U.S. Department
of Transportation

**Federal Aviation
Administration**

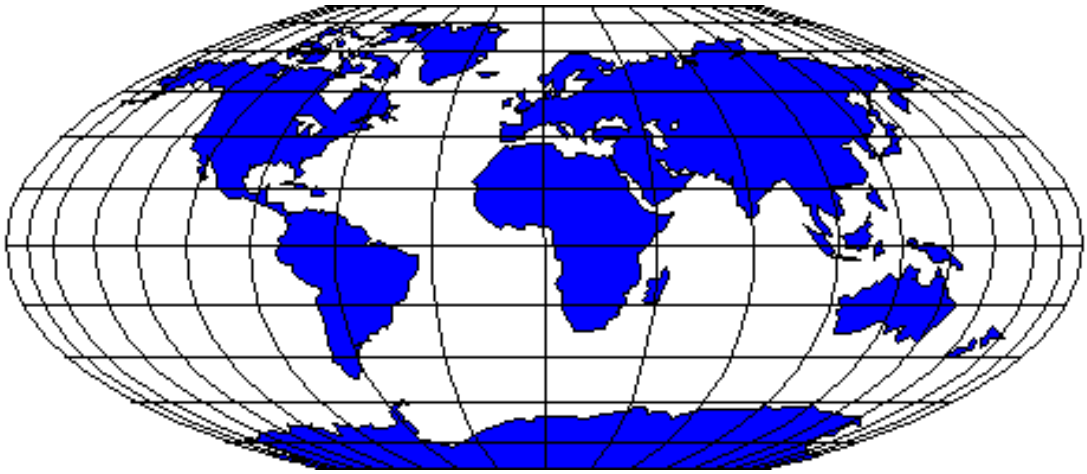
NOTICES TO AIRMEN

Domestic/International

December 5, 2019

Next Issue

January 2, 2020



*Notices to Airmen included in this publication are **NOT** given during pilot briefings unless specifically requested by the pilot. An electronic version of this publication is on the internet at http://www.faa.gov/air_traffic/publications/notices*

Air Traffic Products and Publications Team

JANUARY − 2020

SUN	MON	TUE	WED	THU	FRI	SAT
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FEBRUARY − 2020

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MARCH − 2020

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APRIL − 2020

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MAY − 2020

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JUNE − 2020

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JULY − 2020

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AUGUST − 2020

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SEPTEMBER − 2020

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OCTOBER − 2020

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NOVEMBER − 2020

SUN	MON	TUE	WED	THU	FRI	SAT
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DECEMBER − 2020

SUN	MON	TUE	WED	THU	FRI	SAT
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= Effective dates and cutoff dates for submitting information to the Publications Staff, AJV−8 for next publication. (Twenty−eight (28) days before next effective date.)

NOTICES TO AIRMEN

December 5, 2019

Note: Part 1, Part 95 Revisions, will be removed from the Notices to Airmen Publication (NTAP) effective January 30, 2020. Part 95 Revisions can be found on the Aeronautical Information Services (AJV–A) website (https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Part_95_Consolidation/) and in the Federal Register Notice (https://www.federalregister.gov). Please see the Foreword for more information.

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General Information

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PART 2. International NOTAMs

PART 3. Graphic Notices

(Notices are listed in categories. **For information on submitting graphic notices for publication, see page v.**)

Control No.	Category	Page No.
	Section 1. General	
GEN19000	Automatic Dependent Surveillance–Broadcast (ADS–B) Out Preflight Responsibilities	3–GEN–3
GEN19001	Cold Temperature Restricted Airports	3–GEN–6
GEN19002	Operations of Aircraft Without ADS–B Out at Capacity–Constrained U.S. Airports	3–GEN–29

Section 2. Special Operations

Section 3. Airport and Facility Notices

Northeast United States

**There are no Northeast United States notices for this edition.*

Southeast United States

**There are no Southeast United States notices for this edition.*

East Central United States

South Central United States

**There are no South Central United States notices for this edition.*

North Central United States

**There are no North Central United States notices for this edition.*

Northwest United States

**There are no Northwest United States notices for this edition.*

Southwest United States

Alaska and Hawaii

**There are no Alaska and Hawaii notices for this edition.*

Section 4. Major Sporting & Entertainment Events

**There are no Major Sporting & Entertainment Events notices for this edition.*

Section 5. Airshows

There are no Airshows notices for this edition.

Temporary Flight Restrictions (TFR) and additional NOTAM information are available on the FAA website at http://www.faa.gov

NOTICES TO AIRMEN

Publication Schedule

PART 1

Information for **Part 1** (Part 95 Revisions) shall be submitted to the **Aeronautical Data Team**, **Aeronautical Information Services**, AJV−A before the information cutoff dates listed in the chart below. Information, as well as inquiries, should be addressed to:

Address	Contact	Category
FAA, Aeronautical Information Services 1305 East−West Highway SSMC4, Suite 3424 Silver Spring, MD 20910−3281	Phone Number: 1−800−638−8972 Aeronautical Data Inquiries: https://nfdc.faa.gov/nfdcApps/	Airspace & Procedures Part 95 Revisions

Current NOTAMs are available from *www.1800wxbrief.com*, *notams.aim.faa.gov*/*notamSearch*/, or through Flight Service Stations at 1−800−WX−BRIEF. Notices, restrictions, and advisories may change at any time and without notice. Do not attempt any operation in the National Airspace System without first obtaining and understanding a thorough pre−flight briefing.

PARTS 2 AND 3

Information for **Part 2** (International) and **Part 3** (Graphic Notices) shall be submitted electronically to **Mission Support Services, Policy (AJV−P12)**, through the appropriate regional office. Requirements for Graphic Notices are listed on page viii of the Foreword and **must** be submitted well in advance of the event, but not later than 28 days prior to publication (see table below). Changes to submissions cannot be accepted after the cutoff dates. Graphic Notices for special events are published in two editions prior to the event. Information for Parts 2 and 3, as well as inquiries, should be addressed to:

Address	E−Mail	Phone Number
FAA HQ, Mission Support Services Mission Support Services, Policy (AJV−P) 600 Independence Ave., SW Washington, DC 20597	9−ATOR−HQ−PubGrp@faa.gov	1−202−267−0140

Cutoff Dates for Submitting Information To Be Published

Effective Date of Publication	Information Submission Cutoff Dates for **Graphic Notices (Parts 2 & 3)**	Information Submission Cutoff Dates for **Part 95 Revisions (Parts 1)**	
		Airport Info Cutoff	*Airspace Info Cutoff*
January 2, 2020	December 5, 2019	N/A	N/A
January 30, 2020	January 2, 2020	December 18, 2019	December 3, 2019
February 27, 2020	January 30, 2020	N/A	N/A
March 26, 2020	February 27, 2020	N/A	NA
April 23, 2020	March 26, 2020	N/A	N/A
May 21, 2020	April 23, 2020	N/A	NA
June 18, 2020	May 21, 2020	N/A	N/A
July 16, 2020	June 18, 2020	N/A	N/A
August 13, 2020	July 16, 2020	N/A	N/A
September 10, 2020	August 13, 2020	N/A	N/A
October 8, 2020	September 10, 2020	N/A	N/A
November 5, 2020	October 8, 2020	N/A	N/A
December 3, 2020	November 5, 2020	N/A	N/A

SUBSCRIPTION INFORMATION

This and other selected Air Traffic publications are available online: www.faa.gov/air_traffic/publications

*General Public**	*Government Organizations**
Contact: Superintendent of Documents U.S. Government Printing Office P.O. Box 979050 St. Louis, MO 63197–9000 **Call:** 202–512–1800 **Online:** http://bookstore.gpo.gov	This publication is available on the FAA Website. All Government organizations are responsible for viewing, downloading, and subscribing to receive electronic mail notifications when changes occur to this publication. Electronic subscription information can be obtained by visiting the aforementioned website.
**For those desiring printed copies, current pricing is available on the GPO website at http://bookstore.gpo.gov*	

FOREWORD

NATIONAL AIRSPACE SYSTEM CHANGES

The main references for changes to the National Airspace System (NAS) are the Aeronautical Charts and the Chart Supplements. Most changes to the NAS meeting NOTAM criteria are known sufficiently in advance to be carried in these publications. When this cannot be done, changes are carried as a NOTAM.

NOTAMS IN THE NOTICES TO AIRMEN PUBLICATION

The Notices to Airmen publication is issued every 28 days. Data in this publication that is current on the effective date of the next Chart Supplement will be transferred to the supplements and removed from this publication.

PART 1. PUBLICATION CRITERIA

Effective with the January 30, 2020, edition, this Part will be removed from the publication in its entirety.

Part 95 Revisions can be found on the Aeronautical Information Services (AJV−A) website (https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Part_95_Consolidation/) and in the Federal Register Notice (https://www.federalregister.gov), making its publication in the NTAP redundant. A Safety Panel held on June 26, 2018, concluded there was no safety risk by the removal of Part 95 Revisions from the publication. Part 2, International NOTAMs, and Part 3, Graphic Notices, will be renumbered as Part 1 and Part 2, respectively.

Revisions to Part 95 of the Code of Federal Regulations – Minimum En Route IFR Altitudes and Changeover Points are published four (4) weeks prior to the 56−day IFR chart cycle.

The revisions will remain in the NTAP until four (4) weeks prior to the next IFR chart 56−day cycle. (IFR 56−day cycle dates are published in the AFD in the General Information Section under Effective Date.)

The consolidation of Part 95 Altitudes will continue to be published as a separate document.

PART 2. INTERNATIONAL NOTICES TO AIRMEN

The International Notices to Airmen feature significant international information and data which may affect a pilot's decision to enter or use areas of foreign or international airspace. Each issuance of this Part is complete in itself. Temporary data will be repeated in each issue until the condition ceases to exist. Permanent data will be carried until it is sufficiently published or is available in other permanent sources. New items will be indicated by a black bar running in the left or right margin.

The information in Part 2 is divided into two sections. Section 1, Flight Prohibitions, Potentially Hostile Situations, and Foreign Notices is arranged alphabetically by country. Section 2, International Oceanic Airspace Notices, is divided into two sections: General and Region Specific.

Any notice submitted for inclusion must include the following information at the end of the notice: submitting office and date of the revision (e.g., AJV−P12, 10/10/2019). In addition, all electronic mail submissions to 9−ATOR−HQ−PubGrp@faa.gov should specify a time frame in which to expect the removal of the notice from the publication. Submitting offices should notify AJV−P12 when notices are no longer needed in the publication.

PART 3. GRAPHIC NOTICES

This section contains special notices and notices containing graphics pertaining to almost every aspect of aviation, such as military training areas, large scale sporting events that may attract media attention or draw large crowds of aircraft, air show information, and airport−specific information.

Data in this section is updated continuously. All submissions for inclusion in this section must have regional office approval and be submitted to AJV−P12 through the regional office.

Notices for events requiring Special Traffic Management Programs (STMP) should be coordinated following the procedures in FAA Order JO 7210.3, Facility Operation and Administration.

Submissions should be sent to AJV−P12 well in advance of but **no later than 28 days prior to** the effective date of the Notices to Airmen edition to ensure adequate lead time for inclusion in the publication.

Notices to Airmen (NOTAMS) submitted for inclusion in the NTAP are published **no earlier than two publication cycles (56 day periods) prior to the cycle in which the NOTAM becomes effective.** Special NOTAMS capture special events, like the Super Bowl, and are generally published in the NTAP for two consecutive publication cycles. NOTAMS that are more permanent in nature are posted in the NTAP until transferred to other appropriate Air Traffic Publications.

With the exception of dated special events, any notice submitted for inclusion must include the following information at the end of the notice: submitting office and date of the revision (e.g., AJV−P12, 10/10/2019). In addition, all electronic mail submissions should specify a time frame in which to expect the removal of the notice from the publication. Regional offices should notify AJV−P12 when notices are no longer needed in the publication.

Text files should be submitted as Word documents. Any graphics submitted for inclusion must be of high quality and in camera ready form; *FAX copies will not be accepted*. Electronic mail submissions are required and should be addressed to 9−ATOR−HQ−PubGrp@faa.gov . Graphics should be submitted in one of the following formats: GIF, JPEG, TIFF, BMP, or PDF. Please do not submit graphics with a ".doc" file extension. Each graphic must be submitted as a separate attachment. Graphic notices may be submitted in color or black and white. Avoid using white text in any graphic. Copyrighted materials, such as maps, should not be submitted for publication without written permission of the copyright owner.

REMOVED PARTS

Part 1. FDC NOTAMs

Effective with the February 28, 2019, edition, this part was removed from the publication. This included Section 1, Airway NOTAMs; Section 2, Airport, Facility and Procedural NOTAMs; and Section 3, General NOTAMs. These NOTAMs are still considered on request items when obtaining a briefing from Flight Service Stations (FSS). The most current and up−to−date information on NOTAMs is contained in the FAA's official NOTAM Search website, which can be found at https://notams.aim.faa.gov/notamSearch/. Pilots should obtain preflight IFR route and amendment FDC NOTAM information via the NOTAM Search website, an approved Flight Service web portal, or upon request by calling a Flight Service Station. Part 2, 3, and 4 of the NTAP were renumbered as Part 1, 2, and 3, respectively.

Part 5. Special Temporary Flight Restrictions/Prohibited Areas Around the Washington, DC, Thurmont, MD, and Crawford, TX, Areas

Effective with the November 27, 2003, edition, this part was removed from the publication. For information on flight restrictions, pilots are directed to www.1800wxbrief.com, notams.aim.faa.gov/notamSearch/, or through Flight Service Stations at 1−800−WX−BRIEF.

TIME REFERENCES

All time references are indicated as UTC or local. During periods of Daylight Saving Time, effective hours in local time will be one hour earlier than shown. All states observe Daylight Savings Time except Arizona, Hawaii, Puerto Rico, and the Virgin Islands.

NEW INFORMATION

Vertical lines in the outside margin indicate new or revised information.

INTERNET

The entire Notices to Airmen publication is published on the internet at the following address in PDF and HTML format: http://www.faa.gov/air_traffic/publications/notices/.

There are two copies of the NTAP on the website, the current version and the previous version. This is done to overlay any current NOTAMs and information that may be needed.

ERROR OR OBSOLETE DATA NOTIFICATION

Notification of erroneous or obsolete data should be directed to the Federal Aviation Administration, Mission Support Services, Policy, AJV−P12, 600 Independence Avenue, SW, Washington, DC 20597, or via e−mail at 9−ATOR−HQ−PubGrp@faa.gov.

CONTRACTIONS

NOTAM CONTRACTIONS

This list contains most of the commonly used contractions currently in use in Notices to Airmen (NOTAMS) and the standard aviation weather products, such as METAR/TAF, area forecasts, SIGMETs, AIRMETs, etc.

Contraction	*Decode*
A	
ABN	Aerodrome Beacon
ABV	Above
ACFT	Aircraft
ACT	Active or Activated or Activity
AD	Aerodrome
ADJ	Adjacent
AGL	Above ground level
ALS	Approach Light System
ALT	Altitude
ALTN	Alternate
AP	Airport
APCH	Approach
APP	Approach control or Approach Control Office
ARR	Arrival or Arrive
ASPH	Asphalt
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
AUTH	Authority
AVBL	Available
AWY	Airway
AZM	Azimuth
B	
BA GOOD	Braking action good
BA GOOD TO MEDIUM	Braking action good to medium
BA MEDIUM	Braking action medium
BA MEDIUM TO POOR	Braking action medium to poor
BA NIL	Braking action nil
BC	Back Course
BCN	Beacon
BLW	Below
C	
CAT	Category
CK	Check
CL	Center Line
CLSD	Closed
CMB	Climb
COM	Communications
CONC	Concrete
CTC	Contact
CTL	Control
D	
DCT	Direct
DEG	Degrees
DH	Decision Height
DIST	Distance
DLA	Delay or delayed
DLY	Daily
DME	Distance Measuring Equipment
DP	Dew Point Temperature

Contraction	*Decode*
E	
E	East
ELEV	Elevation
ENG	Engine
EXC	Except
F	
FAF	Final Approach fix
FAN MKR	Fan Marker
FDC	Flight Data Center
FM	From
FREQ	Frequency
FNA	Final approach
FRI	Friday
FSS	Automated/Flight Service Station
FT	Foot, feet
G	
GCA	Ground Control Approach
GP	Glide Path
GPS	Global Positioning System
GRVL	Gravel
H	
HDG	Heading
HEL	Helicopter
HELI	Heliport
HIRL	High Intensity Runway Lights
HIWAS	Hazardous Inflight Weather Advisory Service
HLDG	Holding
HR	Hour
I	
IAF	Initial approach fix
IAP	Instrument Approach Procedure
INBD	Inbound
ID	Identification
IDENT	Identify/Identifier/Identification
IF	Intermediate approach fix
ILS	Instrument Landing System
IM	Inner Marker
IN	Inch/Inches
INFO	Information
INOP	Inoperative
INSTR	Instrument
INT	Intersection
INTL	International
INTST	Intensity
K	
KT	Knots
L	
L	Left
LAA	Local Airport Advisory
LAT	Latitude

Contraction	*Decode*
LAWRS	Limited Aviation Weather Reporting Station
LB	Pound/Pounds
LC	Local Control
LOC	Localizer
LGT	Light or lighting
LGTD	Lighted
LIRL	Low Intensity Runway Lights
LM	Locator Middle
LDG	Landing
LO	Outer Locator
LONG	Longitude
M	
MAINT	Maintain, maintenance
MALS	Medium Intensity Approach Light System
MALSF	Medium Intensity Approach Light System with Sequenced Flashers
MALSR	Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MAPT	Missed Approach Point
MCA	Minimum Crossing Altitude
MDA	Minimum Descent Altitude
MEA	Minimum Enroute Altitude
MIN	Minute
MIRL	Medium Intensity Runway Lights
MLS	Microwave Landing System
MM	Middle Marker
MNM	Minimum
MNT	Monitor/Monitoring/Monitored
MOC	Minimum Obstruction Clearance
MON	Monday
MSG	Message
MSL	Mean Sea Level
N	
N	North
NA	Not Authorized
NAV	Navigation
NB	Northbound
NDB	Nondirectional Radio Beacon
NE	North−east
NGT	Night
NM	Nautical Mile(s)
NTAP	Notice To Airmen Publication
NW	North−west
O	
OBSC	Obscured
OBST	Obstacle
OM	Outer Marker
OPR	Operate
OPS	Operation
P	
PAPI	Precision Approach Path Indicator
PAR	Precision Approach Radar
PARL	Parallel
PAX	Passenger
PCL	Pilot Controlled Lighting
PERM	Permanent/Permanently
PJE	Parachute jumping exercise
PLA	Practice Low Approach
PN	Prior Notice Required

Contraction	*Decode*
PPR	Prior Permission Required
PRN	Psuedo random noise
PROC	Procedure
PTN	Procedure Turn
R	
RAIL	Runway Alignment Indicator Lights
RCL	Runway Centerline
RCLL	Runway Centerline Light System
REC	Receive/Receiver
REDL	Runway Edge Light
REIL	Runway End Identifier Lights
REP	Report
RLLS	Runway Lead−in Lights System
RNAV	Area Navigation
RPLC	Replace
RSR	En Route Surveillance Radar
RTS	Return to Service
RVR	Runway Visual Range
RWY	Runway
S	
S	South
SAT	Saturday
SB	Southbound
SE	Southeast
SID	Standard Instrument Departure
SIMUL	Simultaneous
SKED	Scheduled
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
SSR	Secondary Surveillance Radar
STA	Straight−in Approach
STAR	Standard Terminal Arrival
SUN	Sunday
SW	Southwest
T	
T	Temperature
TACAN	Tactical Air Navigational Aid
TAR	Terminal area surveillance radar
TDZ	Touchdown Zone
TEMPO	Temporary
TFC	Traffic
TFR	Temporary Flight Restriction
TGL	Touch and Go Landings
THR	Threshold
THRU	Through
THU	Thursday
TKOF	Takeoff
TUE	Tuesday
TWR	Tower
TWY	Taxiway
U	
U/S	Unserviceable
UNREL	Unreliable
V	
VASI	Visual Approach Slope Indicator

Contraction	*Decode*
VIS	Visibility
VOR	VHF Omni–Directional Radio Range
VORTAC	VOR and TACAN (colocated)
W	
W	West

Contraction	*Decode*
WB	Westbound
WED	Wednesday
WI	Within
WPT	Waypoint
WX	Weather

WEATHER CONTRACTIONS

Contraction	*Decode*
A	
A	Absolute (temperature)
A	Alaskan Standard Time (time groups only)
A	Arctic (air mass)
A01	Automated Observation without Precipitation Discriminator (rain/snow) (METAR)
A02	Automated Observation with Precipitation Discriminator (rain/snow) (METAR)
AAWF	Auxiliary Aviation Weather Facility
AC	Altocumulus
ACC	Altocumulus Castellanus
ACSL	Standing Lenticular Altocumulus
ACYC	Anticyclonic
ADRNDCK	Adirondack
ADV	Advise
ADVCTN	Advection
ADVY	Advisory
AFC	Area Forecast Center
AFDK	After Dark
ALF	Aloft
ALGHNY	Allegheny
ALQDS	All Quadrants
ALSEC	All Sectors
ALTA	Alberta
ALUTN	Aleutian
ALWF	Actual Wind Factor
AM	Ante Meridiem
AMD	Amended Forecast (TAF)
AMPLTD	Amplitude
AMS	Air Mass
AMS	American Meteorological Society
ANLYS	Analysis
APLCN	Appalachian
AS	Altostratus
ASOS	Automated Surface Observing System
ATLC	Atlantic
AURBO	Aurora Borealis
AWP	Aviation Weather Processors
B	
B	Beginning of Precipitation (time in minutes) (weather reports only)
B	Bering Standard Time (time groups only)
BACLIN	Baroclinic or Baroclinic Prognosis
BATROP	Barotropic or Barotropic Prognosis
BC	Patches (METAR)
BC	British Columbia
BCFG	Patchy Fog (METAR)
BCH	Beach
BCKG	Backing
BDA	Bermuda

Contraction	*Decode*
BECMG	Becoming (expected between 2 digit beginning hour and 2 digit ending hour) (TAF)
BFDK	Before Dark
BINOVC	Breaks in Overcast
BKN	Broken
BL	Between Layers
BL	Blowing (METAR)
BLD	Build
BLDUP	Buildup
BLKHLS	Black Hills
BLKT	Blanket
BLZD	Blizzard
BMS	Basic Meteorological Services
BNDRY	Boundary
BOVC	Base of Overcast
BR	Mist (METAR)
BRF	Brief
BRKHIC	Breaks in Higher Overcast
BRKSHR	Berkshire
BRM	Barometer
BTWN	Between
C	
C	Central Standard Time (time groups only)
C	Continental (air mass)
CAN	Canada
CARIB	Caribbean
CASCDS	Cascades
CAVOK	Cloud and Visibility OK (METAR)
CAVU	Clear or Scattered Clouds and Visibility Greater Than Ten Miles
CAWS	Common Aviation Weather Sub–system
CB	Cumulonimbus
CBMAM	Cumulonimbus Mamma
CC	Cirrocumulus
CCLKWS	Counterclockwise
CCSL	Standing Lenticular Cirrocumulus
CDFNT	Cold Front
CFP	Cold Front Passage
CHARC	Characteristic
CHSPK	Chesapeake
CI	Cirrus
CIG	Ceiling
CLD	Cloud
CLR	Clear at or below 12,000 feet (AWOS/ASOS report) (METAR)
CLRS	Clear and Smooth
CNCL	Cancel
CNDN	Canadian
CNVTV	Convective

Contraction	*Decode*
CONFDC	Confidence
CONTDVD	Continental Divide
CONTRAILS	Condensation Trails
COR	Correction to the observation (METAR)
CS	Cirrostratus
CST	Coast
CTGY	Category
CTSKLS	Catskills
CU	Cumulus
CUFRA	Cumulus Fractus
CYC	Cyclonic
CYCLGN	Cyclogenesis
D	
DABRK	Daybreak
DCAVU	Clear or Scattered Clouds and Visibility Greater than Ten, Remainder of Report Missing (weather reports only)
DKTS	Dakotas
DMSH	Diminish
DNS	Dense
DNSLP	Downslope
DNSTRM	Downstream
DP	Deep
DPNG	Deepening
DPTH	Depth
DR	Low Drifting (METAR)
DRFT	Drift
DS	Dust Storm (METAR)
DSIPT	Dissipate
DTLN	International Dateline
DTRT	Deteriorate
DU	Widespread Dust (METAR)
DVV	Downward Vertical Velocity
DWNDFTS	Downdrafts
DWPNT	Dew Point
DZ	Drizzle (METAR)
E	
E	Eastern Standard Time (time groups only)
E	Ending of Precipitation (time in minutes) (weather reports only)
E	Equatorial (air mass)
E	Estimated (weather reports only)
ELNGT	Elongate
EMBDD	Embedded
EMSU	Environment Meteorological Support Unit
ENERN	East−northeastern (weather reports only)
ENEWD	East−northeastward (weather reports only)
EOF	Expected Operations Forecast
ESERN	East−southeastern (weather reports only)
ESEWD	East−southeastward (weather reports only)
EXTRAP	Extrapolate
EXTRM	Extreme
F	
FA	Area Forecast
FAH	Fahrenheit
FEW	1 or 2 octas (eighths) cloud coverage (METAR)
FC	Funnel Cloud (METAR)
+FC	Tornado/ Water Spout (METAR)
FG	Fog (METAR)
FIBI	Filed but Impractical to Transmit
FILG	Filling

Contraction	*Decode*
FINO	Weather Report Will Not Be Filed for Transmission
FL	Flash Advisory
FLDST	Flood Stage
FLG	Falling
FLRY	Flurry
FLWIS	Flood Warning Issued
FM	From (4 digit beginning time in hours and minutes) (TAF)
FNT	Front
FNTGNS	Frontogenesis
FNTLYS	Frontolysis
FORNN	Forenoon
FRMG	Forming
FROPA	Frontal Passage
FROSFC	Frontal Surface
FRST	Frost
FRWF	Forecast Wind Factor
FRZ	Freeze
FRZLVL	Freezing Level
FRZN	Frozen
FT	Terminal Forecast
FU	Smoke (METAR)
FULYR	Smoke Layer Aloft
FUOCTY	Smoke Over City
FWC	Fleet Weather Central
FZ	Supercooled/freezing (METAR)
G	
G	Gusts Reaching (knots) (weather reports only)
GLFALSK	Gulf of Alaska
GLFCAL	Gulf of California
GLFMEX	Gulf of Mexico
GLFSTLAWR	Gulf of St. Lawrence
GR	Hail (METAR)
GRAD	Gradient
GRBNKS	Grand Banks
GRDL	Gradual
GRTLKS	Great Lakes
GS	Small Hail/Snow Pellets (METAR)
GSTS	Gusts
GSTY	Gusty
H	
HCVIS	High Clouds Visible
HDFRZ	Hard Freeze
HDSVLY	Hudson Valley
HI	Hi
HIEAT	Highest Temperature Equaled for All Time
HIEFM	Highest Temperature Equaled for The Month
HIESE	Highest Temperature Equaled So Early
HIESL	Highest Temperature Equaled So Late
HIFOR	High Level Forecast
HITMP	Highest Temperature
HIXAT	Highest Temperature Exceeded for All Time
HIXFM	Highest Temperature Exceeded for The Month
HIXSE	Highest Temperature Exceeded So Early
HIXSL	Highest Temperature Exceeded So Late
HLSTO	Hailstones
HLTP	Hilltop
HLYR	Haze Layer Aloft
HURCN	Hurricane
HUREP	Hurricane Report
HX	High Index
HZ	Haze (METAR)

Contraction	*Decode*
I	
IC	Ice Crystals (METAR)
ICG	Icing
ICGIC	Icing in Clouds
ICGICIP	Icing in Clouds and Precipitation
ICGIP	Icing in Precipitation
IMDT	Immediate
INLD	Inland
INSTBY	Instability
INTR	Interior
INTRMTRGN	Inter−Mountain Region
INTS	Intense
INTSFY	Intensify
INVRN	Inversion
IOVC	In Overcast
IR	Ice on Runway
J	
JTSTR	Jet Stream
K	
K	Cold (air mass)
KFRST	Killing Frost
L	
LABRDR	Labrador
LCTMP	Little Change in Temperature
LDG	Landing
LFT	Lift
LGRNG	Long Range
LIFR	Low IFR (weather reports only)
LK	Lake
LOEAT	Lowest Temperature Equaled for All Time
LOEFM	Lowest Temperature Equaled for The Month
LOESE	Lowest Temperature Equaled So Early
LOESL	Lowest Temperature Equaled So Late
LOTMP	Lowest Temperature
LOXAT	Lowest Temperature Exceeded for All Time
LOXFM	Lowest Temperature Exceeded for The Month
LOXSE	Lowest Temperature Exceeded So Early
LOXSL	Lowest Temperature Exceeded So Late
LSR	Loose Snow on Runway
LTGCC	Lightning Cloud-to-Cloud
LTGCCCG	Lightning Cloud-to-Cloud, Cloud-to-Ground
LTGCG	Lightning Cloud-to-Ground
LTGCW	Lightning Cloud-to-Water
LTGIC	Lightning in Clouds
LTLCG	Little Change
LTNG	Lightning
LX	Low Index
LYR	Layer or Layered or Layers
M	
M	Maritime (air mass)
M	In temperature field means ”minus” or below zero (METAR)
M	In RVR Field, indicates visibility less than lowest reportable sensor value (e.g. M0600FT)
M	Missing (weather reports only)
M	Mountain Standard Time (time groups only)
MA	Map Analysis

Contraction	*Decode*
MAN	Manitoba
MEGG	Merging
MEX	Mexico
MHKVLY	Mohawk Valley
MI	Shallow (METAR)
MIDN	Midnight
MIFG	Patches of Shallow Fog Not Deeper Than Two Meters (METAR)
MLTLVL	Melting Level
MMO	Main Meteorological Office
MNLD	Mainland
MOGR	Moderate or Greater
MONTR	Monitor
MOV	Move
MRGL	Marginal
MRNG	Morning
MRTM	Maritime
MS	Minus
MSTLY	Mostly
MSTR	Moisture
MTN	Mountain
MVFR	Marginal VFR
MXD	Mixed
N	
NB	New Brunswick
NCWX	No Change in Weather
NELY	Northeasterly (weather reports only)
NERN	Northeastern
NEW ENG	New England
NFLD	Newfoundland
NGT	Night
NL	No Layers
NMBR	Number
NNERN	North−northeastern (weather reports only)
NNEWD	North−northeastward (weather reports only)
NNWRN	North−northwestern (weather reports only)
NNWWD	Northwestward (weather reports only)
NO	Not available (e.g. SLPNO, RVRNO)
NORPI	No Pilot Balloon Observation Will Be Filed Next Collection Unless Weather Changes Significantly
NPRS	Nonpersistent
NS	Nimbostratus
NS	Nova Scotia
NSCSWD	No Small Craft or Storm Warning are Being Displayed
NSW	No Significant Weather (METAR)
NVA	Negative Vorticity Advection
NWLY	Northwesterly (weather reports only)
NWRN	Northwestern (weather reports only)
O	
OBS	Observation
OBSC	Obscure
OCFNT	Occluded Front
OCLD	Occlude
OCLN	Occlusion
OFP	Occluded Frontal Passage
OFSHR	Offshore
OMTNS	Over Mountains
ONSHR	On Shore
ONT	Ontario

Contraction	*Decode*
ORGPHC	Orographic
OSV	Ocean Station Vessel
OTAS	On Top and Smooth
OTLK	Outlook
OVC	Overcast
P	
P	Pacific Standard Time (time group only)
P	Polar (air mass)
P	In RVR field, indicates visibility greater than highest reportable sensor value (e.g. P6000FT)
P6SM	Visibility greater than 6 statute miles (TAF only)
PAC	Pacific
PBL	Probable
PCPN	Precipitation
PDMT	Predominant
PDMT	Predominate
PDW	Priority Delayed Weather
PL	Ice Pellets (METAR)
PEN	Peninsula
PGTSND	Puget Sound
PIBAL	Pilot Balloon Observation
PISE	No Pilot Balloon Observation Due To Unfavorable Sea Conditions
PISO	No Pilot Balloon Observation Due To Snow
PIWI	No Pilot Balloon Observation Due To High, or Gusty, Surface Wind
PLW	Plow (snow)
PNHDL	Panhandle
PO	Dust/Sand Whirls (METAR)
PPINA	Radar Weather Report Not Available (or omitted for a reason different than those otherwise stated)
PPINE	Radar Weather Report No Echoes Observed
PPINO	Radar Weather Report Equipment Inoperative Due To Breakdown
PPIOK	Radar Weather Report Equipment Operation Resumed
PPIOM	Radar Weather Report Equipment Inoperative Due To Maintenance
PR	Partial (METAR)
PRBLTY	Probability
PRESFR	Pressure Falling Rapidly
PRESRR	Pressure Rising Rapidly
PRJMP	Pressure Jump (weather reports only)
PROB40	Probability 40 percent (METAR)
PROG	Prognosis or Prognostic
PRSNT	Present
PS	Plus
PSG	Passage
PSG	Passing
PTCHY	Patchy
PTLY	Partly
PVA	Positive Vorticity Advection
PY	Spray (METAR)
Q	
QSTNRY	Quasi-stationary
QUE	Quebec
R	
R	Runway (used in RVR measurement)
RA	Rain (METAR)
RABA	No RAWIN Obs., No Balloons Available
RABAL	Radiosonde Balloon Wind Data
RABAR	Radiosonde Balloon Release

Contraction	*Decode*
RACO	No RAWIN Obs., Communications Out
RADAT	Radiosonde Observation Data
RADNO	Report Missing Account Radio Failure
RAFI	Radiosonde Observation Not Filed
RAFRZ	Radiosonde Observation Freezing Levels
RAHE	No RAWIN Obs., No Gas Available
RAICG	Radiosonde Observation Icing at
RAOB	Radiosonde Observation
RAREP	Radar Weather Report
RAVU	Radiosonde Analysis and Verification Unit
RAWE	No RAWIN obs., Unfavorable Weather
RAWI	No RAWIN Obs., High and Gusty Winds
RAWIN	Upper Winds Obs. (by radio methods)
RCD	Radar Cloud Detection Report
RCDNA	Radar Cloud Detection Report Not Available
RCDNE	Radar Cloud Detection Report No Echoes Observed
RCDNO	Radar Cloud Detector Inoperative Due to Breakdown Until
RCDOM	Radar Cloud Detector Inoperative Due to Maintenance Until
RCKY	Rockies (mountains)
RDG	Ridge
RDWND	Radar Dome Wind
RESTR	Restrict
RGD	Ragged
RH	Relative Humidity
RHINO	Radar Echo Height Information Not Available
RHINO	Radar Range Height Indicator Not Operating on Scan
RIOGD	Rio Grande
RMK	Remark(s)
RNFL	Rainfall
ROBEPS	Radar Operating Below Prescribed Standard
RPD	Rapid
RSG	Rising
RUF	Rough
RY/RWY	Runway
S	
SA	Sand (METAR)
SASK	Saskatchewan
SBSD	Subside
SC	Stratocumulus
SCSL	Standing Lenticular Stratocumulus
SCT	Scattered
SELS	Severe Local Storms
SELY	Southeasterly (weather reports only)
SERN	Southeastern (weather reports only)
SFERICS	Atmospherics
SG	Snow Grains (METAR)
SGD	Solar–Geophysical Data
SH	Showers (METAR)
SHFT	Shift (weather reports only)
SHLW	Shallow
SHRTLY	Shortly
SHWR	Shower
SIERNEV	Sierra Nevada
SKC	Sky Clear (METAR)
SLD	Solid
SLP	Sea Level pressure (e.g. 1013.2 reported as 132)
SLR	Slush on Runway
SLT	Sleet
SM	Statute mile(s)

