AIP

AERONAUTICAL INFORMATION PUBLICATION

UNITED STATES OF AMERICA

TWENTY–FOURTH EDITION **DATED 10 NOV 2016**

AMENDMENT 2

12 OCT 2017

CONSULT NOTAM FOR LATEST INFORMATION

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

AIP Amendment 2

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12 October 2017

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PART 1 – GENERAL (GEN)

GEN 0.

GEN 0.1 Preface

1. Name of the Publishing Authority

1.1 The United States of America Aeronautical Information Publication (AIP) is published by the authority of the Federal Aviation Administration.

2. Applicable ICAO Documents

2.1 The AIP is prepared in accordance with the Standards and Recommended Practices (SARP) of Annex 15 to the Convention on International Civil Aviation and the Aeronautical Information Services Manual (ICAO Doc 8126). Charts contained in the AIP are produced in accordance with Annex 4 to the Convention on International Civil Aviation and the Aeronautical Chart Manual (ICAO Doc 8697). Differences from ICAO Standards, Recommended Practices and Procedures are given in subsection GEN 1.7.

3. The AIP Structure and Established Regular Amendment Interval

3.1 The AIP Structure

The AIP is made up of three Parts; General (GEN), En Route (ENR), and Aerodromes (AD); each divided into sections and subsections as applicable, containing various types of information subjects.

3.1.1 PART 1 – General (GEN)

PART 1 consists of five sections containing information as briefly described hereafter:

3.1.1.1 GEN 0. – Preface; Record of AIP Amendments; Checklist of AIP Pages; and Table of Contents to PART 1.

3.1.1.2 GEN 1. National Regulations and Requirements – Designated Authorities; Entry, Transit, and Departure of Aircraft; Entry, Transit, and Departure of Passengers and Crew; Entry, Transit, and Departure of Cargo; Aircraft Instruments, Equipment, and Flight Documents; Summary of National Regulations and International Agreements/Conventions; and Differences from ICAO Standards, Recommended Practices, and Procedures.

3.1.1.3 GEN 2. Tables and Codes – Measuring System, Time System, and Aircraft Markings; Abbreviations Used in AIS Publications; Chart Symbols; Location Indicators; List of Radio Navigation Aids; Conversion Tables; and Sunrise/Sunset Tables.

3.1.1.4 GEN 3. Services – Aeronautical Information Services; Aeronautical Charts; Air Traffic Services; Communication Service; Meteorological Services; Search and Rescue; and Aircraft Rescue and Fire Fighting Communications.

3.1.1.5 GEN 4. Charges for Aerodromes/Heliports and Air Navigation Services – Fees and Charges; and Air Navigation Facility Charges.

3.1.2 PART 2 – En Route (ENR)

PART 2 consists of seven sections containing information as briefly described hereafter:

3.1.2.1 ENR 0. – Checklist of AIP Pages; and the Table of Contents to PART 2.

3.1.2.2 ENR 1. General Rules and Procedures – General Rules; Visual Flight Rules; Instrument Flight Rules; ATS Airspace Classification; Holding, Approach, and Departure Procedures; Altimeter Setting Procedures; Flight Planning; Addressing of Flight Plans for Domestic or international Flight Planning; National Security and Interception Procedures; Medical Facts for Pilots; Safety, Hazard, and Accident Reports; and Performance–Based Navigation (PBN) and Area Navigation (RNAV).

3.1.2.3 ENR 2. Air Traffic Services Airspace.

3.1.2.4 ENR 3. ATS Routes – Lower ATS Routes; Upper ATS Routes; Area Navigation Routes; and Other Routes.

3.1.2.5 ENR 4. Navigation Aids/Systems – Navigation Aids – En Route; and Special Navigation Systems.

3.1.2.6 ENR 5. Navigation Warnings – Prohibited, Restricted, and Other Areas; Military Exercise and Training Areas; Bird Migration and Areas with Sensitive Fauna; and Potential Flight Hazards.

3.1.2.7 ENR 6. Helicopter Operations – Helicopter IFR Operations; and Special Operations.

3.1.2.8 ENR 7. Oceanic Operations – General Procedures; Data Link Procedures; Special Procedures for In–Flight Contingencies in Oceanic Airspace; Operational Policy 50 NM Lateral Separation; Operational Policy ADS–C Distance–Based Separation; North Atlantic (NAT) Oceanic Clearance Procedures; North Atlantic (NAT) Timekeeping Procedures; North Atlantic (NAT) Safety Information; San Juan FIR Customs Procedures; Y–Routes; Atlantic High Offshore Airspace Offshore Routes Supporting Florida Airspace Optimization; Reduced Separation Climb/Descent Procedures; and New York Oceanic Control Area (OCA) West Flight Level Allocation.

3.1.3 PART 3 – Aerodromes (AD)

PART 3 consists of three sections containing information as briefly described hereafter:

3.1.3.1 AD 0. – Checklist of AIP Pages; and Table of Contents to PART 3.

3.1.3.2 AD 1. Aerodromes – Introduction: Aerodrome Availability.

3.1.3.3 AD 2. Aerodromes: Listing of Aerodromes.

3.2 Regular Amendment Interval

Regular amendments to the AIP will be issued every 6 months on Aeronautical Information Regulation and Control (AIRAC) effective dates listed in TBL GEN 0.1–1. A list of all AIRAC effective dates are contained in TBL GEN 0.1–2.

TBL GEN 0.1–1
Publication Schedule

New Edition or Amendment	Cutoff Date for Submission	Effective Date of Publication
Twenty–Fourth Edition	5/26/16	11/10/16
Amendment 1	11/10/16	4/27/17
Amendment 2	4/27/17	10/12/17
Amendment 3	10/12/17	3/29/18

TBL GEN 0.1–2
AIRAC System Effective Dates

2016	2017	2018	2019	2020
7 JAN	5 JAN	4 JAN	3 JAN	2 JAN
4 FEB	2 FEB	1 FEB	31 JAN	30 JAN
3 MAR	2 MAR	1 MAR	28 FEB	27 FEB
31 MAR	30 MAR	29 MAR	28 MAR	26 MAR
28 APR	27 APR	26 APR	25 APR	23 APR
26 MAY	25 MAY	24 MAY	23 MAY	21 MAY
23 JUN	22 JUN	21 JUN	20 JUN	18 JUN
21 JUL	20 JUL	19 JUL	18 JUL	16 JUL
18 AUG	17 AUG	16 AUG	15 AUG	13 AUG
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13 OCT	12 OCT	11 OCT	10 OCT	8 OCT
10 NOV	9 NOV	8 NOV	07 NOV	5 NOV
8 DEC	7 DEC	6 DEC	05 DEC	3 DEC
				31 DEC

4. Service to Contact in Case of Detected AIP Errors or Omissions

4.1 In the compilation of the AIP, care has been taken to ensure that the information contained therein is accurate and complete. Any errors and omissions which may be detected, as well as any correspondence concerning the Aeronautical Information Publication, should be referred to:

FAA National Headquarters (FOB–10B)
Procedures Support (AJV–81)
Attn: AIP Editor, Room 5E41NS
600 Independence Avenue, SW.
Washington, DC 20597

To submit comments electronically, please email:
9–AJV–8–HQ–Correspondence@faa.gov

5. Subscription Information

5.1 Private paying subscriptions must be obtained for each AIP publication from the:

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St. Louis, MO 63197–9000
Telephone: 202–512–1800
Internet: https://bookstore.gpo.gov

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

GEN 1.6 Summary of National Regulations and International Agreements/Conventions

1. Summary of National Regulations

1.1 Air regulations for the U.S. and areas under its jurisdiction are published in Title 14 of the U.S. Code of Federal Regulations (CFR) Parts 1–199, entitled the Federal Aviation Administration, Department of Transportation. It is essential that persons engaged in air operations in the U.S. airspace be acquainted with the relevant regulations. Copies of the 14 CFR parts may be purchased from the:

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U.S. Government Printing Office
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The Code of Federal Regulations is available electronically at:
https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR

1.2 The following is a partial list of Federal Aviation Regulations and their respective subject matter:

TBL GEN 1.6–1

14 CFR Part No.	Title
1	Definitions and abbreviations
11	General rulemaking procedures
13	Investigative and enforcement procedures
21	Certification procedures for products and parts
23	Airworthiness standards: normal, utility, acrobatic, and commuter category airplanes
25	Airworthiness standards: transport category airplanes
27	Airworthiness standards: normal category rotorcraft
29	Airworthiness Standards: transport category rotorcraft
31	Airworthiness standards: manned free balloons
33	Airworthiness standards: aircraft engines
35	Airworthiness standards: propellers
36	Noise standards: aircraft type and airworthiness certification
39	Airworthiness directives
43	Maintenance, preventive maintenance, rebuilding, and alteration
45	Identification and registration marking
47	Aircraft registration
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67	Medical standards and certification
71	Designation of Class A, B, C, D, and E airspace areas; airways; routes; and reporting points
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121	Operating requirements: Domestic, flag, and supplemental operations

14 CFR Part No.	Title
125	Certification and operations: Airplanes having a seating capacity of 20 or more passengers or a maximum payload capacity of 6,000 pounds or more
129	Operations: Foreign air carriers and foreign operations of U.S. registered aircraft engaged in common carriage
133	Rotorcraft external load operations
135	Operating requirements: Commuter and on−demand operations
137	Agricultural aircraft operations
139	Certification and operations: Land airports serving certain air carriers
141	Pilot schools
142	Training centers
145	Repair stations
147	Aviation maintenance technician schools
150	Airport noise compatibility planning
151	Federal aid to airports
152	Airport aid program
155	Release of airport property from surplus property disposal restrictions

14 CFR Part No.	Title
156	State block grant pilot program
157	Notice of construction, alteration, activation, and deactivation of airports
158	Passenger facility charges (PFCs)
161	Notice and approval of airport noise and access restrictions
169	Expenditure of Federal funds for nonmilitary airports or air navigation facilities thereon
170	Establishment and discontinuance criteria for air traffic control services and navigational facilities
171	Non−Federal navigation facilities
183	Representatives of the Administrator
185	Testimony by employees and production of records in legal proceedings, and service of legal process and pleadings
187	Fees
189	Use of Federal Aviation Administration communications system
191	Protection of sensitive security information
198	Aviation insurance

GEN 3. SERVICES

GEN 3.1 Aeronautical Information Services

1. Aeronautical Information Service

1.1 The U.S. Aeronautical Information Service is the National Flight Data Center, which forms a part of the Air Traffic Organization of the Federal Aviation Administration.

Postal Address:
Federal Aviation Administration
National Flight Data Center
1305 East–West Highway
Silver Spring, MD 20910
Telephone: 301–427–5000
Telex: 892–562
Commercial Telegraphic Address: FAA WASH
AFTN Address: KRWAYAYX

1.2 The U.S. NOTAM office is located at the following address:

Postal Address:
Federal Aviation Administration
U.S. NOTAM Office
Air Traffic Control System Command Center
3701 Macintosh Drive
Warrenton, VA 20187
Telephone: 540–422–4260
Toll Free: 1–888–876–6826
Facsimile: 540–422–4298
Telex: None
AFTN Address (Administrative)*:*
KDCAYNYX
AFTN (NOTAM): KDZZNAXX

2. Area of Responsibility of AIS

2.1 The National Flight Data Center is responsible for the collection, validation, and dissemination of aeronautical information for the U.S. and areas under its jurisdiction for air traffic control purposes.

3. Aeronautical Publications

3.1 United States AIP

3.1.1 The AIP, issued in one volume, is the basic aeronautical information document published for international use. It contains information of a lasting character, with interim updates published in various other publications. The AIP is available in English only and is maintained on a current basis by a 6–month amendment service.

3.2 NOTAM Publication

3.2.1 NOTAM information is published every 28 days in the Notices to Airmen Publication (NTAP). This book contains airspace, facility, service, and procedural information pertinent to international and domestic civil aviation users. The information will eventually be published in either the U.S. AIP or in other publications for domestic use, as applicable. The NTAP will also contain information regarding temporary changes or unscheduled interruptions to flight procedures and navigational aids or airport services, the duration of which is expected to last seven or more days.

3.3 Aeronautical Information Circulars

3.3.1 These circulars, called Advisory Circulars, contain information of general or technical interest relating to administrative or aviation matters which are inappropriate to either the AIP or the NOTAM. Advisory Circulars are available in English only. A checklist of outstanding circulars is issued annually.

3.4 En Route Aeronautical Charts, En Route Supplements, Approach Procedure Charts, Chart Supplements

3.4.1 These publications, available in English only, contain specific information on airspace, airports, navigational aids, and flight procedures applicable to the regional areas of the U.S. and the territories and airspace under its jurisdiction. These publications are available on the AIS website at:
http://www.faa.gov/air_traffic/flight_info/aeronav.

4. Distribution of Publications

4.1 This publication is available on the FAA website. All foreign aeronautical authorities 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 www.faa.gov/air_traffic/publications or by contact-

ing the Federal Aviation Administration, Mission Support Services, Air Traffic Procedures (AJV−8), 600 Independence Avenue, SW Washington, DC 20597. See information in paragraph 1.2 for published NOTAMs.

4.2 Private paying subscriptions must be obtained for each AIP document from the:

Superintendent of Documents
U.S. Government Printing Office
P. O. Box 979050
St. Louis, MO 63197−9000
Telephone: 202−512−1800
Internet: https://bookstore.gpo.gov

4.3 Advisory Circulars are available, upon request, from the:

U.S. Department of Transportation
Subsequent Distribution Office
Ardmore East Business Center
3341 Q 75th Avenue
Landover, MD 20785

4.4 Public sales of charts and publications are available through FAA approved print providers. A listing of products, dates of latest editions, and print providers is available on the AIS website at: http://www.faa.gov/air_traffic/flight_info/aeronav.

4.5 For the latest information regarding publication availability of world−wide products see the National Geospatial−Intelligence Agency (NGA) website: **https://www.nga.mil/ProductsServices/Pages/PublicProducts.aspx**

5. NOTAM Service

5.1 NOTAM Class I (Telecommunication Distribution)

5.1.1 NOTAM Class I distribution is used mainly for the notification of temporary information of timely significance such as unforeseen changes in services, facilities, airspace utilization, or any other emergency. Distribution is via telecommunications through the International NOTAM Office of the National Flight Data Center, in accordance with the following classifications:

5.1.1.1 International NOTAM. NOTAM containing full information on all airports, facilities and flight procedures available for use by international civil aviation. NOTAMs are given selected distribution to adjacent or appropriate International NOTAM Offices which require their exchange.

5.1.1.2 International Airspace NOTAM. NOTAM containing short term information pertaining to potentially hazardous international and domestic airspace utilization which is of concern to international flights. NOTAMs are given selected distribution to adjacent or appropriate International NOTAM Offices which require their exchange.

5.1.1.3 International Airspace NOTAM. NOTAM containing permanent changes−en route airway structure/aeronautical service and information of a general nature. NOTAMs are given selected distribution to adjacent or appropriate International NOTAM Offices which require their exchange.

5.1.1.4 Domestic NOTAM. NOTAM containing information of concern to aircraft other than those engaged in international civil aviation. Distribution is to local or national users only. (See ENR 1.10.)

5.1.2 Each NOTAM is assigned a four digit serial number which is followed by the location indicator for which the series is applicable. The serial numbers start with number 0001 at 0000 UTC on 1 July of each year. Each serial number is preceded by a letter:

5.1.2.1 "**A**" for NOTAM classification "1."

NOTE−
NOTAM number one for the year 1984 for the New York, John F. Kennedy International Airport would read A0001/84 KJFK. All NOTAMs issued will be preceded by an "A."

5.1.2.2 "**B**" for NOTAM classification "2." (Airspace): the identifier of the affected air traffic control center/FIR will be used.

NOTE−
NOTAM number one for the year 1984 for the Oakland ARTCC/FIR (Pacific Ocean Area) would read A0001/84 KZOA.

5.1.2.3 "**C**" for NOTAM classification "3" (Permanent Airspace): The KFDC identifier will be used for data of permanent airway/aeronautical services and of a general nature that are transmitted as NOTAMs and are given selected distribution to adjacent or appropriate International NOTAM Offices which require their exchange.

NOTE−
NOTAM number one for the year 1984 for KFDC is A0001/84 KFDC.

5.1.2.4 "**E**" for NOTAM classification "5" (domestic): No application (see ENR 1.10.)

5.2 Each NOTAM is provided with an identification letter adjoining the end of the word NOTAM meaning:

5.2.1 NOTAMN: NOTAM containing new information.

5.2.2 NOTAMC: NOTAM cancelling a previous NOTAM indicated.

5.2.3 NOTAMR: NOTAM replacing a previous NOTAM indicated.

5.3 A checklist of NOTAMs currently in force for each international NOTAM classification is issued each month over the Aeronautical Fixed Telecommunications Network (AFTN) to each International NOTAM office which exchanges International NOTAMs with the U.S. International NOTAM Office.

5.4 NOTAM Class I information is exchanged between the U.S. International NOTAM Office and the following International NOTAM Offices.

TBL GEN 3.1–1

COUNTRY	CITY
AFGHANISTAN	KABUL
ALBANIA	ROME
ALGERIA	ALGIERS
ANGOLA	LUANDA
ARGENTINA	BUENOS AIRES
AUSTRALIA	SIDNEY
AUSTRIA	VIENNA
AZORES	SANTO MARIA
BAHAMAS	NASSAU
BAHRAIN	BAHRAIN
BANGLADESH	DHAKA (DACCA)
BELGIUM	BRUSSELS
BERMUDA	BERMUDA
BOLIVIA	LA PAZ
BOSNIA	ZAGREB
BRAZIL	RIO DE JANEIRO
BULGARIA	SOFIA
CAMBODIA	PHNOM–PEHN
CANADA	OTTAWA
CAPE VERDE ISLANDS	AMILCAR CABRAL
CHILE	SANTIAGO
CHINA	BEIJING
CHINA (FORMOSA)	TAIPEI
COLOMBIA	BOGOTA
CONGO	BRAZZAVILLE
CROATIA	ZAGREB
CUBA	HAVANA
CYPRUS	NICOSIA
CZECH REPUBLIC	PRAGUE
DENMARK	COPENHAGEN
DOMINICAN REPUBLIC	SANTO DOMINGO
ECUADOR	GUAYAQUIL
ENGLAND	LONDON
ESTONIA	TALLINN
ETHIOPIA	ADDIS ABABA
EYGPT	CAIRO
FIJI	NANDI
FINLAND	HELSINKI
FRANCE	PARIS
FRENCH GUIANA	MARTINIQUE
FRENCH POLYNESIA	TAHITI
GERMANY (WEST)	FRANKFURT
GHANA	ACCRA
GREECE	ATHENS
GREENLAND	SONDRE STROMFJORD
GUYANA	GEORGETOWN
HAITI	PORT–AU–PRINCE
HONDURAS	TEQUCIGALPA
HONG KONG	HONG KONG
HUNGARY	BUDAPEST
ICELAND	REYKJAVIK
INDIA	BOMBAY
INDIA	CALCUTTA
INDIA	DELHI
INDIA	MADRAS
INDONESIA	JAKARTA
IRAN	TEHRAN (NOT AVBL)
IRELAND	SHANNON
ISRAEL	TEL AVIV
ITALY	ROME
JAMAICA	KINGSTON
JAPAN	TOKYO
JORDAN	AMMAN
KENYA	NAIROBI
KOREA (SOUTH)	SEOUL

COUNTRY	CITY
KUWAIT	KUWAIT
LATVIA	MOSCOW
LEBANON	BEIRUT
LIBERIA	ROBERTS
LIBYA	TRIPOLI
MALAYSIA	KUALA LUMPUR
MALTA	LUQA
MAURITIUS	PLAISANCE
MAYNMAR	RANGOON
MEXICO	MEXICO CITY
MOROCCO	CASABLANCA
MOZAMBIQUE	MAPUTO
NAMIBIA	JOHANNESBURG
NAURU ISLAND	NAURU
NETHERLANDS	AMSTERDAM
NETHERLANDS ANTILLES	CURACAO
NEW GUINEA	PORT MOSEBY
NEW ZEALAND	AUCKLAND
NIGERIA	LAGOS
NORWAY	OSLO
OMAN	MUSCAT
PAKISTAN	KARACHI
PANAMA	TOCUMEN
PARAGUAY	ASUNCION
PERU	LIMA
PHILLIPINES	MANILLA
POLAND	WARSAW
PORTUGAL	LISBON
ROMANIA	BUCHAREST
RUSSIA	MOSCOW
SAMOA	FALEOLA
SAUDI ARABIA	JEDDAH
SENEGAL	DAKAR
SEYCHELLES	MAHE
SINGAPORE	SINGAPORE
SLOVAKIA	BRATISLAVA
SOLOMON ISLANDS	HONIARA
SOUTH AFRICA	JOHANNESBURG
SPAIN	MADRID
SRI LANKA	COLOMBO
SUDAN	KHARTOUM
SURINAME	PARAMARIBO
SWEDEN	STOCKHOLM
SWITZERLAND	ZURICH
SYRIA	DAMASCUS
TANZANIA	DAR–ES–SALAAM
THAILAND	BANKOK
TRINIDAD	PORT OF SPAIN
TUNISIA	TUNIS
TURKEY	ANKARA
URUGUAY	MONTEVIDEO
VIET NAM	HO CHI MINH CITY
VENEZUELA	CARACAS
YEMEN	ADEN
YUGOSLAVIA	BELGRADE
ZAIRE	KINSHASA
ZAMBIA	LUSAKA
ZIMBABWE	HARARE

6. Pre–Flight Information Service at Aerodromes Available to International Flights

6.1 Pre–Flight Information Units in the U.S. are Flight Service Stations (FSS) operated by either FAA (in Alaska) or by federal contract facilities (elsewhere in the U.S.).

6.2 FSSs are air traffic facilities which provide pilot briefings, flight plan processing, en route flight advisories, search and rescue services, and assistance to lost aircraft and aircraft in emergency situations. FSSs also relay ATC clearances, process Notices to Airmen, broadcast aviation weather and aeronautical information, and advise Customs and Border Protection of transborder flights. In Alaska, designated FSSs also provide TWEB recordings, take weather observations, and provide Airport Advisory Services (AAS).

6.3 FSS locations, services and telephone information are available in the Chart Supplement U.S., Chart Supplement Alaska, and Chart Supplement Pacific.

6.4 Flight Service Stations have telecommunications access to all of the weather and NOTAM information available for preflight briefing to international locations with which the U.S. International NOTAM office exchanges information.

GEN 3.2 Aeronautical Charts

1. General

1.1 Civil aeronautical charts for the U.S. and its territories, and possessions are produced by Aeronautical Information Services (AIS), http://www.faa.gov/air_traffic/flight_info/aeronav, which is part of FAA's Air Traffic Organization, Mission Support Services.

2. Obtaining Aeronautical Charts

2.1 Public sales of charts and publications are available through a network of FAA approved print providers. A listing of products, dates of latest editions, and print providers is available on the AIS website at:
http://www.faa.gov/air_traffic/flight_info/aeronav.

3. Selected Charts and Products Available

VFR Navigation Charts
IFR Navigation Charts
Planning Charts
Supplementary Charts and Publications
Digital Products

4. General Description of Each Chart Series

4.1 VFR Navigation Charts

4.1.1 Sectional Aeronautical Charts. Sectional Charts are designed for visual navigation of slow to medium speed aircraft. The topographic information consists of contour lines, shaded relief, drainage patterns, and an extensive selection of visual checkpoints and landmarks used for flight under VFR. Cultural features include cities and towns, roads, railroads, and other distinct landmarks. The aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, special–use airspace, obstructions, and related data. Scale 1 inch = 6.86nm/1:500,000. 60 x 20 inches folded to 5 x 10 inches. Revised biannually, except most Alaskan charts are revised annually.
(See FIG GEN 3.2–1 and FIG GEN 3.2–2.)

4.1.2 VFR Terminal Area Charts (TAC). TACs depict the airspace designated as Class B airspace. While similar to sectional charts, TACs have more detail because the scale is larger. The TAC should be used by pilots intending to operate to or from airfields within or near Class B or Class C airspace. Areas with TAC coverage are indicated by a • on the Sectional Chart indexes. Scale 1 inch = 3.43nm/1:250,000. Charts are revised biannually, except Puerto Rico–Virgin Islands which is revised annually.
(See FIG GEN 3.2–1 and FIG GEN 3.2–2.)

4.1.3 U.S. Gulf Coast VFR Aeronautical Chart. The Gulf Coast Chart is designed primarily for helicopter operation in the Gulf of Mexico area. Information depicted includes offshore mineral leasing areas and blocks, oil drilling platforms, and high density helicopter activity areas. Scale 1 inch = 13.7nm/1:1,000,000. 55 x 27 inches folded to 5 x 10 inches. Revised annually.

4.1.4 Grand Canyon VFR Aeronautical Chart. Covers the Grand Canyon National Park area and is designed to promote aviation safety, flight free zones, and facilitate VFR navigation in this popular area. The chart contains aeronautical information for general aviation VFR pilots on one side and commercial VFR air tour operators on the other side.

FIG GEN 3.2–1

Sectional and VFR Terminal Area Charts for the Conterminous U.S., Hawaii, Puerto Rico, and Virgin Islands

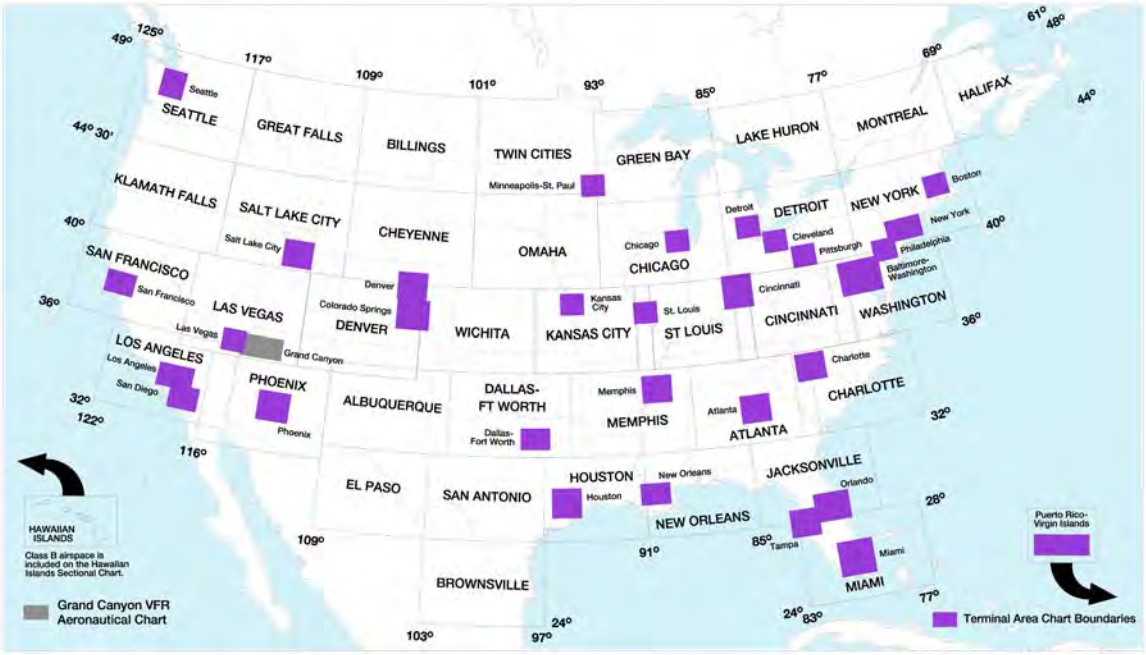
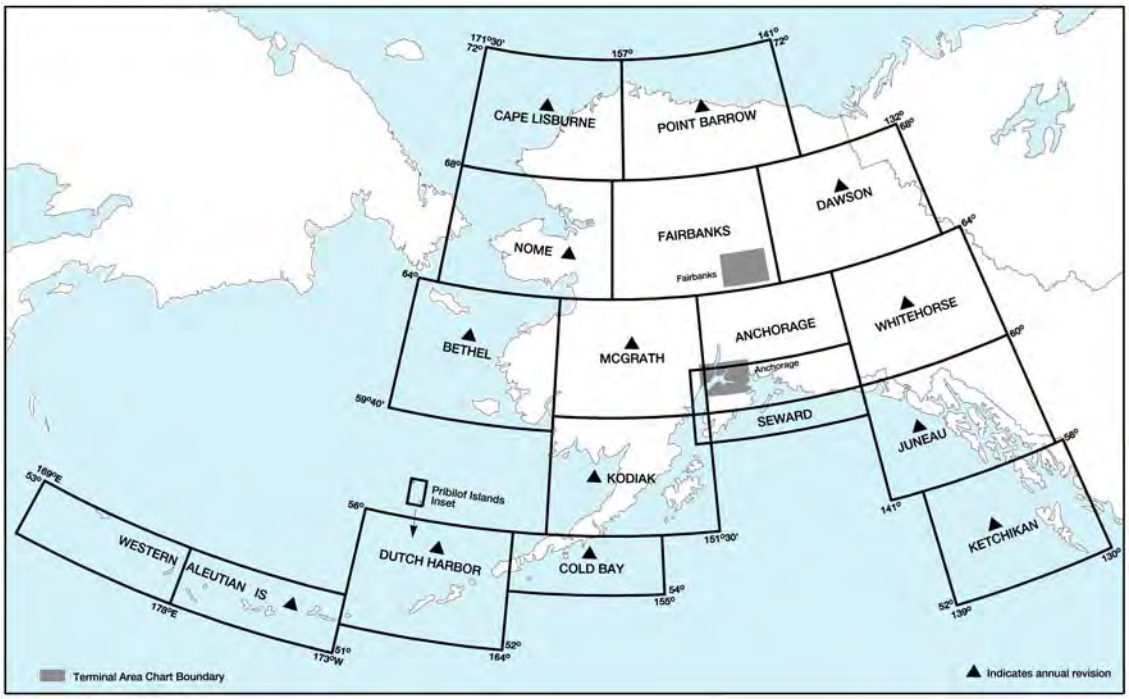


FIG GEN 3.2–2

Sectional and VFR Terminal Area Charts for Alaska



override transmissions may be kept to an absolute minimum.

9.6.8 While it is a good operating practice for pilots to make use of the ATIS broadcast where it is available, some pilots use the phrase "Have Numbers" in communications with the control tower. Use of this phrase means that the pilot has received wind, runway and altimeter information ONLY and the tower does not have to repeat this information. It does not indicate receipt of the ATIS broadcast and should never be used for this purpose.

9.7 Airport Reservation Operations and Special Traffic Management Programs

9.7.1 This section describes procedures for obtaining required airport reservations at airports designated by the FAA and for airports operating under Special Traffic Management Programs.

9.7.2 Slot Controlled Airports.

9.7.2.1 The FAA may adopt rules to require advance operations for unscheduled operations at certain airports. In addition to the information in the rules adopted by the FAA, a listing of the airports and relevant information will be maintained on the FAA website listed below.

9.7.2.2 The FAA has established an Airport Reservation Office (ARO) to receive and process reservations for unscheduled flights at the slot controlled airports. The ARO uses the Enhanced Computer Voice Reservation System (e−CVRS) to allocate reservations. Reservations will be available beginning 72 hours in advance of the operation at the slot controlled airport. Standby lists are not maintained. Flights with declared emergencies do not require reservations. Refer to the website or touch−tone phone interface for the current listing of slot controlled airports, limitations, and reservation procedures.

NOTE−
The web interface/telephone numbers to obtain a reservation for unscheduled operations at a slot controlled airport are:
1. http://www.fly.faa.gov/ecvrs.
2. Touch−tone: 1−800−875−9694.
3. Trouble number: 540−422−4246.

9.7.2.3 For more detailed information on operations and reservation procedures at a slot controlled airport, please see 14 CFR Part 93, Subpart K – High Density Traffic Airports.

9.7.3 Special Traffic Management Programs (STMP)

9.7.3.1 Special procedures may be established when a location requires special traffic handling to accommodate above normal traffic demand (for example, the Indianapolis 500, Super Bowl, etc.) or reduced airport capacity (for example, airport runway/taxiway closures for airport construction). The special procedures may remain in effect until the problem has been resolved or until local traffic management procedures can handle the situation and a need for special handling no longer exists.

9.7.3.2 There will be two methods available for obtaining slot reservations through the ATCSCC: the web interface and the touch−tone interface. If these methods are used, a NOTAM will be issued relaying the website address and toll free telephone number. Be sure to check current NOTAMs to determine: what airports are included in the STMP, the dates and times reservations are required, the time limits for reservation requests, the point of contact for reservations, and any other instructions.

NOTE−
The telephone numbers/web address to obtain a STMP slot are:
1.Touch−tone interface: 1−800−875−9755.
2. Web interface: www.fly.faa.gov.
3. Trouble number: 540−422−4246.

9.7.4 Users may contact the ARO at (540) 422−4246 if they have a problem making a reservation or have a question concerning the slot controlled airport/ STMP regulations or procedures.

9.7.5 Making Reservations

9.7.5.1 Internet Users. Detailed information and User Instruction Guides for using the Web interface to the reservation systems are available on the websites for the slot controlled airports (e−CVRS), http://www.fly.faa.gov/ecvrs; and STMPs (e−STMP), http://www.fly.faa.gov/estmp.

9.7.5.2 Telephone users. When using the telephone to make a reservation, you are prompted for input of information about what you wish to do. All input is accomplished using the keypad on the telephone. The only problem with a telephone is that most keys have a letter and number associated with them. When the system asks for a date or time, it is expecting an input of numbers. A problem arises when entering an aircraft call sign or tail number. The system does not detect if you are entering a letter (alpha character) or a number. Therefore, when entering an aircraft call sign or tail number two keys are used to represent each letter or number. When entering a number, precede the number you wish by the number 0 (zero) i.e., 01, 02, 03, 04, ... If you wish to enter a letter, first press the key on which the letter appears and then press 1, 2, or 3, depending upon whether the letter you desire is the first, second, or third letter on that key. For example to enter the letter "N" first press the "6" key because "N" is on that key, then press the "2" key because the letter "N" is the second letter on the "6" key. Since there are no keys for the letters "Q" and "Z" e−CVRS pretends they are on the number "1" key. Therefore, to enter the letter "Q", press 11, and to enter the letter "Z" press 12.

NOTE−
Users are reminded to enter the "N" character with their tail numbers. (See TBL GEN 3.3−4 and TBL GEN 3.3−5 Helpful Key Entries).

TBL GEN 3.3−4

Codes for Call Sign/Tail Number Input Only			
A−21	J−51	S−73	1-01
B−22	K−52	T−81	2−02
C−23	L−53	U−82	3−03
D−31	M−61	V−83	4−04
E−32	N−62	W−91	5−05
F−33	O−63	X−92	6−06
G−41	P−71	Y−93	7−07
H−42	Q−11	Z−12	8−08
I−43	R−72	0−00	9−09

TBL GEN 3.3−5
Helpful Key Entries

#	After entering a call sign/tail number, depressing the ''pound key" (#) twice will indicate the end of the entry.
*2	Will take the user back to the start of the process.
*3	Will repeat the call sign/tail number used in a previous reservation.
*5	Will repeat the previous question.
*8	Tutorial Mode: In the tutorial mode each prompt for input includes a more detailed description of what is expected as input. *8 is a toggle on/off switch. If you are in tutorial mode and enter *8, you will return to the normal mode.
*0	Expert Mode: In the expert mode, each prompt for input is brief with little or no explanation. Expert mode is also on/off toggle.

and produce forecasts. The FAA and NWS disseminate meteorological observations, analyses, and forecasts through a variety of systems. In addition, the Federal Government is the only approval authority for sources of weather observations; for example, contract towers and airport operators may be approved by the Federal Government to provide weather observations.

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

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

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

3.7 Graphical Forecasts for Aviation (GFA)

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

3.7.2 Weather Products.

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

a) Terminal Aerodrome Forecast (TAF)

b) Ceiling & Visibility (CIG/VIS)

c) Clouds

d) Precipitation / Weather (PCPN/WX)

e) Thunderstorm (TS)

f) Winds

g) Turbulence

h) Ice

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

a) METAR

b) Precipitation/Weather (PCPN/WX)

c) Ceiling & Visibility (CIG/VIS)

d) Pilot Reports (PIREP)

e) Radar & Satellite (RAD/SAT)

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

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

FIG GEN 3.5–2
Aviation Surface Forecast

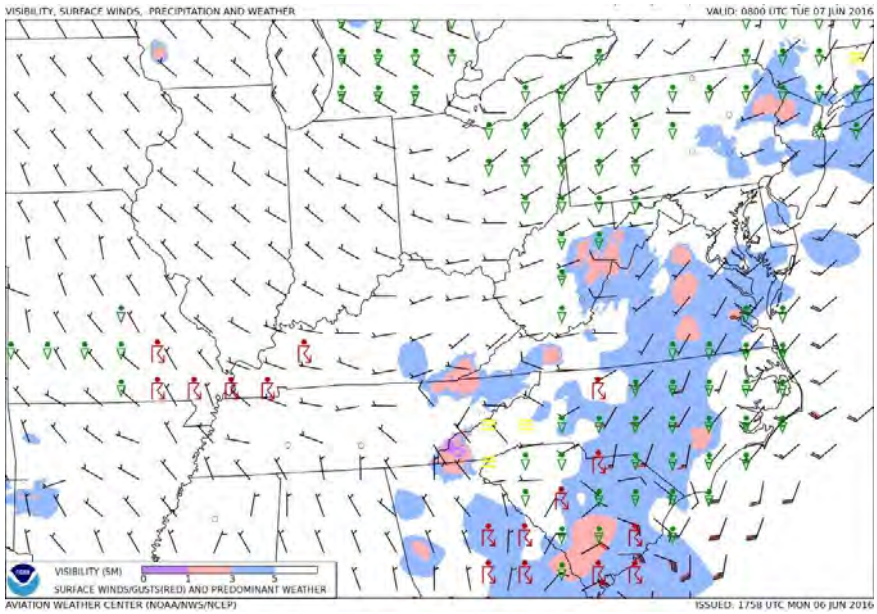
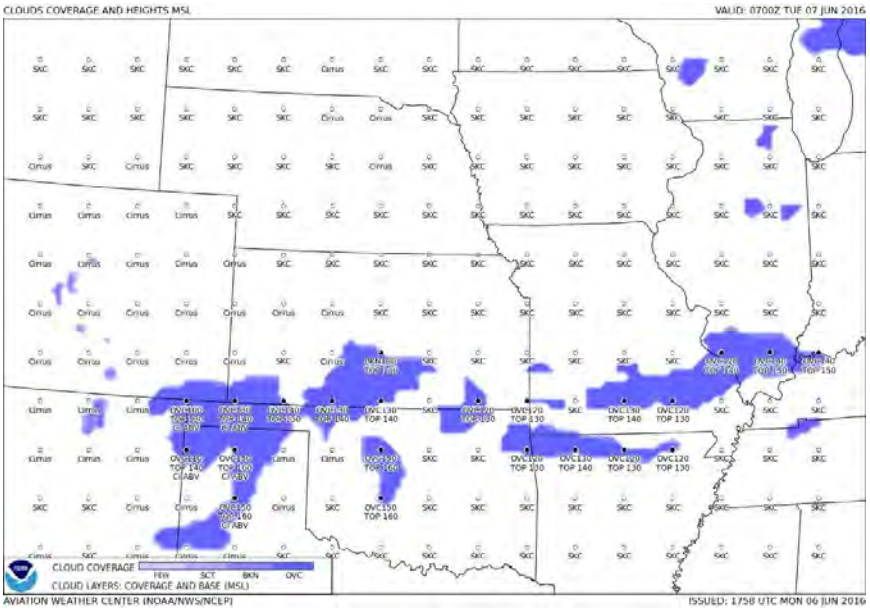


FIG GEN 3.5–3
Aviation Cloud Forecast



3.8 Preflight Briefing

3.8.1 Flight Service Stations are the primary source of obtaining preflight briefings and inflight weather information. Flight Service Specialists are qualified and certificated by the NWS as Pilot Weather Briefers. They are not authorized to make original forecasts, but are authorized to translate and interpret available forecasts (TAF) and reports (METAR/SPECI) directly into terms describing the weather conditions which you can expect along your flight route and at your destination. Available aviation weather reports and forecasts are displayed at each FSS. Some of the larger FSSs provide a separate display for pilot use. Pilots should feel free to use these self–briefing displays where available, or to ask for a briefing or for assistance from the specialist on duty. Three basic types of preflight briefings are available: Standard Briefing, Abbreviated Briefing, and Outlook Briefing. You should specify to the briefer the type of briefing you want, along with appropriate background information. This will enable the briefer to tailor the information to your intended flight. The following paragraphs describe the types of briefings available and the information provided in each.

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

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

3.8.2.2 VFR Flight Not Recommended. When VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that, in the briefer's judgment, would make flight

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

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

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

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

3.8.2.4 Current Conditions. Reported weather conditions applicable to the flight will be summarized from all available sources; e.g., METARs, PIREPs, RAREPs. This element may be omitted if the proposed time of departure is beyond two hours, unless the information is specifically requested by the pilot.

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

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

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

3.8.2.8 Notices to Airmen (NOTAMs)

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

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

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

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

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

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

2. *NOTAM (D) information and Flight Data Center NOTAMs which have been published in the Notices to Airmen Publication are not included in pilot briefings unless a review of this publication is specifically requested by the pilot. For complete flight information you are urged to review both the Notices to Airmen Publication and the Chart Supplement U.S. in addition to obtaining a briefing.*

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

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

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

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

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

b) A review of the Notices to Airmen publication for pertinent NOTAMs and Special Notices.

c) Approximate density altitude data.

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

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

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

g) Other assistance as required.

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

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

3.8.5 Inflight Briefing. You are encouraged to obtain your preflight briefing by telephone or in person before departure. In those cases where you need to obtain a preflight briefing or an update to a previous briefing by radio, you should contact the nearest FSS to obtain this information. After communications have been established, advise the specialist of the type briefing you require and provide appropriate background information. You will be provided information as specified in the above paragraphs, depending on the type of briefing requested. En Route advisories tailored to the phase of flight that begins after climb-out and ends with descent to land are provided upon pilot request. Pilots are encouraged to provide a continuous exchange of information on weather, winds, turbulence, flight visibility, icing, etc., between pilots and inflight specialists. Pilots should report good weather as well as bad, and confirm expected conditions as well as unexpected. Remember that weather conditions can change rapidly and that a “go or no go” decision, as mentioned in paragraph 3.8.2.2, should be assessed at all phases of flight.

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

3.9 Inflight Aviation Weather Advisories

3.9.1 Background

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

3.9.1.2 There are four types of inflight aviation weather advisories: the SIGMET, the Convective SIGMET, the AIRMET (text or graphical product), and the Center Weather Advisory (CWA). All of these advisories use the same location identifiers (either

VORs, airports, or well−known geographic areas) to describe the hazardous weather areas.

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

3.9.2 SIGMET (WS)/AIRMET(WA or G−AIRMET)

SIGMETs/AIRMET text (WA) products are issued corresponding to the Area Forecast (FA) areas described in FIG GEN 3.5−4 and FIG GEN 3.5−5. The maximum forecast period is 4 hours for SIGMETs and 6 hours for AIRMETs. The G−AIRMET is issued over the CONUS every 6 hours, valid at 3−hour increments through 12 hours, with optional forecasts possible during the first 6 hours. The first 6 hours of the G−AIRMET correspond to the 6−hour period of the AIRMET. SIGMETS and AIRMETS are considered "widespread" because they must be either affecting or be forecasted to affect an area of at least 3,000 square miles at any one time. However, if the total area to be affected during the forecast period is very large, it could be that in actuality only a small portion of this total area would be affected at any one time.

3.9.2.1 SIGMETs/AIRMET (or G−AIRMET) for the conterminous U.S. (CONUS)

SIGMETs/AIRMET text products for the CONUS are issued corresponding to the areas in FIG GEN 3.5−4. The maximum forecast period for a CONUS SIGMET is 4 hours and 6 hours for CONUS AIRMETs. The G−AIRMET is issued over the CONUS every 6 hours, valid at 3−hour increments through 12 hours with optional forecasts possible during the first 6 hours. The first 6 hours of the G−AIRMET correspond to the 6−hour period of the AIRMET. SIGMETs and AIRMETs are considered "widespread" because they must be either affecting or be forecasted to affect an area of at least 3,000 square miles at any one time. However, if the total area to be affected during the forecast period is very large, it could be that in actuality only a small portion of this total area would be affected at any one time. Only SIGMETs for the CONUS are for non-convective weather. The U.S. issues a special category of SIGMETs for convective weather called Convective SIGMETs.

3.9.2.2 SIGMETs/AIRMETs for Alaska

Alaska SIGMETs are valid for up to 4 hours, except for Volcanic Ash Cloud SIGMETs which are valid for up to 6 hours. Alaska AIRMETs are valid for up to 8 hours.

3.9.2.3 SIGMETs/AIRMETs for Hawaii and U.S. FIRs in the Gulf of Mexico, Caribbean, Western Atlantic and Eastern and Central Pacific Oceans

These SIGMETs are valid for up to 4 hours, except SIGMETs for Tropical Cyclones and Volcanic Ash Clouds, which are valid for up to 6 hours. AIRMETs are issued for the Hawaiian Islands and are valid for up to 6 hours. No AIRMETs are issued for U.S. FIRs in the the Gulf of Mexico, Caribbean, Western Atlantic and Pacific Oceans.

3.9.3 SIGMET

A SIGMET advises of weather that is potentially hazardous to all aircraft. SIGMETs are unscheduled products that are valid for 4 hours. However, SIGMETs associated with tropical cyclones and volcanic ash clouds are valid for 6 hours. Unscheduled updates and corrections are issued as necessary.

3.9.3.1 In the CONUS, SIGMETs are issued when the following phenomena occur or are expected to occur:

a) Severe icing not associated with thunderstorms.

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

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

d) Volcanic ash.

3.9.3.2 In Alaska and Hawaii, SIGMETs are also issued for:

a) Tornadoes.

b) Lines of thunderstorms.

c) Embedded thunderstorms.

d) Hail greater than or equal to $^{3}/_{4}$ inch in diameter.

3.9.3.3 SIGMETs are identified by an alphabetic designator from November through Yankee excluding Sierra and Tango. (Sierra, Tango, and Zulu are reserved for AIRMET text [WA] products; G−AIRMETS do not use the Sierra, Tango, or Zulu designators.) The first issuance of a SIGMET will be labeled as UWS (Urgent Weather SIGMET). Subsequent issuances are at the forecasters discre-

tion. Issuance for the same phenomenon will be sequentially numbered, using the original designator until the phenomenon ends. For example, the first issuance in the Chicago (CHI) FA area for phenomenon moving from the Salt Lake City (SLC) FA area will be SIGMET Papa 3, if the previous two issuances, Papa 1 and Papa 2, had been in the SLC FA area. Note that no two different phenomena across the country can have the same alphabetic designator at the same time.

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

3.9.4 Convective SIGMET (WST)

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

a) Severe thunderstorm due to:

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

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

3) Tornadoes.

b) Embedded thunderstorms.

c) A line of thunderstorms.

