN, SD VOR/DME	18000	45000
95.7159 JET ROUTE J159			
BATTLE GROUND, WA VORTAC	DESCHUTES, OR VORTAC	18000	45000
95.7160 JET ROUTE J160			
FAIRBANKS, AK VORTAC	FORT YUKON, AK VORTAC	18000	45000
FORT YUKON, AK VORTAC	ADREW, AK FIX	18000	45000
95.7161 JET ROUTE J161			
ZUNI, NM VORTAC	RATTLESNAKE, NM VORTAC	18000	45000
95.7162 JET ROUTE J162			
DRYER, OH VOR/DME	BELLAIRE, OH VOR/DME	18000	45000
BELLAIRE, OH VOR/DME	MORGANTOWN, WV VOR/DME	18000	45000
MORGANTOWN, WV VOR/DME	MARTINSBURG, WV VORTAC	18000	29000
95.7163 JET ROUTE J163			
BAKER CITY, OR VOR/DME	BOISE, ID VORTAC	18000	45000
BOISE, ID VORTAC	POCATELLO, ID VOR/DME	18000	45000
POCATELLO, ID VOR/DME	ROCK SPRINGS, WY VOR/DME	21000	45000
ROCK SPRINGS, WY VOR/DME	HAYDEN, CO VOR/DME	18000	45000
95.7166 JET ROUTE J166			
SAN SIMON, AZ VORTAC	TRUTH OR CONSEQUENCES, NM VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7166 JET ROUTE J166 - CONTINUED

TRUTH OR CONSEQUENCES, NM VORTAC	CHISUM, NM VORTAC	24000	45000
CHISUM, NM VORTAC	WICHITA FALLS, TX VORTAC	*18000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

95.7167 JET ROUTE J167

JOHNSTONE POINT, AK VOR/DME	GULKANA, AK VOR/DME	18000	45000
GULKANA, AK VOR/DME	BIG DELTA, AK VORTAC	18000	45000
BIG DELTA, AK VORTAC	FORT YUKON, AK VORTAC	18000	45000
FORT YUKON, AK VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7168 JET ROUTE J168

WICHITA FALLS, TX VORTAC	LAMAR, CO VOR/DME	*22000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

95.7169 JET ROUTE J169

LOS ANGELES, CA VORTAC	SEAL BEACH, CA VORTAC	18000	45000
SEAL BEACH, CA VORTAC	THERMAL, CA VORTAC	18000	45000
THERMAL, CA VORTAC	BLYTHE, CA VORTAC	18000	45000
BLYTHE, CA VORTAC	STANFIELD, AZ VORTAC	18000	45000

95.7170 JET ROUTE J170

CRAZY WOMAN, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	18000	45000
MUDDY MOUNTAIN, WY VOR/DME	MEDICINE BOW, WY VOR/DME	18000	45000

95.7171 JET ROUTE J171

TOBE, CO VOR/DME	HUGO, CO VOR/DME	18000	45000

95.7173 JET ROUTE J173

WASATCH, UT VORTAC	MEEKER, CO VOR/DME	18000	45000

95.7174 JET ROUTE J174

CHARLESTON, SC VORTAC	WILMINGTON, NC VORTAC	18000	45000
WILMINGTON, NC VORTAC	DIXON, NC NDB	18000	45000
DIXON, NC NDB	NORFOLK, VA VORTAC	18000	45000
NORFOLK, VA VORTAC	SNOW HILL, MD VORTAC	18000	45000
SNOW HILL, MD VORTAC	YAZUU, NJ FIX	18000	45000
YAZUU, NJ FIX	HAMPTON, NY VORTAC	UNUSABLE	
HAMPTON, NY VORTAC	MARCONI, MA VOR/DME	UNUSABLE	
MARCONI, MA VOR/DME	HERIN, MA FIX	UNUSABLE	

95.7175 JET ROUTE J175

CHEYENNE, WY VORTAC	LARAMIE, WY VOR/DME	18000	45000
LARAMIE, WY VOR/DME	DUBOIS, ID VORTAC	*29000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

95.7177 JET ROUTE J177

PALACIOS, TX VORTAC	U.S. MEXICAN BORDER	31000	45000

95.7178 JET ROUTE J178

FORT WAYNE, IN VORTAC	APPLETON, OH VORTAC	18000	45000

FROM	TO	MEA	MAA

95.7179 JET ROUTE J179

MIDDLETON ISLAND, AK VOR/DME	KENAI, AK VOR/DME	18000	45000
KENAI, AK VOR/DME	SPARREVOHN, AK VOR/DME	18000	45000
SPARREVOHN, AK VOR/DME	ANIAK, AK NDB	18000	45000
ANIAK, AK NDB	ST MARYS, AK NDB	18000	45000
ST MARYS, AK NDB	EMMONAK, AK VOR/DME	18000	45000

95.7180 JET ROUTE J180

HUMBLE, TX VORTAC	DAISETTA, TX VORTAC	18000	45000
DAISETTA, TX VORTAC	CIDOR, LA FIX	18000	45000
CIDOR, LA FIX	FOSIN, LA FIX	19000	45000
FOSIN, LA FIX	SAWMILL, LA VOR/DME	18000	45000
SAWMILL, LA VOR/DME	LITTLE ROCK, AR VORTAC	18000	45000
LITTLE ROCK, AR VORTAC	FORISTELL, MO VORTAC	18000	45000

95.7181 JET ROUTE J181

RANGER, TX VORTAC	OKMULGEE, OK VOR/DME	18000	45000
HALLSVILLE, MO VORTAC	BAYLI, IL FIX	18000	23000
BAYLI, IL FIX	BRADFORD, IL VORTAC	18000	45000

95.7182 JET ROUTE J182

GOODLAND, KS VORTAC	WICHITA, KS VORTAC	18000	45000
WICHITA, KS VORTAC	RAZORBACK, AR VORTAC	18000	45000

95.7183 JET ROUTE J183

EL PASO, TX VORTAC	PECOS, TX VOR/DME	18000	45000
PECOS, TX VOR/DME	LLANO, TX VORTAC	20000	45000
LLANO, TX VORTAC	COLLEGE STATION, TX VORTAC	18000	45000

95.7184 JET ROUTE J184

BUCKEYE, AZ VORTAC	DEMING, NM VORTAC	23000	45000
DEMING, NM VORTAC	NEWMAN, TX VORTAC	18000	45000

95.7187 JET ROUTE J187

MEMPHIS, TN VORTAC	FORISTELL, MO VORTAC	18000	45000

95.7188 JET ROUTE J188

BETHEL, AK VORTAC	SPARREVOHN, AK VOR/DME	18000	45000

95.7189 JET ROUTE J189

AVENAL, CA VOR/DME	LINDEN, CA VOR/DME	18000	45000
LINDEN, CA VOR/DME	KLAMATH FALLS, OR VORTAC	*18000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
KLAMATH FALLS, OR VORTAC	BATTLE GROUND, WA VORTAC	*19000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
BATTLE GROUND, WA VORTAC	SEATTLE, WA VORTAC	18000	45000

95.7190 JET ROUTE J190

CARLETON, MI VOR/DME	SLATE RUN, PA VORTAC	*18000	45000
*FOR THAT AIRSPACE OVER U.S. TERRITORY			

FROM	TO	MEA	MAA
95.7190 JET ROUTE J190 - CONTINUED			
SLATE RUN, PA VORTAC	BINGHAMTON, NY VOR/DME	*18000	45000
*USE SLATE RUN R-072 TO BINGHAMTON			
BINGHAMTON, NY VOR/DME	ROCKDALE, NY VOR/DME	18000	45000
ROCKDALE, NY VOR/DME	ALBANY, NY VORTAC	18000	45000
95.7191 JET ROUTE J191			
HOPEWELL, VA VORTAC	WILMINGTON, NC VORTAC	18000	45000
95.7192 JET ROUTE J192			
GOODLAND, KS VORTAC	PAWNEE CITY, NE VORTAC	18000	45000
PAWNEE CITY, NE VORTAC	IOWA CITY, IA VOR/DME	18000	45000
95.7195 JET ROUTE J195			
ANNETTE ISLAND, AK VOR/DME	BIORKA ISLAND, AK VORTAC	18000	45000
95.7196 JET ROUTE J196			
BRYCE CANYON, UT VORTAC	MEEKER, CO VOR/DME	33000	45000
95.7197 JET ROUTE J197			
DOVE CREEK, CO VORTAC	HUGO, CO VOR/DME	33000	45000
HUGO, CO VOR/DME	GOODLAND, KS VORTAC	18000	45000
GOODLAND, KS VORTAC	WOLBACH, NE VORTAC	18000	45000
WOLBACH, NE VORTAC	SIOUX FALLS, SD VORTAC	18000	45000
95.7198 JET ROUTE J198			
MINA, NV VORTAC	WILSON CREEK, NV VORTAC	18000	45000
WILSON CREEK, NV VORTAC	MEEKER, CO VOR/DME	33000	45000
95.7199 JET ROUTE J199			
WILSON CREEK, NV VORTAC	DELTA, UT VORTAC	18000	45000
DELTA, UT VORTAC	MEEKER, CO VOR/DME	33000	45000
95.7202 JET ROUTE J202			
FAIRFIELD, UT VORTAC	ROCK SPRINGS, WY VOR/DME	20000	45000
ROCK SPRINGS, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	18000	45000
95.7203 JET ROUTE J203			
BILLINGS, MT VORTAC	GREAT FALLS, MT VORTAC	18000	45000
95.7204 JET ROUTE J204			
DUPREE, SD VOR/DME	MILES CITY, MT VOR/DME	18000	45000
MILES CITY, MT VOR/DME	HILGR, MT FIX	19000	45000
HILGR, MT FIX	GREAT FALLS, MT VORTAC	18000	45000
95.7206 JET ROUTE J206			
ALAMOSA, CO VORTAC	BLUE MESA, CO VOR/DME	18000	45000
BLUE MESA, CO VOR/DME	RED TABLE, CO VOR/DME	18000	45000

FROM	TO	MEA	MAA
95.7206 JET ROUTE J206 - CONTINUED			
RED TABLE, CO VOR/DME	ROCK SPRINGS, WY VOR/DME	18000	45000
95.7209 JET ROUTE J209			
RALEIGH/DURHAM, NC VORTAC	TAR RIVER, NC VORTAC	18000	45000
TAR RIVER, NC VORTAC	NORFOLK, VA VORTAC	18000	45000
NORFOLK, VA VORTAC	SALISBURY, MD VORTAC	18000	45000
SALISBURY, MD VORTAC	COYLE, NJ VORTAC	18000	45000
COYLE, NJ VORTAC	WHITE, NJ FIX	18000	45000
95.7211 JET ROUTE J211			
YOUNGSTOWN, OH VORTAC	JOHNSTOWN, PA VOR/DME	18000	45000
JOHNSTOWN, PA VOR/DME	WESTMINSTER, MD VORTAC	18000	45000
95.7212 JET ROUTE J212			
STANFIELD, AZ VORTAC	BUCKEYE, AZ VORTAC	18000	45000
BUCKEYE, AZ VORTAC	PALM SPRINGS, CA VORTAC	26000	45000
95.7213 JET ROUTE J213			
BECKLEY, WV VOR/DME	ARMEL, VA VOR/DME	*18000	45000
*BECKLEY R-072 UNUSABLE			
95.7217 JET ROUTE J217			
HANCOCK, NY VOR/DME	KEATING, PA VORTAC	18000	45000
95.7220 JET ROUTE J220			
ARMEL, VA VOR/DME	STONYFORK, PA VOR/DME	*18000	23000
*ARMEL R-009 UNUSABLE BEYOND 74 NM			
95.7223 JET ROUTE J223			
LA GUARDIA, NY VOR/DME	CORDS, PA FIX	18000	25000
95.7227 JET ROUTE J227			
ARMEL, VA VOR/DME	ELMIRA, NY VOR/DME	*18000	23000
*ARMEL R-009 UNUSABLE BYD 74 NM			
*ELMIRA R-205 UNUSABLE BYD 73 NM			
95.7231 JET ROUTE J231			
TWENTYNINE PALMS, CA VORTAC	HIPPI, AZ FIX	23000	40000
HIPPI, AZ FIX	DRAKE, AZ VORTAC	18000	45000
DRAKE, AZ VORTAC	ST JOHNS, AZ VORTAC	18000	45000
ST JOHNS, AZ VORTAC	ANTON CHICO, NM VORTAC	18000	45000
95.7232 JET ROUTE J232			
MOLINE, IL VOR/DME	KIRKSVILLE, MO VORTAC	18000	35000
95.7233 JET ROUTE J233			
ST LOUIS, MO VORTAC	KIRKSVILLE, MO VORTAC	18000	45000