Contraction	*Decode*
SMK	Smoke
SMTH	Smooth
SN	Snow (METAR)
SNBNK	Snowbank
SNFLK	Snowflake
SNOINCR	Snow Depth Increase in Past Hour
SNW	Snow
SNWFL	Snowfall
SP	Station Pressure
SPECI	Special Report (METAR)
SPKL	Sprinkle
SPLNS	South Plains
SPRD	Spread
SQ	Squall (METAR)
SQAL	Squall
SQLN	Squall Line
SS	Sandstorm (METAR)
SSERN	South-southeastern (weather reports only)
SSEWD	South-southeastward (weather reports only)
SSWRN	South-southwestern (weather reports only)
SSWWD	South–southwestward (weather reports only)
ST	Stratus
STAGN	Stagnation
STFR	Stratus Fractus
STFRM	Stratiform
STG	Strong
STM	Storm
STNRY	Stationary
SWLG	Swelling
SWLY	Southwesterly (weather reports only)
SWRN	Southwestern (weather reports only)
SX	Stability Index
SXN	Section
SYNOP	Synoptic
SYNS	Synopsis
T	
T	Trace (weather reports only)
T	Tropical (air mass)
TCU	Towering Cumulus
TEMPO	Temporary changes expected (between 2 digit beginning hour and 2 digit ending hour) (TAF)
THD	Thunderhead (non METAR)
THDR	Thunder (non METAR)
THK	Thick
THN	Thin
TKOF	Takeoff
TOP	Cloud Top
TOVC	Top of Overcast
TPG	Topping
TRIB	Tributary
TROF	Trough
TROP	Tropopause
TRPCD	Tropical Continental (air mass)
TRPCL	Tropical
TRPLYR	Trapping Layer
TS	Thunderstorm (METAR)
TSHWR	Thundershower (non METAR)
TSQLS	Thundersqualls (non METAR)
TSTM	Thunderstorm (non METAR)
TURBC	Turbulence
TURBT	Turbulent
TWRG	Towering

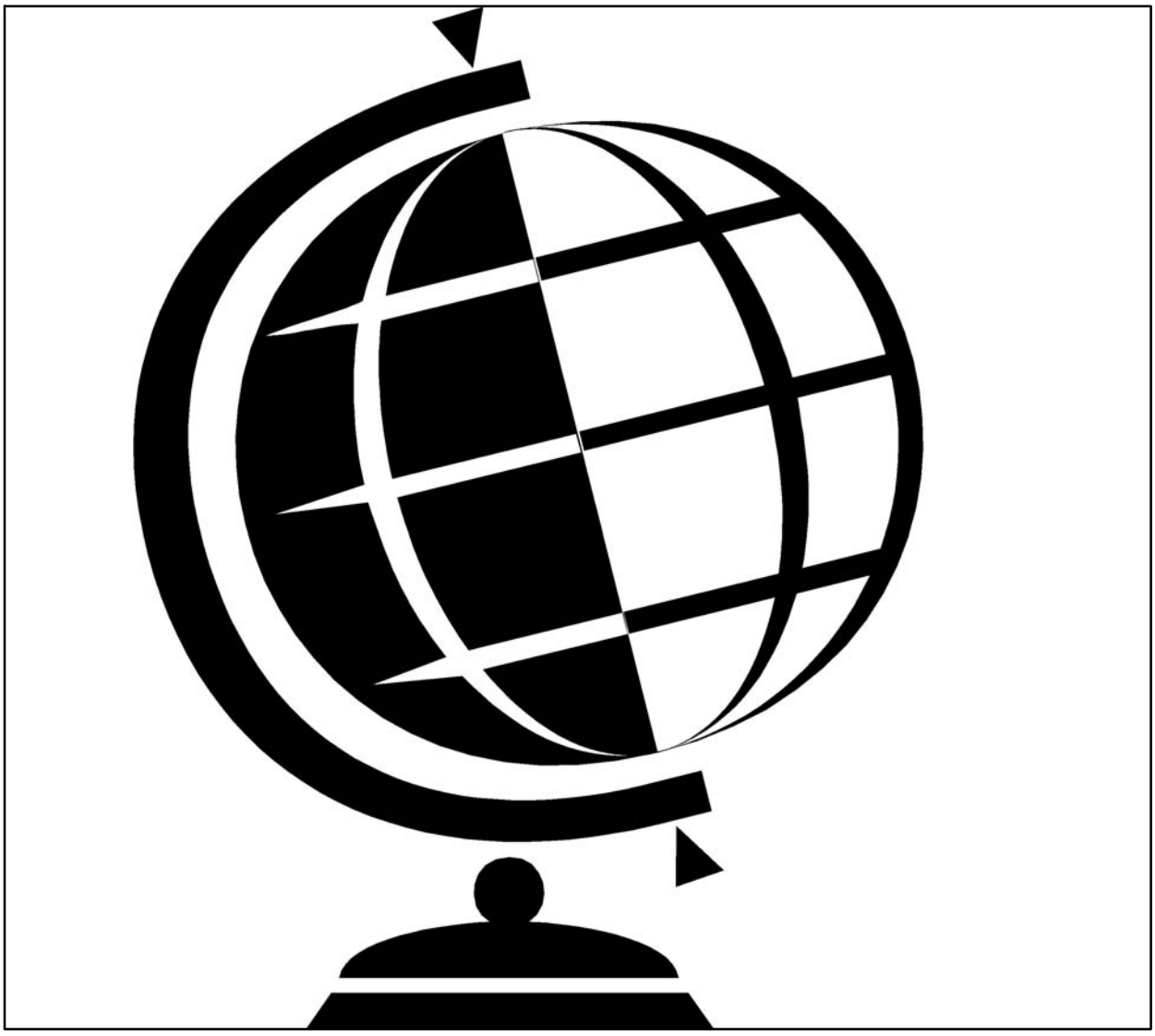
Contraction	*Decode*
U	
UAG	Upper Atmosphere Geophysics
UDDF	Up and Down Drafts
UNSBL	Unseasonable
UNSTBL	Unstable
UNSTDY	Unsteady
UNSTL	Unsettle
UP	Unknown Precipitation (Automated Observations)
UPDFTS	Updrafts
UPR	Upper
UPSLP	Upslope
UPSTRM	Upstream
UVV	Upward Vertical Velocity
UWNDS	Upper Winds
V	
V	Varies (wind direction and RVR)
V	Variable (weather reports only)
VA	Volcanic Ash (METAR)
VC	Vicinity
VLCTY	Velocity
VLNT	Violent
VLY	Valley
VR	Veer
VRB	Variable wind direction when speed is less than or equal to 6 knots
VRISL	Vancouver Island, BC
VRT MOTN	Vertical Motion
VSBY	Visibility
VSBYDR	Visibility Decreasing Rapidly
VSBYIR	Visibility Increasing Rapidly
VV	Vertical Visibility (Indefinite Ceiling) (METAR)
W	
W	Warm (air mass)
WA	AIRMET
WDC–1	World Data Centers in Western Europe
WDC–2	World Data Centers Throughout Rest of World
WDLY	Widely
WDSPRD	Widespread
WEA	Weather
WFP	Warm Front Passage
WINT	Winter
WND	Wind
WNWRN	West–northwestern (weather reports only)
WNWWD	West–northwestward (weather reports only)
WPLTO	Western Plateau
WR	Wet Runway
WRM	Warm
WRMFNT	Warm Front
WRNG	Warning
WS	Wind Shear (in TAFs, low level and not associated with convective activity)
WS	SIGMET
WSHFT	Wind Shift
WSOM	Weather Service Operations Manual
WSR	Wet Snow on Runway
WSWRN	West–southwestern (weather reports only)
WSWWD	West–southwestward (weather reports only)
WTR	Water
WTSPT	Waterspout
WV	Wave
WW	Severe Weather Forecast
WXCON	Weather Reconnaissance Flight Pilot Report

Contraction	*Decode*
X	
XCP	Except
XPC	Expect
Y	
Y	Yukon Standard Time (time groups only)

Contraction	*Decode*
YKN	Yukon
YLSTN	Yellowstone
Z	
ZI	Zonal Index
ZI	Zone of Interior

PART 1. Part 95 Revisions

Section 1. Revisions to Minimum En Route IFR Altitudes & Changeover Points



REVISIONS TO IFR ALTITUDES & CHANGEOVER POINT
AMENDMENT 548
EFFECTIVE DATE October 10, 2019

§95.3000 LOW ALTITUDE RNAV ROUTES

§95.3331 RNAV ROUTE T331

FROM	TO	MEA	MAA
IS AMENDED BY ADDING			
FRAME, CA FIX	NTELL, CA WP	2000	17500

§95.4000 HIGH ALTITUDE RNAV ROUTES

§95.4106 RNAV ROUTE Q106

FROM	TO	MEA	MAA
IS AMENDED TO DELETE			
SMELZ, FL WP	GADAY, AL WP	*18000	45000
*GNSS REQUIRED			

§95.6001 VICTOR ROUTES-U.S

§95.6001 VOR FEDERAL AIRWAY V1

FROM		TO	MEA
IS AMENDED TO READ IN PART			
CHARLESTON, SC VORTAC		*KIMMY, SC FIX	**5000
*6000 - MRA			
**2000 - GNSS MEA			
*KIMMY, SC FIX		INLET, SC FIX	**5000
*6000 - MRA			
**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	#2000
#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS			

§95.6013 VOR FEDERAL AIRWAY V13

FROM	TO	MEA
IS AMENDED TO READ IN PART		
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	1700

§95.6023 VOR FEDERAL AIRWAY V23

FROM	TO	MEA
IS AMENDED TO DELETE		
LATON, CA FIX	CLOVIS, CA VORTAC	2000
CLOVIS, CA VORTAC	BEREN, CA FIX	2100
BEREN, CA FIX *3000 - MOCA	WRAPS, CA FIX	*4000
IS AMENDED TO READ IN PART		
DELNO, CA FIX *2000 - MOCA *3000 - GNSS MEA	PIXEY, CA FIX	*5000
PIXEY, CA FIX *2000 - MOCA *3000 - GNSS MEA	LATON, CA FIX	*6000
LATON, CA FIX *1900 - MOCA *2000 - GNSS MEA	FRAME, CA FIX	*6000
EBTUW, CA FIX *3000 - MOCA	WRAPS, CA FIX	*4000

§95.6033 VOR FEDERAL AIRWAY V33

FROM	TO	MEA
IS AMENDED TO READ IN PART		
GRAMO, PA FIX *3600 - MCA HARRISBURG, PA VORTAC , NW BND *4600 - MCA HARRISBURG, PA VORTAC , SE BND **5000 - GNSS MEA	*HARRISBURG, PA VORTAC	**7000
HARRISBURG, PA VORTAC *4800 - MCA PHILIPSBURG, PA VORTAC , SE BND	*PHILIPSBURG, PA VORTAC	4900

§95.6037 VOR FEDERAL AIRWAY V37

FROM	TO	MEA
IS AMENDED TO READ IN PART		
COLUMBIA, SC VORTAC *2400 - MOCA *2400 - GNSS MEA	RICHE, SC FIX	*4000

§95.6056 VOR FEDERAL AIRWAY V56

FROM		TO	MEA
IS AMENDED TO READ IN PART			
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
*5000 - MRA			
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 , W BND			
**1800 - MOCA			

§95.6063 VOR FEDERAL AIRWAY V63

FROM	TO	MEA
IS AMENDED TO READ IN PART		
WAUSAU, WI VORTAC	RHINELANDER, WI VOR/DME	#
#UNUSABLE		

§95.6067 VOR FEDERAL AIRWAY V67

FROM	TO	MEA
IS AMENDED TO READ IN PART		
CEDAR RAPIDS, IA VOR/DME	*LYERS, IA FIX	3300
*4000 - MRA		
*LYERS, IA FIX	WATERLOO, IA VOR/DME	3300
*4000 - MRA		

§95.6070 VOR FEDERAL AIRWAY V70

FROM		TO	MEA
IS AMENDED TO READ IN PART			
GRAND STRAND, SC VORTAC		WILMINGTON, NC VORTAC	#3100
#COP NE TO WILMINGTON R-240 UNUSABLE EXCEPT FR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS			
WILMINGTON, NC VORTAC		BEULA, NC FIX	#**8000
*1600 - MOCA			
*2000 - GNSS MEA			
#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS			
BEULA, NC FIX		*KINSTON, NC VORTAC	
	N BND		#2000
	S BND		8000
*4400 - MCA KINSTON, NC VORTAC , S BND			
#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS			
KINSTON, NC VORTAC		PEARS, NC FIX	#2500
#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS			

§95.6115 VOR FEDERAL AIRWAY V115

FROM	TO	MEA
IS AMENDED TO DELETE		
FRANKLIN, PA VOR	TIDIOUTE, PA VORTAC	3800
TIDIOUTE, PA VORTAC	JAMESTOWN, NY VOR/DME	4000
JAMESTOWN, NY VOR/DME	BUFFALO, NY VOR/DME	4000

§95.6140 VOR FEDERAL AIRWAY V140

FROM	TO	MEA
IS AMENDED TO READ IN PART		
SOFTY, WV FIX	CASTE, VA FIX	6300

§95.6170 VOR FEDERAL AIRWAY V170

FROM	TO	MEA
IS AMENDED TO READ IN PART		
PETTY, WI FIX #UNUSABLE	RAINE, MI FIX	#
RAINE, MI FIX #UNUSABLE	PULLMAN, MI VOR/DME	#
PULLMAN, MI VOR/DME #UNUSABLE	HEBEL, MI FIX	#
HEBEL, MI FIX #UNUSABLE	LESSY, MI FIX	#

§95.6184 VOR FEDERAL AIRWAY V184

FROM	TO	MEA
IS AMENDED TO DELETE		
ERIE, PA VORTAC	TIDIOUTE, PA VORTAC	3500
TIDIOUTE, PA VORTAC *4000 - MOCA	PHILIPSBURG, PA VORTAC	*5000
IS AMENDED TO READ IN PART		
#PHILIPSBURG, PA VORTAC *3600 - MCA HARRISBURG, PA VORTAC , NW BND #4800 MCA PHILIPSBURG, PA VORTAC, SE BND	*HARRISBURG, PA VORTAC	4900
HARRISBURG, PA VORTAC *10000 - MCA DELRO, PA FIX , E BND	*DELRO, PA FIX	3000

§95.6188 VOR FEDERAL AIRWAY V188

FROM	TO	MEA
IS AMENDED TO DELETE		
TIDIOUTE, PA VORTAC	SLATE RUN, PA VORTAC	4000

§95.6197 VOR FEDERAL AIRWAY V197

FROM	TO	MEA
IS AMENDED TO READ IN PART		
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

§95.6213 VOR FEDERAL AIRWAY V213

FROM	TO	MEA
IS AMENDED TO READ IN PART		
GRAND STRAND, SC VORTAC	WILMINGTON, NC VORTAC	#3100
#COP NE TO WILMINGTON R-240 UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS		
WILMINGTON, NC VORTAC	WALLO, NC FIX	#*8000
*1600 - MOCA		
*5000 - GNSS MEA		
#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS.		
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		

§95.6230 VOR FEDERAL AIRWAY V230

FROM	TO	MEA
IS AMENDED TO DELETE		
MENDO, CA FIX	*CLOVIS, CA VORTAC	2000
*4000 - MCA CLOVIS, CA VORTAC , NE BND		
CLOVIS, CA VORTAC	*FRIANT, CA VORTAC	5000
*10400 - MCA FRIANT, CA VORTAC , NE BND		
IS AMENDED TO READ IN PART		
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		

§95.6234 VOR FEDERAL AIRWAY V234

FROM	TO	MEA
IS AMENDED TO READ IN PART		
FLACK, KS FIX	KRIER, KS FIX	*5000
*4100 - MOCA		

§95.6258 VOR FEDERAL AIRWAY V258

FROM	TO	MEA
IS AMENDED TO READ IN PART		
ROANOKE, VA VOR/DME	PIGGS, VA FIX	5400

§95.6264 VOR FEDERAL AIRWAY V264

FROM	TO	MEA
IS AMENDED TO READ IN PART		
AMTRA, CA FIX	*POMONA, CA VORTAC	4800
*5600 - MCA POMONA, CA VORTAC , E BND		
*MTA V264 E TO V197 NW 11800		

§95.6265 VOR FEDERAL AIRWAY V265

FROM	TO	MEA
IS AMENDED TO READ IN PART		
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		

§95.6311 VOR FEDERAL AIRWAY V311

FROM	TO	MEA
IS AMENDED TO READ IN PART		
GREENWOOD, SC VORTAC	COLUMBIA, SC VORTAC	2400

§95.6407 VOR FEDERAL AIRWAY V407

FROM	TO	MEA
IS AMENDED TO READ IN PART		
CORPUS CHRISTI, TX VORTAC	PALACIOS, TX VORTAC	1700

§95.6459 VOR FEDERAL AIRWAY V459

FROM	TO	MEA
IS AMENDED TO READ IN PART		
EXTRA, CA FIX	FRIANT, CA VORTAC	5700

§95.6472 VOR FEDERAL AIRWAY V472

FROM	TO	MEA
IS AMENDED TO READ IN PART		
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	#2000

#SEGMENT UNUSABLE EXCEPT FOR AIRCRAFT EQUIPPED WITH SUITABLE RNAV SYSTEM WITH GPS

§95.6493 VOR FEDERAL AIRWAY V493

FROM	TO	MEA
IS AMENDED TO READ IN PART		
LIVINGSTON, TN VOR/DME	LEXINGTON, KY VOR/DME	3600
LEXINGTON, KY VOR/DME	BEAER, KY FIX	3000

§95.6542 VOR FEDERAL AIRWAY V542

FROM	TO	MEA
IS AMENDED TO DELETE		
TIDIOUTE, PA VORTAC	BRADFORD, PA VOR/DME	*4000
*3500 - MOCA		
BRADFORD, PA VOR/DME	EXALL, PA WP	4500
EXALL, PA WP	ELMIRA, NY VOR/DME	4000

§95.6548 VOR FEDERAL AIRWAY V548

FROM		TO	MEA
IS AMENDED TO READ IN PART			
BOSEL, TX FIX		WACO, TX VORTAC	
	N BND		2800
	S BND		3600

§95.7001 JET ROUTES

§95.7065 JET ROUTE J65

FROM	TO	MEA	MAA
IS AMENDED TO DELETE			
SHAFTER, CA VORTAC	CLOVIS, CA VORTAC	18000	45000
CLOVIS, CA VORTAC	SACRAMENTO, CA VORTAC	18000	45000

§95.7110 JET ROUTE J110

FROM	TO	MEA	MAA
IS AMENDED TO DELETE			
OAKLAND, CA VOR/DME	SALINAS, CA VORTAC	18000	45000
SALINAS, CA VORTAC	CLOVIS, CA VORTAC	18000	45000
CLOVIS, CA VORTAC	BOULDER CITY, NV VORTAC	#29000	45000

#MEA IS ESTABLISHED WITH A GAP IN NAVIGATION SIGNAL COVERAGE.

§95.7147 JET ROUTE J147

FROM	TO	MEA	MAA
IS AMENDED TO DELETE			
BECKLEY, WV VOR/DME	GREENBRIER, WV VOR/DME	18000	45000
GREENBRIER, WV VOR/DME	CASANOVA, VA VORTAC	18000	45000

§95.8003 VOR FEDERAL AIRWAY CHANGEOVER POINT

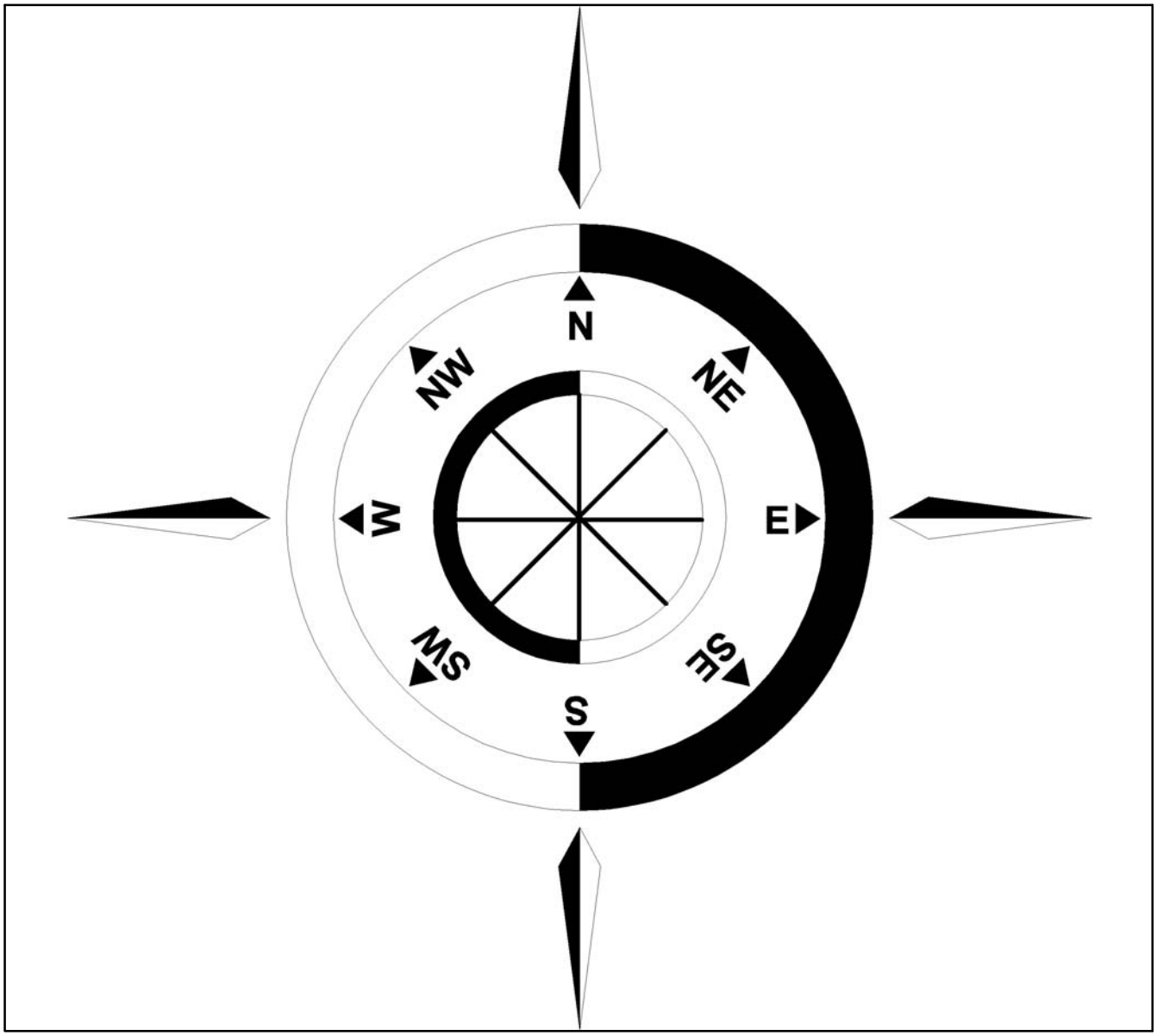
AIRWAY SEGMENT		CHANGEOVER POINTS	
FROM	**TO**	**DISTANCE**	**FROM**
	V23		
IS AMENDED TO DELETE CHANGEOVER POINT			
SHAFTER, CA VORTAC	CLOVIS, CA VORTAC	49	SHAFTER
CLOVIS, CA VORTAC	LINDEN, CA VOR/DME	42	CLOVIS
	V37		
IS AMENDED TO MODIFY CHANGEOVER POINT			
COLUMBIA, SC VORTAC	CHARLOTTE, NC VOR/DME	26	COLUMBIA
	V67		
IS AMENDED TO ADD CHANGEOVER POINT			
CEDAR RAPIDS, IA VOR/DME	WATERLOO, IA VOR/DME	37	CEDAR RAPIDS
	ALASKA V603		
IS AMENDED TO MODIFY CHANGEOVER POINT			
ELFEE, AK NDB	DILLINGHAM, AK VOR/DME	207	ELFEE

§95.8005 JET ROUTES CHANGEOVER POINTS

AIRWAY SEGMENT		CHANGEOVER POINTS	
FROM	**TO**	**DISTANCE**	**FROM**
	J181		
IS AMENDED TO MODIFY CHANGEOVER POINT			
NEOSHO, MO VOR/DME	HALLSVILLE, MO VORTAC	130	NEOSHO

Part 2.

INTERNATIONAL NOTICES TO AIRMEN



GENERAL

This part features significant international notices to airmen (NOTAM) information and special notices.

The information contained in the International Notices to Airmen section is derived from international notices and other official sources. International notices are of two types: Class One International Notices are those NOTAMs issued via telecommunications. They are made available to the U.S. flying public by the International NOTAM Office (Washington, DC) through the local Flight Service Station (FSS). Class Two International Notices are NOTAMs issued via postal services and are not readily available to the U.S. flying public. The International Notices to Airmen draws from both these sources and also includes information about temporary hazardous conditions which are not otherwise readily available to the flyer. Before any international flight, always update the International Notices to Airmen with a review of Class One International Notices available at your closest FSS.

Foreign notices carried in this publication are carried as issued to the maximum extent possible. Most abbreviations used in this publication are listed in ICAO Document DOC 8400. Wherever possible, the source of the information is included at the end of an entry. This allows the user to confirm the currency of the information with the originator.

International Information Source Code Table

Code	*Information Source*
I or II (followed by the NOTAM number)	Class One or Class Two NOTAMs
AIP	Aeronautical Information Publication (followed by the AIP change number)
AIC	Aeronautical Information Circular (followed by the AIC number)
DOS	Department of State advisories
FAA	Federal Aviation Administration.

The International Notices to Airmen section gives world wide coverage in each issue. Coverage for the U.S. and its external territories is limited and normally will not include data available on the domestic NOTAM circuit or published in other official sources available to the user.

Each issue of this section is complete in itself. Temporary data will be repeated in each issue until the condition ceases to exist. Permanent data will be carried until it is sufficiently published or is available in other permanent sources. New items will be indicated by a black bar running in the left or right margin.

This section includes data issued by foreign governments. The publication of this data in no way constitutes legal recognition of the validity of the data. This publication does not presume to tabulate all NOTAM data, although every effort is made to publish all pertinent data. The Federal Aviation Administration does not assume liability for failure to publish, or the accuracy of, any particular item.

INTERNATIONAL NOTICES TO AIRMEN

SECTION 1

Flight Prohibitions, Potentially Hostile Situations, and Foreign Notices

Introduction: This section contains information concerning FAA–issued flight prohibitions for countries and territories outside the United States, advisory notices on potentially hostile situations abroad, and notices issued by foreign governments and civil aviation authorities.

These may affect a pilot's decision to enter or use areas of foreign or international airspace. During the flight planning process, pilots should review FAA's Prohibitions, Restrictions, and Notices at https://www.faa.gov/air_traffic/publications/us_restrictions/ for foreign airspace and entry restrictions. Foreign airspace penetration without official authorization can involve extreme danger to the aircraft and the imposition of severe penalties and inconvenience on both passengers and crew. A flight plan on file with ATC authorities does not necessarily constitute the prior permission required by certain authorities. The possibility of fatal consequences cannot be ignored in some areas of the world.

All operators also should check the latest U.S. Department of State Travel Warnings and Public Announcements at http://travel.state.gov, and can obtain additional information by contacting the appropriate foreign government authorities.

BAHAMAS, THE

Communication Procedures for Aircraft Operations Within the Nassau and Grand Bahama Terminal Control Areas (TMAS')

Effective immediately, all aircraft operating or about to operate (IFR, VFR, including military unless specifically exempted, etc.) within the Nassau and Grand Bahama TMAS' and within a 50 nautical mile radius of Nassau and Freeport Int'l airports SHALL report, as a minimum, to the respective Approach Control Unit as follows:

1. Their identification.

2. Aircraft type.

3. Position.

4. Direction of flight.

5. Cruising level.

These reports shall enable the respective approach control unit to provide a more effective advisory service to possible conflicting flights, controlled and uncontrolled within the TMAS'.

Pilots shall contact the appropriate approach control unit as follows:

1. "Nassau Approach" on frequency 121.0 MHz.

2. "Freeport Approach" on frequency 126.5 MHz.

(Bahamas AIC 2/20/2010)

CHINA

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with China registrations beginning with B; aircraft using the ICAO designator of a China company; or aircraft used for China diplomatic flights require FAA routing authorization for flights in United

States Territorial Airspace, unless the aircraft is registered in Hong Kong, Macau, or Taiwan, or the aircraft is operated by a company with FAA Part 129 operations specifications.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

CUBA

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with Cuba registration beginning with CU; aircraft using the ICAO designator of a Cuba company; or aircraft used for Cuba diplomatic flights require FAA routing authorization for flights in United States Territorial Airspace.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

EUROPE

EUROCONTROL Integrated Initial Flight Plan Processing System (IFPS).

All aircraft flying into, departing from, or transiting Europe within the General Air Traffic (GAT) Civil system must file an International Civil Aviation Organization (ICAO) flight plan with the Integrated Initial Flight Plan Processing System (IFPS) managed by the EUROCONTROL Central Flow Management Unit (CFMU). This system is the sole source for the distribution of the IFR/GAT portions of flight plan information to Air Traffic Control (ATC) within participating European Countries collectively known as the IFPS Zone (IFPZ). Flight plans and associated messages for all IFR flights, including the IFR portions of mixed IFR/VFR flights, entering, over flying or departing the IFPZ, shall be addressed only to the two IFPS addresses for that portion of the flight within the IFPZ. The IFPS addresses to be included in flight plans and associated messages submitted by operators that intend to fly into or through the IFPZ are as follows:

Network	IFPS Unit Addresses	
IFPU1		
Haren, Belgium	**AFTN**	EUCHZMFP
SITA BRUEP7X		
IFPU2		
Brétigny, France	**AFTN**	EUCBZMFP
SITA PAREP7X		

IFPS will ensure distribution of the accepted flight plan to all relevant ATS units within their area of responsibility. Flight plan message originators filing to IFPS are responsible for ensuring that the flight plan and any modifications made thereto are addressed to all the relevant ATS units outside the IFPZ. In order to ensure consistency between the flight plan data distributed within the IFPZ and that distributed outside the IFPZ, the EUROCONTROL CFMU has established a “re-addressing function”. The “re-addressing function” is intended primarily for flights originating within the IFPZ and proceeding outside the IFPZ.

Note.— Detailed procedures and information applicable to flight plan addressing and distribution are contained in the EUROCONTROL “Basic CFMU Handbook”.

Additional information may be obtained from Aeronautical Information Publications (AIP) and/or Aeronautical Information Circulars (AIC) issued by individual countries, through commercial flight planners, or by contacting EUROCONTROL, rue de la Fusee, 96, B−1130, Brussels, Belgium. Telephone: 32−2− 745−1950, FAX: 32−2− 729−9041 and on the EUROCONTROL Web site: www.eurocontrol.int.

NOTE−IFPS Zone Countries − Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Former Yugoslav Republic of Macedonia, Malta, Monaco, Morocco, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Serbia and Montenegro.

(AEU-500 6/7/2010)

IRAN (ISLAMIC REPUBLIC OF)

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with Iran registrations beginning with EP; aircraft using the ICAO designator of an Iran company; or aircraft used for Iran diplomatic flights require FAA routing authorization for flights in United States Territorial Airspace.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

DEMOCRATIC PEOPLE'S REPUBLIC OF NORTH KOREA (DPRK)

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with DPRK registrations beginning with P; aircraft using the ICAO designator of a DPRK company; or aircraft used for DPRK diplomatic flights require FAA routing authorization for flights in United States Territorial Airspace.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

RUSSIA FEDERATION

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with Russian Federation registrations beginning with RA; aircraft using the ICAO designator of a Russian Federation company; or aircraft used for Russian Federation diplomatic flights require FAA

routing authorization for flights in United States Territorial Airspace, unless the aircraft is operated by a company with FAA Part 129 operations specifications.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

SUDAN

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with Sudan registrations beginning with ST; aircraft using the ICAO designator of a Sudan company; or aircraft used for Sudan diplomatic flights require FAA routing authorization for flights in United States Territorial Airspace.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

SYRIAN ARAB REPUBLIC

Federal Aviation Administration (FAA) Flight Routing Authorization Requirements in United States Territorial Airspace

All aircraft with Syrian Arab Republic registrations beginning with YK; aircraft using the ICAO designator of a Syrian Arab Republic company; or aircraft used for Syrian Arab Republic diplomatic flights require FAA routing authorization for flights in United States Territorial Airspace.

Only IFR flights are eligible for FAA routing authorization. See current FAA KFDC NOTAMS for other requirements and information regarding Aircraft that Operate To or From or Within or Transit Territorial Airspace of the United States (US).

FAA routing authorization is in addition to any US State Department (DOS) diplomatic clearance or US Transportation Security Administration (TSA) waiver. To obtain FAA routing authorization, contact the FAA System Operations Support Center at 9-ATOR-HQ-RT-REQ@faa.gov or FAX 202-267-5289 (Attention FAA SOSC), or call 202-267-8115.

Provide the following information:

1. Name and address of company or individual. Include a phone number (in case there are questions concerning your request) and a return E-Mail address. Aircraft Information: Callsign (including ICAO designator if assigned)/type/registration number.

2. General Route Itinerary: Date range. City (ICAO Location Identifier)- City (ICAO Location Identifier)- City (ICAO Location Identifier), etc.

3. Specific route information for each leg of the flight: Callsign, departure point, date/time (UTC), route, destination, date/time (UTC).

4. Purpose: Cargo, Passenger, Diplomatic, etc. for each leg of flight.

(FAA/AJR–2 System Operations Security 6/27/2013)

SECTION 2

INTERNATIONAL OCEANIC AIRSPACE NOTICES

INTRODUCTION

The following information contains the most current notices involving airspace matters pertaining to U.S. internationally delegated airspace. The information provided is divided into two sections: General and Region Specific.

GENERAL

COMMUNICATIONS REQUIREMENTS IN OCEANIC AIRSPACE DELEGATED TO THE FAA FOR PROVISION OF AIR TRAFFIC SERVICES

1. The United States Aeronautical Information Publication (AIP), (section ENR 7.1, paragraph 6) describes satellite voice (SatVoice) communications services available in Anchorage, New York and Oakland oceanic control areas (OCAs), along with the requirements for use of those services. The AIP currently allows use of suitably installed and operated SatVoice to communicate with New York and San Francisco Radio only "when unable to communicate on HF" (High Frequency) radio. Some questions have arisen as to what constitutes being "unable" to communicate on HF.