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

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

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

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

FIG GEN 3.5−4

SIGMET and AIRMET Locations − Conterminous United States

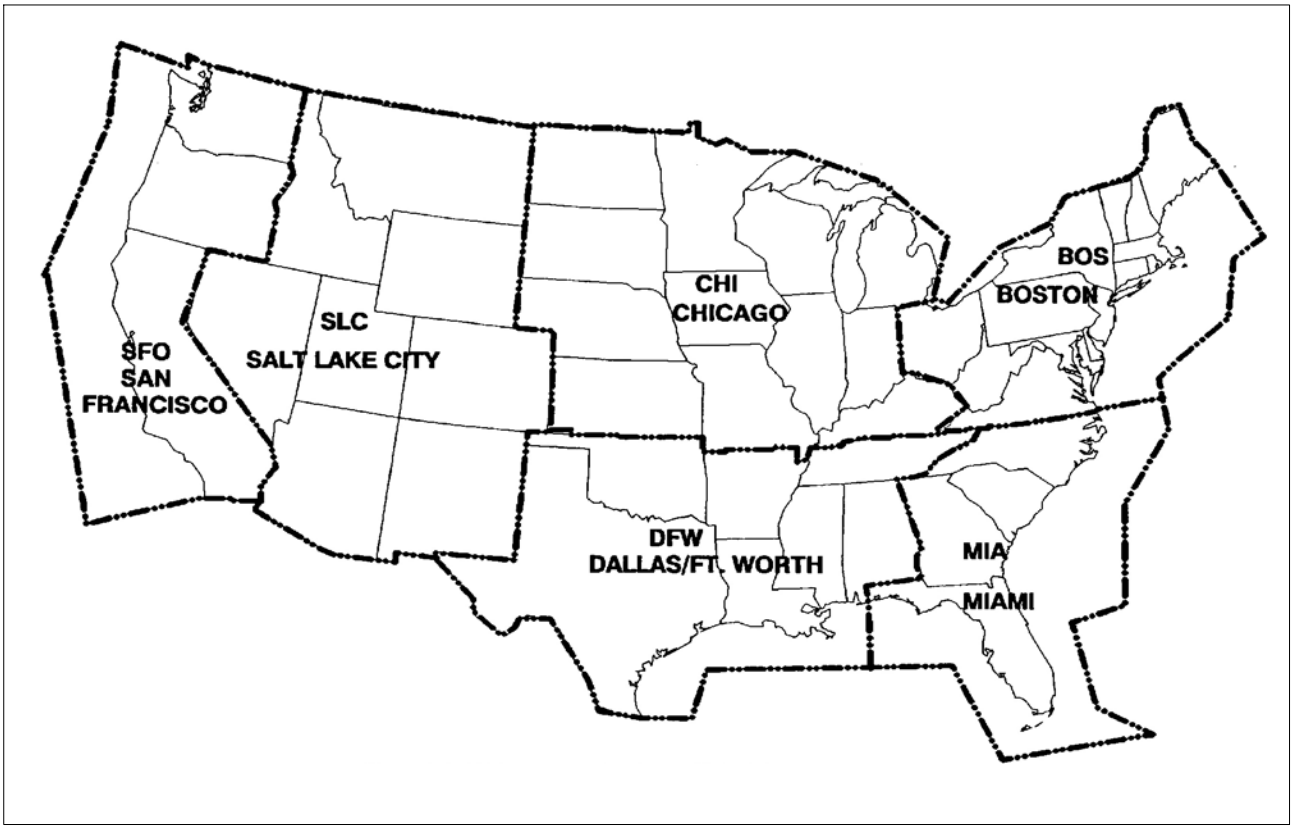
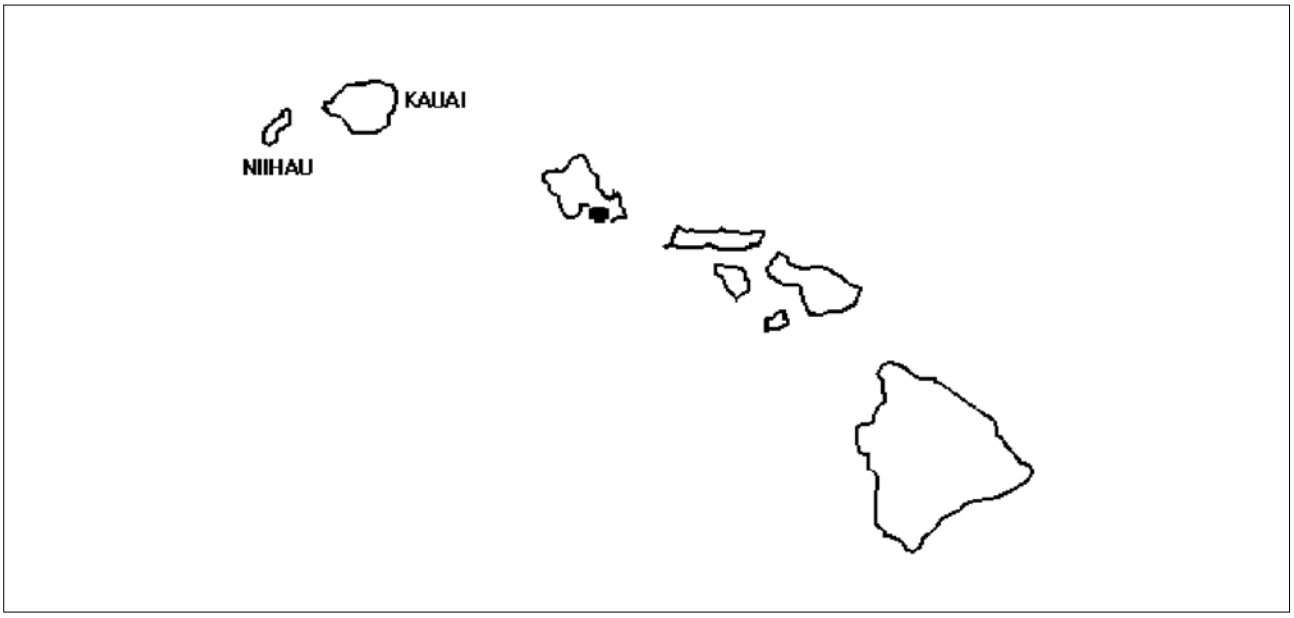


FIG GEN 3.5−5

Hawaii Area Forecast Locations



3.9.5 SIGMET Outside the CONUS

3.9.5.1 Three NWS offices have been designated by ICAO as Meteorological Watch Offices (MWOs). These offices are responsible for issuing SIGMETs for designated areas outside the CONUS that include Alaska, Hawaii, portions of the Atlantic and Pacific Oceans, and the Gulf of Mexico.

3.9.5.2 The offices which issue International SIGMETs are:

a) The AWC in Kansas City, Missouri.

b) The AAWU in Anchorage, Alaska.

c) The WFO in Honolulu, Hawaii.

3.9.5.3 SIGMETs for outside the CONUS are issued for 6 hours for volcanic ash clouds, 6 hours for tropical cyclones (e.g. hurricanes and tropical storms), and 4 hours for all other events. Like the CONUS SIGMETs, SIGMETs for outside the CONUS are also identified by an alphabetic designator from Alpha through Mike and are numbered sequentially until that weather phenomenon ends. The criteria for an international SIGMET are:

a) Thunderstorms occurring in lines, embedded in clouds, or in large areas producing tornadoes or large hail.

b) Tropical cyclones.

c) Severe icing.

d) Severe or extreme turbulence.

e) Dust storms and sandstorms lowering visibilities to less than 3 miles.

f) Volcanic ash.

EXAMPLE−
Example of SIGMET Outside the U.S.:
WSNT06 KKCI 022014
SIGA0F
KZMA KZNY TJZS SIGMET FOXTROT 3 VALID 022015/030015 KKCI− MIAMI OCEANIC FIR NEW YORK OCEANIC FIR SAN JUAN FIR FRQ TS WI AREA BOUNDED BY 2711N6807W 2156N6654W 2220N7040W 2602N7208W 2711N6807W. TOPS TO FL470. MOV NE 15KT. WKN. BASED ON SAT AND LTG OBS.
MOSHER

3.9.6 AIRMET

3.9.6.1 AIRMETs (WAs) are advisories of significant weather phenomena but describe conditions at intensities lower than those which require the issuance of SIGMETs. AIRMETs are intended for dissemination to all pilots in the preflight and en route phase of flight to enhance safety. AIRMET information is available in two formats: text bulletins (WA) and graphics (G−AIRMET). Both formats meet the criteria of paragraph 3.6.9 and are issued on a scheduled basis every 6 hours beginning at 0145 UTC during Central Daylight Time and at 0245 UTC during Central Standard Time. Unscheduled updates and corrections are issued as necessary. Each AIRMET Bulletin contains any current AIRMETs in effect and an outlook for conditions expected after the AIRMET valid period. AIRMETs contain details about IFR, extensive mountain obscuration, turbulence, strong surface winds, icing, and freezing levels.

3.9.6.2 There are three AIRMETs: Sierra, Tango, and Zulu. After the first issuance each day, scheduled or unscheduled bulletins are numbered sequentially for easier identification.

a) AIRMET Sierra describes IFR conditions and/or extensive mountain obscurations.

b) AIRMET Tango describes moderate turbulence, sustained surface winds of 30 knots or greater, and/or nonconvective low−level wind shear.

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

EXAMPLE−
Example of AIRMET Sierra issued for the Chicago FA area:
CHIS WA 131445
AIRMET SIERRA UPDT 2 FOR IFR AND MTN OBSCN VALID UNTIL 132100.
AIRMET IFR...KY
FROM 20SSW HNN TO HMV TO 50ENE DYR TO20SSW HNN
CIG BLW 010/VIS BLW 3SM PCPN/BR/FG. CONDS ENDG BY 18Z.
.
AIRMET IFR....MN LS
FROM INL TO 70W YQT TO 40ENE DLH TO 30WNW DLH TO 50SE GFK TO 20 ENE GFK TO INL
CIG BLW 010/VIS BLW 3SM BR. CONDS ENDG 15−18Z.
.
AIRMET IFR....KS
FROM 30N SLN TO 60E ICT TO 40S ICT TO 50W LBL TO 30SSW GLD TO 30N SLN
CIG BLW 010/VIS BLW 3SM PCPN/BR/FG. CONDS

ENDG 15−18Z.
.
AIRMET MTN OBSCN...KY TN
FROM HNN TO HMV TO GQO TO LOZ TO HNN
MTN OBSC BY CLDS/PCPN/BR. CONDS CONTG
BYD 21Z THRU 03Z.
.....

EXAMPLE−
Example of AIRMET Tango issued for the Salt Lake City FA area:
SLCT WA 131445
AIRMET TANGO UPDT 2 FOR TURB VALID UNTIL 131200.
AIRMET TURB...MT
FROM 40NW HVR TO 50SE BIL TO 60E DLN TO 60SW YQL TO 40NW HVR
MOD TURB BLW 150. CONDS DVLPG 18−21Z. CONDS CONTG BYD 21Z THRU 03Z.
.
AIRMET TURB....ID MT WY NV UT CO
FROM 100SE MLS TO 50SSW BFF TO 20SW BTY TO 40SW BAM TO 100SE MLS
MOD TURB BTN FL310 AND FL410. CONDS CONTG BYD 21Z ENDG 21−00Z.
.
AIRMET TURB...NV AZ NM CA AND CSTL WTRS
FROM 100WSW ENI TO 40W BTY TO 40S LAS TO 30ESE TBE TO INK TO ELP TO 50S TUS TO BZA TO 20S MZB TO 150SW PYE TO 100WSW ENI
MOD TURB BTWN FL210 AND FL380. CONDS CONTG BYD 21Z THRU 03Z.
....

EXAMPLE−
Example of AIRMET Zulu issued for the San Francisco FA area:
SFOZ WA 131445
AIRMET ZULU UPDT 2 FOR ICE AND FRZLVL VALID UNTIL 132100.
NO SGFNT ICE EXP OUTSIDE OF CNVTV ACT.
.
FRZLVL....RANGING FROM SFC−105 ACRS AREA
MULT FRZLVL BLW 080 BOUNDED BY 40SE YDC−60NNW GEG−60SW MLP−30WSW BKE−20SW BAM−70W BAM−40SW YKM−40E HUH−40SE YDC
SFC ALG 20NNW HUH−30SSE HUH−60S SEA 50NW LKV−60WNWOAL−30SW OAL
040 ALG 40W HUH−30W HUH−30NNW SEA−40N PDX−20NNW DSD
080 ALG 160NW FOT−80SW ONP−50SSW EUG 40SSE OED−50SSE CZQ−60E EHF−40WSW LAS
....

3.9.6.3 Graphical AIRMETs (G−AIRMETs), found on the Aviation Weather Center webpage at http://aviationweather.gov, are graphical forecasts of en−route weather hazards valid at discrete times no more than 3 hours apart for a period of up to 12 hours into the future (for example, 00, 03, 06, 09, and 12 hours). Additional forecasts may be inserted during the first 6 hours (for example, 01, 02, 04, and 05). 00 hour represents the initial conditions, and the subsequent graphics depict the area affected by the particular hazard at that valid time. Forecasts valid at 00 through 06 hours correspond to the text AIRMET bulletin. Forecasts valid at 06 through 12 hours correspond to the text bulletin outlook. G−AIRMET depicts the following en route aviation weather hazards:

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

b) Mountain obscuration

c) Icing

d) Freezing level

e) Turbulence

f) Low level wind shear (LLWS)

g) Strong surface winds.

G−AIRMETs are snap shots at discrete time intervals as defined above. The text AIRMET is the result of the production of the G−AIRMET but provided in a time smear for a 6hr valid period. G−AIRMETs provide a higher forecast resolution than text AIRMET products. Since G−AIRMETs and text AIRMETs are created from the same forecast “production” process, there exists perfect consistency between the two. Using the two together will provide clarity of the area impacted by the weather hazard and improve situational awareness and decision making.

Interpolation of time periods between G−AIRMET valid times: Users must keep in mind when using the G−AIRMET that if a 00 hour forecast shows no significant weather and a 03 hour forecast shows hazardous weather, they must assume a change is occurring during the period between the two forecasts. It should be taken into consideration that the hazardous weather starts immediately after the 00 hour forecast unless there is a defined initiation or ending time for the hazardous weather. The same

would apply after the 03 hour forecast. The user should assume the hazardous weather condition is occurring between the snap shots unless informed otherwise. For example, if a 00 hour forecast shows no hazard, a 03 hour forecast shows the presence of hazardous weather, and a 06 hour forecast shows no hazard, the user should assume the hazard exists from the 0001 hour to the 0559 hour time period.

EXAMPLE−
See FIG GEN 3.5−6 for an example of the G−AIRMET graphical product.

3.9.7 Watch Notification Messages

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

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

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

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

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

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

3.9.7.3 Public Tornado Watch Notification Messages describe areas where the threat of tornadoes exists. A Public Tornado Watch Notification Message contains the area description and axis, watch expiration time, the term “damaging tornadoes,” a description of the largest hail size and strongest thunderstorm wind gusts expected, the definition of the watch, a call to action statement, a list of other valid watches, a brief discussion of meteorological reasoning and technical information for the aviation community. SPC may enhance a Public Tornado Watch Notification Message by using the words “THIS IS A PARTICULARLY DANGEROUS SITUATION” when there is a likelihood of multiple strong (damage of EF2 or EF3) or violent (damage of EF4 or EF5) tornadoes.

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

EXAMPLE−
Example of a Public Tornado Watch Notification Message:
WWUS20 KWNS 050550

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

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

3.9.8 Center Weather Advisories (CWA)

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

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

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

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

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

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

4. Categorical Outlooks

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

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

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

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

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

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

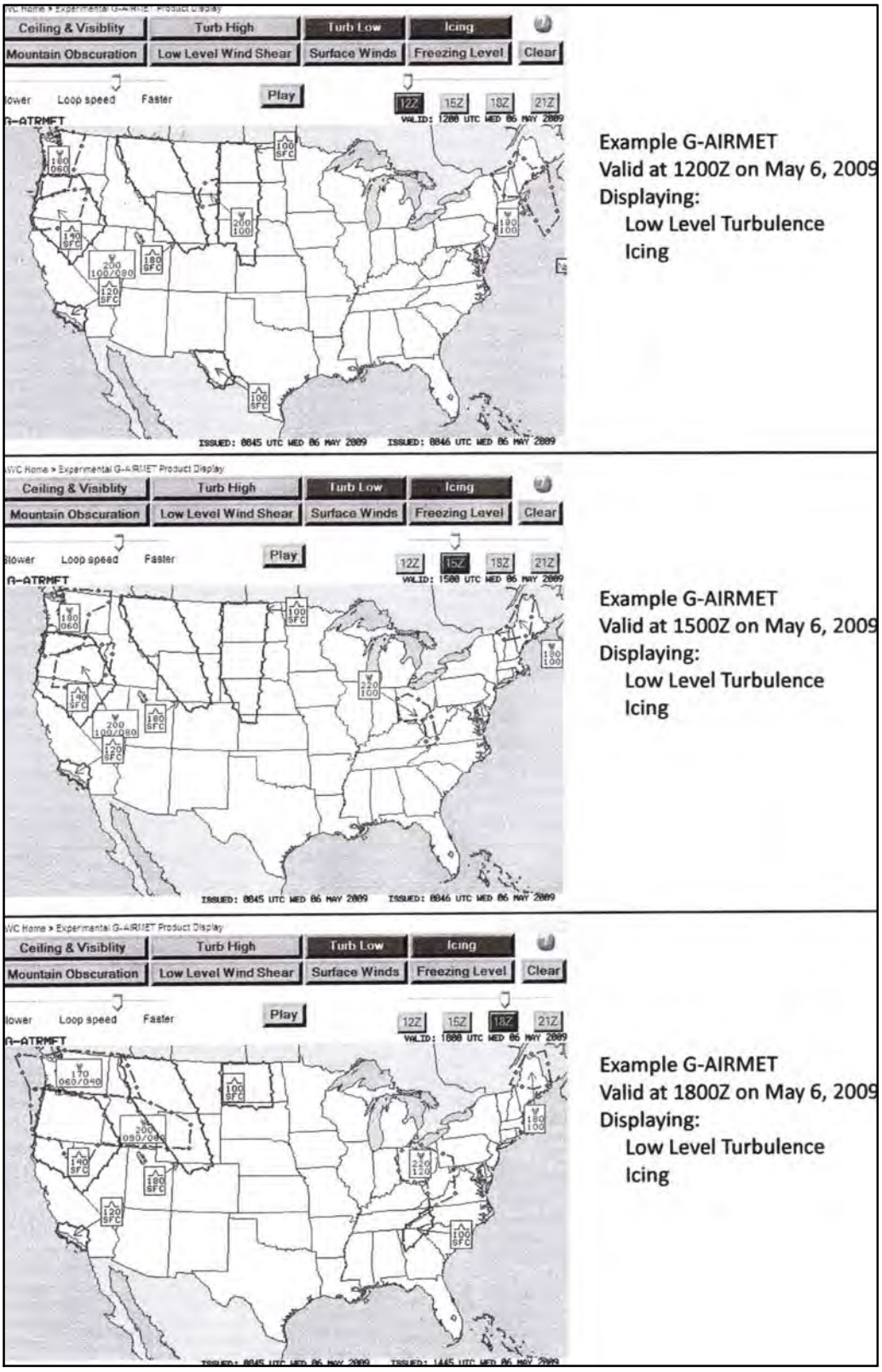
EXAMPLE–
LIFR CIG–low IFR due to low ceiling.

IFR FG–IFR due to visibility restricted by fog.

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

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

FIG GEN 3.5–6
G–AIRMET Graphical Product



5. Telephone Information Briefing Service (TIBS)

5.1 TIBS, provided by FSS, is a system of automated telephone recordings of meteorological and aeronautical information available throughout the United States. Based on the specific needs of each area, TIBS provides route and/or area briefings in addition to airspace procedures and special announcements concerning aviation interests that may be available. Depending on user demand, other items may be provided; for example, surface weather observations, terminal forecasts, wind and temperatures aloft forecast, etc.

6. Inflight Weather Broadcasts

6.1 Weather Advisory Broadcasts. ARTCCs' broadcast a Severe Weather Forecast Alert (AWW), Convective SIGMET, or CWA alert once on all frequencies, except emergency, when any part of the area described is within 150 miles of the airspace under their jurisdiction. These broadcasts contain SIGMET or CWA identification and a brief description of the weather activity and general area affected.

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

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

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

NOTE−
1. *Terminal control facilities have the option to limit the AWW, Convective SIGMET, SIGMET, or CWA broadcast as follows: local control and approach control positions may opt to broadcast SIGMET or CWA alerts only when any part of the area described is within 50 miles of the airspace under their jurisdiction.*

2. *In areas where HIWAS is available, ARTCC, Terminal ATC, and FSS facilities do not broadcast inflight advisories as described in this paragraph.*

6.2 Hazardous Inflight Weather Advisory Service (HIWAS). HIWAS is an automated, continuous broadcast of inflight weather advisories, provided by FSS over select VOR outlets, which include the following weather products: AWW, SIGMET, Convective SIGMET, CWA, AIRMET (text [WA] or graphical [G−AIRMET] products), and urgent PIREP. HIWAS is available throughout the conterminous United States as an additional source of hazardous weather information. HIWAS does not replace preflight or inflight weather briefings from FSS. Pilots should call FSS if there are any questions about weather that is different than forecasted or if the HIWAS broadcast appears to be in error.

NOTE−
In areas where HIWAS is available, ARTCC, Terminal ATC, and FSS facilities do not broadcast inflight advisories as described in the preceding paragraph.

6.2.1 Where HIWAS is available, a HIWAS alert will be broadcast once on all frequencies, except emergency frequencies, upon receipt by ARTCC and terminal facilities, which will include an alert announcement, frequency instruction, number, and type of advisory updated; for example, AWW, SIGMET, Convective SIGMET, or CWA.

EXAMPLE−
Attention all aircraft. Hazardous weather information (SIGMET, Convective SIGMET, AIRMET (text [WA] or graphical [G−AIRMET] product), urgent pilot weather report [UUA], or Center Weather Advisory [CWA]), (number or numbers) for (geographical area) available on HIWAS or Flight Service frequencies.

6.2.2 In HIWAS ARTCC areas, FSSs will broadcast a HIWAS update announcement once on all frequencies, except emergency frequencies, upon the addition of an update to the HIWAS broadcast. Included in the broadcast will be the type of advisory updated; for example, AWW, SIGMET, Convective SIGMET, CWA, etc.

EXAMPLE−
Attention all aircraft. Hazardous weather information for (geographical area) available from Flight Service.

6.2.3 HIWAS availability is notated with VOR listings in the Chart Supplement U.S., and is shown by symbols on IFR Enroute Low Altitude Charts and VFR Sectional Charts. The symbol depiction is identified in the chart legend.

7. Flight Information Services (FIS)

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

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

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

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

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

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

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

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

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

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

7.1.4.1 Before using FIS for inflight operations, pilots and other flight crewmembers should become familiar with the operation of the FIS system to be used, the airborne equipment to be used, including its system architecture, airborne system components, coverage service volume and other limitations of the particular system, modes of operation and indications of various system failures. Users should also be familiar with the specific content and format of the services available from the FIS provider(s). Sources

of information that may provide this specific guidance include manufacturer's manuals, training programs, and reference guides.

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

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

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

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

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

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

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

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

b) The following list represents the initial suite of text and graphical products available through FIS−B and provided free−of−charge. Detailed information concerning FIS−B meteorological products can be found in Advisory Circular 00−45, Aviation Weather Services, and AC 00-63, Use of Cockpit Displays of Digital Weather and Aeronautical Information. Information on Special Use Airspace (SUA), Temporary Flight Restriction (TFR), and Notice to Airmen (NOTAM) products can be found in Chapters ENR 1 and ENR 5 of this manual.

1) Text: Aviation Routine Weather Report (METAR) and Special Aviation Report (SPECI);

2) Text: Pilot Weather Report (PIREP);

3) Text: Winds and Temperatures Aloft;

4) Text: Terminal Aerodrome Forecast (TAF) and amendments;

5) Text: Notice to Airmen (NOTAM) Distant and Flight Data Center;

6) Text/Graphic: Airmen's Meteorological Conditions (AIRMET);

7) Text/Graphic: Significant Meteorological Conditions (SIGMET);

8) Text/Graphic: Convective SIGMET;

9) Text/Graphic: Special Use Airspace (SUA);

10) Text/Graphic: Temporary Flight Restriction (TFR) NOTAM; and

11) Graphic: NEXRAD Composite Reflectivity Products (Regional and National).

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

d) FIS−B products are updated and transmitted at specific intervals based primarily on product issuance criteria. Update intervals are defined as the rate at which the product data is available from the source for transmission. Transmission intervals are defined as the amount of time within which a new or updated product transmission must be completed and/or the rate or repetition interval at which the product is rebroadcast. Update and transmission intervals for each product are provided in TBL GEN 3.5−2.

e) Where applicable, FIS−B products include a look−ahead range expressed in nautical miles (NM) for three service domains: Airport Surface; Terminal Airspace; and Enroute/Gulf−of−Mexico (GOMEX). TBL GEN 3.5−3 provides service domain availability and look−ahead ranging for each FIS−B product.

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

g) FIS−B malfunctions not attributed to aircraft system failures or covered by active NOTAM should be reported by radio or telephone to the nearest FSS facility.

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

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

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

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

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

TBL GEN 3.5−2

FIS−B Over UAT Product Update and Transmission Intervals

Product	FIS-B Over UAT Service Update Intervals[1]	FIS-B Service Transmission Intervals[2]
AIRMET	As Available	5 minutes
Convective SIGMET	As Available	5 minutes
METARs/SPECIs	1 minute/As Available	5 minutes
NEXRAD Composite Reflectivity (CONUS)	15 minutes	15 minutes
NEXRAD Composite Reflectivity (Regional)	5 minutes	2.5 minutes
NOTAMs-D/FDC/TFR	As Available	10 minutes
PIREP	As Available	10 minutes
SIGMET	As Available	5 minutes
SUA Status	As Available	10 minutes
TAF/AMEND	8 Hours/As Available	10 minutes
Temperatures Aloft	12 Hours	10 minutes
Winds Aloft	12 Hours	10 minutes

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

[2] The Transmission Interval is the amount of time within which a new or updated product transmission must be completed and the rate or repetition interval at which the product is rebroadcast.

TBL GEN 3.5−3
Product Parameters for Low/Medium/High Altitude Tier Radios

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

8. Weather Observing Programs

8.1 Manual Observations. Aviation Routine Weather Reports (METAR) are taken at more than 600 locations in the U.S. With only a few exceptions, these stations are located at airport sites and most are staffed by FAA personnel who manually observe, perform calculations, and enter the observation into the distribution system. The format and coding of these observations are contained in FIG GEN 3.5−25 and FIG GEN 3.5−26.

8.2 Automated Weather Observing System (AWOS)

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

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

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

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

8.2.3.1 AWOS−A only reports altimeter setting.

NOTE−
Any other information is advisory only.

8.2.3.2 AWOS−AV reports altimeter and visibility;

NOTE−
Any other information is advisory only.

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

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

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

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

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

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

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

8.2.4 The information is transmitted over a discrete VHF radio frequency or the voice portion of a local NAVAID. AWOS transmissions on a discrete VHF radio frequency are engineered to be receivable to a maximum of 25 NM from the AWOS site and a maximum altitude of 10,000 feet AGL. At many locations, AWOS signals may be received on the surface of the airport, but local conditions may limit the maximum AWOS reception distance and/or altitude. The system transmits a 20− to 30−second weather message updated each minute. Pilots should monitor the designated frequency for the automated weather broadcast. A description of the broadcast is contained in Paragraph 8.3, Automated Weather Observing System (AWOS) Broadcasts. There is no two−way communication capability. Most AWOS sites also have a dial−up capability so that the minute−by−minute weather messages can be accessed via telephone.

8.2.5 AWOS information (system level, frequency, phone number) concerning specific locations is published, as the systems become operational, in the Chart Supplement U.S. and, where applicable, on published Instrument Approach Procedure (IAP) charts. Selected individual systems may be incorporated into nationwide data collection and dissemination networks in the future.

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

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

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

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

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

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

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

"Sandusky, Cowley Field automated weather observation."

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

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

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

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

8.3.2 Ceiling and Sky Cover

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

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

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

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

EXAMPLE–
"No clouds below one two thousand."

"Clear below one two thousand."

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

8.3.3 Visibility

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

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

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

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

8.3.5.1 Automated "remarks."

a) Variable visibility.

b) Density altitude.

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

a) Type and intensity of precipitation.

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

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

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

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

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

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

a) Automated "REMARKS":

1) Variable visibility.

2) Density altitude.

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

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

8.4 Automated Surface Observing System (ASOS)/Automated Weather Sensor System (AWSS)

8.4.1 The ASOS/AWSS is the primary surface weather observing system of the U.S. The program to install and operate these systems throughout the U.S. is a joint effort of the NWS, the FAA and the Department of Defense. AWSS is a follow–on program that provides identical data as ASOS. ASOS/AWSS is designed to support aviation operations and weather forecast activities. The ASOS/AWSS will provide continuous minute-by-minute observations and perform the basic observing functions necessary to generate an aviation routine weather report (METAR) and other aviation weather information. The information may be transmitted over a discrete VHF radio frequency or the voice portion of a local NAVAID. ASOS/AWSS transmissions on a discrete VHF radio frequency are engineered to be receivable to a maximum of 25 NM from the ASOS/AWSS site and a maximum altitude of 10,000 feet AGL. At many locations, ASOS/AWSS signals may be received on the surface of the airport, but local conditions may limit the maximum reception distance and/or altitude. While the automated system and the human may differ in their methods of data collection and interpretation, both produce an observation quite similar in form and content. For the "objective" elements such as pressure, ambient temperature, dew point temperature, wind, and precipitation accumulation, both the automated system and the observer use a fixed location and time-averaging technique. The quantitative differences between the observer and the automated observation of these elements are negligible. For the "subjective" elements, however, observers use a fixed time, spatial averaging technique to describe the visual elements (sky condition, visibility and present weather), while the automated systems use a fixed location, time averaging technique. Although this is a fundamental change, the manual and automated techniques yield remarkably similar results within the limits of their respective capabilities. (See FIG GEN 3.5–25 and

FIG GEN 3.5−26, Key to Decode an ASOS/AWSS (METAR) Observation.

8.4.2 System Description

8.4.2.1 The ASOS/AWSS at each airport location consists of four main components:

a) Individual weather sensors.

b) Data collection and processing units.

c) Peripherals and displays.

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

8.4.3 Every ASOS/AWSS will contain the following basic set of sensors.

8.4.3.1 Cloud height indicator (one or possibly three).

8.4.3.2 Visibility sensor (one or possibly three).

8.4.3.3 Precipitation identification sensor.

8.4.3.4 Freezing rain sensor.

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

8.4.3.6 Ambient temperature/dew point temperature sensor.

8.4.3.7 Anemometer (wind direction and speed sensor).

8.4.3.8 Rainfall accumulation sensor.

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

8.4.4 The ASOS/AWSS data outlets include:

8.4.4.1 Those necessary for on−site airport users.

8.4.4.2 National communications networks.

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

NOTE−
Wind direction broadcast over FAA radios is in reference to magnetic north.

8.5 A comparison of weather observing programs and the elements observed by each are in TBL GEN 3.5−4, Weather Observing Programs.

8.6 Service Standards. During 1995, a government/industry team worked to comprehensively reassess the requirements for surface observations at the nation's airports. That work resulted in agreement on a set of service standards and the FAA and NWS ASOS sites to which the standards would apply. The term "Service Standards" refers to the level of detail in the weather observation. The service standards consist of four different levels of service (A, B, C, and D) as described below. Specific observational elements included in each service level are listed in TBL GEN 3.5−5, Weather Observation Service Standards.

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

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

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

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

8.6.4 Service Level B is a service in which weather observations consist of all elements provided under Service Level C, plus augmentation of additional data beyond the capability of the ASOS/AWSS. This category of airports includes smaller hubs or airports special in other ways that have worse than average

bad weather operations for thunderstorms and/or freezing/frozen precipitation, and/or that are remote airports.

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

TBL GEN 3.5−4
Weather Observing Programs

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

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

TBL GEN 3.5−5

Weather Observation Service Standards

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

9. Weather Radar Services

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

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

9.3 All En route Flight Advisory Service facilities and many Automated Flight Service Stations have equipment to directly access the radar displays from the individual weather radar sites. Specialists at these locations are trained to interpret the display for pilot briefing and inflight advisory services. The Center Weather Service Units located in the ARTCCs also have access to weather radar displays and provide support to all air traffic facilities within their center's area.

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

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

REFERENCE−
Pilot/Controller Glossary Term− Precipitation Radar Weather Descriptions.
AIP, Thunderstorms, GEN 3.5, Paragraph 27.
Chart Supplement U.S., Charts, NWS Upper Air Observing Stations and Weather Network for the location of specific radar sites.

10. ATC Inflight Weather Avoidance Assistance

10.1 ATC Radar Weather Display

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

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

10.1.2.1 "LIGHT" (< 30 dBZ)

10.1.2.2 "MODERATE" (30 to 40 dBZ)

10.1.2.3 "HEAVY" (> 40 to 50 dBZ)

10.1.2.4 "EXTREME" (> 50 dBZ)

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

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

10.1.4 ARTCC facilities normally use a Weather and Radar Processor (WARP) to display a mosaic of data obtained from multiple NEXRAD sites. There is a time delay between actual conditions and those displayed to the controller. For example, the precipitation data on the ARTCC controller's display could be up to 6 minutes old. When the WARP is not available, a second system, the narrowband Air Route Surveillance Radar (ARSR) can display two distinct levels of precipitation intensity that will be described to pilots as "MODERATE" (30 to 40 dBZ) and

"HEAVY TO EXTREME" (> 40 dBZ). The WARP processor is only used in ARTCC facilities.

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

10.2 Weather Avoidance Assistance

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

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

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

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

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

10.2.1.3 Request a new route to avoid the affected area.

10.2.1.4 Request a change of altitude.

10.2.1.5 Request radar vectors around the affected areas.

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

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

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

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

10.2.5.1 Proposed point where detour will commence.

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

10.2.5.3 Point where original route will be resumed.

10.2.5.4 Flight conditions (IFR or VFR).

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

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

10.2.6 To a large degree, the assistance that might be rendered by ATC will depend upon the weather information available to controllers. Due to the extremely transitory nature of severe weather situations, the controller's weather information may

be of only limited value if based on weather observed on radar only. Frequent updates by pilots giving specific information as to the area affected, altitudes, intensity, and nature of the severe weather can be of considerable value. Such reports are relayed by radio or phone to other pilots and controllers, and they also receive widespread teletypewriter dissemination.

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

10.3 ATC Severe Weather Avoidance Plans

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

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

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

10.4.1 See ENR 7.3, Paragraph 4, General Weather Deviation Procedures.

11. Notifications Required From Operators

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

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

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

12. Weather Observing Systems and Operating Procedures

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

13. Runway Visual Range (RVR)

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

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

13.1.1 A transmissometer projector and related items.

13.1.2 A transmissometer receiver (detector) and related items.

13.1.3 An analog recorder.

13.1.4 A signal data converter and related items.

13.1.5 A remote digital or remote display programmer.

13.2 The transmissometer projector and receiver are mounted on towers 250 feet apart. A known intensity

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

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

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

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

13.6 Approach categories with the corresponding minimum RVR values are listed in TBL GEN 3.5−6.

TBL GEN 3.5−6

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

* 1,400 feet with special equipment and authorization

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

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

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

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

13.8.1.2 A runway light intensity monitor (RLIM).

13.8.1.3 An ambient light sensor (ALS).

13.8.1.4 A data processor unit (DPU).

13.8.1.5 A controller display (CD).

13.8.2 The forward scatter meter is mounted on a 14−foot frangible pole. Infrared light is emitted from the transmitter and received by the receiver. Any obscuring matter such as rain, snow, dust, fog, haze, or smoke increases the amount of scattered light reaching the receiver. The resulting measurement along with inputs from the runway light intensity monitor and the ambient light sensor are forwarded to the DPU which calculates the proper RVR value. The RVR values are displayed locally and remotely on controller displays.

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

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

13.8.4.1 100−foot increments for products below 800 feet.

13.8.4.2 200−foot increments for products between 800 feet and 3,000 feet.

13.8.4.3 500−foot increments for products between 3,000 feet and 6,500 feet.

13.8.4.4 25−meter increments for products below 150 meters.

13.8.4.5 50–meter increments for products between 150 meters and 800 meters.

13.8.4.6 100–meter increments for products between 800 meters and 1,200 meters.

13.8.4.7 200–meter increments for products between 1,200 meters and 2,000 meters.

14. Reporting of Cloud Heights

14.1 Ceiling, by definition in Federal Aviation Regulations, and as used in Aviation Weather Reports and Forecasts, is the height above ground (or water) level of the lowest layer of clouds or obscuring phenomenon that is reported as "broken," "overcast," or "the vertical visibility into an obscuration." For example, an aerodrome forecast which reads "BKN030" refers to heights above ground level (AGL). An area forecast which reads "BKN030" states that the height is above mean sea level (MSL). See FIG GEN 3.5–23 for the Key to Routine Aviation Weather Reports and Forecasts for the definition of "broken," "overcast," and "obscuration."

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

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

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

15. Reporting Prevailing Visibility

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

15.2 Prevailing visibility is the greatest visibility equaled or exceeded throughout at least one–half the horizon circle, not necessarily contiguous. Segments of the horizon circle which may have a significantly different visibility may be reported in the remarks section of the weather report; i.e., the southeastern quadrant of the horizon circle may be determined to be 2 miles in mist while the remaining quadrants are determined to be 3 miles in mist.

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

16. Estimating Intensity of Rain and Ice Pellets

16.1 Rain

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

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

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

16.2 Ice Pellets

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

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

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

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

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

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

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

18. Pilot Weather Reports (PIREPs)

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

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

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

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

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

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

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

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

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

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

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

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

a portion of the report needs clarification, the ground station will request the information.

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

EXAMPLE–

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

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

EXAMPLE–

KCRW UA/OV KBKW 360015–KCRW/TM 1815/FL120/TP BE99/SK IMC/WX RA–/TA M08/WV 290030/TB LGT–MDT/IC LGT RIME/RM MDT MXD ICG DURC KROA NWBND FL080–100 1750Z.

Translation: from 15 miles north of Beckley VOR to Charleston VOR; time 1815 UTC; altitude 12,000 feet; type aircraft, BE–99; in clouds; rain; temperature minus 8 Celsius; wind 290 degrees magnetic at 30 knots; light to moderate turbulence; light rime icing during climb northwestbound from Roanoke, VA, between 8,000 and 10,000 feet at 1750 UTC.

TBL GEN 3.5–7

PIREP Element Code Chart

	PIREP ELEMENT	PIREP CODE	CONTENTS
1.	3–letter station identifier	XXX	Nearest weather reporting location to the reported phenomenon
2.	Report type	UA or UUA	Routine or urgent PIREP
3.	Location	/OV	In relation to a VOR
4.	Time	/TM	Coordinated Universal Time
5.	Altitude	/FL	Essential for turbulence and icing reports
6.	Type aircraft	/TP	Essential for turbulence and icing reports
7.	Sky cover	/SK	Cloud height and coverage (sky clear, few, scattered, broken, or overcast)
8.	Weather	/WX	Flight visibility, precipitation, restrictions to visibility, etc.
9.	Temperature	/TA	Degrees Celsius
10.	Wind	/WV	Direction in degrees magnetic north and speed in knots
11.	Turbulence	/TB	See paragraph 22.
12.	Icing	/IC	See paragraph 20.
13.	Remarks	/RM	For reporting elements not included or to clarify previously reported items

19. Mandatory MET Points

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

19.2 Mandatory MET Reporting Points Within the Houston FIR

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

19.3 Mandatory MET Reporting Points Within the Miami FIR

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

19.4 Mandatory MET Reporting Points Within the San Juan FIR

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

20. PIREPs Relating to Airframe Icing

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

20.2 A pilot can expect icing when flying in visible precipitation, such as rain or cloud droplets, and the temperature is between +02 and −10 degrees Celsius. When icing is detected, a pilot should do one of two things (particularly if the aircraft is not equipped with deicing equipment). The pilot should get out of the area of precipitation or go to an altitude where the temperature is above freezing. This "warmer" altitude may not always be a lower altitude. Proper preflight action includes obtaining information on the freezing level and the above−freezing levels in precipitation areas. Report the icing to an ATC or FSS facility, and if operating IFR, request new routing or altitude if icing will be a hazard. Be sure to give the type of aircraft to ATC when reporting icing. TBL GEN 3.5−8 describes how to report icing conditions.

TBL GEN 3.5−8

Intensity	Ice Accumulation
Trace	Ice becomes perceptible. Rate of accumulation slightly greater than rate of sublimation. Deicing/anti−icing equipment is not utilized unless encountered for an extended period of time (over 1 hour).
Light	The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti−icing equipment removes/prevents accumulation. It does not present a problem if the deicing/anti−icing equipment is used.
Moderate	The rate of accumulation is such that even short encounters become potentially hazardous and use of deicing/anti−icing equipment or diversion is necessary.
Severe	The rate of accumulation is such that ice protection systems fail to remove the accumulation of ice, or ice accumulates in locations not normally prone to icing, such as areas aft of protected surfaces and any other areas identified by the manufacturer. Immediate exit from the condition is necessary. *NOTE− Severe icing is aircraft dependent, as are the other categories of icing intensity. Severe icing may occur at any accumulation rate.*
Pilot Report: Aircraft Identification, Location, Time (UTC), Intensity of Type[1], Altitude/FL, Aircraft Type, Indicated Air Speed (IAS), and Outside Air Temperature (OAT)[2].	
[1]Rime or Clear Ice: Rime ice is a rough, milky, opaque ice formed by the instantaneous freezing of small supercooled water droplets. Clear ice is a glossy, clear, or translucent ice formed by the relatively slow freezing of large supercooled water droplets.	
[2]The Outside Air Temperature (OAT) should be requested by the FSS or ATC if not included in the PIREP.	

21. Definitions of Inflight Icing Terms

See TBL GEN 3.5−9, Icing Types, and TBL GEN 3.5−10, Icing Conditions.

TBL GEN 3.5−9

Icing Types

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

TBL GEN 3.5−10

Icing Conditions

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

22. PIREPs Relating to Turbulence

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

22.1.1 Aircraft location.

22.1.2 Time of occurrence in UTC.

22.1.3 Turbulence intensity.

22.1.4 Whether the turbulence occurred in or near clouds.

22.1.5 Aircraft altitude, or flight level.

22.1.6 Type of aircraft.

22.1.7 Duration of turbulence.

EXAMPLE−

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

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

22.2 Duration and classification of intensity should be made using TBL GEN 3.5−11, Turbulence Reporting Criteria Table.

TBL GEN 3.5−11

Turbulence Reporting Criteria Table

Intensity	Aircraft Reaction	Reaction inside Aircraft	Reporting Term−Definition
Light	Turbulence that momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw). Report as **Light Turbulence;** [1] or Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. Report as **Light Chop.**	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted, and little or no difficulty is encountered in walking.	Occasional−Less than $^{1}/_{3}$ of the time. Intermittent−$^{1}/_{3}$ to $^{2}/_{3}$. Continuous−More than $^{2}/_{3}$.
Moderate	Turbulence that is similar to Light Turbulence but of greater intensity. Changes in altitude and/or attitude occur, but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. Report as **Moderate Turbulence;** [1] or Turbulence that is similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. Report as **Moderate Chop.** [1]	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.	**NOTE** 1. Pilots should report location(s), time (UTC), intensity, whether in or near clouds, altitude, type of aircraft and, when applicable, duration of turbulence. 2. Duration may be based on time between two locations or over a single location. All locations should be readily identifiable. **EXAMPLES:** a. Over Omaha. 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707. b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.
Severe	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. Report as **Severe Turbulence.**[1]	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food service and walking are impossible.	
Extreme	Turbulence in which the aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. Report as **Extreme Turbulence.** [1]		

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

23. Wind Shear PIREPs

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

23.2 When describing conditions, the use of the terms "negative" or "positive" wind shear should be avoided. PIREPs of negative wind shear on final, intended to describe loss of airspeed and lift, have been interpreted to mean that no wind shear was encountered. The recommended method for wind shear reporting is to state the loss/gain of airspeed and the altitude(s) at which it was encountered.

EXAMPLE−

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

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

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

EXAMPLE−

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

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

24. Clear Air Turbulence (CAT) PIREPs

24.1 Clear air turbulence (CAT) has become a very serious operational factor to flight operations at all levels and especially to jet traffic flying in excess of 15,000 feet. The best available information on this phenomenon must come from pilots via the PIREP procedures. All pilots encountering CAT conditions are urgently requested to report time, location, and intensity (light, moderate, severe, or extreme) of the element to the FAA facility with which they are maintaining radio contact. If time and conditions permit, elements should be reported according to the standards for other PIREPs and position reports. See TBL GEN 3.5−11, Turbulence Reporting Criteria Table.

25. Microbursts

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

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

25.3 The life cycle of a microburst as it descends in a convective rain shaft is seen in FIG GEN 3.5−7, Evolution of a Microburst. An important consideration for pilots is the fact that the microburst intensifies for about 5 minutes after it strikes the ground.