FROM	TO	MEA	MAA
95.7233 JET ROUTE J233 - CONTINUED			
KIRKSVILLE, MO VORTAC	WATERLOO, IA VOR/DME	18000	27000
95.7236 JET ROUTE J236			
THERMAL, CA VORTAC	NEEDLES, CA VORTAC	18000	45000
NEEDLES, CA VORTAC	TUBA CITY, AZ VORTAC	18000	45000
95.7240 JET ROUTE J240			
MYTON, UT VOR/DME	BLUE MESA, CO VOR/DME	19000	45000
95.7244 JET ROUTE J244			
FORT UNION, NM VORTAC	ZUNI, NM VORTAC	21000	45000
ZUNI, NM VORTAC	PHOENIX, AZ VORTAC	19000	45000
95.7478 JET ROUTE J478			
GLASGOW, MT VOR/DME	U.S. CANADIAN BORDER	18000	45000
95.7483 JET ROUTE J483			
MINOT, ND VOR/DME	U.S. CANADIAN BORDER	18000	45000
95.7501 JET ROUTE J501			
SAN MARCUS, CA VORTAC	BIG SUR, CA VORTAC	18000	45000
BIG SUR, CA VORTAC	POINT REYES, CA VOR/DME	18000	45000
POINT REYES, CA VOR/DME	ROGUE VALLEY, OR VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
ROGUE VALLEY, OR VORTAC	HOQUIAM, WA VORTAC	*22000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
HOQUIAM, WA VORTAC	TATOOSH, WA VORTAC	18000	45000
TATOOSH, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	BIORKA ISLAND, AK VORTAC	18000	45000
BIORKA ISLAND, AK VORTAC	YAKUTAT, AK VOR/DME	18000	45000
YAKUTAT, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	18000	45000
JOHNSTONE POINT, AK VOR/DME	ANCHORAGE, AK VOR/DME	18000	45000
ANCHORAGE, AK VOR/DME	SPARREVOHN, AK VOR/DME	18000	45000
SPARREVOHN, AK VOR/DME	BETHEL, AK VORTAC	18000	45000
95.7502 JET ROUTE J502			
SEATTLE, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	ANNETTE ISLAND, AK VOR/DME	22000	45000
ANNETTE ISLAND, AK VOR/DME	LEVEL ISLAND, AK VOR/DME	18000	45000
LEVEL ISLAND, AK VOR/DME	SISTERS ISLAND, AK VORTAC	18000	45000
NORTHWAY, AK VORTAC	FAIRBANKS, AK VORTAC	18000	45000
FAIRBANKS, AK VORTAC	KOTZEBUE, AK VOR/DME	*27000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			
95.7503 JET ROUTE J503			
SEATTLE, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
95.7505 JET ROUTE J505			
SEATTLE, WA VORTAC	U.S. CANADIAN BORDER	*24000	45000
*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE			

FROM	TO	MEA	MAA

95.7507 JET ROUTE J507

BARROW, AK VOR/DME	DEADHORSE, AK VOR/DME	18000	45000
DEADHORSE, AK VOR/DME	FORT YUKON, AK VORTAC	18000	45000
FORT YUKON, AK VORTAC	NORTHWAY, AK VORTAC	18000	45000
NORTHWAY, AK VORTAC	U.S. CANADIAN BORDER	21000	45000
U.S. CANADIAN BORDER	YAKUTAT, AK VOR/DME	22000	45000

95.7511 JET ROUTE J511

DILLINGHAM, AK VOR/DME	ANCHORAGE, AK VOR/DME	21000	45000
ANCHORAGE, AK VOR/DME	GULKANA, AK VOR/DME	18000	45000

95.7512 JET ROUTE J512

EMMONAK, AK VOR/DME	UNALAKLEET, AK VOR/DME	18000	45000
UNALAKLEET, AK VOR/DME	GALENA, AK VOR/DME	18000	45000

95.7515 JET ROUTE J515

U.S. CANADIAN BORDER	NORTHWAY, AK VORTAC	18000	45000
NORTHWAY, AK VORTAC	FAIRBANKS, AK VORTAC	18000	45000
FAIRBANKS, AK VORTAC	BETTLES, AK VOR/DME	18000	45000
BETTLES, AK VOR/DME	BARROW, AK VOR/DME	*20000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

95.7516 JET ROUTE J516

GREAT FALLS, MT VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7517 JET ROUTE J517

BOISE, ID VORTAC	SPOKANE, WA VORTAC	18000	45000
SPOKANE, WA VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7518 JET ROUTE J518

DRYER, OH VOR/DME	INDIAN HEAD, PA VORTAC	*18000	45000

*INDIAN HEAD R-310 UNUSABLE

*J518 UNUSABLE FROM KOZAR TO INDIAN HEAD

INDIAN HEAD, PA VORTAC	BALTIMORE, MD VORTAC	18000	35000

95.7523 JET ROUTE J523

BRYCE CANYON, UT VORTAC	ELY, NV VOR/DME	18000	45000
ELY, NV VOR/DME	ROME, OR VOR/DME	29000	45000
ROME, OR VOR/DME	KIMBERLY, OR VOR/DME	18000	45000
KIMBERLY, OR VOR/DME	KLICKITAT, OR VOR/DME	18000	45000
KLICKITAT, OR VOR/DME	SEATTLE, WA VORTAC	18000	45000
SEATTLE, WA VORTAC	TATOOSH, WA VORTAC	18000	45000
TATOOSH, WA VORTAC	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	ANNETTE ISLAND, AK VOR/DME	18000	45000

95.7526 JET ROUTE J526

BECKLEY, WV VOR/DME	LOUISVILLE, KY VORTAC	18000	45000

95.7530 JET ROUTE J530

GREAT FALLS, MT VORTAC	U.S. CANADIAN BORDER	18000	45000

FROM	TO	MEA	MAA

95.7533 JET ROUTE J533

DULUTH, MN VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7534 JET ROUTE J534

IWACK, WA FIX	WHATCOM, WA VORTAC	18000	45000
WHATCOM, WA VORTAC	U.S. CANADIAN BORDER	18000	45000

95.7536 JET ROUTE J536

SISTERS ISLAND, AK VORTAC	U.S. CANADIAN BORDER	*21000	45000

*MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE

95.7537 JET ROUTE J537

ROME, OR VOR/DME	MULLAN PASS, ID VOR/DME	22000	45000
MULLAN PASS, ID VOR/DME	U.S. CANADIAN BORDER	*GNSS - 18000	45000

*GNSS REQUIRED
*MULLAN PASS R-002 UNUSABLE

95.7538 JET ROUTE J538

U.S. CANADIAN BORDER	DULUTH, MN VORTAC	18000	45000
DULUTH, MN VORTAC	DELLS, WI VORTAC	18000	45000
DELLS, WI VORTAC	BADGER, WI VOR/DME	18000	45000

95.7539 JET ROUTE J539

GLASGOW, MT VOR/DME	U.S. CANADIAN BORDER	18000	45000

95.7540 JET ROUTE J540

MULLAN PASS, ID VOR/DME	U.S. CANADIAN BORDER	18000	45000

95.7541 JET ROUTE J541

YAKUTAT, AK VOR/DME	SISTERS ISLAND, AK VORTAC	18000	45000

95.7547 JET ROUTE J547

NORTHBROOK, IL VOR/DME	PULLMAN, MI VOR/DME	18000	45000
PULLMAN, MI VOR/DME	FLINT, MI VORTAC	18000	45000

95.7548 JET ROUTE J548

PULLMAN, MI VOR/DME	TRAVERSE CITY, MI VOR/DME	18000	45000

95.7549 JET ROUTE J549

WILLISTON, ND VOR/DME	U.S. CANADIAN BORDER	18000	45000

95.7554 JET ROUTE J554

GIPPER, MI VORTAC	CARLETON, MI VOR/DME	18000	45000
CARLETON, MI VOR/DME	U.S. CANADIAN BORDER	18000	45000
U.S. CANADIAN BORDER	JAMESTOWN, NY VOR/DME	18000	45000

95.7562 JET ROUTE J562

DICKINSON, ND VORTAC	U.S. CANADIAN BORDER	18000	45000

FROM	TO	MEA	MAA
95.7569 JET ROUTE J569			
GREAT FALLS, MT VORTAC	U.S. CANADIAN BORDER	18000	45000
95.7584 JET ROUTE J584			
NORTHBROOK, IL VOR/DME	CARLETON, MI VOR/DME	18000	45000
CARLETON, MI VOR/DME	SLATE RUN, PA VORTAC	*18000	45000
*FOR THAT AIRSPACE OVER U.S. TERRITORY			
SLATE RUN, PA VORTAC	WILLIAMSPORT, PA VOR/DME	18000	33000
WILLIAMSPORT, PA VOR/DME	BROADWAY, NJ VOR/DME	18000	31000
95.7589 JET ROUTE J589			
ROSEBURG, OR VOR/DME	CORVALLIS, OR VOR/DME	18000	45000
CORVALLIS, OR VOR/DME	U.S. CANADIAN BORDER	28000	45000
95.7590 JET ROUTE J590			
LAKE CHARLES, LA VORTAC	FIGHTING TIGER, LA VORTAC	18000	45000
FIGHTING TIGER, LA VORTAC	GREENE COUNTY, MS VORTAC	18000	45000
GREENE COUNTY, MS VORTAC	MONTGOMERY, AL VORTAC	18000	45000
95.7599 JET ROUTE J599			
MULLAN PASS, ID VOR/DME	U.S. CANADIAN BORDER	18000	45000
95.7603 JET ROUTE J603			
ELFEE, AK NDB	DILLINGHAM, AK VOR/DME	18000	45000
95.7606 JET ROUTE J606			
ST PAUL ISLAND, AK NDB/DME	CHINOOK, AK NDB	18000	45000
95.7617 JET ROUTE J617			
HOMER, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	18000	45000
95.7618 JET ROUTE J618			
MOUNT MOFFETT, AK NDB/DME	ELFEE, AK NDB	18000	45000
95.7619 JET ROUTE J619			
CAPE NEWENHAM, AK NDB/DME	ST PAUL ISLAND, AK NDB/DME	18000	45000
95.7623 JET ROUTE J623			
PORT HEIDEN, AK NDB/DME	COLD BAY, AK VORTAC	18000	45000
COLD BAY, AK VORTAC	ST PAUL ISLAND, AK NDB/DME	18000	45000
95.7713 JET ROUTE J713			
BILLINGS, MT VORTAC	BOYSEN RESERVOIR, WY VOR/DME	18000	45000
BOYSEN RESERVOIR, WY VOR/DME	BIG PINEY, WY VOR/DME	18000	45000
BIG PINEY, WY VOR/DME	WASATCH, UT VORTAC	26000	45000