2. Anchorage, New York and Oakland OCAs are "high seas" (international) airspace (for U.S. operators, 14 CFR § 91.703 refers). Therefore, all operations therein must comply with ICAO Annex 2 (*Rules of the Air*), which requires that aircraft "maintain continuous air−ground voice communication watch on the appropriate communication channel…" (Paragraph 3.6.5.1). This means that a long−range communication system (LRCS) is required whenever operations will exceed the range of VHF voice communications between aircraft and air traffic control. Additionally, regulations issued by the State of Registry/ State of the Operator may stipulate how many LRCS are required. Examples of such regulations, for U.S. operators, include 14 CFR §§ 91.511, 121.351, 125.203 and 135.165.

3. A flight crew is considered to be "unable to communicate on HF" during poor HF propagation conditions (commonly referred to as "HF Blackouts"), or if there is an inflight HF radio failure. In those cases, that flight crew can use AIP−compliant SatVoice equipment and procedures to continue the flight to destination. A one−time return flight through Anchorage, New York and Oakland OCAs, to obtain maintenance on the HF radios, would also be acceptable under these circumstances, and would meet the criteria for use of SatVoice with New York and San Francisco Radio as per the AIP. Operators must still comply with applicable regulations on how many LRCS are required, as well as with applicable Minimum Equipment List (MEL) provisos.

4. When first establishing communications with New York or San Francisco Radio via SatVoice, the flight crew should request a "callback check." Such a check will help ensure Radio can contact the crew during the period of SatVoice use. The table below illustrates a sample callback check. Additionally, in the event the operator has indicated capability for SatVoice via both Iridium and Inmarsat (by listing codes M1 and M3 in Item 10 of the ATC flight plan), the flight crew should inform the Radio operator of the service to use for communicating with the aircraft.

Sample Transcript of SatVoice Callback Check	
SatVoice call from the air:	*"New York RADIO, Airline 123, request SatVoice Callback check."* For aircraft equipped with both Inmarsat and Iridium: *"… on Inmarsat/Iridium* (as applicable)*"*
Answer from the ground:	*"Airline 123, copy, terminating call, will call you right back"*
New SatVoice call from ground:	*"Airline 123, New York Radio with your SatVoice callback, how do you read?"*
SatVoice answer from the air:	*"Loud and clear, SatVoice callback check good, good day!"*

5. FAA point of contact: Aviation Safety Inspector Kevin C. Kelley, Flight Technologies and Procedures Division, 202−267−8854, Kevin.C.Kelley@faa.gov.

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 7/18/2019)

REGION SPECIFIC

SPECIAL EMPHASIS ITEMS FOR OPERATIONS ON NORTH ATLANTIC TRACKS/ROUTES EMPLOYING REDUCED AIRCRAFT SEPARATION

The ICAO North Atlantic (NAT) region has implemented reduced aircraft separation, both longitudinally and laterally, between appropriately equipped and qualified aircraft. A trial of further reduced lateral separation will begin in October 2019 between ADS−B equipped aircraft flying in the NAT.

The purpose of this notice is to alert U.S. operators to a number of NAT OPS Bulletins published by the ICAO Europe/North Atlantic region office. (Anyone planning to fly across the NAT should read and become very familiar with the information contained in ALL current NAT OPS Bulletins.) The bulletins provide information on aircraft equipment and aircrew qualification requirements for taking advantage of the tracks and routes where air traffic controllers use reduced aircraft separation minimums. The bulletins also contain *special emphasis items* that should be part of aircrew training and operating procedures to enhance safety of operations in the NAT.

The bulletins most relevant to operations under reduced aircraft separation minimums are as follows:

Number 2018_006 *Trial Implementation of ASEPS Using ADS−B*

Number 2018_005 *Special Procedures for In−flight Contingencies in Oceanic Airspace*

Number 2018_004 *Implementation of Performance Based Separation Minima−Expanded Publication of PBCS OTS*

Number 2018_003 *Waypoint Insertion/Verification Special Emphasis Items*

Special emphasis items covered in these bulletins include:

- Pilot training on map and FMC displays of ½ degree and whole degree waypoints
- **Required** pilot procedures for verifying waypoint degrees and minutes inserted into navigation systems
- Pilot in−flight contingency and weather deviation procedures

To reiterate, operators are strongly encouraged to review all the current NAT OPS Bulletins and include relevant information in their training programs and normal oceanic procedures. Use the information in the

bulletins hand in hand with the information published in the U.S. Aeronautical Information Publication (AIP).

Note: The emphasis items contained in bulletin 2018_003 are of value to safe operations in *any* oceanic airspace. ALL operators should provide the information contained therein to their oceanic flight crews.

Operators may find the bulletins on the *ICAO EUR/NAT* website (https://www.icao.int/EURNAT/Pages/welcome.aspx), then selecting *EUR/NAT Documents*, then *NAT Documents*, and then *NAT OPS Bulletins.*

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 7/18/19)

NORTH ATLANTIC DATA LINK MANDATE SEPTEMBER 2019 UPDATE

1. Introduction.

a. This notice updates operators on the status of the International Civil Aviation Organization (ICAO) North Atlantic (NAT) region Data Link Mandate (DLM). The comprehensive source of information and guidance on the DLM is NAT OPS Bulletin 2017−1 (Revision 4) *NAT Common DLM AIC*, issued July 9, 2019. That bulletin is available free of charge at the ICAO Europe/North Atlantic region office website, under EUR & NAT Documents > NAT Documents > NAT Ops Bulletins. All U.S. operators intending flights in the NAT region should familiarize themselves with **all** the current NAT Ops Bulletins, and update operations manuals and training materials as applicable.

b. The NAT OPS Bulletin identifies specific airspace within the NAT region and specific types of flights that are exempt from the mandate. (Notably, the entire New York Oceanic CTA/FIR is exempt from the mandate.) Otherwise, since December 2017 **aircraft operating at FL 350 through FL 390, throughout the ICAO North Atlantic region, must be equipped with operable FANS 1/A (or equivalent) CPDLC and ADS−C equipment.**

c. On January 30, 2020, the NAT DLM will extend from **FL 290 to FL 410** inclusive, throughout the NAT region. Many of the current exemptions for specific airspace and types of flights will remain in effect. See the NAT OPS Bulletin for details.

2. Contingency Procedures. NAT OPS Bulletin 2017−1 provides procedures pilots should use in the event of data link equipment failure prior to and after departure, as well failures after entering DLM airspace. Aircraft separation standards within DLM airspace are based on fully operational data link equipment. Pilots must promptly notify ATC of any data link equipment failures prior to entering or while in DLM airspace.

3. U.S. Operator Authorization to Use FANS 1/A (or equivalent) Data Link Systems.

a. U.S. operators intending to fly in NAT DLM airspace must have been issued operational authorization via Operations Specification, Management Specification or Letter of Authorization (as appropriate) A056 *Data Link Communications*. Advisory Circular (AC) 90−117 *Data Link Communications* provides guidance on operational use, aircraft eligibility, minimum performance and services of communication service providers, performance monitoring, training requirements, and discrepancy reporting related to the use of data link communication systems.

b. Operators may also find helpful the information posted in the “FAA NAT Resource Guide for U.S. Operators,” under the Comm/Nav/Surveillance, Data Link Communications sections. Operators can find the resource guide at the following address:

https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afx/afs/afs400/afs410/media/NAT.pdf

4. Contacts.

a. Aviation Safety Inspector Mark Patterson, Flight Technologies and Procedures Division, 202−267−8848, Mark.Patterson@faa.gov.

b. Aviation Safety Inspector Madison Walton, Flight Technologies and Procedures Division, 202−267−8850, Madison.Walton@faa.gov.

c. Senior Aviation Analyst Mark Wisniewski (SAIC), Flight Technologies and Procedures Division, 202−267−8843, Mark.ctr.Wisniewski@faa.gov.

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 9/12/2019)

SPECIAL NOTICE −− NAT ATS MESSAGE FORMAT

The following is submitted in an effort to standardize ATS message formats for air/ground communications in the North Atlantic (NAT) Region:

1. General

a. All NAT air−ground messages are categorized under one of the following headings (excluding emergency messages):

(1) Position Report.

(2) Request Clearance.

(3) Revised Estimate.

(4) Miscellaneous Message.

b. In order to enable ground stations to process messages in the shortest possible time, pilots should observe the following rules:

(1) Use the correct type of message applicable to the data transmitted.

(2) State the message type on the contact call to the ground station or at the start of the message.

(3) Adhere strictly to the sequence of information for the type of message.

(4) All times in each of the messages should be expressed in hours and minutes.

2. Description of ATS Message Types. Aircraft should transmit air−ground messages using standard RTF phraseology in accordance with the following:

a. POSITION. To be used for routine position reports.

Content and Data Sequence

(1) “POSITION.”

(2) Flight identification.

(3) Present position.

(4) Time over present position (hours and minutes).

(5) Present flight level.

(6) Next position on assigned route.

(7) Estimated time for next position (hours and minutes).

(8) Next subsequent position.

(9) Any further information; e.g., MET data or Company message.

EXAMPLE−
"Position, SWISSAIR 100, 56N 010W 1235, flight level 330, estimating 56N 020W 1310, next 56N 030W"

b. REQUEST CLEARANCE.

(1) To be used, in conjunction with a routine position report, to request a change of mach number, flight level, or route and to request westbound oceanic clearance prior to entering Reykjavik, Santa Maria or Shanwick CTAs.

Content and Data Sequence

(a) "REQUEST CLEARANCE."

(b) Flight identification.

(c) Present or last reported position.

(d) Time over present or last reported position (hours and minutes).

(e) Present flight level.

(f) Next position on assigned route or oceanic entry point.

(g) Estimate for next position or oceanic entry point.

(h) Next subsequent position.

(i) Requested Mach number, flight level or route.

(j) Further information or clarifying remarks.

EXAMPLE−
"Request clearance, TWA 801, 56N 020W 1245, flight level 330, estimating 56N 030W 1320, next 56N 040W, requesting flight level 350"

(2) To be used to request a change in Mach number, flight level, or route when a position report message is not appropriate.

Content and Data Sequence

(a) "REQUEST CLEARANCE."

(b) Flight identification.

(c) Requested Mach number, flight level or route.

(d) Further information or clarifying remarks.

EXAMPLE−
"Request clearance, BAW 212, requesting flight level 370"

c. REVISED ESTIMATE. To be used to update estimate for next position.

Content and Data Sequence

(1) "Revised Estimate."

(2) Flight identification.

(3) Next position on route.

(4) Revised estimate for next position (hours and minutes).

(5) Further information.

EXAMPLE−
"Revised estimate, WDA 523, 57N 040W 0325"

d. MISCELLANEOUS. To be used to pass information or make a request in plain language that does not conform with the content of other message formats. No message designator is required as this will be inserted by the ground station.

Content and Data Sequence

(1) Flight identification.

(2) General information or request in plain language and format free.

(ZNY, Updated 5/24/2018)

GULF OF MEXICO RNAV ROUTES Q100, Q102, AND Q105

This NOTAM defines RNAV equipment requirements for operators filing Q100, Q102, and Q105 through Gulf of Mexico airspace. Only aircraft approved for IFR Area Navigation operations will be cleared to operate on Q100, Q102, and Q105 between the surface and FL600 (inclusive).

Operator Determination of RNAV Equipment Eligibility

In accordance with Federal Aviation Regulations 91.511, 121.351, 125.203, and 135.165 (as applicable) an approved Long-Range Navigation System (INS, IRS, GPS or Loran C) is required for operation on these routes.

In addition, operators will not flight plan or operate on these routes unless their aircraft are equipped with RNAV systems that are approved for IFR navigation and the pilots are qualified to operate them. Aircraft may be considered eligible to operate on these routes if they fall under one of the following categories:

1. For new installations, the Airplane Flight Manual must show that the navigation system installation has received airworthiness approval in accordance with one of the following FAA ACs:

a. AC 20-138, as amended (Airworthiness Approval of Positioning and Navigation Systems).

b. AC 25-15 (Flight Management System [FMS] approval).

2. Installations that have previously received airworthiness approval under the following ACs are eligible for Gulf of Mexico Q-route operation provided it is shown in the Airplane Flight Manual:

a. AC 90-45A (RNAV system approval).

b. AC 20-130, as amended (Multi-Sensor Navigation system approval).

NOTE *- INS LIMITATIONS. See paragraph 6, below.*

Operational Requirements and Procedures

1. Class I Navigation: operations on Q100, Q102 and Q105 will continue to be categorized as Class I navigation, as defined in FAA Order 8900.1, Vol. 4, Chapter 1, Section 3, Class I Navigation.

2. Operations Specifications: operators are considered eligible to conduct operations on the Q-routes provided that aircraft are equipped with the appropriate equipment in accordance with the "Operator Determination of RNAV Equipment Eligibility" paragraph above and operations are conducted in accordance with paragraph 3, 4, 5 and 6 below. Title 14 CFR Parts 121, 125, 135 operators are authorized to operate on the Q-routes when they are issued Operations Specifications (OpSpecs) paragraph B034 (Class I Navigation Using Area Navigation Systems). In addition, OpSpecs B034 must be annotated in OpSpecs paragraph B050 (Enroute Authorizations, Limitations and Procedures), for the Gulf of Mexico High Offshore Airspace.

3. Pilots in command filing on RNAV routes are certifying that the crews and equipment are qualified to conduct RNAV operations.

4. Pilots in command shall be responsible for navigating along route centerline (as defined by the aircraft navigation system) in accordance with the requirements of Title 14 CFR 91, section 181 (course to be flown) and ICAO Annex 2, paragraph 3.6.2.1.1. (Annex 2, paragraph 3.6.2.1 states that flights shall "in so far as practical, when on an established ATS route, operate on the defined centerline of that route.")

5. Pilots in command shall notify the Air Route Traffic Control Center (ARTCC) of any loss of navigation capability that affects the aircraft's ability to navigate within the lateral limits of the route.

6. INS or IRS LIMITATION. For the purposes of operating on the following RNAV routes, Q100, Q102, and Q105, aircraft equipped with Inertial Navigation Systems (INS) or Inertial Reference Systems (IRS) that cannot receive automatic position updates (e.g., DME/DME update) for the entire length of the route, are limited to 1.5 consecutive hours of un-updated operation. In preparation for take-off, this time starts at the time that the INS or IRS is placed in the navigation mode. En route, the maximum time allowed between automatic position updates is 1.5 hours. Systems that perform updating after the pilot has manually selected the navigation aid are considered to have "automatic update" capability.

7. Radar monitoring will normally be provided. In the event of loss of radar, aircraft will be advised. ATC will ensure that the appropriate nonradar separation is applied during these time periods.

FAA Contacts

Madison Walton	Flight Technologies and Procedures Division	202-267-8850	Madison.Walton@faa.gov
Vincent McMenamy	AJT−2210	202-267−0627	Vincent.McMenamy@faa.gov

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 4/29/14)

PROCEDURES FOR IN−FLIGHT CONTINGENCIES IN THE NEW YORK OCEANIC CTA/FIR DURING ASEPS TRIAL

1. Introduction

a. The International Civil Aviation Organization's (ICAO) Separation and Airspace Safety Panel (SASP) has submitted a proposal for amendment to ICAO Document 4444, Procedures for Air Navigation Services − Air Traffic Management, which modifies aircraft contingency procedures to support the operational use of Advanced Surveillance Enhanced Procedural Separation (ASEPS) minima. The amendments for the new ASEPS minima and the new contingency procedures are expected to be published in November 2020.

b. Three Air Navigation Service Providers (ANSP) in the ICAO North Atlantic (NAT) Region − Gander (Canada), Shanwick (the United Kingdom and Ireland), and Santa Maria (Portugal) are planning to trial the ASEPS minima, using ADS−B as the advanced surveillance, beginning no earlier than March 28, 2019. To support this trial, and maintain regional procedural harmony, all of the NAT ANSPs are planning to implement the proposed contingency procedures at the time the trial starts. The trial is intended to last until November 2020 when the new ASEPS minima are published in ICAO Doc 4444. At that time, the use of trial minima will transition to actual usage by those ANSPs who wish to do so.

c. The procedures contained herein are to be used in place of the procedures contained in the U.S. Aeronautical Information Publication (AIP), ENR 7.3, paragraphs 1, 2, and 4 for operations within the entirety of the New York Center oceanic CTA/FIR. The contingency procedures contained in the U.S. AIP, ENR 7.3, paragraphs 1, 2, and 4 remain applicable to operations within the Anchorage and Oakland Air Route Traffic Control Centers.

d. Although all possible contingencies cannot be covered, the procedures in paragraphs 2, 3, and 4 provide for the more frequent cases, such as:

(1) inability to comply with assigned clearance due to meteorological conditions (see paragraph 4);

(2) enroute diversion across the prevailing traffic flow (for example, due to medical emergencies (see paragraphs 2 and 3); and

(3) loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations, or pressurization failure (see paragraphs 2 and 3).

NOTE−
Guidance on procedures to follow when an aircraft experiences a degradation in navigation capabilities can be found in ICAO Doc 4444, Procedures for Air Navigation Services – Air Traffic Management, chapter 5, section 5.2.2.

e. The pilot shall take action as necessary to ensure the safety of the aircraft, and the pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. Air traffic control shall render all possible assistance.

2. General Procedures

NOTE−
Figure 1 provides an aid for understanding and applying the contingency procedures contained in paragraphs 2 and 3.

a. If an aircraft is unable to continue the flight in accordance with its ATC clearance, a revised clearance should be obtained, whenever possible, prior to initiating any action.

b. If prior clearance cannot be obtained, the following contingency procedures should be employed until a revised clearance is received:

(1) leave the cleared route or track by initially turning at least 30 degrees to the right or to the left in order to intercept and maintain a parallel, same direction track or route offset of 9.3 km (5.0 NM). The direction of the turn should be based on one or more of the following:

(a) aircraft position relative to any organized track or route system;

(b) the direction of flights and flight levels allocated on adjacent tracks;

(c) the direction to an alternate airport;

(d) any strategic lateral offset being flown; and

(e) terrain clearance;

(2) the aircraft should be flown at a flight level and an offset track where other aircraft are less likely to be encountered;

(3) maintain a watch for conflicting traffic both visually and by reference to ACAS (if equipped) leaving ACAS in RA mode at all times, unless aircraft operating limitations dictate otherwise;

(4) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

(5) keep the SSR transponder on at all times and, when able, squawk 7700, as appropriate;

(6) as soon as practicable, the pilot shall advise air traffic control of any deviation from assigned clearance;

(7) use whatever means is appropriate (i.e. voice and/or CPDLC) to communicate during a contingency or emergency;

(8) if voice communication is used, the radiotelephony distress signal (MAYDAY) or urgency signal (PAN PAN) preferably spoken three times, shall be used, as appropriate;

(9) when emergency situations are communicated via CPDLC, the controller may respond via CPDLC. However, the controller may also attempt to make voice communication contact with the aircraft;

NOTE−
Additional guidance on emergency procedures for controllers and radio operators, and flight crew, in data link operations can be found in the Global Operational Data Link (GOLD) Manual (Doc 10037).

(10) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals on 121.5 MHz (or, as a backup, on the inter−pilot air−to−air frequency 123.45 MHz) and where appropriate on the frequency in use: aircraft identification, the nature of the distress condition, intention of the person in command, position (including the ATS route designator or the track code, as appropriate) and flight level; and

(11) the controller should attempt to determine the nature of the emergency and ascertain any assistance that may be required. Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and overall traffic situation.

3. Actions to be Taken Once Offset from Track

NOTE−
The pilot's judgement of the situation and the need to ensure the safety of the aircraft will determine if the actions

outlined in 3. b. (1) or (2) will be taken. Factors for the pilot to consider when diverting from the cleared route or track without an ATC clearance include, but are not limited to:

a. operation within a parallel track system;

b. the potential for User Preferred Routes (UPRs) parallel to the aircraft's track or route;

c. the nature of the contingency (e.g. aircraft system malfunction); and

d. weather factors (e.g. convective weather at lower flight levels).

a. If possible, maintain the assigned flight level until established on the 9.3 km (5.0 NM) parallel, same direction track or route offset. If unable, initially minimize the rate of descent to the extent that is operationally feasible.

b. Once established on a parallel, same direction track or route offset by 9.3 km (5.0 NM), either:

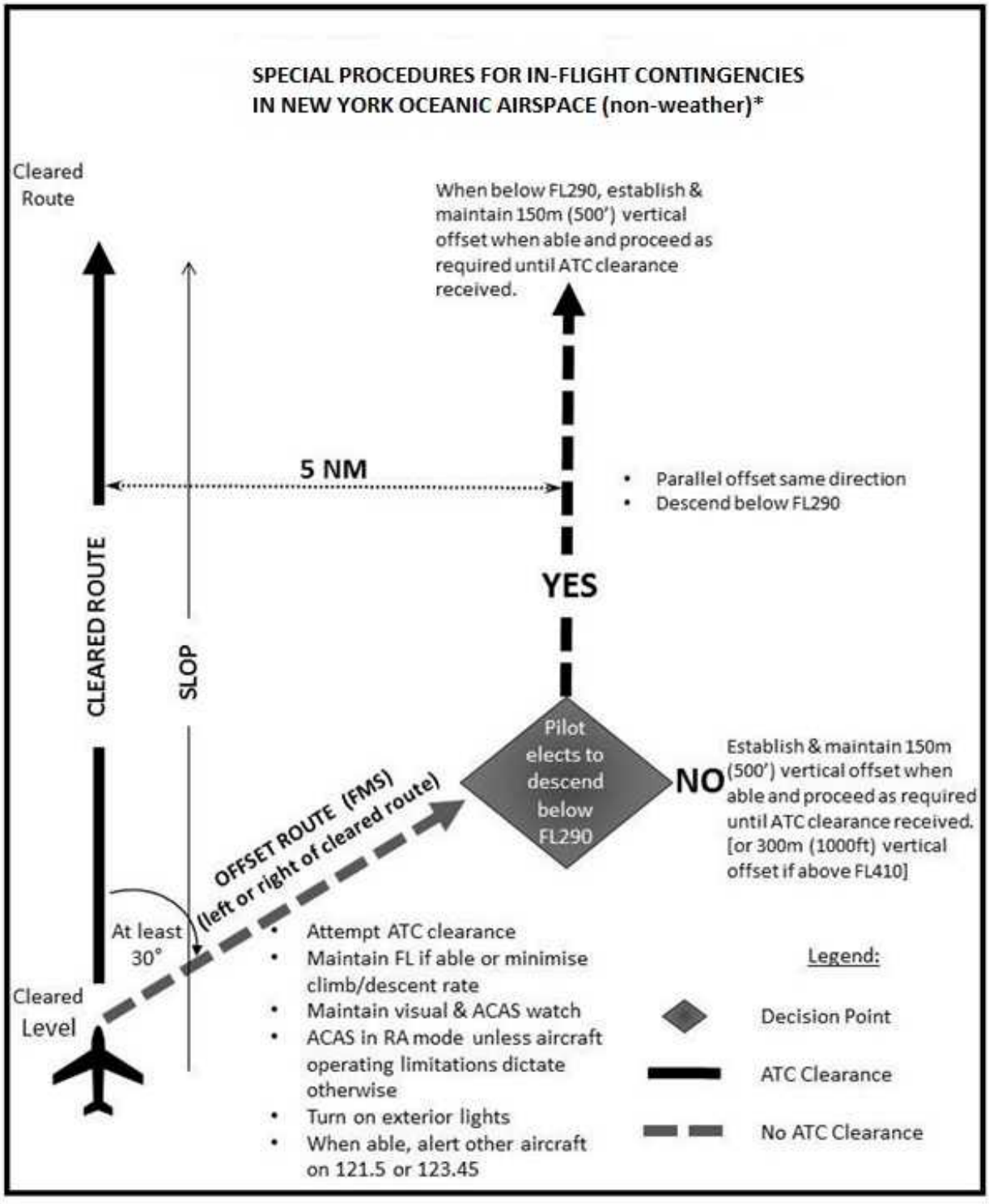
(1) descend below FL 290, and establish a 150 m (500 ft) vertical offset from those flight levels normally used, and proceed as required by the operational situation or, if an ATC clearance has been obtained, proceed in accordance with the clearance; or

NOTE−
Descent below FL 290 is considered particularly applicable to operations where there is a predominant traffic flow (e.g. east−west) or parallel track system where the aircraft's diversion path will likely cross adjacent tracks or routes. A descent below FL 290 can decrease the likelihood of conflict with other aircraft, ACAS RA events, and delays in obtaining a revised ATC clearance.

(2) establish a 150 m (500 ft) vertical offset (or 300 m (1000 ft) vertical offset if above FL 410 from those flight levels normally used, and proceed as required by the operational situation, or if an ATC clearance has been obtained, proceed in accordance with the clearance.

NOTE−
Altimetry system error may lead to less than actual 500 ft vertical separation when the procedure above is applied. In addition, with the 500 ft vertical offset applied, ACAS RAs may occur.

Figure 1. Visual aid for understanding and applying the contingency procedures guidance



*Consistent with North Atlantic regional implementation.

4. Weather Deviation Procedures

a. General

NOTE−
The following procedures are intended for deviations around adverse meteorological conditions.

(1) When weather deviation is required, the pilot should initiate communications with ATC via voice or CPDLC. A rapid response may be obtained by either:

(a) stating, “WEATHER DEVIATION REQUIRED” to indicate that priority is desired on the frequency and for ATC response; or

(b) requesting a weather deviation using a CPDLC lateral downlink message.

(2) When necessary, the pilot should initiate the communications using the urgency call “PAN PAN” (preferably spoken three times) or by using a CPDLC urgency downlink message.

(3) The pilot shall inform ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to its cleared route.

b. Actions to be Taken When Controller−Pilot Communications are Established

(1) The pilot should notify ATC and request clearance to deviate from track or route, advising when possible, the extent of the deviation requested. The flight crew will use whatever means is appropriate (i.e. CPDLC and/or voice) to communicate during a weather deviation.

NOTE−
Pilots are advised to contact ATC as soon as possible with requests for clearance in order to provide time for the request to be assessed and acted upon.

(2) ATC should take one of the following actions:

(a) when appropriate separation can be applied, issue clearance to deviate from track; or

(b) if there is conflicting traffic and ATC is unable to establish appropriate separation, ATC should:

[1] advise the pilot of inability to issue clearance for the requested deviation;

[2] advise the pilot of conflicting traffic; and

[3] request the pilot’s intentions.

(3) The pilot should take one of the following actions:

(a) comply with the ATC clearance issued; or

(b) advise ATC of intentions and execute the procedures provided in paragraph 4.c. below.

c. Actions to be Taken if a Revised ATC Clearance Cannot be Obtained

NOTE−
The provisions of this paragraph apply to situations where a pilot needs to exercise the authority of a pilot−in−command under the provisions of ICAO Annex 2, 2.3.1.

(1) If the aircraft is required to deviate from track or route to avoid adverse meteorological conditions, and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received, the pilot shall take the following actions:

(a) if possible, deviate away from an organized track or route system;

(b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator or the track code) and intentions, on the frequency in use and on 121.5 MHz (or, as a backup, on the inter−pilot air−to−air frequency 123.45 MHz);.

(c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);

(d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

(e) for deviations of less than 9.3 km (5.0 NM) from the originally cleared track or route remain at a level assigned by ATC;

(f) for deviations greater than or equal to 9.3 km (5.0 NM) from the originally cleared track or route, when the aircraft is approximately 9.3 km (5.0 NM) from track, initiate a level change in accordance with the Table below;

(g) if the pilot receives clearance to deviate from cleared track or route for a specified distance and, subsequently, requests, but cannot obtain a clearance to deviate beyond that distance, the pilot should apply an altitude offset in accordance with the Table below before deviating beyond the cleared distance;

(h) when returning to track or route, be at its assigned flight level when the aircraft is within approximately 9.3 km (5.0 NM) of the centerline; and

(i) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

NOTE−
If, as a result of actions taken under the provisions of 4. c. (1), the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.

Altitude Offset When Denied Clearance to Deviate 9.3 km (5.0 NM) or More, Applicable in New York's Oceanic Airspace (consistent with North Atlantic regional implementation)

Originally Cleared Track or Route Center Line	Deviations ≥ 9.3 km (5.0 NM)	Level Change
EAST (000° − 179° magnetic)	LEFT	DESCEND 90 m (300 ft)
	RIGHT	CLIMB 90 m (300 ft)
WEST (180° − 359° magnetic)	LEFT	CLIMB 90 m (300 ft)
	RIGHT	DESCEND 90 m (300 ft)

(2/28/19)

NORTH ATLANTIC TRIAL IMPLEMENTATION OF ASEPS (LATERAL) USING ADS−B

The ICAO North Atlantic (NAT) region is conducting trials of reduced aircraft separation minimums based on the use of ADS−B. The NAT region officially refers to these aircraft separation minimums as *Advanced Surveillance−Enhanced Procedural Separation (ASEPS).* The trials, conducted exclusively in the Gander, Shanwick and Santa Maria Oceanic Control Areas (OCA), began in March 2019 with reduced longitudinal separation minimums. The NAT region will expand the trials to include reduced *lateral* separation minimums, again only in Gander, Shanwick and Santa Maria OCAs, beginning as early as October 10, 2019. During the trials, the participating OCAs may separate aircraft on non−intersecting tracks not less than 19 nautical miles (NM) laterally. Aircraft currently flying on Performance Based Communications and Surveillance (PBCS) tracks in the NAT region can experience lateral spacing limited to 23 NM.

Air traffic controllers for the Gander and Shanwick OCAs will use space based ADS−B for aircraft surveillance during the trials, while controllers for Santa Maria OCA will use their existing ground−based ADS−B network.

As with the PBCS tracks, ATC will limit application of reduced lateral spacing to aircraft whose flight plan indicates authorization for RNP 4, RCP 240, RSP 180, RVSM, and operations in the North Atlantic High Level Airspace (NAT HLA). The flight plan must also indicate equipage with ADS−B out (1090 MHz) (Item 10 codes B1 or B2) and FANS 1/A CPDLC SATCOM (Item 10 codes J5 or J7).

ICAO NAT OPS Bulletin 2019−002 *Trial Implementation of ASEPS (Lateral) Using ADS−B* is the comprehensive source of guidance and information on the trials. Operators may find this OPS Bulletin, as well as all active NAT OPS Bulletins at www.icao.int/EURNAT. Subsequently click on *EUR/NAT Documents*, then *NAT Region Documents*, then *NAT OPS Bulletins*.

Flight crews crossing the NAT may experience some new and/or non−standard terminology regarding *surveillance* of their aircraft, particularly as they enter or travel between trial participating OCAs. Regardless of the surveillance status terminology that flight crews hear or receive via CPDLC when in oceanic airspace, they must perform *all* their normal oceanic procedures.

The FAA *recommends* flight crews of U.S. aircraft opt out of the ASEPS reduced lateral separation trial if flying with less than a fully functioning TCAS (ACAS II). Flight crews should inform ATC that they have “no ACAS” either when requesting their oceanic clearance (voice or CPDLC), 30 minutes prior to crossing the Gander, Shanwick or Santa Maria OCA boundaries if entering from New York or Iceland oceanic airspace, or otherwise as soon as possible if ACAS failure occurs while in Gander, Shanwick or Santa Maria OCAs.

Strategic Lateral Offset Procedures (SLOP) remain in effect during ASEPS trials. For safety of operations, flight crews should always use SLOP while within oceanic airspace on their NAT crossing.

Operators who fly across the North Atlantic should ensure their pilots are aware of the reduced lateral separation trials and the information presented in both this notice and NAT OPS Bulletin 2019−002.

For questions regarding this notice contact the Flight Technologies and Procedures Division, 202−267−8790.

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 8/15/19)

NORTH ATLANTIC OPERATIONS WITHOUT AN ASSIGNED FIXED SPEED

1. The purpose of the notice is to alert operators flying in the International Civil Aviation Organization (ICAO) North Atlantic (NAT) region of opportunities to fly other than a fixed speed. A speed assignment has long been a component of a NAT oceanic clearance. As a result of extensive coordination among NAT air navigation service providers (ANSP), operators may now have the opportunity to fly a variable speed, for all or a portion of their NAT oceanic crossing. NAT ANSPs are implementing operations without an assigned fixed speed as changes to their individual flight data processing systems and procedures allow. Therefore, the opportunities to fly other than a fixed speed will vary with the oceanic control area, traffic density, and direction of flight.

2. ICAO NAT OPS Bulletin 2019−1 *Operations Without an Assigned Fixed Speed in the NAT (OWAFS) Special Emphasis Items (SEI)*, issued July 9, 2019, is the comprehensive source of information on operations without an assigned fixed speed in the NAT. The bulletin includes an example operational scenario illustrating how a nominal oceanic flight crew may obtain clearance to fly other than a fixed assigned speed in the NAT. It is important to note that, in accordance with Title 14 of the Code of Federal Regulations, § 91.703, operators must observe the provisions of paragraph 3.6.2.2 of ICAO Annex 2. Operators should not interpret anything in the bulletin as authorizing a deviation from Annex 2.

3. Operators can obtain this bulletin, as well as all NAT OPS Bulletins, free of charge on the ICAO EUR/NAT website. Visitors to the website should select EUR/NAT Documents, then NAT Documents, then NAT OPS Bulletins to view the complete list of effective bulletins. All U.S. operators intending flights in the NAT region should familiarize themselves with **all** current NAT OPS Bulletins.

4. Operators may direct questions to Aviation Safety Inspector Madison Walton, Flight Technologies and Procedures Division, at 202−267−8850, or Madison.Walton@faa.gov.

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 9/12/2019)

STRATEGIC LATERAL OFFSET PROCEDURE (SLOP) WHILE WITHIN OCEANIC AIRSPACE

The strategic lateral offset procedure (SLOP) has been promoted and practiced in oceanic airspace for a number of years. The standards for SLOP have been established by ICAO through Document 4444, Procedures for Air Navigation Services − Air Traffic Management. Until recently, application of SLOP offered aircraft operators options only to fly the track centerline, 1.0 NM, or 2.0 NM right of track. However, a change to the International Civil Aviation Organization Document 4444, Procedures for Air Navigation Services − Air Traffic Management, established new criteria for SLOP such that offsets may be performed at .1 NM intervals up to a maximum of 2.0 NM right of track. The new criteria will allow 21 offset positions versus the existing three positions, thereby, increasing safety. These procedures will be published in the United States Aeronautical Information Publication on 30 January 2020.:

It has been determined that allowing aircraft conducting oceanic flight to fly lateral offsets, in increments of .1 nautical mile (NM) up to a maximum of 2 NM right of center line, will provide an additional safety margin and mitigate the risk of conflict when non−normal events, such as aircraft navigation errors, altitude deviation errors, and turbulence−induced altitude−keeping errors occur.

Effective 12 September 2019, these procedures are authorized in U.S.−controlled Oceanic Airspace and also the airspace surrounding the island of Bermuda, the airspace controlled by Honolulu Control Facility (HCF) and the airspace controlled by Guam Combined Center Radar Approach Control (CERAP).

These procedures provide for offsets within the following guidelines: Along a route or track there will be 21 positions that an aircraft may fly: on center line or at increments of .1 NM (e.g. .1, .2, .3, .4 ….. 1.8, 1.9, 2.0)

right of center line out to a maximum offset of 2 NM. Offsets must not exceed 2 NM right of centerline. The intent of this procedure is to reduce risk (add safety margin) by distributing aircraft laterally across the 21 available positions.

Pilots must fly the track center line if their aircraft does not have automatic offset programming capability. Pilots of aircraft unable to offset at .1 NM increments should fly on the track centerline, or at the 1.0 NM or 2.0 NM positions right of centerline when using SLOP.