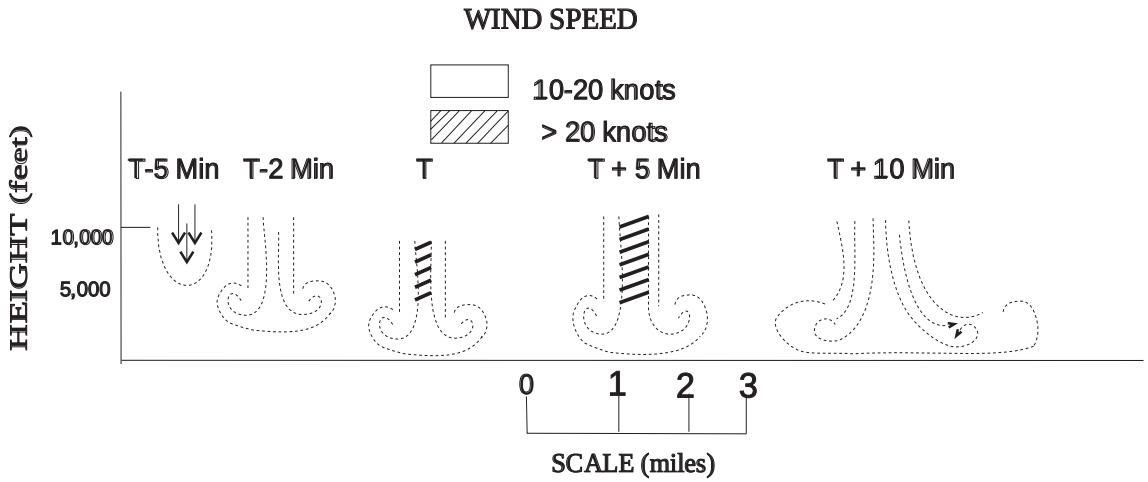
25.4 Characteristics of microbursts include:

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

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

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

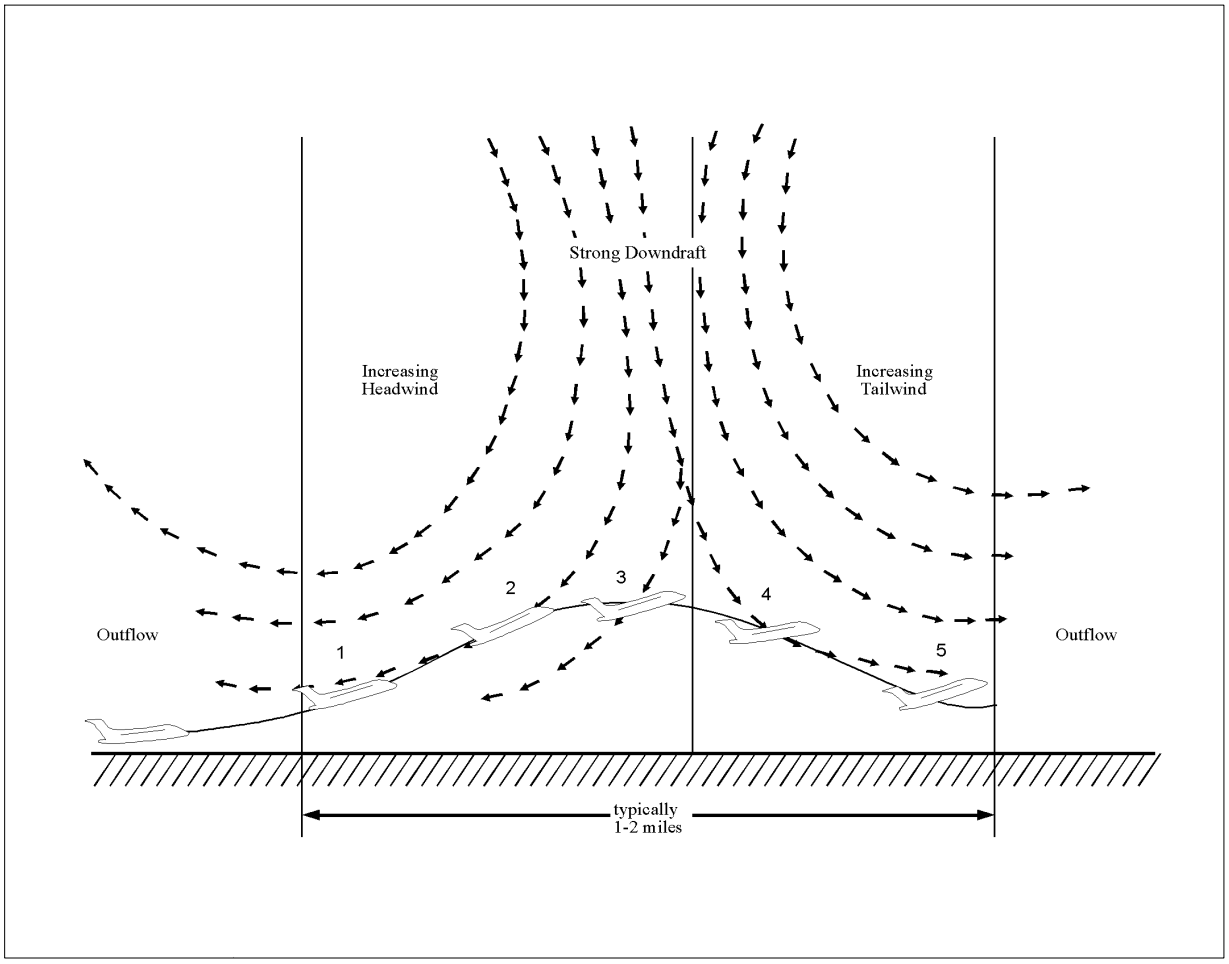
FIG GEN 3.5−7
Evolution of a Microburst



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

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

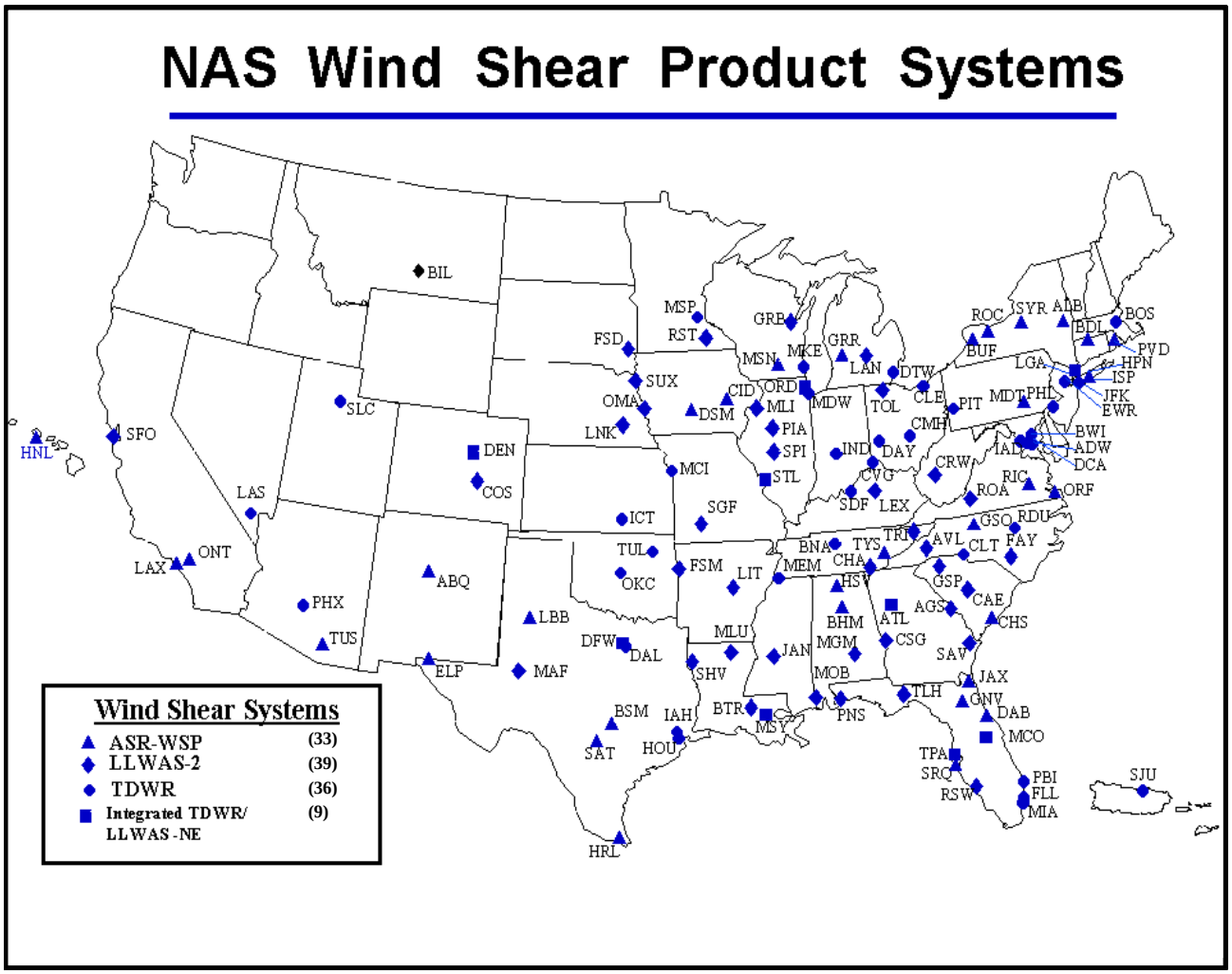
FIG GEN 3.5−8
Microburst Encounter During Takeoff



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

25.5 Microburst wind shear may create a severe hazard for aircraft within 1,000 feet of the ground, particularly during the approach to landing and landing and take−off phases. The impact of a microburst on aircraft which have the unfortunate experience of penetrating one is characterized in FIG GEN 3.5−8. The aircraft may encounter a headwind (performance increasing), followed by a downdraft and a tailwind (both performance decreasing), possibly resulting in terrain impact.

FIG GEN 3.5−9
NAS Wind Shear Product Systems



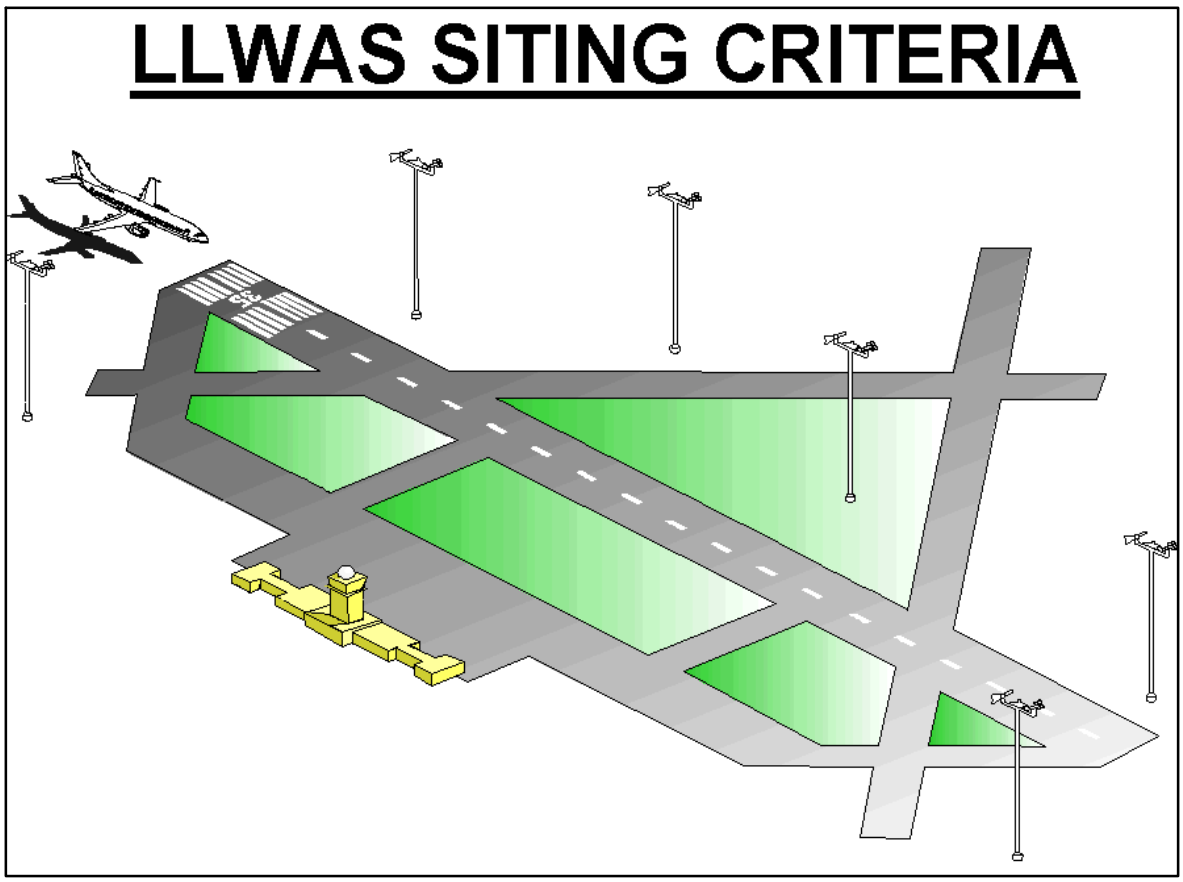
25.6 Detection of Microbursts, Wind Shear, and Gust Fronts

25.6.1 FAA's Integrated Wind Shear Detection Plan

25.6.1.1 The FAA currently employs an integrated plan for wind shear detection that will significantly improve both the safety and capacity of the majority of the airports currently served by the air carriers. This plan integrates several programs, such as the Integrated Terminal Weather System (ITWS), Terminal Doppler Weather Radar (TDWR), Weather System Processor (WSP), and Low Level Wind Shear Alert Systems (LLWAS) into a single strategic concept that significantly improves the aviation weather information in the terminal area. (See FIG GEN 3.5−9.)

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

FIG GEN 3.5−10
LLWAS Siting Criteria



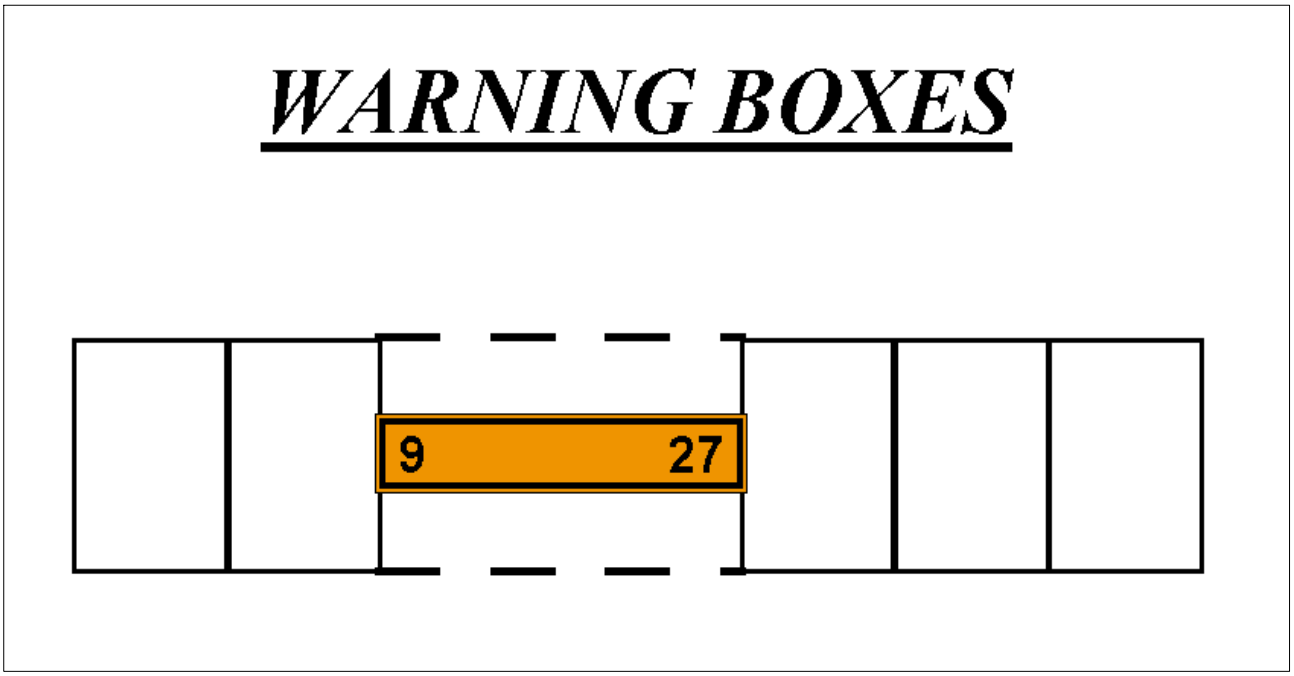
25.6.1.3 The early detection of a wind shear/microburst event, and the subsequent warning(s) issued to an aircraft on approach or departure, will alert the pilot/crew to the potential of, and to be prepared for, a situation that could become very dangerous! Without these warnings, the aircraft may NOT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

25.6.1.4 Low Level Wind Shear Alert System (LLWAS)

a) The LLWAS provides wind data and software processes to detect the presence of hazardous wind shear and microbursts in the vicinity of an airport. Wind sensors, mounted on poles sometimes as high as 150 feet, are (ideally) located 2,000 − 3,500 feet, but not more than 5,000 feet, from the centerline of the runway. (See FIG GEN 3.5−10.)

b) The LLWAS was fielded in 1988 at 110 airports across the nation. Many of these systems have been replaced by new terminal doppler weather radar (TDWR) and weather systems processor (WSP) technology. Eventually all LLWAS systems will be phased out; however, 39 airports will be upgraded to the LLWAS−NE (Network Expansion) system, which employs the very latest software and sensor technology. The new LLWAS−NE systems will not only provide the controller with wind shear warnings and alerts, including wind shear/microburst detection at the airport wind sensor location, but will also provide the location of the hazards relative to the airport runway(s). It will also have the flexibility and capability to grow with the airport as new runways are built. As many as 32 sensors, strategically located around the airport and in relationship to its runway configuration, can be accommodated by the LLWAS−NE network.

FIG GEN 3.5−11
Warning Boxes



25.6.1.5 Terminal Doppler Weather Radar (TDWR)

a) TDWRs are being deployed at 45 locations across the U.S. Optimum locations for TDWRs are 8 to 12 miles from the airport proper, and designed to look at the airspace around and over the airport to detect microbursts, gust fronts, wind shifts, and precipitation intensities. TDWR products advise the controller of wind shear and microburst events impacting all runways and the areas $^{1}/_{2}$ mile on either side of the extended centerline of the runways and to a distance of 3 miles on final approach and 2 miles on departure. FIG GEN 3.5−11 is a theoretical view of the runway and the warning boxes that the software uses to determine the location(s) of wind shear or microbursts. These warnings are displayed (as depicted in the examples in subparagraph e) on the ribbon display terminal located in the tower cabs.

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

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

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

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

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

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

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

25.6.1.6 Weather Systems Processor (WSP)

a) The WSP provides the controller, supervisor, traffic management specialist, and ultimately the pilot, with the same products as the terminal doppler weather radar at a fraction of the cost. This is accomplished by utilizing new technologies to access the weather channel capabilities of the existing ASR−9 radar located on or near the airport, thus

eliminating the requirements for a separate radar location, land acquisition, support facilities, and the associated communication landlines and expenses.

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

c) This system is currently under development and is operating in a developmental test status at the Albuquerque, New Mexico, airport. When fielded, the WSP is expected to be installed at 34 airports across the nation, substantially increasing the safety of flying.

25.6.1.7 Operational Aspects of LLWAS, TDWR, and WSP

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

a) MICROBURST ALERTS

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

27A MBA 35K− 2MF 250 20

NOTE−
(See FIG GEN 3.5−12 to see how the TDWR/WSP determines the microburst location).

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

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

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

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

b) WIND SHEAR ALERTS

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

27A WSA 20K− 3MF 200 15

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

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

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

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

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

FIG GEN 3.5−12
Microburst Alert

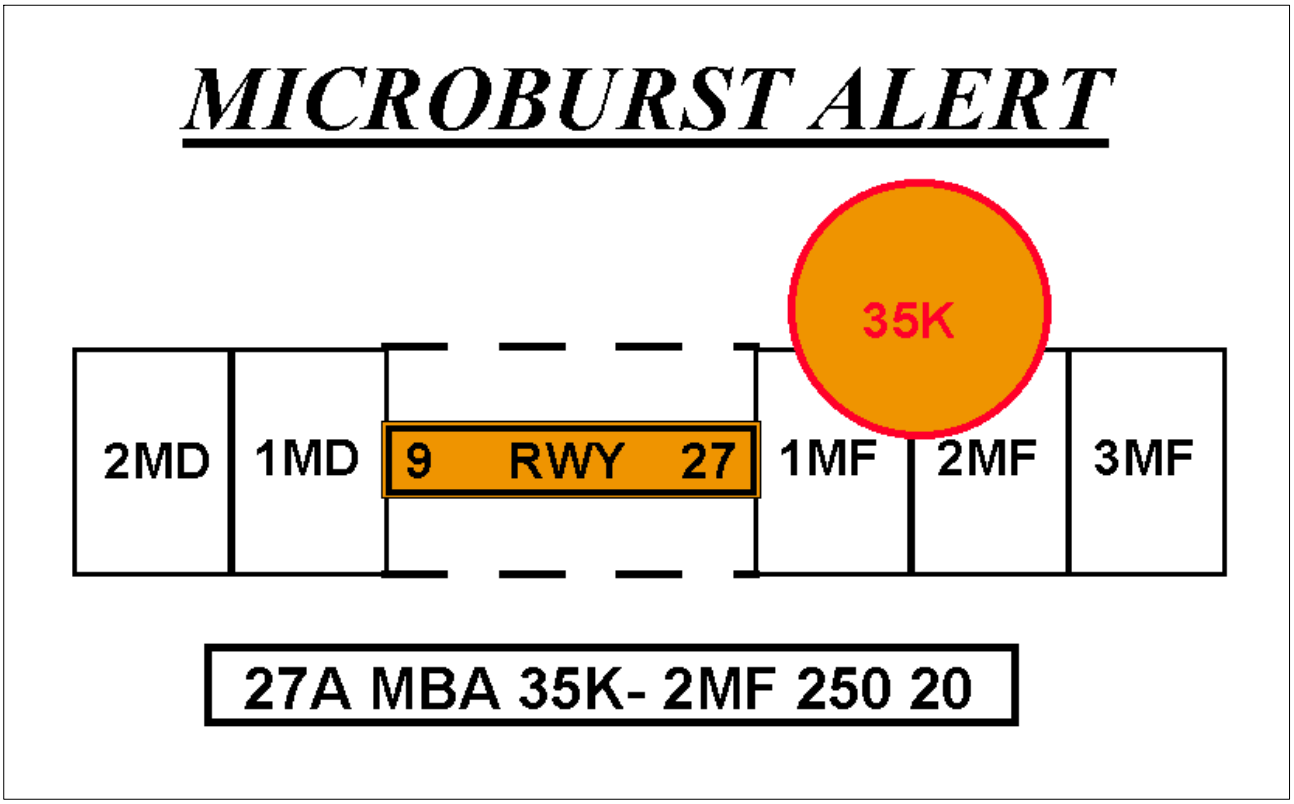


FIG GEN 3.5–13
Weak Microburst Alert

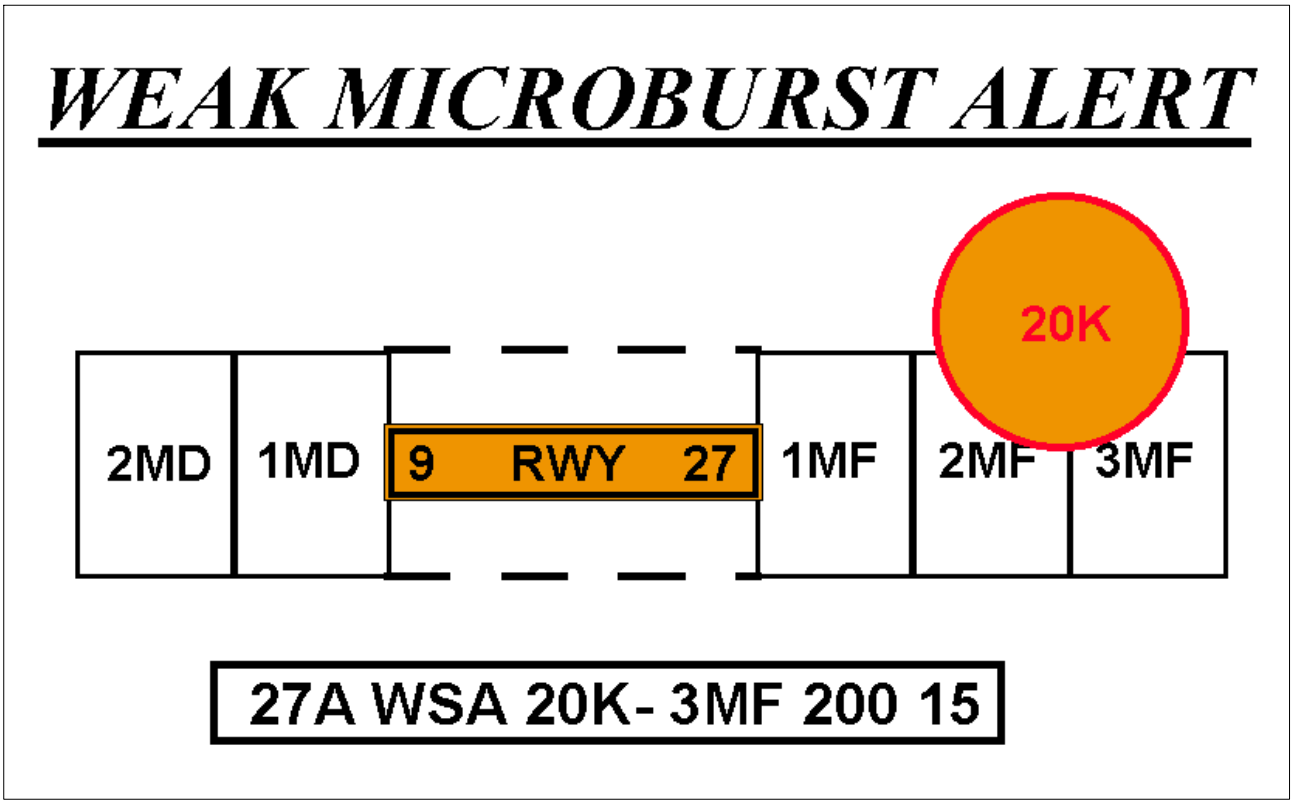
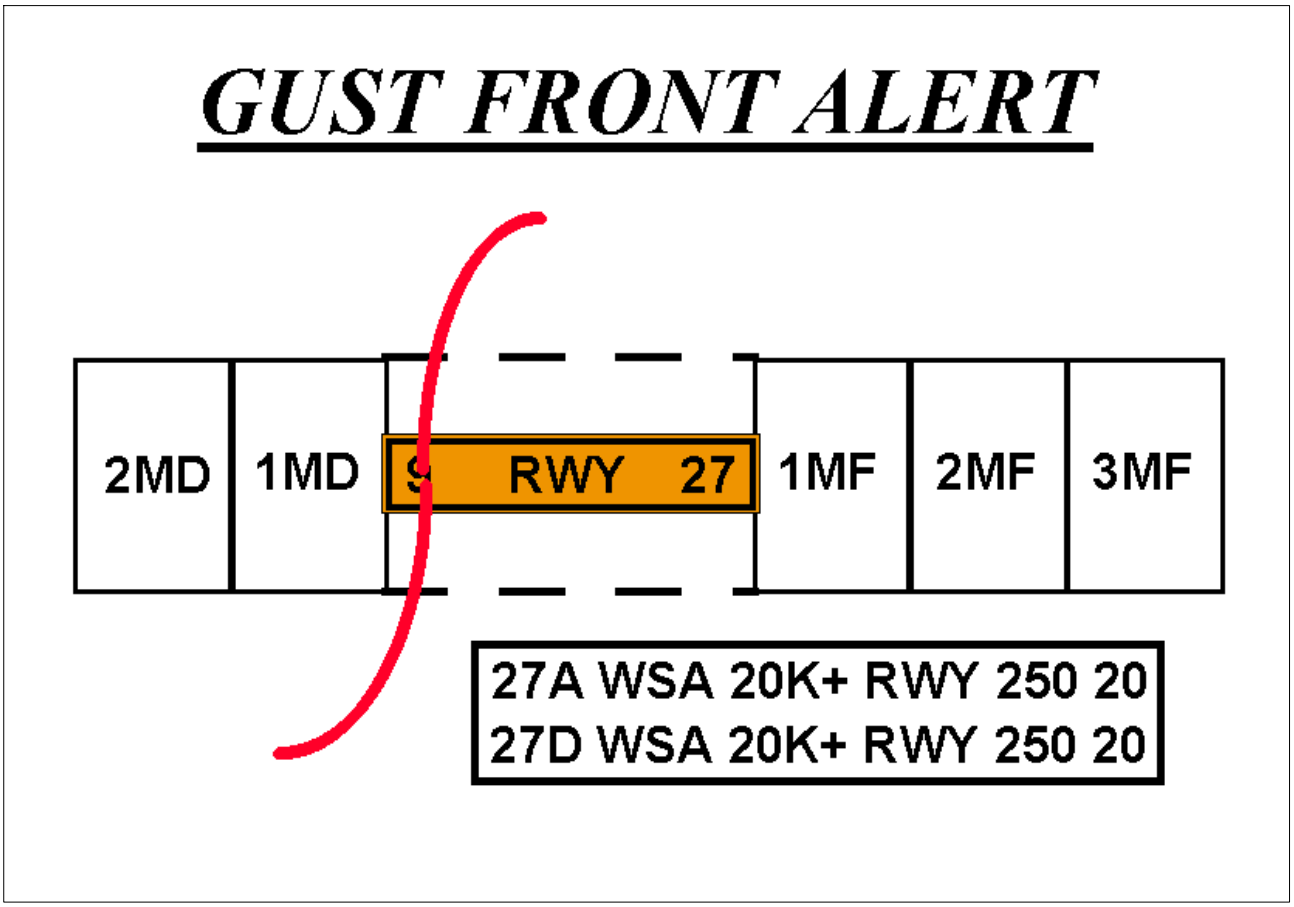


FIG GEN 3.5−14
Gust Front Alert



c) MULTIPLE WIND SHEAR ALERTS

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

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

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

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

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

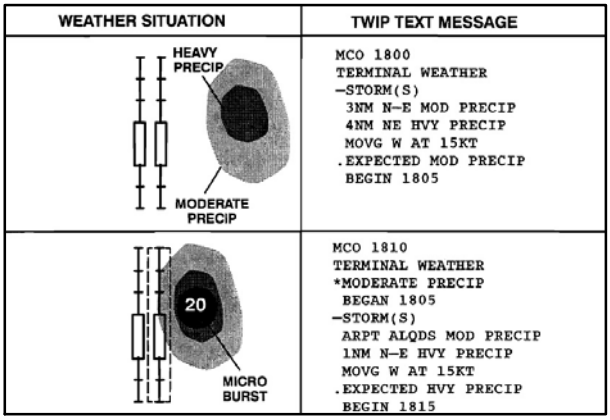
EXAMPLE−
In this example, the controller is advising arriving and departing aircraft that they could encounter a wind shear condition right on the runway due to a gust front (significant change of wind direction) with the possibility of a 20 knot gain in airspeed associated with the gust front. Additionally,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

25.6.1.8 The Terminal Weather Information for Pilots System (TWIP)

a) With the increase in the quantity and quality of terminal weather information available through TDWR, the next step is to provide this information directly to pilots rather than relying on voice communications from ATC. The National Airspace System has long been in need of a means of delivering terminal weather information to the cockpit more efficiently in terms of both speed and accuracy to enhance pilot awareness of weather hazards and reduce air traffic controller workload. With the TWIP

capability, terminal weather information, both alphanumerically and graphically, is now available directly to the cockpit at 43 airports in the U.S. NAS. (See FIG GEN 3.5–15.)

FIG GEN 3.5–15
TWIP Image of Convective Weather at MCO International



b) TWIP products are generated using weather data from the TDWR or the Integrated Terminal Weather System (ITWS) testbed. TWIP products are generated and stored in the form of text and character graphic messages. Software has been developed to allow TDWR or ITWS to format the data and send the TWIP products to a database resident at Aeronautical Radio, Inc. (ARINC). These products can then be accessed by pilots using the ARINC Aircraft Communications Addressing and Reporting System (ACARS) data link services. Airline dispatchers can also access this database and send messages to specific aircraft whenever wind shear activity begins or ends at an airport.

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

TBL GEN 3.5–12
TWIP–Equipped Airports

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

Airport	Identifier
Minneapolis St. Paul Intl Airport	KMSP
Louis Armstrong New Orleans Intl Airport	KMSY
Will Rogers World Airport	KOKC
O'Hare Intl Airport	KORD
Palm Beach Intl Airport	KPBI
Philadelphia Intl Airport	KPHL
Pittsburgh Intl Airport	KPIT
Raleigh−Durham Intl Airport	KRDU
Louisville Intl Airport	KSDF
Salt Lake City Intl Airport	KSLC
Lambert−St. Louis Intl Airport	KSTL
Tampa Intl Airport	KTPA
Tulsa Intl Airport	KTUL

26. PIREPs Relating to Volcanic Ash Activity

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

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

26.3 Pilots should submit PIREPs regarding volcanic activity using the Volcanic Activity Reporting form (VAR) as illustrated in FIG GEN 3.5−30. (If a VAR form is not immediately available, relay enough information to identify the position and type of volcanic activity.)

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

27. Thunderstorms

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

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

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

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

27.5 The probability of lightning strikes occurring to aircraft is greatest when operating at altitudes where temperatures are between −5 C and +5 C. Lightning

can strike aircraft flying in the clear in the vicinity of a thunderstorm.

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

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

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

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

28. Thunderstorm Flying

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

28.1.18 Do give a PIREP for the flight conditions.

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

28.1.20 Do contact Flight Service for assistance in avoiding thunderstorms. Flight Service specialists have NEXRAD mosaic radar imagery and NEXRAD single site radar with unique features such as base and

composite reflectivity, echo tops, and VAD wind profiles.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

29. Wake Turbulence

29.1 General

29.1.1 Every aircraft generates a wake while in flight. Initially, when pilots encountered this wake in flight, the disturbance was attributed to "prop wash." It is known, however, that this disturbance is caused by a pair of counterrotating vortices trailing from the wing tips. The vortices from larger aircraft pose problems to encountering aircraft. For instance, the wake of these aircraft can impose rolling moments exceeding the roll control authority of the encountering aircraft. Further, turbulence generated within the vortices can damage aircraft components and equipment if encountered at close range. The pilot must learn to envision the location of the vortex wake generated by larger (transport category) aircraft and adjust the flight path accordingly.

29.1.2 During ground operations and during takeoff, jet engine blast (thrust stream turbulence) can cause damage and upsets if encountered at close range. Exhaust velocity versus distance studies at various thrust levels have shown a need for light aircraft to maintain an adequate separation behind large turbojet aircraft. Pilots of larger aircraft should be particularly careful to consider the effects of their "jet blast" on other aircraft, vehicles, and maintenance equipment during ground operations.

29.2 Vortex Generation

29.2.1 Lift is generated by the creation of a pressure differential over the wing surface. The lowest pressure occurs over the upper wing surface and the highest pressure under the wing. This pressure differential triggers the roll up of the airflow aft of the wing resulting in swirling air masses trailing downstream of the wing tips. After the roll up is completed, the wake consists of two counter rotating cylindrical vortices. Most of the energy is within a few feet of the center of each vortex, but pilots should avoid a region within about 100 feet of the vortex core. (See FIG GEN 3.5−16.)

29.3 Vortex Strength

29.3.1 The strength of the vortex is governed by the weight, speed, and shape of the wing of the generating aircraft. The vortex characteristics of any given aircraft can also be changed by extension of flaps or other wing configuring devices as well as by change in speed. However, as the basic factor is weight, the vortex strength increases proportionately. Peak

vortex tangential speeds up to almost 300 feet per second have been recorded. The greatest vortex strength occurs when the generating aircraft is HEAVY, CLEAN, and SLOW.

29.3.2 Induced Roll

29.3.2.1 In rare instances, a wake encounter could cause inflight structural damage of catastrophic proportions. However, the usual hazard is associated with induced rolling moments which can exceed the roll control authority of the encountering aircraft. In flight experiments, aircraft have been intentionally flown directly up trailing vortex cores of larger aircraft. It was shown that the capability of an aircraft to counteract the roll imposed by the wake vortex primarily depends on the wing span and counter−control responsiveness of the encountering aircraft.

29.3.2.2 Counter−control is usually effective and induced roll minimal in cases where the wing span and ailerons of the encountering aircraft extend beyond the rotational flow field of the vortex. It is more difficult for aircraft with short wing span (relative to the generating aircraft) to counter the imposed roll induced by vortex flow. Pilots of short−span aircraft, even of the high−performance type, must be especially alert to vortex encounters. (See FIG GEN 3.5−17.)

29.3.2.3 The wake of larger aircraft requires the respect of all pilots.

29.4 Vortex Behavior

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

29.4.1.1 An aircraft generates vortices from the moment it rotates on takeoff to touchdown, since trailing vortices are a by−product of wing lift. Prior to takeoff or touchdown pilots should note the rotation or touchdown point of the preceding aircraft. (See FIG GEN 3.5−18.)

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

29.4.1.3 Flight tests have shown that the vortices from larger (transport category) aircraft sink at a rate of several hundred feet per minute, slowing their descent and diminishing in strength with time and distance behind the generating aircraft. Atmospheric turbulence hastens breakup. Pilots should fly at or above the preceding aircraft's flight path, altering course as necessary to avoid the area behind and below the generating aircraft. However, vertical separation of 1,000 feet may be considered safe. (See FIG GEN 3.5−19.)

FIG GEN 3.5−16
Wake Vortex Generation

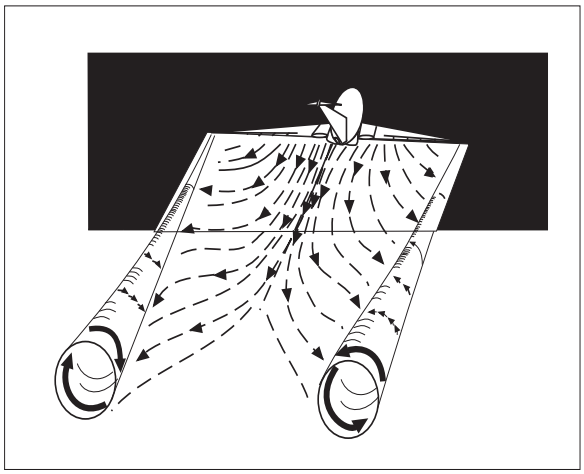


FIG GEN 3.5−17
Wake Encounter Counter Control

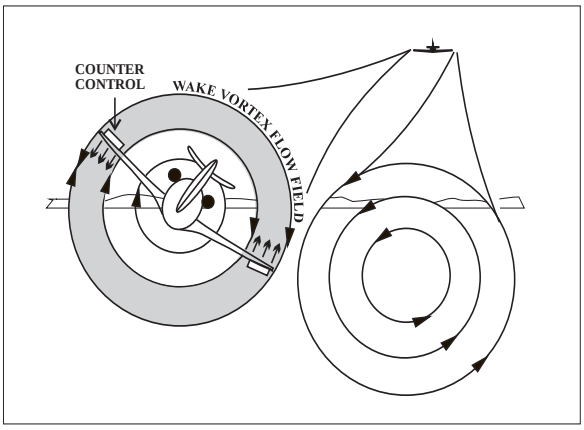


FIG GEN 3.5−18
Wake Ends/Wake Begins

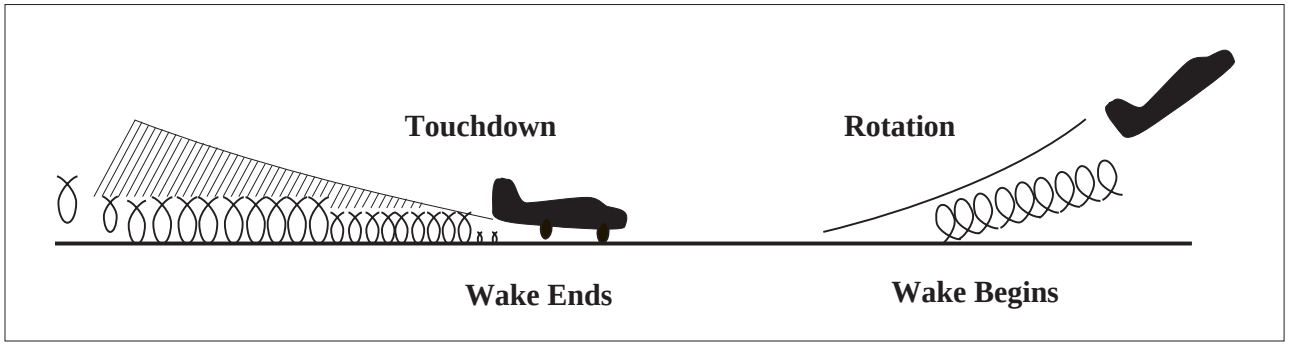


FIG GEN 3.5−19
Vortex Flow Field

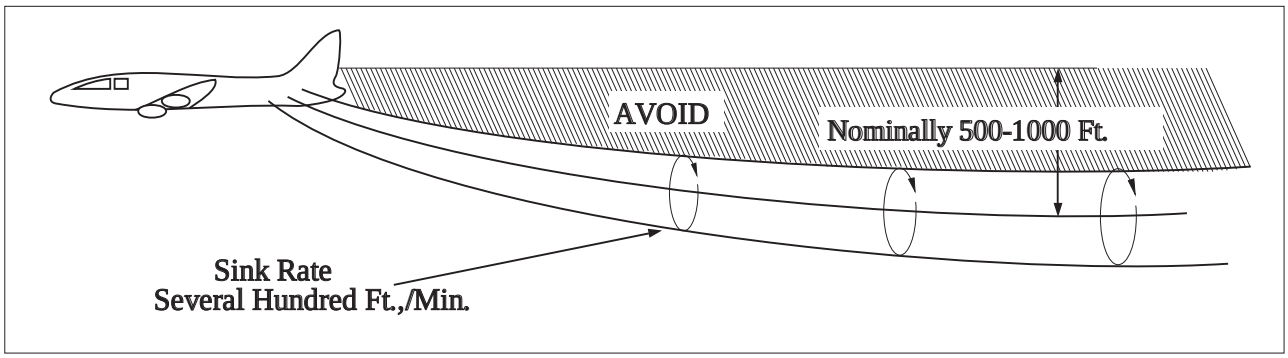
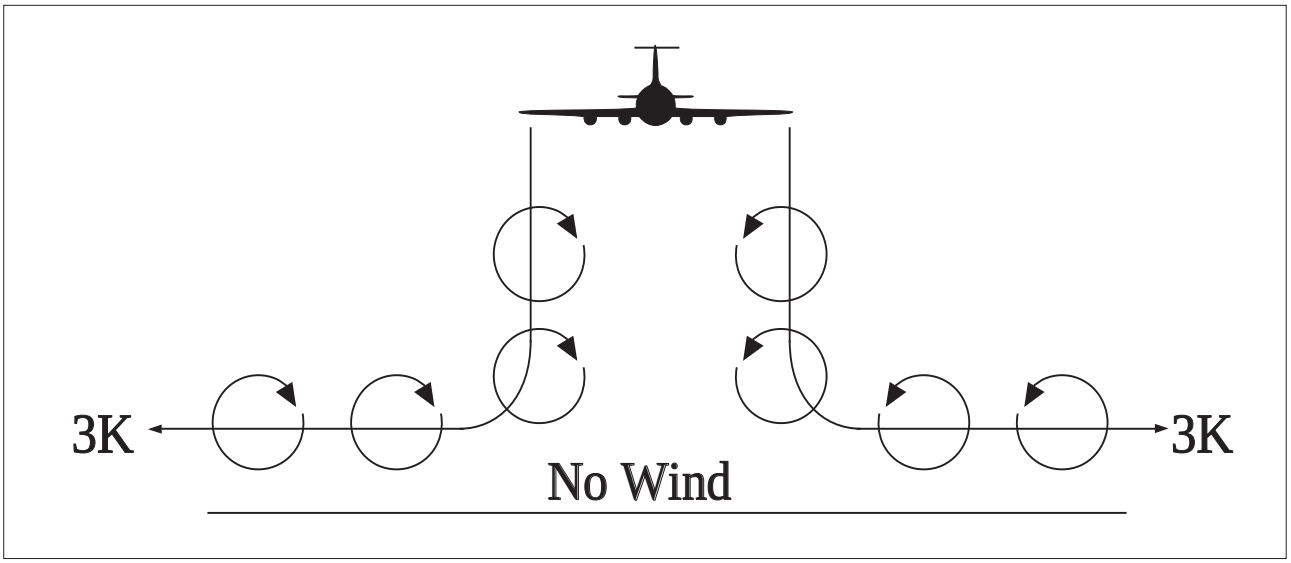


FIG GEN 3.5−20
Vortex Movement Near Ground − No Wind



29.4.1.4 When the vortices of larger aircraft sink close to the ground (within 100 to 200 feet), they tend to move laterally over the ground at a speed of 2 or 3 knots. (See FIG GEN 3.5−20.)

29.4.1.5 There is a small segment of the aviation community that have become convinced that wake vortices may "bounce" up to twice their nominal steady state height. With a 200−foot span aircraft, the "bounce" height could reach approximately 200 feet AGL. This conviction is based on a single unsubstantiated report of an apparent coherent vortical flow that was seen in the volume scan of a research sensor. No one can say what conditions cause vortex bouncing, how high they bounce, at what angle they bounce, or how many times a vortex may bounce. On the other hand, no one can say for certain that vortices never "bounce." Test data have shown that vortices can rise with the air mass in which they are embedded. Wind shear, particularly, can cause vortex flow field "tilting." Also, ambient thermal lifting and orographic effects (rising terrain or tree lines) can cause a vortex flow field to rise. Notwithstanding the foregoing, pilots are reminded that they should be alert at all times for possible wake vortex encounters when conducting approach and landing operations. The pilot has the ultimate responsibility for ensuring appropriate separations and positioning of the aircraft in the terminal area to avoid the wake turbulence created by a preceding aircraft.

FIG GEN 3.5−21
Vortex Movement Near Ground − with Cross Winds

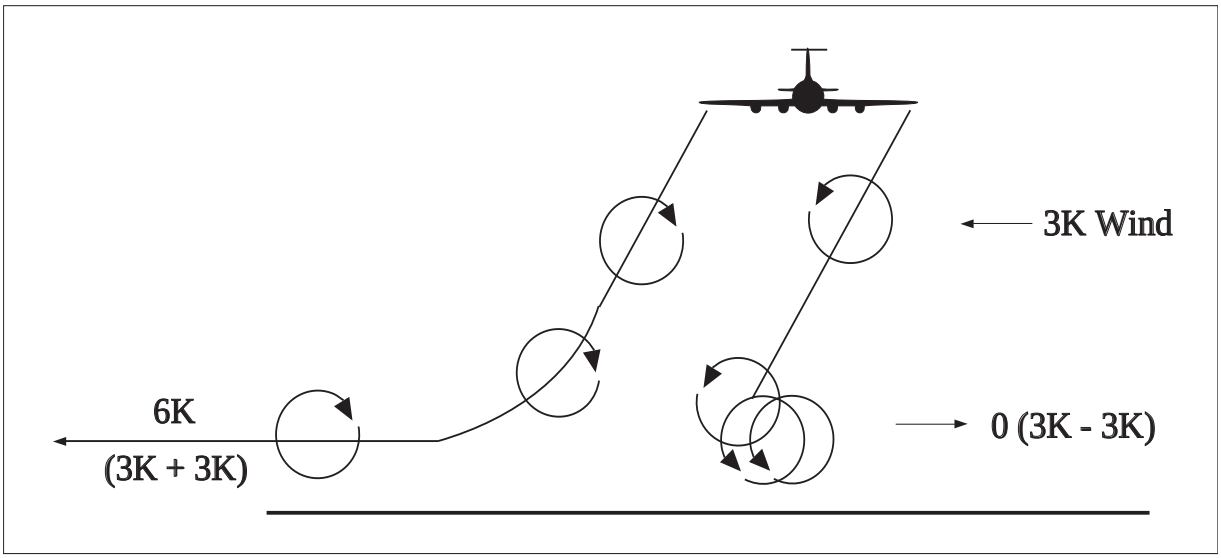
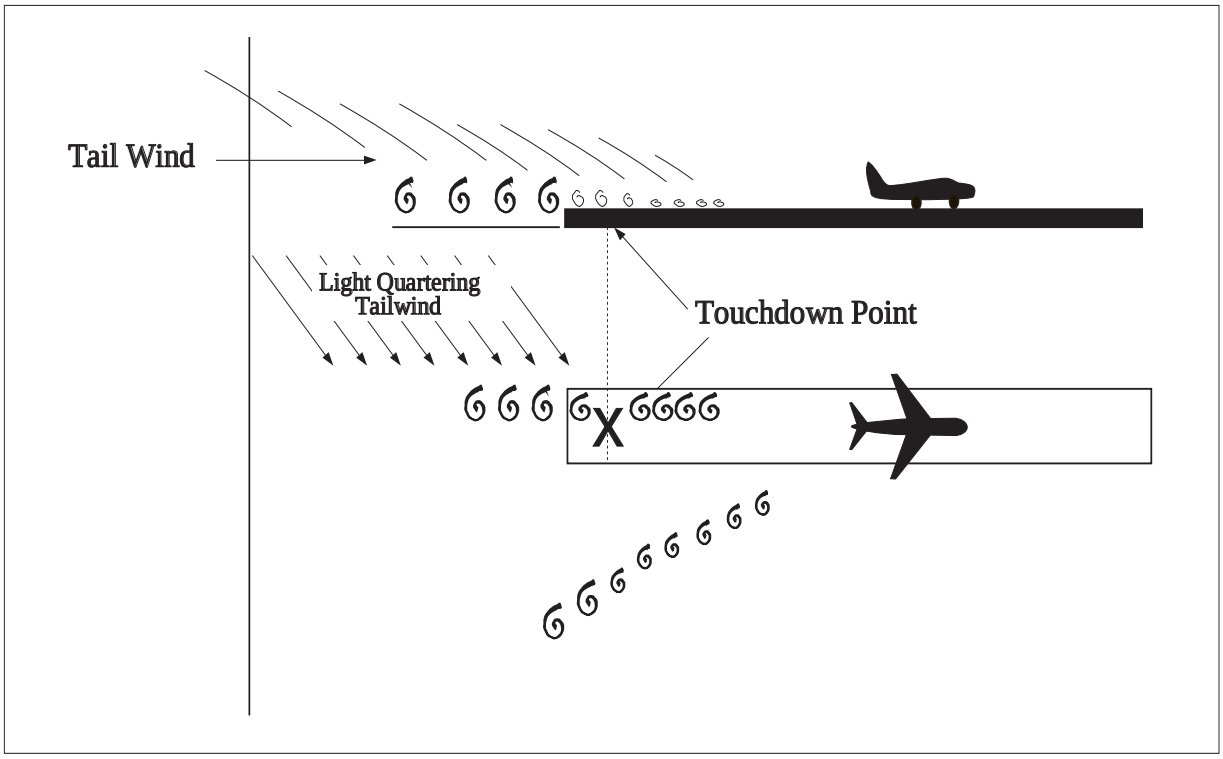


FIG GEN 3.5−22
Vortex Movement in Ground Effect − Tailwind



29.4.2 A crosswind will decrease the lateral movement of the upwind vortex and increase the movement of the downwind vortex. Thus a light wind with a cross−runway component of 1 to 5 knots could result in the upwind vortex remaining in the touchdown zone for a period of time and hasten the drift of the downwind vortex toward another runway. (See FIG GEN 3.5−21.) Similarly, a tailwind condition can move the vortices of the preceding aircraft forward into the touchdown zone. THE LIGHT QUARTERING TAILWIND REQUIRES MAXIMUM CAUTION. Pilots should be alert to larger aircraft upwind from their approach and takeoff flight paths. (See FIG GEN 3.5−22.)