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM

§95.8003 VOR FEDERAL AIRWAYS CHANGEOVER POINTS

V1

CRAIG, FL VORTAC	CHARLESTON, SC VORTAC	96	CRAIG
CHARLESTON, SC VORTAC	GRAND STRAND, SC VORTAC	46	CHARLESTON

V2

SEATTLE, WA VORTAC	ELLENSBURG, WA VOR/DME	47	SEATTLE
ELLENSBURG, WA VOR/DME	MOSES LAKE, WA VOR/DME	28	ELLENSBURG
SPOKANE, WA VORTAC	MULLAN PASS, ID VOR/DME	32	SPOKANE
MISSOULA, MT VOR/DME	HELENA, MT VORTAC	35	MISSOULA
MILES CITY, MT VOR/DME	DICKINSON, ND VORTAC	60	MILES CITY
GOPHER, MN VORTAC	NODINE, MN VORTAC	50	GOPHER

V3

FORT LAUDERDALE, FL VOR/DME	PALM BEACH, FL VORTAC	24	FORT LAUDERDALE
FLORENCE, SC VORTAC	SANDHILLS, NC VORTAC	20	FLORENCE
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	10	SANDHILLS
MODENA, PA VORTAC	SOLBERG, NJ VOR/DME	10	MODENA

V4

YAKIMA, WA VORTAC	PENDLETON, OR VORTAC	26	YAKIMA
BAKER CITY, OR VOR/DME	BOISE, ID VORTAC	25	BAKER CITY
CHARLESTON, WV VOR/DME	ELKINS, WV VORTAC	27	CHARLESTON

V5

DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	47	DUBLIN
LOUISVILLE, KY VORTAC	CINCINNATI, KY VORTAC	38	LOUISVILLE
CINCINNATI, KY VORTAC	APPLETON, OH VORTAC	64	CINCINNATI

V6

OAKLAND, CA VOR/DME	SACRAMENTO, CA VORTAC	34	OAKLAND
SACRAMENTO, CA VORTAC	SQUAW VALLEY, CA VOR/DME	40	SACRAMENTO
OGDEN, UT VORTAC	FORT BRIDGER, WY VOR/DME	25	OGDEN
GRAND ISLAND, NE VOR DME	OMAHA, IA VORTAC	52	GRAND ISLAND

V7

SEMINOLE, FL VORTAC	WIREGRASS, AL VORTAC	53	SEMINOLE

V8

SEAL BEACH, CA VORTAC	PARADISE, CA VORTAC	13	SEAL BEACH
PARADISE, CA VORTAC	HECTOR, CA VORTAC	44	PARADISE
HECTOR, CA VORTAC	GOFFS, CA VORTAC	38	HECTOR
HANKSVILLE, UT VORTAC	GRAND JUNCTION, CO VOR/DME	40	HANKSVILLE
GRAND JUNCTION, CO VOR DME	RIFLE, CO VOR/DME	37	GRAND JUNCTION
RIFLE, CO VOR/DME	KREMMLING, CO VOR/DME	20	RIFLE
GRAND ISLAND, NE VOR DME	OMAHA, IA VORTAC	52	GRAND ISLAND
MARTINSBURG, WV VORTAC	WASHINGTON, DC VOR/DME	29	MARTINSBURG

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V12		
PALMDALE, CA VORTAC	HECTOR, CA VORTAC	60	PALMDALE
HECTOR, CA VORTAC	NEEDLES, CA VORTAC	41	HECTOR
DRAKE, AZ VORTAC	WINSLOW, AZ VORTAC	39	DRAKE
ALBUQUERQUE, NM VORTAC	OTTO, NM VOR	23	ALBUQUERQUE
ANTON CHICO, NM VORTAC	TUCUMCARI, NM VORTAC	30	ANTON CHICO
PANHANDLE, TX VORTAC	MITBEE, OK VORTAC	46	PANHANDLE
BIBLE GROVE, IL VORTAC	SHELBYVILLE, IN VOR/DME	70	BIBLE GROVE
JOHNSTOWN, PA VOR/DME	HARRISBURG, PA VORTAC	62	JOHNSTOWN
	V13		
CORPUS CHRISTI, TX VORTAC	BROWNSVILLE, TX VORTAC	47	CORPUS CHRISTI
LUFKIN, TX VORTAC	BELCHER, LA VORTAC	64	LUFKIN
NAPOLEON, MO VORTAC	LAMONI, IA VOR/DME	40	NAPOLEON
	V14		
MUNCIE, IN VOR/DME	FLAG CITY, OH VORTAC	44	MUNCIE
	V15		
CEDAR CREEK, TX VORTAC	BONHAM, TX VORTAC	20	CEDAR CREEK
	V16		
LOS ANGELES, CA VORTAC	PARADISE, CA VORTAC	25	LOS ANGELES
PARADISE, CA VORTAC	PALM SPRINGS, CA VORTAC	34	PARADISE
BLYTHE, CA VORTAC	BUCKEYE, AZ VORTAC	44	BLYTHE
SALT FLAT, TX VORTAC	WINK, TX VORTAC	42	SALT FLAT
TEXARKANA, AR VORTAC	PINE BLUFF, AR VOR/DME	62	TEXARKANA
VOLUNTEER, TN VORTAC	HOLSTON MOUNTAIN, TN VORTAC	38	VOLUNTEER
	V20		
MONTGOMERY, AL VORTAC	TUSKEGEE, AL VOR/DME	30	MONTGOMERY
ATHENS, GA VOR/DME	ELECTRIC CITY, SC VORTAC	20	ATHENS
	V21		
SEAL BEACH, CA VORTAC	PARADISE, CA VORTAC	13	SEAL BEACH
PARADISE, CA VORTAC	HECTOR, CA VORTAC	44	PARADISE
HECTOR, CA VORTAC	BOULDER CITY, NV VORTAC	23	HECTOR
DUBOIS, ID VORTAC	DILLON, MT VOR/DME	46	DUBOIS
CUT BANK, MT VOR/DME	LETHBRIDGE, CA VOR/DME	39	CUT BANK
	V23		
LOS ANGELES, CA VORTAC	GORMAN, CA VORTAC	36	LOS ANGELES
GORMAN, CA VORTAC	SHAFTER, CA VORTAC	10	GORMAN
RED BLUFF, CA VORTAC	FORT JONES, CA VOR/DME	53	RED BLUFF
ROGUE VALLEY, OR VORTAC	EUGENE, OR VORTAC	40	ROGUE VALLEY
EUGENE, OR VORTAC	BATTLE GROUND, WA VORTAC	57	EUGENE
WHATCOM, WA VORTAC	VANCOUVER, CA VOR/DME	10	WHATCOM

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V25		
MISSION BAY, CA VORTAC	LOS ANGELES, CA VORTAC	40	MISSION BAY
KLAMATH FALLS, OR VORTAC	DESCHUTES, OR VORTAC	23	KLAMATH FALLS
	V26		
MONTROSE, CO VOR/DME	GRAND JUNCTION, CO VOR/DME	23	MONTROSE
MEEKER, CO VOR/DME	CHEROKEE, WY VOR/DME	35	MEEKER
MUDDY MOUNTAIN, WY VOR DME	RAPID CITY, SD VORTAC	92	MUDDY MOUNTAIN
	V27		
SANTA CATALINA, CA VORTAC	OCEANSIDE, CA VORTAC	31	SANTA CATALINA
GAVIOTA, CA VORTAC	MORRO BAY, CA VORTAC	20	GAVIOTA
MENDOCINO, CA VORTAC	FORTUNA, CA VORTAC	67	MENDOCINO
NEWPORT, OR VORTAC	ASTORIA, OR VOR/DME	66	NEWPORT
	V30		
SELINSGROVE, PA VOR/DME	EAST TEXAS, PA VOR/DME	20	SELINSGROVE
	V32		
BATTLE MOUNTAIN, NV VORTAC	BULLION, NV VOR/DME	24	BATTLE MOUNTAIN
BULLION, NV VOR/DME	BONNEVILLE, UT VORTAC	40	BULLION
WASATCH, UT VORTAC	FORT BRIDGER, WY VOR/DME	17	WASATCH
	V33		
HARRISBURG, PA VORTAC	PHILIPSBURG, PA VORTAC	35	HARRISBURG
	V34		
ROCHESTER, NY VOR/DME	HANCOCK, NY VOR/DME	60	ROCHESTER
	V35		
ATHENS, GA VOR/DME	ELECTRIC CITY, SC VORTAC	20	ATHENS
PHILIPSBURG, PA VORTAC	STONYFORK, PA VOR/DME	25	PHILIPSBURG
	V37		
SAVANNAH, GA VORTAC	ALLENDALE, SC VOR	36	SAVANNAH
COLUMBIA, SC VORTAC	CHARLOTTE, NC VOR/DME	26	COLUMBIA
CHARLOTTE, NC VOR/DME	PULASKI, VA VORTAC	74	CHARLOTTE
	V38		
ELKINS, WV VORTAC	GORDONSVILLE, VA VORTAC	46	ELKINS

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V39		
MARTINSBURG, WV VORTAC	LANCASTER, PA VOR/DME	34	MARTINSBURG
SOARS, CT FIX	ALBANY, NY VORTAC	8	SOARS
	V44		
MORGANTOWN, WV VOR/DME	MARTINSBURG, WV VORTAC	53	MORGANTOWN
	V51		
CRAIG, FL VORTAC	ALMA, GA VORTAC	48	CRAIG
DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	47	DUBLIN
	V59		
BECKLEY, WV VOR/DME	PARKERSBURG, WV VOR/DME	46	BECKLEY
	V62		
SANTA FE, NM VORTAC	ANTON CHICO, NM VORTAC	30	SANTA FE
ANTON CHICO, NM VORTAC	TEXICO, TX VORTAC	61	ANTON CHICO
	V64		
SEAL BEACH, CA VORTAC	THERMAL, CA VORTAC	59	SEAL BEACH
THERMAL, CA VORTAC	BLYTHE, CA VORTAC	29	THERMAL
	V66		
MISSION BAY, CA VORTAC	IMPERIAL, CA VORTAC	39	MISSION BAY
GILA BEND, AZ VORTAC	TUCSON, AZ VORTAC	48	GILA BEND
DOUGLAS, AZ VORTAC	COLUMBUS, NM VOR/DME	*44	DOUGLAS
*UTILIZE DEMING VORTAC 233 M RAD FROM COP TO ANIMA FIX			
MIDLAND, TX VORTAC	ABILENE, TX VORTAC	51	MIDLAND
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	10	SANDHILLS
	V67		
CEDAR RAPIDS, IA VOR DME	WATERLOO, IA VOR/DME	37	CEDAR RAPIDS
	V68		
CORONA, NM VORTAC	CHISUM, NM VORTAC	33	CORONA
SAN ANGELO, TX VORTAC	JUNCTION, TX VORTAC	25	SAN ANGELO
	V71		
EL DORADO, AR VOR/DME	HOT SPRINGS, AR VOR/DME	49	EL DORADO
HOT SPRINGS, AR VOR/DME	HARRISON, AR VOR/DME	47	HOT SPRINGS
	V74		
TULSA, OK VORTAC	FORT SMITH, AR VORTAC	48	TULSA