An aircraft overtaking another aircraft should offset within the confines of this procedure, if capable, so as to create the least amount of wake turbulence for the aircraft being overtaken.

Pilots should also fly one of the available offset positions shown above to avoid wake turbulence.

(9/12/2019)

OPERATIONS OF AIRCRAFT WITHOUT AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS−B) OUT IN U.S. ADS−B OUT RULE AIRSPACE (OUTSIDE 48 CONTIGUOUS STATES)

Purpose: To describe FAA Air Traffic policy for aircraft operations without Automatic Dependent Surveillance−Broadcast Out (ADS−B Out) in United States sovereign airspace outside of the 48 Contiguous States.

Pursuant to 14 CFR § 91.225, when operating in Class A airspace an aircraft must:

1. Meet the performance requirements in TSO−C166b, Extended Squitter Automatic Dependent Surveillance−Broadcast (ADS−B) and Traffic Information Service−Broadcast (TIS−B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz); and,

2. Meet the requirements of 14 CFR § 91.227.

For the purposes of § 91.225, Class A airspace is located within U.S. domestic airspace. U.S. domestic airspace exists over all land mass regions of the U.S. as defined in 14 CFR § 1.1 and includes the States (contiguous and non−contiguous), the District of Columbia, Puerto Rico, and the possessions, including the surrounding territorial waters.

NOTE−
Areas beyond 12 nautical miles from the U.S. coastline are considered part of International Civil Aviation Organization (ICAO) airspace. U.S. airspace regulations do not apply in these areas even if the FAA opts to apply domestic air traffic procedures.

Several U.S. territories in the Pacific and Caribbean region have Class A airspace defined over them. Per the Department of the Interior, Insular Affairs Policy Division, the U.S. possessions, or territories, in the Pacific and Caribbean regions include the following:

Caribbean: Navassa Island, Puerto Rico, U.S. Virgin Islands

Pacific: American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Northern Mariana Islands, Palmyra Atoll, Wake Atoll.

For flight operations within the Class A domestic airspace of Puerto Rico, U.S. Virgin Islands, Guam, and the Northern Mariana Islands south of latitude North 17 degrees 49 minutes, the FAA notes the following expectations:

1. Operators without equipment meeting the performance requirements in TSO−C166b are expected to plan their routes of flight (including alternate airports) around this airspace; and

2. Operators without equipment meeting the performance requirements in TSO−C166b should train their flight crews to generally decline a voluntary ATC rerouting through this airspace unless required to safely operate their aircraft (e.g., in−flight emergencies, weather deviations, or diversions, etc.), advising ATC that they are not equipped with appropriate ADS−B avionics. If, however, ATC chooses to proceed with the new routing, the flight crew should accept and execute the clearance.

The remaining locations in the Pacific and Caribbean regions do not have FAA ADS−B or radar coverage at this time. The specific locations within the Pacific and Caribbean regions without coverage are: American Samoa, Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, Navassa Island, and the Northern Mariana Islands north of latitude North 17 degrees 49 minutes.

In airspace without FAA ADS−B or radar coverage, the FAA cannot provide (and does not provide) Air Traffic Service (ATS) surveillance services. Also, without ADS−B coverage, FAA has no practical means to detect violations of § 91.225. Therefore, until such coverage exists, FAA does not anticipate devoting its resources to identifying non−equipped aircraft briefly traversing these locations without FAA ADS−B or radar coverage.

(AJV−1, 10/10/2019)

Section 1. General

Automatic Dependent Surveillance – Broadcast (ADS–B) Out Preflight Responsibilities

Purpose: To describe preflight responsibilities for Automatic Dependent Surveillance–Broadcast Out (ADS–B Out) operations in United States National Airspace System. The Federal Aviation Administration will incorporate this guidance into the next revision of Advisory Circular (AC) 90–114A Change 1, *Automatic Dependent Surveillance – Broadcast Operations* (https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_90–114A_CHG_1.pdf).

Background: In 2016, the FAA published guidance for ADS–B operations in AC 90–114A CHG 1. Since that time, the agency has refined and clarified ADS–B policy in a number of areas, most significantly with respect to preflight requirements and responsibilities for operators with specific ADS–B position sources. Use the information in this Graphic Notice to supplement guidance in AC 90–114A CHG 1.

a. Flight Planning Requirements. Operators of aircraft with position sources identified in this Notice are expected to conduct a preflight prediction to ensure compliance with Title 14 of the Code of Federal Regulations (14 CFR) section § 91.227(c)(1)(i) and (iii) (https://www.ecfr.gov/cgi–bin/text–idx?SID=8137158693744ba666e318c1f474d81b&node=se14.2.91_1227&rgn=div8). Preflight prediction requirements are summarized in Table 1–1 below.

b. Global Positioning System (GPS) Performance Prediction. For aircraft equipped with Technical Standard Order (TSO) C129() or TSO–C196() GPS units to support ADS–B Out equipment, a Navigation Accuracy Category for Position (NACp) and Navigation Integrity Category (NIC) GPS service availability prediction should be performed for the intended route of flight (route and time) using available GPS satellite information and guidance published in AC 90–114A CHG 1 as amended here.

Note: It is not necessary for operators of aircraft equipped with the Wide Area Augmentation System (WAAS) (TSO–C145 or TSO–C146) receivers to conduct a preflight availability prediction. Operators of aircraft equipped with specific aircraft–based augmentation systems (ABAS) that have been reviewed by the FAA and are approved for ADS–B operations (i.e., 14 CFR §§ 91.225 [https://www.ecfr.gov/cgi–bin/text–idx?node=se14.2.91_1225&rgn=div8] and 91.227) also do not need to conduct a preflight availability prediction.

1. Prediction Methods. Refer to AC 90–114A CHG 1, section 4–5c.(1) for a discussion of preflight availability prediction methods.

2. Flight Planning Guidance. Predictions should be conducted within 24 hours of departure and as close to departure time as feasible, but with sufficient time to re–plan the flight in the event a segment along the planned route is predicted to have insufficient GPS service availability. The prediction should be reevaluated prior to flight if new information (i.e., a Notice to Airmen) provides notice of an unscheduled GPS satellite outage. In the event of a *predicted* loss of performance for any part along the intended route in the airspace where ADS–B Out is required, the flight should be re–planned so that ADS–B Out performance requirements specified in 14 CFR § 91.227 can be met. Alternatively, to continue on the planned route, operators must obtain air traffic control (ATC) authorization to deviate from applicable regulatory requirements.

c. Operations conducted under Exemption No. 12555. Operators approved to conduct operations under the conditions and limitations of Exemption No. 12555 (https://www.faa.gov/nextgen/equipadsb/research/exemption/media/Exemption12555.pdf) should adhere to the guidance provided in this section.

1. Under the conditions of Exemption No. 12555, operators with receivers meeting the performance requirements of TSO–C196() may operate in designated airspace for which ADS–B Out is required when the

aircraft's NACp and NIC do not meet the performance specified in 14 CFR § 91.227. For these operations, the operator does not need to conduct any preflight availability prediction.

2. Operators conducting operations under Exemption No. 12555 equipped with TSO−C129() receivers may operate where ADS−B Out is required with performance below that specified in 14 CFR § 91.227 when the FAA determines use of backup surveillance is available. In these instances, operators must use the FAA Service Availability Prediction Tool (SAPT). The applicable SAPT run should be completed no more than 3−hours before the planned departure time. If ATC in the departure jurisdiction requires flight plan submission earlier than 3 hours prior, the SAPT for backup surveillance should be run just prior to flight plan submission. Under Exemption No. 12555, operators may elect their own tool for preflight prediction and use SAPT only to determine the availability of backup surveillance when needed under Exemption No. 12555.

NOTE: Some GPS receivers manufactured with a TSO−C129a approval are SA−Aware, and, therefore, have the same NACp and NIC availability as TSO−C196() approved equipment. Operators should check with their GPS receiver supplier to verify whether their installed TSO−C129() GPS receiver is SA−On or SA−Aware.

Note: Refer to AC 90−114A CHG 1, section 4−5c.(1) for determination of backup surveillance availability during a predicted GPS service disruption.

Table 1−1

Preflight Availability Prediction?			
	Years 2020 – 2024		**After 2024**
Equipment	**Exemption 12555**	**No Exemption**	
SA−On	Yes SAPT will determine backup surveillance and exemption authorizes flight if prediction results in NIC <7 and/or NACp<8.	Yes If prediction results in NIC <7 and/or NACp < 8, operator should re−plan the flight or request ATC authorization.	Yes If prediction results in NIC <7 and/or NACp < 8, operator should re−plan the flight or request ATC authorization.
SA−AWARE	No Exemption authorizes flight without the need for preflight prediction.	Yes If prediction results in NIC <7 and/or NACp < 8, operator should re−plan the flight or request ATC authorization.	Yes If prediction results in NIC <7 and/or NACp < 8, operator should re−plan the flight or request ATC authorization.
SBAS/ABAS	No	No	No

d. Preflight prediction compliance. Operators need to perform an ADS−B Out preflight prediction only for the intended route of flight to the intended destination. For example, when departure and/or arrival alternate airports are required, no preflight prediction is necessary for these routes. However, if you become aware of a change that could result in degraded ADS−B Out performance, such as a satellite outage prior to receiving an ATC clearance for the intended route of flight, then you should conduct a subsequent preflight prediction for the planned flight to ensure that ADS−B Out performance is still predicted to comply with the performance requirements of § 91.227(c)(1)(i) and (iii). Once the pilot has received an ATC route clearance, there is no requirement to conduct a subsequent preflight prediction. Therefore, upon receiving a satisfactory preflight availability prediction and an ATC clearance for an intended route of flight, the operator will be deemed to have complied with the preflight availability prediction requirement and the performance requirements of § 91.227(c)(1)(i) and (iii). The FAA accepts that unanticipated changes in route of flight and environmental conditions may adversely affect ADS−B Out performance. ATC will continue to exercise its responsibility for the safe and efficient movement of air traffic, including the routing of traffic to meet those objectives.

▶ ADS−B preflight planning should include:
- Identification of flights or aircraft that require completion of a preflight prediction.
- Identify the preflight prediction system (or systems) to be used.
- Include a means to document completion of a satisfactory prediction for each flight where a prediction is required.
- Retain documentation of prediction completion for a suitable period of time, such as three months.

e. GPS Interference. There may be times when the GPS position source cannot meet the required technical performance due to planned GPS interference. In the event of a scheduled interference outage of GPS, the FAA will issue a Notice to Airmen (NOTAM) that identifies the airspace and time periods that may be affected by the interference. The FAA has determined that it would be impractical and not in the public interest to require operators to avoid the affected area based on the chance that an otherwise compliant flight could experience GPS interference. Accordingly, operators should proceed with their intended operation if the only impediment to their operation is possible planned GPS interference. An operator who is required to perform a preflight availability prediction for the intended route of flight is still required to obtain a satisfactory preflight availability prediction. When a NOTAM identifies the airspace and time periods that may be affected by GPS interference, an operator will not be required to alter his or her route of flight to avoid the area based solely on that NOTAM. If an operator encounters actual GPS interference during their flight that results in a degradation of ADS−B Out performance, the FAA will not consider these events to constitute noncompliance with § 91.227.

f. SAPT Outages. The FAA will issue a NOTAM in the event of a SAPT outage. Operators who use SAPT as their preflight prediction tool will not need to conduct a preflight prediction for the duration of the outage. When there is a SAPT outage, the FAA will not initiate compliance or enforcement actions against operators who rely on the SAPT if an operation falls below the performance requirements, despite the technical non−compliance with § 91.227. The FAA cautions that, for operators who have been notified by the FAA of consistent and repeated ADS−B Out performance issues, operating during SAPT outage without first redressing the identified non−performance issue will be considered a continuation of existing non−compliance of the performance requirements.

(Flight Technologies and Procedures Division, Flight Standards Service, 7/18/2019)

COLD TEMPERATURE RESTRICTED AIRPORTS

Aug 15, 2019

Cold Temperature Altitude Corrections

Subject: Cold temperature altitude corrections at airports with a published cold temperature restriction.

Purpose: 1. To provide an updated list of 14 CFR Part 97 Cold Temperature Restricted Airports (CTRA) and segments designated with a temperature restriction; 2. Change the NTAP Segment(s) Method to the Individual Segment(s) Method; 3. Explain how to calculate and apply altitude corrections during cold temperature operations; 4. Explain how the All Segments Methods and Individual Segment(s) Method are used to make cold temperature altitude corrections.

This list may also be found at the bottom of the, "Terminal Procedures Basic Search" page. http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dtpp/search/

Background: In response to aviation industry concerns over cold weather altimetry errors, the FAA conducted a risk analysis to determine if current 14 CFR Part 97 instrument approach procedures, in the United States National Airspace System, place aircraft at risk during cold temperature operations. This study applied the coldest recorded temperature at the given airports in the last five years and specifically determined if there was a probability that during these non−standard day operations, anticipated altitude errors in a barometric altimetry system could exceed the ROC used on procedure segment altitudes. If a probability, of the ROC being exceeded, went above one percent on a segment of the approach, a temperature restriction was applied to that segment. In addition to the low probability that these procedures will be required, the probability of the ROC being exceeded precisely at an obstacle position is extremely low, providing an even greater safety margin.

The 2019 list includes restricted temperatures based on standard Required Obstacle Clearance (ROC) values and values that account for additional altitude adjustments. These adjustments do not only reflect the minimum ROC for an approach segment based on terrain and/or an obstacle, but also an upward adjustment for other operational and/or ATC needs. These adjusted approach altitudes may result in the segment no longer being identified with a restriction or in a revised restricted temperature for the airport being published.

The CTRA risk analysis was only performed on airports of 2500 ft. and greater due to database constraints. Pilots must calculate a cold temperature altitude correction at any airport included in the airports list below. Pilots operating into an airport with a runway length less than 2500 feet may make a cold temperature altitude correction in cold temperature conditions, if desired. Pilots must advise ATC with the corrected altitude when applying altitude corrections on any approach segment with the exception of the final segment.

Identifying Cold Temperature Restricted Airport in the Terminal Procedure publication: Cold Temperature Restricted Airports are identified by a "snowflake" icon () and temperature limit, in Celsius, i.e.,  −30°C, on U.S. Government approach charts or a "textual" Note published on commercial charting publications.

All Segments Method: Pilots may correct all altitudes from the IAF altitude to the missed approach final holding altitude. Pilots familiar with the NTAP procedure for making altitude corrections and choosing to use the All Segments Method are only required to use the published "snowflake" icon  and associated temperature on the chart for making corrections. Pilots do not need to reference the restricted airports list in the NTAP or Terminal Procedures Basic Search" page. Calculations will be made based on the altitude at the Final Approach Fix (FAF)/Precision Final Approach Fix (PFAF), the Minimum Descent Altitude or Decision

Altitude (DA) and the Missed Approach (MA) final holding altitude. The calculations made at these fixes will be used to make altitude corrections on the other fixes in the applicable approach segment(s).

Individual Segment(s) Method: Pilots may correct only the required segment(s) indicated in this NTAP's restricted airports list. Pilots using the Individual Segment(s) Method will need to reference the restricted airports list to determine which segment(s) require a correction. Calculations will be made based on the altitude at the Final Approach Fix (FAF)/Precision Final Approach Fix (PFAF), the Minimum Descent Altitude or Decision Altitude (DA) and the Missed Approach (MA) final holding altitude. The calculations made at these fixes will be used to make altitude corrections on the other fixes in the applicable approach segment(s).

Actions:

When and where to correct: Pilots must make an altitude correction to the published, "at", "at or above" and "at or below" altitudes on all designated segment(s), for all published procedures and runways when the reported airport temperature is at or below the published airport cold temperature restriction on the approach plate. Pilots must advise ATC of the amount of altitude correction applied when correcting on any segment of the approach other than the final segment. ATC requires this information to ensure appropriate vertical separation between known traffic. Reference the **How to Apply Cold Temperature Altitude Corrections on an Approach** for examples and additional information.

Altitudes not corrected: ATC does not apply a cold temperature correction to Minimum Vectoring Altitude (MVA) charts. Pilots must request approval from ATC to apply a cold temperature correction to an ATC assigned altitude or an assigned altitude when flying on a radar vector in lieu of a published missed approach procedure. Pilots must not correct altitudes published on Standard Instrument Departures (SIDs), Obstacle Departure Procedures (ODPs) and Standard Terminal Arrivals (STARs).

Use of corrected MDA/DA: Pilots must use the corrected Minimum Descent Altitude (MDA) or Decision Altitude/ Decision Height (DA) as the minimum for an approach. Pilots must meet the requirements in 14 CFR Part 91.175 in order to operate below the corrected MDA or DA. Pilots must see and avoid obstacles when descending below the MDA.

Methods for Calculating Altitude Corrections: Pilots of aircraft **not equipped with** an RNAV system capable of temperature compensation must use the AIM 7−2−3, ICAO Cold Temperature Error Table to calculate a cold temperature altitude correction. The calculations for the approach will be calculated from three points on the approach:

NOTE: For the purpose of this procedure, when the FAF is referenced, it is the FAF altitude or the PFAF/Glideslope intercept altitude.

1. The FAF/PFAF will be used to calculate the correction to be applied to all altitudes from the FAF/PFAF:
    a. Up to but not including the intermediate fix (IF) altitude for the Individual Segment(s) Method
    b. Up to and including the initial approach fix (IAF) for the All Segments Method
2. The published MDA or DA will be used to calculate the correction to be applied to all altitudes in the final approach segment as applicable.
3. The final missed approach (MA) holding altitude will be used to calculate the correction to be applied to the final missed approach holding altitude only.

NOTE: Pilots may use Real Time Mesocscale Analysis (RTMA): Alternate Report of Surface Temperature, for computing altitude corrections, when airport temperatures are not available via normal reporting. See InFO 15006 for additional information,

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2015/info15006.pdf.
The RTMA website is http://nomads.ncep.noaa.gov/pub/data/nccf/com/rtma/prod/airport_temps/

Pilots of aircraft **equipped with** an RNAV system capable of temperature compensation, and choosing to use this system, must ensure the system is active and operating correctly. If the system is not operating correctly, or not being used, the pilot must manually calculate and apply a cold weather altitude correction using the AIM 7−2−3, ICAO Cold Temperature Error Table. The MDA/DA and step down fixes in the final segment will still require a manual correction.

PILOTS MUST NOT MAKE AN ALTIMETER CHANGE to accomplish an altitude correction. Pilots must ensure that the altimeter is set to the current altimeter setting provided by ATC in accordance with 14 CFR §91.121.

ICAO COLD TEMPERATURE ERROR TABLE
HEIGHT ABOVE AIRPORT IN FEET

REPORTED TEMP °C	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
+10	10	10	10	10	20	20	20	20	20	30	40	60	80	90
0	20	20	30	30	40	40	50	50	60	90	120	170	230	280
-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20	30	50	60	70	90	100	120	130	140	210	280	420	570	710
-30	40	60	80	100	120	140	150	170	190	280	380	570	760	950
-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50	60	90	120	150	180	210	240	270	300	450	590	890	1190	1500

Acceptable Use of Table:
Pilots may calculate a correction with a visual interpolation of the chart when using reported temperature and height above airport. This calculated altitude correction may then be rounded to the nearest whole hundred or rounded up. I.e., a correction of 130 ft. from the chart may be rounded to 100 ft. or 200 ft. A correction of 280 ft. will be rounded up to 300 ft. This rounded correction will be added to the FAF, all step−down fixes outside of the FAF and the IAF altitudes. The correction calculated from the MDA or DA may be used as is, rounded up, but never rounded down. This number will be added to the MDA, DA and all step−down fixes inside of the FAF as applicable. Do not round down when using the 5000 ft. column for calculated height above airport values greater than 5000 ft.

No extrapolation above the 5000 ft. column is required. Pilots may use the 5000 ft. “height above airport in feet” column for calculating corrections when the calculated altitude is greater than 5000 ft. above reporting station elevation. Pilots must add the correction(s) from the table to the affected segment altitude(s) and fly at the new corrected altitude.

It is important to understand that the correction from the table will place the aircraft back to an altitude based on a standard day. Although the techniques adopted in this NTAP to use the FAF altitude and MDA to correct the affected segment altitudes may not place the aircraft back to a standard day altitude on all fixes, a safe obstacle clearance will be maintained. These techniques have also been adopted to minimize the number of entries into the table while making corrections required by the pilot.

Additional Temperature Restrictions on IAP Charts: The charted temperature restriction for “uncompensated baro−VNAV systems” on 14 CFR Part 97 RNAV (GPS) and RNAV (RNP) Authorization Required (AR)

approach plates is independent of the temperature restriction established at a "Cold Temperature Restricted Airport". The charted temperature restriction for an uncompensated baro−VNAV system is applicable when the LNAV/VNAV line of minima is used on an RNAV (GPS) approach. The temperature restriction for an uncompensated baro−VNAV system on an RNAV (RNP) AR approach applies to the entire procedure. Aircraft without a compensating baro−VNAV system may not use the LNAV/VNAV line of minima on the RNAV (GPS) approach when the actual temperature is above or below the charted baro−VNAV temperature restriction. For aircraft without a compensating baro−VNAV system, the RNAV (RNP) AR approach is not authorized when the actual temperature is above or below the charted baro−VNAV temperature restriction. In all cases, a cold temperature altitude correction must be applied when the actual temperature is at or below the cold temperature restricted airport temperature restriction.

How to Apply Cold Temperature Altitude Corrections on an Approach:

All Segments Method: All segments corrected from IAF through MA holding altitude:

Step 1: Determine if there is a published "snowflake" icon, /CTRA temperature limit on the approach chart.

Step 2: If the reported airport temperature is at or below the published CTRA temperature limit, apply cold temperature altitude corrections to all published altitudes from the IAF altitude to the MA final holding altitude.

A Aircraft not equipped with a temperature compensating RNAV system or not using that system (use manual correction).

- All altitudes from the FAF/PFAF up to and including the IAF altitude: Calculate correction by taking FAF/PFAF altitude and subtracting the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Round this number as applicable and then add to all altitudes from the FAF altitude through the IAF altitude.

- All altitudes in final segment: Calculate correction by taking the MDA or DA for the approach being flown and subtract the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Use this number or round up. Add this number to MDA or DA/DH, as applicable, and any applicable step−down fixes in the final segment.

- Final holding altitude in the Missed Approach Segment: Calculate the correction by taking the final missed approach (MA) holding altitude and subtract the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Round this number as applicable and then add to the final MA altitude only.

B If flying an aircraft equipped with a RNAV system capable of temperature compensation, follow the instructions for applying temperature compensation provided in the AFM, AFM supplement, or RNAV system operating manual. Ensure that temperature compensation is active prior to the IAF and remains active through the entire approach. Manually calculate an altimetry correction for the MDA or DA. Determine an altimetry correction from the ICAO table based on the reported airport temperature and the height difference between the MDA or DA, as applicable, and the airport elevation.

NOTE: Some RNAV systems apply temperature compensation only to those altitudes associated with an instrument approach procedure loaded into the active flight plan while other systems apply temperature compensation to all procedure altitudes or user entered altitudes in the active flight plan,

including altitudes associated with a STAR. For those systems that apply temperature compensation to all altitudes in the active flight plan, delay activating temperature compensation until the aircraft has passed the last altitude constraint associated with the active STAR.

Step 3: For RNAV (GPS) approaches flown to the LNAV/VNAV line of minima using baro−VNAV vertical guidance, determine if there are published uncompensated baro−VNAV temperature limits. If the reported airport temperature is above or below the published limits, do not use the LNAV/VNAV line of minima unless the RNAV system is capable of temperature compensation and the system is active. Use an alternative line of minima (e.g., LNAV). CTRA correction must still be made on this approach if applicable.

Step 4: For RNAV (RNP) AR approaches, determine if there are uncompensated baro−VNAV temperature limits published on the approach. If the reported airport temperature is above or below the published temperature limits, the RNP (AR) approach may not be flown.

NOTE: When executing an approach with vertical guidance at a CTRA airport (i.e., ILS, LPV, LNAV/VNAV), pilots are reminded to follow the glideslope/glidepath as published when it is intersected inbound on the approach at the corrected altitude. The ILS glideslope and WAAS generated glidepath are unaffected by cold temperatures and will be provide reliable vertical guidance to the corrected DA/DH. A baro−VNAV generated glidepath will be affected by cold temperatures and must be corrected when at or below the published temperature limit and using the LNAV/VNAV line of minima to DA/DH.

Individual Segment(s) method:

Step 1: Determine if there is a published “snowflake” icon, /CTRA temperature limit on the approach chart.

Step 2: If the reported airport temperature is at or below the published CTRA temperature limit, apply cold temperature altitude corrections to all published altitudes, on the affected segment(s), listed in Cold Temperature Restricted Airports List.

A. Aircraft not equipped with a temperature compensating RNAV system or not using the system will make a manual correction using ICAO Cold Temperature Error Table.

- Intermediate Segment: All altitudes from the FAF/PFAF up to but not including the intermediate fix (IF) altitude. Calculate correction by taking FAF/PFAF altitude and subtracting the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Round this number as applicable and then add to FAF altitude and all step−down altitudes.

- Final segment: Calculate correction by taking the MDA or DA for the approach being flown and subtract the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Use this number or round up. Add this number to MDA or DA/DH, as applicable, and any applicable step−down fixes in the final segment.

- Missed Approach Segment: Calculate the correction by taking the final missed approach (MA) holding altitude and subtract the airport elevation. This number will be used to enter the height above airport in the ICAO table until reaching the reported temperature. Round this number as applicable and then add to the final MA altitude only.

B. If flying an aircraft equipped with a RNAV system capable of temperature compensation, follow the instructions for applying temperature compensation provided in the AFM, AFM supplement, or

RNAV system operating manual. Ensure that temperature compensation is active on the segment being corrected. Manually calculate an altimetry correction for the MDA or DA. Determine an altimetry correction from the ICAO table based on the reported airport temperature and the height difference between the MDA or DA, as applicable, and the airport elevation.

NOTE: Some RNAV systems apply temperature compensation only to those altitudes associated with an instrument approach procedure loaded into the active flight plan while other systems apply temperature compensation to all procedure altitudes or user entered altitudes in the active flight plan, including altitudes associated with a STAR. For those systems that apply temperature compensation to all altitudes in the active flight plan, delay activating temperature compensation until the aircraft has passed the last altitude constraint associated with the active STAR.

Step 3: For RNAV (GPS) approaches flown to the LNAV/VNAV line of minima using baro−VNAV vertical guidance, determine if there are published uncompensated baro−VNAV temperature limits. If the reported airport temperature is above or below the published limits, do not use the LNAV/VNAV line of minima unless the RNAV system is capable of temperature compensation and the system is active. Use an alternative line of minima (e.g., LNAV). CTRA correction must still be made on this approach if applicable.

Step 4: For RNAV (RNP) AR approaches, determine if there are uncompensated baro−VNAV temperature limits published on the approach. If the reported airport temperature is above or below the published temperature limits, the RNP (AR) approach may not be flown.

NOTE: When executing an approach with vertical guidance at a CTRA airport (i.e., ILS, LPV, LNAV/VNAV), pilots are reminded to follow the glideslope/glidepath as published when it is intersected inbound on the approach at the corrected altitude. The ILS glideslope and WAAS generated glidepath are unaffected by cold temperatures and will be provide reliable vertical guidance to the corrected DA/DH. A baro−VNAV generated glidepath will be affected by cold temperatures and must be corrected when at or below the published temperature limit and using the LNAV/VNAV line of minima to DA/DH.

Communication: Pilots must request approval from ATC whenever applying a cold temperature altitude correction. Pilots do not need to inform ATC of the final approach segment correction (i.e., new MDA or DA/DH). This report should be provided on initial radio contact with the ATC facility issuing approach clearance. ATC requires this information in order to ensure appropriate vertical separation between known traffic. Pilots should query ATC when vectored altitudes to a segment are lower than the requested corrected altitude. Pilots are encouraged to self−announce corrected altitude when flying into non−towered airfields.

The following are examples of appropriate pilot−to−ATC communication when applying cold−temperature altitude corrections.

- On initial check−in with ATC providing approach clearance: Hayden, CO (example below).
    - Vectors to final approach course: Outside of PICIN: "*Request 12100 ft. for cold temperature operations."*
    - Vectors to final approach course: Inside of PICIN: *"Request 10600 ft. for cold temperature operations.*"
    - Missed Approach segment: "*Require final holding altitude, 10600 ft. on missed approach for cold temperature operations.*"
- Pilots cleared by ATC for an instrument approach procedure; "Cleared the RNAV RWY 28 approach (from any IAF)". Hayden, CO (example below).
    - IAF: "*Request 13600 for cold temperature operations at TUSKK, TILLI or HIPNA*"

For additional information contact Kel Christianson, Flight Operations Group, at 202−267−8838.

Cold Temperature Restricted Airports: Airports are listed by ICAO code, Airport Name, Temperature Restriction in Celsius. The temperature will be indicated on Airport IAPs next to a snowflake symbol, −XX°C in the United States Terminal Procedure Publication (TPP).

Identifier	Airport Name	Temperature	Affected Segment		
			Intermediate	Final	Missed Appr
Alaska					
PABL	Buckland	−36C	X		
PABR	Wiley Post−Will Rogers	−42C	X		
PABT	Bettles	−37C	X	X	
PACE	Central	−43C	X	X	
PACH	Chuathbaluk	−34C		X	
PACI	Chalkyitsik	−32C	X		
PACM	Scammon Bay	−21C		X	
PACX	Coldfoot	−11C	X	X	
PADE	Deering	−39C		X	
PADM	Marshall Don Hunter Sr	−28C		X	
PAEG	Eagle	−49C	X		
PAEN	Kenai	−31C	X		
PAFA	Fairbanks Intl	−45C	X		
PAFM	Ambler	−35C		X	
PAGA	Edward G. Pitka Sr	−33C	X		
PAGH	Shungnak	−44C	X		
PAGK	Gulkana	−37C	X		
PAGM	Gambell	−26C		X	
PAHC	Holy Cross	−29C		X	
PAHV	Healy River	−11C	X	X	
PAHX	Shageluk	−37C	X		
PAIK	Bob Baker Memorial	−28C	X	X	
PAIL	Iliamna	−23C	X		
PAIW	Wales	−12C		X	
PAJN	Juneau Intl	−15C	X		
PAKN	King Salmon	−31C	X		
PAKP	Anaktuvuk	−31C	X		
PAKV	Kaltag	−32C	X	X	
PALG	Kalskag	−42C	X		
PAMB	Manokotak	−34C	X		
PAMH	Minchumina	−37C		X	
PAMK	St Michael	−37C	X		
PANA	Napakiak	−37C	X		
PANI	Aniak	−34C		X	
PANN	Nenana Muni	−43C	X		
PANV	Anvik	−32C	X		
PAOM	Nome	−34C	X		

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
PAOR	Northway	–41C	X		
PAOT	Ralph Wien Memorial	–44C	X		
PAQH	Quinhagak	–36C	X		
PAQT	Nuiqsut	–41C	X		
PARC	Artic Village	–46C	X		
PARS	Russian Mission	–18C	X	X	
PARY	Ruby	–33C	X	X	
PASC	Deadhorse	–45C	X		
PASK	Selawik	–36C	X		X
PATA	Ralph M Calhoun Memorial	–51C		X	
PATQ	Atqasuk Edward Burnell Sr. Mem	–43C	X		
PAUN	Unalakleet	–39C	X		
PAVD	Valdez Pioneer Field	–11C	X		
PAVE	Venetie	–42C	X		
PAVL	Kivalina	–34C	X		
PAWB	Beaver	–42C	X		
PAWD	Seward	–5C	X		
PAWG	Wrangell	–5C		X	
PAWI	Wainwright	–42C	X		
PAWS	Wasilla	–31C	X		
PFAL	Allakaket	–44C	X		
PFCL	Clarks Point	–34C	X		
PFEL	Elim	–29C		X	
PFKT	Brevig Mission	–26C	X		
PFKU	Koyukuk	–25C		X	
PFKW	Kwethluk	–38C	X		
PFSH	Shaktoolik	–35C	X		
PFYU	Fort Yukon	–45C	X	X	
California					
KSVE	Susanville Muni	–22C	X	X	
KTRK	Truckee – Tahoe	–13C	X	X	
O02	Nervino	–14C		X	
Colorado					
KAEJ	Central Colorado Rgnl	–17C		X	
KASE	Aspen–Pitkin County/Sardy Field	–26C	X		
KCAG	Craig–Moffat	–26C		X	
KEEO	Meeker Coulter Field	–25C		X	
KEGE	Eagle County Rgnl	–18C	X		
KGUC	Gunnison–Crested Butte Rgnl	–28C	X		
KHDN	Yampa Valley	–30C		X	
KLXV	Lake County	–27C		X	

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
KRIL	Garfield County Rgnl	−15C	X	X	
KSBS	Steamboat Springs/Bob Adams Fld	−32C	X		
KTAD	Perry Stokes	−26C	X		
20V	Mc Elroy Airfield	−21C		X	
Idaho					
KMYL	McCall Muni	−21C	X		
KSMN	Lemhi County	−14C	X	X	
KSUN	Friedman Memorial	−16C		X	
65S	Boundary County	−8C		X	
Indiana					
KSMD	Smith Field	−24C		X	
Iowa					
KAMW	Ames Muni	−27C	X		
KSPW	Spencer Muni	−32C	X		
Kansas					
KDDC	Dodge City Rgnl	−20C		X	
Kentucky					
KBYL	Williamsburg−Whitley County	−21C		X	
Maine					
KPQI	Northern Maine Rgnl	−30C	X		
Massachusetts					
KBAF	Westfield−Barnes Regional	−21C		X	
KFIT	Fitchburg Muni	−25C		X	
Michigan					
KAPN	Alpena County Rgnl	−32C	X		
KIWD	Gogebic−Iron County	−27C		X	
KPLN	Pellston Rgnl of Emmet County	−33C		X	
KTVC	Cherry Capital	−20C		X	
Minnesota					
KBFW	Silver Bay Municipal	−35C	X	X	
KCKC	Grand Marais/Cook County	−30C			X
KCQM	Cook Muni	−38C	X		
KELO	Ely Muni	−39C	X		
KHIB	Range Rgnl	−31C	X		
KINL	Falls Intl	−31C	X		
KRRT	Warroad Intl Memorial	−37C	X		
Montana					
KBTM	Bert Mooney	−19C	X	X	
KBZN	Bozeman Yellowstone Intl	−33C	X		
KGTF	Great Falls Intl	−33C	X		
KHLN	Helena Rgnl	−21C	X	X	

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
KHVR	Havre City−County	−30C			X
KMSO	Missoula Intl	−17C	X	X	
KOLF	L M Clayton	−38C	X		
KSBX	Shelby	−31C			X
KWYS	Yellowstone	−19C	X	X	
M46	Colstrip	−32C	X		
M75	Malta	−37C	X		
3U3	Bowman Field	−33C	X		
6S5	Ravalli County	−30C			X
6S8	Laurel Municipal	−30C	X		
Nebraska					
KCDR	Chadron Muni	−32C	X		
Nevada					
KEKO	Elko Rgnl	−24C		X	
KELY	Ely (Yelland Field)	−31C	X		
KRNO	Reno/Tahoe Intl	−15C		X	
KRTS	Reno/Stead	−15C		X	
New Hampshire					
KBML	Berlin Rgnl	−29C		X	
KCNH	Claremont Muni	−27C		X	
KHIE	Mount Washington Rgnl	−29C		X	
KLEB	Lebanon Muni	−20C	X	X	
New Mexico					
KAXX	Angel Fire	−31C	X		
New York					
KART	Watertown Intl	−37C	X		
KDKK	Chautauqua County/Dunkirk	−20C		X	
KELM	Elmira/Corning Rgnl	−17C		X	
KGFL	Floyd Bennett Memorial	−18C	X	X	
KITH	Ithaca Tompkins Rgnl	−19C		X	
KLKP	Lake Placid	−16C		X	
KSLK	Adirondack Rgnl	−29C		X	
4B6	Ticonderoga Muni	−29C		X	
North Carolina					
KRHP	Western Carolina Rgnl	−8C		X	
North Dakota					
KBIS	Bismarck	−35C	X		
KDIK	Dickinson−Theodore Roosevelt Rgnl	−30C	X		
KISN	Sloulin Field Intl	−36C	X		
Ohio					
KBKL	Burke Lakefront	−23C		X	

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
Oregon					
KLGD	La Grande/Union County	−16C		X	
KMFR	Rogue Valley Intl−Medford	−5C	X		
KPDT	Eastern Oregon Rgnl at Pendleton	−22C	X		
Pennsylvania					
KIPT	Williamsport Rgnl	−14C		X	
KSEG	Penn Valley	−14C		X	
N27	Bradford County	−25C		X	
South Dakota					
KIEN	Pine Ridge	−33C		X	
KMBG	Mobridge Muni	−31C	X		
Tennessee					
KMOR	Moore−Murrell	−22C		X	
0A9	Elizabethton Muni	−12C		X	
6A4	Mountain City/Johnson County	−12C		X	
Utah					
KBCE	Bryce Canyon Airport	−30C	X		
KENV	Wendover	−12C	X		
KLGU	Logan−Cache	−15C	X		
KRIF	Richfield Muni	−29C	X		
KSGU	St George Muni	−17C	X		
KVEL	Vernal Rgnl	−27C		X	
U55	Panguitch Municipal	−28C	X		
Vermont					
KBTV	Burlington Intl	−15C	X		
KDDH	William H. Morse State	−13C		X	
KEFK	Newport State	−30C	X		
KMPV	Edward F. Knapp State	−20C	X		
KMVL	Morrisville−Stowe State	−30C	X		
KRUT	Rutland−Southern Vermont Rgnl	−8C		X	
KVSF	Hartness State (Springfield)	−24C		X	
Virginia					
KROA	Roanoke Rgnl/Woodrum Field	−13C		X	
KVBW	Bridgewater Air Park	−20C	X		
Washington St.					
KEAT	Pangborn Memorial	−7C	X		
KOMK	Omak	−15C		X	
West Virginia					
KEKN	Elkins−Randolph County Jennings Randolph Field	−17C		X	

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
W99	Grant County	–9C		X	
12V	Ona Airpark	–25C	X		
3I2	Point Pleasant/Mason County	–18C		X	
Wisconsin					
KASX	John F. Kennedy Memorial	–31C	X		
KCMY	Sparta/Fort McCoy	–33C	X		
KLSE	La Crosse Muni	–20C		X	
KOVS	Boscobel	–31C		X	
KRHI	Rhinelander–Oneida County	–31C	X		
KRPD	Rice Lake Rgnl–Carl's Field	–35C	X		
4R5	Major Gilbert Field	–30C	X		
Wyoming					
KAFO	Afton Municipal Airport	–22C		X	
KCOD	Yellowstone Rgnl	–31C	X		
KDWX	Dixon	–38C		X	
KEMM	Kemmerer Muni	–35C	X		
KGEY	South Big Horn County	–33C	X	X	
KHSG	Hot Springs County	–36C	X		
KJAC	Jackson Hole	–26C	X	X	
KLAR	Laramie Rgnl	–35C	X		
KSHR	Sheridan County	–24C	X		
KWRL	Worland Muni	–33C			X
W43	Hulett Muni	–34C	X		

Additional Information: The following military airfields meet the criteria to be identified as a Cold Temperature Restricted Airport using the FAA cold temperature model. USAF, USA, USM, USN and USCG are not required to adhere to the procedures found in this NTAP at these airfields. This information is applicable to FAA authorized operators operating into these airfields.