29.5 Operations Problem Areas

29.5.1 A wake encounter can be catastrophic. In 1972 at Fort Worth, Texas, a DC−9 got too close to a DC−10 (two miles back), rolled, caught a wingtip, and cartwheeled coming to rest in an inverted position on the runway. All aboard were killed. Serious and even fatal general aviation accidents induced by wake vortices are not uncommon. However, a wake encounter is not necessarily hazardous. It can be one or more jolts with varying severity depending upon the direction of the encounter, weight of the generating aircraft, size of the encountering aircraft, distance from the generating aircraft, and point of vortex encounter. The probability of induced roll increases when the encountering aircraft's heading is generally aligned with the flight path of the generating aircraft.

29.5.2 AVOID THE AREA BELOW AND BEHIND THE GENERATING AIRCRAFT, ESPECIALLY AT LOW ALTITUDE WHERE EVEN A MOMENTARY WAKE ENCOUNTER COULD BE HAZARDOUS. This is not easy to do. Some accidents have occurred even though the pilot of the trailing aircraft had carefully noted that the aircraft in front was at a considerably lower altitude. Unfortunately, this does not ensure that the flight path of the lead aircraft will be below that of the trailing aircraft.

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

29.5.3.1 Remain in the touchdown area.

29.5.3.2 Drift from aircraft operating on a nearby runway.

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

29.5.3.4 Sink into the traffic pattern from other airport operations.

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

29.5.4 Pilots of all aircraft should visualize the location of the vortex trail behind larger aircraft and use proper vortex avoidance procedures to achieve safe operation. It is equally important that pilots of larger aircraft plan or adjust their flight paths to minimize vortex exposure to other aircraft.

29.6 Vortex Avoidance Procedures

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

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

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

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

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

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

29.6.2.5 Landing Behind a Departing Larger Aircraft – Crossing Runway. Note the larger aircraft's rotation point – if past the intersection – continue the approach – land prior to the intersection. If

larger aircraft rotates prior to the intersection, avoid flight below the larger aircraft's flight path. Abandon the approach unless a landing is ensured well before reaching the intersection.

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

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

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

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

29.7 Helicopters

29.7.1 In a slow hover−taxi or stationary hover near the surface, helicopter main rotor(s) generate downwash producing high velocity outwash vortices to a distance approximately three times the diameter of the rotor. When rotor downwash hits the surface, the resulting outwash vortices have behavioral characteristics similar to wing tip vortices produced by fixed−wing aircraft. However, the vortex circulation is outward, upward, around, and away from the main rotor(s) in all directions. Pilots of small aircraft should avoid operating within three rotor diameters of any helicopter in a slow hover−taxi or stationary hover. In forward flight, departing or landing helicopters produce a pair of strong, high−speed trailing vortices similar to wing tip vortices of larger fixed−wing aircraft. Pilots of small aircraft should use caution when operating behind or crossing behind landing and departing helicopters.

29.8 Pilot Responsibility

29.8.1 Government and industry groups are making concerted efforts to minimize or eliminate the hazards of trailing vortices. However, the flight disciplines necessary to ensure vortex avoidance during VFR operations must be exercised by the pilot. Vortex visualization and avoidance procedures should be exercised by the pilot using the same degree for concern as in collision avoidance.

29.8.2 Wake turbulence may be encountered by aircraft in flight as well as when operating on the airport movement area.

29.8.3 Pilots are reminded that in operations conducted behind all aircraft, acceptance of instructions from ATC in the following situations is an acknowledgment that the pilot will ensure safe takeoff and landing intervals and accepts the responsibility of providing his/her own wake turbulence separation:

29.8.3.1 Traffic information.

29.8.3.2 Instructions to follow an aircraft.

29.8.3.3 The acceptance of a visual approach clearance.

29.8.4 For operations conducted behind **super** or **heavy** aircraft, ATC will specify the word "**super**" or "**heavy**" as appropriate, when this information is known. Pilots of **super** or **heavy** aircraft should always use the word "**super**" or "**heavy**" in radio communications.

29.8.5 Super, heavy and large jet aircraft operators should use the following procedures during an approach to landing. These procedures establish a dependable baseline from which pilots of in−trail, lighter aircraft may reasonably expect to make effective flight path adjustments to avoid serious wake vortex turbulence.

29.8.5.1 Pilots of aircraft that produce strong wake vortices should make every attempt to fly on the established glidepath, not above it; or, if glidepath guidance is not available, to fly as closely as possible to a "3−1" glidepath, not above it.

EXAMPLE−
Fly 3,000 feet at 10 miles from touchdown, 1,500 feet at 5 miles, 1,200 feet at 4 miles, and so on to touchdown.

29.8.5.2 Pilots of aircraft that produce strong wake vortices should fly as closely as possible to the approach course centerline or to the extended centerline of the runway of intended landing as appropriate to conditions.

29.8.6 Pilots operating lighter aircraft on visual approaches in−trail to aircraft producing strong wake vortices should use the following procedures to assist in avoiding wake turbulence. These procedures apply only to those aircraft that are on visual approaches.

29.8.6.1 Pilots of lighter aircraft should fly on or above the glidepath. Glidepath reference may be furnished by an ILS, by a visual approach slope system, by other ground−based approach slope guidance systems, or by other means. In the absence of visible glidepath guidance, pilots may very nearly duplicate a 3−degree glideslope by adhering to the "3 to 1" glidepath principle.

EXAMPLE−
Fly 3,000 feet at 10 miles from touchdown, 1,500 feet at 5 miles, 1,200 feet at 4 miles, and so on to touchdown.

29.8.6.2 If the pilot of the lighter following aircraft has visual contact with the preceding heavier aircraft and also with the runway, the pilot may further adjust for possible wake vortex turbulence by the following practices:

a) Pick a point of landing no less than 1,000 feet from the arrival end of the runway.

b) Establish a line−of−sight to that landing point that is above and in front of the heavier preceding aircraft.

c) When possible, note the point of landing of the heavier preceding aircraft and adjust point of intended landing as necessary.

EXAMPLE−
A puff of smoke may appear at the 1,000−foot markings of the runway, showing that touchdown was at that point; therefore, adjust point of intended landing to the 1,500−foot markings.

d) Maintain the line−of−sight to the point of intended landing above and ahead of the heavier preceding aircraft; maintain it to touchdown.

e) Land beyond the point of landing of the preceding heavier aircraft.

29.8.7 During visual approaches pilots may ask ATC for updates on separation and groundspeed with respect to heavier preceding aircraft, especially when there is any question of safe separation from wake turbulence.

29.9 Air Traffic Wake Turbulence Separations

29.9.1 Because of the possible effects of wake turbulence, controllers are required to apply no less than specified minimum separation to all IFR aircraft, to all VFR aircraft receiving Class B or Class C airspace services when operating behind super or heavy aircraft, and to small aircraft operating behind a B757.

29.9.1.1 Separation is applied to aircraft operating directly behind a super or heavy at the same altitude or less than 1,000 feet below, and to small aircraft operating directly behind a B757 at the same altitude or less than 500 feet below:

a) Heavy behind **super** – 6 miles.

b) Large behind **super** – 7 miles.

c) Small behind **super** – 8 miles.

d) Heavy behind **heavy** – 4 miles.

e) Small/large behind **heavy** – 5 miles.

f) Small behind **B757** – 4 miles.

29.9.1.2 Also, separation, measured at the time the preceding aircraft is over the landing threshold, is provided to small aircraft:

a) Small landing behind **heavy** – 6 miles.

b) Small landing behind **large, non−B757** – 4 miles.

29.9.1.3 Additionally, appropriate time or distance intervals are provided to departing aircraft when the departure will be from the same threshold, a parallel runway separated by less than 2,500 feet with less than 500 feet threshold stagger, or on a crossing runway and projected flight paths will cross:

a) Three minutes or the appropriate radar separation when takeoff will be behind a super aircraft;

b) Two minutes or the appropriate radar separation when takeoff will be behind a heavy aircraft.

c) Two minutes or the appropriate radar separation when a small aircraft will takeoff behind a B757.

NOTE−
Controllers may not reduce or waive these intervals.

29.9.2 A 3−minute interval will be provided for a **small** aircraft taking off:

29.9.2.1 From an intersection on the same runway (same or opposite direction) behind a departing **large** aircraft (except B757), or

29.9.2.2 In the opposite direction on the same runway behind a large aircraft (except B757) takeoff or low/missed approach.

NOTE−
This 3−minute interval may be waived upon specific pilot request.

29.9.3 A 3−minute interval will be provided when a small aircraft will takeoff:

29.9.3.1 From an intersection on the same runway (same or opposite direction) behind a departing B757, or

29.9.3.2 In the opposite direction on the same runway behind a B757 takeoff or low/missed approach.

NOTE−
This 3−minute interval may not be waived.

29.9.4 A 4−minute interval will be provided for all aircraft taking off behind a super aircraft, and a 3−minute interval will be provided for all aircraft taking off behind a heavy aircraft when the operations are as described in subparagraphs 29.9.3.1 and 29.9.3.2 above, and are conducted on either the same runway or parallel runways separated by less than 2,500 feet. Controllers may not reduce or waive this interval.

29.9.5 Pilots may request additional separation (i.e., 2 minutes instead of 4 or 5 miles) for wake turbulence avoidance. This request should be made as soon as practical on ground control and at least before taxiing onto the runway.

NOTE−
Federal Aviation Administration Regulations state: "The pilot in command of an aircraft is directly responsible for and is the final authority as to the operation of that aircraft."

29.9.6 Controllers may anticipate separation and need not withhold a takeoff clearance for an aircraft departing behind a **large, heavy,** or **super** aircraft if there is reasonable assurance the required separation will exist when the departing aircraft starts takeoff roll.

30. International Civil Aviation Organization (ICAO) Weather Formats

30.1 The U.S. uses the ICAO world standard for aviation weather reporting and forecasting. The World Meteorological Organization's (WMO) publication No. 782 "Aerodrome Reports and Forecasts" contains the base METAR and TAF code as adopted by the WMO member countries.

30.2 Although the METAR code is adopted worldwide, each country is allowed to make modifications or exceptions to the code for use in their particular country, e.g., the U.S. will continue to use statute miles for visibility, feet for RVR values, knots for wind speed, and inches of mercury for altimetry. However, temperature and dew point will be reported in degrees Celsius. The U.S reports prevailing visibility rather than lowest sector visibility. The elements in the body of a METAR report are separated with a space. The only exceptions are RVR, temperature, and dew point which are separated with a solidus (/). When an element does not occur, or cannot be observed, the preceding space and that element are omitted from that particular report. A METAR report contains the following sequence of elements in the following order:

30.2.1 Type of report.

30.2.2 ICAO station identifier.

30.2.3 Date and time of report.

30.2.4 Modifier (as required).

30.2.5 Wind.

30.2.6 Visibility.

30.2.7 Runway Visual Range (RVR).

30.2.8 Weather phenomena.

30.2.9 Sky conditions.

30.2.10 Temperature/Dew point group.

30.2.11 Altimeter.

30.2.12 Remarks (RMK).

30.3 The following paragraphs describe the elements in a METAR report.

30.3.1 Type of Report. There are two types of reports:

30.3.1.1 The METAR, an aviation routine weather report.

30.3.1.2 The SPECI, a nonroutine (special) aviation weather report.

The type of report (METAR or SPECI) will always appear as the lead element of the report.

30.3.2 ICAO Station Identifier. The METAR code uses ICAO 4−letter station identifiers. In the contiguous 48 states, the 3−letter domestic station identifier is prefixed with a "K"; i.e., the domestic identifier for Seattle is SEA while the ICAO identifier is KSEA. For Alaska, all station identifiers start with "PA"; for Hawaii, all station identifiers start with "PH." The identifier for the eastern Caribbean is "T" followed by the individual country's letter; i.e., Puerto Rico is "TJ." For a complete worldwide listing see ICAO Document 7910, "Location Indicators."

30.3.3 Date and Time of Report. The date and time the observation is taken are transmitted as a six−digit date/time group appended with Z to denote Coordinated Universal Time (UTC). The first two digits are the date followed with two digits for hour and two digits for minutes.

EXAMPLE−
172345Z (the 17th day of the month at 2345Z)

30.3.4 Modifier (As Required). "AUTO" identifies a METAR/SPECI report as an automated weather report with no human intervention. If "AUTO" is shown in the body of the report, the type of sensor equipment used at the station will be encoded in the remarks section of the report. The absence of "AUTO" indicates that a report was made manually by an observer or that an automated report had human augmentation/backup. The modifier "COR" indicates a corrected report that is sent out to replace an earlier report with an error.

NOTE−
There are two types of automated stations, AO1 for automated weather reporting stations without a precipitation discriminator, and AO2 for automated stations with a precipitation discriminator. (A precipitation discriminator can determine the difference between liquid and frozen/freezing precipitation). This information appears in the remarks section of an automated report.

30.3.5 Wind. The wind is reported as a five digit group (six digits if speed is over 99 knots). The first three digits are the direction from which the wind is blowing, in tens of degrees referenced to true north, or "VRB" if the direction is variable. The next two digits is the wind speed in knots, or if over 99 knots, the next three digits. If the wind is gusty, it is reported as a "G" after the speed followed by the highest gust reported. The abbreviation "KT" is appended to denote the use of knots for wind speed.

EXAMPLE−
13008KT − wind from 130 degrees at 8 knots

08032G45KT − wind from 080 degrees at 32 knots with gusts to 45 knots

VRB04KT − wind variable in direction at 4 knots

00000KT − wind calm

210103G130KT − wind from 210 degrees at 103 knots with gusts to 130 knots

If the wind direction is variable by 60 degrees or more and the speed is greater than 6 knots, a variable group consisting of the extremes of the wind direction separated by a "V" will follow the prevailing wind group.

32012G22KT 280V350

30.3.5.1 Peak Wind. Whenever the peak wind exceeds 25 knots, "PK WND" will be included in Remarks; e.g., PK WND 280045/1955 "Peak wind two eight zero at four five occurred at one niner five five." If the hour can be inferred from the report time, only the minutes will be appended; e.g., PK WND 34050/38 "Peak wind three four zero at five zero occurred at three eight past the hour."

30.3.5.2 Wind Shift. Whenever a wind shift occurs, "WSHFT" will be included in remarks followed by the time the wind shift began; e.g., WSHFT 30 FROPA "Wind shift at three zero due to frontal passage."

30.3.6 Visibility. Prevailing visibility is reported in statute miles with "SM" appended to it.

EXAMPLE−
7SM . . . . . seven statute miles
15SM . . . . . fifteen statute miles
$^1/_2$SM . . . . . one−half statute mile

30.3.6.1 Tower/Surface Visibility. If either tower or surface visibility is below 4 statute miles, the lesser of the 2 will be reported in the body of the report; the greater will be reported in remarks.

30.3.6.2 Automated Visibility. ASOS/AWSS visibility stations will show visibility 10 or greater than 10 miles as "10SM." AWOS visibility stations will show visibility less than $^1/_4$ statute mile as "M$^1/_4$SM" and visibility 10 or greater than 10 miles as "10SM."

NOTE−
Automated sites that are augmented by human observer to meet service level requirements can report 0, 1/16 SM, and 1/8 SM visibility increments.

30.3.6.3 Variable Visibility. Variable visibility is shown in remarks when rapid increase or decrease by $^{1}/_{2}$ statute mile or more and the average prevailing visibility is less than 3 statute miles; e.g., VIS 1V2 means "visibility variable between 1 and 2 statute miles."

30.3.6.4 Sector Visibility. Sector visibility is shown in remarks when it differs from the prevailing visibility, and either the prevailing or sector visibility is less than 3 statute miles.

EXAMPLE−
VIS N2 . . . . . visibility north two

30.3.7 Runway Visual Range (when reported). "R" identifies the group followed by the runway heading (and parallel runway designator, if needed) "/" and the visual range in feet (meters in other countries) followed with "FT." ("Feet" is not spoken.)

30.3.7.1 Variability Values. When RVR varies by more than on reportable value, the lowest and highest values are shown with "V" between them.

30.3.7.2 Maximum/Minimum Range. "P" indicates an observed RVR is above the maximum value for this system (spoken as "more than"). "M" indicates an observed RVR is below the minimum value which can be determined by the system (spoken as "less than").

EXAMPLE−
R32L/1200FT − Runway Three Two Left R−V−R one thousand two hundred

R27R/M1000V4000FT − Runway Two Seven Right R−V−R variable from less than one thousand to four thousand.

30.3.8 Weather Phenomena. In METAR, weather is reported in the format:

Intensity / Proximity / Descriptor / Precipitation / Obstruction to Visibility / Other

NOTE−
The "/" above and in the following descriptions (except as the separator between the temperature and dew point) are for separation purposes in this publication and do not appear in the actual METARs.

30.3.8.1 Intensity applies only to the first type of precipitation reported. A "−" denotes light, no symbol denotes moderate, and a "+" denotes heavy.

30.3.8.2 Proximity applies to and is reported only for weather occurring in the vicinity of the airport (between 5 and 10 miles of the point(s) of observation). It is denoted by the letters "VC." (Intensity and "VC" will not appear together in the weather group.)

30.3.8.3 Descriptor. These eight descriptors apply to the precipitation or obstructions to visibility:

TS	thunderstorm
DR	low drifting
SH	showers
MI	shallow
FZ	freezing
BC	patches
BL	blowing
PR	partial

NOTE−
Although "TS" and "SH" are used with precipitation and may be preceded with an intensity symbol, the intensity still applies to the precipitation not the descriptor.

30.3.8.4 Precipitation. There are nine types of precipitation in the METAR code:

RA	rain
DZ	drizzle
SN	snow
GR	hail ($^{1}/_{4}$″ or greater)
GS	small hail/snow pellets
PL	ice pellets
SG	snow grains
IC	ice crystals
UP	unknown precipitation (automated stations only)

30.3.8.5 Obstructions to Visibility. Obscurations are any phenomena in the atmosphere, other than precipitation, that reduce horizontal visibility. There are eight types of obscuration phenomena in the METAR code:

FG	fog (visibility less than $^5/_8$ mile)
HZ	haze
FU	smoke
PY	spray
BR	mist (visibility $^5/_8$−6 miles)
SA	sand
DU	dust
VA	volcanic ash

NOTE−
Fog (FG) is observed or forecast only when the visibility is less than $^5/_8$ mile. Otherwise, mist (BR) is observed or forecast.

30.3.8.6 Other. There are five categories of other weather phenomena which are reported when they occur:

SQ	squall
SS	sandstorm
DS	duststorm
PO	dust/sand whirls
FC +FC	funnel cloud tornado/waterspout

EXAMPLES−

TSRA	thunderstorm with moderate rain
+SN	heavy snow
−RA FG	light rain and fog
BRHZ	mist and haze (visibility $^5/_8$ mile or greater)
FZDZ	freezing drizzle
VCSH	rain shower in the vicinity
+SHRASNPL	heavy rain showers, snow, ice pellets (Intensity indicator refers to the predominant rain.)

30.3.9 Sky Condition. In METAR, sky condition is reported in the format:

Amount / Height / (Type) or Indefinite Ceiling / Height

30.3.9.1 Amount. The amount of sky cover is reported in eighths of sky cover, using contractions:

SKC	clear (no clouds)
FEW	$>^0/_8$ to $^2/_8$ cloud cover
SCT	scattered ($^3/_8$ to $^4/_8$ cloud cover)
BKN	broken ($^5/_8$ to $^7/_8$ cloud cover)
OVC	overcast ($^8/_8$ cloud cover)
CB	cumulonimbus when present
TCU	towering cumulus when present

NOTE−
1. *"SKC" will be reported at manual stations. "CLR" will be used at automated stations when no clouds below 12,000 feet are reported.*

2. A *ceiling layer is not designated in the METAR code. For aviation purposes, the ceiling is the lowest broken or overcast layer, or vertical visibility into obscuration. Also, there is no provision for reporting thin layers in the METAR code. When clouds are thin, that layer must be reported as if it were opaque.*

30.3.9.2 Height. Cloud bases are reported with three digits in hundreds of feet above ground level (AGL). (Clouds above 12,000 feet cannot be reported by an automated station).

30.3.9.3 Type. If towering cumulus clouds (TCU) or cumulonimbus clouds (CB) are present, they are reported after the height which represents their base.

EXAMPLE−
SCT025TCU BKN080 BKN250 − "two thousand five hundred scattered towering cumulus, ceiling eight thousand broken, two five thousand broken."

SCT008 OVC012CB − "eight hundred scattered ceiling one thousand two hundred overcast cumulonimbus clouds."

30.3.9.4 Vertical Visibility (indefinite ceiling height). The height into an indefinite ceiling is preceded by "VV" and followed by three digits indicating the vertical visibility in hundreds of feet. This layer indicates total obscuration.

EXAMPLE−
$^1/_8$ SM FG VV006 − visibility one eighth, fog, indefinite ceiling six hundred.

30.3.9.5 Obscurations are reported when the sky is partially obscured by a ground−based phenomena by indicating the amount of obscuration as FEW, SCT, BKN followed by three zeros (000). In remarks, the obscuring phenomenon precedes the amount of obscuration and three zeros.

EXAMPLE−
BKN000 (IN BODY) − "sky partially obscured."

FU BKN000 (IN REMARKS) − "smoke obscuring five− to seven−eighths of the sky."

30.3.9.6 When sky conditions include a layer aloft other than clouds, such as smoke or haze, the type of phenomena, sky cover, and height are shown in remarks.

EXAMPLE−
BKN020 (IN BODY) − "ceiling two thousand broken."
RMK FU BKN020 − "broken layer of smoke aloft, based at two thousand."

30.3.9.7 Variable Ceiling. When a ceiling is below three thousand and is variable, the remark "CIG" will be shown followed with the lowest and highest ceiling heights separated by a "V."

EXAMPLE−
CIG 005V010 − "ceiling variable between five hundred and one thousand."

30.3.9.8 Second Site Sensor. When an automated station uses meteorological discontinuity sensors, remarks will be shown to identify site specific sky conditions which differ and are lower than conditions reported in the body.

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

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

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

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

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

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

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

CBMAM DSNT S − "cumulonimbus mammatus distant south."

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

EXAMPLE−
TCU OHD − "towering cumulus overhead."

TCU W − "towering cumulus west."

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

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

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

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

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

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

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

Except for precipitation, phenomena located within 5 statute miles of the point of observation will be

reported as at the station. Phenomena between 5 and 10 statute miles will be reported in the vicinity, "VC." Precipitation not occurring at the point of observation but within 10 statute miles is also reported as in the vicinity, "VC." Phenomena beyond 10 statute miles will be shown as distant, "DSNT." Distances are in statute miles except for automated lightning remarks which are in nautical miles. Movement of clouds or weather will be indicated by the direction toward which the phenomena is moving.

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

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

1) Volcanic Eruptions
2) Tornado, Funnel Cloud, Waterspout
3) Type of Automated Station (AO1 or AO2)
4) Peak Wind
5) Wind Shift
6) Tower or Surface Visibility
7) Variable Prevailing Visibility
8) Sector Visibility
9) Visibility at Second Location
10) Dispatch Visual Range
11) Lightning. When lightning is observed at a manual location, the frequency and location is reported. When cloud−to−ground lightning is detected by an automated lightning detection system, such as ALDARS: [a] Within 5 nautical miles (NM) of the Airport Reference Point (ARP), it will be reported as "TS" in the body of the report with no remark; [b] Between 5 and 10 NM of the ARP, it will be reported as "VCTS" in the body of the report with no remark; [c] Beyond 10 but less than 30 NM of the ARP, it will be reported in remarks as "DSNT" followed by the direction from the ARP. ***EXAMPLE−*** *LTG DSNT W or LTG DSNT ALQDS*
12) Beginning/Ending Time of Precipitation
13) Beginning/Ending Time of Thunderstorms
14) Thunderstorm Location; Movement Direction
15) Hailstone Size
16) Virga
17) Variable Ceiling
18) Obscurations
19) Variable Sky Condition
20) Significant Cloud Types
21) Ceiling Height at Second Location
22) Pressure Rising or Falling Rapidly
23) Sea−Level Pressure
24) Aircraft Mishap (not transmitted)
25) No SPECI Reports Taken
26) Snow Increasing Rapidly
27) Other Significant Information

30.3.12.2 Additive and Automated Maintenance Data Remarks.

1) Hourly Precipitation
2) Precipitation Amount
3) 24−Hour Precipitation
4) Snow Depth on Ground
5) Water Equivalent of Snow on Ground
6) Cloud Types
7) Duration of Sunshine
8) Hourly Temperature and Dew Point (Tenths)
9) 6−Hour Maximum Temperature
10) 6−Hour Minimum Temperature
11) 24−Hour Maximum/Minimum Temperatures
12) Pressure Tendency
13) Sensor Status:
WINO
ZRANO
SNO
VRNO
PNO
VISNO

EXAMPLE−
METAR report and explanation:

METAR KSFO 041453Z AUTO VRB02KT 3SM BR CLR 15/12 A3012 RMK AO2

METAR	Type of report (aviation routine weather report)
KSFO	Station identifier (San Francisco, CA)
041453Z	Date/Time (4th day of month; time 1453 UTC)
AUTO	Fully automated; no human intervention
VRB02KT	Wind (wind variable at two)
3SM	Visibility (visibility three statute miles)
BR	Visibility obscured by mist
CLR	No clouds below one two thousand
15/12	Temperature one five; dew point one two
A3012	Altimeter three zero one two
RMK	Remarks
AO2	This automated station has a weather discriminator (for precipitation).

EXAMPLE−
METAR report and explanation:

METAR KBNA 281250Z 33018KT 290V360 1/2SM R31/2700FT SN BLSN FG VV008 00/M03 A2991 RMK RAE42SNB42

METAR	Aviation routine weather report
KBNA	Nashville, TN
281250Z	28th day of month; time 1250 UTC
(no modifier)	This is a manually generated report, due to the absence of “AUTO” and “AO1 or AO2” in remarks.
33018KT	Wind three three zero at one eight
290V360	Wind variable between two nine zero and three six zero
$^{1}/_{2}$SM	Visibility one half statute mile
R31/2700FT	Runway three one RVR two thousand seven hundred feet
SN	Moderate snow
BLSN FG	Visibility obscured by blowing snow and fog
VV008	Indefinite ceiling eight hundred
00/M03	Temperature zero; dew point minus three
A2991	Altimeter two niner niner one
RMK	Remarks
RAE36	Rain ended at three six
SNB42	Snow began at four two

EXAMPLE−
SPECI report and explanation:

SPECI KCVG 152224Z 28024G36KT 3/4SM +TSRA BKN008 OVC020CB 28/23 A3000 RMK TSRAB24 TS W MOV E.

SPECI	Nonroutine aviation special weather report
KCVG	Cincinnati, OH
152224Z	15th day of month; time 2224 UTC
(no modifier)	This is a manually generated report due to the absence of “AUTO” and “AO1 or AO2” in remarks.
28024G36KT	Wind two eight zero at two four gusts three six
3/4SM	Visibility three fourths statute mile
+TSRA	Thunderstorms, heavy rain
BKN008	Ceiling eight hundred broken
OVC020CB	Two thousand overcast cumulonimbus clouds
28/23	Temperature two eight; dew point two three
A3000	Altimeter three zero zero zero
RMK	Remarks
TSRAB24	Thunderstorm and rain began at two four
TS W MOV E	Thunderstorm west moving east

30.4 Aerodrome Forecast (TAF). A concise statement of the expected meteorological conditions at an airport during a specified period. At most locations, TAFs have a 24 hour forecast period. However, TAFs for some locations have a 30 hour forecast period. These forecast periods may be shorter in the case of an amended TAF. TAFs use the same codes as METAR weather reports. They are scheduled four times daily for 24−hour periods beginning at 0000Z, 0600Z, 1200Z, and 1800Z.

Forecast times in the TAF are depicted in two ways. The first is a 6−digit number to indicate a specific point in time, consisting of a two−digit date, two−digit hour, and two−digit minute (such as issuance time or FM). The second is a pair of four−digit numbers separated by a “/” to indicate a beginning and end for a period of time. In this case, each four−digit pair consists of a two−digit date and a two−digit hour.

TAFs are issued in the following format:

TYPE OF REPORT/ICAO STATION IDENTIFIER/DATE AND TIME OF ORIGIN/VALID PERIOD DATE AND TIME/FORECAST METEOROLOGICAL CONDITIONS

NOTE−
The "/" above and in the following descriptions are for separation purposes in this publication and do not appear in the actual TAFs.

TAF KORD 051130Z 0512/0618 14008KT 5SM BR BKN030
TEMPO 0513/0516 1 1/2SM BR
FM051600 16010KT P6SM SKC
FM052300 20013G20KT 4SM SHRA OVC020
PROB40 0600/0606 2SM TSRA OVC008CB
BECMG 0606/0608 21015KT P6SM NSW SCT040

TAF format observed in the above example:

TAF = type of report

KORD = ICAO station identifier

051130Z = date and time of origin (issuance time)

0512/0618 = valid period date and times

14008KT 5SM BR BKN030 = forecast meteorological conditions

30.4.1 Explanation of TAF elements

30.4.1.1 Type of Report. There are two types of TAF issuances, a routine forecast issuance (TAF) and an amended forecast (TAF AMD). An amended TAF is issued when the current TAF no longer adequately describes the on−going weather or the forecaster feels the TAF is not representative of the current or expected weather. Corrected (COR) or delayed (RTD) TAFs are identified only in the communications header which precedes the actual forecasts.

30.4.1.2 ICAO Station Identifier. The TAF code uses ICAO 4−letter location identifiers as described in the METAR section.

30.4.1.3 Date and Time of Origin. This element is the date and time the forecast is actually prepared. The format is a two−digit date and four−digit time followed, without a space, by the letter "Z."

30.4.1.4 Valid Period Date and Time. he UTC valid period of the forecast consists of two four−digit sets, separated by a "/". The first four−digit set is a two−digit date followed by the two−digit beginning hour, and the second four−digit set is a two−digit date followed by the two−digit ending hour. Although most airports have a 24−hour TAF, a select number of airports have a 30−hour TAF. In the case of an amended forecast, or a forecast which is corrected or delayed, the valid period may be for less than 24 hours. Where an airport or terminal operates on a part−time basis (less than 24 hours/day), the TAFs issued for those locations will have the abbreviated statement "AMD NOT SKED" added to the end of the forecasts. The time observations are scheduled to end and/or resume will be indicated by expanding the AMD NOT SKED statement. Expanded statements will include:

a) Observation ending time (AFT DDHHmm; for example, AFT 120200)

b) Scheduled observations resumption time (TIL DDHHmm; for example, TIL 171200Z) or

c) Period of observation unavailability (DDHH/DDHH); for example, 2502/2512).

30.4.1.5 Forecast Meteorological Conditions. This is the body of the TAF. The basic format is:

Wind / Visibility / Weather / Sky Condition / Optional Data (Wind Shear)

The wind, visibility, and sky condition elements are always included in the initial time group of the forecast. Weather is included only if significant to aviation. If a significant, lasting change in any of the elements is expected during the valid period, a new time period with the changes is included. It should be noted that with the exception of an "FM" group, the new time period will include only those elements which are expected to change; i.e., if a lowering of the visibility is expected but the wind is expected to remain the same, the new time period reflecting the lower visibility would not include a forecast wind. The forecast wind would remain the same as in the previous time period.

Any temporary conditions expected during a specific time period are included with that time period. The following describes the elements in the above format.

a) Wind. This five (or six) digit group includes the expected wind direction (first 3 digits) and speed (last 2 digits or 3 digits if 100 knots or greater). The contraction "KT" follows to denote the units of wind speed. Wind gusts are noted by the letter "G"

appended to the wind speed followed by the highest expected gust.

NOTE−
A variable wind direction is noted by "VRB" where the three digit direction usually appears. A calm wind (3 knots or less) is forecast as "00000KT."

EXAMPLE−
18010KT − wind one eight zero at one zero (wind is blowing from 180 at 10 knots).

35012G20KT − wind three five zero at one two gust two zero

b) Visibility. The expected prevailing visibility up to and including 6 miles is forecast in statute miles, including fractions of miles, followed by "SM" to note the units of measure. Expected visibilities greater than 6 miles are forecast as P6SM (Plus six statute miles).

EXAMPLE−
1/2SM . . . . . visibility one−half
4SM . . . . . visibility four
P6SM . . . . . visibility more than six

c) Weather Phenomena. The expected weather phenomena is coded in TAF reports using the same format, qualifiers, and phenomena contractions as METAR reports (except UP).

Obscurations to vision will be forecast whenever the prevailing visibility is forecast to be 6 statute miles or less.

If no significant weather is expected to occur during a specific time period in the forecast, the weather group is omitted for that time period. If, after a time period in which significant weather has been forecast, a change to a forecast of no significant weather occurs, the contraction NSW (no significant weather) will appear as the weather group in the new time period. (NSW is included only in temporary (TEMPO) groups.)

NOTE−
It is very important that pilots understand that NSW only refers to weather phenomena, i.e., rain, snow, drizzle, etc. Omitted conditions, such as sky conditions, visibility, winds, etc., are carried over from the previous time group.

d) Sky Condition. TAF sky condition forecasts use the METAR format described in the METAR section. Cumulonimbus clouds (CB) are the only cloud type forecast in TAFs. When clear skies are forecast, the contraction "SKC" will always be used. The contraction "CLR" is never used in the aerodrome forecast (TAF). When the sky is obscured due to a surface−based phenomenon, vertical visibility (VV) into the obscuration is forecast. The format for vertical visibility is "VV" followed by a three−digit height in hundreds of feet.

NOTE−
As in METAR, ceiling layers are not designated in the TAF code. For aviation purposes, the ceiling is the lowest broken or overcast layer or vertical visibility into a complete obscuration.

SKC	"sky clear"
SCT005 BKN025CB	"five hundred scattered, ceiling two thousand five hundred broken cumulonimbus clouds"
VV008	"indefinite ceiling eight hundred"

e) Optional Data (Wind Shear). Wind Shear is the forecast of non−convective, low−level winds (up to 2,000 feet). The forecast includes the letters "WS" followed by the height of the wind shear, the wind direction and wind speed at the indicated height and the ending letters "KT" (knots). Height is given in hundreds of feet (AGL) up to and including 2,000 feet. Wind shear is encoded with the contraction "WS" followed by a three−digit height, slant character "/" and winds at the height indicated in the same format as surface winds. The wind shear element is omitted if not expected to occur.

WS010/18040KT	"low level wind shear at one thousand, wind one eight zero at four zero"

30.5 Probability Forecast. The probability or chance of thunderstorms or other precipitation events occurring, along with associated weather conditions (wind, visibility, and sky conditions). The PROB30 group is used when the occurrence of thunderstorms or precipitation is 30−39% and the PROB40 group is used when the occurrence of thunderstorms or precipitation is 40−49%. This is followed by two four−digit groups separated by a "/", giving the beginning date and hour, and the ending date and hour of the time period during which the thunderstorms or precipitation are expected.

NOTE−
NWS does not use PROB 40 in the TAF. However U.S. Military generated TAFS may include PROB40. PROB30

will not be shown during the first nine hours of a NWS forecast.

EXAMPLE−

PROB40 2221/2302 $^{1}/_{2}$SM +TSRA	*"chance between 2100Z and 0200Z of visibility one−half statute mile in thunderstorms and heavy rain."*
PROB30 3010/3014 1SM RASN .	*"chance between 1000Z and 1400Z of visibility one statute mile in mixed rain and snow."*

30.6 Forecast Change Indicators. The following change indicators are used when either a rapid, gradual, or temporary change is expected in some or all of the forecast meteorological conditions. Each change indicator marks a time group within the TAF report.

30.6.1 From (FM) Group. The FM group is used when a rapid change, usually occurring in less than one hour, in prevailing conditions is expected. Typically, a rapid change of prevailing conditions to more or less a completely new set of prevailing conditions is associated with a synoptic feature passing through the terminal area (cold or warm frontal passage). Appended to the "FM" indicator is the six−digit date, hour, and minute the change is expected to begin and continues until the next change group or until the end of the current forecast. A "FM" group will mark the beginning of a new line in a TAF report (indented 5 spaces). Each "FM" group contains all the required elements−wind, visibility, weather, and sky condition. Weather will be omitted in "FM" groups when it is not significant to aviation. FM groups will not include the contraction NSW.

EXAMPLE−

FM210100 14010KT P6SM SKC − "after 0100Z on the 21st, wind one four zero at one zero, visibility more than six, sky clear."

30.6.2 Becoming (BECMG) Group. The BECMG group is used when a gradual change in conditions is expected over a longer time period, usually two hours. The time period when the change is expected is two four−digit groups separated by a "/", with the beginning date and hour, and ending date and hour of the change period which follows the BECMG indicator. The gradual change will occur at an unspecified time within this time period. Only the changing forecast meteorological conditions are included in BECMG groups. The omitted conditions are carried over from the previous time group.

NOTE−

The NWS does not use BECMG in the TAF.

EXAMPLE−

OVC012 BECMG 0114/0116 BKN020 − "ceiling one thousand two hundred overcast. Then a gradual change to ceiling two thousand broken between 1400Z on the 1st and 1600Z on the 1st."

30.6.3 Temporary (TEMPO) Group. The TEMPO group is used for any conditions in wind, visibility, weather, or sky condition which are expected to last for generally less than an hour at a time (occasional), and are expected to occur during less than half the time period. The TEMPO indicator is followed by two four−digit groups separated by a "/". The first four digit group gives the beginning date and hour, and the second four digit group gives the ending date and hour of the time period during which the temporary conditions are expected. Only the changing forecast meteorological conditions are included in TEMPO groups. The omitted conditions are carried over from the previous time group.

EXAMPLE−

1. *SCT030 TEMPO 0519/0523 BKN030 − "three thousand scattered with occasional ceilings three thousand broken between 1900Z on the 5th and 2300Z on the 5th."*

2. *4SM HZ TEMPO 1900/1906 2SM BR HZ − "visibility four in haze with occasional visibility two in mist and haze between 0000Z on the 19th and 0600Z on the 19th."*

FIG GEN 3.5–23

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

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

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

FIG GEN 3.5–24

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

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

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

Qualifiers
Intensity or Proximity

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

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

Descriptor

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

Weather Phenomena
Precipitation

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

Obscuration

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

Other

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

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

31. Meteorological Broadcasts (ATIS, VHF and LF)

31.1 Continuous Transcribed Weather Broadcasts (TWEB)

31.1.1 Weather broadcasts are made continuously over selected navigational aids. These broadcasts contain the general weather forecasts and winds up to 12,000 feet within a 250−mile radius of the radio. In some cases the forecasts are for route of flight rather than the general area. They also broadcast pilot reports, radar reports, and hourly weather reports of selected locations within a 400−mile radius of the broadcast station.

31.2 Automatic Terminal Information Service (ATIS) Broadcasts

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

31.3 Scheduled Weather Broadcasts (SWB)

31.3.1 Scheduled broadcasts are made only in Alaska at 15 minutes past the hour over en route navigational aids not used for TWEB or ATIS. These broadcasts contain hourly weather reports of selected locations within 150 miles of the station and weather advisories, pilot weather reports, radar weather reports, and Notices to Airmen (NOTAMs).

31.4 Navigational Aids Providing Broadcast Services

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

31.5 Hazardous Inflight Weather Advisory Service (HIWAS)

31.5.1 A 24−hour continuous broadcast of hazardous inflight weather is available on selected navigational outlets. Broadcasts include: severe weather forecast alerts (AWW), airman's meteorological information (AIRMET−text [WA] or graphical [G−AIRMET] product), significant meteorological information (SIGMET), Convective SIGMET (WST), urgent pilot weather reports (UUA), hazardous portions of the domestic area forecasts (FA), and center weather advisories (CWA). HIWAS broadcast outlets are identified on en route/sectional charts and in the Chart Supplement U.S. For further details, contact your nearest FSS.

TBL GEN 3.5−13

Meteorological Broadcasts (VOLMET)

Meteorological Broadcasts (VOLMET)							
Name	**Call Sign**	**Frequency**	**Broadcast**	**Form**	**Contents**	**Emission**	**Remarks**
Honolulu	Honolulu Radio	2863, 6679, 8828, 13282 kHz	H00−05 and H30−35	Forecasts	PHNL Honolulu PHTO Hilo PGUM Guam	Voice	Plain language English
				SIGMET	Oakland FIR		
				Hourly Reports	PHNL Honolulu PHTO Hilo PHOG Kahului PGUM Guam		
			E05−10 and E35−40	Hourly Reports	KSFO San Francisco KSEA Seattle KLAX Los Angeles KPDX Portland KSMF Sacramento KONT Ontario KLAS Las Vegas		
				SIGMET	Oakland FIR		
				Aerodrome Forecasts	KSFO San Francisco KSEA Seattle KLAX Los Angeles		
			E25−30 and E55−00	Hourly Reports	PANC Anchorage PAED ElmendorfAFB PAFA Fairbanks PACD Cold Bay PAKN King Salmon CYVR Vancouver		
				SIGMET	Oakland FIR		
				Forecasts	PANC Anchorage PAFA Fairbanks PACD Cold Bay CYVR Vancouver		
New York	New York Radio	3485, 6604, 10051, 13270 kHz	H00−05	Aerodrome Forecasts	KDTW Detroit KCLE Cleveland KCVG Cincinnati	Voice	Plain language English
				Hourly Reports	KDTW Detroit KCLE Cleveland KCVG Cincinnati KIND Indianapolis KPIT Pittsburgh		
			H05−10	SIGMET	Oceanic − New York FIR		
				Aerodrome Forecasts	KBGR Bangor KBDL Windsor Locks KCLT Charlotte		
				Hourly Reports	KBGR Bangor KBDL Windsor Locks KORF Norfolk KCLT Charlotte		
			H10−15	Aerodrome Forecasts	KJFK New York KEWR Newark KBOS Boston		
				Hourly Reports	KJFK New York KEWR Newark KBOS Boston KBAL Baltimore KIAD Washington		

Meteorological Broadcasts (VOLMET) − continued							
Name	**Call Sign**	**Frequency**	**Broadcast**	**Form**	**Contents**	**Emission**	**Remarks**
			H15−20	SIGMET	Oceanic − Miami FIR/San Juan FIR		
				Aerodrome Forecasts	MXKF Bermuda KMIA Miami KATL Atlanta		
				Hourly Reports	MXKF Bermuda KMIA Miami MYNN Nassau KMCO Orlando KATL Atlanta		
			H30−35	Aerodrome Forecasts	KORD Chicago KMKE Milwaukee KMSP Minneapolis		
				Hourly Reports	KORD Chicago KMKE Milwaukee KMSP Minneapolis KDTW Detroit KBOS Boston		
			E35−40	SIGMET	Oceanic − New York FIR		
				Aerodrome Forecasts	KIND Indianapolis KSTL St. Louis KPIT Pittsburgh		
				Hourly Reports	KIND Indianapolis KSTL St. Louis KPIT Pittsburgh KACY Atlantic City		
			E40−45	Aerodrome Forecasts	KBAL Baltimore KPHL Philadelphia KIAD Washington		
				Hourly Reports	KBAL Baltimore KPHL Philadelphia KIAD Washington KJFK New York KEWR Newark		
			E45−50	SIGMET	Oceanic − Miami FIR/San Juan FIR		
				Aerodrome Forecasts	MYNN Nassau KMCO Orlando		
				Hourly Reports	MXKF Bermuda KMIA Miami MYNN Nassau KMCO Orlando KATL Atlanta KTPA Tampa KPBI West Palm Beach		
All stations operate on A3 emission H24.							
All broadcasts are made 24 hours daily, seven days a week.							