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V77		
ABILENE, TX VORTAC	WICHITA FALLS, TX VORTAC	56	ABILENE
	V83		
CARLSBAD, NM VORTAC	CHISUM, NM VORTAC	31	CARLSBAD
CHISUM, NM VORTAC	CORONA, NM VORTAC	48	CHISUM
CORONA, NM VORTAC	OTTO, NM VOR	20	CORONA
	V86		
MISSOULA, MT VOR/DME	COPPERTOWN, MT VOR/DME	35	MISSOULA
SHERIDAN, WY VOR/DME	RAPID CITY, SD VORTAC	100	SHERIDAN
	V87		
SAN FRANCISCO, CA VOR DME	SCAGGS ISLAND, CA VORTAC	19	SAN FRANCISCO
	V91		
BRIDGEPORT, CT VOR/DME	ALBANY, NY VORTAC	30	BRIDGEPORT
	V94		
STANFIELD, AZ VORTAC	SAN SIMON, AZ VORTAC	82	STANFIELD
DEMING, NM VORTAC	NEWMAN, TX VORTAC	35	DEMING
SALT FLAT, TX VORTAC	WINK, TX VORTAC	42	SALT FLAT
MIDLAND, TX VORTAC	TUSCOLA, TX VOR/DME	51	MIDLAND
	V95		
WINSLOW, AZ VORTAC	RATTLESNAKE, NM VORTAC	91	WINSLOW
BLUE MESA, CO VOR/DME	FALCON, CO VORTAC	*77	BLUE MESA
*USE THE HUGO (HGO) VORTAC FROM THE COP TO THE GORJE INT			
	V97		
ST PETERSBURG, FL VORTAC	SEMINOLE, FL VORTAC	97	ST PETERSBURG
CINCINNATI, KY VORTAC	SHELBYVILLE, IN VOR/DME	39	CINCINNATI
NODINE, MN VORTAC	GOPHER, MN VORTAC	60	NODINE
	V101		
GILL, CO VOR/DME	HAYDEN, CO VOR/DME	71	GILL
HAYDEN, CO VOR/DME	VERNAL, UT VOR/DME	56	HAYDEN
VERNAL, UT VOR/DME	WASATCH, UT VORTAC	75	VERNAL
OGDEN, UT VORTAC	BURLEY, ID VOR/DME	61	OGDEN
	V102		
SALT FLAT, TX VORTAC	CARLSBAD, NM VORTAC	24	SALT FLAT

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V103		
GREENSBORO, NC VORTAC	ROANOKE, VA VOR/DME	28	GREENSBORO
	V105		
DRAKE, AZ VORTAC	BOULDER CITY, NV VORTAC	55	DRAKE
BEATTY, NV VORTAC	COALDALE, NV VORTAC	34	BEATTY
COALDALE, NV VORTAC	MUSTANG, NV VORTAC	55	COALDALE
	V107		
FILLMORE, CA VORTAC	AVENAL, CA VOR/DME	31	FILLMORE
AVENAL, CA VOR/DME	PANOCHE, CA VORTAC	45	AVENAL
	V111		
BIG SUR, CA VORTAC	SALINAS, CA VORTAC	21	BIG SUR
SALINAS, CA VORTAC	MODESTO, CA VOR/DME	22	SALINAS
	V112		
PENDLETON, OR VORTAC	SPOKANE, WA VORTAC	57	PENDLETON
	V113		
MORRO BAY, CA VORTAC	PASO ROBLES, CA VORTAC	7	MORRO BAY
MUSTANG, NV VORTAC	SOD HOUSE, NV VORTAC	48	MUSTANG
BOISE, ID VORTAC	SALMON, ID VOR/DME	45	BOISE
SALMON, ID VOR/DME	COPPERTOWN, MT VOR/DME	60	SALMON
HELENA, MT VORTAC	LEWISTOWN, MT VOR/DME	40	HELENA
	V115		
VULCAN, AL VORTAC	CHOO CHOO, TN VORTAC	59	VULCAN
	V120		
SEATTLE, WA VORTAC	WENATCHEE, WA VOR/DME	51	SEATTLE
WENATCHEE, WA VOR/DME	EPHRATA, WA VORTAC	10	WENATCHEE
MULLAN PASS, ID VOR/DME	GREAT FALLS, MT VORTAC	80	MULLAN PASS
LEWISTOWN, MT VOR/DME	MILES CITY, MT VOR/DME	74	LEWISTOWN
MILES CITY, MT VOR/DME	DUPREE, SD VOR/DME	90	MILES CITY
SIOUX FALLS, SD VORTAC	MASON CITY, IA VOR/DME	82	SIOUX FALLS
	V121		
KIMBERLY, OR VOR/DME	BAKER CITY, OR VOR/DME	67	KIMBERLY
	V123		
WOODSTOWN, NJ VORTAC	ROBBINSVILLE, NJ VORTAC	19	WOODSTOWN
	V124		
PARIS, TX VOR/DME	HOT SPRINGS, AR VOR/DME	75	PARIS
HOT SPRINGS, AR VOR/DME	LITTLE ROCK, AR VORTAC	14	HOT SPRINGS

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V128		
CINCINNATI, KY VORTAC	YORK, KY VORTAC	38	CINCINNATI
YORK, KY VORTAC	CHARLESTON, WV VOR/DME	29	YORK
CHARLESTON, WV VOR/DME	CASANOVA, VA VORTAC	114	CHARLESTON
	V133		
BARRETTS MOUNTAIN, NC VOR/DME	CHARLESTON, WV VOR/DME	77	BARRETTS MOUNTAIN
CHARLESTON, WV VOR/DME	ZANESVILLE, OH VOR/DME	52	CHARLESTON
	V134		
FAIRFIELD, UT VORTAC	CARBON, UT VOR/DME	20	FAIRFIELD
CARBON, UT VOR/DME	GRAND JUNCTION, CO VOR/DME	*25	CARBON
*THE COP IS AT THE SLOLM INT.			
GRAND JUNCTION, CO VOR DME	RED TABLE, CO VOR/DME	*56	GRAND JUNCTION
*THE COP IS AT THE SLOLM INT.			
	V135		
GOFFS, CA VORTAC	BEATTY, NV VORTAC	31	GOFFS
BEATTY, NV VORTAC	COALDALE, NV VORTAC	*34	BEATTY
*COP 53 NM FROM AND UTILIZES COALDALE, NV VORTAC ON THE 129 M RAD.			
	V136		
VOLUNTEER, TN VORTAC	SNOWBIRD, TN VORTAC	25	VOLUNTEER
	V137		
PALM SPRINGS, CA VORTAC	PALMDALE, CA VORTAC	30	PALM SPRINGS
GORMAN, CA VORTAC	AVENAL, CA VOR/DME	31	GORMAN
	V139		
CAPE CHARLES, VA VORTAC	SNOW HILL, MD VORTAC	38	CAPE CHARLES
SNOW HILL, MD VORTAC	SEA ISLE, NJ VORTAC	25	SNOW HILL
HAMPTON, NY VORTAC	PROVIDENCE, RI VOR/DME	28	HAMPTON
	V140		
PANHANDLE, TX VORTAC	BURNS FLAT, OK VORTAC	56	PANHANDLE
	V142		
MALAD CITY, ID VOR/DME	FORT BRIDGER, WY VOR/DME	32	MALAD CITY
	V143		
MARTINSBURG, WV VORTAC	LANCASTER, PA VOR/DME	34	MARTINSBURG

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V146		
ALBANY, NY VORTAC	CHESTER, MA VOR/DME	8	ALBANY
	V148		
THURMAN, CO VORTAC	HAYES CENTER, NE VORTAC	65	THURMAN
	V155		
SANDHILLS, NC VORTAC	RALEIGH/DURHAM, NC VORTAC	10	SANDHILLS
FLAT ROCK, VA VORTAC	BROOKE, VA VORTAC	43	FLAT ROCK
	V157		
ALMA, GA VORTAC	ALLENDALE, SC VOR	58	ALMA
VANCE, SC VORTAC	FLORENCE, SC VORTAC	21	VANCE
WOODSTOWN, NJ VORTAC	ROBBINSVILLE, NJ VORTAC	19	WOODSTOWN
	V159		
OCALA, FL VORTAC	CROSS CITY, FL VORTAC	28	OCALA
SPRINGFIELD, MO VORTAC	NAPOLEON, MO VORTAC	57	SPRINGFIELD
	V161		
NAPOLEON, MO VORTAC	LAMONI, IA VOR/DME	40	NAPOLEON
INTERNATIONAL FALLS, MN VOR/DME	WINNIPEG, CA VORTAC	77	INTERNATIONAL FALLS
	V162		
ALLENTOWN, PA VORTAC	HUGUENOT, NY VOR/DME	10	ALLENTOWN
	V163		
BROWNSVILLE, TX VORTAC	CORPUS CHRISTI, TX VORTAC	71	BROWNSVILLE
	V165		
MUSTANG, NV VORTAC	LAKEVIEW, OR VORTAC	70	MUSTANG
LAKEVIEW, OR VORTAC	DESCHUTES, OR VORTAC	73	LAKEVIEW
DESCHUTES, OR VORTAC	NEWBERG, OR VOR/DME	43	DESCHUTES
	V166		
WESTMINSTER, MD VORTAC	DUPONT, DE VORTAC	40	WESTMINSTER
WOODSTOWN, NJ VORTAC	SEA ISLE, NJ VORTAC	28	WOODSTOWN
	V168		
LAGRANGE, GA VORTAC	VULCAN, AL VORTAC	45	LAGRANGE
	V170		
PULLMAN, MI VOR/DME	SALEM, MI VORTAC	61	PULLMAN

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V181		
OMAHA, IA VORTAC	NORFOLK, NE VOR/DME	51	OMAHA
	V182		
NEWPORT, OR VORTAC	NEWBERG, OR VOR/DME	29	NEWPORT
KLICKITAT, OR VOR/DME	BAKER CITY, OR VOR/DME	119	KLICKITAT
	V183		
SAN MARCUS, CA VORTAC	SHAFTER, CA VORTAC	20	SAN MARCUS
	V186		
VAN NUYS, CA VOR/DME	PARADISE, CA VORTAC	39	VAN NUYS
	V187		
ALBUQUERQUE, NM VORTAC	RATTLESNAKE, NM VORTAC	58	ALBUQUERQUE
RATTLESNAKE, NM VORTAC	GRAND JUNCTION, CO VOR/DME	90	RATTLESNAKE
GRAND JUNCTION, CO VOR DME	ROCK SPRINGS, WY VOR/DME	86	GRAND JUNCTION
BOYSEN RESERVOIR, WY VOR/DME	BILLINGS, MT VORTAC	97	BOYSEN RESERVOIR
GREAT FALLS, MT VORTAC	MISSOULA, MT VOR/DME	84	GREAT FALLS
MISSOULA, MT VOR/DME	NEZ PERCE, ID VOR/DME	30	MISSOULA
	V189		
WRIGHT BROTHERS, NC VOR/DME	TAR RIVER, NC VORTAC	25	WRIGHT BROTHERS
	V190		
PHOENIX, AZ VORTAC	ST JOHNS, AZ VORTAC	67	PHOENIX
ALBUQUERQUE, NM VORTAC	FORT UNION, NM VORTAC	38	ALBUQUERQUE
	V191		
IRONWOOD, MI VOR/DME	DULUTH, MN VORTAC	32	IRONWOOD
	V194		
SABINE PASS, TX VOR/DME	LAFAYETTE, LA VORTAC	50	SABINE PASS
	V198		
FORT STOCKTON, TX VORTAC	JUNCTION, TX VORTAC	*64	FORT STOCKTON
*MEA GAP AT COP			
HARVEY, LA VORTAC	BROOKLEY, AL VORTAC	61	HARVEY
	V200		
WILLIAMS, CA VORTAC	MUSTANG, NV VORTAC	84	WILLIAMS
FAIRFIELD, UT VORTAC	MYTON, UT VOR/DME	32	FAIRFIELD