Identifier	Airport Name	Temperature	Intermediate	Final	Missed Appr
KGTB	Wheeler–Sack AAF	–29C	X		
KRYM	Ray S. Miller AAF	–34C	X		
PAEI	Eielson AFB	–37C	X		X
PAFB	Ladd AAF	–33C	X		X
PAIM	Indian Mountain LRRS	–44C	X		
PALU	Cape Lisburne LRRS	–34C	X		
PASV	Sparrevohn LRRS	–21C	X		
PATC	Tin City LRRS	–37C	X		
PATL	Tatalina LRRS	–21C	X		X
PPIZ	Point Lay LRRS	–41C	X		

See the following examples for identifying and applying altitude corrections.

All Segments Method: All segments corrected from IAF through MA holding altitude.

Hayden/Yampa Valley (KHDN), Colorado. Reported Temperature −30°C: RNAV (GPS) RWY 28

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −30°C
2. Altitude at the Final Approach Fix (FAF) (BEEAR) = 10000 ft.
3. Airport elevation = 6606 ft.
4. Difference: 10000 ft. – 6606 ft. = 3394 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 3394 ft. and −30°C. Visual interpolation is approximately 600 ft. Actual interpolation is 645 ft. Add 600 ft. to the FAF and all procedure altitudes outside of the FAF up to and including IAF altitude:
   - TUSKK (IAF), TILLJ (IAF) and HIPNA (IAF HILO): 13000 + 600 = 13600 ft.
   - PICIN (stepdown fix): 11500 + 600 = 12100 ft.
   - BEEAR (FAF): 10000 + 600 = 10600 ft.
6. Correct altitudes within the final segment altitude based on the minima used. LP MDA = 7080 ft.
7. Difference: 7080 ft. – 6606 ft. = 474 ft.
8. AIM 7−2−3 Table: 474 ft. at −30°C is approximately 90ft. Use 90 ft. or round up to 100 ft.
9. Add corrections to altitudes up to but not including the FAF:
   - DICEV (stepdown fix): 8400 + 90 = 8490 ft.
   - BUYYA (stepdown fix): 7860 + 90 = 7950 ft.
   - LP MDA: 7080 + 90 = 7170 ft.
10. Correct MEKWY/Missed Approach Holding Altitude: MA altitude is same as BEEAR (10000); therefore, the same table calculation in step 5 may be used at MEKWY. Take 600 ft. correction for 10000 ft. and add to MA holding altitude:
    - MEKWY: 10000 + 600 = 10600 ft.

Compensated Baro−VNAV System:
Operators using a temperature compensating RNAV system to make altitude corrections will be set to the current airport temperature (−30°C) and activated prior to the passing the IAF. A manual calculation of the cold temperature altitude correction is required for the MDA/DA. Although using the temperature compensating system should provide clearance over step−down fixes on any segment, a correction will be added to all applicable step−down fixes and monitored during descent to ensure aircraft will be “at” or “above” the corrected step−down fix altitude during the approach.

Individual Segments Method: Final segment required.

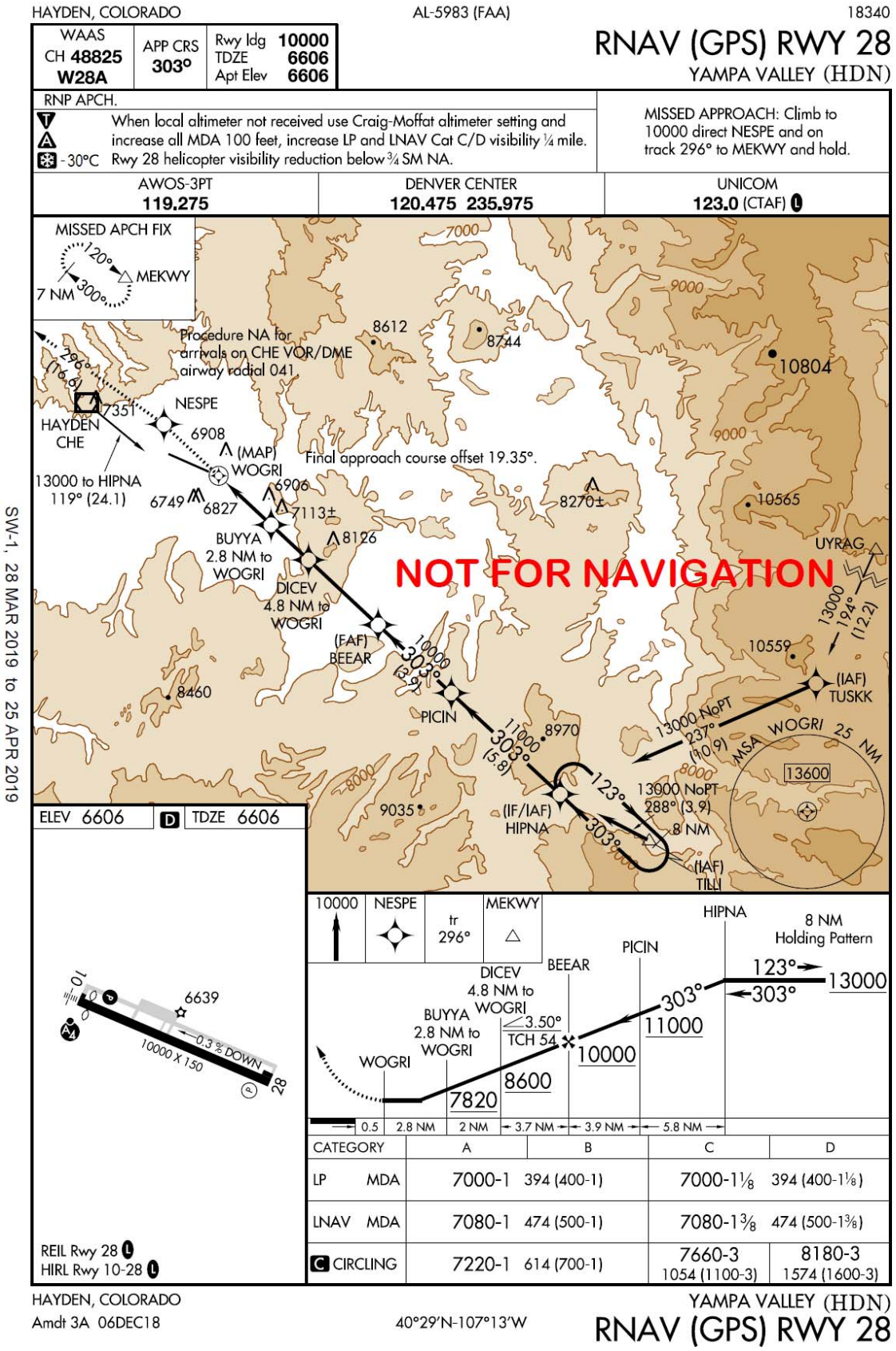
Hayden/Yampa Valley (KHDN), Colorado. Reported Temperature −30°C: RNAV (GPS) RWY 28.

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −30°C
2. Airport elevation = 6606 ft.
3. Correct altitudes within the final segment altitude based on the minima used. LP MDA = 7080 ft.
4. Difference: 7080 ft. – 6606 ft. = 474 ft.
5. AIM 7−2−3 Table: 474 ft. at −30°C is approximately 90ft. Use 90 ft. or round up to 100 ft.
6. Add corrections to MDA and all stepdown fix altitudes in final segment up to but not including the FAF:
   - DICEV (stepdown fix): 8400 + 90 = 8490 ft.
   - BUYYA (stepdown fix): 7860 + 90 = 7950 ft.
   - LP MDA: 7080 + 90 = 7170

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will set the current airport temperature (−30°C) and activate the system for the required segment(s). A manual calculation of the cold temperature altitude correction is required for the MDA/DA. Although using the temperature compensating system should provide clearance over step−down fixes on any segment, a correction will be added to all applicable step−down fixes and monitored during descent to ensure aircraft will be “at” or “above” the corrected step−down fix altitude during the approach.


HAYDEN, COLORADO
AL-5983 (FAA)
18340
WAAS
CH 48825
W28A
APP CRS
303°
Rwy Idg 10000
TDZE 6606
Apt Elev 6606
RNAV (GPS) RWY 28
YAMPA VALLEY (HDN)
RNP APCH.
When local altimeter not received use Craig-Moffat altimeter setting and increase all MDA 100 feet, increase LP and LNAV Cat C/D visibility ¼ mile.
-30°C Rwy 28 helicopter visibility reduction below ¾ SM NA.
MISSED APPROACH: Climb to 10000 direct NESPE and on track 296° to MEKWY and hold.
AWOS-3PT 119.275
DENVER CENTER 120.475 235.975
UNICOM 123.0 (CTAF)
MISSED APCH FIX
120°
MEKWY
7 NM
300°
Procedure NA for arrivals on CHE VOR/DME airway radial 041
296°
(16.6)
7351
NESPE
HAYDEN
CHE
6908
(MAP)
WOGRI
13000 to HIPNA
119° (24.1)
6749
6827
6906
7113±
BUYYA
2.8 NM to
WOGRI
8126
DICEV
4.8 NM to
WOGRI
(FAF)
BEEAR
10000
303°
(5.9)
PICIN
11000
303°
(5.8)
8460
8970
9035
(IF/IAF)
HIPNA
303°
(IAF)
TILLI
8612
8744
10804
9000
7000
8270±
10565
UYRAG
13000
194°
(12.2)
10559
(IAF)
TUSKK
13000 NoPT
237°
(10.9)
MSA
WOGRI 25 NM
13600
13000 NoPT
288° (3.9)
8 NM
123°
303°
NOT FOR NAVIGATION
SW-1, 28 MAR 2019 to 25 APR 2019
SW-1, 28 MAR 2019 to 25 APR 2019
ELEV 6606
D
TDZE 6606
6639
10
0.3 % DOWN
10000 X 150
28
REIL Rwy 28
HIRL Rwy 10-28
10000
NESPE
tr
296°
MEKWY
HIPNA
8 NM
Holding Pattern
PICIN
BEEAR
DICEV
4.8 NM to
WOGRI
BUYYA
2.8 NM to
WOGRI
3.50°
TCH 54
WOGRI
7820
8600
10000
11000
13000
0.5
2.8 NM
2 NM
3.7 NM
3.9 NM
5.8 NM
CATEGORY
A
B
C
D
LP MDA
7000-1 394 (400-1)
7000-1⅛ 394 (400-1⅛)
LNAV MDA
7080-1 474 (500-1)
7080-1⅜ 474 (500-1⅜)
C CIRCLING
7220-1 614 (700-1)
7660-3 1054 (1100-3)
8180-3 1574 (1600-3)
HAYDEN, COLORADO
Amdt 3A 06DEC18
40°29'N-107°13'W
YAMPA VALLEY (HDN)
RNAV (GPS) RWY 28

All Segments Method: All segments corrected from IAF through MA holding altitude.

(KMFR) Rogue Valley Intl−Medford, Oregon. Reported Temperature −5°C: RNAV (RNP) RWY 32.

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −5°C
2. Altitude at the Final Approach Fix (FAF) (CUNBA) = 2600 ft.
3. Airport elevation = 1335 ft.
4. Difference: 2600 ft. – 1335 ft. = 1265 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 1265 ft. and −5°C. The approximate calculation is 100 ft. Add the correction to the FAF and all procedure altitudes outside of the FAF up to and including IAF altitude:
    - BAYTS (IAF): 9100 + 100 = 9200, ZUNAS (IAF): 7400 + 100 = 7500, ACLOB (IAF): 7700 + 100 = 7800, SAMIE (IAF): 7300 + 100 = 7400
    - All Stepdown fixes between FILPU and the IAFs (BAYTS, ZUNAS, ACLOB and SAMIE).
        - OMACO (9200), NIGEE (7500), IPAGY (7500), HIDVO (6200)
        - NIGEE (7500), IPAGY (7500), HIDVO (6200)
        - KUSNE (7800), INITY (7700), HIDVO (6200)
        - RURTE (7400), ZIDAX (7400), WONIG (6700), PUNRE (5700)
    - FILPU (IF): 4600 +100 = 4700
    - ERBAW (Stepdown Fix): 3800 + 100 = 3900 ft.
    - CUNBA (PFAF): 2600 + 100 = 2700 ft.
6. Correct altitudes within the final segment altitude based on the minima used. RNP 0.15 DA = 1609 ft. or RNP 0.30 DA 1661 ft.
7. Difference: 1609 ft. – 1335 ft. = 274 ft.
8. AIM 7−2−3 Table: 274 ft. at −5°C is approximately 25 ft. Use 25 ft. or round up to 100 ft. for correction.
    - Add correction to RNP 0.15 DA: 1609 ft. + 25 ft. = 1634 ft.
9. Correction at CUTTR: Take final holding altitude and subtract field elevation: 9000 – 1335 = 7665 ft. Using table, 5000 ft height above airport and −5°C correction is approximately 230 ft. Round up to 300 ft.
    - Missed Approach Holding Altitude/CUTTR: 9000 + 300 = 9300 ft.

If the airport temperature decreases below −8°C, an uncompensated baro−VNAV system may not be used to fly this RNAV (RNP) approach. Cold temperature correction is still required on all segments for all other non RNAV (RNP) approaches flown at this airport.

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will be set to the current airport temperature (−5°C) and activated prior to the passing the IAF. A manual calculation of the cold temperature altitude correction is required for the MDA/DA. At temperatures below −8°C, a compensating baro−VNAV system must be on and active to fly the RNAV (RNP) approach. Manual calculation of a cold temperature compensated MDA or DA, as applicable, is still required. Cold temperature correction is still required on all segments.

Individual Segment(s) method: Intermediate segment required

(KMFR) Rogue Valley Intl−Medford. Reported Temperature −5°C: RNAV (RNP) RWY 32.

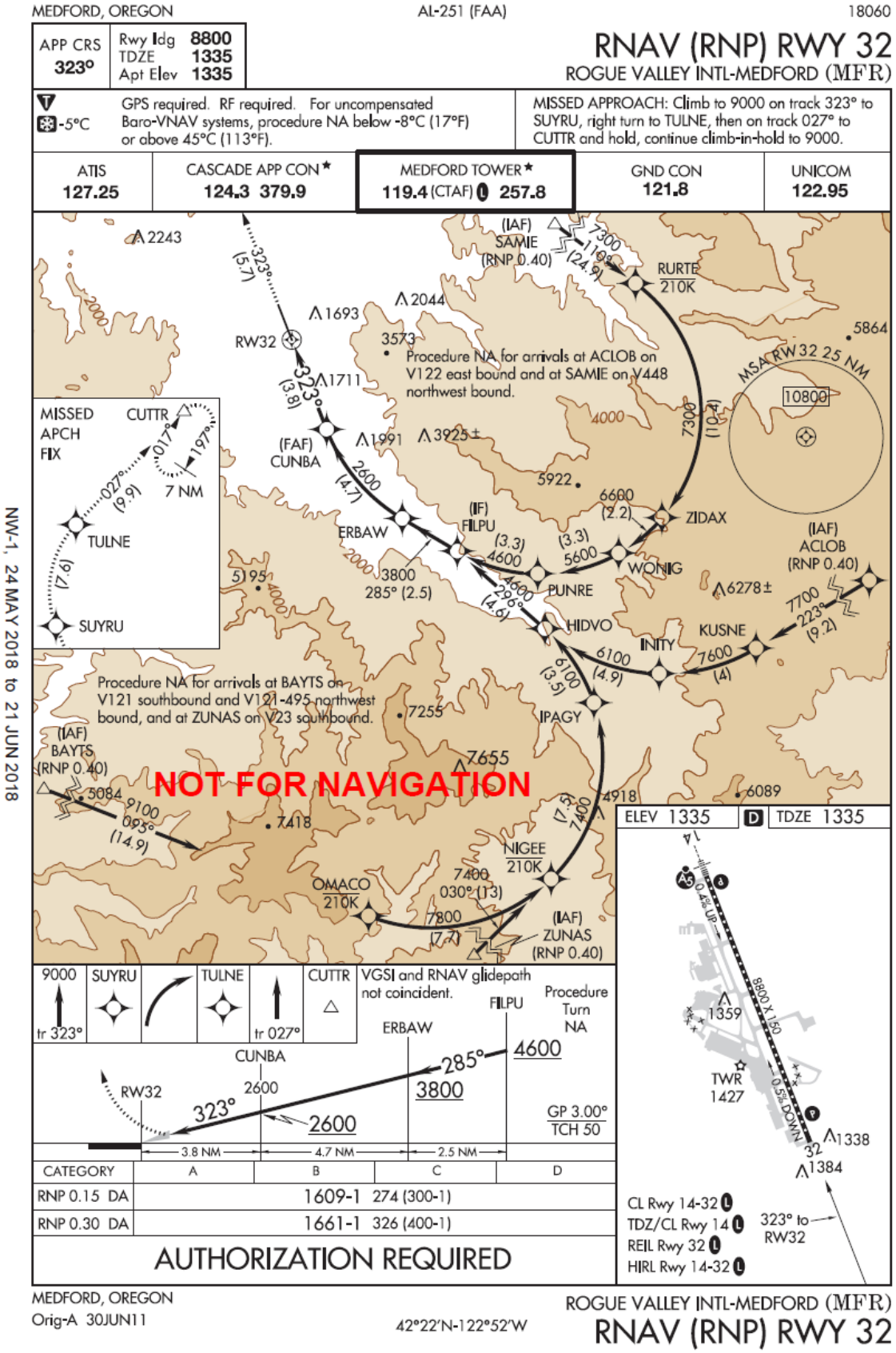
Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −5°C
2. Altitude at the PFAF (CUNBA) = 2600 ft.
3. Airport elevation = 1335 ft.
4. Difference: 2600 ft. – 1335 ft. = 1265 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 1265 ft. and −5°C. The approximate calculation is 100 ft. Add the correction to the FAF and all procedure altitudes outside of the FAF up to but not including IF:
    - ERBAW (Stepdown Fix): 3800 + 100 = 3900 ft
    - CUNBA (PFAF): 2600 + 100 = 2700 ft.

If the airport temperature decreases below −8°C, an uncompensated baro−VNAV system may not be used to fly this approach. Cold temperature correction is still required on the intermediate segment for all other non RNAV (RNP) approaches flown at this airport.

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will set the current airport temperature (−5°C) and activate the system for the intermediate segment. At temperatures below −8°C, baro−VNAV temperature compensation must be on and active to fly this approach. Manual calculation of a cold temperature compensated MDA or DA, as applicable, is still required. Cold temperature correction is still required on the intermediate segment.


MEDFORD, OREGON
AL-251 (FAA)
18060
RNAV (RNP) RWY 32
ROGUE VALLEY INTL-MEDFORD (MFR)
APP CRS 323°
Rwy Idg 8800
TDZE 1335
Apt Elev 1335
-5°C
GPS required. RF required. For uncompensated Baro-VNAV systems, procedure NA below -8°C (17°F) or above 45°C (113°F).
MISSED APPROACH: Climb to 9000 on track 323° to SUYRU, right turn to TULNE, then on track 027° to CUTTR and hold, continue climb-in-hold to 9000.
ATIS 127.25
CASCADE APP CON 124.3 379.9
MEDFORD TOWER 119.4 (CTAF) 257.8
GND CON 121.8
UNICOM 122.95
NW-1, 24 MAY 2018 to 21 JUN 2018
NW-1, 24 MAY 2018 to 21 JUN 2018
NOT FOR NAVIGATION
Procedure NA for arrivals at ACLOB on V122 east bound and at SAMIE on V448 northwest bound.
Procedure NA for arrivals at BAYTS on V121 southbound and V121-495 northwest bound, and at ZUNAS on V23 southbound.
MISSED APCH FIX
CUTTR
TULNE
SUYRU
7 NM
(IAF) SAMIE (RNP 0.40)
(IAF) ACLOB (RNP 0.40)
(IAF) BAYTS (RNP 0.40)
(IAF) ZUNAS (RNP 0.40)
(FAF) CUNBA
(IF) FILPU
RURTE 210K
ZIDAX
WONIG
PUNRE
HIDVO
KUSNE
INITY
IPAGY
NIGEE 210K
OMACO 210K
ERBAW
RW32
MSA RW32 25 NM
10800
VGSI and RNAV glidepath not coincident.
Procedure Turn NA
GP 3.00°
TCH 50
CATEGORY A B C D
RNP 0.15 DA 1609-1 274 (300-1)
RNP 0.30 DA 1661-1 326 (400-1)
AUTHORIZATION REQUIRED
ELEV 1335
TDZE 1335
CL Rwy 14-32
TDZ/CL Rwy 14
REIL Rwy 32
HIRL Rwy 14-32
323° to RW32
MEDFORD, OREGON
Orig-A 30JUN11
42°22'N-122°52'W
ROGUE VALLEY INTL-MEDFORD (MFR)
RNAV (RNP) RWY 32

All Segments Method: All segments corrected from IAF through MA holding altitude.

(KMFR) Rogue Valley Intl−Medford, Oregon. Reported Temperature −5°C ILS or LOC/DME RWY 14.

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −5°C
2. Altitude at the FAF (OSSAJ) = 3800 ft.
3. Airport elevation = 1335 ft.
4. Difference: 3800 ft. – 1335 ft. = 2465 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 2465 ft. and −5°C. The approximate calculation is 200 ft.
6. Add the correction to the FAF and all procedure altitudes outside of the FAF up to and including IAF altitudes:
    - SAMIE (IAF): 6000 + 200 = 6200 ft.
    - FISTA (IF): 5900 + 200 = 6100 ft.
    - AMASE (stepdown fix): 4700 + 200 = 4900 ft.
    - OSSAJ (FAF): 3800 + 200 = 4000 ft.
7. Correct altitudes in the final segment based on the minima used. ILS DA(H): 1503 ft.
8. Difference: 1503 ft. – 1335 ft. = 168 ft.
9. AIM 7−2−3 Table: 168 ft. at −5C is 20 ft. Use 20 ft. for correction or round up to 100 ft.
10. Add correction to DA: 1503 ft. + 20 ft. = 1523 ft.
11. Correction at final holding altitude (OED VORTAC): Take final holding altitude and subtract field elevation: 6400 ft. – 1335 ft. = 5065 ft. Using table, correction is approximately 400 ft.
    - Missed Approach final holding altitude (OED VORTAC): 6400 + 400 = 6800 ft.

Compensated Baro−VNAV System:
Operators using a temperature compensating RNAV system to make altitude corrections will be set to the current airport temperature (−5°C) and activated prior to the passing the IAF. A manual calculation of the cold temperature altitude correction is required for the MDA/DA.

Individual Segment(s) method: Intermediate segment required

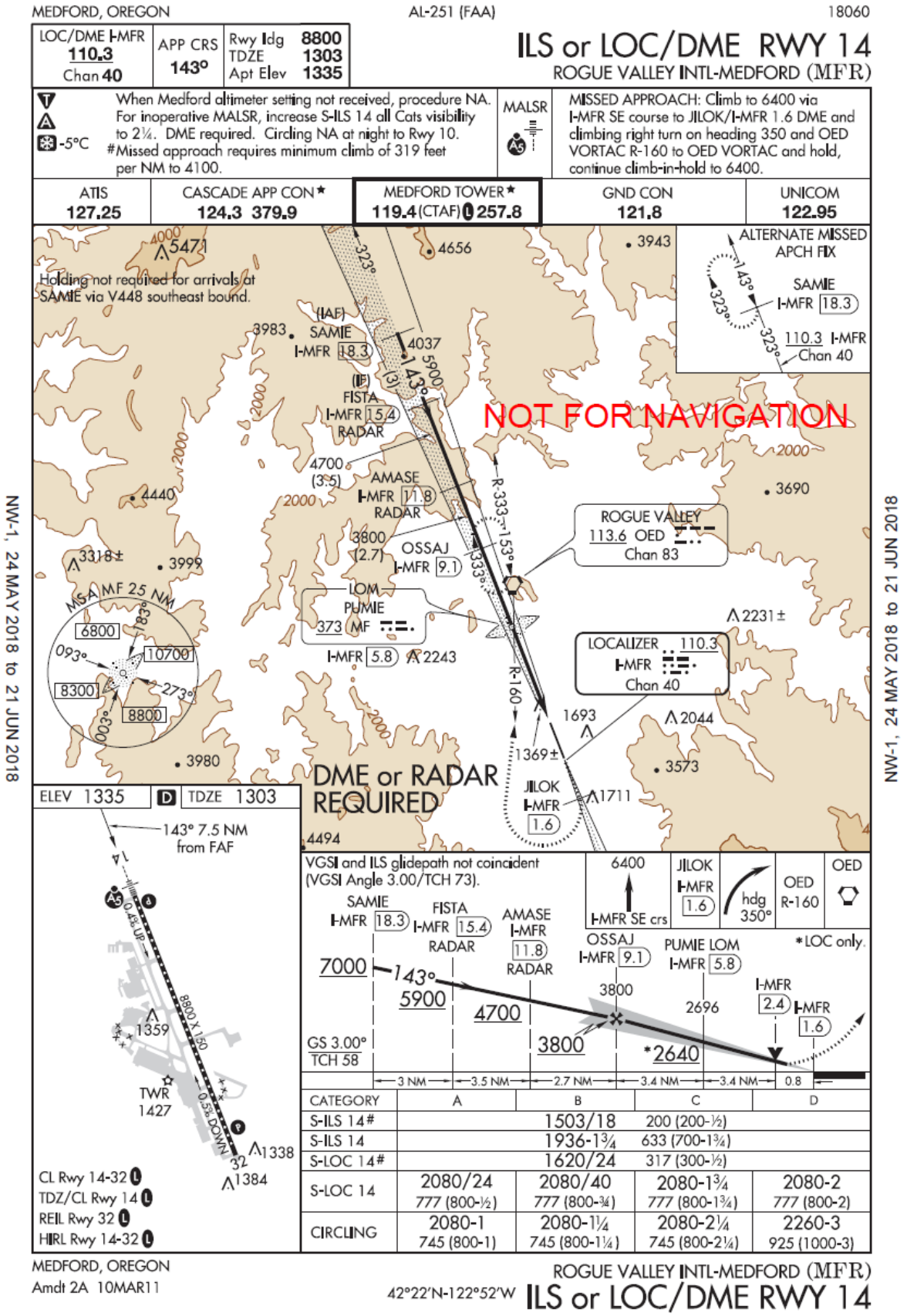
(KMFR) Rogue Valley Intl−Medford, Oregon. Reported Temperature −5°C ILS or LOC/DME RWY 14.

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −5°C
2. Altitude at the FAF (OSSAJ) = 3800 ft.
3. Airport elevation = 1335 ft.
4. Difference: 3800 ft. – 1335 ft. = 2465 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 2465 ft. and −5° C. The approximate calculation is 200 ft. Add the correction to the FAF and all procedure altitudes outside of the FAF up to but not including IF:
    - AMASE (stepdown fix): 4700 + 200 = 4900 ft.
    - OSSAJ (FAF): 3800 + 200 = 4000 ft.

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will set the current airport temperature (−5°C) and activate the system for the intermediate segment.


MEDFORD, OREGON
AL-251 (FAA)
18060
ILS or LOC/DME RWY 14
ROGUE VALLEY INTL-MEDFORD (MFR)
LOC/DME I-MFR 110.3 Chan 40
APP CRS 143°
Rwy Idg 8800
TDZE 1303
Apt Elev 1335
When Medford altimeter setting not received, procedure NA. For inoperative MALSR, increase S-ILS 14 all Cats visibility to 2¼. DME required. Circling NA at night to Rwy 10. #Missed approach requires minimum climb of 319 feet per NM to 4100.
-5°C
MALSR
MISSED APPROACH: Climb to 6400 via I-MFR SE course to JILOK/I-MFR 1.6 DME and climbing right turn on heading 350 and OED VORTAC R-160 to OED VORTAC and hold, continue climb-in-hold to 6400.
ATIS 127.25
CASCADE APP CON* 124.3 379.9
MEDFORD TOWER* 119.4 (CTAF) L 257.8
GND CON 121.8
UNICOM 122.95
Holding not required for arrivals at SAMIE via V448 southeast bound.
(IAF) SAMIE I-MFR 18.3
(IF) FISTA I-MFR 15.4 RADAR
AMASE I-MFR 11.8 RADAR
OSSAJ I-MFR 9.1
LOM PUMIE 373 MF
I-MFR 5.8
ROGUE VALLEY 113.6 OED Chan 83
LOCALIZER 110.3 I-MFR Chan 40
JILOK I-MFR 1.6
ALTERNATE MISSED APCH FIX
SAMIE I-MFR 18.3
110.3 I-MFR Chan 40
MSA MF 25 NM
NOT FOR NAVIGATION
DME or RADAR REQUIRED
ELEV 1335
TDZE 1303
143° 7.5 NM from FAF
VGSI and ILS glidepath not coincident (VGSI Angle 3.00/TCH 73).
6400
I-MFR SE crs
hdg 350°
R-160
OED
*LOC only.
GS 3.00°
TCH 58
3 NM
3.5 NM
2.7 NM
3.4 NM
3.4 NM
0.8
CATEGORY A B C D
S-ILS 14# 1503/18 200 (200-½)
S-ILS 14 1936-1¾ 633 (700-1¾)
S-LOC 14# 1620/24 317 (300-½)
S-LOC 14 2080/24 777 (800-½) 2080/40 777 (800-¾) 2080-1¾ 777 (800-1¾) 2080-2 777 (800-2)
CIRCLING 2080-1 745 (800-1) 2080-1¼ 745 (800-1¼) 2080-2¼ 745 (800-2¼) 2260-3 925 (1000-3)
CL Rwy 14-32 L
TDZ/CL Rwy 14 L
REIL Rwy 32 L
HIRL Rwy 14-32 L
TWR 1427
8800 X 150
0.45% UP
0.5% DOWN
MEDFORD, OREGON
Amdt 2A 10MAR11
42°22'N-122°52'W
ROGUE VALLEY INTL-MEDFORD (MFR)
ILS or LOC/DME RWY 14
NW-1, 24 MAY 2018 to 21 JUN 2018
NW-1, 24 MAY 2018 to 21 JUN 2018

All Segments Method: All segments corrected from IAF through MA holding altitude.

(KAMW) Ames Muni. Reported Temperature −27°C: RNAV (GPS) RWY 1.

Uncompensated Baro−VNAV System or Manual Method:

1. Cold Temperature Restricted Airport Temperature Limit: −27°C
2. Altitude at the Final Approach Fix (FAF) (NIYKU) = 3400 ft.
3. Airport elevation = 956 ft.
4. Difference: 3400 ft. – 956 ft. = 2444 ft.
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 2444 ft. and −27° C. The approximate calculation is 400 ft. Add the correction to the FAF and all procedure altitudes outside of the FAF up to and including IAF altitude:
    - WOWLU (IAF): 4000 + 400 = 4400, SIFAY (IAF): 4000 + 400 = 4400, OHFAH (IAF): 4000 + 400 = 4400
    - OHFAH (IF): 4000 + 400 = 4400
    - NIYKU (PFAF): 3400 + 400 = 3800 ft.
6. Correct altitudes within the final segment altitude based on the minima used. LNAV/VNAV DA = 1364 ft.
7. Difference: 1364 ft. – 956 ft. = 408 ft.
8. AIM 7−2−3 Table: 408 ft. at −27°C is approximately 70 ft. Use 70 ft. or round up to 100 ft. for correction.
    - Add correction to LNAV/VNAV DA: 1364 ft. + 70 ft. = 1434 ft. No correction at CEXOG required, only required if using LNAV minima.
9. Correction at FULLE: Take final holding altitude and subtract field elevation: 3000 ft. – 956 ft. = 2044 ft. Using table, 2044 ft height above airport and −27°C correction is approximately 330 ft. Round down to 300 ft. or up to 400 ft.
    - Missed Approach Holding Altitude/FULLE: 3000 + 300 = 3300 ft.