FIG GEN 3.5–25
Key to Decode an ASOS/AWSS (METAR) Observation (Front)

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

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

FIG GEN 3.5−26

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

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

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

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FIG GEN 3.5–27
NEXRAD Coverage

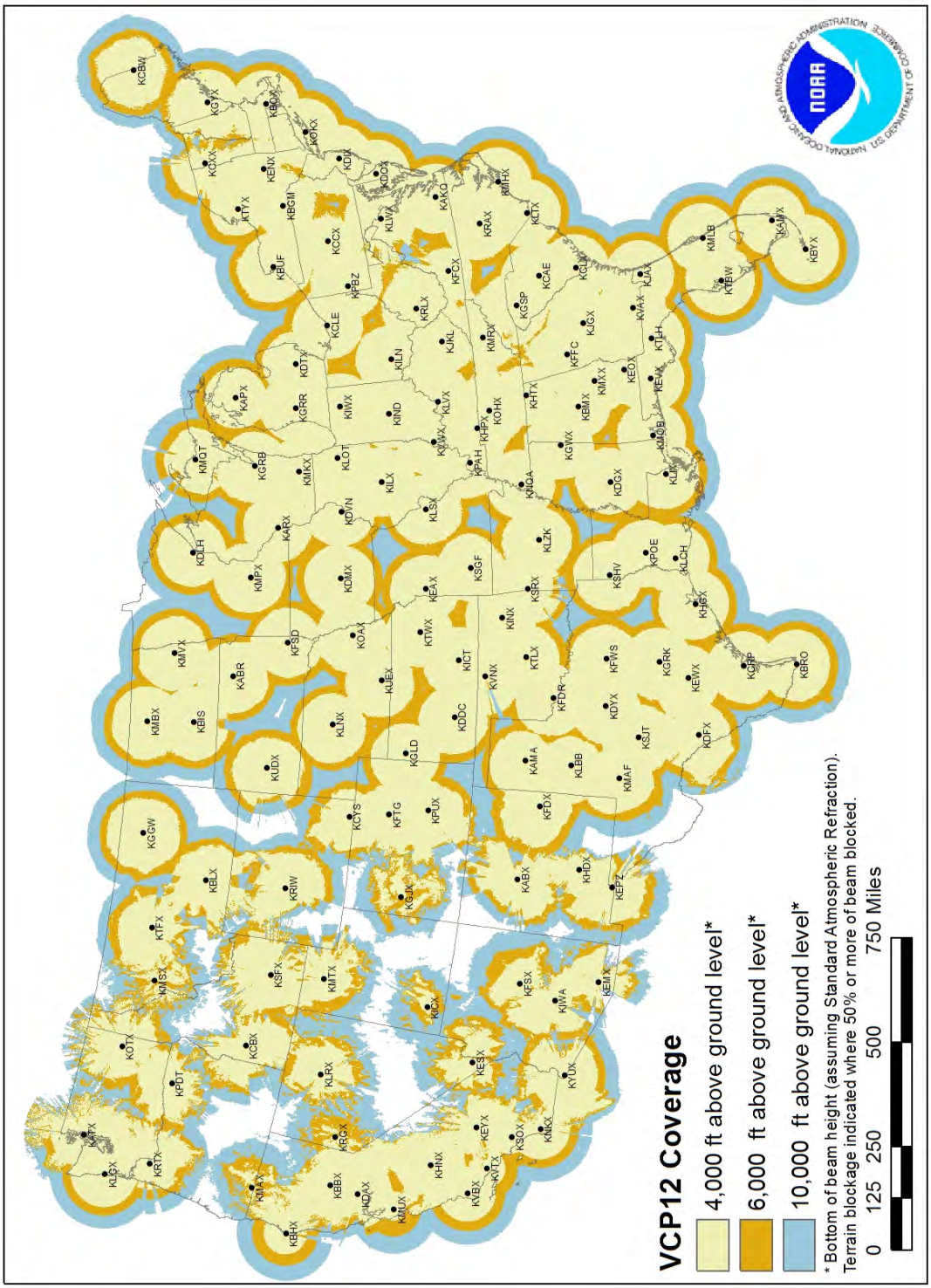

FIG GEN 3.5–28
NEXRAD Coverage

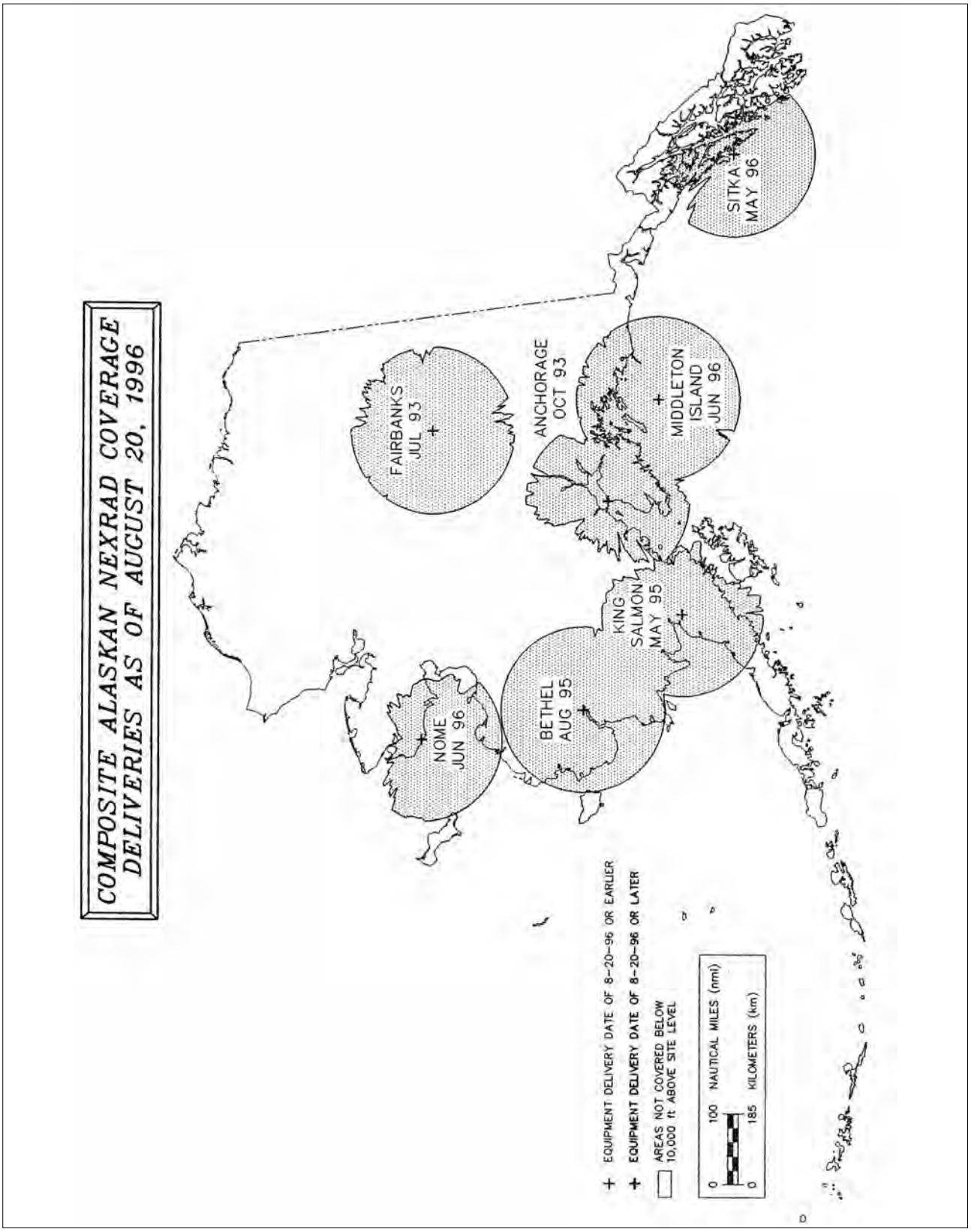

FIG GEN 3.5–29
NEXRAD Coverage

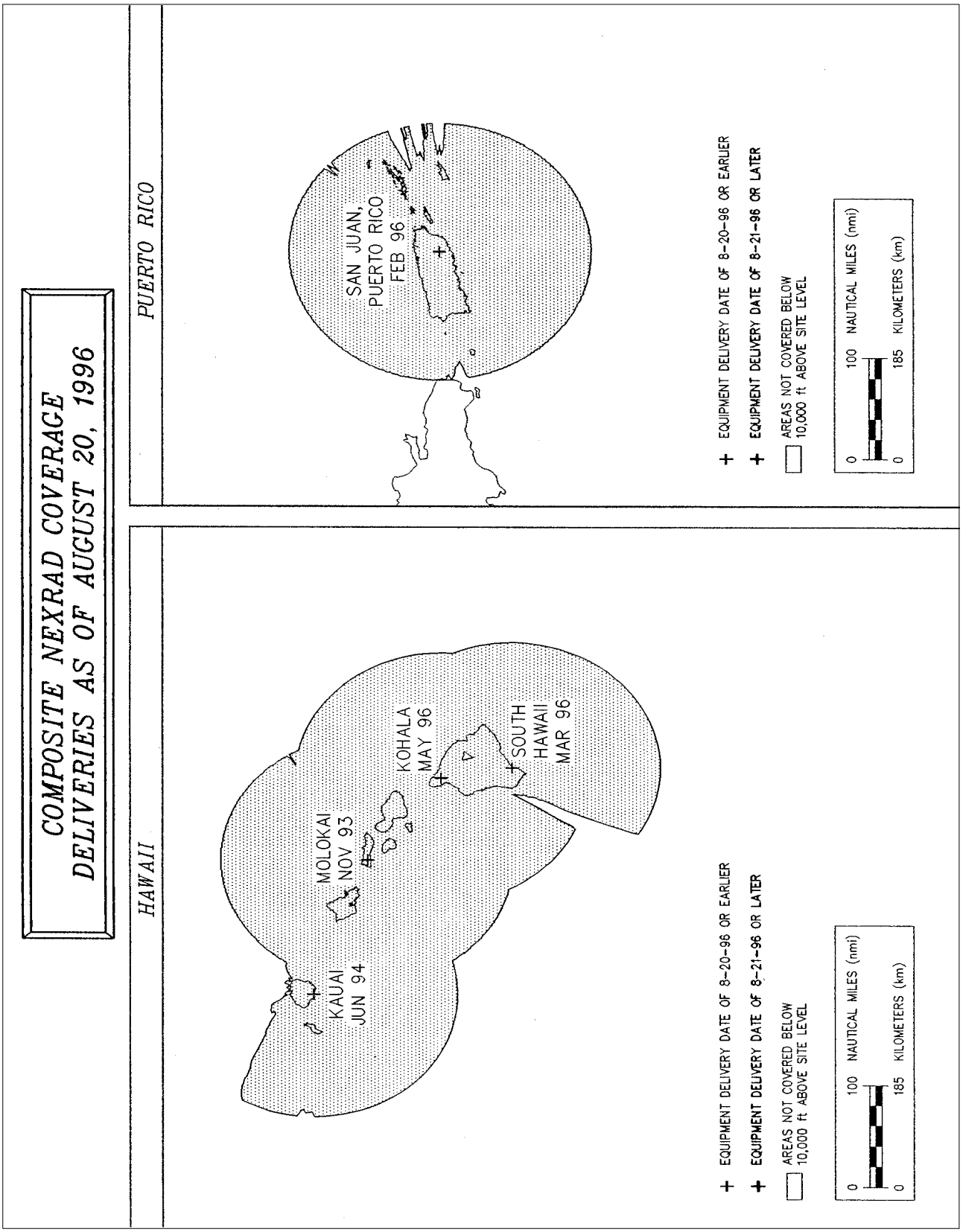

FIG GEN 3.5–30

Volcanic Activity Reporting Form (VAR)

Date _____

SECTION 1 - Transmit to ATC via radio

1. Aircraft Identification	
2. Position	
3. Time (UTC)	
4. Flight level or altitude	
5. Position/location of volcanic activity or ash cloud	
6. Air temperature	
7. Wind	
8. Supplementary Information (Brief description of activity including vertical and lateral extent of the ash cloud, horizontal movement, rate of growth, etc., as available.)	

SECTION 2 - Complete and forward as directed

	Mark the appropriate box(s)		
9. *Density of ash cloud*	☐ wispy	☐ moderately dense	☐ very dense
10. *Color of ash*	☐ white ☐ black	☐ light gray	☐ dark gray
11. *Eruption*	☐ continuous	☐ intermittent	☐ not visible
12. *Position of activity*	☐ summit ☐ multiple	☐ side ☐ not observed	☐ single
13. *Other observed features of eruption*	☐ lightning ☐ ash fallout	☐ glow ☐ mushroom cloud	☐ large rocks ☐ none
14. *Effect on aircraft*	☐ communications ☐ pitot static ☐ none	☐ navigation system ☐ windscreen	☐ engines ☐ other windows
15. *Other effects*	☐ turbulence ☐ ash deposits	☐ St. Elmo's fire	☐ fumes
16. *Other information deemed useful*			

Forward completed form via mail to:
Global Volcanism Program
NHB-119
Smithsonian Institution
Washington, DC 20560

Or Fax to:
Global Volcanism Program
(202) 357-2476

PART 2 – EN ROUTE (ENR)

ENR 0.

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

ENR 0.4 Checklist of Pages

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

ENR 0.6 Table of Contents to Part 2

7. OCEANIC OPERATIONS

20. Option Approach

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

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

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

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

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

22.2 Pilot Responsibilities and Basic Procedures

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

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

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

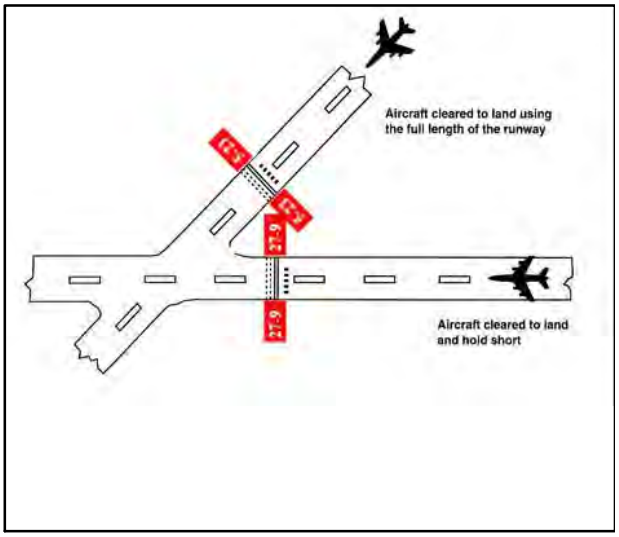
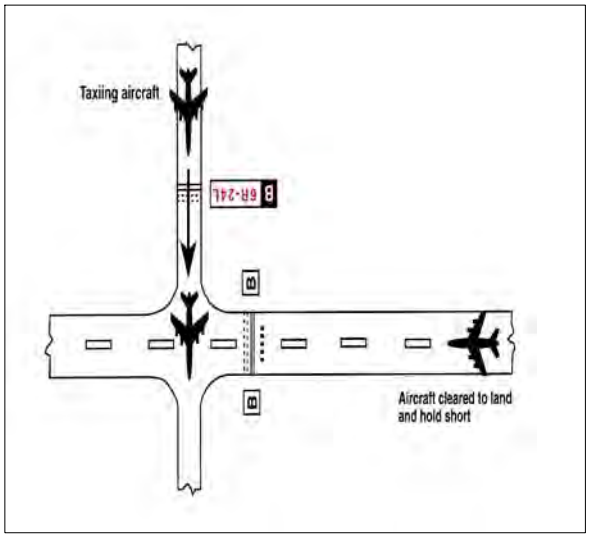


FIG ENR 1.1–9

Land and Hold Short of an Intersecting Taxiway



EXAMPLE–

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

NOTE–

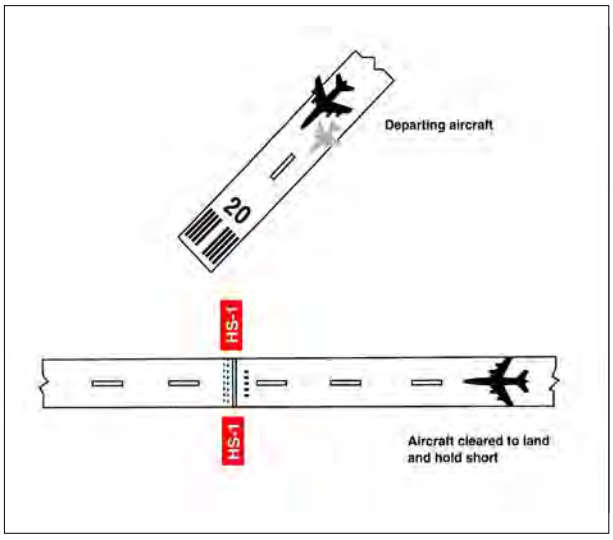
Each figure shows the approximate location of LAHSO markings, signage, and in–pavement lighting when installed.

REFERENCE–

AIP, Part 3 – Aerodromes.

FIG ENR 1.1–10

Land and Hold Short of a Designated Point on a Runway Other Than an Intersecting Runway or Taxiway



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

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

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

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

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

22.2.8 Controllers need a full read back of all LAHSO clearances. Pilots should read back their

LAHSO clearance and include the words, "HOLD SHORT OF (RUNWAY/TAXIWAY/OR POINT)" in their acknowledgment of all LAHSO clearances. In order to reduce frequency congestion, pilots are encouraged to read back the LAHSO clearance without prompting. Don't make the controller have to ask for a read back!

22.3 LAHSO Situational Awareness

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

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

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

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

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

23. Exiting the Runway after Landing

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

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

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

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

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

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

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

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

24. Hand Signals

FIG ENR 1.1–11
Signalman Directs Towing

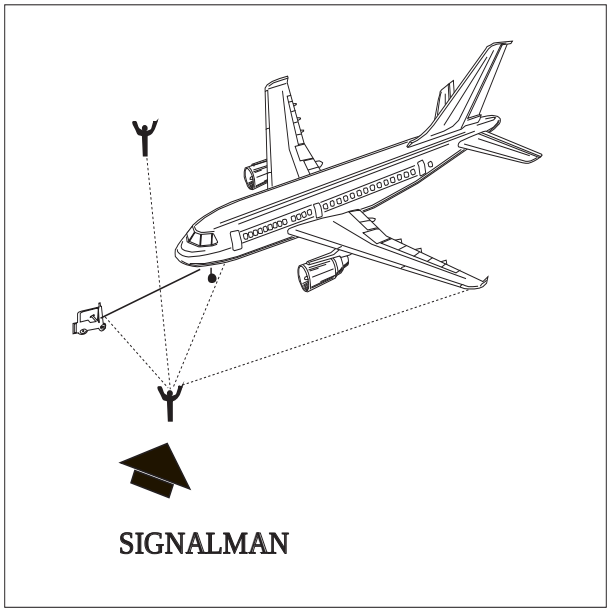


FIG ENR 1.1–12
Signalman's Position

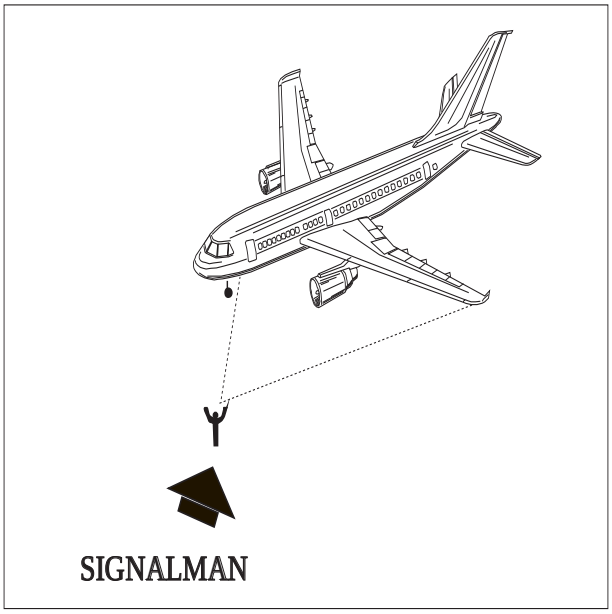


FIG ENR 1.1–13
All Clear (O.K.)

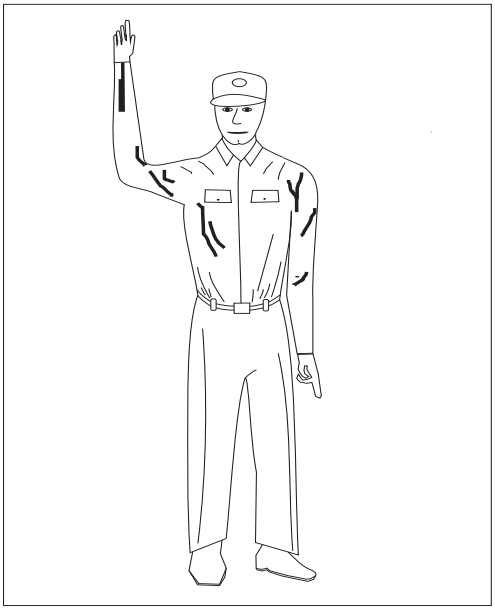
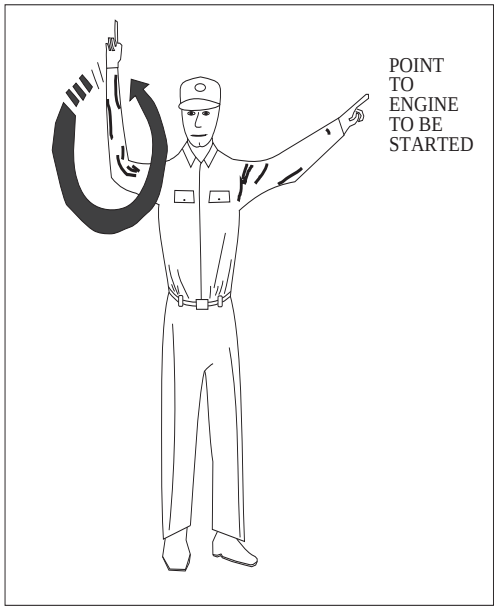


FIG ENR 1.1–14
Start Engine



Classes B, C, D, and E surface areas with less than one statute mile visibility.

27.5.2 When a control tower is located within a Class B, Class C, and Class D surface area, requests for clearances should be to the tower. If no tower is located within the surface area, a clearance may be obtained from the nearest tower, FSS or ARTCC.

27.5.3 It is not necessary to file a complete flight plan with the request for clearance, but pilots should state their intentions in sufficient detail to permit ATC to fit their flight into the traffic flow. The clearance will not contain a specific altitude as the pilot must remain clear of clouds. The controller may require the pilot to fly at or below a certain altitude due to other traffic, but the altitude specified will permit flight at or above the minimum safe altitude. In addition, at radar locations, flight may be vectored if necessary for control purposes or on pilot request.

NOTE–
The pilot is responsible for obstacle or terrain clearance (reference 14 CFR Section 91.119).

27.5.4 Special VFR clearances are effective within Classes B, C, D, and E surface areas only. ATC does not provide separation after an aircraft leaves Class D surface area on a special VFR clearance.

27.5.5 Special VFR operations by fixed–wing aircraft are prohibited in some Classes B and C surface areas due to the volume of IFR traffic. A list of these Classes B and C surface areas is contained in 14 CFR Part 91, Appendix D, Section 3 and also depicted on Sectional Aeronautical Charts.

27.5.6 ATC provides separation between special VFR flights and between them and other IFR flights.

27.5.7 Special VFR operations by fixed–wing aircraft are prohibited between sunset and sunrise unless the pilot is instrument rated and the aircraft is equipped for IFR flight.

27.5.8 Pilots arriving or departing an uncontrolled airport that has automated weather broadcast capability (ASOS/AWSS/AWOS) should monitor the broadcast frequency, advise the controller that they have the "one–minute weather," and state intentions prior to operating within the Class B, Class C, Class D, or Class E surface areas.

NOTE–
One–minute weather is the most recent one minute updated weather broadcast received by a pilot from an uncontrolled airport ASOS/AWSS/AWOS.

28. Pilot Responsibilities Upon Clearance Issuance

28.1 Record ATC Clearance. When conducting an IFR operation, make a written record of your ATC clearance. The specified conditions which are a part of your air traffic clearance may be somewhat different from those included in your flight plan. Additionally, ATC may find it necessary to ADD conditions, such as a particular departure route. The very fact that ATC specifies different or additional conditions means that other aircraft are involved in the traffic situation.

28.2 ATC Clearance/Instruction Readback. Pilots of airborne aircraft should read back *those parts* of ATC clearances and instructions containing altitude assignments, vectors, or runway assignments as a means of mutual verification. The read back of the "numbers" serves as a double check between pilots and controllers and reduces the kinds of communications errors that occur when a number is either "misheard" or is incorrect.

28.2.1 Include the aircraft identification in all readbacks and acknowledgments. This aids controllers in determining that the correct aircraft received the clearance or instruction. The requirement to include aircraft identification in all readbacks and acknowledgments becomes more important as frequency congestion increases and when aircraft with similar call signs are on the same frequency.

EXAMPLE–
"Climbing to Flight Level three three zero, United Twelve" or "November Five Charlie Tango, roger, cleared to land runway nine left."

28.2.2 Read back altitudes, altitude restrictions, and vectors in the same sequence as they are given in the clearance/instruction.

28.2.3 Altitudes contained in charted procedures such as DPs, instrument approaches, etc., should not be read back unless they are specifically stated by the controller.

28.2.4 Initial read back of a taxi, departure or landing clearance should include the runway assignment, including left, right, center, etc. if applicable.

28.3 It is the responsibility of the pilot to accept or refuse the clearance issued.

29. IFR Clearance VFR−On−Top

29.1 A pilot on an IFR flight plan operating in VFR weather conditions, may request VFR−on−top in lieu of an assigned altitude. This would permit pilots to select an altitude or flight level of their choice (subject to any ATC restrictions).

29.2 Pilots desiring to climb through a cloud, haze, smoke, or other meteorological formation and then either cancel their IFR flight plan or operate VFR−on−top may request a climb to VFR−on−top. The ATC authorization must contain either a top report or a statement that no top report is available, and a request to report reaching VFR−on−top. Additionally, the ATC authorization may contain a clearance limit, routing and an alternative clearance if VFR−on−top is not reached by a specified altitude.

29.3 A pilot on an IFR flight plan operating in VFR conditions may request to climb/descend in VFR conditions.

29.4 ATC may not authorize VFR−on−top/VFR conditions operations unless the pilot requests the VFR operation or a clearance to operate in VFR conditions will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA approved noise abatement route or altitude.

29.5 When operating in VFR conditions with an ATC authorization to "maintain VFR−on−top" or "maintain VFR conditions," pilots on IFR flight plans must:

29.5.1 Fly at the appropriate VFR altitude as prescribed in 14 CFR Section 91.159.

29.5.2 Comply with the VFR visibility and distance from cloud criteria in 14 CFR Section 91.155 (Basic VFR Weather Minimums).

NOTE−
See AIP, GEN 1.7, Annex 2, Rules of the Air, for a table showing basic VFR weather minimums.

29.5.3 Comply with instrument flight rules that are applicable to this flight; i.e., minimum IFR altitude, position reporting, radio communications, course to be flown, adherence to ATC clearance, etc. Pilots should advise ATC prior to any altitude change to ensure the exchange of accurate traffic information.

29.6 ATC authorization to "maintain VFR−on−top" is not intended to restrict pilots so that they must operate only above an obscuring meteorological formation (layer). Instead, it permits operation above, below, between layers or in areas where there is no meteorological obscuration. It is imperative that clearance to operate "VFR−on−top/VFR conditions" does not imply cancellation of the IFR flight plan.

29.7 Pilots operating VFR−on−top/VFR conditions may receive traffic information from ATC on other pertinent IFR or VFR aircraft. However, aircraft operating in Class B or Class C airspace and TRSAs must be separated as required by FAA Order JO 7110.65, Air Traffic Control.

NOTE−
When operating in VFR weather conditions, it is the pilot's responsibility to be vigilant so as to see and avoid other aircraft.

30. VFR/IFR Flights

30.1 A pilot departing VFR, either intending to or needing to obtain an IFR clearance en route, must be aware of the position of the aircraft and the relative terrain/obstructions. When accepting a clearance below the minimum en route altitude (MEA)/minimum IFR altitude (MIA)/minimum vector altitude (MVA)/off route obstruction clearance altitude (OROCA), pilots are responsible for their own terrain/obstruction clearance until reaching the MEA/MIA/MVA/OROCA. If the pilots are unable to maintain terrain/obstruction clearance, the controller should be advised and pilots should state their intentions.

NOTE−
OROCA is an off route altitude which provides obstruction clearance with a 1,000 foot buffer in nonmountainous terrain areas and a 2,000 foot buffer in designated mountainous areas within the U.S. This altitude may not provide signal coverage from ground based navigational aids, air traffic control radar, or communications coverage.

31. Adherence to Clearance

31.1 When air traffic clearance has been obtained under either the Visual or Instrument Flight Rules, the pilot in command of the aircraft must not deviate from the provisions thereof unless an amended clearance is obtained. When ATC issues a clearance or instruction, pilots are expected to execute its provisions upon receipt. ATC, in certain situations, will include the word "IMMEDIATELY" in a clearance or instruction to impress urgency of an

"line of sight" with ground radar and ADS–B radio sites. Low altitude or aircraft antenna shielding by the aircraft itself may result in reduced range or loss of aircraft contact. Surveillance coverage can be improved by climbing to a higher altitude.

NOTE–
For a complete description of operating limitations and procedures, pilots of aircraft equipped with ADS–B should refer to AIP, Automatic Dependent Surveillance – Broadcast Services, ENR 1.1 Paragraph 45.

37.7.2 Transponder Code Designation

37.7.2.1 For ATC to utilize one or a combination of the 4096 discrete codes, FOUR DIGIT CODE DESIGNATION will be used; e.g., code 2100 will be expressed as TWO ONE ZERO ZERO. Due to the operational characteristics of the rapidly expanding automated ATC system, THE LAST TWO DIGITS OF THE SELECTED TRANSPONDER CODE SHOULD ALWAYS READ '00' UNLESS SPECIFICALLY REQUESTED BY ATC TO BE OTHERWISE.

37.7.3 Automatic Altitude Reporting (Mode C)

37.7.3.1 Some transponders are equipped with a Mode C automatic altitude reporting capability. This system converts aircraft altitude in 100 foot increments to coded digital information which is transmitted together with Mode C framing pulses to the interrogating radar facility. The manner in which transponder panels are designed differs, therefore, a pilot should be thoroughly familiar with the operation of the transponder so that ATC may realize its full capabilities.

37.7.3.2 Adjust transponder to reply on the Mode A/3 code specified by ATC and, if equipped, to reply on Mode C with altitude reporting capability activated unless deactivation is directed by ATC or unless the installed aircraft equipment has not been tested and calibrated as required by 14 CFR Section 91.217. If deactivation is required by ATC, run off the altitude reporting feature of your transponder. An instruction by ATC to "STOP ALTITUDE SQUAWK, ALTITUDE DIFFERS (number of feet) FEET," may be an indication that your transponder is transmitting incorrect altitude information or that you have an incorrect altimeter setting. While an incorrect altimeter setting has no effect on the Mode C altitude information transmitted by your transponder (transponders are preset at 29.92), it would cause you to fly at an actual altitude different from your assigned altitude. When a controller indicates that an altitude readout is invalid, the pilot should initiate a check to verify that the aircraft altimeter is set correctly.

37.7.3.3 Pilots of aircraft with operating Mode C altitude reporting transponders should exact altitude/flight level to the nearest hundred foot increment when establishing initial contact with an ATC. Exact altitude/flight level reports on initial contact provide ATC with information that is required prior to using Mode C altitude information for separation purposes. This will significantly reduce altitude verification requests.

37.7.4 Transponder IDENT Feature

37.7.4.1 The transponder must be operated only as specified by ATC. Activate the "IDENT" feature only upon request of the ATC controller.

37.7.5 Code Changes

37.7.5.1 When making routine code changes, pilots should avoid inadvertent selection of Codes 7500, 7600, or 7700 thereby causing momentary false alarms at automated ground facilities. For example when switching from Code 2700 to Code 7200, switch first to 2200 then 7200, NOT to 7700 and then 7200. This procedure applies to nondiscrete Code 7500 and all discrete codes in the 7600 and 7700 series (i.e., 7600–7677, 7700–7777) which will trigger special indicators in automated facilities. Only nondiscrete Code 7500 will be decoded as the hijack code.

37.7.5.2 Under no circumstances should a pilot of a civil aircraft operate the transponder on Code 7777. This code is reserved for military interceptor operations.

37.7.5.3 Military pilots operating VFR or IFR within restricted/warning areas should adjust their transponders to Code 4000, unless another code has been assigned by ATC.

37.7.6 Mode C Transponder Requirements

37.7.6.1 Specific details concerning requirements to carry and operate Mode C transponders, as well as exceptions and ATC authorized deviations from the requirements are found in 14 CFR Sections 91.215 and 99.13.

37.7.6.2 In general, the CFR requires aircraft to be equipped with Mode C transponders when operating:

a) At or above 10,000 feet MSL over the 48 contiguous states or the District of Columbia, excluding that airspace below 2,500 feet AGL.

b) Within 30 miles of a Class B airspace primary airport, below 10,000 feet MSL. Balloons, gliders, and aircraft not equipped with an engine driven electrical system are excepted from the above requirements when operating below the floor of Class A airspace and/or; outside of Class B airspace and below the ceiling of the Class B airspace (or 10,000 feet MSL, whichever is lower).

c) Within and above all Class C airspace up to 10,000 feet MSL.

d) Within 10 miles of certain designated airports from the surface to 10,000 feet MSL, excluding that airspace which is both outside Class D airspace and below 1,200 feet AGL. Balloons, gliders and aircraft not equipped with an engine driven electrical system are excepted from this requirement.

37.7.6.3 14 CFR Section 99.12 requires all aircraft flying into, within, or across the contiguous U.S. ADIZ be equipped with a Mode C or Mode S transponder. Balloons, gliders, and aircraft not equipped with an engine driven electrical system are excepted from this requirement.

37.7.6.4 Pilots must ensure that their aircraft transponder is operating on an appropriate ATC assigned VFR/IFR code and Mode C when operating in such airspace. If in doubt about the operational status of either feature of your transponder while airborne, contact the nearest ATC facility or FSS and they will advise you what facility you should contact for determining the status of your equipment.

37.7.6.5 Inflight requests for "immediate" deviation from the transponder requirements may be approved by controllers only when the flight will continue IFR or when weather conditions prevent VFR descent and continued VFR flight in airspace not affected by the CFR. All other requests for deviation should be made by contacting the nearest FSS or air traffic facility in person or by telephone. The nearest ARTCC will normally be the controlling agency and is responsible for coordinating requests involving deviations in other ARTCC's areas.

37.7.7 Transponder Operation Under Visual Flight Rules (VFR)

37.7.7.1 Unless otherwise instructed by an ATC Facility, adjust transponder to reply on Mode 3/A Code 1200 regardless of altitude.

NOTE–

1. *Aircraft not in contact with an ATC facility may squawk 1255 in lieu of 1200 while en route to, from, or within the designated fire fighting area(s).*

2. *VFR aircraft which fly authorized SAR missions for the USAF or USCG may be advised to squawk 1277 in lieu of 1200 while en route to, from, or within the designated search area.*

3. *Gliders not in contact with an ATC facility should squawk 1202 in lieu of 1200.*

REFERENCE–

FAA Order JO 7110.66, National Beacon Code Allocation Plan.

37.7.7.2 Adjust transponder to reply on Mode C, with altitude reporting capability activated if the aircraft is so equipped, unless deactivation is directed by ATC or unless the installed equipment has not been tested and calibrated as required by 14 CFR Section 91.217. If deactivation is required and your transponder is so designed, turn off the altitude reporting switch and continue to transmit Mode C framing pulses. If this capability does not exist, turn off Mode C.

37.7.8 Radar Beacon Phraseology

37.7.8.1 Air traffic controllers, both civil and military, will use the following phraseology when referring to operation of the ATCRBS. Instructions by ATC refer only to Mode A/3 or Mode C operations and do not affect the operation of the transponder on other modes.

a) SQUAWK (number). Operate radar beacon transponder on designated code in Mode A/3.

b) IDENT. Engage the "IDENT" feature (military I/P) of the transponder.

c) SQUAWK (number) AND IDENT. Operate transponder on specified code in Mode A/3 and engage the "IDENT" (military I/P) feature.

d) SQUAWK STANDBY. Switch transponder to standby position.

e) SQUAWK LOW/NORMAL. Operate transponder on low or normal sensitivity as specified. Transponder is operated in "NORMAL" position unless ATC specified "LOW." ("ON" is used instead

Paragraph 38.11, Non–RVSM Aircraft Requesting Climb to and Descent from Flight Levels Above RVSM Airspace Without Intermediate Level Off.

38.5.1.3 An emergency situation exists.

38.5.2 Basic RVSM Operating Practices and Procedures. Appendix B of AC 91–85, *Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum Airspace,* contains pilot practices and procedures for RVSM. Operators must incorporate Appendix B practices and procedures, as supplemented by the applicable paragraphs of this section, into operator training or pilot knowledge programs and operator documents containing RVSM operational policies.

38.5.3 Appendix B contains practices and procedures for flight planning, preflight procedures at the aircraft, procedures prior to RVSM airspace entry, inflight (en route) procedures, contingency procedures and post flight.

38.5.4 The following paragraphs either clarify or supplement Appendix B practices and procedures.

38.6 Guidance on Severe Turbulence and Mountain Wave Activity (MWA)

38.6.1 Introduction/Explanation

38.6.1.1 The information and practices in this paragraph are provided to emphasize to pilots and controllers the importance of taking appropriate action in RVSM airspace when aircraft experience severe turbulence and/or MWA that is of sufficient magnitude to significantly affect altitude–keeping.

38.6.1.2 Severe Turbulence. Severe turbulence causes large, abrupt changes in altitude and/or attitude usually accompanied by large variations in indicated airspeed. Aircraft may be momentarily out of control. Encounters with severe turbulence must be remedied immediately in any phase of flight. Severe turbulence may be associated with MWA.

38.6.1.3 Mountain Wave Activity (MWA)

a) Significant MWA occurs both below and above the floor of RVSM airspace, FL 290. MWA often occurs in western states in the vicinity of mountain ranges. It may occur when strong winds blow perpendicular to mountain ranges resulting in up and down or wave motions in the atmosphere. Wave action can produce altitude excursions and airspeed fluctuations accompanied by only light turbulence. With sufficient amplitude, however, wave action can induce altitude and airspeed fluctuations accompanied by severe turbulence. MWA is difficult to forecast and can be highly localized and short lived.

b) Wave activity is not necessarily limited to the vicinity of mountain ranges. Pilots experiencing wave activity anywhere that significantly affects altitude–keeping can follow the guidance provided below.

c) Inflight MWA Indicators (Including Turbulence). Indicators that the aircraft is being subjected to MWA are:

1) Altitude excursions and/or airspeed fluctuations with or without associated turbulence.

2) Pitch and trim changes required to maintain altitude with accompanying airspeed fluctuations.

3) Light to severe turbulence depending on the magnitude of the MWA.

38.6.1.4 Priority for Controller Application of Merging Target Procedures

a) Explanation of Merging Target Procedures. As described in subparagraph 38.6.3.3 below, ATC will use “merging target procedures” to mitigate the effects of both severe turbulence and MWA. The procedures in subparagraph 38.6.3.3 have been adapted from existing procedures published in FAA Order JO 7110.65, Air Traffic Control, Paragraph 5–1–8, Merging Target Procedures. Paragraph 5–1–8 calls for en route controllers to advise pilots of potential traffic that they perceive may fly directly above or below his/her aircraft at minimum vertical separation. In response, pilots are given the option of requesting a radar vector to ensure their radar target will not merge or overlap with the traffic’s radar target.

b) The provision of “merging target procedures” to mitigate the effects of severe turbulence and/or MWA is not optional for the controller, but rather is a priority responsibility. Pilot requests for vectors for traffic avoidance when encountering MWA or pilot reports of “Unable RVSM due turbulence or MWA” are considered first priority aircraft separation and sequencing responsibilities. (FAA Order JO 7110.65, Paragraph 2–1–2, Duty Priority, states that the controller’s first priority is to separate aircraft and issue safety alerts).

c) Explanation of the term "traffic permitting." The contingency actions for MWA and severe turbulence detailed in Paragraph 38.9, Contingency Actions: Weather Encounters and Aircraft System Failures that Occur After Entry into RVSM Airspace, state that the controller will "vector aircraft to avoid merging targets with traffic at adjacent flight levels, traffic permitting." The term "traffic permitting" is not intended to imply that merging target procedures are not a priority duty. The term is intended to recognize that, as stated in FAA Order JO 7110.65, Paragraph 2–1–2, Duty Priority, there are circumstances when the controller is required to perform more than one action and must "exercise their best judgment based on the facts and circumstances known to them" to prioritize their actions. Further direction given is: "That action which is most critical from a safety standpoint is performed first."

38.6.1.5 TCAS Sensitivity. For both MWA and severe turbulence encounters in RVSM airspace, an additional concern is the sensitivity of collision avoidance systems when one or both aircraft operating in close proximity receive TCAS advisories in response to disruptions in altitude hold capability.

38.6.2 Pre–flight tools. Sources of observed and forecast information that can help the pilot ascertain the possibility of MWA or severe turbulence are: Forecast Winds and Temperatures Aloft (FD), Area Forecast (FA), Graphical Turbulence Guidance (GTG), SIGMETs and PIREPs.

38.6.3 Pilot Actions When Encountering Weather (for example, Severe Turbulence or MWA)

38.6.3.1 Weather Encounters Inducing Altitude Deviations of Approximately 200 feet. When the pilot experiences weather induced altitude deviations of approximately 200 feet, the pilot will contact ATC and state "Unable RVSM Due (state reason)" (e.g., turbulence, mountain wave). See contingency actions in paragraph 38.9.

38.6.3.2 Severe Turbulence (including that associated with MWA). When pilots encounter severe turbulence, they should contact ATC and report the situation. Until the pilot reports clear of severe turbulence, the controller will apply merging target vectors to one or both passing aircraft to prevent their targets from merging:

EXAMPLE–
"Yankee 123, FL 310, unable RVSM due severe turbulence."

"Yankee 123, fly heading 290; traffic twelve o'clock, 10 miles, opposite direction; eastbound MD–80 at FL 320" (or the controller may issue a vector to the MD–80 traffic to avoid Yankee 123).

38.6.3.3 MWA. When pilots encounter MWA, they should contact ATC and report the magnitude and location of the wave activity. When a controller makes a merging targets traffic call, the pilot may request a vector to avoid flying directly over or under the traffic. In situations where the pilot is experiencing altitude deviations of 200 feet or greater, the pilot will request a vector to avoid traffic. Until the pilot reports clear of MWA, the controller will apply merging target vectors to one or both passing aircraft to prevent their targets from merging:

EXAMPLE–
"Yankee 123, FL 310, unable RVSM due mountain wave."

"Yankee 123, fly heading 290; traffic twelve o'clock, 10 miles, opposite direction; eastbound MD–80 at FL 320" (or the controller may issue a vector to the MD–80 traffic to avoid Yankee 123).

38.6.3.4 FL Change or Re–route. To leave airspace where MWA or severe turbulence is being encountered, the pilot may request a FL change and/or re–route, if necessary.

38.7 Guidance on Wake Turbulence

38.7.1 Pilots should be aware of the potential for wake turbulence encounters in RVSM airspace. Experience gained since 1997 has shown that such encounters in RVSM airspace are generally moderate or less in magnitude.

38.7.2 Prior to DRVSM implementation, the FAA established provisions for pilots to report wake turbulence events in RVSM airspace using the NASA Aviation Safety Reporting System (ASRS). A "Safety Reporting" section established on the FAA RVSM Documentation webpage provides contacts, forms, and reporting procedures.

38.7.3 To date, wake turbulence has not been reported as a significant factor in DRVSM operations. European authorities also found that reports of wake turbulence encounters did not increase significantly after RVSM implementation (eight versus seven reports in a ten–month period). In addition, they found that reported wake turbulence

flights of 2 hours duration or less. If longer flights are planned, extensive coordination may be required with the multiple complex which could result in unanticipated delays.

40.2 There are no unique requirements upon pilots to use the TEC program. Normal flight plan filing procedures will ensure proper flight plan processing. Pilots should include the acronym "TEC" in the remarks selection of the flight plan when requesting tower en route.

40.3 All approach controls in the system may not operate up to the maximum TEC altitude of 10,000 feet. IFR flight may be planned to any satellite airport in proximity to the major primary airport via the same routing.

41. Services in Offshore Controlled Airspace

41.1 Pilots requesting TEC are subject to the same delay factor at the destination airport as other aircraft in the ATC system. In addition, departure and en route delays may occur depending upon individual facility workload. When a major metropolitan airport is incurring significant delays, pilots in the TEC program may want to consider an alternative airport experiencing no delay.

41.2 Flights which operate between the U.S. 3–mile territorial limit and the adjoining oceanic controlled airspace/flight information region (CTA/FIR) boundaries generally operate in airspace designated by federal regulation as "controlled airspace," or "offshore controlled airspace."

41.3 Within the designated areas ATC radar surveillance, ground based navigational signal coverage, and air/ground communications are capable of supporting air traffic services comparable to those provided over U.S. domestic controlled airspace.

41.4 Pilots should be aware that domestic procedures will be applied in offshore controlled airspace to both VFR and IFR aircraft using ATC services.

42. Pilot/Controller Roles/Responsibilities

42.1 General

42.1.1 The roles and responsibilities of the pilot and controller for effective participation in the ATC system are contained in several documents. Pilot responsibilities are in the Federal Aviation Regulations (Title 14 of the U.S. Code of Federal Regulations) and the air traffic controller's are in FAA Order JO 7110.65, Air Traffic Control, and supplemental FAA directives. Additional and supplemental information for pilots can be found in the current Aeronautical Information Manual, Notices to Airmen, advisory circulars, and aeronautical charts. Since there are many other excellent publications produced by nongovernment organizations as well as other Government organizations with various updating cycles, questions concerning the latest or most current material can be resolved by cross–checking with the above mentioned documents.

42.1.2 The pilot in command of an aircraft is directly responsible for and is the final authority as to the safe operation of that aircraft. In an emergency requiring immediate action, the pilot in command may deviate from any rule in the General, Subpart A, and Flight Rules, Subpart B, in accordance with 14 CFR Section 91.3.

42.1.3 The air traffic controller is responsible to give first priority to the separation of aircraft and to the issuance of radar safety alerts; second priority to other services that are required, but do not involve separation of aircraft; and third priority to additional services to the extent possible.

42.1.4 In order to maintain a safe and efficient air traffic system, it is necessary that every party fulfill their responsibilities to the fullest.

42.1.5 The responsibilities of the pilot and the controller intentionally overlap in many areas providing a degree of redundancy. Should one or the other fail in any manner, this overlapping responsibility is expected to compensate, in many cases, for failures that may affect safety.

42.1.6 The following, while not intended to be all inclusive, is a brief listing of pilot and controller responsibilities for some commonly used procedures or phases of flight. More detailed explanations are contained in the appropriate Federal Aviation Regulations, Advisory Circulars, and similar publications. The information provided here is an overview of the principles involved and is not meant as an interpretation of the rules nor is it intended to extend or diminish responsibilities.

42.2 Air Traffic Clearance

42.2.1 Pilot

42.2.1.1 Acknowledges receipt and understanding of an ATC clearance.

42.2.1.2 Reads back any hold short of runway instructions issued by ATC.

42.2.1.3 Requests clarification or amendment, as appropriate, any time a clearance is not fully understood, or considered unacceptable from a safety standpoint.

42.2.1.4 Promptly complies with an air traffic clearance upon receipt, except as necessary to cope with an emergency. Advises ATC as soon as possible and obtains an amended clearance if deviation is necessary.

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

42.2.2 Controller

42.2.2.1 Issues appropriate clearances for the operation being, or to be, conducted in accordance with established criteria.

42.2.2.2 Assigns altitudes in IFR clearances that are at or above the minimum IFR altitudes in Classes A, B, C, D, and E airspace.

42.2.2.3 Ensures acknowledgements by the pilot for issued information, clearance, or instructions.

42.2.2.4 Ensures that readbacks by the pilot of altitude, heading, or other items are correct. If incorrect, distorted, or incomplete, makes corrections as appropriate.

42.3 Contact Approach

42.3.1 Pilot

42.3.1.1 This approach must be requested by the pilot and is made in lieu of a standard or special instrument approach.

42.3.1.2 By requesting the contact approach, the pilot indicates that the flight is operating clear of clouds, has at least 1 mile flight visibility, and can reasonably expect to continue to the destination airport in those conditions.

42.3.1.3 Be aware that while conducting a contact approach, the pilot assumes responsibility for obstruction clearance.

42.3.1.4 Advises ATC immediately if you are unable to continue the contact approach or if you encounter less than 1 mile flight visibility.

42.3.1.5 Be aware that, if radar service is being received, it may automatically terminate when the pilot is told to contact the tower. “Radar service terminated” is used by ATC to inform a pilot that he/she will no longer be provided any of the services that could be received while in radar contact.

REFERENCE–
The Pilot/Controller Glossary is published in the Aeronautical Information Manual (AIM) and FAA Orders JO 7110.10, Flight Services, and JO 7110.65, Air Traffic Control.

42.3.2 Controller

42.3.2.1 Issues clearance for contact approach only when requested by the pilot. Does not solicit the use of this procedure.

42.3.2.2 Before issuing clearance, ascertains that reported ground visibility at destination airport is at least 1 mile.

42.3.2.3 Provides approved separation between aircraft cleared for contact approach and other IFR or special VFR aircraft. When using vertical separation, does not assign a fixed altitude but clears the aircraft at or below an altitude which is at least 1,000 feet below any IFR traffic but not below minimum safe altitudes prescribed in 14 CFR Section 91.119.

42.3.2.4 Issues alternative instructions if, in the controller’s judgment, weather conditions may make completion of the approach impractical.

42.4 Instrument Approach

42.4.1 Pilot

42.4.1.1 Be aware that the controller issues clearance for approach based only on known traffic.

42.4.1.2 Follows the procedures as shown on the instrument approach chart including all restrictive notations, such as:

a) Procedure not authorized at night.

b) Approach not authorized when local area altimeter not available.

c) Procedure not authorized when control tower not in operation.

d) Procedure not authorized when glide slope not used.

e) Straight–in minimums not authorized at night.

f) Radar required.

g) The circling minimums published on the instrument approach chart provide adequate obstruction clearance. The pilot should not descend below the circling altitude until the aircraft is in a position to make final descent for landing. Sound judgment and knowledge of the pilot's and the aircraft's capabilities are the criteria for a pilot to determine the exact maneuver in each instance since airport design and the aircraft position, altitude, and airspeed must all be considered. (See ENR 1.5, Paragraph 11.6, Circling Minimums.)

42.4.1.3 Upon receipt of an approach clearance while on an unpublished route or being radar vectored:

a) Complies with the minimum altitude for IFR.

b) Maintains last assigned altitude until established on a segment of a published route or Instrument Approach Procedure (IAP), at which time published altitudes apply.

42.4.1.4 When applicable, apply cold temperature correction to instrument approach segments. Advise ATC when intending to apply cold temperature correction and of the amount of correction required for each affected segment on initial contact (or as soon as possible). This information is required for ATC to provide aircraft appropriate vertical separation between known traffic.