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V201		
LOS ANGELES, CA VORTAC	PALMDALE, CA VORTAC	19	LOS ANGELES
	V204		
HOQUIAM, WA VORTAC	OLYMPIA, WA VORTAC	31	HOQUIAM
	V208		
SANTA CATALINA, CA VORTAC	OCEANSIDE, CA VORTAC	31	SANTA CATALINA
THERMAL, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	20	THERMAL
NEEDLES, CA VORTAC	PEACH SPRINGS, AZ VOR/DME	39	NEEDLES
PEACH SPRINGS, AZ VOR DME	GRAND CANYON, AZ VOR/DME	57	PEACH SPRINGS
PAGE, AZ VOR/DME	HANKSVILLE, UT VORTAC	61	PAGE
CARBON, UT VOR/DME	MYTON, UT VOR/DME	17	CARBON
VERNAL, UT VOR/DME	CHEROKEE, WY VOR/DME	54	VERNAL
	V210		
POMONA, CA VORTAC	HECTOR, CA VORTAC	16	POMONA
HECTOR, CA VORTAC	GOFFS, CA VORTAC	38	HECTOR
GOFFS, CA VORTAC	PEACH SPRINGS, AZ VOR/DME	42	GOFFS
PEACH SPRINGS, AZ VOR DME	GRAND CANYON, AZ VOR/DME	57	PEACH SPRINGS
	V212		
LUFKIN, TX VORTAC	ALEXANDRIA, LA VORTAC	65	LUFKIN
	V213		
TAR RIVER, NC VORTAC	HOPEWELL, VA VORTAC	43	TAR RIVER
	V217		
RHINELANDER, WI VOR/DME	DULUTH, MN VORTAC	49	RHINELANDER
	V218		
GRAND RAPIDS, MN VOR DME	GOPHER, MN VORTAC	46	GRAND RAPIDS
	V220		
GRAND JUNCTION, CO VOR DME	RIFLE, CO VOR/DME	*56	GRAND JUNCTION
*COP - THE COP IS AT THE SLOLM INT			
	V222		
SALT FLAT, TX VORTAC	FORT STOCKTON, TX VORTAC	52	SALT FLAT
FORT STOCKTON, TX VORTAC	JUNCTION, TX VORTAC	*64	FORT STOCKTON
*MEA GAP AT COP			

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V229		
BRIDGEPORT, CT VOR/DME	HARTFORD, CT VOR/DME	19	BRIDGEPORT
	V230		
SALINAS, CA VORTAC	PANOCHE, CA VORTAC	30	SALINAS
FRIANT, CA VORTAC	MINA, NV VORTAC	40	FRIANT
	V231		
MISSOULA, MT VOR/DME	KALISPELL, MT VOR/DME	29	MISSOULA
	V235		
FAIRFIELD, UT VORTAC	FORT BRIDGER, WY VOR/DME	32	FAIRFIELD
ROCK SPRINGS, WY VOR DME	MUDDY MOUNTAIN, WY VOR/DME	65	ROCK SPRINGS
	V237		
NEEDLES, CA VORTAC	BOULDER CITY, NV VORTAC	60	NEEDLES
	V240		
HARVEY, LA VORTAC	BROOKLEY, AL VORTAC	61	HARVEY
	V243		
WAYCROSS, GA VORTAC	VIENNA, GA VORTAC	30	WAYCROSS
	V244		
COALDALE, NV VORTAC	TONOPAH, NV VORTAC	14	COALDALE
TONOPAH, NV VORTAC	WILSON CREEK, NV VORTAC	50	TONOPAH
WILSON CREEK, NV VORTAC	MILFORD, UT VORTAC	40	WILSON CREEK
MILFORD, UT VORTAC	HANKSVILLE, UT VORTAC	40	MILFORD
BLUE MESA, CO VOR/DME	PUEBLO, CO VORTAC	53	BLUE MESA
	V245		
NATCHEZ, MS VOR/DME	MAGNOLIA, MS VORTAC	25	NATCHEZ
	V252		
GENESEO, NY VOR/DME	BINGHAMTON, NY VOR/DME	34	GENESEO
	V253		
LUCIN, UT VORTAC	TWIN FALLS, ID VORTAC	40	LUCIN
TWIN FALLS, ID VORTAC	BOISE, ID VORTAC	48	TWIN FALLS
NEZ PERCE, ID VOR/DME	PULLMAN, WA VOR/DME	13	NEZ PERCE
	V257		
GRAND CANYON, AZ VOR DME	BRYCE CANYON, UT VORTAC	36	GRAND CANYON
DELTA, UT VORTAC	MALAD CITY, ID VOR/DME	63	DELTA
DUBOIS, ID VORTAC	DILLON, MT VOR/DME	46	DUBOIS
DILLON, MT VOR/DME	COPPERTOWN, MT VOR/DME	27	DILLON

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V258		
CHARLESTON, WV VOR/DME	BECKLEY, WV VOR/DME	20	CHARLESTON
	V259		
GRAND STRAND, SC VORTAC	FLORENCE, SC VORTAC	25	GRAND STRAND
	V263		
SANTA FE, NM VORTAC	FORT UNION, NM VORTAC	21	SANTA FE
FORT UNION, NM VORTAC	CIMARRON, NM VORTAC	28	FORT UNION
	V264		
POMONA, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	37	POMONA
DRAKE, AZ VORTAC	WINSLOW, AZ VORTAC	39	DRAKE
	V265		
HARRISBURG, PA VORTAC	PHILIPSBURG, PA VORTAC	35	HARRISBURG
	V267		
DUBLIN, GA VORTAC	ATHENS, GA VOR/DME	47	DUBLIN
	V268		
WESTMINSTER, MD VORTAC	BALTIMORE, MD VORTAC	12	WESTMINSTER
	V269		
WELLS, NV VOR/DME	TWIN FALLS, ID VORTAC	33	WELLS
	V277		
FORT WAYNE, IN VORTAC	KEELER, MI VOR/DME	38	FORT WAYNE
	V280		
PANHANDLE, TX VORTAC	MITBEE, OK VORTAC	46	PANHANDLE
	V283		
SEAL BEACH, CA VORTAC	HOMELAND, CA VOR	24	SEAL BEACH
HECTOR, CA VORTAC	BOULDER CITY, NV VORTAC	23	HECTOR
	V286		
ELKINS, WV VORTAC	CASANOVA, VA VORTAC	43	ELKINS
BROOKE, VA VORTAC	CAPE CHARLES, VA VORTAC	22	BROOKE
	V287		
BATTLE GROUND, WA VORTAC	OLYMPIA, WA VORTAC	41	BATTLE GROUND

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V291		
ALBUQUERQUE, NM VORTAC	GALLUP, NM VORTAC	44	ALBUQUERQUE
FLAGSTAFF, AZ VOR/DME	PEACH SPRINGS, AZ VOR/DME	39	FLAGSTAFF
	V293		
ELY, NV VOR/DME	BULLION, NV VOR/DME	26	ELY
BULLION, NV VOR/DME	TWIN FALLS, ID VORTAC	66	BULLION
	V295		
OCALA, FL VORTAC	CROSS CITY, FL VORTAC	28	OCALA
	V298		
SEATTLE, WA VORTAC	ELLENSBURG, WA VOR/DME	47	SEATTLE
DONNELLY, ID VOR/DME	DUBOIS, ID VORTAC	109	DONNELLY
DUBOIS, ID VORTAC	DUNOIR, WY VOR/DME	68	DUBOIS
DUNOIR, WY VOR/DME	BOYSEN RESERVOIR, WY VOR/DME	15	DUNOIR
	V299		
LOS ANGELES, CA VORTAC	VENTURA, CA VOR/DME	18	LOS ANGELES
	V300		
SAULT STE MARIE, MI VOR/DME	THUNDER BAY, CA VOR/DME	94	SAULT STE MARIE
	V306		
DAISETTA, TX VORTAC	LAKE CHARLES, LA VORTAC	30	DAISETTA
	V316		
IRONWOOD, MI VOR/DME	SAWYER, MI VOR/DME	94	IRONWOOD
	V317		
POGGI, CA VORTAC	IMPERIAL, CA VORTAC	25	POGGI
	V319		
WORLAND, WY VOR/DME	CODY, WY VOR/DME	39	WORLAND
	V321		
SHELBYVILLE, TN VOR/DME	LIVINGSTON, TN VOR/DME	40	SHELBYVILLE
	V323		
MONTGOMERY, AL VORTAC	EUFAULA, AL VORTAC	32	MONTGOMERY

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V324		
CRAZY WOMAN, WY VOR/DME	WORLAND, WY VOR/DME	15	CRAZY WOMAN
	V325		
COLUMBIA, SC VORTAC	ATHENS, GA VOR/DME	90	COLUMBIA
	V328		
JACKSON, WY VOR/DME	BIG PINEY, WY VOR/DME	20	JACKSON
	V330		
IDAHO FALLS, ID VOR/DME	JACKSON, WY VOR/DME	48	IDAHO FALLS
DUNOIR, WY VOR/DME	RIVERTON, WY VOR/DME	15	DUNOIR
	V336		
ELLENSBURG, WA VOR/DME	EPHRATA, WA VORTAC	19	ELLENSBURG
	V343		
DUBOIS, ID VORTAC	BOZEMAN, MT VOR/DME	60	DUBOIS
	V361		
RATTLESNAKE, NM VORTAC	MONTROSE, CO VOR/DME	61	RATTLESNAKE
	V365		
HELENA, MT VORTAC	CUT BANK, MT VOR/DME	51	HELENA
	V370		
LOS ANGELES, CA VORTAC	PARADISE, CA VORTAC	25	LOS ANGELES
PARADISE, CA VORTAC	PALM SPRINGS, CA VORTAC	34	PARADISE
	V372		
SEAL BEACH, CA VORTAC	HOMELAND, CA VOR	24	SEAL BEACH
	V373		
GREENSBORO, NC VORTAC	SANDHILLS, NC VORTAC	43	GREENSBORO
	V375		
ROANOKE, VA VOR/DME	GORDONSVILLE, VA VORTAC	48	ROANOKE
	V376		
RICHMOND, VA VORTAC	WASHINGTON, DC VOR/DME	53	RICHMOND

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V393		
NOGALES, AZ VOR/DME	HERMOSILLO, MX VOR/DME	64	NOGALES
	V394		
POMONA, CA VORTAC	DAGGETT, CA VORTAC	16	POMONA
DAGGETT, CA VORTAC	LAS VEGAS, NV VORTAC	59	DAGGETT
	V401		
WORLAND, WY VOR/DME	MUDDY MOUNTAIN, WY VOR/DME	35	WORLAND
	V413		
EAU CLAIRE, WI VORTAC	IRONWOOD, MI VOR/DME	45	EAU CLAIRE
	V417		
ATHENS, GA VOR/DME	COLLIERS, SC VORTAC	24	ATHENS
	V419		
MODENA, PA VORTAC	SOLBERG, NJ VOR/DME	10	MODENA
	V430		
DEVILS LAKE, ND VOR/DME	MINOT, ND VOR/DME	40	DEVILS LAKE
DULUTH, MN VORTAC	IRONWOOD, MI VOR/DME	55	DULUTH
IRONWOOD, MI VOR/DME	IRON MOUNTAIN, MI VOR/DME	44	IRONWOOD
	V432		
THERMAL, CA VORTAC	PARKER, CA VORTAC	30	THERMAL
	V433		
LA GUARDIA, NY VOR/DME	BRIDGEPORT, CT VOR/DME	9	LA GUARDIA
	V437		
ORMOND BEACH, FL VORTAC	SAVANNAH, GA VORTAC	80	ORMOND BEACH
	V442		
HECTOR, CA VORTAC	PARKER, CA VORTAC	*41	HECTOR
*USE THE NEEDLES (EED) VORTAC FROM THE COP TO THE CLIPP INT.			
	V444		
BAKER CITY, OR VOR/DME	BOISE, ID VORTAC	25	BAKER CITY
BOISE, ID VORTAC	POCATELLO, ID VOR/DME	66	BOISE