If the airport temperature decreases below −16°C, an uncompensated baro−VNAV system may not be used to fly to the RNAV (GPS) LNAV/VNAV approach minima.

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will be set to the current airport temperature of −27°C and activated prior to the passing the IAF. A manual calculation of the cold temperature altitude correction is required for the MDA/DA. At temperatures below −16°C, a compensating baro−VNAV system must be on and active to fly to the LNAV/VNAV line of minima on this approach. Manual calculation of a cold temperature compensated MDA or DA is still required.

Individual Segment(s) method: Intermediate segment required

(KAMW) Ames Muni. Reported Temperature −27°C: RNAV (GPS) RWY 1.

Uncompensated Baro−VNAV System or Manual Method:

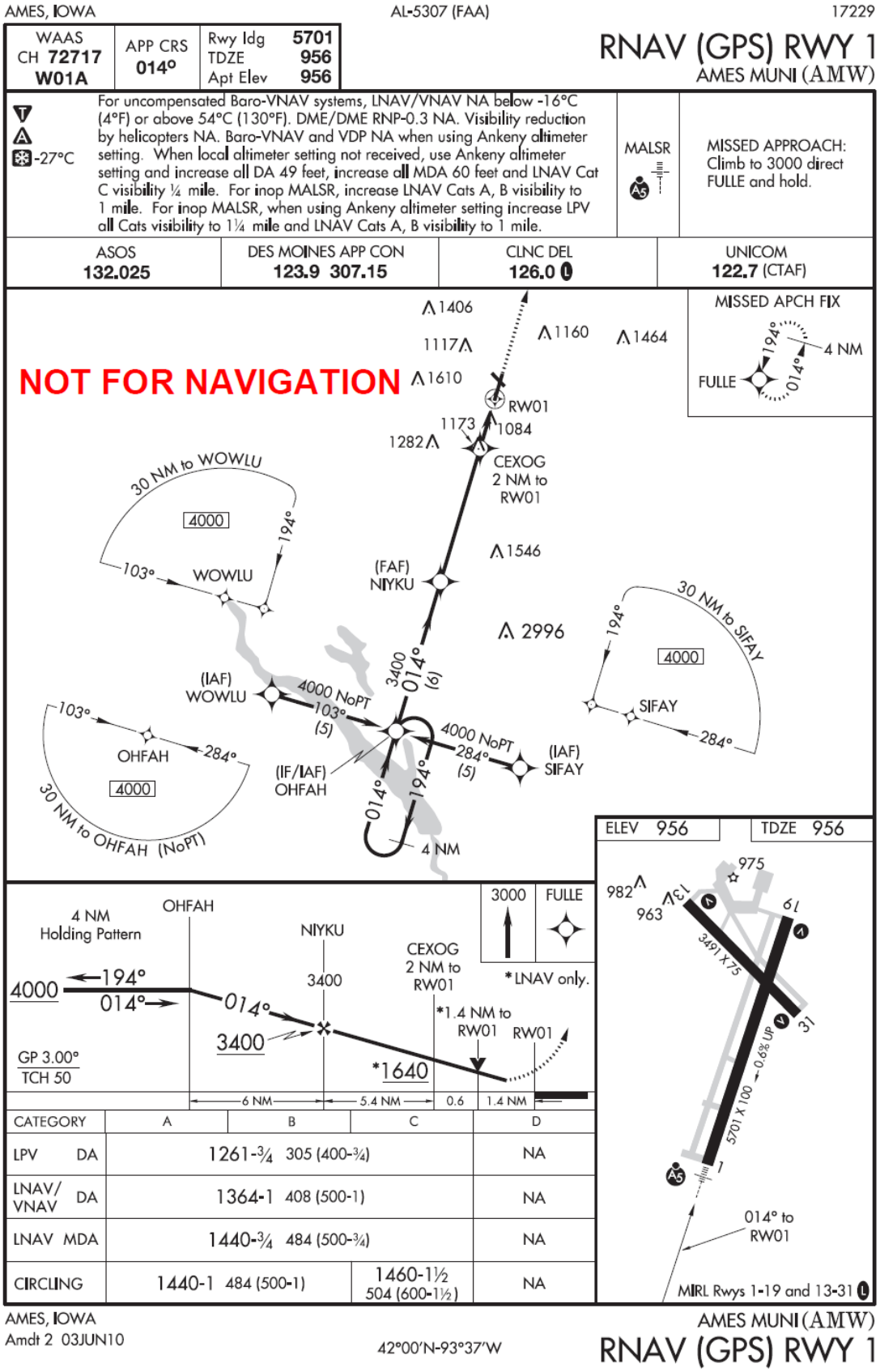
1. Cold Temperature Restricted Airport Temperature Limit: −27°C
2. Altitude at the PFAF (NIYKU) = 3400 ft.
3. Airport elevation = 956 ft.
4. Difference: 3400 ft. – 956 ft. = 2444 ft
5. Use the AIM 7−2−3 ICAO Cold Temperature Error Table for a height above airport of 2444 ft. and −27° C. The approximate calculation is 400 ft. Add the correction to the FAF and all procedure altitudes outside of the FAF up to but not including IF:

- NIYKU (PFAF): 3400 + 400 = 3800 ft.

Compensated Baro−VNAV System:

Operators using a temperature compensating RNAV system to make altitude corrections will be set to the current airport temperature of −27°C and activated prior to the intermediate segment. At temperatures below −16°C, a compensating baro−VNAV system must be on and active to fly to the LNAV/VNAV line of minima on this approach. Manual calculation of a cold temperature compensated MDA or DA is still required.

(Flight Operations Branch, Flight Technologies and Procedures Division, AFS−410, 8/15/19)


AMES, IOWA
AL-5307 (FAA)
17229
WAAS CH 72717 W01A
APP CRS 014°
Rwy Idg 5701
TDZE 956
Apt Elev 956
RNAV (GPS) RWY 1
AMES MUNI (AMW)
-27°C
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -16°C (4°F) or above 54°C (130°F). DME/DME RNP-0.3 NA. Visibility reduction by helicopters NA. Baro-VNAV and VDP NA when using Ankeny altimeter setting. When local altimeter setting not received, use Ankeny altimeter setting and increase all DA 49 feet, increase all MDA 60 feet and LNAV Cat C visibility ¼ mile. For inop MALSR, increase LNAV Cats A, B visibility to 1 mile. For inop MALSR, when using Ankeny altimeter setting increase LPV all Cats visibility to 1¼ mile and LNAV Cats A, B visibility to 1 mile.
MALSR
MISSED APPROACH: Climb to 3000 direct FULLE and hold.
ASOS 132.025
DES MOINES APP CON 123.9 307.15
CLNC DEL 126.0
UNICOM 122.7 (CTAF)
NOT FOR NAVIGATION
MISSED APCH FIX
FULLE
194°
014°
4 NM
1406
1117
1160
1464
1610
RW01
1173
1084
1282
CEXOG
2 NM to RW01
30 NM to WOWLU
4000
103°
194°
WOWLU
(FAF)
NIYKU
1546
2996
30 NM to SIFAY
SIFAY
284°
(IAF)
WOWLU
4000 NoPT
103°
(5)
3400
014°
(6)
4000 NoPT
284°
(5)
(IAF)
SIFAY
OHFAH
(IF/IAF)
OHFAH
30 NM to OHFAH (NoPT)
4 NM
ELEV 956
TDZE 956
975
982
963
13
6
3491 X 75
31
5701 X 100
0.6% UP
014° to RW01
MIRL Rwys 1-19 and 13-31
3000
FULLE
4 NM Holding Pattern
OHFAH
NIYKU
CEXOG 2 NM to RW01
*LNAV only.
4000
194°
014°
3400
*1.4 NM to RW01
RW01
GP 3.00°
TCH 50
*1640
6 NM
5.4 NM
0.6
1.4 NM
CATEGORY A B C D
LPV DA 1261-¾ 305 (400-¾) NA
LNAV/VNAV DA 1364-1 408 (500-1) NA
LNAV MDA 1440-¾ 484 (500-¾) NA
CIRCLING 1440-1 484 (500-1) 1460-1½ 504 (600-1½) NA
AMES, IOWA
Amdt 2 03JUN10
42°00'N-93°37'W
AMES MUNI (AMW)
RNAV (GPS) RWY 1
NC-3, 24 MAY 2018 to 21 JUN 2018
NC-3, 24 MAY 2018 to 21 JUN 2018

OPERATIONS OF AIRCRAFT WITHOUT ADS–B OUT AT CAPACITY–CONSTRAINED U.S. AIRPORTS

Purpose: To describe FAA Air Traffic policy for aircraft operations without Automatic Dependent Surveillance–Broadcast Out (ADS–B Out) at capacity–constrained U.S. airports.

Background: Pursuant to 14 CFR § 91.225 and § 91.227, when operating in the airspace defined in § 91.225, an aircraft must:

(1) Meet the performance requirements in TSO–C166b, Extended Squitter Automatic Dependent Surveillance–Broadcast (ADS–B) and Traffic Information Service–Broadcast (TIS–B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz); or

(2) Meet the performance requirements in TSO–C154c, Universal Access Transceiver (UAT) Automatic Dependent Surveillance–Broadcast (ADS–B) Equipment Operating on the Frequency of 978 MHz; and,

(3) Meet the requirements of § 91.227.

14 CFR § 91.225 contains a provision by which aircraft operators can request an ATC authorized deviation from those requirements. On April 1, 2019, the FAA published a Federal Register Notice (FRN), *Statement of Policy for Authorizations to Operators of Aircraft That are Not Equipped With Automatic Dependent Surveillance–Broadcast (ADS–B) Out Equipment.* (https://www.regulations.gov/document?D=FAA-2019-0239-0001). In that FRN, the FAA noted, in part:

> "The ADS–B Out final rule contemplated that those operators with a need to operate regularly in airspace where ADS–B Out is required would equip, and that an exception for per–operation authorizations was designed to accommodate unforeseen or rare circumstances."
>
> "The preamble to the final rule made it apparent that no operator is guaranteed an ATC authorization to deviate from ADS–B Out equipage requirements. Because ATC may not be able to grant every authorization request, it would be detrimental for an operator to make its scheduled operations into ADS–B Out airspace dependent solely on obtaining an ATC authorization to deviate from the equipage requirements of § 91.225. Relying solely on an ATC authorization—which may not be granted—to operate a non–equipped aircraft in ADS–B Out airspace would put the operator's scheduled operations in jeopardy."
>
> "(W)hile a scheduled operator may request a deviation from the ADS– B Out equipage requirements on a per–operation basis in accordance with § 91.225(g), it is unlikely that the FAA will issue repeated authorizations to deviate from ADS–B Out equipage requirements. Accordingly, operators who conduct routine and regular operations into ADS–B Out airspace should be taking the necessary steps to equip their aircraft with ADS–B Out equipment to ensure their scheduled operations are not disrupted."
>
> "Under the rule, the FAA determined that, to the maximum extent possible, operators of equipped aircraft should not be penalized or have their ATC services affected by operators who choose not to equip their aircraft with ADS–B Out equipment. Therefore, under the policy, ATC will make determinations as necessary to ensure equipped operators are not adversely impacted and that efficiency of operations is maintained.

Consistent with this principle, it will be difficult for unscheduled operators conducting operations at capacity–constrained airports to obtain authorizations."

"(Capacity–constrained) airports are where demand is consistently at 85% capacity or greater, and operations are often constrained. For that reason, it is far more likely that the FAA will deny rather than issue authorization requests from unscheduled operators to operate nonequipped aircraft at these airports."

a. Applicability. This Notice applies to civil operators of aircraft not equipped with ADS–B Out in accordance with 14 CFR § 91.225 and who are requesting an ATC authorized deviation from those regulatory requirements to operate into or out of a capacity–constrained airport.

b. Exclusion. This Notice does not apply to U.S. Federal, State and local government aircraft flight operations, inclusive of special flights contracted by U.S. Federal, State or local governments, when the aircraft is performing a sensitive government mission for national defense, homeland security, intelligence or law enforcement purposes. Those aircraft operators must contact their own agency for questions regarding FAA authorized mission accommodations.

c. Capacity–Constrained Airports. Based on FAA's current analysis, this includes the following airports:

1. Boston Logan International Airport (BOS)
2. Charlotte Douglas International Airport (CLT)
3. Chicago O'Hare International Airport (ORD)
4. Dallas/Fort Worth International Airport (DFW)
5. Hartsfield–Jackson Atlanta International Airport (ATL)
6. John F. Kennedy International Airport (JFK)
7. LaGuardia Airport (LGA)
8. Los Angeles International Airport (LAX)
9. McCarran International Airport (LAS)
10. Philadelphia International Airport (PHL)
11. Ronald Reagan Washington National Airport (DCA)
12. San Diego International Airport (SAN)
13. San Francisco International Airport (SFO)
14. Seattle–Tacoma International Airport (SEA)
15. Newark International Airport (EWR)[1]

A Notice to Airman (NOTAM) will be issued at these airports advising that operators should not expect authorizations from ATC per this notice during peak hours, typically 0600–2200 local time. This time–of–day policy applies only to those airports defined as capacity–constrained, as listed above. ATC authorization requests into or out of other airports located in the Class B airspace or Mode C Veil associated with the capacity–constrained airport, or to transit that airspace, will be evaluated individually.

This notice does not negate existing airport Noise Abatement Procedures. Any shifts in traffic must be commensurate with existing noise abatement procedures at these airports.

[1] Note: Newark International Airport (EWR) was inadvertently omitted in the April 1 Federal Register Notice Policy; however, it is a capacity–constrained airport.

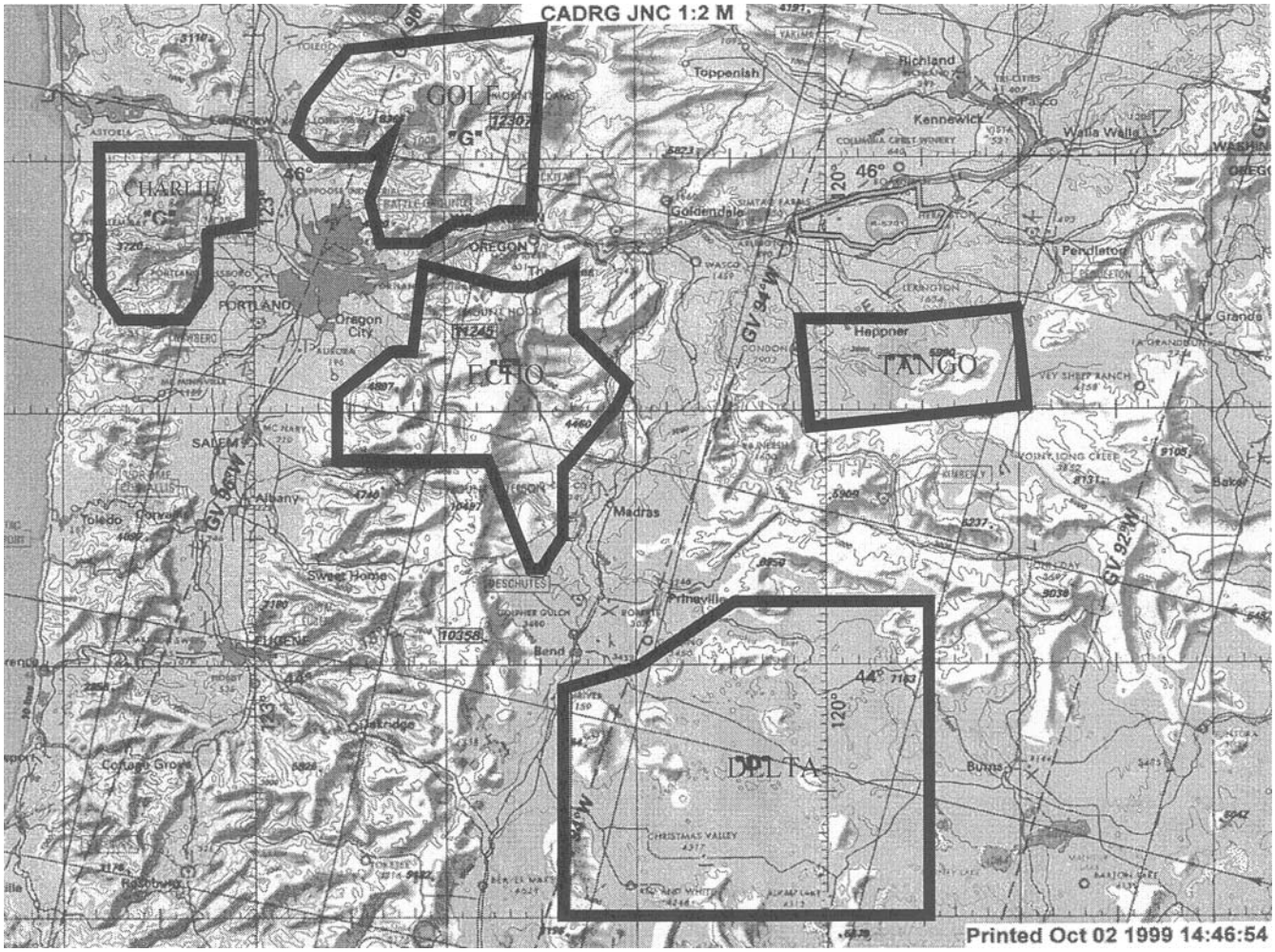
Section 2. Special Military Operations

Notice to Pilots and Interested Personnel in Northern Oregon and Southwest Washington

LIGHTS OUT MILITARY HELICOPTER OPERATIONS

Effective Date: April 30, 2000

The U.S. Air Force 304th Rescue Squadron conducts low altitude flight in five low altitude tactical navigation (LATN) Areas: “Charlie,” “Delta,” “Echo,” “Golf,” and “Tango.” These operations are conducted day and night below 200 feet above ground level (AGL). The night operations are conducted utilizing night vision goggles (NVGs). FAA exemption 5891A authorized NVG training in Air Force helicopters to be conducted without lighted position lights. These operations will ONLY be conducted below 200 feet AGL and outside of five (5) nautical miles from any public use airport, within the five (5) LATN areas.



(ANM–520.6 3/2/2000)

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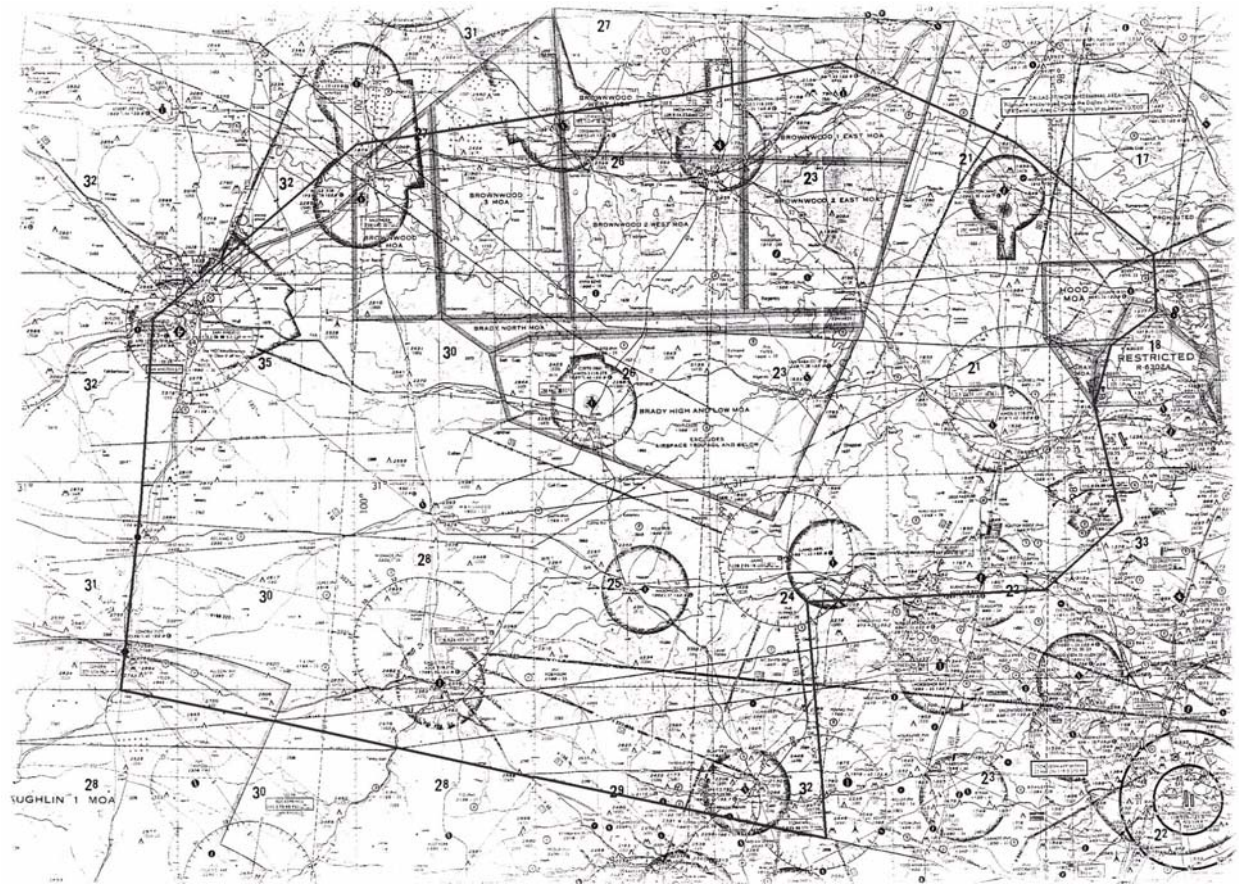
Notice to Pilots and Interested Personnel in Central and Southwest Texas

LIGHTS OUT MILITARY HELICOPTER OPERATIONS

The U.S. Army/National Guard is conducting "lights out" tactical helicopter training. These operations are conducted day and night. The night operations are conducted without the use of exterior aircraft lights from the surface up to 200 feet AGL, outside four (4) nautical miles from any public–use airport, and within the boundaries depicted below:



Beginning at lat. 31°24'00" N., long. 097°44'00" W./ North Fort Hood;
to lat. 31°30'00" N., long. 097°44'00" W.; to lat. 31°48'00" N., long. 098°07'00" W.;
to lat. 31°57'00" N., long. 098°37'00" W.; to lat. 31°48'00" N., long. 099°59'00" W.;
to lat. 31°23'00" N., long. 100°35'00" W.; to lat. 30°29'00" N., long. 100°40'00" W.;
to lat. 30°16'00" N., long. 098°42'00" W.; to lat. 30°43'00" N., long. 098°41'00" W.;
to lat. 30°45'00" N., long. 098°03'00" W.; to lat. 30°52'00" N., long. 097°52'00" W.;
to lat. 31°09'00" N., long. 097°55'00" W.; to lat. 31°17'00" N., long. 097°53'00" W.;
to point of origin.

(SJT 2/21/02)

LIGHTS OUT/LOW LEVEL MILITARY HELICOPTER OPERATIONS IN SOUTHWEST WISCONSIN

The Army National Guard is conducting "Lights Out" tactical operation training IAW FAA Exemption 3946J. These operations are conducted between official sunset and official sunrise at an altitude below 500' agl. and outside four (4) nautical miles from any public use airport.

The Routes are defined as below:

LONE ROCK (NVG Route #1)

42º 49.70' N 89º 24.70' W – SP

42º 45.50' N 89º 58.00' W – CP A

42º 46.00' N 90º 17.50' W – CP B

43º 03.80' N 90º 56.40' W – CP C

43º 17.74' N 91º 01.13' W – CP D

43º 43.16' N 91º 04.76' W – CP E

43º 53.21' N 91º 00.64' W – CP F

44º 08.82' N 90º 44.30' W – RP

DELLS (NVG Route #2)

43º 11.00' N 89º 54.50' W – SP

43º 26.35' N 90º 21.24' W – CP A

43º 41.34' N 90º 47.89' W – CP B

43º 43.49' N 90º 54.37' W – CP C

43º 50.10' N 90º 57.31' W – CP D

43º 51.32' N 90º 59.43' W – CP E

43º 53.21' N 91º 00.64' W – CP F

44º 08.82' N 90º 44.30' W – RP

CW3 TRAVIS E. BOXRUCKER
AASF#2 MADISON, WI
travis.boxrucker@us.army.mil

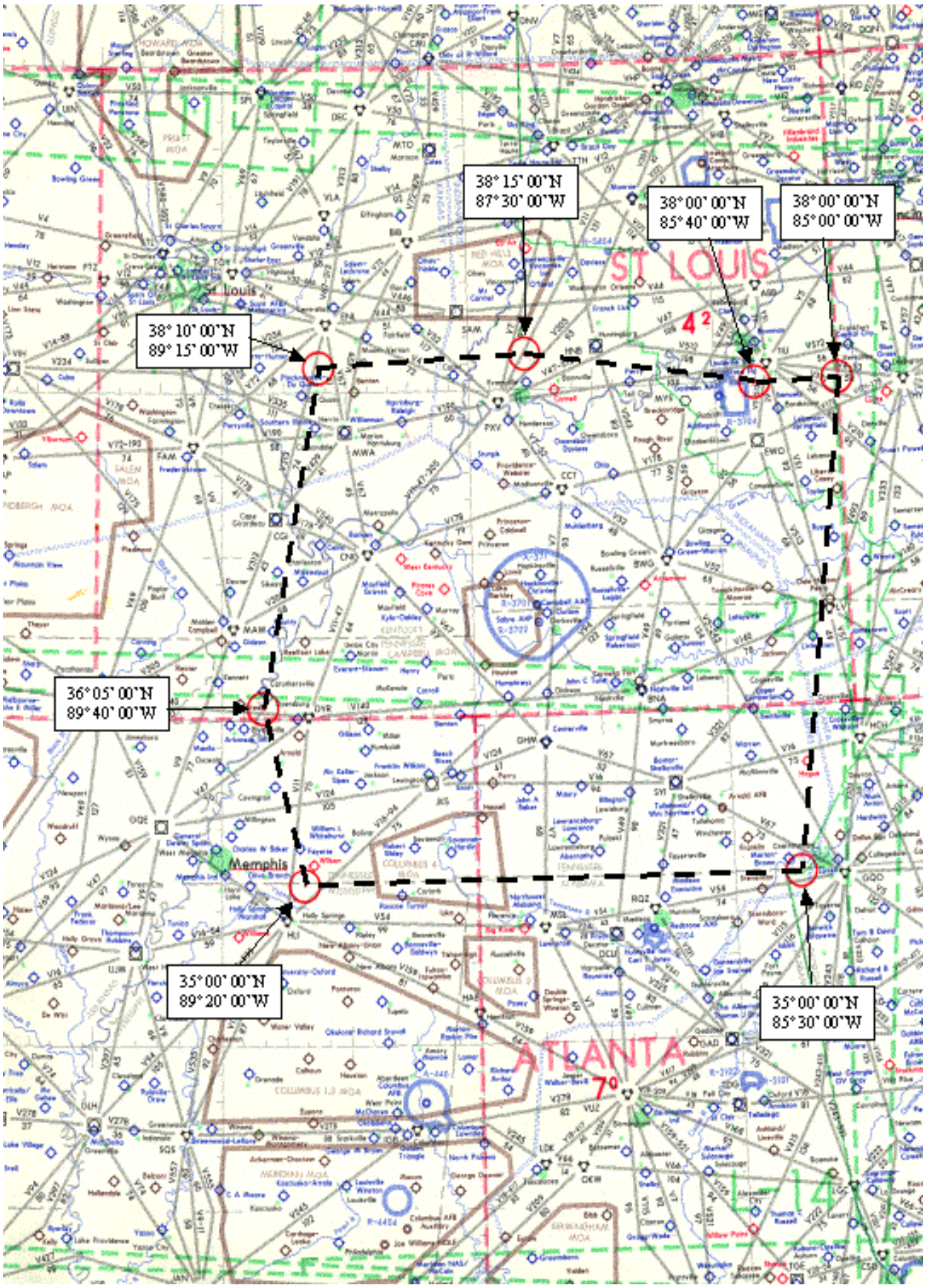
Notice to Pilots and Interested Persons in KY, TN, Southern IL, IN and Northern AL

LIGHTS OUT MILITARY HELICOPTER OPERATIONS

The U.S. Army is conducting "lights out" tactical helicopter training. These operations are conducted without the use of exterior aircraft lights from the surface to 500 feet above ground level, in accordance with FAA Exemption 3946, as amended, during the times of Sunset to Sunrise, and within the boundaries depicted below:

Lat. 38−00−00N, Long. 085−00−00W, to
Lat. 35−00−00N, Long. 085−30−00W, to
Lat. 35−00−00N, Long. 089−20−00W, to
Lat. 36−05−00N, Long. 089−40−00W, to
Lat. 38−10−00N, Long. 089−15−00W, to
Lat. 38−15−00N, Long. 087−30−00W, to
Lat. 38−00−00N, Long. 085−40−00W, to
point of origin. Excluding that airspace within a 4 nautical mile radius of all public use airports, and also excluding all class "B", "C", "D" and "E" controlled airspace.

(ASO−530/920 6/8/06)


38° 15' 00"N
87° 30' 00"W
38° 00' 00"N
85° 40' 00"W
38° 00' 00"N
85° 00' 00"W
38° 10' 00"N
89° 15' 00"W
36° 05' 00"N
89° 40' 00"W
35° 00' 00"N
89° 20' 00"W
35° 00' 00"N
85° 30' 00"W
ST LOUIS
Memphis
ATLANTA

SPECIAL USE AIRSPACE

Stinger Temporary Military Operations Area, OH

Effective Dates: October 7–10, 14–17, 21–24, & 28–31, 2019, for Exercise Killer Bee I
November 4–7, 11–14, 18–21, & 25–28, 2019, for Exercise Killer Bee II
December 2–5, 2019, for Exercise Killer Bee III
December 9–12, 2019, for Exercise Killer Bee IV
December 16–19, 2019, for Exercise Killer Bee V

The Stinger Temporary Military Operations Area (MOA) is established in northwest Ohio in support of Exercises Killer Bee I, II, III, IV, and V. The exercises are designed to create a high operations tempo environment and test pilots and maintenance personnel to demonstrate increased aircraft utilization/generation rates with aircraft that do not have external fuel tanks installed, as well as enhanced maintenance capabilities while quick–turning aircraft following the return from a long–term deployment.

The Stinger Temporary MOA will be used by pilots for conducting basic fighter maneuvering (BFM) and air combat maneuvering (ACM) training activities. The exercises will be conducted from the Toledo Air National Guard Base located in Swanton, Ohio, with a maximum of 8 sorties per day during the exercises. All participating exercise aircraft will be F–16 fighters and activities will occur between 6,000 feet Mean Sea Level (MSL) to, but not including Flight Level 180 (FL 180).

The Stinger Temporary MOA will only be activated for aircraft participating in Exercises Killer Bee I, II, III, IV, and V, respectively. Aerial activities will include aggressive three–dimensional tactical combat maneuvering involving abrupt, unpredictable changes in altitude, attitude, and direction of flight by participating aircraft. Supersonic flight is not authorized in the Stinger Temporary MOA; however, chaff and flare countermeasures will be employed with a minimum altitude of 10,000 feet MSL.

Nonparticipant pilots are encouraged to contact the nearest flight service station and request the latest NOTAM information or contact Cleveland Air Route Traffic Control Center (ARTCC) for status of the temporary MOA.

Stinger Temporary MOA, OH

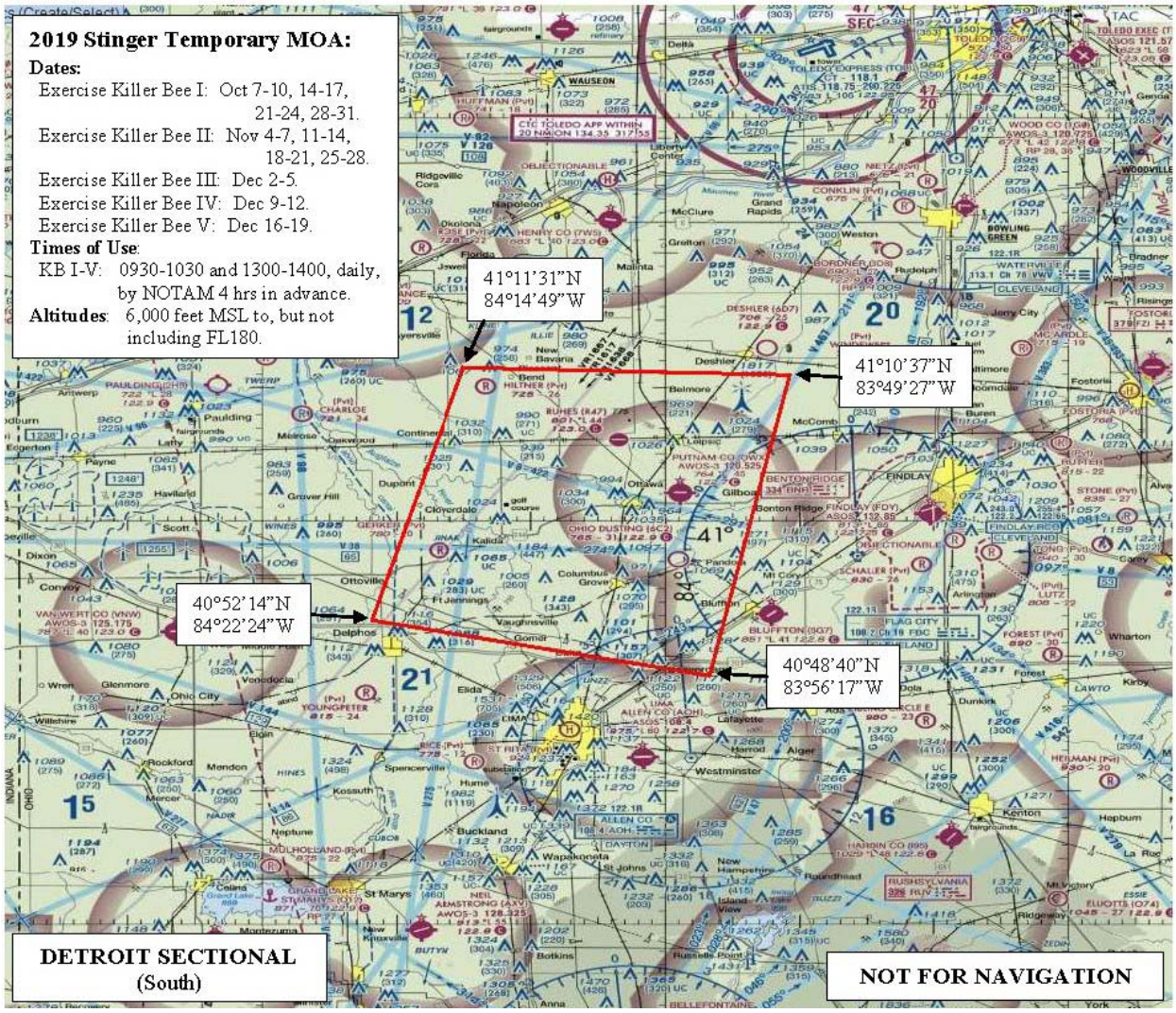
Boundaries. Beginning at lat. 41°11’31”N., long. 84°14’49”W.;
to lat. 41°10’37”N., long. 83°49’27”W.;
to lat. 40°48’40”N., long. 83°56’17”W.;
to lat. 40°52’14”N., long. 84°22’24”W.;
to the point of beginning.