REFERENCE–
AIP, Paragraph ENR 1.7–3. Altimeter Errors
AIP, TBL ENR 1.7–3, ICAO Cold Temperature Error

42.4.2 Controller

42.4.2.1 Issues an approach clearance based on known traffic.

42.4.2.2 Issues an IFR approach clearance only after aircraft is established on a segment of published route or IAP; or assigns an appropriate altitude for the aircraft to maintain until so established.

42.5 Missed Approach

42.5.1 Pilot

42.5.1.1 Executes a missed approach when one of the following conditions exist:

a) Arrival at the missed approach point (MAP) or the decision height (DH) and visual reference to the runway environment is insufficient to complete the landing.

b) Determines that a safe approach or landing is not possible (see ENR 1.5 paragraph 27.8).

c) Instructed to do so by ATC.

42.5.1.2 Advises ATC that a missed approach will be made. Include the reason for the missed approach unless initiated by ATC.

42.5.1.3 Complies with the missed approach instructions for the IAP being executed from the MAP, unless other missed approach instructions are specified by ATC.

42.5.1.4 If executing a missed approach prior to reaching the MAP, fly the lateral navigation path of the instrument procedure to the MAP. Climb to the altitude specified in the missed approach procedure, except when a maximum altitude is specified between the final approach fix (FAF) and the MAP. In that case, comply with the maximum altitude restriction. Note, this may require a continued descent on the final approach.

42.5.1.5 When applicable, apply cold temperature correction to the published missed approach segment. Advise ATC when intending to apply cold temperature correction and of the amount of correction required on initial contact (or as soon as possible). This information is required for ATC to provide aircraft appropriate vertical separation between known traffic. The pilot must not apply an altitude correction to an assigned altitude when provided an initial heading to fly or radar vector in lieu of published missed approach procedures, unless approved by ATC.

REFERENCE–
AIP, Paragraph ENR 1.7–3. Altimeter Errors
AIP, TBL ENR 1.7–3, ICAO Cold Temperature Error

42.5.1.6 Following a missed approach, requests clearance for specific action; i.e., another approach, hold for improved conditions, proceed to an alternate airport, etc.

42.5.2 Controller

42.5.2.1 Issues an approved alternate missed approach procedure if it is desired that the pilot execute a procedure other than as depicted on the instrument approach chart.

42.5.2.2 May vector a radar identified aircraft executing a missed approach when operationally advantageous to the pilot or the controller.

42.5.2.3 In response to the pilot's stated intentions, issues a clearance to an alternate airport, to a holding fix, or for reentry into the approach sequence, as traffic conditions permit.

42.6 Radar Vectors

42.6.1 Pilot

42.6.1.1 Promptly complies with headings and altitudes assigned to you by the controller.

42.6.1.2 Questions any assigned heading or altitude believed to be incorrect.

42.6.1.3 If operating VFR and compliance with any radar vector or altitude would cause a violation of any Federal Aviation Regulation, advises ATC and obtain a revised clearance or instruction.

42.6.2 Controller

42.6.2.1 Vectors aircraft in Class A, B, C, D, and E airspace:

a) For separation.

b) For noise abatement.

c) To obtain an operational advantage for the pilot or the controller.

42.6.2.2 Vectors aircraft in Class A, B, C, D, E, and G airspace when requested by the pilot.

42.6.2.3 Vectors IFR aircraft at or above minimum vectoring altitudes.

42.6.2.4 May vector VFR aircraft, not at an ATC assigned altitude, at any altitude. In these cases, terrain separation is the pilot's responsibility.

42.7 Speed Adjustments

42.7.1 Pilot (In U.S. Domestic Class A, B, C, D, and E airspace)

42.7.2 Except as stated in paragraphs 42.7.5 and 42.7.6, advises ATC anytime the true airspeed at cruising level varies or is expected to vary by plus or minus 10 knots or 0.02 Mach number, whichever is less, of the filed true airspeed.

42.7.3 Complies with speed adjustments from ATC unless:

42.7.3.1 Except as stated in paragraphs 42.7.5 and 42.7.6, advises ATC anytime the true airspeed at cruising level varies or is expected to vary by plus or minus 10 knots or 0.02 Mach number, whichever is less, of the filed true airspeed.

42.7.3.2 Complies with speed adjustments from ATC unless:

a) The minimum or maximum safe airspeed for any particular operation is greater or less than the requested airspeed. In such cases, advises ATC.

b) Operating at or above 10,000 feet MSL on an ATC assigned SPEED ADJUSTMENT of more than 250 knots IAS and subsequent clearance is received for descent below 10,000 feet MSL. In such cases, pilots are expected to comply with 14 CFR Section 97.117(a).

42.7.4 Controller (In U.S. Domestic Class A, B, C, D, and E Airspaces)

42.7.4.1 Assigns aircraft to speed adjustments when necessary, but not as a substitute for good vectoring technique.

42.7.4.2 Adheres to the restrictions of FAA Order JO 7110.65, Air Traffic Control, as to when speed adjustment procedures may be applied.

42.7.4.3 Avoids speed adjustments requiring alternate decreases and increases.

42.7.4.4 Assigns speed adjustments to a specified IAS knots/Mach number or to increase or decrease speed utilizing increments of 5 knots or multiples thereof.

42.7.4.5 Terminates ATC-assigned speed adjustments when no longer required by issuing further instructions to pilots in the following manner:

a) Advises pilots to "resume normal speed" when the aircraft is on a heading, random routing, charted procedure, or route without published speed restrictions.

b) Instructs pilots to "comply with speed restrictions" when the aircraft is joining or resuming a charted procedure or route with published speed restrictions.

CAUTION–
The phraseology "Climb via SID" requires compliance

11.3.2 Precision Obstacle Free Zone (POFZ). A volume of airspace above an area beginning at the runway threshold, at the threshold elevation, and centered on the extended runway centerline. The POFZ is 200 feet (60m) long and 800 feet (240m) wide. The POFZ must be clear when an aircraft on a vertically guided final approach is within 2 nautical miles of the runway threshold and the official weather observation is a ceiling below 250 feet or visibility less than 3/4 statute mile (SM) (or runway visual range below 4,000 feet). If the POFZ is not clear, the MINIMUM authorized height above touchdown (HAT) and visibility is 250 feet and 3/4 SM. The POFZ is considered clear even if the wing of the aircraft holding on a taxiway waiting for runway clearance penetrates the POFZ; however, neither the fuselage nor the tail may infringe on the POFZ. The POFZ is applicable at all runway ends including displaced thresholds. (See FIG ENR 1.5−18.)

11.4 Straight−In Minimums are shown on the IAP when the final approach course is within 30 degrees of the runway alignment (15 degrees for GPS IAPs) and a normal descent can be made from the IFR altitude shown on the IAP to the runway surface. When either the normal rate of descent or the runway alignment factor of 30 degrees (15 degrees for GPS IAPs) is exceeded, a straight−in minimum is not published and a circling minimum applies. The fact that a straight−in minimum is not published does not preclude pilots from landing straight−in if they have the active runway in sight and have sufficient time to make a normal approach for landing. Under such conditions and when ATC has cleared them for landing on that runway, pilots are not expected to circle even though only circling minimums are published. If they desire to circle, they should advise ATC.

11.5 Side−Step Maneuver Minimums. Landing minimums for a side−step maneuver to the adjacent runway will normally be higher than the minimums to the primary runway.

11.6 Circling Minimums. In some busy terminal areas, ATC may not allow circling and circling minimums will not be published. Published circling minimums provide obstacle clearance when pilots remain within the appropriate area of protection. Pilots should remain at or above the circling altitude until the aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers. Circling may require maneuvers at low altitude, at low airspeed, and in marginal weather conditions. Pilots must use sound judgment, have an in−depth knowledge of their capabilities, and fully understand the aircraft performance to determine the exact circling maneuver since weather, unique airport design, and the aircraft position, altitude, and airspeed must all be considered. The following basic rules apply:

11.6.1 Maneuver the shortest path to the base or downwind leg, as appropriate, considering existing weather conditions. There is no restriction from passing over the airport or other runways.

11.6.2 It should be recognized that circling maneuvers may be made while VFR or other flying is in progress at the airport. Standard left turns or specific instruction from the controller for maneuvering must be considered when circling to land.

11.6.3 At airports without a control tower, it may be desirable to fly over the airport to observe wind and turn indicators and other traffic which may be on the runway or flying in the vicinity of the airport.

REFERENCE−
AC 90−66A, Recommended Standards Traffic patterns for Aeronautical Operations at Airports without Operating Control Towers.

11.6.4 The missed approach point (MAP) varies depending upon the approach flown. For vertically guided approaches, the MAP is at the decision altitude/decision height. Non−vertically guided and circling procedures share the same MAP and the pilot determines this MAP by timing from the final approach fix, by a fix, a NAVAID, or a waypoint. Circling from a GLS, an ILS without a localizer line of minima or an RNAV (GPS) approach without an LNAV line of minima is prohibited.

11.7 Instrument Approaches at a Military Field. When instrument approaches are conducted by civil aircraft at military airports, they must be conducted in accordance with the procedures and minimums approved by the military agency having jurisdiction over the airport.

12. Instrument Approach Procedure Charts

12.1 14 CFR Section 91.175(a), Instrument approaches to civil airports, requires the use of SIAP's prescribed for the airport in 14 CFR Part 97 unless

otherwise authorized by the Administrator (including ATC). If there are military procedures published at a civil airport, aircraft operating under 14 CFR Part 91 must use the civil procedure(s). Civil procedures are defined with "FAA" in parenthesis; e.g., (FAA), at the top, center of the procedure chart. DOD procedures are defined using the abbreviation of the applicable military service in parenthesis; for example, (USAF), (USN), (USA). 14 CFR Section 91.175(g), Military airports, requires civil pilots flying into or out of military airports to comply with the IAP's and takeoff and landing minimums prescribed by the authority having jurisdiction at those airports. Unless an emergency exists, civil aircraft operating at military airports normally require advance authorization, commonly referred to as "Prior Permission Required" or "PPR." Information on obtaining a PPR for a particular military airport can be found in the Chart Supplement U.S.

NOTE−
Civil aircraft may conduct practice VFR approaches using DOD instrument approach procedures when approved by the air traffic controller.

12.1.1 IAPs (standard and special, civil and military) are based on joint civil and military criteria contained in the U.S. Standard for TERPS. The design of IAPs based on criteria contained in TERPS, takes into account the interrelationship between airports, facilities, and the surrounding environment, terrain, obstacles, noise sensitivity, etc. Appropriate altitudes, courses, headings, distances, and other limitations are specified and, once approved, the procedures are published and distributed by government and commercial cartographers as instrument approach charts.

12.1.2 Not all IAPs are published in chart form. Radar IAPs are established where requirements and facilities exist but they are printed in tabular form in appropriate U.S. Government Flight Information Publications.

12.1.3 The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the chart.

12.1.3.1 Straight−in IAPs are identified by the navigational system providing the final approach guidance and the runway to which the approach is aligned (e.g., VOR RWY 13). Circling only approaches are identified by the navigational system providing final approach guidance and a letter (e.g., VOR A). More than one navigational system separated by a slash indicates that more than one type of equipment must be used to execute the final approach (e.g., VOR/DME RWY 31). More than one navigational system separated by the word "or" indicates either type of equipment may be used to execute the final approach (for example, VOR or GPS RWY 15).

12.1.3.2 In some cases, other types of navigation systems including radar may be required to execute other portions of the approach or to navigate to the IAF (e.g., an NDB procedure turn to an ILS, an NDB in the missed approach, or radar required to join the procedure or identify a fix). When radar or other equipment is required for procedure entry from the en route environment, a note will be charted in the planview of the approach procedure chart (for example, RADAR REQUIRED or ADF REQUIRED). When radar or other equipment is required on portions of the procedure outside the final approach segment, including the missed approach, a note will be charted in the notes box of the pilot briefing portion of the approach chart (for example, RADAR REQUIRED or DME REQUIRED). Notes are not charted when VOR is required outside the final approach segment. Pilots should ensure that the aircraft is equipped with the required NAVAID(s) in order to execute the approach, including the missed approach.

NOTE−
Some military (i.e., U.S. Air Force and U.S. Navy) IAPs have these "additional equipment required" notes charted only in the planview of the approach procedure and do not conform to the same application standards used by the FAA.

12.1.3.3 The FAA has initiated a program to provide a new notation for LOC approaches when charted on an ILS approach requiring other navigational aids to fly the final approach course. The LOC minimums will be annotated with the NAVAID required (for example, "DME Required" or "RADAR Required"). During the transition period, ILS approaches will still exist without the annotation.

12.1.3.4 Many ILS approaches having minima based on RVR are eligible for a landing minimum of RVR 1800. Some of these approaches are to runways that have touchdown zone and centerline lights. For many runways that do not have touchdown and centerline lights, it is still possible to allow a landing minimum of RVR 1800. For these runways, the

normal ILS minimum of RVR 2400 can be annotated with a single or double asterisk or the dagger symbol "†"; for example "** 696/24 200 (200/1/2)." A note is included on the chart stating "**RVR 1800 authorized with use of FD or AP or HUD to DA." The pilot must use the flight director, or autopilot with an approved approach coupler, or head up display to decision altitude or to the initiation of a missed approach. In the interest of safety, single pilot operators should not fly approaches to 1800 RVR minimums on runways without touchdown and centerline lights using only a flight director, unless accompanied by the use of an autopilot with an approach coupler.

12.1.3.5 The naming of multiple approaches of the same type to the same runway is also changing. Multiple approaches with the same guidance will be annotated with an alphabetical suffix beginning at the end of the alphabet and working backwards for subsequent procedures (e.g., ILS Z RWY 28, ILS Y RWY 28, etc.). The existing annotations such as ILS 2 RWY 28 or Silver ILS RWY 28 will be phased out and replaced with the new designation. The Cat II and Cat III designations are used to differentiate between multiple ILSs to the same runway unless there are multiples of the same type.

12.1.3.6 RNAV (GPS) approaches to LNAV, LP, LNAV/VNAV and LPV lines of minima using WAAS and RNAV (GPS) approaches to LNAV and LNAV/VNAV lines of minima using GPS are charted as RNAV (GPS) RWY (Number) (e.g., RNAV (GPS) RWY 21). VOR/DME RNAV approaches will continue to be identified as VOR/DME RNAV RWY (Number) (e.g., VOR/DME RNAV RWY 21). VOR/DME RNAV procedures which can be flown by GPS will be annotated with "or GPS" (e.g., VOR/DME RNAV or GPS RWY 31).

12.1.4 Approach minimums are based on the local altimeter setting for that airport, unless annotated otherwise; for example, Oklahoma City/Will Rogers World approaches are based on having a Will Rogers World altimeter setting. When a different altimeter source is required, or more than one source is authorized, it will be annotated on the approach chart; e.g., use Sidney altimeter setting, if not received, use Scottsbluff altimeter setting. Approach minimums may be raised when a nonlocal altimeter source is authorized. When more than one altimeter source is authorized, and the minima are different, they will be shown by separate lines in the approach minima box or a note; e.g., use Manhattan altimeter setting; when not available use Salina altimeter setting and increase all MDAs 40 feet. When the altimeter must be obtained from a source other than air traffic a note will indicate the source; e.g., Obtain local altimeter setting on CTAF. When the altimeter setting(s) on which the approach is based is not available, the approach is not authorized. Baro−VNAV must be flown using the local altimeter setting only. Where no local altimeter is available, the LNAV/VNAV line will still be published for use by WAAS receivers with a note that Baro−VNAV is not authorized. When a local and at least one other altimeter setting source is authorized and the local altimeter is not available Baro−VNAV is not authorized; however, the LNAV/VNAV minima can still be used by WAAS receivers using the alternate altimeter setting source.

NOTE−
Barometric Vertical Navigation (baro−VNAV). An RNAV system function which uses barometric altitude information from the aircraft's altimeter to compute and present a vertical guidance path to the pilot. The specified vertical path is computed as a geometric path, typically computed between two waypoints or an angle based computation from a single waypoint. Further guidance may be found in Advisory Circular 90−105.

12.1.5 A pilot adhering to the altitudes, flight paths, and weather minimums depicted on the IAP chart or vectors and altitudes issued by the radar controller, is assured of terrain and obstruction clearance and runway or airport alignment during approach for landing.

12.1.6 IAPs are designed to provide an IFR descent from the en route environment to a point where a safe landing can be made. They are prescribed and approved by appropriate civil or military authority to ensure a safe descent during instrument flight conditions at a specific airport. It is important that pilots understand these procedures and their use prior to attempting to fly instrument approaches.

12.1.7 TERPS criteria are provided for the following types of instrument approach procedures:

12.1.7.1 Precision Approach (PA). An instrument approach based on a navigation system that provides course and glidepath deviation information meeting the precision standards of ICAO Annex 10. For example, PAR, ILS,and GLS are precision approaches.

12.1.7.2 Approach with Vertical Guidance (APV). An instrument approach based on a navigation system that is not required to meet the precision approach standards of ICAO Annex 10 but provides course and glidepath deviation information. For example, Baro−VNAV, LDA with glidepath, LNAV/VNAV and LPV are APV approaches.

12.1.7.3 Nonprecision Approach (NPA). An instrument approach based on a navigation system which provides course deviation information, but no glidepath deviation information. For example, VOR, NDB and LNAV. As noted in subparagraph 12.10, Vertical Descent Angle (VDA) on Nonprecision Approaches, some approach procedures may provide a Vertical Descent Angle as an aid in flying a stabilized approach, without requiring its use in order to fly the procedure. This does not make the approach an APV procedure, since it must still be flown to an MDA and has not been evaluated with a glidepath.

12.2 The method used to depict prescribed altitudes on instrument approach charts differs according to techniques employed by different chart publishers. Prescribed altitudes may be depicted in four different configurations: minimum, maximum, mandatory, and recommended. The U.S. Government distributes charts produced by National Geospatial−Intelligence Agency (NGA) and FAA. Altitudes are depicted on these charts in the profile view with underscore, overscore, both or none to identify them as minimum, maximum, mandatory or recommended.

12.2.1 Minimum altitude will be depicted with the altitude value underscored. Aircraft are required to maintain altitude at or above the depicted value, for example, 3000.

12.2.2 Maximum altitude will be depicted with the altitude value overscored. Aircraft are required to maintain altitude at or below the depicted value, for example, $\overline{4000}$.

12.2.3 Mandatory altitude will be depicted with the altitude value both underscored and overscored. Aircraft are required to maintain altitude at the depicted value, for example, $\underline{\overline{5000}}$.

12.2.4 Recommended altitude will be depicted with no overscore or underscore. These altitudes are depicted for descent planning, for example, 6000.

NOTE−

1. *Pilots are cautioned to adhere to altitudes as prescribed because, in certain instances, they may be used as the basis for vertical separation of aircraft by ATC. When a depicted altitude is specified in the ATC clearance, that altitude becomes mandatory as defined above.*

2. *The ILS glide slope is intended to be intercepted at the published glide slope intercept altitude. This point marks the PFAF and is depicted by the "lightning bolt" symbol on U.S. Government charts. Intercepting the glide slope at this altitude marks the beginning of the final approach segment and ensures required obstacle clearance during descent from the glide slope intercept altitude to the lowest published decision altitude for the approach. Interception and tracking of the glide slope prior to the published glide slope interception altitude does not necessarily ensure that minimum, maximum, and/or mandatory altitudes published for any preceding fixes will be complied with during the descent. If the pilot chooses to track the glide slope prior to the glide slope interception altitude, they remain responsible for complying with published altitudes for any preceding stepdown fixes encountered during the subsequent descent.*

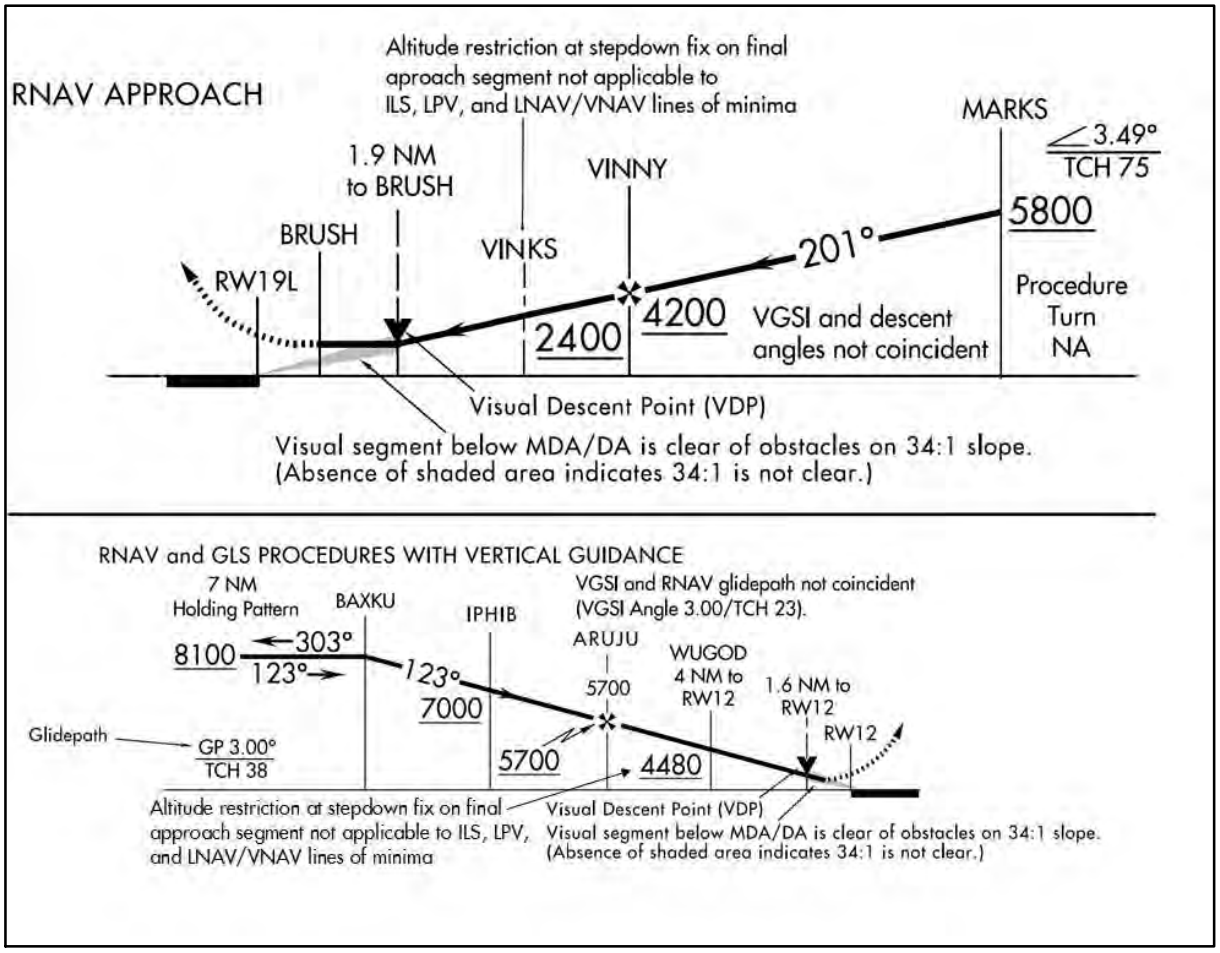
3. *Approaches used for simultaneous (parallel) independent and simultaneous close parallel operations procedurally require descending on the glideslope from the altitude at which the approach clearance is issued (refer to ENR 1.5−19. and ENR 1.5−20.). For simultaneous close parallel (PRM) approaches, the Attention All Users Page (AAUP) may publish a note which indicates that descending on the glideslope/glidepath meets all crossing restrictions. However, if no such note is published, and for simultaneous independent approaches (4300 and greater runway separation) where an AAUP is not published, pilots are cautioned to monitor their descent on the glideslope/path outside of the PFAF to ensure compliance with published crossing restrictions during simultaneous operations.*

4. *When parallel approach courses are less than 2500 feet apart and reduced in-trail spacing is authorized for simultaneous dependent operations, a chart note will indicate that simultaneous operations require use of vertical guidance and that the pilot should maintain last assigned altitude until established on glide slope. These approaches procedurally require utilization of the ILS glide slope for wake turbulence mitigation. Pilots should not confuse these simultaneous dependent operations with (SOIA) simultaneous close parallel PRM approaches, where PRM appears in the approach title.*

12.2.5 Altitude restrictions depicted at stepdown fixes within the final approach segment are applicable only when flying a Non−Precision Approach to a straight−in or circling line of minima identified as a MDA(H). Stepdown fix altitude restrictions within the final approach segment do not apply to pilots using Precision Approach (ILS) or Approach with Vertical Guidance (LPV, LNAV/

VNAV) lines of minima identified as a DA(H), since obstacle clearance on these approaches are based on the aircraft following the applicable vertical guidance. Pilots are responsible for adherence to stepdown fix altitude restrictions when outside the final approach segment (i.e., initial or intermediate segment), regardless of which type of procedure the pilot is flying. (See FIG ENR 1.5–19).

FIG ENR 1.5–19
Instrument Approach Procedure Stepdown Fixes



12.3 Minimum Safe Altitudes (MSA) are published for emergency use on IAP charts. MSAs provide 1,000 feet of clearance over all obstacles, but do not necessarily assure acceptable navigation signal coverage. The MSA depiction on the plan view of an approach chart contains the identifier of the center point of the MSA, the applicable radius of the MSA, a depiction of the sector(s), and the minimum altitudes above mean sea level which provide obstacle clearance. For conventional navigation systems, the MSA is normally based on the primary omnidirectional facility on which the IAP is predicated, but may be based on the airport reference point (ARP) if no suitable facility is available. For RNAV approaches, the MSA is based on an RNAV waypoint. MSAs normally have a 25 NM radius; however, for conventional navigation systems, this radius may be expanded to 30 NM if necessary to encompass the airport landing surfaces. A single sector altitude is normally established, however when the MSA is based on a facility and it is necessary to obtain relief from obstacles, an MSA with up to four sectors may be established.

12.4 Terminal Arrival Area (TAA)

12.4.1 The TAA provides a transition from the en route structure to the terminal environment with little required pilot/air traffic control interface for aircraft equipped with Area Navigation (RNAV) systems. A TAA provides minimum altitudes with standard obstacle clearance when operating within the TAA boundaries. TAAs are primarily used on RNAV approaches but may be used on an ILS approach when RNAV is the sole means for navigation to the IF; however, they are not normally used in areas of heavy concentration of air traffic.

12.4.2 The basic design of the RNAV procedure underlying the TAA is normally the "T" design (also called the "Basic T"). The "T" design incorporates two IAFs plus a dual purpose IF/IAF that functions as both an intermediate fix and an initial approach fix. The T configuration continues from the IF/IAF to the final approach fix (FAF) and then to the missed approach point (MAP). The two base leg IAFs are typically aligned in a straight-line perpendicular to the intermediate course connecting at the IF/IAF. A Hold-in-Lieu-of Procedure Turn (HILPT) is anchored at the IF/IAF and depicted on U.S. Government publications using the "hold–in–lieu –of–PT" holding pattern symbol. When the HILPT is necessary for course alignment and/or descent, the dual purpose IF/IAF serves as an IAF during the entry into the pattern. Following entry into the HILPT pattern and when flying a route or sector labeled "NoPT," the dual-purpose fix serves as an IF, marking the beginning of the Intermediate Segment. See FIG ENR 1.5−20 and FIG ENR 1.5−21 for the Basic "T" TAA configuration.

FIG ENR 1.5−20
Basic "T" Design

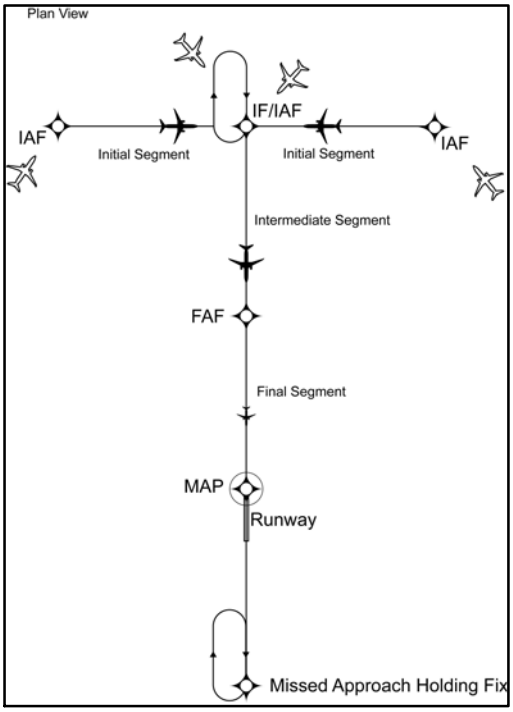
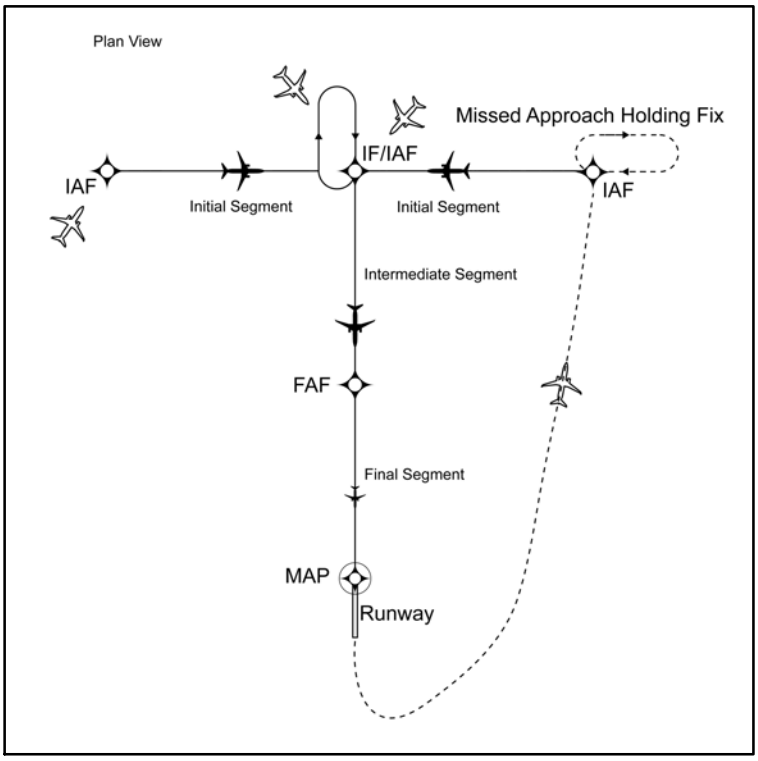


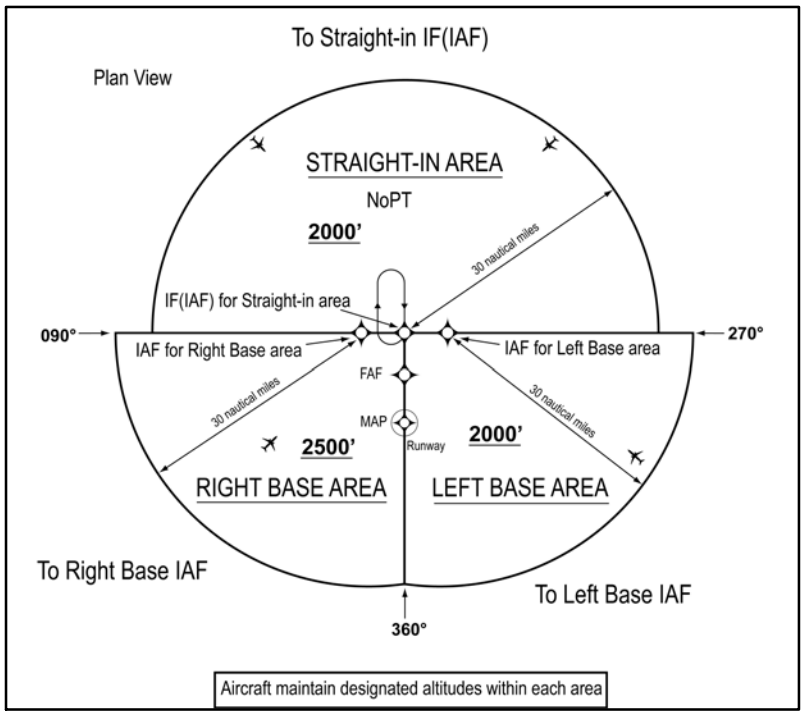
FIG ENR 1.5–21

Basic “T” Design



12.4.3 The standard TAA based on the "T" design consists of three areas defined by the Initial Approach Fix (IAF) legs and the intermediate segment course beginning at the IF/IAF. These areas are called the straight−in, left−base, and right−base areas. (See FIG ENR 1.5−22). TAA area lateral boundaries are identified by magnetic courses TO the IF/IAF. The straight−in area can be further divided into pie−shaped sectors with the boundaries identified by magnetic courses TO the (IF/ IAF), and may contain stepdown sections defined by arcs based on RNAV distances from the IF/IAF. (See FIG ENR 1.5−23). The right/left−base areas can only be subdivided using arcs based on RNAV distances from the IAFs for those areas.

FIG ENR 1.5−22
TAA Area



12.4.4 Entry from the terminal area onto the procedure is normally accomplished via a no procedure turn (NoPT) routing or via a course reversal maneuver. The published procedure will be annotated "NoPT" to indicate when the course reversal is not authorized when flying within a particular TAA sector. Otherwise, the pilot is expected to execute the course reversal under the provisions of 14 CFR Section 91.175. The pilot may elect to use the course reversal pattern when it is not required by the procedure, but must receive clearance from air traffic control before beginning the procedure.

12.4.4.1 ATC should not clear an aircraft to the left base leg or right base leg IAF within a TAA at an intercept angle exceeding 90 degrees. Pilots must not execute the HILPT course reversal when the sector or procedure segment is labeled "NoPT."

12.4.4.2 ATC may clear aircraft direct to the fix labeled IF/IAF if the course to the IF/IAF is within the straight-in sector labeled "NoPT" and the intercept angle does not exceed 90 degrees. Pilots are expected to proceed direct to the IF/IAF and accomplish a straight-in approach. Do not execute HILPT course reversal. Pilots are also expected to fly the straight−in approach when ATC provides radar vectors and monitoring to the IF/IAF and issues a "straight-in" approach clearance; otherwise, the pilot *is expected* to execute the HILPT course reversal.

12.4.4.3 On rare occasions, ATC may clear the aircraft for an approach at the airport without specifying the approach procedure by name or by a specific approach (for example, "cleared RNAV Runway 34 approach") without specifying a particular IAF. In either case, the pilot should proceed direct to the IAF or to the IF/IAF associated with the

sector that the aircraft will enter the TAA and join the approach course from that point and if required by that sector (i.e., sector is not labeled "NoPT), complete the HILPT course reversal.

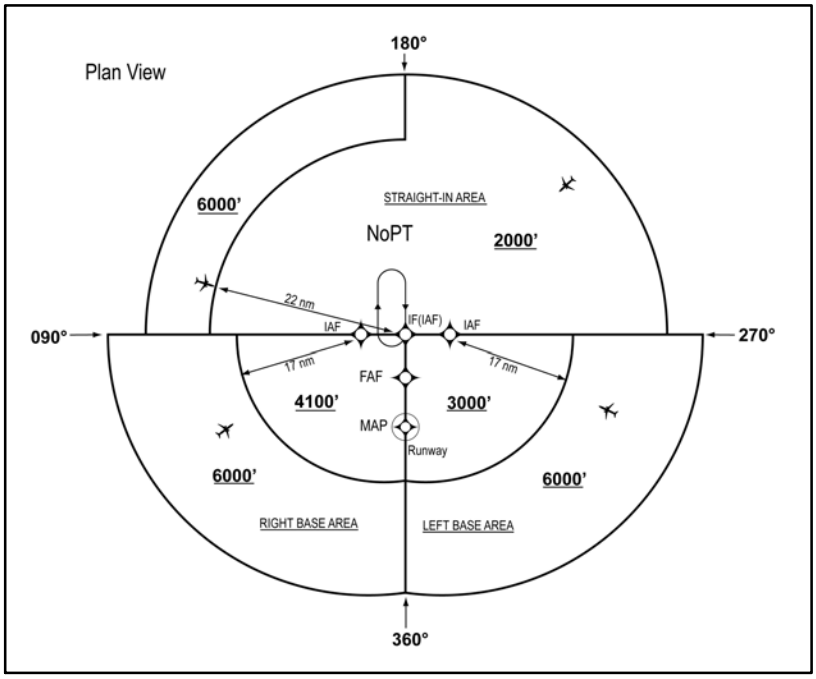
NOTE−
If approaching with a TO bearing that is on a sector boundary, the pilot is expected to proceed in accordance with a "NoPT" routing unless otherwise instructed by ATC.

12.4.5 Altitudes published within the TAA replace the MSA altitude. However, unlike MSA altitudes the TAA altitudes are operationally usable altitudes. These altitudes provide at least 1,000 feet of obstacle clearance, more in mountainous areas. It is important that the pilot knows which area of the TAA the aircraft will enter in order to comply with the minimum altitude requirements. The pilot can determine which area of the TAA the aircraft will enter by determining the magnetic bearing of the aircraft TO the fix labeled IF/IAF. The bearing should then be compared to the published lateral boundary bearings that define the TAA areas. Do not use magnetic bearing to the right-base or left-base IAFs to determine position.

12.4.5.1 An ATC clearance direct to an IAF or to the IF/IAF without an approach clearance does not authorize a pilot to descend to a lower TAA altitude. If a pilot desires a lower altitude without an approach clearance, request the lower TAA altitude from ATC. Pilots not sure of the clearance should confirm their clearance with ATC or request a specific clearance. Pilots entering the TAA with two−way radio communications failure (14 CFR Section 91.185, IFR Operations: Two−way Radio Communications Failure), must maintain the highest altitude prescribed by Section 91.185(c)(2) until arriving at the appropriate IAF.

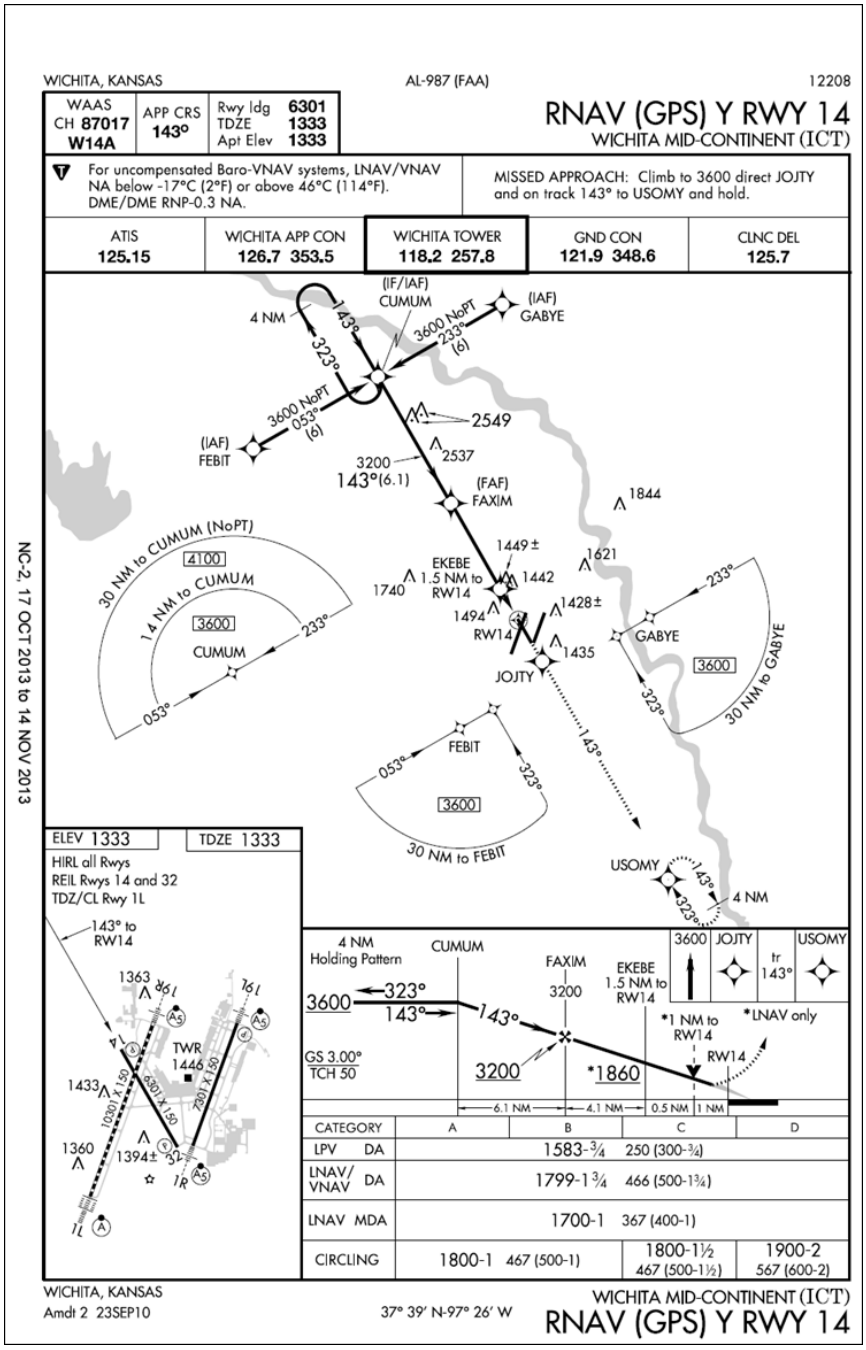
12.4.5.2 Once cleared for the approach, pilots may descend in the TAA sector to the minimum altitude depicted within the defined area/subdivision, unless instructed otherwise by air traffic control. Pilots should plan their descent within the TAA to permit a normal descent from the IF/IAF to the FAF. In FIG ENR 1.5−23, pilots within the left or right−base areas are expected to maintain a minimum altitude of 6,000 feet until within 17 NM of the associated IAF. After crossing the 17 NM arc, descent is authorized to the lower charted altitudes. Pilots approaching from the northwest are expected to maintain a minimum altitude of 6,000 feet, and when within 22 NM of the IF/IAF, descend to a minimum altitude of 2,000 feet MSL until crossing the IF/IAF.

FIG ENR 1.5−23
Sectored TAA Areas



12.4.6 U.S. Government charts depict TAAs using icons located in the plan view outside the depiction of the actual approach procedure. (See FIG ENR 1.5–24). Use of icons is necessary to avoid obscuring any portion of the "T" procedure (altitudes, courses, minimum altitudes, etc.). The icon for each TAA area will be located and oriented on the plan view with respect to the direction of arrival to the approach procedure, and will show all TAA minimum altitudes and sector/radius subdivisions. The IAF for each area of the TAA is included on the icon where it appears on the approach to help the pilot orient the icon to the approach procedure. The IAF name and the distance of the TAA area boundary from the IAF are included on the outside arc of the TAA area icon.

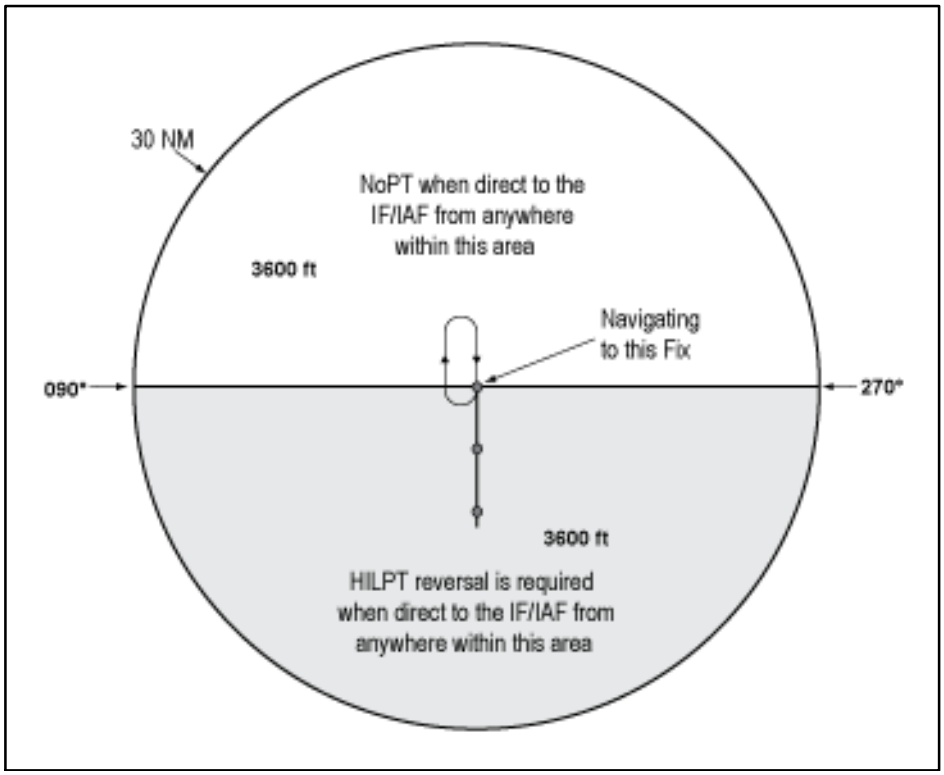
FIG ENR 1.5–24
RNAV (GPS) Approach Chart



12.4.7 TAAs may be modified from the standard size and shape to accommodate operational or ATC requirements. Some areas may be eliminated, while the other areas are expanded. The "T" design may be modified by the procedure designers where required by terrain or ATC considerations. For instance, the "T" design may appear more like a regularly or irregularly shaped "Y," upside down "L," or an "I."

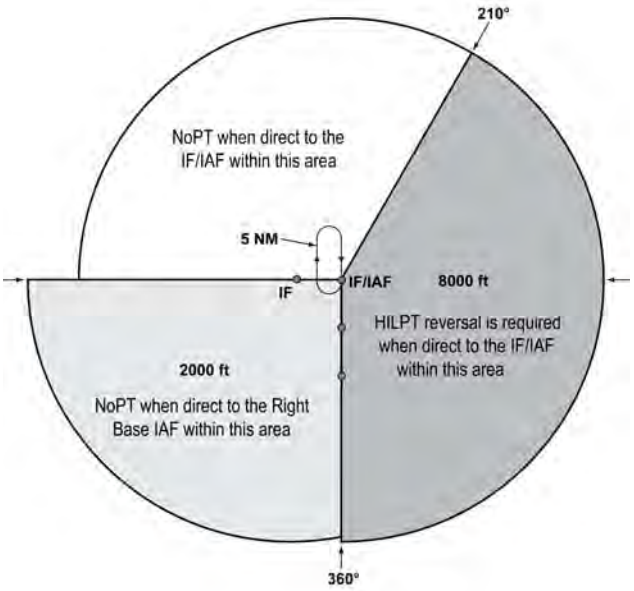
12.4.7.1 FIG ENR 1.5–25 depicts a TAA without a left base leg and right base leg. In this generalized example, pilots approaching on a bearing TO the IF/IAF from 271 clockwise to 089 are expected to execute a course reversal because the amount of turn required at the IF/IAF exceeds 90 degrees. The term "NoPT" will be annotated on the boundary of the TAA icon for the other portion of the TAA.