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V448		
YAKIMA, WA VORTAC	MOSES LAKE, WA VOR/DME	15	YAKIMA
SPOKANE, WA VORTAC	KALISPELL, MT VOR/DME	105	SPOKANE
	V452		
EUGENE, OR VORTAC	KLAMATH FALLS, OR VORTAC	67	EUGENE
	V454		
LIBERTY, NC VORTAC	LAWRENCEVILLE, VA VORTAC	82	LIBERTY
	V458		
SANTA CATALINA, CA VORTAC	OCEANSIDE, CA VORTAC	31	SANTA CATALINA
	V465		
BULLION, NV VOR/DME	WELLS, NV VOR/DME	25	BULLION
WELLS, NV VOR/DME	MALAD CITY, ID VOR/DME	40	WELLS
MALAD CITY, ID VOR/DME	JACKSON, WY VOR/DME	*63	MALAD CITY
*MEA GAP AT COP			
DUNOIR, WY VOR/DME	BILLINGS, MT VORTAC	45	DUNOIR
	V469		
HARRISBURG, PA VORTAC	DUPONT, DE VORTAC	32	HARRISBURG
	V484		
TWIN FALLS, ID VORTAC	WASATCH, UT VORTAC	59	TWIN FALLS
WASATCH, UT VORTAC	MYTON, UT VOR/DME	28	WASATCH
	V487		
LA GUARDIA, NY VOR/DME	BRIDGEPORT, CT VOR/DME	9	LA GUARDIA
BRIDGEPORT, CT VOR/DME	BRIDGEPORT, CT VOR/DME	30	BRIDGEPORT
	V495		
WHATCOM, WA VORTAC	VICTORIA, CA VOR/DME	10	WHATCOM
SEATTLE, WA VORTAC	VICTORIA, CA VOR/DME	50	SEATTLE
	V500		
NEWBERG, OR VOR/DME	KIMBERLY, OR VOR/DME	79	NEWBERG
BOISE, ID VORTAC	POCATELLO, ID VOR/DME	66	BOISE
	V501		
ST THOMAS, PA VORTAC	PHILIPSBURG, PA VORTAC	22	ST THOMAS

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	V502		
EMPORIA, KS VORTAC	KANSAS CITY, MO VORTAC	40	EMPORIA
	V514		
THERMAL, CA VORTAC	TWENTYNINE PALMS, CA VORTAC	20	THERMAL
GOFFS, CA VORTAC	BOULDER CITY, NV VORTAC	*60	GOFFS
*COP MEASURED FROM NEEDLES VORTAC.			
	V520		
NEZ PERCE, ID VOR/DME	SALMON, ID VOR/DME	53	NEZ PERCE
DUBOIS, ID VORTAC	JACKSON, WY VOR/DME	60	DUBOIS
	V527		
HOT SPRINGS, AR VOR/DME	RAZORBACK, AR VORTAC	42	HOT SPRINGS
	V532		
SALINA, KS VORTAC	LINCOLN, NE VORTAC	51	SALINA
	V536		
MULLAN PASS, ID VOR/DME	KALISPELL, MT VOR/DME	45	MULLAN PASS
KALISPELL, MT VOR/DME	GREAT FALLS, MT VORTAC	35	KALISPELL
	V569		
FRANKSTON, TX VOR/DME	CEDAR CREEK, TX VORTAC	5	FRANKSTON
	V571		
HUMBLE, TX VORTAC	NAVASOTA, TX VOR/DME	24	HUMBLE
	V573		
HOT SPRINGS, AR VOR/DME	LITTLE ROCK, AR VORTAC	14	HOT SPRINGS
	V574		
NAVASOTA, TX VOR/DME	HUMBLE, TX VORTAC	18	NAVASOTA
	V591		
GRAND JUNCTION, CO VOR DME	RED TABLE, CO VOR/DME	*56	GRAND JUNCTION
*THE COP IS AT THE SLOLM INT			
	V611		
SANTA FE, NM VORTAC	FORT UNION, NM VORTAC	21	SANTA FE
FORT UNION, NM VORTAC	CIMARRON, NM VORTAC	28	FORT UNION
CIMARRON, NM VORTAC	PUEBLO, CO VORTAC	30	CIMARRON

AIRWAY SEGMENT		CHANGEOVER POINTS	
FROM	TO	DISTANCE	FROM

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	ALASKA V311		
ANNETTE ISLAND, AK VOR DME	BIORKA ISLAND, AK VORTAC	103	ANNETTE ISLAND
	ALASKA V317		
ANNETTE ISLAND, AK VOR DME	LEVEL ISLAND, AK VOR/DME	64	ANNETTE ISLAND
LEVEL ISLAND, AK VOR DME	SISTERS ISLAND, AK VORTAC	74	LEVEL ISLAND
	ALASKA V319		
YAKUTAT, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	119	YAKUTAT
SPARREVOHN, AK VOR/DME	BETHEL, AK VORTAC	92	SPARREVOHN
	ALASKA V320		
MC GRATH, AK VORTAC	ANCHORAGE, AK VOR/DME	95	MC GRATH
	ALASKA V321		
KING SALMON, AK VORTAC	HOMER, AK VOR/DME	70	KING SALMON
	ALASKA V333		
HOOPER BAY, AK VOR/DME	NOME, AK VOR/DME	70	HOOPER BAY
NOME, AK VOR/DME	SHISHMAREF, AK NDB	65	NOME
	ALASKA V401		
AMBLER, AK NDB	KOTZEBUE, AK VOR/DME	40	AMBLER
KOTZEBUE, AK VOR/DME	SHISHMAREF, AK NDB	60	KOTZEBUE
	ALASKA V428		
BIORKA ISLAND, AK VORTAC	SISTERS ISLAND, AK VORTAC	55	BIORKA ISLAND
SISTERS ISLAND, AK VORTAC	HAINES, AK NDB	21	SISTERS ISLAND
HAINES, AK NDB	WHITEHORSE, CA VOR/DME	30	HAINES
	ALASKA V438		
KODIAK, AK VOR/DME	HOMER, AK VOR/DME	66	KODIAK
HOMER, AK VOR/DME	ANCHORAGE, AK VOR/DME	53	HOMER
	ALASKA V440		
NOME, AK VOR/DME	UNALAKLEET, AK VOR/DME	45	NOME
MC GRATH, AK VORTAC	ANCHORAGE, AK VOR/DME	95	MC GRATH
YAKUTAT, AK VOR/DME	BIORKA ISLAND, AK VORTAC	108	YAKUTAT
BIORKA ISLAND, AK VORTAC	SANDSPIT, CA VOR/DME	134	BIORKA ISLAND

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	ALASKA V441		
MIDDLETON ISLAND, AK VOR/DME	KENAI, AK VOR/DME	84	MIDDLETON ISLAND
	ALASKA V444		
BARROW, AK VOR/DME	EVANSVILLE, AK NDB	105	BARROW
BETTLES, AK VOR/DME	FAIRBANKS, AK VORTAC	89	BETTLES
	ALASKA V447		
FAIRBANKS, AK VORTAC	CHANDALAR LAKE, AK NDB	103	FAIRBANKS
	ALASKA V452		
KUKULIAK, AK VOR/DME	NOME, AK VOR/DME	67	KUKULIAK
MOSES POINT, AK VOR/DME	GALENA, AK VOR/DME	70	MOSES POINT
GALENA, AK VOR/DME	NENANA, AK VORTAC	75	GALENA
	ALASKA V453		
BETHEL, AK VORTAC	UNALAKLEET, AK VOR/DME	109	BETHEL
	ALASKA V457		
ILIAMNA, AK NDB/DME	KENAI, AK VOR/DME	47	ILIAMNA
	ALASKA V459		
EMMONAK, AK VOR/DME	ST MARYS, AK NDB	40	EMMONAK
	ALASKA V480		
ST PAUL ISLAND, AK NDB DME	BETHEL, AK VORTAC	223	ST PAUL ISLAND
BETHEL, AK VORTAC	MC GRATH, AK VORTAC	117	BETHEL
MC GRATH, AK VORTAC	NENANA, AK VORTAC	70	MC GRATH
	ALASKA V481		
GULKANA, AK VOR/DME	BIG DELTA, AK VORTAC	63	GULKANA
BIG DELTA, AK VORTAC	FORT YUKON, AK VORTAC	69	BIG DELTA
	ALASKA V488		
HOOPER BAY, AK VOR/DME	HOOPER BAY, AK VOR/DME	91	HOOPER BAY
TANANA, AK VOR/DME	FAIRBANKS, AK VORTAC	40	TANANA
	ALASKA V496		
HOOPER BAY, AK VOR/DME	ST MARYS, AK NDB	40	HOOPER BAY

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	ALASKA V504		
NENANA, AK VORTAC	BETTLES, AK VOR/DME	67	NENANA
BETTLES, AK VOR/DME	DEADHORSE, AK VOR/DME	116	BETTLES
	ALASKA V506		
KODIAK, AK VOR/DME	KING SALMON, AK VORTAC	55	KODIAK
KING SALMON, AK VORTAC	BETHEL, AK VORTAC	102	KING SALMON
NOME, AK VOR/DME	KOTZEBUE, AK VOR/DME	64	NOME
HOTHAM, AK NDB	BARROW, AK VOR/DME	186	HOTHAM
	ALASKA V508		
MIDDLETON ISLAND, AK VOR/DME	KENAI, AK VOR/DME	85	MIDDLETON ISLAND
KENAI, AK VOR/DME	SPARREVOHN, AK VOR/DME	67	KENAI
SPARREVOHN, AK VOR/DME	ANIAK, AK NDB	68	SPARREVOHN
	ALASKA V510		
EMMONAK, AK VOR/DME	ANVIK, AK NDB	69	EMMONAK
ANVIK, AK NDB	MC GRATH, AK VORTAC	87	ANVIK
	ALASKA V531		
FAIRBANKS, AK VORTAC	TANANA, AK VOR/DME	69	FAIRBANKS
TANANA, AK VOR/DME	HUSLIA, AK VOR/DME	40	TANANA
SELAWIK, AK VOR/DME	KOTZEBUE, AK VOR/DME	30	SELAWIK
KOTZEBUE, AK VOR/DME	POINT HOPE, AK NDB	116	KOTZEBUE
	ALASKA V603		
ELFEE, AK NDB	DILLINGHAM, AK VOR/DME	207	ELFEE
	ALASKA V617		
HOMER, AK VOR/DME	JOHNSTONE POINT, AK VOR/DME	63	HOMER

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	HAWAII V15		
MOLOKAI, HI VORTAC	MAUI, HI VORTAC	31	MOLOKAI
	HAWAII V16		
LANAI, HI VORTAC	UPOLU POINT, HI VORTAC	47	LANAI