Altitudes. 6,000 feet MSL to, but not including FL180.

Times of use. October 7–10, 14–17, 21–24, & 28–31, 2019: 0930–1030 and 1300–1400, daily, by NOTAM 4 hours in advance.
November 4–7, 11–14, 18–21, & 25–28, 2019: 0930–1030 & 1300–1400, daily, by NOTAM 4 hours in advance.
December 2–5, 9–12, & 16–19, 2019: 0930–1030 & 1300–1400, daily, by NOTAM 4 hours in advance.

Controlling agency. FAA, Cleveland ARTCC.

Using agency. USAF, 180th Fighter Wing, Toledo ANGB, Swanton, OH.



Section 3. Airport and Facility Notices

Northeast
United States

**There are no Northeast United States notices for this edition.*

Southeast
United States

**There are no Southeast United States notices for this edition.*

East Central United States

CLEVELAND-HOPKINS INTERNATIONAL AIRPORT (CLE)

STANDARD (CODED) TAXI ROUTES

Effective: Until Further Notice

The Cleveland–Hopkins International Airport (CLE) has instituted standardized taxi routes to all runways for departure aircraft.

These standardized taxi routes will use color-coded designations for routings to various runways. The color-coded routes may be issued by the CLE ground controller instead of the normal traditional full taxiway routings. The routes and associated codes are published in text form below. Pilots who are unable to comply with standardized routes should advise ground control on initial contact.

READBACK ALL HOLD SHORT INSTRUCTIONS

Runway 6L		
Route ID	**Start Point**	**Routing Via**
Violet	All Terminal Parking Areas	Juliet, Kilo, Lima, November **HOLD SHORT OF RUNWAY 6R** and monitor 120.9, Golf. *(Monitor 124.5 when west of Runway 6R)*

Runway 6R		
Route ID	**Start Point**	**Routing Via**
Emerald	All Terminal Parking Areas	Juliet, Kilo and Lima.

Runway 6R, Intersection Tango		
Route ID	**Start Point**	**Routing Via**
Red	All Terminal Parking Areas	Juliet, Kilo, Lima and Tango

Runway 24L		
Route ID	**Start Point**	**Routing Via**
Blue	All Terminal Parking Areas	Juliet, Sierra, Lima, Whiskey

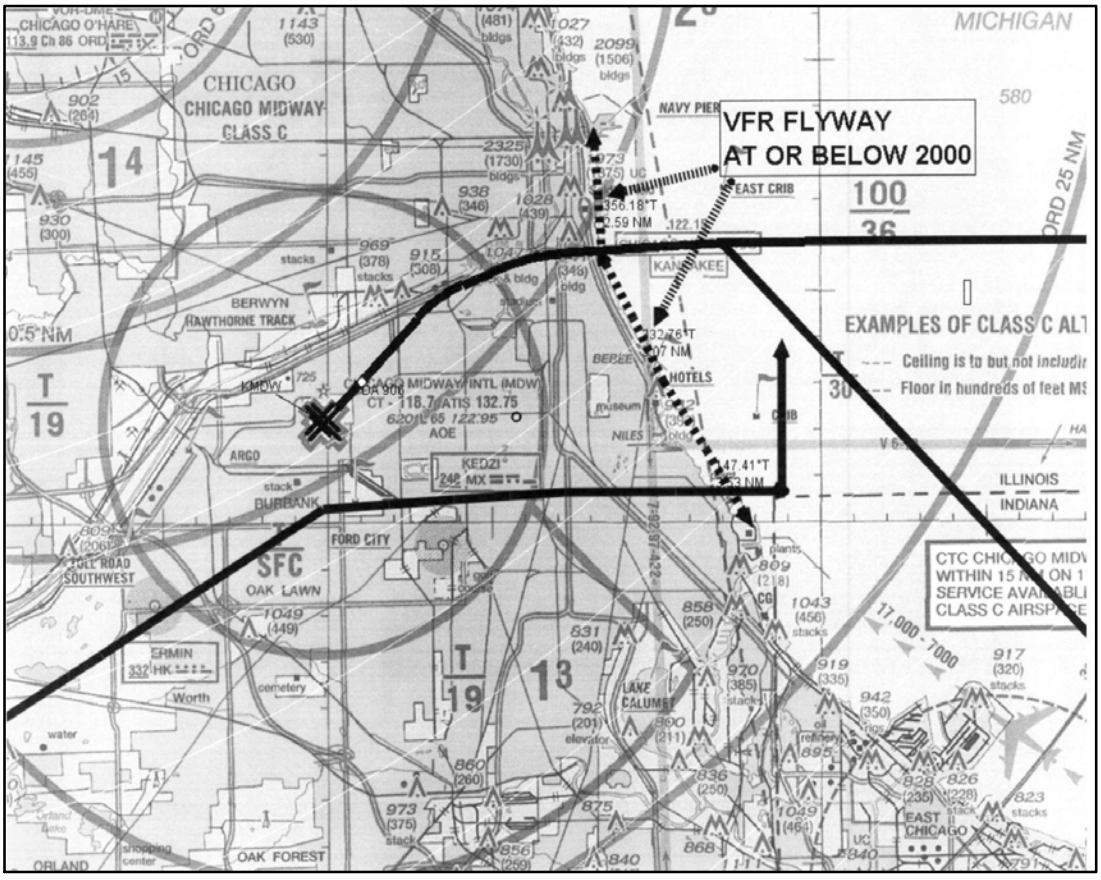
Runway 24R		
Route ID	**Start Point**	**Routing Via**
Grey	All Terminal Parking Areas	Juliet, Sierra, **HOLD SHORT OF RUWNAY 24L** and monitor 120.9, Sierra. *(Monitor 124.5 when west of Runway 24L)*

Runway 24R		
Route ID	**Start Point**	**Routing Via**
Orange	All Terminal Parking Areas	Juliet, Romeo **HOLD SHORT OF RUNWAY 24L** and monitor 120.9, Bravo, Golf, Sierra. *(Monitor 124.5 when west of Runway 24L)*

(CLE ATCT 10/23/08)

MIDWAY AIRPORT (MDW) ARRIVALS TO RUNWAY 22L AND VFR AIRCRAFT

During times when MDW arrivals are landing on runway 22L, MDW arrivals will cross the Lake Michigan shoreline (from Navy Pier to Gary/Chicago Int'l airport) between 3,000 feet and 2,400 feet, inbound to runway 22L. When transitioning the Chicago Metropolitan area along the Lake Michigan shoreline, VFR aircraft are advised that lower altitudes are strongly suggested.



*Solid bold tracks indicate the estimated flight paths into Runway 22L

Should you have any questions, please feel free to contact the Chicago TRACON Plans and Procedures office at:

847.608.5548
847.608.5590

(AJV–C21, 2/1/2018)

PTK AIR TRAFFIC CONTROL TOWER

OPERATION GOOD CHEER PROCEDURES

December 7, 2019

TABLE OF CONTENTS

GENERAL INFORMATION

PHONE NUMBERS:

- PTK–Pontiac Tower: 248–886–8507
- DTW– Detroit Approach: 734–955–5042
- AZO– Great Lakes Approach: 269–459–3361

FREQUENCIES:

- Pontiac (PTK):
  - Clearance Delivery: 118.25
  - OGC Ramp Control: TBD (will be issued via NOTAM)
  - Ground: 121.9 / 121.65
  - Tower: 120.5 / 123.7
- Detroit (DTW):
  - Arrival/Departure: 127.5, 118.95
- Great Lakes Approach–Lansing Sector:
  - Arrival/Departure: 118.65, 127.3
- Great Lakes Approach–Flint Sector:
  - Arrival/Departure: 118.8, 128.55

***Advise all facilities you are Operation Good Cheer on initial contact**

****All procedures have been designed to eliminate excessive departure/arrival delays.**

*****Ramp Control will assist you through the OGC Ramp and help ensure flight plan issues are corrected at the earliest possible time.**

PREFLIGHT PLANNING

FLIGHT PLANNING:

- IFR Aircraft:
  - IFR aircraft: Detroit will vector and clear aircraft on an approach into PTK via normal instrument procedures. Additional spacing, a minimum of 5 miles between aircraft on final will be utilized. Holding may become necessary.
  - Due to high volume, pilots should be prepared to land on either runway. Expect possible changes to landing runway inside 3 miles from the runway thresholds
  - Report airport in sight with tower
  - Upon arrival, expect taxi instructions to the main terminal ramp from Ground Control. At the ramp, follow marshalling direction and monitor Ramp Control (TBD)
  - Destination and departure procedures will be assigned and reviewed during registration at the main terminal building
  - Expect to file your clearance via Fore−Flight and/or with ATC personnel in the Terminal and receive your IFR clearance with Clearance Delivery (118.25) via radio in the terminal building (ATC Desk) or in your aircraft **PRIOR** to taxi.

- VFR Aircraft:
  - Approach PTK via specified VFR preferred routings to alleviate congestion with departing aircraft. (*see VFR Departure / Arrival Procedures*)
    - Avoid FNT Class C airspace when approaching/departing PTK from/to the North
  - Contact PTK tower more than 10 miles away from the field
    - Tower frequency provided on ATIS broadcast
  - You may be instructed to temporarily remain clear of the Class D airspace (5NM from PTK) due to volume and congestion
  - Due to high volume, pilots should be prepared to land on either runway. Expect changes to landing runway inside 3 miles from runway thresholds
  - Report airport in sight with tower
  - Upon arrival, expect taxi instructions to the main terminal ramp from Ground Control.
    - At the ramp, follow marshalling instruction, monitor OGC Ramp Control (TBD)
  - Destination and departure procedures will be assigned and reviewed during registration at the main terminal building
  - Expect to file your abbreviated VFR Flight Following information with FAA personnel in the Terminal (ATC Desk) and receive your squawk code with OGC Ramp Control (TBD) during taxi to departure staging

***NOTE: VFR aircraft filing with FAA personnel do NOT enter the Flight Service Flight Following system.**

***You will NOT need to "Open" or "Close" these flight plans unless you file a separate flight through Flight Service.**

VFR ARRIVAL PROCEDURES

General:

In an effort to alleviate congestion and manage the safe flow of traffic into PTK airport, VFR pilots participating in OGC are asked to fly preferred VFR routes

Aircraft will be divided by North and South Arrival and Departure routes based on the runway configuration and arrival airports

- **PTK RUNWAY 27L/R**
  - **Arrivals:**
    - North: Arrive in the *vicinity* of;
      - **Lapeer (D95)** Airport (See Page 5)

    - West / South: Enter in the *vicinity* of;
      - **Brighton (45G)** Airport (See Page 6)

- **PTK RUNWAY 09R/L**
  - **Arrivals:**
    - North: Arrive in the *vicinity* of;
      - **Linden Price (9G2)** Airport (See Page 7)

***CAUTION: 9G2 is located just within FNT Class C airspace**
DO NOT enter Class C Airspace without contacting Great Lakes Approach

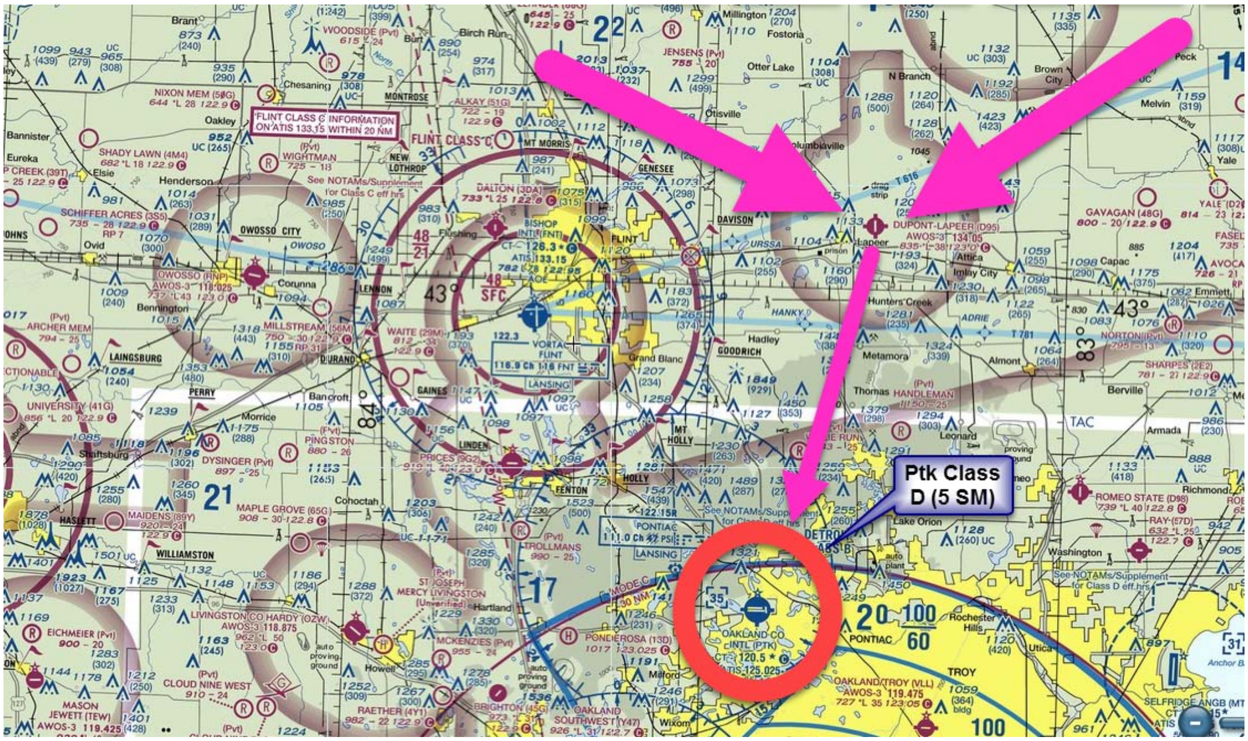
    - West / South: Arrive in the vicinity of;
      - **Brighton (45G)** Airport (See Page 8)

***AIRCRAFT NOT TALKING TO GREAT LAKES APPROACH ARE ADVISED TO REMAIN CLEAR OF FNT CLASS C AIRSPACE!**

LAPEER (D95) VFR ARRIVAL:
(RUNWAY 27L/R)

Aircraft arriving from the following airports or airports in the vicinity can expect to fly the Lapeer (D95) VFR Arrival:

SAW, APN, PHN, BAX, CFS, GDW, IKW, LDM, MBS, MOP, OSC, RQB, TVC, Y31, HTL, and points North

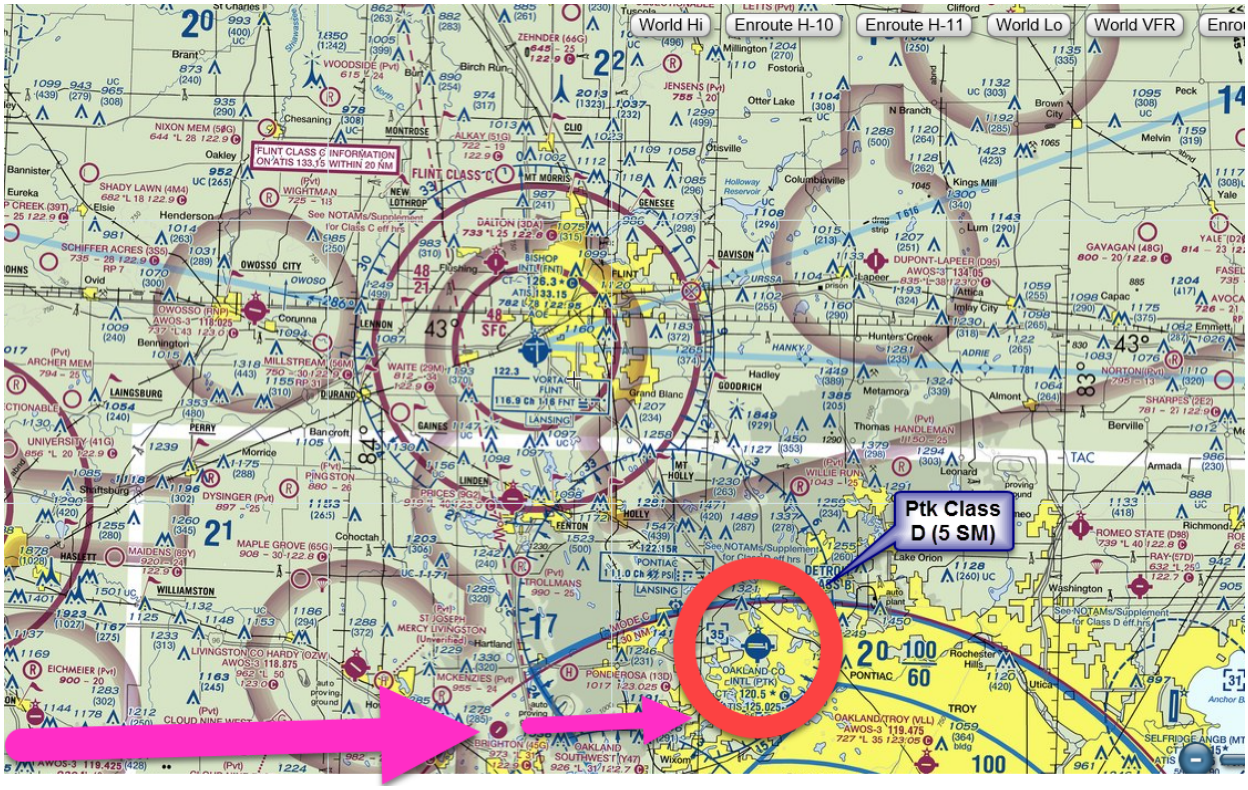


- Aircraft transitioning airspace North of PTK are advised to remain clear of Flint Class C airspace without proper clearance from Great Lakes Approach
- Arriving aircraft are advised to **exercise vigilance** for other aircraft approaching arrival fixes and PTK airport due to volume of aircraft in the vicinity of the airport
- If receiving flight following from Detroit Approach they will issue traffic advisories to the maximum extent possible
    - Aircraft are expected to navigate to the vicinity of Lapeer (D95) Airport then via direct to PTK
    - All pilots are expected to contact PTK tower on ATIS assigned frequency no later than 10NM from the airport

BRIGHTON (45G) VFR ARRIVAL:
(RUNWAY 27L/R)

Aircraft arriving from the following airports or airports in the vicinity can expect to fly the Brighton (45G) VFR Arrival:

JXN, BEH, AZO, ADG, BIV, LAN, OZW, GRR, RNP, JYM, MKG, OEB, Y70, and all points South



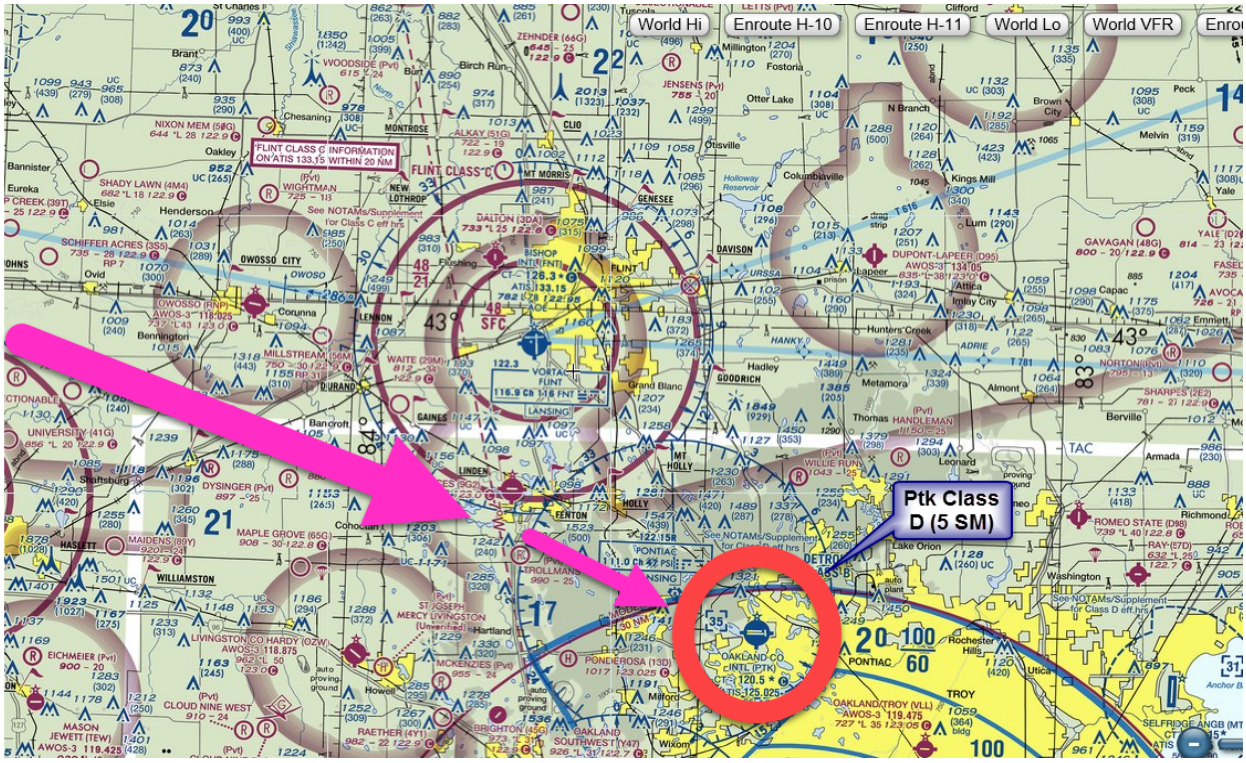
- Arriving aircraft are advised to **exercise vigilance** for other aircraft approaching arrival fixes and PTK airport due to volume of aircraft in the vicinity of the airport

- If receiving flight following from Detroit Approach they will issue traffic advisories to the maximum extent possible
  - Aircraft are expected to navigate to the vicinity of Brighton (45G) Airport then via due East on a wide LEFT downwind
  - All pilots are expected to contact PTK tower on ATIS assigned frequency no later than 10NM from the airport

LINDEN (9G2) VFR ARRIVAL: (RUNWAY 09R/L)

Aircraft arriving from the following airports or airports in the vicinity can expect to fly the Linden (9G2) VFR Arrival:

SAW, APN, BAX, CFS, GDW, IKW, LDM, MBS, MOP, RQB, TVC, Y31, and all points North



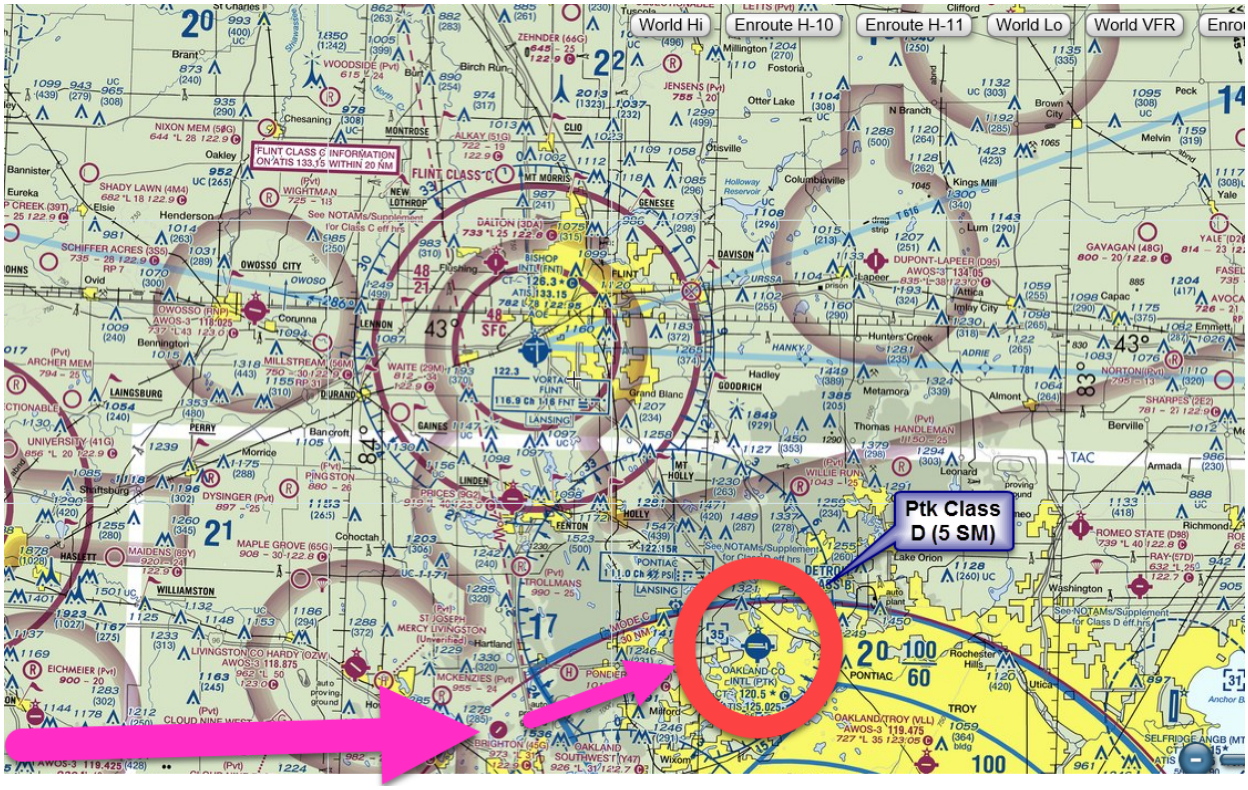
- Aircraft advised to remain clear of Flint Class C airspace without proper clearance from Great Lakes Approach
- Arriving aircraft are advised to **exercise vigilance** for other aircraft approaching arrival fixes and PTK airport due to volume of aircraft in the vicinity of the airport
- If receiving flight following from Detroit Approach they will issue traffic advisories to the maximum extent possible
  - Aircraft are expected to navigate to the vicinity of Linden (9G2) Airport, then towards PTK
  - All pilots are expected to contact PTK tower on ATIS assigned frequency no later than 10NM from the airport

***<u>CAUTION</u>: 9G2 is located just within FNT Class C airspace DO NOT enter Class C Airspace without contacting Great Lakes Approach**

BRIGHTON (45G) VFR ARRIVAL:
(RUNWAY 09R/L)

Aircraft <u>arriving</u> from the following airports or airports in the vicinity can expect to fly the Brighton (45G) VFR Arrival:

JXN, BEH, AZO, ADG, BIV, LAN, OZW, GRR, RNP, JYM, MKG, OEB, Y70, and all points South



- Arriving aircraft are advised to **exercise vigilance** for other aircraft approaching arrival fixes and PTK airport due to volume of aircraft in the vicinity of the airport

- If receiving flight following from Detroit Approach they will issue traffic advisories to the maximum extent possible
  - Aircraft are expected to navigate to the vicinity of Brighton (45G) Airport, then via direct to PTK
  - All pilots are expected to contact PTK tower on ATIS assigned frequency no later than 10NM from the airport

TAXI AND GROUND MOVEMENT

ARRIVAL: Upon arrival, contact Ground as directed, advise you are OGC and expect taxi instructions to the main terminal ramp via Taxiway C4. Upon entering ramp, follow direction of marshals to parking.

REGISTRATION: Upon entering Main Terminal building, proceed to registration.

- After receiving airport assignment decide on type of flight to conduct
  - **IFR–** Pilots are encouraged to file flight plan through ForeFlight or equivalent.
    - Add "OGC" to remarks and advise ATC desk if you have filed with ForeFlight, otherwise the ATC desk will take information for flight plan input.
  - **VFR–** All VFR flights will be filed with the ATC desk for flight following and assignment of a discreet transponder code

CLEARANCE: IFR pilots will receive their departure clearance at the ATC desk via radio with Clearance Delivery on (118.25) or in their aircraft before moving the aircraft from parking.

- VFR aircraft electing to use flight following will receive their squawk codes via OGC Ramp Control on (TBD) prior to contacting PTK Ground Control.

TERMINAL RAMP:

- After engine start, advise Ramp Control (TBD) **PRIOR** to moving from parking
- Ramp control will provide advisories/instruction to assist movement to the trucks, and through the loading process on the ramp as necessary
- After loading, advise Ramp Control that you are ready to reposition for run–up
  - Ramp Control will advise when and where to taxi for run–up
  - Run–ups **MUST** be completed **PRIOR** to departure staging!
  - Run–up complete:
    - Advise Ramp Control (TBD) you're ready to taxi for departure
    - Ramp Control will ensure you have your proper squawk code
    - Ramp Control will provide guidance to appropriate staging location.
    - When advised, switch to and monitor Ground Control on (121.9)

TAXI FOR DEPARTURE:

- At departure staging, **MONITOR** PTK Ground Control on (121.9) for taxi instructions to the runway
  - A ground controller will reach out to you at departure staging area
    - Please **DO NOT** call Ground Control… we will find you
    - We appreciate your patience!
  - Ground Control will provide taxi instruction to the appropriate runway (see runway assignment below) for departure and sequence you with other departures

RUNWAY ASSIGNMENT:

- West Flow (RWY 27L/R)
  - **Departing IFR Aircraft:** Expect Runway 27L for departure on Tower frequency (120.5)
    - Ground will provide taxi instructions, departure sequence and when to monitor Tower on frequency (120.5)
    - Multiple aircraft will be positioned on Charlie, C2, B2 and B1 to allow tower flexibility to maximize departure spacing
    - DO NOT block the entrance to runway unless advised to move up by tower.
    - DO NOT contact PTK Tower unless you are number one
    - We appreciate your patience!
  - **Departing VFR Aircraft:** Expect RUNWAY 27R for departure on Tower frequency (123.7)
    - From staging points, Ground Control on 121.9 will issue taxi instructions via taxiways A or B to Runway 36; then north on Runway 36 to hold short of taxiway Delta and monitor Ground Control on (121.65).

- Ground Control (121.65) will then provide taxi instructions to RUNWAY 27R via Taxiway Delta and sequence you with other departures.
  - ◇ Continue to follow the aircraft you are advised to follow
- When advised, monitor Tower on (123.7)
  - ◇ DO NOT contact PTK Tower until you are number one
  - ◇ We appreciate your patience!

- East Flow (RUNWAY 09R/L)
  - **Departing IFR Aircraft:** Expect Runway 09R for departure on Tower frequency (120.5)
    - Ground Control will provide taxi instructions, departure sequence and when to monitor tower
    - Use caution when leaving the Good Cheer ramp as there will be numerous arrival aircraft taxiing via B, B1 and C to the registration ramp
    - Do not block the entrance to runway unless advised to move up by tower.
    - DO NOT contact PTK Tower until you are number one
    - We appreciate your patience!

  - **Departing VFR Aircraft:** Expect Runway 09R for departure on Tower frequency (120.5)
    - Ground will provide taxi instructions, departure sequence and when to monitor Tower frequency (120.5)
    - Use caution when leaving the Good Cheer ramp as there will be numerous arrival aircraft taxiing via Bravo, B1 and C to the registration ramp
    - Do not block the end of the runway unless advised to move up by tower.
    - DO NOT contact PTK Tower until you are number one
    - We appreciate your patience!