FIG ENR 1.5–25
TAA with Left and Right Base Areas Eliminated



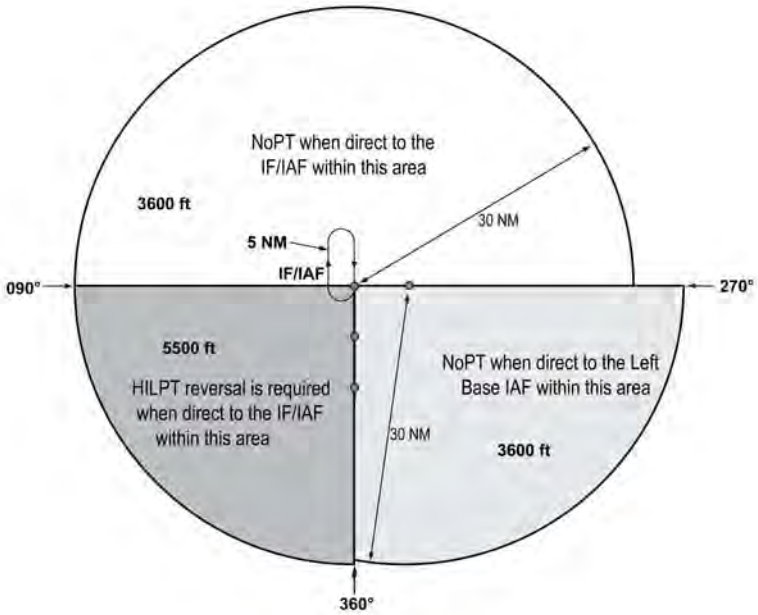
12.4.7.2 FIG ENR 1.5–26 depicts another TAA modification that pilots may encounter. In this generalized example, the left base area and part of the straight-in area have been eliminated. Pilots operating within the TAA between 210 clockwise to 360 bearing TO the IF/IAF are expected to proceed direct to the IF/IAF and then execute the course reversal in order to properly align the aircraft for entry onto the intermediate segment or to avoid an excessive descent rate. Aircraft operating in areas from 001 clockwise to 090 bearing TO the IF/IAF are expected to proceed direct to the right base IAF and not execute course reversal maneuver. Aircraft cleared direct the IF/IAF by ATC in this sector will be expected to accomplish HILTP. Aircraft operating in areas 091 clockwise to 209 bearing TO the IF/IAF are expected to proceed direct to the IF/IAF and not execute the course reversal. These two areas are annotated "NoPT" at the TAA boundary of the icon in these areas when displayed on the approach chart's plan view.

FIG ENR 1.5−26
TAA with Left Base and Part of Straight−In Area Eliminated



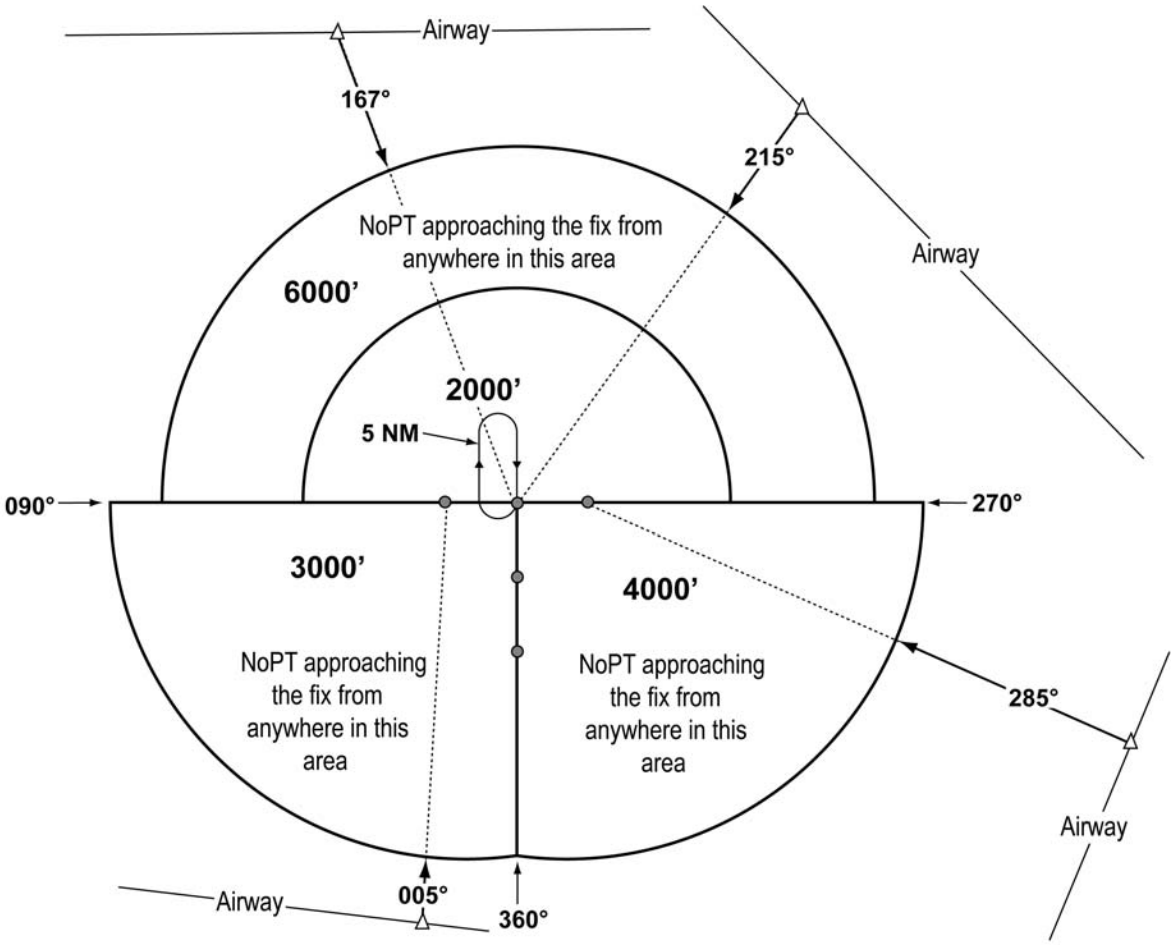
12.4.7.3 FIG ENR 1.5−27 depicts a TAA with right base leg and part of the straight-in area eliminated.

FIG ENR 1.5−27
TAA with Right Base Eliminated



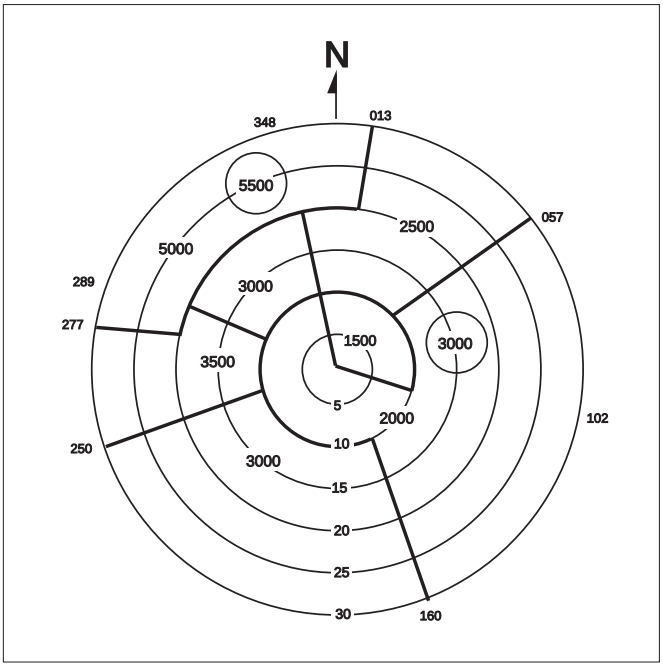
12.4.8 When an airway does not cross the lateral TAA boundaries, a feeder route will be established from an airway fix or NAVAID to the TAA boundary to provide a transition from the en route structure to the appropriate IAF. Each feeder route will terminate at the TAA boundary and will be aligned along a path pointing to the associated IAF. Pilots should descend to the TAA altitude after crossing the TAA boundary and cleared for the approach by ATC.
(See FIG ENR 1.5–28).

FIG ENR 1.5–28
Examples of a TAA with Feeders from an Airway



12.4.9 Each waypoint on the "T" is assigned a pronounceable 5–letter name, except the missed approach waypoint. These names are used for ATC communications, RNAV databases, and aeronautical navigation products. The missed approach waypoint is assigned a pronounceable name when it is not located at the runway threshold.

FIG ENR 1.5−29
Minimum Vectoring Altitude Charts



12.5 Minimum Vectoring Altitudes (MVAs) are established for use by ATC when radar ATC is exercised. MVA charts are prepared by air traffic facilities at locations where there are numerous different minimum IFR altitudes. Each MVA chart has sectors large enough to accommodate vectoring of aircraft within the sector at the MVA. Each sector boundary is at least 3 miles from the obstruction determining the MVA. To avoid a large sector with an excessively high MVA due to an isolated prominent obstruction, the obstruction may be enclosed in a buffer area whose boundaries are at least 3 miles from the obstruction. This is done to facilitate vectoring around the obstruction. (See FIG ENR 1.5−29.)

12.5.1 The minimum vectoring altitude in each sector provides 1,000 feet above the highest obstacle in nonmountainous areas and 2,000 feet above the highest obstacle in designated mountainous areas. Where lower MVAs are required in designated mountainous areas to achieve compatibility with terminal routes or to permit vectoring to an IAP, 1,000 feet of obstacle clearance may be authorized with the use of Airport Surveillance Radar (ASR). The minimum vectoring altitude will provide at least 300 feet above the floor of controlled airspace.

NOTE−
OROCA is an off−route altitude which provides obstruction clearance with a 1,000 foot buffer in nonmountainous terrain areas and a 2,000 foot buffer in designated mountainous areas within the U.S. This altitude may not provide signal coverage from ground−based navigational aids, air traffic control radar, or communications coverage.

12.5.2 Because of differences in the areas considered for MVA, and those applied to other minimum altitudes, and the ability to isolate specific obstacles, some MVAs may be lower than the nonradar Minimum En Route Altitudes (MEAs), Minimum Obstruction Clearance Altitudes (MOCAs) or other minimum altitudes depicted on charts for a given location. While being radar vectored, IFR altitude assignments by ATC will be at or above MVA.

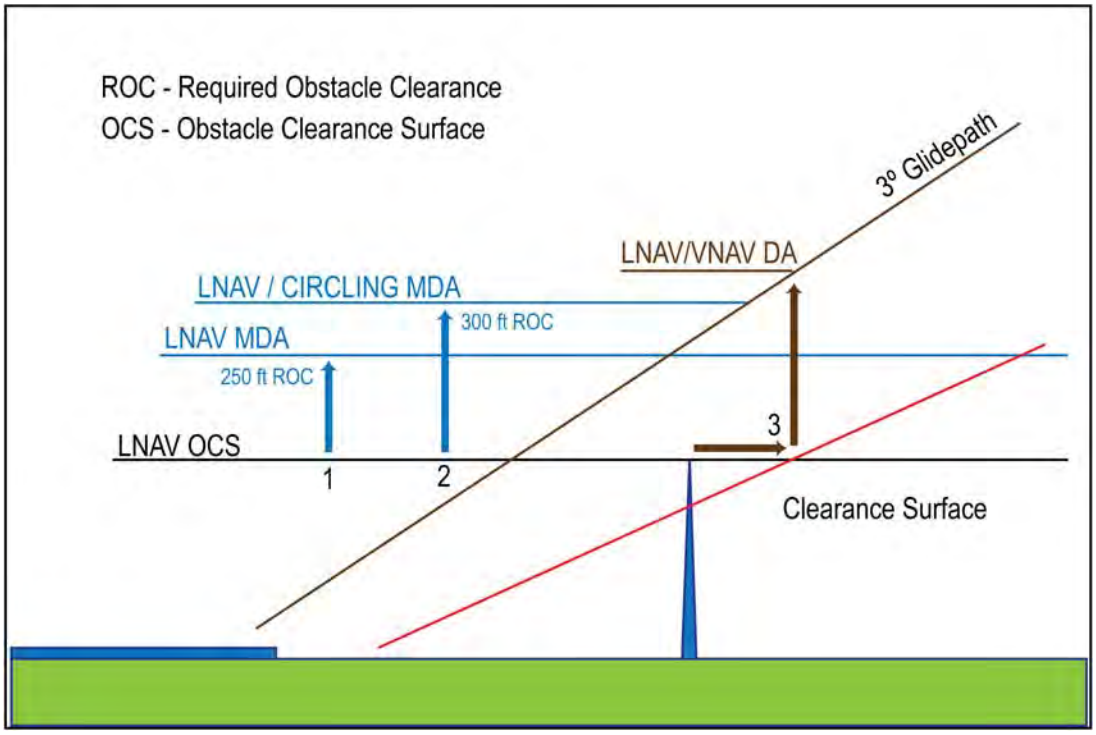
12.5.3 The MVA/MIA may be lower than the TAA minimum altitude. If ATC has assigned an altitude to an aircraft that is below the TAA minimum altitude, the aircraft will either be assigned an altitude to maintain until established on a segment of a published route or instrument approach procedure, or climbed to the TAA altitude.

12.6 Circling. Circling minimums charted on an RNAV (GPS) approach chart may be lower than the LNAV/VNAV line of minima, but never lower than the LNAV line of minima (straight-in approach). Pilots may safely perform the circling maneuver at the circling published line of minima if the approach and circling maneuver is properly performed according to aircraft category and operational limitations.

FIG ENR 1.5–30
Example of LNAV and Circling Minima Lower Than LNAV/VNAV DA.
Harrisburgh International RNAV (GPS) RWY 13

CATEGORY		A	B	C	D
LPV	**DA**	**558/24** 250 (300 – ½)			
LNAV/ VNAV	**DA**	**1572 – 5** 1264 (1300 – 5)			
LNAV	**MDA**	**1180 / 24** 872 (900 – ½)	**1180 / 40** 872 (900 – ¾)	**1180 / 2** 872 (900 – 2)	**1180 / 2 ¼** 872 (900 – 2 ¼)
CIRCLING		**1180 – 1** 870 (900 – 1)	**1180 – 1 ¼** 870 (900 – 1 ¼)	**1180 – 2 ½** 870 (900 – 2 ½)	**1180 – 2 ¾** 870 (900 – 2 ¾)

FIG ENR 1.5–31
Explanation of LNAV and/or Circling Minima Lower than LNAV/VNAV DA



12.7 FIG ENR 1.5–31 provides a visual representation of an obstacle evaluation and calculation of LNAV MDA, Circling MDA, LNAV/VNAV DA.

12.7.1 No vertical guidance (LNAV). A line is drawn horizontal at obstacle height and 250 feet added for Required Obstacle Clearance (ROC). The controlling obstacle used to determine LNAV MDA can be different than the controlling obstacle used in determining ROC for circling MDA. Other factors may force a number larger than 250 ft to be added to the LNAV OCS. The number is rounded up to the next higher 20 foot increment.

12.7.2 Circling MDA. The circling MDA will provide 300 foot obstacle clearance within the area considered for obstacle clearance and may be lower than the LNAV/VNAV DA, but never lower than the straight in LNAV MDA. This may occur when different controlling obstacles are used or when other controlling factors force the LNAV MDA to be higher than 250 feet above the LNAV OCS. In FIG ENR 1.5−30, the required obstacle clearance for both the LNAV and Circle resulted in the same MDA, but lower than the LNAV/VNAV DA. FIG ENR 1.5−31 provides an illustration of this type of situation.

12.7.3 Vertical guidance (LNAV/VNAV). A line is drawn horizontal at obstacle height until reaching the obstacle clearance surface (OCS). At the OCS, a vertical line is drawn until reaching the glide path. This is the DA for the approach. This method places the offending obstacle in front of the LNAV/VNAV DA so it can be seen and avoided. In some situations, this may result in the LNAV/VNAV DA being higher than the LNAV and/or Circling MDA.

12.8 The Visual Descent Point (VDP) identified by the symbol (V), is a defined point on the final approach course of a nonprecision straight−in approach procedure from which a stabilized visual descent from the MDA to the runway touchdown point may be commenced. The pilot should not descend below the MDA prior to reaching the VDP. The VDP will be identified by DME or RNAV along−track distance to the MAP. The VDP distance is based on the lowest MDA published on the IAP and harmonized with the angle of the visual glide slope indicator (VGSI) (if installed) or the procedure VDA (if no VGSI is installed). A VDP may not be published under certain circumstances which may result in a destabilized descent between the MDA and the runway touchdown point. Such circumstances include an obstacle penetrating the visual surface between the MDA and runway threshold, lack of distance measuring capability, or the procedure design prevents a VDP to be identified.

12.8.1 VGSI systems may be used as a visual aid to the pilot to determine if the aircraft is in a position to make a stabilized descent from the MDA. When the visibility is close to minimums, the VGSI may not be visible at the VDP due to its location beyond the MAP.

12.8.2 Pilots not equipped to receive the VDP should fly the approach procedure as though no VDP had been provided.

12.8.3 On a straight-in nonprecision IAP, descent below the MDA between the VDP and the MAP may be inadvisable or impossible. Aircraft speed, height above the runway, descent rate, amount of turn, and runway length are some of the factors which must be considered by the pilot to determine if a safe descent and landing can be accomplished.

12.9 A visual segment obstruction evaluation is accomplished during procedure design on all IAPs. Obstacles (both lighted and unlighted) are allowed to penetrate the visual segment obstacle identification surfaces. Identified obstacle penetrations may cause restrictions to instrument approach operations which may include an increased approach visibility requirement, not publishing a VDP, and/or prohibiting night instrument operations to the runway. There is no implicit obstacle protection from the MDA/DA to the touchdown point. Accordingly, it is the responsibility of the pilot to visually acquire and avoid obstacles below the MDA/DA during transition to landing.

12.9.1 Unlighted obstacle penetrations may result in prohibiting night instrument operations to the runway. A chart note will be published in the pilot briefing strip “Procedure NA at Night.”

12.9.2 Use of a VGSI may be approved in lieu of obstruction lighting to restore night instrument operations to the runway. A chart note will be published in the pilot briefing strip “ Straight-in Rwy XX at Night, operational VGSI required, remain on or above VGSI glidepath until threshold.”

12.10 The highest obstacle (man-made, terrain, or vegetation) will be charted on the planview of an IAP. Other obstacles may be charted in either the planview or the airport sketch based on distance from the runway and available chart space. The elevation of the charted obstacle will be shown to the nearest foot above mean sea level. Obstacles without a verified accuracy are indicated by a ± symbol following the elevation value.

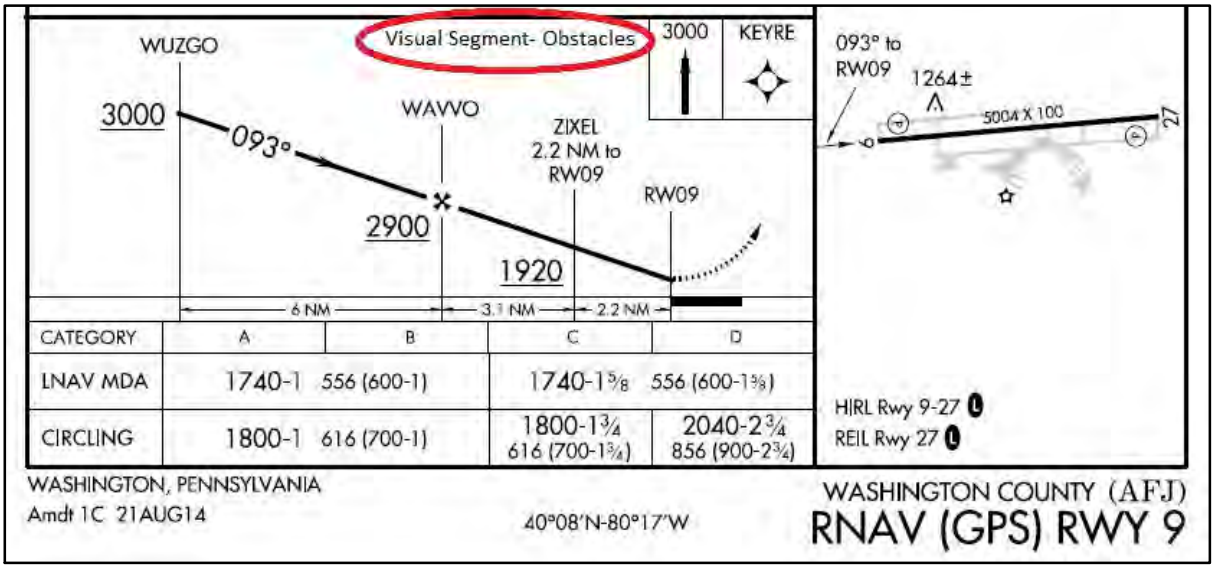
12.11 Vertical Descent Angle (VDA). FAA policy is to publish VDAs on all nonprecision approaches except those published in conjunction with vertically guided minimums or no-FAF procedures without step-down fixes. A VDA does not guarantee obstacle protection below the MDA in the visual segment. The

presence of a VDA does not change any nonprecision approach requirements.

12.11.1 Obstacles may penetrate the visual segment of an IAP that has a published VDA. When the VDA is not authorized due to an obstacle penetration that would require a pilot to deviate from the VDA between MDA and touchdown, the VDA/TCH will be replaced with the note "Visual Segment-Obstacles" in the profile view of the IAP (See FIG ENR 1.5−32). Accordingly, pilots are advised to carefully review approach procedures to identify where the optimum stabilized descent to landing can be initiated. Pilots that follow the previously published descent angle below the MDA on procedures with this note may encounter obstacles in the visual segment.

12.11.2 The threshold crossing height (TCH) used to compute the descent angle is published with the VDA. The VDA and TCH information are charted on the profile view of the IAP following the fix (FAF/stepdown) used to compute the VDA. If no PA/APV IAP is established to the same runway, the VDA will be equal to or higher than the glide path angle of the VGSI installed on the same runway provided it is within instrument procedure criteria. A chart note will indicate if the VGSI is not coincident with the VDA. Pilots must be aware that the published VDA is for advisory information only and not to be considered instrument procedure derived vertical guidance. The VDA solely offers an aid to help pilots establish a continuous, stabilized descent during final approach.

FIG ENR 1.5−32
Example of a Chart Note



12.11.3 Pilots may use the published angle and estimated/actual groundspeed to find a target rate of descent from the rate of descent table published in the back of the U.S. Terminal Procedures Publication. This rate of descent can be flown with the Vertical Velocity Indicator (VVI) in order to use the VDA as an aid to flying a stabilized descent. No special equipment is required.

12.11.4 A straight−in aligned procedure may be restricted to circling only minimums when an excessive descent gradient necessitates. The descent angle between the FAF/stepdown fix and the Circling MDA must not exceed the maximum descent angle allowed by TERPS criteria. A published VDA on these procedures does not imply that landing straight ahead is recommended or even possible. The descent rate based on the VDA may exceed the capabilities of the aircraft and the pilot must determine how to best maneuver the aircraft within the circling area in order to land safely.

12.12 In isolated cases, an IAP may contain a published visual flight path. These procedures are annotated "Fly Visual to Airport" or "Fly Visual." A dashed arrow indicating the visual flight path will be

included in the profile and plan views with an approximate heading and distance to the end of the runway.

12.12.1 The depicted ground track associated with the "Fly Visual to Airport" segment should be flown as a "Dead Reckoning" course. When executing the "Fly Visual to Airport" segment, the flight visibility must not be less than that prescribed in the IAP; the pilot must remain clear of clouds and proceed to the airport maintaining visual contact with the ground. Altitude on the visual flight path is at the discretion of the pilot, and it is the responsibility of the pilot to visually acquire and avoid obstacles in the "Fly Visual to Airport" segment.

12.12.2 Missed approach obstacle clearance is assured only if the missed approach is commenced at the published MAP. Before initiating an IAP that contains a "Fly Visual to Airport" segment, the pilot should have preplanned climb out options based on aircraft performance and terrain features. Obstacle clearance is the responsibility of the pilot when the approach is continued beyond the MAP.

NOTE−
The FAA Administrator retains the authority to approve instrument approach procedures where the pilot may not necessarily have one of the visual references specified in 14 CFR § 91.175 and related rules. It is not a function of procedure design to ensure compliance with § 91.175. The annotation "Fly Visual to Airport" provides relief from § 91.175 requirements that the pilot have distinctly visible and identifiable visual references prior to descent below MDA/DA.

12.13 Area Navigation (RNAV) Instrument Approach Charts. Reliance on RNAV systems for instrument operations is becoming more commonplace as new systems such as GPS and augmented GPS such as the Wide Area Augmentation System (WAAS) are developed and deployed. In order to support full integration of RNAV procedures into the National Airspace System (NAS), the FAA developed a new charting format for IAPs (See FIG ENR 1.5−24). This format avoids unnecessary duplication and proliferation of instrument approach charts. The original stand alone GPS charts, titled simply "GPS," are being converted to the newer format as the procedures are revised. One reason for the revision is the addition of WAAS based minima to the approach chart. The reformatted approach chart is titled "RNAV (GPS) RWY XX." Up to four lines of minima are included on these charts. GLS (Ground Based Augmentation System (GBAS) Landing System) was a placeholder for future WAAS and LAAS minima, and the minima was always listed as N/A. The GLS minima line has now been replaced by the WAAS LPV (Localizer Performance with Vertical Guidance) minima on most RNAV (GPS) charts. LNAV/VNAV (lateral navigation/vertical navigation) was added to support both WAAS electronic vertical guidance and Barometric VNAV. LPV and LNAV/VNAV are both APV procedures as described in paragraph 12.1.7. The original GPS minima, titled "S−XX," for straight in runway XX, is retitled LNAV (lateral navigation). Circling minima may also be published. A new type of nonprecision WAAS minima will also be published on this chart and titled LP (localizer performance). LP will be published in locations where vertically guided minima cannot be provided due to terrain and obstacles and therefore, no LPV or LNAV/VNAV minima will be published. GBAS procedures are published on a separate chart and the GLS minima line is to be used only for GBAS. ATC clearance for the RNAV procedure authorizes a properly certified pilot to utilize any minimums for which the aircraft is certified (for example, a WAAS equipped aircraft utilizes the LPV or LP minima but a GPS only aircraft may not). The RNAV chart includes information formatted for quick reference by the pilot or flight crew at the top of the chart. This portion of the chart, developed based on a study by the Department of Transportation, Volpe National Transportation System Center, is commonly referred to as the pilot briefing.

12.13.1 The minima lines are:

12.13.1.1 GLS. "GLS" is the acronym for GBAS Landing System. The U.S. version of GBAS has traditionally been referred to as LAAS. The worldwide community has adopted GBAS as the official term for this type of navigation system. To coincide with international terminology, the FAA is also adopting the term GBAS to be consistent with the international community. This line was originally published as a placeholder for both WAAS and LAAS minima and marked as N/A since no minima was published. As the concepts for GBAS and WAAS procedure publication have evolved, GLS will now be used only for GBAS minima, which will be on a separate approach chart. Most RNAV(GPS) approach charts have had the GLS minima line replaced by a WAAS LPV line of minima.

12.13.1.2 LPV. "LPV" is the acronym for localizer performance with vertical guidance. RNAV (GPS) approaches to LPV lines of minima take advantage of the improved accuracy of WAAS lateral and vertical guidance to provide an approach that is very similar to a Category I Instrument Landing System (ILS). The approach to LPV line of minima is designed for angular guidance with increasing sensitivity as the aircraft gets closer to the runway. The sensitivities are nearly identical to those of the ILS at similar distances. This was done intentionally to allow the skills required to proficiently fly an ILS to readily transfer to flying RNAV (GPS) approaches to the LPV line of minima. Just as with an ILS, the LPV has vertical guidance and is flown to a DA. Aircraft can fly this minima line with a statement in the Aircraft Flight Manual that the installed equipment supports LPV approaches. This includes Class 3 and 4 TSO−C146 GPS/WAAS equipment.

12.13.1.3 LNAV/VNAV. LNAV/VNAV identifies APV minimums developed to accommodate an RNAV IAP with vertical guidance, usually provided by approach certified Baro−VNAV, but with lateral and vertical integrity limits larger than a precision approach or LPV. LNAV stands for Lateral Navigation; VNAV stands for Vertical Navigation. This minima line can be flown by aircraft with a statement in the Aircraft Flight Manual that the installed equipment supports GPS approaches and has an approach−approved barometric VNAV, or if the aircraft has been demonstrated to support LNAV/VNAV approaches. This includes Class 2, 3 and 4 TSO−C146 GPS/WAAS equipment. Aircraft using LNAV/VNAV minimums will descend to landing via an internally generated descent path based on satellite or other approach approved VNAV systems. Since electronic vertical guidance is provided, the minima will be published as a DA. Other navigation systems may be specifically authorized to use this line of minima. (See Section A, Terms/Landing Minima Data, of the U.S. Terminal Procedures books.)

12.13.1.4 LP. "LP" is the acronym for localizer performance. Approaches to LP lines of minima take advantage of the improved accuracy of WAAS to provide approaches, with lateral guidance and angular guidance. Angular guidance does not refer to a glideslope angle but rather to the increased lateral sensitivity as the aircraft gets closer to the runway, similar to localizer approaches. However, the LP line of minima is a Minimum Descent Altitude (MDA) rather than a DA (H). Procedures with LP lines of minima will not be published with another approach that contains approved vertical guidance (LNAV/VNAV or LPV). It is possible to have LP and LNAV published on the same approach chart but LP will only be published if it provides lower minima than an LNAV line of minima. LP is not a fail−down mode for LPV. LP will only be published if terrain, obstructions, or some other reason prevent publishing a vertically guided procedure. WAAS avionics may provide GNSS−based advisory vertical guidance during an approach to an LP line of minima. Barometric altimeter information remains the primary altitude reference for complying with any altitude restrictions. WAAS equipment may not support LP, even if it supports LPV, if it was approved before TSO−C145b and TSO−C146b. Receivers approved under previous TSOs may require an upgrade by the manufacturer in order to be used to fly to LP minima. Receivers approved for LP must have a statement in the approved Flight Manual or Supplemental Flight Manual including LP as one of the approved approach types.

12.13.1.5 LNAV. This minima is for lateral navigation only, and the approach minimum altitude will be published as a minimum descent altitude (MDA). LNAV provides the same level of service as the present GPS stand alone approaches. LNAV minimums support the following navigation systems: WAAS, when the navigation solution will not support vertical navigation; and, GPS navigation systems which are presently authorized to conduct GPS approaches.

NOTE−
GPS receivers approved for approach operations in accordance with: AC 20−138, Airworthiness Approval of Positioning and Navigation Systems, qualify for this minima. WAAS navigation equipment must be approved in accordance with the requirements specified in TSO−C145() or TSO−C146() and installed in accordance with Advisory Circular AC 20−138.

12.13.2 Other systems may be authorized to utilize these approaches. See the description in Section A of the U.S. Terminal Procedures books for details. Operational approval must also be obtained for Baro−VNAV systems to operate to the LNAV/VNAV minimums. Baro−VNAV may not be authorized on some approaches due to other factors, such as no local altimeter source being available. Baro−VNAV is not authorized on LPV procedures. Pilots are directed to

their local Flight Standards District Office (FSDO) for additional information.

NOTE−
RNAV and Baro−VNAV systems must have a manufacturer supplied electronic database which must include the waypoints, altitudes, and vertical data for the procedure to be flown. The system must be able to retrieve the procedure by name from the aircraft navigation database, not just as a manually entered series of waypoints.

12.13.3 ILS or RNAV (GPS) Charts.

12.13.3.1 Some RNAV (GPS) charts will also contain an ILS line of minima to make use of the ILS precision final in conjunction with the RNAV GPS capabilities for the portions of the procedure prior to the final approach segment and for the missed approach. Obstacle clearance for the portions of the procedure other than the final approach segment is still based on GPS criteria.

NOTE−
*Some GPS receiver installations inhibit GPS navigation whenever **ANY** ILS frequency is tuned. Pilots flying aircraft with receivers installed in this manner must wait until they are on the intermediate segment of the procedure prior to the PFAF (PFAF is the active waypoint) to tune the ILS frequency and must tune the ILS back to a VOR frequency in order to fly the GPS based missed approach.*

12.13.3.2 Charting. There are charting differences between ILS, RNAV (GPS), and GLS approaches.

a) The LAAS procedure is titled "GLS RWY XX" on the approach chart.

b) The VDB provides information to the airborne receiver where the guidance is synthesized.

c) The LAAS procedure is identified by a four alpha−numeric character field referred to as the RPI or approach ID and is similar to the IDENT feature of the ILS.

d) The RPI is charted.

e) Most RNAV(GPS) approach charts have had the GLS (NA) minima line replaced by an LPV line of minima.

f) Since the concepts for LAAS and WAAS procedure publication have evolved, GLS will now be used only for LAAS minima, which will be on a separate approach chart.

12.13.4 Required Navigation Performance (RNP)

12.13.4.1 Pilots are advised to refer to the "TERMS/LANDING MINIMUMS DATA" (Section A) of the U.S. Government Terminal Procedures books for aircraft approach eligibility requirements by specific RNP level requirements.

12.13.4.2 Some aircraft have RNP approval in their AFM without a GPS sensor. The lowest level of sensors that the FAA will support for RNP service is DME/DME. However, necessary DME signal may not be available at the airport of intended operations. For those locations having an RNAV chart published with LNAV/VNAV minimums, a procedure note may be provided such as "DME/DME RNP−0.3 NA." This means that RNP aircraft dependent on DME/DME to achieve RNP−0.3 are not authorized to conduct this approach. Where DME facility availability is a factor, the note may read "DME/DME RNP−0.3 Authorized; ABC and XYZ Required." This means that ABC and XYZ facilities have been determined by flight inspection to be required in the navigation solution to assure RNP−0.3. VOR/DME updating must not be used for approach procedures.

12.13.5 Chart Terminology

12.13.5.1 Decision Altitude (DA) replaces the familiar term Decision Height (DH). DA conforms to the international convention where altitudes relate to MSL and heights relate to AGL. DA will eventually be published for other types of instrument approach procedures with vertical guidance, as well. DA indicates to the pilot that the published descent profile is flown to the DA (MSL), where a missed approach will be initiated if visual references for landing are not established. Obstacle clearance is provided to allow a momentary descent below DA while transitioning from the final approach to the missed approach. The aircraft is expected to follow the missed instructions while continuing along the published final approach course to at least the published runway threshold waypoint or MAP (if not at the threshold) before executing any turns.

12.13.5.2 Minimum Descent Altitude (MDA) has been in use for many years, and will continue to be used for the LNAV only and circling procedures.

12.13.5.3 Threshold Crossing Height (TCH) has been traditionally used in "precision" approaches as the height of the glide slope above threshold. With publication of LNAV/VNAV minimums and RNAV

descent angles, including graphically depicted descent profiles, TCH also applies to the height of the "descent angle," or glidepath, at the threshold. Unless otherwise required for larger type aircraft which may be using the IAP, the typical TCH is 30 to 50 feet.

12.13.6 The MINIMA FORMAT will also change slightly.

12.13.6.1 Each line of minima on the RNAV IAP is titled to reflect the level of service available; e.g., GLS, LPV, LNAV/VNAV, LP, and LNAV. CIRCLING minima will also be provided.

12.13.6.2 The minima title box indicates the nature of the minimum altitude for the IAP. For example:

a) DA will be published next to the minima line title for minimums supporting vertical guidance such as for GLS, LPV or LNAV/VNAV.

b) MDA will be published as the minima line on approaches with lateral guidance only, LNAV, or LP. Descent below the MDA must meet the conditions stated in 14 CFR Section 91.175.

c) Where two or more systems, such as LPV and LNAV/VNAV, share the same minima, each line of minima will be displayed separately.

12.13.7 Chart Symbology changed slightly to include:

12.13.7.1 Descent Profile. The published descent profile and a graphical depiction of the vertical path to the runway will be shown. Graphical depiction of the RNAV vertical guidance will differ from the traditional depiction of an ILS glide slope (feather) through the use of a shorter vertical track beginning at the decision altitude.

a) It is FAA policy to design IAPs with minimum altitudes established at fixes/waypoints to achieve optimum stabilized (constant rate) descents within each procedure segment. This design can enhance the safety of the operations and contribute toward reduction in the occurrence of controlled flight into terrain (CFIT) accidents. Additionally, the National Transportation Safety Board (NTSB) recently emphasized that pilots could benefit from publication of the appropriate IAP descent angle for a stabilized descent on final approach. The RNAV IAP format includes the descent angle to the hundredth of a degree; e.g., 3.00 degrees. The angle will be provided in the graphically depicted descent profile.

b) The stabilized approach may be performed by reference to vertical navigation information provided by WAAS or LNAV/VNAV systems; or for LNAV−only systems, by the pilot determining the appropriate aircraft attitude/groundspeed combination to attain a constant rate descent which best emulates the published angle. To aid the pilot, U.S. Government Terminal Procedures Publication charts publish an expanded Rate of Descent Table on the inside of the back hard cover for use in planning and executing precision descents under known or approximate groundspeed conditions.

12.13.7.2 Visual Descent Point (VDP). A VDP will be published on most RNAV IAPs. VDPs apply only to aircraft utilizing LP or LNAV minima, not LPV or LNAV/VNAV minimums.

12.13.7.3 Missed Approach Symbology. In order to make missed approach guidance more readily understood, a method has been developed to display missed approach guidance in the profile view through the use of quick reference icons. Due to limited space in the profile area, only four or fewer icons can be shown. However, the icons may not provide representation of the entire missed approach procedure. The entire set of textual missed approach instructions are provided at the top of the approach chart in the pilot briefing. (See FIG ENR 1.5−24.)

12.13.7.4 Waypoints. All RNAV or GPS stand−alone IAPs are flown using data pertaining to the particular IAP obtained from an onboard database, including the sequence of all WPs used for the approach and missed approach, except that step down waypoints may not be included in some TSO−C−129 receiver databases. Included in the database, in most receivers, is coding that informs the navigation system of which WPs are fly−over (FO) or fly−by (FB). The navigation system may provide guidance appropriately − including leading the turn prior to a fly−by WP; or causing overflight of a fly−over WP. Where the navigation system does not provide such guidance, the pilot must accomplish the turn lead or waypoint overflight manually. Chart symbology for the FB WP provides pilot awareness of expected actions. Refer to the legend of the U.S. Terminal Procedures books.

12.13.7.5 TAAs are described in subparagraph 12.4, Terminal Arrival Area (TAA). When published, the RNAV chart depicts the TAA areas through the use of "icons" representing each TAA area associated with the RNAV procedure (See FIG ENR 1.5−24). These

icons are depicted in the plan view of the approach chart, generally arranged on the chart in accordance with their position relative to the aircrafts arrival from the en route structure. The WP, to which navigation is appropriate and expected within each specific TAA area, will be named and depicted on the associated TAA icon. Each depicted named WP is the IAF for arrivals from within that area. TAAs may not be used on all RNAV procedures because of airspace congestion or other reasons.

12.13.7.6 Hot and Cold Temperature Limitations. A minimum and maximum temperature limitation is published on procedures which authorize Baro−VNAV operation. These temperatures represent the airport temperature above or below which Baro−VNAV is not authorized to LNAV/VNAV minimums. As an example, the limitation will read: "Uncompensated Baro−VNAV NA below −8 °C (+18 °F) or above 47 °C (117 °F)." This information will be found in the upper left hand box of the pilot briefing. When the temperature is above the high temperature or below the low temperature limit, Baro−VNAV may be used to provide a stabilized descent to the LNAV MDA; however, extra caution should be used in the visual segment to ensure a vertical correction is not required. If the VGSI is aligned with the published glidepath, and the aircraft instruments indicate on glidepath, an above or below glidepath indication on the VGSI may indicate that temperature error is causing deviations to the glidepath. These deviations should be considered if the approach is continued below the MDA.

NOTE−
Many systems which apply Baro−VNAV temperature compensation only correct for cold temperature. In this case, the high temperature limitation still applies. Also, temperature compensation may require activation by maintenance personnel during installation in order to be functional, even though the system has the feature. Some systems may have a temperature correction capability, but correct the Baro−altimeter all the time, rather than just on the final, which would create conflicts with other aircraft if the feature were activated. Pilots should be aware of compensation capabilities of the system prior to disregarding the temperature limitations.

NOTE−
Temperature limitations do not apply to flying the LNAV/VNAV line of minima using approach certified WAAS receivers when LPV or LNAV/VNAV are annunciated to be available.

12.13.7.7 WAAS Channel Number/Approach ID. The WAAS Channel Number is an optional equipment capability that allows the use of a 5−digit number to select a specific final approach segment without using the menu method. The Approach ID is an airport unique 4−character combination for verifying the selection and extraction of the correct final approach segment information from the aircraft database. It is similar to the ILS ident, but displayed visually rather than aurally. The Approach ID consists of the letter W for WAAS, the runway number, and a letter other than L, C or R, which could be confused with Left, Center and Right, e.g., W35A. Approach IDs are assigned in the order that WAAS approaches are built to that runway number at that airport. The WAAS Channel Number and Approach ID are displayed in the upper left corner of the approach procedure pilot briefing.

12.13.7.8 At locations where outages of WAAS vertical guidance may occur daily due to initial system limitations, a negative W symbol (W) will be placed on RNAV (GPS) approach charts. Many of these outages will be very short in duration, but may result in the disruption of the vertical portion of the approach. The W symbol indicates that NOTAMs or Air Traffic advisories are not provided for outages which occur in the WAAS LNAV/VNAV or LPV vertical service. Use LNAV or circling minima for flight planning at these locations, whether as a destination or alternate. For flight operations at these locations, when the WAAS avionics indicate that LNAV/VNAV or LPV service is available, then vertical guidance may be used to complete the approach using the displayed level of service. Should an outage occur during the procedure, reversion to LNAV minima may be required. As the WAAS coverage is expanded, the W will be removed.

NOTE−
Properly trained and approved, as required, TSO-C145() and TSO-C146() equipped users (WAAS users) with and using approved baro-VNAV equipment may plan for LNAV/VNAV DA at an alternate airport. Specifically authorized WAAS users with and using approved baro-VNAV equipment may also plan for RNP 0.3 DA at the alternate airport as long as the pilot has verified RNP availability through an approved prediction program.

13. Special Instrument Approach Procedures

13.1 Instrument Approach Procedure (IAP) charts reflect the criteria associated with the U.S. Standard for Terminal Instrument [Approach] Procedures (TERPs), which prescribes standardized methods for use in developing IAPs. Standard IAPs are published in the Federal Register (FR) in accordance with Title 14 of the Code of Federal Regulations, Part 97, and are available for use by appropriately qualified pilots operating properly equipped and airworthy aircraft in accordance with operating rules and procedures acceptable to the FAA. Special IAPs are also developed using TERPS but are not given public notice in the FR. The FAA authorizes only certain individual pilots and/or pilots in individual organizations to use special IAPs, and may require additional crew training and/or aircraft equipment or performance, and may also require the use of landing aids, communications, or weather services not available for public use. Additionally, IAPs that service private use airports or heliports are generally special IAPs. FDC NOTAMs for Specials, FDC T-NOTAMs, may also be used to promulgate safety-of-flight information relating to Specials provided the location has a valid landing area identifier and is serviced by the United States NOTAM system. Pilots may access NOTAMs online or through an FAA Flight Service Station (FSS). FSS specialists will not automatically provide NOTAM information to pilots for special IAPs during telephone pre–flight briefings. Pilots who are authorized by the FAA to use special IAPs must specifically request FDC NOTAM information for the particular special IAP they plan to use.

14. Radar Approaches

14.1 The only airborne radio equipment required for radar approaches is a functioning radio transmitter and receiver. The radar controller vectors the aircraft to align it with the runway centerline. The controller continues the vectors to keep the aircraft on course until the pilot can complete the approach and landing by visual reference to the surface. There are two types of radar approaches, "Precision" (PAR) and "Surveillance" (ASR).

14.2 A radar approach may be given to any aircraft upon request and may be offered to pilots of aircraft in distress or to expedite traffic; however, a surveillance approach might not be approved unless there is an ATC operational requirement, or in an unusual or emergency situation. Acceptance of a precision or surveillance approach by a pilot does not waive the prescribed weather minimums for the airport or for the particular aircraft operator concerned. The decision to make a radar approach when the reported weather is below the established minimums rests with the pilot.

14.3 Precision and surveillance approach minimums are published on separate pages in the Federal Aviation Administration Instrument Approach Procedure charts.

14.3.1 A Precision Approach (PAR) is one in which a controller provides highly accurate navigational guidance in azimuth and elevation to a pilot. Pilots are given headings to fly to direct them to and keep their aircraft aligned with the extended centerline of the landing runway. They are told to anticipate glidepath interception approximately 10 to 30 seconds before it occurs and when to start descent. The published decision height will be given only if the pilot requests it. If the aircraft is observed to deviate above or below the glidepath, the pilot is given the relative amount of deviation by use of terms "slightly" or "well" and is expected to adjust the aircraft's rate of descent to return to the glidepath. Trend information is also issued with respect to the elevation of the aircraft and may be modified by the terms "rapidly" and "slowly"; e.g., "well above glidepath, coming down rapidly." Range from touchdown is given at least once each mile. If an aircraft is observed by the controller to proceed outside of specified safety zone limits in azimuth and/or elevation and continues to operate outside these prescribed limits, the pilot will be directed to execute a missed approach or to fly a specified course unless the pilot has the runway environment (runway, approach lights, etc.) in sight. Navigational guidance in azimuth and elevation is provided the pilot until the aircraft reaches the published decision height (DH). Advisory course and glidepath information is furnished by the controller until the aircraft passes over the landing threshold, at which point the pilot is advised of any deviation from the runway centerline. Radar service is automatically terminated upon completion of the approach.

14.3.2 A Surveillance Approach (ASR) is one in which a controller provides navigational guidance in azimuth only. The pilot is furnished headings to fly to align the aircraft with the extended centerline of the

landing runway. Since the radar information used for a surveillance approach is considerably less precise than that used for a precision approach, the accuracy of the approach will not be as great, and higher minimums will apply. Guidance in elevation is not possible but the pilot will be advised when to commence descent to the minimum descent altitude (MDA) or, if appropriate, to an intermediate "step down fix" minimum crossing altitude and subsequently to the prescribed MDA. In addition, the pilot will be advised of the location of the missed approach point (MAP) prescribed for the procedure and the aircraft's position each mile on final from the runway, airport/heliport, or MAP, as appropriate. If requested by the pilot, recommended altitudes will be issued at each mile, based on the descent gradient established for the procedure, down to the last mile that is at or above the MDA. Normally, navigational guidance will be provided until the aircraft reaches the MAP. Controllers will terminate guidance and instruct the pilot to execute a missed approach unless at the MAP the pilot has the runway, airport/heliport in sight or, for a helicopter point−in−space approach, the prescribed visual reference with the surface is established. Also, if at any time during the approach the controller considers that safe guidance for the remainder of the approach cannot be provided, the controller will terminate guidance and instruct the pilot to execute a missed approach. Similarly, guidance termination and missed approach will be effected upon pilot request, and for civil aircraft only, controllers may terminate guidance when the pilot reports the runway, airport/heliport, or visual surface route (point−in−space approach) in sight or otherwise indicates that continued guidance is not required. Radar service is automatically terminated at the completion of a radar approach.

NOTE−
1. *The published MDA for straight−in approaches will be issued to the pilot before beginning descent. When a surveillance approach will terminate in a circle−to−land maneuver, the pilot must furnish the aircraft approach category to the controller. The controller will then provide the pilot with the appropriate MDA.*

2. *ASR approaches are not available when an ATC facility is using center radar arts presentation/ processing (CENRAP).*

14.3.3 A No−Gyro Approach is available to a pilot under radar control who experiences circumstances wherein the directional gyro or other stabilized compass is inoperative or inaccurate. When this occurs, the pilot should so advise ATC and request a No−Gyro vector or approach. Pilots of aircraft not equipped with a directional gyro or other stabilized compass who desire radar handling may also request a No−Gyro vector or approach. The pilot should make all turns at standard rate and should execute the turn immediately upon receipt of instructions. For example, "TURN RIGHT," "STOP TURN." When a surveillance or precision approach is made, the pilot will be advised after the aircraft has been turned onto final approach to make turns at half standard rate.

15. Radar Monitoring of Instrument Approaches

15.1 PAR facilities operated by the FAA and the military services at some joint−use (civil/military) and military installations monitor aircraft on instrument approaches and issue radar advisories to the pilot when weather is below VFR minimum (1,000 and 3), at night, or when requested by a pilot. This service is provided only when the PAR final approach course coincides with the final approach of the navigational aid and only during the operational hours of the PAR. The radar advisories serve only as a secondary aid since the pilot has selected the navigational aid as the primary aid for the approach.

15.2 Prior to starting final approach, the pilot will be advised of the frequency on which the advisories will be transmitted. If, for any reason, radar advisories cannot be furnished, the pilot will be so advised.

15.3 Advisory information, derived from radar observations, includes information on:

15.3.1 Passing the final approach fix inbound (nonprecision approach) or passing the outer marker or the fix used in lieu of the outer marker inbound (precision approach).