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM

§95.8005 JET ROUTES CHANGEOVER POINTS

	J1		
ROGUE VALLEY, OR VORTAC	BATTLE GROUND, WA VORTAC	90	ROGUE VALLEY
	J5		
LAKEVIEW, OR VORTAC	SEATTLE, WA VORTAC	156	LAKEVIEW
	J6		
DRAKE, AZ VORTAC	ZUNI, NM VORTAC	76	DRAKE
MARTINSBURG, WV VORTAC	LANCASTER, PA VOR/DME	24	MARTINSBURG
	J8		
GALLUP, NM VORTAC	FORT UNION, NM VORTAC	103	GALLUP
	J10		
BLUE MESA, CO VOR/DME	FALCON, CO VORTAC	50	BLUE MESA
	J15		
RATTLESNAKE, NM VORTAC	GRAND JUNCTION, CO VOR/DME	90	RATTLESNAKE
	J16		
BATTLE GROUND, WA VORTAC	PENDLETON, OR VORTAC	60	BATTLE GROUND
	J17		
CHEYENNE, WY VORTAC	RAPID CITY, SD VORTAC	90	CHEYENNE
	J18		
PHOENIX, AZ VORTAC	ST JOHNS, AZ VORTAC	88	PHOENIX
MOLINE, IL VOR/DME	JOLIET, IL VOR/DME	45	MOLINE
	J19		
ROBERTS, IL VOR/DME	NORTHBROOK, IL VOR/DME	40	ROBERTS
	J20		
POCATELLO, ID VOR/DME	ROCK SPRINGS, WY VOR/DME	82	POCATELLO
	J21		
GOPHER, MN VORTAC	DULUTH, MN VORTAC	81	GOPHER

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J24		
HUGO, CO VOR/DME	HAYS, KS VORTAC	80	HUGO
	J32		
ABERDEEN, SD VOR/DME	DULUTH, MN VORTAC	130	ABERDEEN
	J37		
KENNEDY, NY VOR/DME	KINGSTON, NY VOR/DME	37	KENNEDY
	J44		
FALCON, CO VORTAC	MC COOK, NE VOR/DME	90	FALCON
MC COOK, NE VOR/DME	LINCOLN, NE VORTAC	51	MC COOK
	J48		
CASANOVA, VA VORTAC	MONTEBELLO, VA VOR/DME	58	CASANOVA
	J54		
OLYMPIA, WA VORTAC	BAKER CITY, OR VOR/DME	143	OLYMPIA
POCATELLO, ID VOR/DME	CHEROKEE, WY VOR/DME	95	POCATELLO
	J55		
BOSTON, MA VOR/DME	KENNEBUNK, ME VOR/DME	38	BOSTON
	J56		
WASATCH, UT VORTAC	HAYDEN, CO VOR/DME	*66	WASATCH
*USE GILL (GLL) VOR/DME FROM COP TO RIDJE INT			
HAYDEN, CO VOR/DME	GILL, CO VOR/DME	*55	HAYDEN
*USE GILL (GLL) VOR/DME FROM COP TO RIDJE INT			
	J58		
COALDALE, NV VORTAC	WILSON CREEK, NV VORTAC	44	COALDALE
MILFORD, UT VORTAC	RATTLESNAKE, NM VORTAC	92	MILFORD
	J60		
HANKSVILLE, UT VORTAC	RED TABLE, CO VOR/DME	75	HANKSVILLE
RED TABLE, CO VOR/DME	MILE HIGH, CO VORTAC	39	RED TABLE
GOSHEN, IN VORTAC	DRYER, OH VOR/DME	90	GOSHEN
	J64		
RATTLESNAKE, NM VORTAC	PUEBLO, CO VORTAC	93	RATTLESNAKE
PUEBLO, CO VORTAC	HILL CITY, KS VORTAC	80	PUEBLO
FORT WAYNE, IN VORTAC	ELLWOOD CITY, PA VOR/DME	112	FORT WAYNE

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J70		
DICKINSON, ND VORTAC	ABERDEEN, SD VOR/DME	60	DICKINSON
	J71		
CENTRALIA, IL VORTAC	ROBERTS, IL VOR/DME	98	CENTRALIA
ROBERTS, IL VOR/DME	NORTHBROOK, IL VOR/DME	40	ROBERTS
	J78		
DRAKE, AZ VORTAC	ZUNI, NM VORTAC	76	DRAKE
	J79		
FRANKLIN, VA VORTAC	SALISBURY, MD VORTAC	20	FRANKLIN
	J80		
COALDALE, NV VORTAC	WILSON CREEK, NV VORTAC	44	COALDALE
MILFORD, UT VORTAC	GRAND JUNCTION, CO VOR/DME	50	MILFORD
	J82		
BATTLE GROUND, WA VORTAC	DONNELLY, ID VOR/DME	90	BATTLE GROUND
RAPID CITY, SD VORTAC	SIOUX FALLS, SD VORTAC	125	RAPID CITY
	J83		
APPLETON, OH VORTAC	DRYER, OH VOR/DME	75	APPLETON
	J84		
NORTHBROOK, IL VOR/DME	DANVILLE, IL VORTAC	67	NORTHBROOK
	J86		
HUMBLE, TX VORTAC	LEEVILLE, LA VORTAC	135	HUMBLE
	J87		
MOLINE, IL VOR/DME	JOLIET, IL VOR/DME	45	MOLINE
	J88		
SAN MARCUS, CA VORTAC	SALINAS, CA VORTAC	71	SAN MARCUS
	J90		
HELENA, MT VORTAC	MILES CITY, MT VOR/DME	115	HELENA
	J92		
BEATTY, NV VORTAC	BOULDER CITY, NV VORTAC	12	BEATTY

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J94		
ROCK SPRINGS, WY VOR DME	SCOTTSBLUFF, NE VORTAC	105	ROCK SPRINGS
	J96		
DRAKE, AZ VORTAC	GALLUP, NM VORTAC	77	DRAKE
GALLUP, NM VORTAC	CIMARRON, NM VORTAC	146	GALLUP
	J107		
MILFORD, UT VORTAC	ROCK SPRINGS, WY VOR/DME	120	MILFORD
	J110		
BELLAIRE, OH VOR/DME	COYLE, NJ VORTAC	132	BELLAIRE
	J116		
MEEKER, CO VOR/DME	FALCON, CO VORTAC	60	MEEKER
	J121		
CHARLESTON, SC VORTAC	KINSTON, NC VORTAC	128	CHARLESTON
SNOW HILL, MD VORTAC	SEA ISLE, NJ VORTAC	20	SNOW HILL
	J126		
SAN MARCUS, CA VORTAC	SALINAS, CA VORTAC	71	SAN MARCUS
	J128		
BLUE MESA, CO VOR/DME	FALCON, CO VORTAC	50	BLUE MESA
	J130		
MC COOK, NE VOR/DME	PAWNEE CITY, NE VORTAC	72	MC COOK
	J134		
DRAKE, AZ VORTAC	GALLUP, NM VORTAC	77	DRAKE
GALLUP, NM VORTAC	CIMARRON, NM VORTAC	146	GALLUP
	J136		
YAKIMA, WA VORTAC	SPOKANE, WA VORTAC	50	YAKIMA
MULLAN PASS, ID VOR/DME	HELENA, MT VORTAC	100	MULLAN PASS
BILLINGS, MT VORTAC	MEDICINE BOW, WY VOR/DME	149	BILLINGS
	J140		
DULUTH, MN VORTAC	SAULT STE MARIE, MI VOR/DME	171	DULUTH

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J143		
MENDOCINO, CA VORTAC	ROSEBURG, OR VOR/DME	150	MENDOCINO
	J152		
JOHNSTOWN, PA VOR/DME	HARRISBURG, PA VORTAC	62	JOHNSTOWN
	J153		
ROME, OR VOR/DME	BAKER CITY, OR VOR/DME	120	ROME
BAKER CITY, OR VOR/DME	SPOKANE, WA VORTAC	60	BAKER CITY
	J154		
WASATCH, UT VORTAC	ROCK SPRINGS, WY VOR/DME	35	WASATCH
ROCK SPRINGS, WY VOR DME	GILL, CO VOR/DME	104	ROCK SPRINGS
	J157		
MYTON, UT VOR/DME	LARAMIE, WY VOR/DME	112	MYTON
	J163		
POCATELLO, ID VOR/DME	ROCK SPRINGS, WY VOR/DME	82	POCATELLO
	J173		
WASATCH, UT VORTAC	MEEKER, CO VOR/DME	47	WASATCH
	J174		
SNOW HILL, MD VORTAC	HAMPTON, NY VORTAC	106	SNOW HILL
	J180		
SAWMILL, LA VOR/DME	LITTLE ROCK, AR VORTAC	105	SAWMILL
LITTLE ROCK, AR VORTAC	FORISTELL, MO VORTAC	118	LITTLE ROCK
	J181		
RANGER, TX VORTAC	OKMULGEE, OK VOR/DME	139	RANGER
	J183		
LLANO, TX VORTAC	COLLEGE STATION, TX VORTAC	93	LLANO
	J187		
MEMPHIS, TN VORTAC	FORISTELL, MO VORTAC	96	MEMPHIS
	J189		
KLAMATH FALLS, OR VORTAC	BATTLE GROUND, WA VORTAC	78	KLAMATH FALLS

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J197		
DOVE CREEK, CO VORTAC	HUGO, CO VOR/DME	105	DOVE CREEK
	J209		
NORFOLK, VA VORTAC	SALISBURY, MD VORTAC	42	NORFOLK
	J220		
ARMEL, VA VOR/DME	STONYFORK, PA VOR/DME	122	ARMEL
	J233		
KIRKSVILLE, MO VORTAC	WATERLOO, IA VOR/DME	78	KIRKSVILLE
	J236		
THERMAL, CA VORTAC	NEEDLES, CA VORTAC	53	THERMAL
NEEDLES, CA VORTAC	TUBA CITY, AZ VORTAC	72	NEEDLES
	J240		
MYTON, UT VOR/DME	BLUE MESA, CO VOR/DME	60	MYTON
	J244		
FORT UNION, NM VORTAC	ZUNI, NM VORTAC	86	FORT UNION
	J501		
BIORKA ISLAND, AK VORTAC	SANDSPIT, CA VOR/DME	153	BIORKA ISLAND
YAKUTAT, AK VOR/DME	BIORKA ISLAND, AK VORTAC	108	YAKUTAT
JOHNSTONE POINT, AK VOR/DME	YAKUTAT, AK VOR/DME	100	JOHNSTONE POINT
	J502		
SEATTLE, WA VORTAC	VICTORIA, CA VOR/DME	50	SEATTLE
	J503		
SEATTLE, WA VORTAC	PRINCETON, CA VORTAC	108	SEATTLE
	J505		
SEATTLE, WA VORTAC	CRANBROOK, CA VOR/DME	108	SEATTLE
	J515		
BETTLES, AK VOR/DME	BARROW, AK VOR/DME	130	BETTLES

AIRWAY SEGMENT			CHANGEOVER POINTS
FROM	TO	DISTANCE	FROM
	J517		
BOISE, ID VORTAC	SPOKANE, WA VORTAC	100	BOISE
	J518		
INDIAN HEAD, PA VORTAC	BALTIMORE, MD VORTAC	20	INDIAN HEAD
	J523		
ELY, NV VOR/DME	BRYCE CANYON, UT VORTAC	20	ELY
	J589		
CORVALLIS, OR VOR/DME	VICTORIA, CA VOR/DME	100	CORVALLIS
	J713		
BIG PINEY, WY VOR/DME	WASATCH, UT VORTAC	94	BIG PINEY

TBL 2–18
Special Handling

Special Handling	Item 18 STS/
Flight operating in accordance with an altitude reservation	ALTRV
Flight approved for exemption from ATFM measures by the appropriate ATS authority	ATFMX
Fire Fighting	FFR
Flight check for calibration of NAVAIDS	FLTCK
Flight carrying hazardous material(s)	HAZMAT
Flight with Head of State status	HEAD
Medical flight declared by medical authorities	HOSP
Flight operating on a humanitarian mission	HUM
Flight for which a military entity assumes responsibility for separation of military aircraft	MARSA
Life critical medical emergency evacuation	MEDEVAC
Non–RVSM capable flight intending to operate in RVSM airspace	NONRVSM
Flight engaged in a search and rescue mission	SAR
Flight engaged in military, customs, or police services	STATE

(b) Any other requests for special handling must be made in Item 18 RMK/.