VFR DEPARTURE PROCEDURES

General:

In an effort to alleviate congestion and manage the safe flow of traffic out of the PTK airport, VFR pilots participating in OGC are asked to fly preferred VFR routes

Aircraft will be divided by North and South Preferred VFR Departure routes based on the runway configuration and destination airports

- **PTK RWY 27L/R**
  - **Departures:**
    - North: Depart in the *vicinity* of;
      - **Frankenmuth Zehnder (66G)** Airport (See Page 13) and
      - **Linden (9G2)** Airport (See Page 14)
    - West / South: Depart in the *vicinity* of
      - **Livingston Howell (OZW)** Airport (See Page 15)

- **PTK RUNWAY 09R/L**
  - Departures:
    - North: Depart in the vicinity of;
      - **Frankenmuth (66G)** Airport (See Page 16) and
      - **Lapeer (D95)** Airport (See Page 17)

***CAUTION: 9G2 is located just within FNT Class C airspace**

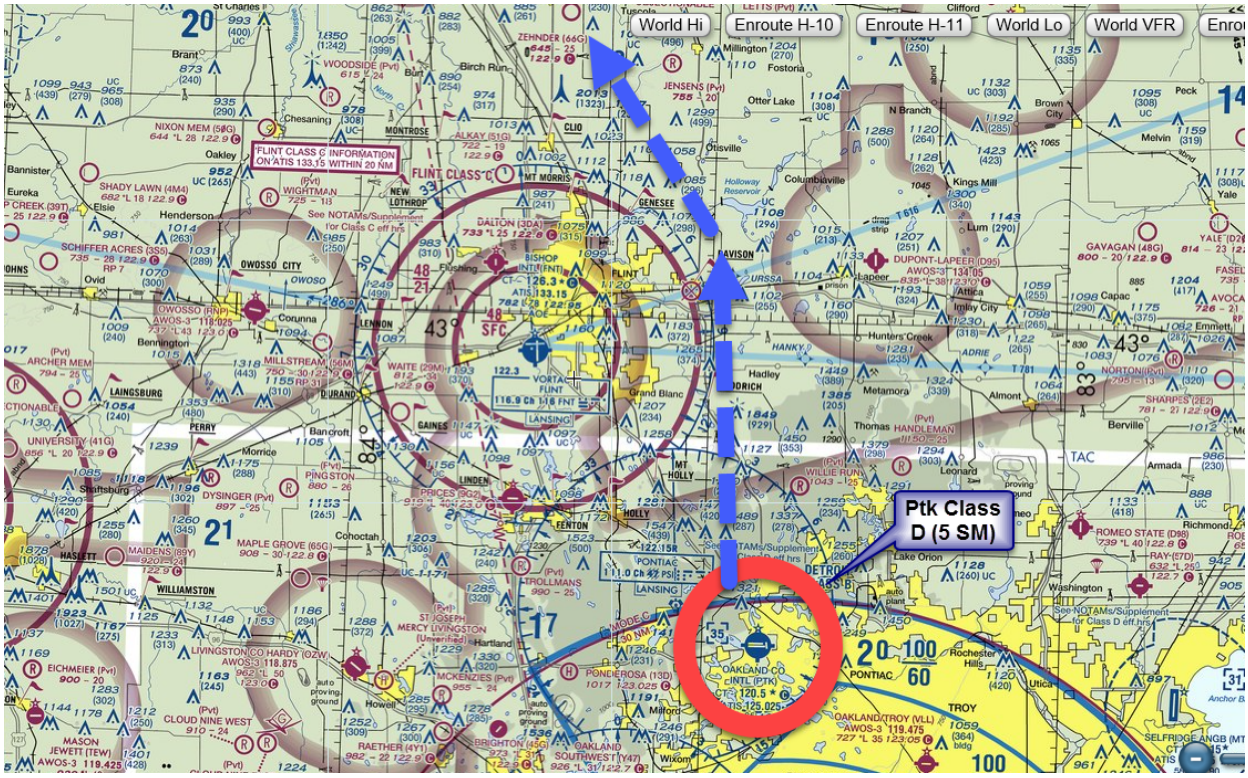
DO NOT enter Class C Airspace without contacting Great Lakes Approach

    - West / South: Depart in the *vicinity* of;
      - **Livingston Howell (OZW)** Airport (See Page 18)

FRANKENMUTH (66G) VFR DEPARTURE: (RUNWAY 27L/R)

The following destinations can expect the Frankenmuth (66G) VFR Departure:

APN, PHN, BAX, CFS, GDW, IKW, MBS, OSC, Y31



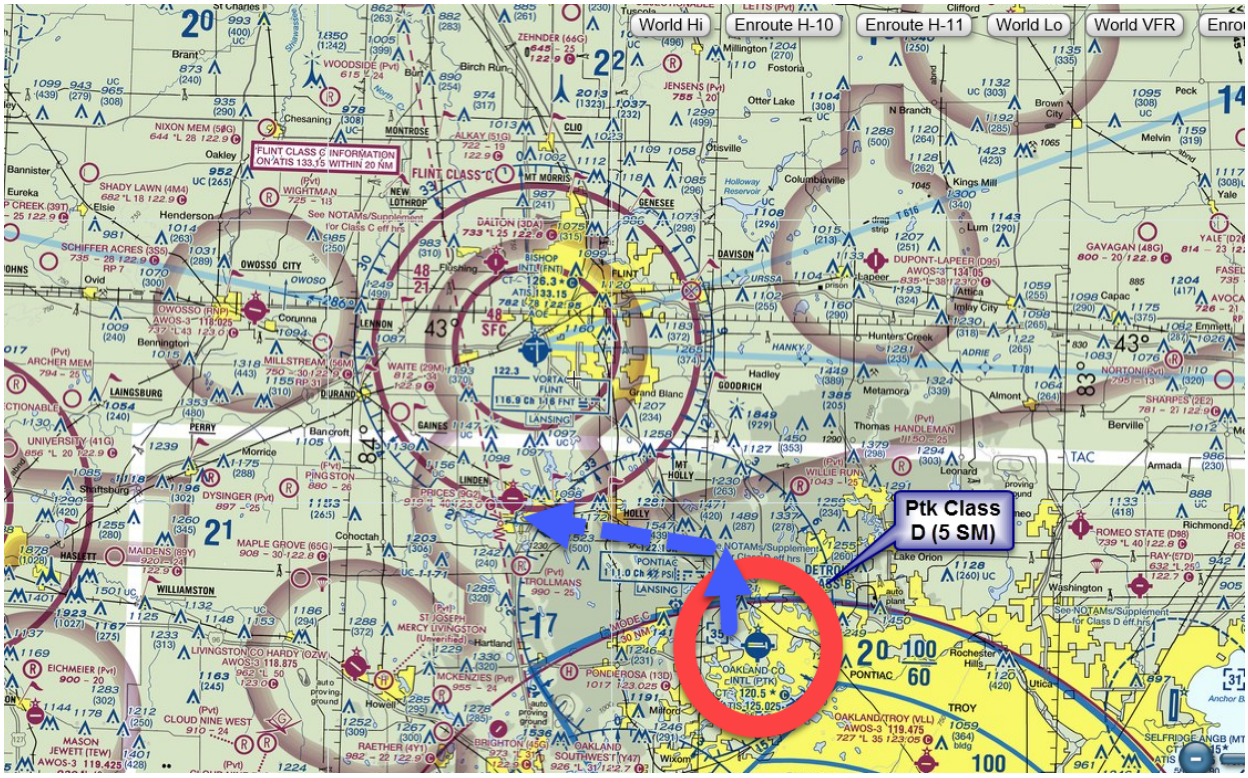
- PTK Tower will issue take−off clearance and a right turn
  - E.g. “N12345, Right turn approved, Runway 27L/R Cleared for Takeoff”
  - Upon reaching the end of the runway or <u>as soon as possible</u> execute a right turn and fly due **NORTH** until clear of the PTK Class Delta surface area
    - **THEN** towards Frankenmuth (66G) Airport
  - Remain **<u>AT OR BELOW 2,500</u>** feet until clearing the PTK Class D!
    - Arrival IFR aircraft will be at 3,000 and above on the downwind
- Aircraft requesting flight following contact Great Lakes Approach upon leaving the PTK Class D, or when advised
- Upon reaching Frankenmuth (66G) Airport, proceed on course or expect on course earlier from Great Lakes Approach

***All aircraft not receiving flight following are to remain clear of Flint Class C airspace**

LINDEN (9G2) VFR DEPARTURE: (RUNWAY 27L/R)

The following destinations can expect the Linden VFR Departure:

RNP, SAW, LDM, MOP, RQB, TVC



- PTK Tower will issue take–off clearance and a right turn
  - E.g. “N12345, Right turn approved, Runway 27L/R Cleared for Takeoff”
  - Upon reaching the end of the runway or as soon as practicable, execute a right turn and fly due **NORTH** until clear of the PTK Class D
    - **THEN** towards Linden (9G2)Airport
  - Remain **AT OR BELOW 2,500** feet until clearing the PTK Class D!
    - Arrival IFR aircraft will be at 3,000 and above on the downwind

- Aircraft requesting flight following contact Great Lakes Approach upon leaving the PTK Class D, or when advised

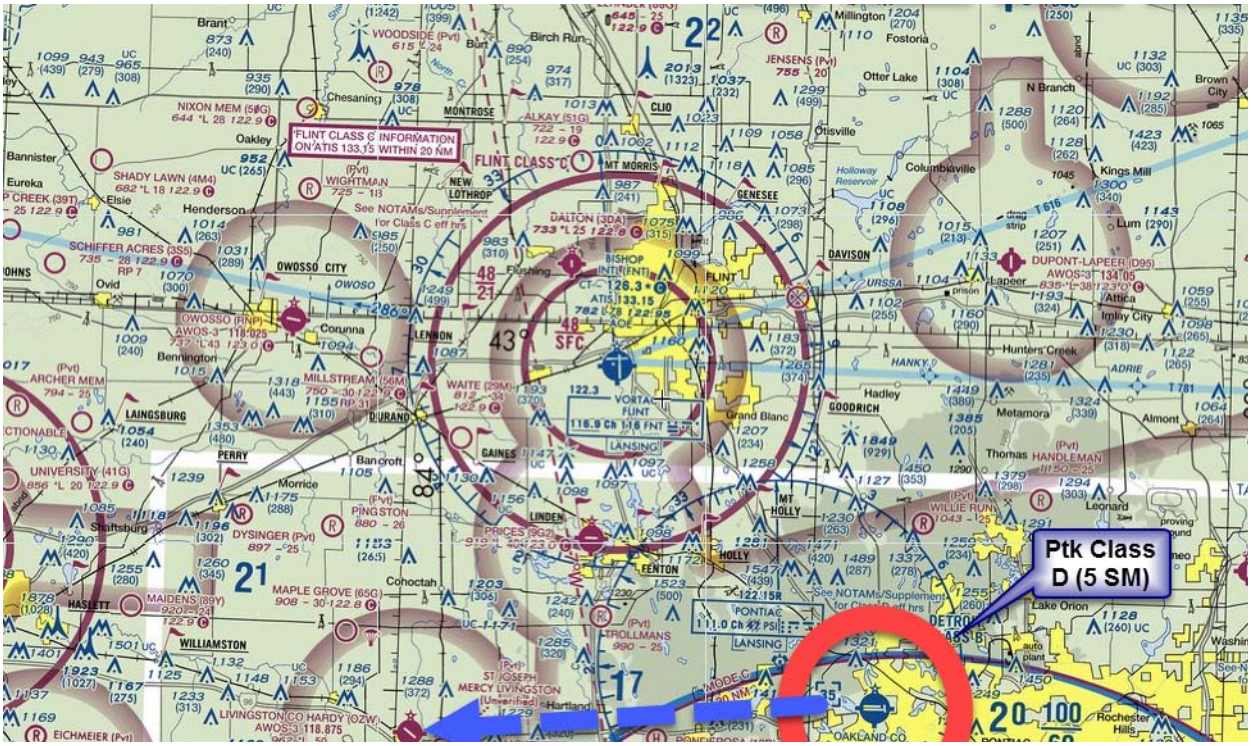
- Upon reaching Linden Airport, proceed on course or expect on course from Great Lakes Approach

***CAUTION: 9G2 is located just within FNT Class C Airspace**
DO NOT enter Class C Airspace without contacting Great Lakes Approach

LIVINGSTON (OZW) VFR DEPARTURE: (RUNWAY 27L/R)

The following destinations can expect the Livingston (OZW) VFR Departure:

JXN, BEH, AZO, ADG, BIV, LAN, OZW, GRR, JYM, MKG, OEB, Y70

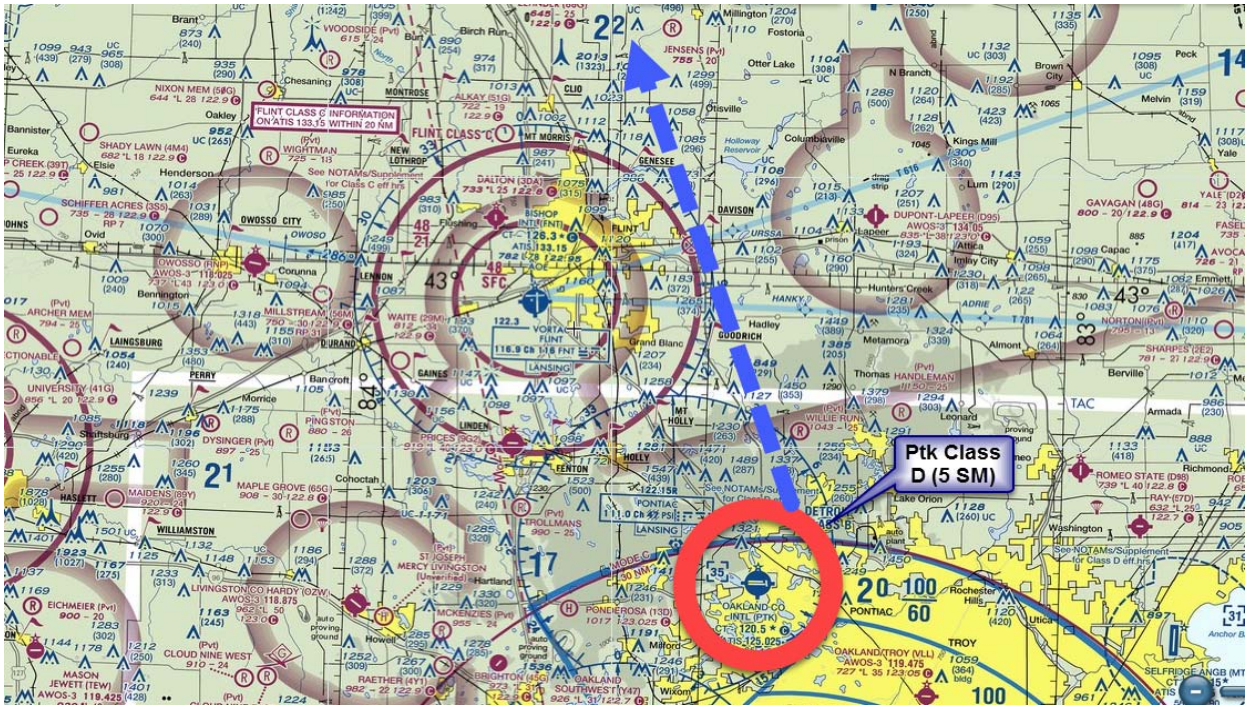


- PTK Tower will issue take−off clearance and instruction to fly straight−out
  - E.g. “N12345, fly straight−out, Runway 27L/R Cleared for Takeoff”
  - Upon reaching the end of the runway, fly due West until clear of the PTK Class D
    - **THEN** towards Livingston (OZW) Airport
  - Remain **AT OR BELOW 2,500** feet until clearing the PTK Class D!
    - IFR departure aircraft will be climbing to 3000 MSL and executing north bound turns above you.
- Aircraft requesting flight following, contact Detroit Approach upon leaving the PTK Class D, or when advised
- Upon reaching Livingston (OZW) Airport proceed on course or expect on course from Detroit Approach

FRANKENMUTH (66G) VFR DEPARTURE: (RUNWAY 09R/L)

The following destinations can expect the Frankenmuth (66G) VFR Departure:

SAW, LDM, MOP, RQB, TVC



- PTK Tower will issue take−off clearance and a left turn
  - E.g. “N12345, Left turn approved, Runway 09R/L Cleared for Takeoff”
  - Upon reaching the end of the runway or as soon as practicable, execute a **Left** turn and fly due **NORTH** until clear of the PTK Class D
    - **THEN** towards Lapeer (D95) Airport
  - Remain **AT OR BELOW 2,500** feet MSL until clearing the PTK Class D!
    - Arrival IFR aircraft will be at 3,000 MSL and above on the downwind

- Aircraft requesting flight following contact Great Lakes Approach on upon leaving the PTK Class D or when advised

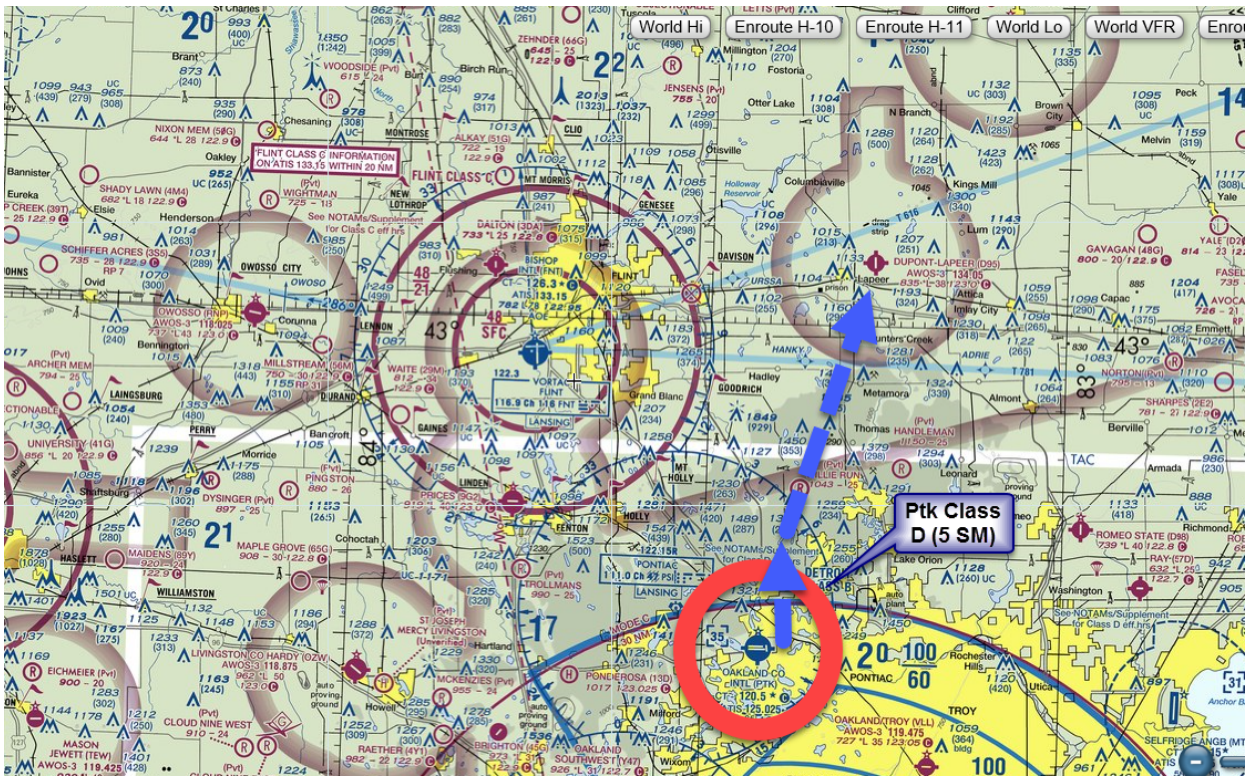
- Upon reaching Frankenmuth (66G) airport, proceed on course or expect on course earlier from Great Lakes Approach

***All aircraft not receiving flight following are to remain clear of Flint Class C airspace**

LAPEER (D95) VFR DEPARTURE: (RUNWAY 09R/L)

The following destinations can expect the Lapeer (D95) VFR Departure:

APN, PHN, BAX, CFS, GDW, IKW, MBS, OSC, Y31



- PTK Tower will issue take−off clearance and a left turn
  - E.g. “N12345, Left turn approved, Runway 09R/L Cleared for Takeoff”
  - Upon reaching the end of the runway or as soon as practicable, execute a **Left** turn and fly due **NORTH** until clear of the PTK Class Delta surface area
    - **THEN** towards Lapeer (D95) Airport
  - Remain **AT OR BELOW 2,500** feet MSL until clearing the PTK Class D!
    - Arrival aircraft will be at 3,000 MSL and above on the downwind

- Aircraft requesting flight following, contact Great Lakes Approach upon leaving the PTK Class D or when advised

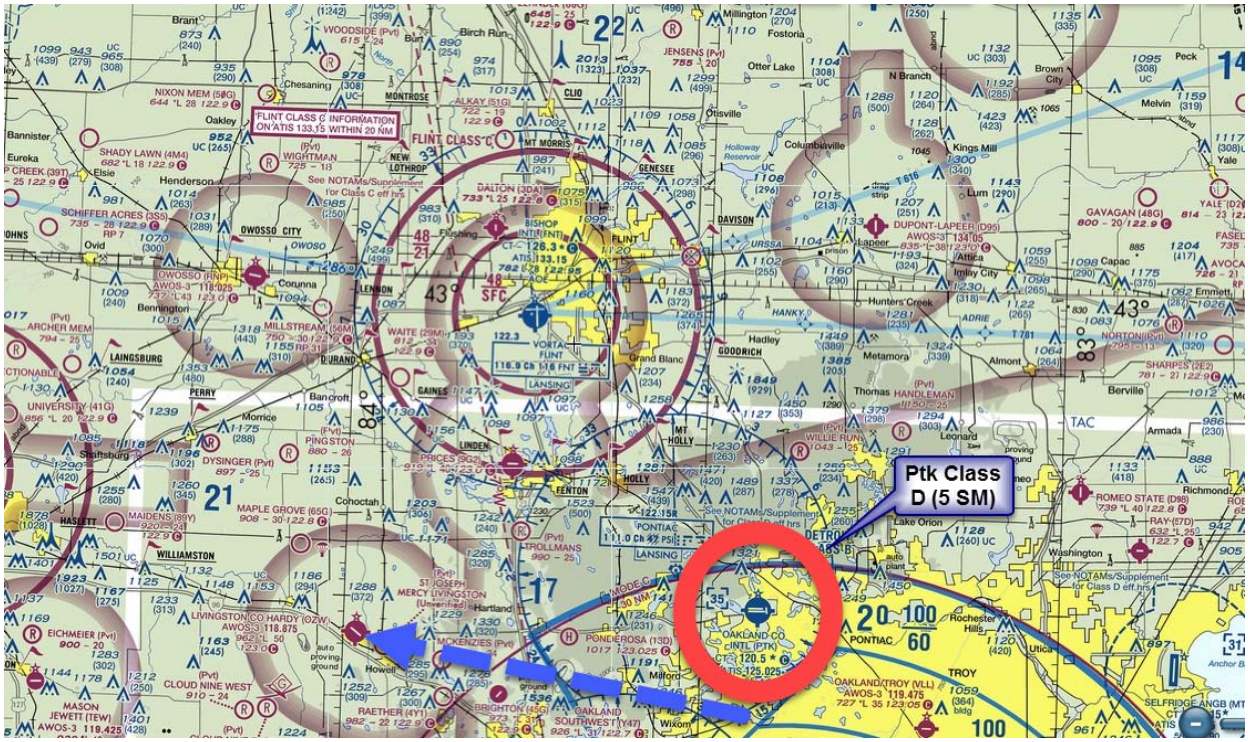
- Upon reaching Lapeer (D95) Airport, proceed on course or expect on course from Great Lakes Approach

***All aircraft not receiving flight following are to remain clear of Flint Class C airspace**

LIVINGSTON (OZW) VFR DEPARTURE: (RUNWAY 09R/L)

The following destinations can expect to fly the Livingston (OZW) VFR Departure:

JXN, BEH, AZO, ADG, BIV, LAN, OZW, GRR, RNP, JYM, MKG, OEB, Y70



- PTK Tower will issue take−off clearance and a right turn
  - E.g. “N12345, turn right, Runway 09R/L Cleared for Takeoff”
  - Upon reaching the end of the runway or as soon as able execute a **Right** turn and fly Southbound until clear of the PTK Class D
    - **THEN** towards Livingston (OZW) Airport
  - Remain **AT OR BELOW 2,500** feet MSL until advised or reaching OZW
    - Arrival IFR aircraft will be at 3000 MSL above on the downwind
- Aircraft requesting flight following contact Detroit Approach upon leaving the PTK Class D, or when advised
- Upon reaching Livingston (OZW) Airport proceed on course or expect on course from Detroit Approach

DETROIT METROPOLITAN WAYNE COUNTY (DTW) STANDARD (CODED) TAXI ROUTES

Runway 22L

Route ID	Starting Point	Routing Via
Green 5	**South terminal** circles 3N or 4N. CONTACT GROUND ON 121.8	Uniform, Yankee.
Green 6	**South terminal** circle 2S. CONTACT GROUND ON 119.25	J-8, Tango, Kilo, Yankee. Hold short of Quebec and contact ground on 132.72. Hold short of Uniform and contact ground on 121.8.
Green 7	**North terminal** circle 1. CONTACT GROUND ON 119.45	Hotel, Bravo, Yankee. Hold short of Kilo and contact ground 121.8.
Green 8	**North terminal** circle 2N. CONTACT GROUND ON 119.45	Uniform, Foxtrot, Hotel, Bravo, Yankee. Hold short of Kilo and contact ground on 121.8.

Runway 21R

Route ID	Starting Point	Routing Via
Blue 1	**South terminal** circles 3N or 4N. CONTACT GROUND ON 121.8	TURN RIGHT on Uniform, Golf, RY 9L, Mike, M-6. Hold short of U-8 and contact ground on 119.45.
Blue 2	**South terminal** circles 3N or 4N. CONTACT GROUND ON 121.8	TURN RIGHT on Uniform, Golf, Victor, Mike, M-6. Hold short of U-8 and contact ground on 119.45.
Blue 3	**South terminal** circle 2N. CONTACT GROUND ON 119.45	Uniform, Golf, Victor, Mike, M-6.
Blue 4	**South terminal** circle 2N. CONTACT GROUND ON 119.45	Uniform, Golf, RY 9L, Mike, M-6.
Blue 6	**South terminal** circles 3N or 4N. CONTACT GROUND ON 121.8	TURN LEFT on Uniform, Kilo, RY 9L, Golf, Victor, Mike, M-6. Hold short of Foxtrot and contact ground on 119.45 joining RY 9L.
Blue 7	**South terminal** circle 2S. CONTACT GROUND ON 119.25	Juliet, Papa Papa, P-3, Whiskey, Papa.
Blue 11	**South terminal** circles 3N or 4N CONTACT GROUND ON 121.8	TURN LEFT on Uniform, Kilo, RY 9L, Mike, M-6. Hold short of Foxtrot and contact ground on 119.45 joining RY 9L.
Blue 14	**North terminal** circle 1 CONTACT GROUND ON 119.45	Foxtrot, Victor, Mike, M-6.

Blue 15	**North terminal** circles 2 through 6 CONTACT GROUND ON 121.8	Kilo, Victor, Mike, M-6. Hold short of Foxtrot and contact ground on 119.45.
Blue 16	**South terminal** Taxiway Kilo between Taxiways Romeo and Uniform CONTACT GROUND ON 132.72	Kilo, RY 9L, Mike, M-6. Hold short of Uniform and contact ground 121.8. Hold short of Foxtrot and contact ground on 119.45 joining RY 9L.
Blue 17	**South terminal** Taxiway Kilo between Taxiways Romeo and Uniform CONTACT GROUND ON 132.72	Kilo, RY 9L, Golf, Victor, Mike and M−6. Hold short of Uniform and contact ground 121.8. Hold short of Foxtrot and contact ground on 119.45 joining RY 9L.

Runway 3L

Route ID	Starting Point	Routing Via
Brown 2	**South terminal** circle 2S. CONTACT GROUND ON 119.25	Juliet, Papa Papa. Hold short of P-1 and **MONITOR** tower on 118.4
Brown 4	**North terminal** circles 2 through 6 CONTACT GROUND ON 121.8	Kilo, Victor, Foxtrot, Mike. Hold short of Foxtrot and contact ground on 119.45.
Brown 6	**North terminal** circle 1 CONTACT GROUND ON 119.45	Foxtrot, Mike.
Brown 7	**South terminal** circle 2S. CONTACT GROUND ON 119.25	Juliet, Papa Papa, P-1.
Brown 8	**South terminal** Taxiway Kilo between Taxiways Romeo and Uniform. CONTACT GROUND ON 132.72	Kilo, RY 9L, Foxtrot, Mike. Hold short of Uniform and contact ground 121.8. Hold short of Foxtrot and contact ground on 119.45 joining RY 9L.

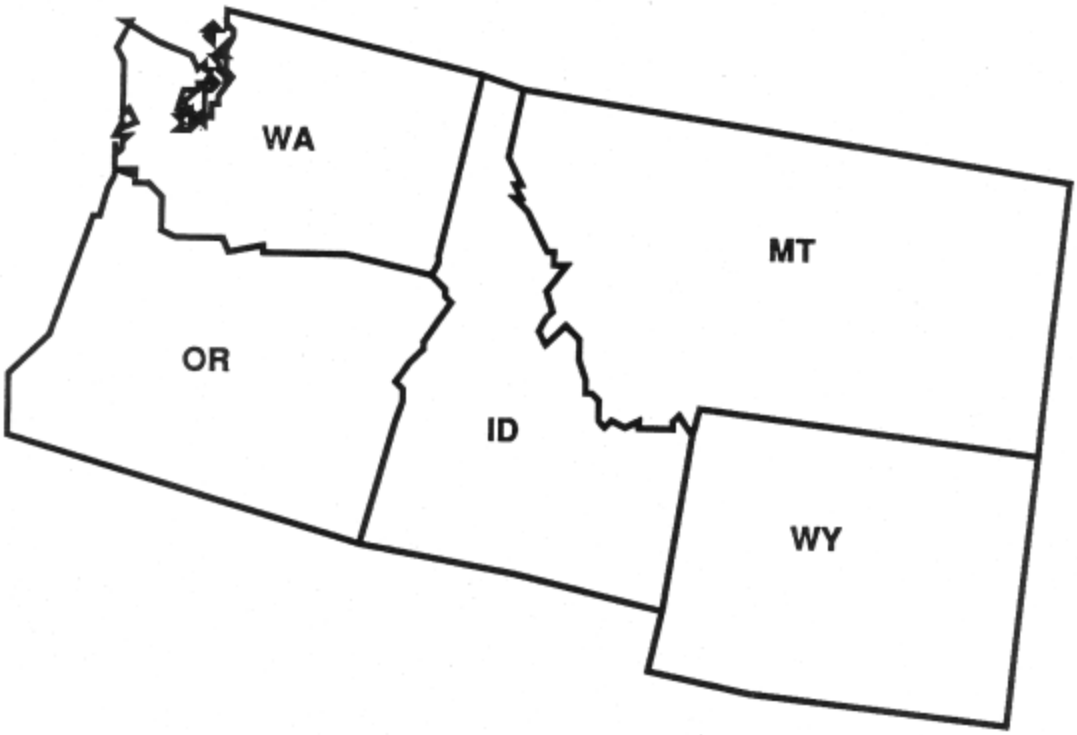
South Central United States

**There are no South Central United States notices for this edition.*

North Central United States

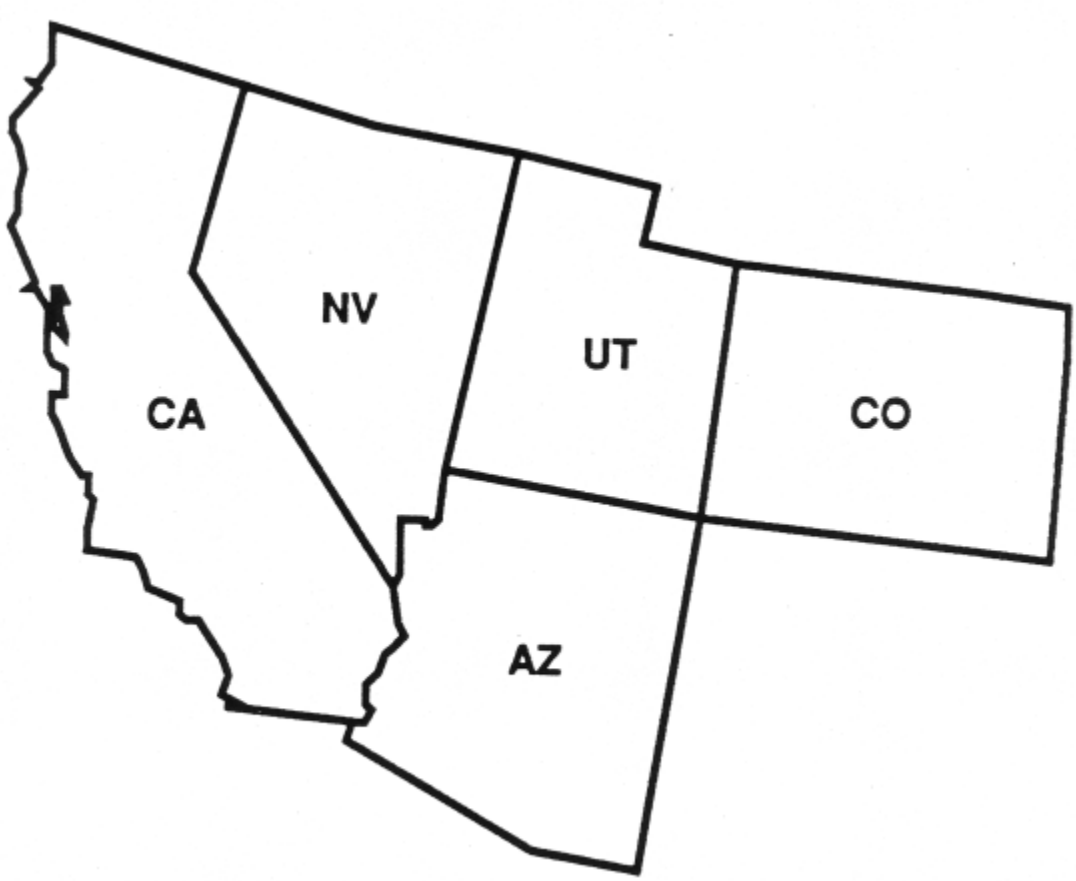
**There are no North Central United States notices for this edition.*

Northwest
United States



**There are no Northwest United States notices for this edition.*

Southwest
United States



PHOENIX SKY HARBOR INTERNATIONAL AIRPORT (PHX) STANDARDIZED TAXI ROUTES

Effective: Until Further Notice

PHX has instituted standardized taxi routes to/from runways 8/26 and 7L/25R for arriving and departing aircraft.

Standardized taxi routes may be issued by the PHX tower or ground controller instead of a typical full taxiway routing.

The routes will be issued as “Taxi via South Route, Taxi via West Route, etc.”.

The routes are published in text form below.

Route Ident	Start Point	Routing Via	End Point
NORTH ROUTE	Terminal 2, 3, and 4 − South Side	Taxi via Taxiway D to Taxiway T. Continue north on Taxiway T and monitor GC 119.75. If further instructions are not received, hold short of Taxiway C and contact GC for approval to continue. When approved by GC, continue taxi to: a) **Runway 8** via Taxiway C. b) **Runway 26** via Taxiway B.	Runway 8 or 26
	Terminal 3 and 4 − North Side	Taxi to: a) **Runway 8** via Taxiway C. b) **Runway 26** via Taxiway B.	Runway 8 or 26
	Landing or crossing runway 7L/25R	Taxi via Taxiway E to Taxiway T. Unless otherwise instructed, monitor GC 132.55 while taxiing on Taxiway E. Continue north on Taxiway T and monitor GC 119.75. If further instructions are not received, hold short of Taxiway C and contact GC 119.75 for approval to continue. When approved by GC, continue taxi to the ramp via Taxiway C.	Terminal 3 or 4 − North Side

Route Ident	Start Point	Routing Via	End Point
SOUTH ROUTE	Terminal 3 and 4 − North Side	Taxi via Taxiway C to Taxiway S. Continue south on Taxiway S and monitor GC 132.55. If further instructions are not received, hold short of Taxiway D and contact GC 132.55 for approval to continue. When approved by GC, continue taxi to: a) **Runway 7L** via Taxiway D, Taxiway D9, and Taxiway E. b) **Runway 25R** via Taxiway E.	Runway 7L or 25R
	Landing runway 8	Taxi via Taxiway B to Taxiway S. Unless otherwise instructed, monitor GC 119.75 while on Taxiway B. Continue south on Taxiway S and monitor ground 132.55. If further instructions are not received, hold short of Taxiway D and contact GC 132.55 for approval to continue. When approved by GC, continue taxi to ramp via Taxiway D.	Terminal 3 or 4 − South Side
	Landing runway 26	Cross Taxiway B, taxi via Taxiway C to Taxiway S. Unless otherwise instructed, monitor GC 119.75 while taxiing on Taxiway C. Continue south on Taxiway S and monitor GC 132.55. If further instructions are not received, hold short of Taxiway D and contact GC 132.55 for approval to continue. When approved by GC, continue taxi to the ramp via Taxiway D.	Terminal 3 or 4 − South Side

Route Ident	Start Point	Routing Via	End Point
EAST ROUTE	Terminal 3 and 4 − North Side	Taxi via Taxiway C and Taxiway R. Monitor tower 120.9 on Taxiway R (do not hold short of TWY D unless instructed).	Runway 25R
	Landing or crossing runway 7L/25R	Taxi via Taxiway E to Taxiway R. Unless otherwise instructed, monitor GC 132.55 while taxiing on Taxiway E. Continue north on Taxiway R and monitor GC 119.75 when on Taxiway R. If further instructions are not received, hold short of Taxiway C and contact GC for approval to continue. When approved by GC, continue taxi to the ramp via Taxiway C.	Terminal 3 or 4 − North Side
Route Ident	**Start Point**	**Routing Via**	**End Point**
WEST ROUTE	Terminal 4 − South Side	Taxi via Taxiway D, Taxiway D9, and Taxiway E.	Runway 7L

Alaska

Hawaii

**There are no Alaska and Hawaii notices for this edition.*

Section 4. Major Sporting and Entertainment Events

**There are no Major Sporting and Entertainment Events notices for this edition.*

Section 5. Airshows

**There are no Airshows notices for this edition.*