(c) Include plain–language remarks when required by ATC or deemed necessary. Do not use special characters, for example; / * – = +.

EXAMPLE–
RMK/NRP
RMK/DVRSN

12. Remarks

Include when necessary.

13. Operator (Item 18 OPR/)

When the operator is not obvious from the aircraft identification, the operator may be indicated.

EXAMPLE–
OPR/NETJETS

14. Flight Plan Originator (Item 18 ORGN/)

(a) VFR flight plans originating outside of FAA FSS or FAA contracted flight plan filing services must enter the 8–letter AFTN address of the service where the flight plan was originally filed. Alternately, enter the name of the service where the FPL was originally filed. This information is critical to locating the FPL originator in the event additional information is needed.

(b) For IFR flight plans, the original filers AFTN address may be indicated, which is helpful in cases where a flight plan has been forwarded.

EXAMPLE–
ORGN/Acme Flight Plans
ORGN/KDENXLDS

TBL 2–19

Aircraft Specific Information

Item	International Flight Plan (FAA Form 7233–4)	Domestic U.S. Requirements	Equivalent Item on Domestic Flight Plan (FAA Form 7233–1)
Number of Aircraft	Item 9	Included when more than one a/c in flight	Item 3
Type of Aircraft	Item 9	Required	Item 3
Wake Turbulence Category	Item 9	Required	N/A
Aircraft Registration	Item 18 REG/	Include when planning to operate in RVSM airspace	N/A
Mode S Address	Item 18 CODE/	Not required within U.S. controlled airspace	N/A
SELCAL Codes	Item 18 SEL/	Include when SELCAL equipped	N/A
Performance Category	Item 18 PER/	Not required for domestic flights	N/A

e. Instructions for Aircraft–Specific Information.

1. Number of Aircraft (Item 9) when there is more than one aircraft in the flight; indicate the number of aircraft up to 99.

2. Type of Aircraft (Item 9)

(a) Provide the appropriate 2–4 character aircraft type designator listed in FAA Order JO 7360.1, Aircraft Type Designators. FAA Order JO 7360.1 may be located at: Orders & Notices (faa.gov), then enter 7360.1 in the Search box.

(b) When there is no designator for the aircraft type use 'ZZZZ', and provide a description in Item 18 TYP/.

3. Wake Turbulence Category (Item 9)

A Wake Turbulence Category is required for all aircraft types. Provide the appropriate wake turbulence category for the aircraft type as listed in FAA Order 7360.1. The categories include:

(a) J – SUPER, aircraft types specified as such in FAA Order JO 7360.1, Aircraft Type Designators.

(b) H – HEAVY, to indicate an aircraft type with a maximum certificated take–off mass of 300,000 lbs. or more, with the exception of aircraft types listed in FAA Order JO 7360.1 in the SUPER (J) category.

(c) M – MEDIUM, to indicate an aircraft type with a maximum certificated take–off mass of less than 300,000 lbs. but more than 15,500 lbs.

(d) L – LIGHT, to indicate an aircraft type with a maximum certificated take–off mass of 15,500 lbs. or less.

4. Aircraft Registration (Item 18 REG/)

The aircraft registration must be provided here if different from the Item 7 entry. The registration mark must not include any spaces or hyphens. Additionally, the actual aircraft registration must also be included if Item 7 would have contained a leading numeric and was modified to be prefixed with the appropriate alphabetic character for U.S. ATC acceptance.

EXAMPLE–
U.S. aircraft with registration N789AK
REG/N789AK
Belgian aircraft with registration OO–FAH
REG/OOFAH

5. Mode S Address (Item 18 CODE/)

responsible party to verify VFR arrival/closure, if desired. Ensure party will be available for contact at ETA. (for example; FBO is open at ETA)

5. C/ (Pilot) Enter name and contact information, including telephone number, of pilot–in–command. Ensure contact information will be valid at ETA in case SAR is necessary.

FIG 2–1

FAA Form 7233–4, Pre–Flight Pilot Checklist and International Flight Plan

PRIVACY ACT STATEMENT: This statement is provided pursuant to the Privacy Act of 1974, 5 USC § 552a: The authority for collecting this information is contained in 49 U.S.C. §§ 40113, 44702, 44703, 44709, and 14 C.F.R. Part 6 - [Part 61, 63, 65, or 67. The principal purpose for which the information is intended to be used is to allow you to submit your flight plan. Submission of the data is voluntary. Failure to provide all required information may result in you not being able to submit your flight plan. The information collected on this form will be included in a Privacy Act System of Records known as DOT/FAA 847, titled "Aviation Records on Individuals" and will be subject to the routine uses published in the System of Records Notice (SORN) for DOT/FAA 847 (see www.dot.gov/privacy/privacyactnotices).

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0026. Public reporting for this collection of information is estimated to be approximately 2.5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are required to obtain or retain a benefit per 14 CFR Part 91. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, ASP-110.

Pre-Flight Pilot Checklist

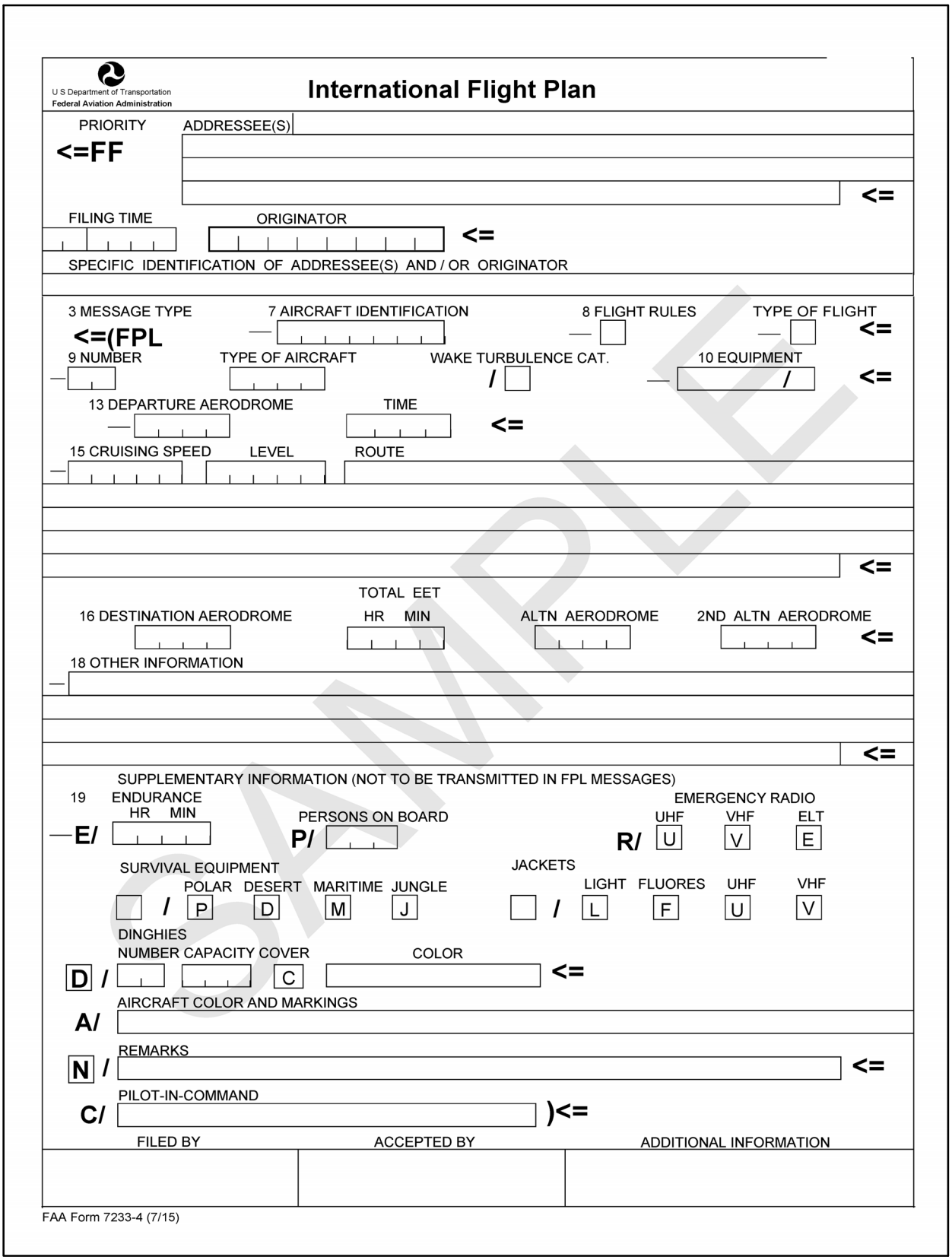
Aircraft Identification | Time of Briefing

			Report Weather Conditions Aloft			
Weather (Destination) (Alternate)	☐ Present	Remarks	*Report immediately weather conditions encountered---particularly cloud tops, upper cloud layers, thunderstorms, ice, turbulence, winds and temperature*			
	☐ Forecast		Position	Altitude	Time	Weather Conditions
Weather (En Route)	☐ Present					
	☐ Forecast					
	☐ Pireps					
Winds Aloft	Best Crzg. Alt.					
Nav. Aid & Comm. Status.	☐ Destination					
	☐ En Route					
Airport Conditions	☐ Destination					
	☐ Alternate					
ADIZ	☐ Airspace Restrictions					

Civil Aircraft Pilots

FAR Part 91 states that each person operating a civil aircraft of U S. registry over the high seas shall comply with Annex 2 to the Convention of International Civil Aviation, International Standards - Rules of the Air. Annex 2 requires the submission of a flight plan containing items 1-1 9 prior to operating any flight across international waters. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended).

International briefing information may not be current or complete. Data should be secured, at the first opportunity, from the country in whose airspace the flight will be conducted.



U S Department of Transportation
Federal Aviation Administration

International Flight Plan

PRIORITY <=FF

ADDRESSEE(S) <=

FILING TIME

ORIGINATOR <=

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND / OR ORIGINATOR

3 MESSAGE TYPE <=(FPL

7 AIRCRAFT IDENTIFICATION

8 FLIGHT RULES

TYPE OF FLIGHT <=

9 NUMBER

TYPE OF AIRCRAFT

WAKE TURBULENCE CAT. /

10 EQUIPMENT / <=

13 DEPARTURE AERODROME

TIME <=

15 CRUISING SPEED

LEVEL

ROUTE

<=

16 DESTINATION AERODROME

TOTAL EET HR MIN

ALTN AERODROME

2ND ALTN AERODROME <=

18 OTHER INFORMATION

<=

SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)

19 ENDURANCE HR MIN E/

PERSONS ON BOARD P/

EMERGENCY RADIO R/ UHF [U] VHF [V] ELT [E]

SURVIVAL EQUIPMENT / POLAR [P] DESERT [D] MARITIME [M] JUNGLE [J]

JACKETS / LIGHT [L] FLUORES [F] UHF [U] VHF [V]

DINGHIES
NUMBER CAPACITY COVER [C] COLOR <=

[D] /

AIRCRAFT COLOR AND MARKINGS A/

REMARKS [N] / <=

PILOT-IN-COMMAND C/)<=

FILED BY | ACCEPTED BY | ADDITIONAL INFORMATION

FAA Form 7233-4 (7/15)

NOTE–
Current FAA Form 7233–4 available at https://www.faa.gov/forms/.