15.3.2 Trend advisories with respect to elevation and/or azimuth radar position and movement will be provided.

NOTE−
At this point, the pilot may be requested to report sighting the approach lights or the runway.

NOTE−
Whenever the aircraft nears the PAR safety limit, the pilot will be advised that the aircraft is well above or below the glidepath or well left or right of course. Glidepath information is given only to those aircraft executing a precision approach, such as ILS. Altitude information is

not transmitted to aircraft executing other than precision approaches because the descent portions of these approaches generally do not coincide with the depicted PAR glidepath.

15.3.3 If, after repeated advisories, the aircraft proceeds outside the PAR safety limit or if a radical deviation is observed, the pilot will be advised to execute a missed approach if not visual.

15.4 Radar service is automatically terminated upon completion of the approach.

16. ILS Approach

16.1 Communications should be established with the appropriate FAA control tower or with the FAA FSS where there is no control tower, prior to starting an ILS approach. This is in order to receive advisory information as to the operation of the facility. It is also recommended that the aural signal of the ILS be monitored during an approach as to assure continued reception and receipt of advisory information, when available.

17. ILS Approaches to Parallel Runways

17.1 ATC procedures permit ILS/RNAV/GLS instrument approach operations to dual or triple parallel runway configurations. ILS/RNAV/GLS approaches to parallel runways are grouped into three classes: Simultaneous Parallel Dependent Approaches; Simultaneous (Parallel) Independent Approaches; and Simultaneous Close Parallel PRM Approaches. (See FIG ENR 1.5−33.) RNAV approach procedures that are approved for simultaneous operations require GPS as the sensor for position updating. VOR/DME, DME/DME and IRU RNAV updating is not authorized. The classification of a parallel runway approach procedure is dependent on adjacent parallel runway centerline separation, ATC procedures, and airport ATC radar monitoring and communications capabilities. At some airports one or more parallel localizer courses may be offset up to 3 degrees. ILS approaches with offset localizer configurations result in loss of Category II/III capabilities and an increase in decision altitude/height (50').

17.2 Parallel approach operations demand heightened pilot situational awareness. A thorough Approach Procedure Chart review should be conducted with, as a minimum, emphasis on the following approach chart information: name and number of the approach, localizer frequency, inbound localizer/azimuth course, glide slope intercept altitude, glideslope crossing altitude at the final approach fix, decision height, missed approach instructions, special notes/procedures, and the assigned runway location/proximity to adjacent runways. Pilots will be advised that simultaneous dependent approaches, simultaneous approaches, or simultaneous close parallel PRM approaches are in use. This information may be provided through the ATIS.

17.3 The close proximity of adjacent aircraft conducting simultaneous (parallel) independent approaches and simultaneous close parallel PRM approaches mandates strict pilot compliance with all ATC clearances. ATC assigned airspeeds, altitudes, and headings must be complied with in a timely manner. Autopilot coupled approaches require pilot knowledge of procedures necessary to comply with ATC instructions. Simultaneous (parallel) independent approaches and simultaneous close parallel PRM approaches necessitate precise approach course tracking to minimize final monitor controller intervention, and unwanted No Transgression Zone (NTZ) penetration. In the unlikely event of a breakout, ATC will not assign altitudes lower than the minimum vectoring altitude. Pilots should notify ATC immediately if there is a degradation of aircraft or navigation systems.

17.4 Strict radio discipline is mandatory during simultaneous (parallel) independent and simultaneous close parallel PRM approach operations. This includes an alert listening watch and the avoidance of lengthy, unnecessary radio transmissions. Attention must be given to proper call sign usage to prevent the inadvertent execution of clearances intended for another aircraft. Use of abbreviated call signs must be avoided to preclude confusion of aircraft with similar sounding call signs. Pilots must be alert to unusually long periods of silence or any unusual background sounds in their radio receiver. A stuck microphone may block the issuance of ATC instructions on the tower frequency by the final monitor controller during simultaneous (parallel) independent and simultaneous close parallel PRM approaches. In the case of PRM approaches, the use of a second frequency by the monitor controller mitigates the

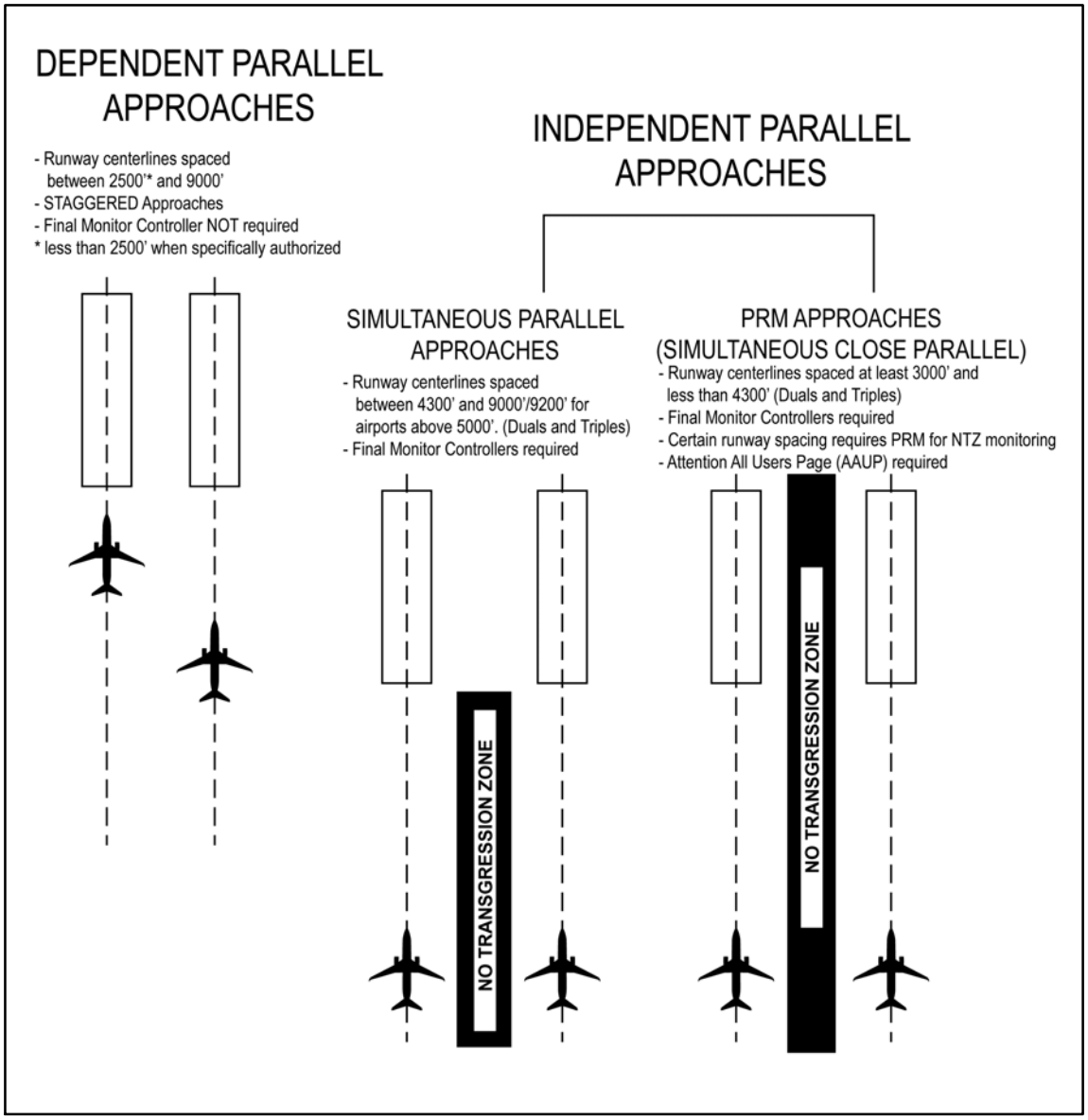
"stuck mike" or other blockage on the tower frequency.

REFERENCE−
AIP GEN 3.4, Paragraph 4.4, Radio Communications Phraseology and Techniques, gives additional communications information.

17.5 Use of Traffic Collision Avoidance Systems (TCAS) provides an additional element of safety to parallel approach operations. Pilots should follow recommended TCAS operating procedures presented in approved flight manuals, original equipment manufacturer recommendations, professional newsletters, and FAA publications.

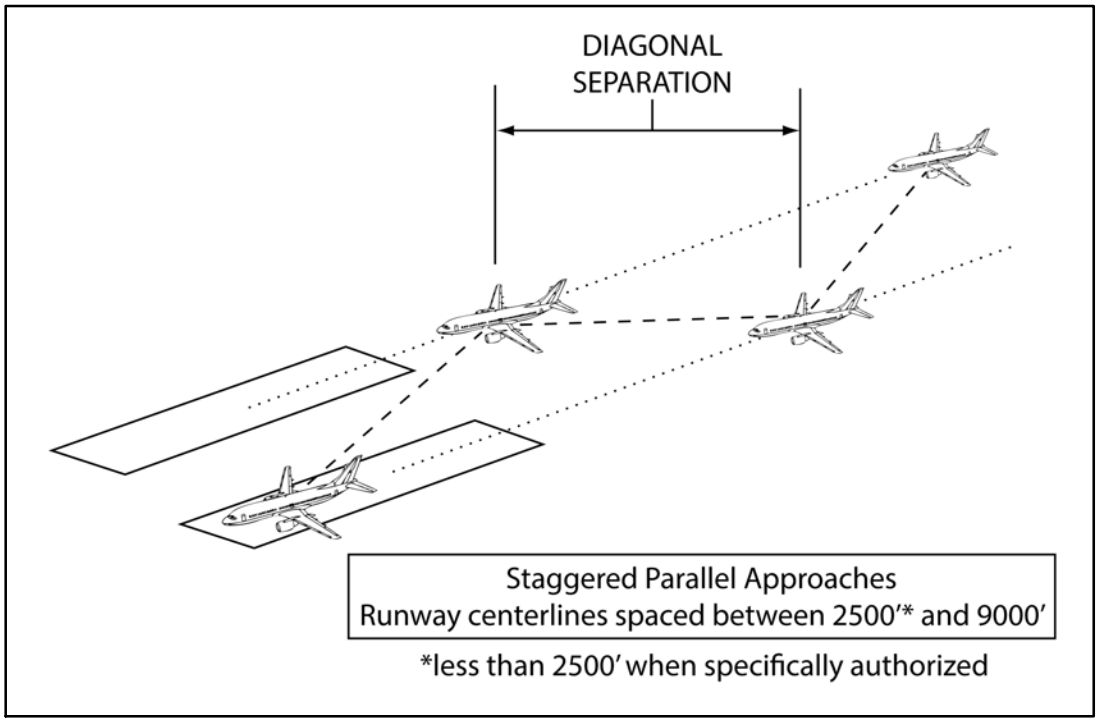
FIG ENR 1.5−33

Simultaneous Parallel Approaches
(Parallel Runways and Approach Courses and Offset Approach Courses between 2.5 and 3.0 degrees)



18. Parallel ILS Approaches (Dependent)
(See FIG ENR 1.5−34)

FIG ENR 1.5−34
Simultaneous (Parallel) Dependent Approaches



18.1 Simultaneous (parallel) dependent approaches are an ATC procedure permitting approaches to airports having parallel runway centerlines separated by between 2,500 feet and 9,000 feet. Integral parts of a total system are ILS, radar, communications, ATC procedures, and required airborne equipment. RNAV equipment in the aircraft or GLS equipment on the ground and in the aircraft may replace the required airborne and ground based ILS equipment.

18.2 A simultaneous (parallel) dependent approach differs from a simultaneous (parallel) independent approach in that, the minimum distance between parallel runway centerlines is reduced; there is no requirement for radar monitoring or advisories; and a staggered separation of aircraft on the adjacent final course is required.

18.3 A minimum of 1.0 NM radar separation (diagonal) is required between successive aircraft on the adjacent final approach course when runway centerlines are at least 2,500 feet but no more than 3,600 feet apart. A minimum of 1.5 NM radar separation (diagonal) is required between successive aircraft on the adjacent final approach course when runway centerlines are more than 3,600 feet but no more than 8,300 feet apart. When runway centerlines are more than 8,300 feet but no more than 9,000 feet apart a minimum of 2 NM diagonal radar separation is provided. Aircraft on the same final approach course within 10 NM of the runway end are provided a minimum of 3 NM radar separation, reduced to 2.5 NM in certain circumstances. In addition, a minimum of 1,000 feet vertical or a minimum of three miles radar separation is provided between aircraft during turn on to the parallel final approach course.

18.4 Whenever parallel approaches are in progress, pilots are informed by ATC or via the ATIS that approaches to both runways are in use. The charted IAP also notes which runways may be used simultaneously. In addition, the radar controller will have the interphone capability of communicating with the tower controller where separation responsibility has not been delegated to the tower.

NOTE−
ATC will specifically identify these operations as being dependent when advertised on the ATIS.

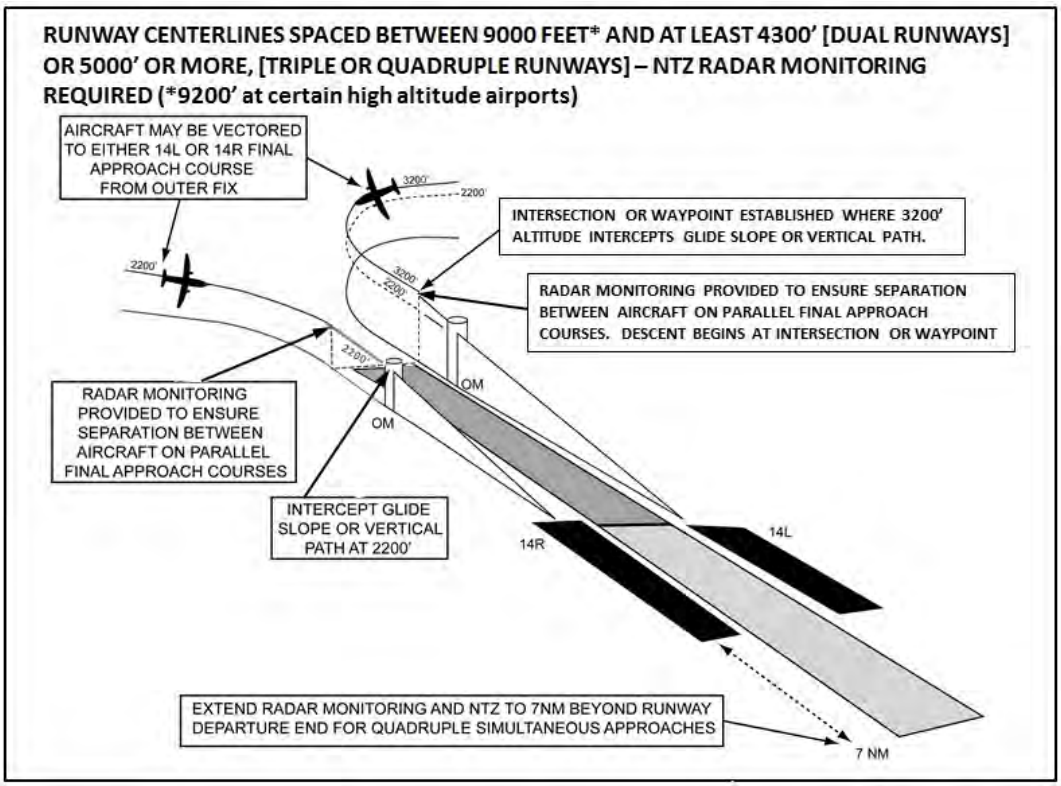
EXAMPLE–
Simultaneous dependent ILS runway 19R and 19L in progress.

18.5 At certain airports, simultaneous (parallel) dependent approaches are permitted to runways spaced less than 2500 feet apart. In this case, ATC will stagger aircraft on the parallel approaches with the leaders always arriving on the same runway. The trailing aircraft is permitted diagonal separation of not less than 1.5 NM, instead of the single runway separation normally utilized for runways spaced less than 2500 feet apart. For wake turbulence mitigation reasons: a) 1.5 NM spacing is only permitted when the leader is either in the large or small wake turbulence category, and b) all aircraft must descend on the glideslope from the altitude at which they were cleared for the approach during these operations. When 1.5 NM reduced separation is authorized, the IAP briefing strip which indicates that simultaneous operations require the use of vertical guidance and that the pilot should maintain last assigned altitude until intercepting the glideslope. No special pilot training is required to participate in these operations.

NOTE–
Either simultaneous dependent ILS approaches or SOIA LDA PRM and ILS PRM approaches may be conducted to these runways depending on weather conditions and traffic volume. Pilots should use caution so as not to confuse these operations. Use SOIA procedures only when the ATIS advertises PRM approaches are in use, refer to AIP ENR 1.5–20. SFO is the only airport where both procedures are presently conducted.

19. Simultaneous (Parallel) Independent ILS/RNAV/GLS Approaches
(See FIG ENR 1.5−35)

FIG ENR 1.5−35
Simultaneous (Parallel) Independent ILS/RNAV/GLS Approaches



19.1 System. An approach system permitting simultaneous ILS/RNAV/GLS approaches to parallel runways with centerlines separated by 4,300 to 9,000 feet (9,200' for airports above 5,000') utilizing NTZ final monitor controllers. Simultaneous (parallel) independent approaches require NTZ radar monitoring to ensure separation between aircraft on the adjacent parallel approach course. Aircraft position is tracked by final monitor controllers who will issue instructions to aircraft observed deviating from the assigned final approach course. Staggered radar separation procedures are not utilized. Integral parts of a total system are ILS, radar, communications, ATC procedures, and required airborne equipment. A chart note identifies that the approach is authorized for simultaneous use. When simultaneous operations are in progress, it will be advertised on the ATIS. When advised that simultaneous approaches are in progress, pilots must advise approach control immediately of malfunctioning or inoperative receivers, or if a simultaneous approach is not desired.

NOTE−
ATC does not use the word independent or parallel when advertising these operations on the ATIS.

EXAMPLE−
Simultaneous ILS 24L and ILS 24R approaches in progress.

19.2 Radar Services. These services are is provided for each simultaneous (parallel) independent approach.

19.2.1 During turn on to parallel final approach, aircraft will be provided 3 miles radar separation or a minimum of 1,000 feet vertical separation. The assigned altitude must be maintained until intercepting the glide path, unless cleared otherwise by ATC. Aircraft will not be vectored to intercept the final approach course at an angle greater than thirty degrees.

19.2.2 The final monitor controller will have the capability of overriding the tower controller on the tower frequency.

19.2.3 Pilots will be instructed to contact the tower frequency prior to the point where NTZ monitoring begins.

19.2.4 Aircraft observed to overshoot the turn−on or to continue on a track which will penetrate the NTZ will be instructed to return to the correct final approach course immediately. The final monitor controller may cancel the approach clearance, and issue missed approach or other instructions to the deviating aircraft.

PHRASEOLOGY−
"(Aircraft call sign) YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO THE FINAL APPROACH COURSE,"

or

"(aircraft call sign) TURN (left/right) AND RETURN TO THE FINAL APPROACH COURSE."

19.2.5 If a deviating aircraft fails to respond to such instructions or is observed penetrating the NTZ, the aircraft on the adjacent final approach course (if threatened), will be issued a breakout instruction.

PHRASEOLOGY−
"TRAFFIC ALERT (aircraft call sign) TURN (left/right) IMMEDIATELY HEADING (degrees), (climb/descend) AND MAINTAIN (altitude)."

19.2.6 Radar monitoring will automatically be terminated when visual separation is applied, the aircraft reports the approach lights or runway in sight, or the aircraft is 1 mile or less from the runway threshold. Final monitor controllers will not advise pilots when radar monitoring is terminated.

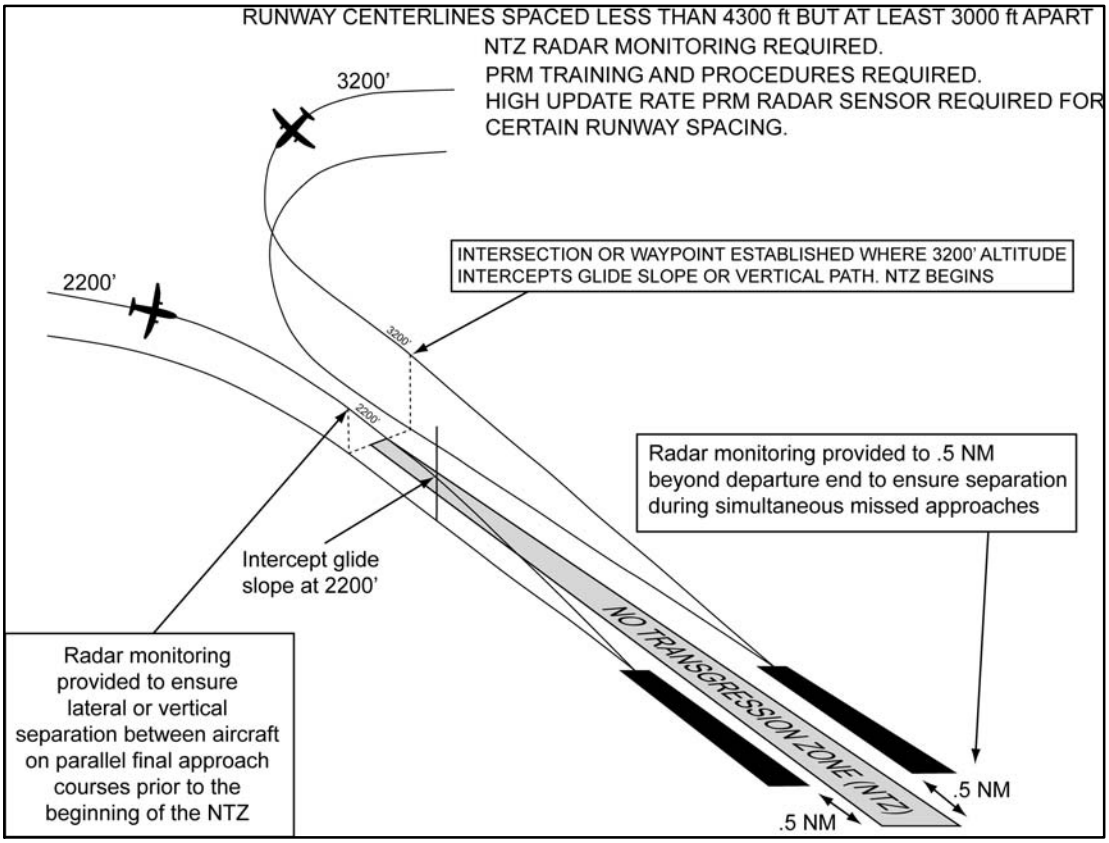
NOTE−
Simultaneous independent approaches conducted to runways spaced greater than 9,000 feet (or 9,200' at airports above 5,000') do not require an NTZ. However, from a pilot's perspective, the same alerts relative to deviating aircraft will be provided by ATC as are provided when an NTZ is being monitored. Pilots may not be aware as to whether or not an NTZ is being monitored.

20. Simultaneous Close Parallel ILS PRM/RNAV PRM/GLS PRM Approaches and Simultaneous Offset Instrument Approaches (SOIA)

(See FIG ENR 1.5−36)

FIG ENR 1.5−36

PRM Approaches
Simultaneous Close Parallel



20.1 System

20.1.1 PRM is an acronym for the high update rate Precision Runway Monitor surveillance system which is required to monitor the No Transgression Zone (NTZ) for specific parallel runway separations used to conduct simultaneous close parallel approaches. PRM is also published in the title as part of the approach name for IAPs used to conduct Simultaneous Close Parallel approaches. "PRM" alerts pilots that specific airborne equipment, training, and procedures are applicable.

Because Simultaneous Close Parallel PRM Approaches are independent, the NTZ and normal operating zone (NOZ) airspace between the final approach courses is monitored by two monitor controllers, one for each approach course. The NTZ monitoring system consists of high resolution ATC radar displays, automated tracking software which provides monitor controllers with aircraft identification, position, speed and a ten-second projected position, as well as visual and aural NTZ penetration alerts. A PRM high update rate surveillance sensor is a component of this system only for specific runway spacing. Additional procedures for simultaneous independent approaches are described in ENR 1.5−19., Simultaneous (Parallel) Independent ILS/RNAV/GLS Approaches. Simultaneous Close Parallel PRM approaches, whether conducted utilizing a high update rate PRM surveillance sensor or not, must meet all of the following requirements: pilot training, PRM in the approach title, NTZ monitoring utilizing a final monitor aid, publication on an AAUP, and use of a secondary PRM communication frequency.

Simultaneous close parallel ILS PRM approaches are depicted on a separate Approach Procedure Chart titled ILS PRM Rwy XXX (Simultaneous Close Parallel).

NOTE–
ATC does not use the word "independent" when advertising these operations on the ATIS.

EXAMPLE–
Simultaneous ILS PRM 33L and ILS PRM 33R approaches in progress.

20.1.1.1 In the discussion below, RNAV PRM and GLS PRM approaches may be substituted for one or both of the ILS PRM approaches in a simultaneous close parallel operation, or, in the case of SOIA, may be substituted for an ILS PRM and/or LDA PRM approach. RNAV PRM or GLS PRM approaches utilize the same applicable chart notations and the same fixes, crossing altitudes, and missed approach procedures as the ILS PRM or LDA PRM approach it overlays. Vertical guidance for an RNAV PRM or GLS PRM approach must be used when substituting for an ILS PRM or LDA PRM approach.

20.1.1.2 RNAV PRM and GLS PRM approaches may be substituted for:

a) one or both of the ILS PRM approaches in a simultaneous close parallel operation, or

b) the ILS PRM and/or LDA PRM approach in a Simultaneous Offset Instrument Approach (SOIA) operation.

20.1.1.3 The pilot may request to fly the RNAV PRM or GLS PRM approach in lieu of either the ILS PRM and LDA PRM approaches. ATIS may advertise RNAV or GLS PRM approaches to the affected runway or runways in the event of the loss of ground based NAVAIDS. The Attention All Users Page will address ILS PRM, LDA PRM, RNAV PRM, or GLS PRM approaches as applicable. In the remainder of this section:

a) The RNAV PRM or GLS PRM approaches may be substituted when reference is made to an ILS, LOC, or SOIA offset LDA PRM approach.

b) The RNAV PRM or GLS PRM Missed Approach Point (MAP) in SOIA operations may be substituted when reference is made to the LDA PRM MAP.

20.1.2 Flight Management System (FMS) coding of the offset RNAV PRM and GLS PRM approaches in a SOIA operation is different than other RNAV and GLS approach coding in that it does not match the initial procedure published on the charted IAP. In the SOIA design of the offset approach, the lateral course terminates at the fictitious threshold point (FTP), which is an extension of the final approach course to a point near the runway threshold. The FTP is designated in the approach coding as the MAP so that vertical guidance is available to the pilot to the runway threshold, just as vertical guidance is provided by the LDA glideslope. RNAV and GLS lateral guidance, in contrast, is discontinued at the charted MAP and replaced by visual maneuvering to accomplish runway alignment in the same manner as LDA course guidance is discontinued at the MAP.

As a result of this RNAV and GLS approach coding, when executing a missed approach at and after passing the charted MAP, a heading must initially be flown, either hand-flown or using autopilot "heading mode," before engaging LNAV. If the pilot engages LNAV immediately, the aircraft will continue to track toward the FTP instead of commencing a turn toward the missed approach holding fix. Notes on the charted IAP and in the AAUP make specific reference to this procedure.

Because the SOIA LDA approach is coded in the FMS in same manner as the RNAV GPS approach, this same procedure should be utilized when conducting the LDA PRM missed approach at or inside of the LDA MAP.

Some FMSs do not code waypoints inside of the FAF as part of the approach. Therefore, the depicted MAP on the charted IAP may not be included in the offset approach coding. Pilots utilizing those FMSs may identify the location of the waypoint by noting its distance from the FTP as published on the charted IAP. In those same FMSs, the straight-in SOIA approach will not display a waypoint inside the PFAF. The same procedures may be utilized to identify the uncoded waypoint. In this case, the location is determined by noting its distance from the runway waypoint as published on the charted IAP.

Because the FTP is coded as the MAP, the FMS map display will depict the initial missed approach course as beginning at the FTP. This depiction does not match the charted initial missed approach procedure on the IAP. Pilots are reminded that charted IAP

guidance is to be followed, not the map display. Once the aircraft completes the initial turn when commencing a missed approach, the remainder of the procedure coding is standard and can be utilized as with any other IAP.

20.2 Simultaneous Offset Instrument Approach (SOIA).

20.2.1 SOIA is an acronym for Simultaneous Offset Instrument Approach, a procedure used to conduct simultaneous approaches to runways spaced less than 3,000 feet, but at least 750 feet apart. The SOIA procedure utilizes an ILS PRM approach to one runway and an offset Localizer Type Directional Aid (LDA) PRM approach with glide slope to the adjacent runway. In SOIA operations, aircraft are paired, with the aircraft conducting the ILS PRM approach always positioned slightly ahead of the aircraft conducting the LDA PRM approach.

20.2.2 The ILS PRM approach plates used in SOIA operations are identical to other ILS PRM approach plates, with an additional note, which provides the separation between the two runways used for simultaneous approaches. The LDA PRM approach plate displays the required notations for closely spaced approaches as well as depicting the visual segment of the approach.

20.2.3 Controllers monitor the SOIA ILS PRM and LDA PRM approaches in exactly the same manner as is done for ILS PRM approaches. The procedures and system requirements for SOIA ILS PRM and LDA PRM approaches are identical with those used for simultaneous close parallel ILS PRM approaches until near the LDA PRM approach missed approach point (MAP) −− where visual acquisition of the ILS aircraft by the aircraft conducting the LDA PRM approach occurs. Since the ILS PRM and LDA PRM approaches are identical except for the visual segment in the SOIA concept, an understanding of the procedures for conducting ILS PRM approaches is essential before conducting a SOIA ILS PRM or LDA PRM operation.

20.2.4 In SOIA, the approach course separation (instead of the runway separation) meets established close parallel approach criteria. Refer to FIG ENR 1.5−37 for the generic SOIA approach geometry. A visual segment of the LDA PRM approach is established between the LDA MAP and the runway threshold. Aircraft transition in visual conditions from the LDA course, beginning at the LDA MAP, to align with the runway and can be stabilized by 500 feet above ground level (AGL) on the extended runway centerline. Aircraft will be "paired" in SOIA operations, with the ILS aircraft ahead of the LDA aircraft prior to the LDA aircraft reaching the LDA MAP. A cloud ceiling for the approach is established so that the LDA aircraft has nominally 30 seconds to acquire the leading ILS aircraft prior to the LDA aircraft reaching the LDA MAP. If visual acquisition is not accomplished, a missed approach must be executed at the LDA MAP.

20.3 Requirements and Procedures.

Besides system requirements and pilot procedures as identified in subparagraph 20.1.1 above, all pilots must have completed special training before accepting a clearance to conduct ILS PRM or LDA PRM Simultaneous Close Parallel Approaches.

20.3.1 Pilot Training Requirement. Pilots must complete **special pilot training**, as outlined below, before accepting a clearance for a simultaneous close parallel ILS PRM or LDA PRM approach.

20.3.1.1 For operations under 14 CFR Parts 121, 129, and 135, pilots must comply with FAA−approved company training as identified in their Operations Specifications. Training, at a minimum, must require pilots to view the FAA video "ILS PRM AND SOIA APPROACHES: INFORMATION FOR AIR CARRIER PILOTS." Refer to **https://www.faa.gov/training_testing/training/prm/** or search key words **FAA PRM** for additional information and to view or download the video.

20.3.1.2 For operations under Part 91:

a) Pilots operating **transport category** aircraft must be familiar with PRM operations as contained in this section of the AIM. In addition, **pilots operating transport category aircraft** must view the FAA video "ILS PRM AND SOIA APPROACHES: INFORMATION FOR AIR CARRIER PILOTS." Refer to **https://www.faa.gov/training_testing/training/prm/** or search key words **FAA PRM** for additional information and to view or download the video.

b) Pilots ***not*** operating **transport category** aircraft must be familiar with PRM and SOIA operations as contained in this section of the AIM.

The FAA strongly recommends that pilots ***not*** involved **in transport category** aircraft operations view the FAA video, "ILS PRM AND SOIA APPROACHES: INFORMATION FOR GENERAL AVIATION PILOTS." Refer to **https://www.faa.gov/training_testing/training/prm/** or search key words **FAA PRM** for additional information and to view or download the video.

NOTE–
Either simultaneous dependent ILS approaches, or SOIA LDA PRM and ILS PRM approaches may be conducted depending on weather conditions and traffic volume. Pilots should use caution so as not to confuse these operations. Use SOIA procedures only when the ATIS advertises PRM approaches are in use. For simultaneous (parallel) dependent approaches see paragraph ENR 1.5–18. SFO is the only airport where both procedures are presently conducted.

20.3.2 ATC Directed Breakout. An ATC directed "breakout" is defined as a vector off the ILS or LDA approach course of a threatened aircraft in response to another aircraft penetrating the NTZ.

20.3.3 Dual Communications. The aircraft flying the ILS PRM or LDA PRM approach must have the capability of enabling the pilot/s to listen to two communications frequencies simultaneously.

20.3.4 Radar Services.

20.3.4.1 During turn on to parallel final approach, aircraft will be provided 3 miles radar separation or a minimum of 1,000 feet vertical separation. The assigned altitude must be maintained until intercepting the glide path, unless cleared otherwise by ATC. Aircraft will not be vectored to intercept the final approach course at an angle greater than thirty degrees.

20.3.4.2 The final monitor controller will have the capability of overriding the tower controller on the tower frequency.

20.3.4.3 Pilots will be instructed to contact the tower frequency prior to the point where NTZ monitoring begins. Pilots will begin monitoring the secondary PRM frequency at that time (see Dual VHF Communications Required below).

20.3.4.4 To ensure separation is maintained, and in order to avoid an imminent situation during simultaneous close parallel ILS PRM or SOIA ILS PRM and LDA PRM approaches, pilots must immediately comply with PRM monitor controller instructions.

20.3.4.5 Aircraft observed to overshoot the turn or to continue on a track which will penetrate the NTZ will be instructed to return to the correct final approach course immediately. The final monitor controller may cancel the approach clearance, and issue missed approach or other instructions to the deviating aircraft.

PHRASEOLOGY–
"(Aircraft call sign) YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO THE LOCALIZER FINAL APPROACH COURSE,"
or
"(aircraft call sign) TURN (left/right) AND RETURN TO THE LOCALIZER FINAL APPROACH COURSE."

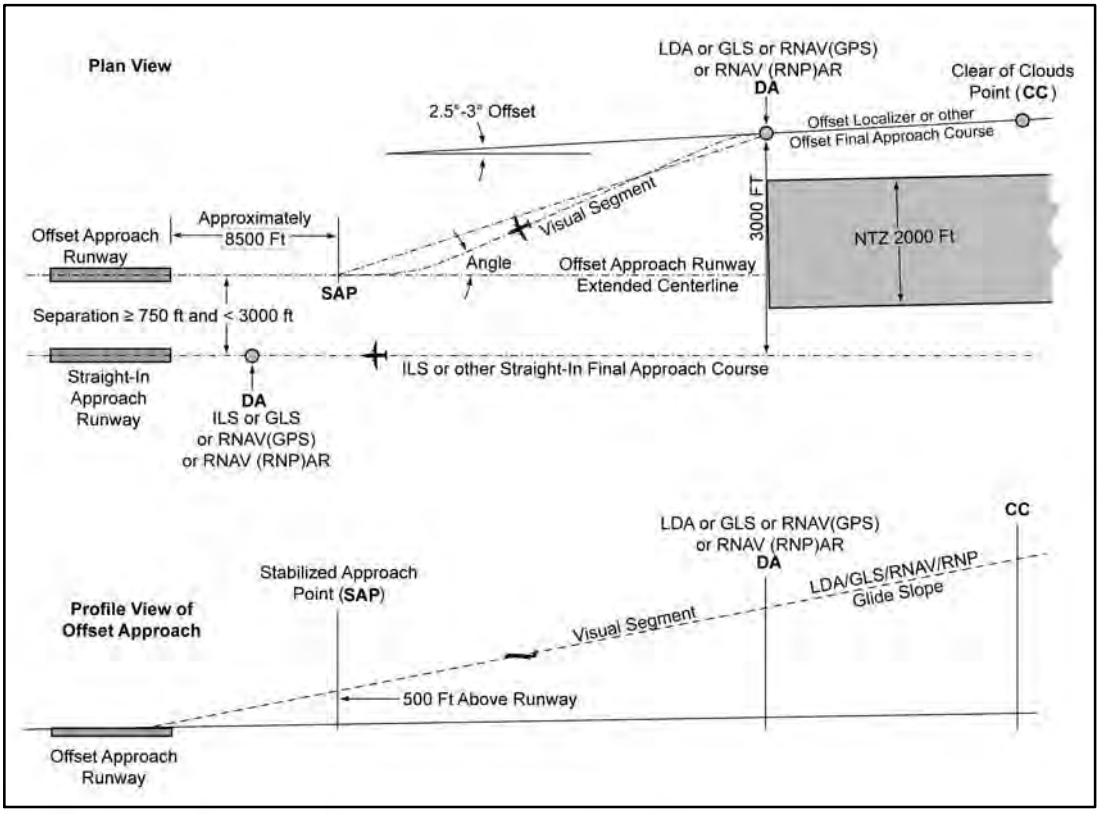
20.3.4.6 If a deviating aircraft fails to respond to such instructions or is observed penetrating the NTZ, the aircraft on the adjacent final approach course (if threatened) will be issued a breakout instruction.

PHRASEOLOGY–
"TRAFFIC ALERT (aircraft call sign) TURN (left/right) IMMEDIATELY HEADING (degrees), (climb/descend) AND MAINTAIN (altitude)."

20.3.4.7 Radar monitoring will automatically be terminated when visual separation is applied or the aircraft reports the approach lights or runway in sight. Otherwise, monitoring continues to at least .5 NM beyond the furthest DER. Final monitor controllers will **not** advise pilots when radar monitoring is terminated.

20.3.5 At airports that conduct PRM operations, (ILS PRM, and the case of airports where SOIAs are conducted, ILS PRM and LDA PRM approaches) the Attention All Users Page (AAUP) informs pilots who are unable to participate that they will be afforded appropriate arrival services as operational conditions permit and must notify the controlling ARTCC as soon as practical, but at least 100 miles from destination.

FIG ENR 1.5−37
SOIA Approach Geometry



NOTE−

SAP *The stabilized approach point is a design point along the extended centerline of the intended landing runway on the glide slope/glide path at 500 feet above the runway threshold elevation. It is used to verify a sufficient distance is provided for the visual maneuver after the offset course approach DA to permit the pilots to conform to approved, stabilized approach criteria. The SAP is not published on the IAP.*

Offset Course DA *The point along the LDA, or other offset course, where the course separation with the adjacent ILS, or other straight-in course, reaches the minimum distance permitted to conduct closely spaced approaches. Typically that minimum distance will be 3,000 feet without the use of high update radar; with high update radar, course separation of less than 3,000 ft may be used when validated by a safety study. The altitude of the glide slope/glide path at that point determines the offset course approach decision altitude and is where the NTZ terminates. Maneuvering inside the DA is done in visual conditions.*

Visual Segment Angle *Angle, as determined by the SOIA design tool, formed by the extension of the straight segment of the calculated flight track (between the offset course MAP/DA and the SAP) and the extended runway centerline. The size of the angle is dependent on the aircraft approach categories (Category D or only selected categories/speeds) that are authorized to use the offset course approach and the spacing between the runways.*

Visibility *Distance from the offset course approach DA to runway threshold in statute mile.*

Procedure *The aircraft on the offset course approach must see the runway-landing environment and, if ATC has advised that traffic on the straight-in approach is a factor, the offset course approach aircraft must visually acquire the straight-in approach aircraft and report it in sight to ATC prior to reaching the DA for the offset course approach.*

CC *The Clear of Clouds point is the position on the offset final approach course where aircraft first operate in visual meteorological conditions below the ceiling, when the actual weather conditions are at, or near, the minimum ceiling for SOIA operations. Ceiling is defined by the Aeronautical Information Manual.*

20.4 Attention All Users Page (AAUP). Multiple PRM approach charts at the same airport have a single AAUP associated with them that must be referred to in preparation for conducting the approach.

Bullet points are published which summarize the PRM procedures which apply to each approach and must be briefed before conducting a PRM approach. The following information may be summarized in the bullet points or published in more detail in the Expanded Procedures section of the AAUP. Briefing on the Expanded Procedures is optional.

20.4.1 ATIS. When the ATIS broadcast advises ILS PRM approaches are in progress (or ILS PRM and LDA PRM approaches in the case of SOIA), pilots should brief to fly the ILS PRM or LDA PRM approach. If later advised to expect the ILS or LDA approach (should one be published), the ILS PRM or LDA PRM chart may be used after completing the following briefing items. The pilot may also request to fly the RNAV (GPS) PRM in lieu of either the ILS PRM or LDAPRM approach. In the event of the loss of ground based NAVAIDS, the ATIS may advertise RNAV (GPS) PRM approaches to the affected runway or runways.

20.4.1.1 Minimums and missed approach procedures are unchanged.

20.4.1.2 PRM Monitor frequency no longer required.

20.4.1.3 ATC may assign a lower altitude for glide slope intercept.

NOTE−
In the case of the LDA PRM approach, this briefing procedure only applies if an LDA-DME approach is also published.

In the case of the SOIA ILS PRM and LDA PRM procedure, the AAUP describes the weather conditions in which simultaneous approaches are authorized:

Simultaneous approach weather minimums are X,XXX feet (ceiling), x miles (visibility).

20.4.2 Dual VHF Communications Required. To avoid blocked transmissions, each runway will have two frequencies, a primary and a PRM monitor frequency. The tower controller will transmit on both frequencies. The monitor controller's transmissions, if needed, will override both frequencies. Pilots will ONLY transmit on the tower controller's frequency, but will listen to both frequencies. Select the PRM monitor frequency audio only when instructed by ATC to contact the tower. The volume levels should be set about the same on both radios so that the pilots will be able to hear transmissions on at least one frequency if the other is blocked. Site specific procedures take precedence over the general information presented in this paragraph. Refer to the AAUP for applicable procedures at specific airports.

NOTE−
At KSFO, pilots conducting SOIA operations select the monitor frequency audio when communicating with the final radar controller. In this special case, the monitor controller's transmissions, if required, override the final controller's frequency.

20.4.3 Breakouts. Breakouts differ from other types of abandoned approaches in that they can happen anywhere and unexpectedly. Pilots directed by ATC to break off an approach must assume that an aircraft is blundering toward them and a breakout must be initiated **immediately**.

20.4.3.1 Hand-fly breakouts. All breakouts are to be hand-flown to ensure the maneuver is accomplished in the shortest amount of time.

20.4.3.2 ATC Directed "Breakouts." ATC directed breakouts will consist of a turn and a climb or descent. Pilots must always initiate the breakout in response to an air traffic controller's instruction.

Controllers will give a descending breakout only when there are no other reasonable options available, but in no case will the descent be below the minimum vectoring altitude (MVA) which provides at least 1,000 feet required obstruction clearance. The AAUP may provide the MVA in the final approach segment as X,XXX feet at (Name) Airport.

NOTE–
"TRAFFIC ALERT." If an aircraft enters the "NO TRANSGRESSION ZONE" (NTZ), the controller will breakout the threatened aircraft on the adjacent approach. The phraseology for the breakout will be:

PHRASEOLOGY–
TRAFFIC ALERT, (aircraft call sign) TURN (left/right) IMMEDIATELY, HEADING (degrees), CLIMB /DESCEND AND MAINTAIN (altitude).

20.4.4 ILS PRM Glideslope Navigation. The pilot may find crossing altitudes published along the final approach course. If the approach geometry warrants it, the pilot is advised on the AAUP that descending on the ILS or LDA glideslope ensures complying with any charted crossing restrictions.

20.4.5 SOIA and ILS PRM differences as noted on the AAUP

20.4.5.1 ILS PRM, LDA Traffic (only published on the AAUP when the ILS PRM approach is used in conjunction with an LDA PRM approach to the adjacent runway). To provide better situational awareness, and because traffic on the LDA may be visible on the ILS aircraft's TCAS, pilots are reminded of the fact that aircraft will be maneuvering behind them to align with the adjacent runway. While conducting the ILS PRM approach to Runway XXX, other aircraft may be conducting the offset LDA PRM approach to Runway XXX. These aircraft will approach from the (left/right) rear and will realign with Runway XXX after making visual contact with the ILS traffic. Under normal circumstances, these aircraft will not pass the ILS traffic.

20.4.5.2 SOIA LDA PRM Items. The AAUP section for the SOIA LDA PRM approach contains most information found in the ILS PRM section. It replaces certain information as seen below and provides pilots with the procedures to be used in the visual segment of the LDA PRM approach from the LDA MAP until landing.

20.4.5.3 SOIA LDA PRM Navigation (replaces ILS PRM 20.4.4 and 20.4.5.1 above). The pilot may find crossing altitudes published along the final approach course. The pilot is advised that descending on the LDA glideslope ensures complying with any charted crossing restrictions. Remain on the LDA course until passing XXXXX (LDA MAP name) intersection prior to maneuvering to align with the centerline of Runway XXX.

20.4.5.4 SOIA (Name) Airport Visual Segment (replaces ILS PRM 20.4.4 above). Pilot procedures for navigating beyond the LDA MAP are spelled out. If ATC advises that there is traffic on the adjacent ILS, pilots are authorized to continue past the LDA MAP to align with runway centerline when:

a) the ILS traffic is in sight and is expected to remain in sight,

b) ATC has been advised that "traffic is in sight." (ATC is not required to acknowledge this transmission),

c) the runway environment is in sight. Otherwise, a missed approach must be executed. Between the LDA MAP and the runway threshold, pilots conducting the LDA PRM approach are responsible for separating themselves visually from traffic conducting the ILS PRM approach to the adjacent runway, which means maneuvering the aircraft as necessary to avoid that traffic until landing, and providing wake turbulence avoidance, if applicable. Pilots maintaining visual separation should advise ATC, as soon as practical, if visual contact with the aircraft conducting the ILS PRM approach is lost and execute a missed approach unless otherwise instructed by ATC.

20.5 Differences between Simultaneous ILS and ILS PRM or LDA PRM approaches of importance to the pilot.

20.5.1 Runway Spacing. Prior to simultaneous close parallel approaches, most ATC directed breakouts were the result of two aircraft in-trail on the same final approach course getting too close together. Two aircraft going in the same direction did not mandate quick reaction times. With PRM closely spaced approaches, two aircraft could be alongside each other, navigating on courses that are separated by less than 4,300 feet. In the unlikely event that an aircraft "blunders" off its course and makes a worst case turn of 30 degrees toward the adjacent final approach course, closing speeds of 135 feet per second could occur that constitute the need for quick reaction. A blunder has to be recognized by the monitor controller, and breakout instructions issued

to the endangered aircraft. The pilot will not have any warning that a breakout is imminent because the blundering aircraft will be on another frequency. It is important that, when a pilot receives breakout instructions, he/she assumes that a blundering aircraft is about to or has penetrated the NTZ and is heading toward his/her approach course. The pilot must initiate a breakout as soon as safety allows. While conducting PRM approaches, pilots must maintain an increased sense of awareness in order to immediately react to an ATC instruction (**breakout**) and maneuver as instructed by ATC, away from a blundering aircraft.

20.5.2 Communications. To help in avoiding communication problems caused by stuck microphones and two parties talking at the same time, two frequencies for each runway will be in use during ILS PRM and LDA PRM approach operations, the primary tower frequency and the PRM monitor frequency. The tower controller transmits and receives in a normal fashion on the primary frequency and also transmits on the PRM monitor frequency. The monitor controller's transmissions override on both frequencies. The pilots flying the approach will listen to both frequencies but only transmit on the primary tower frequency. If the PRM monitor controller initiates a breakout and the primary frequency is blocked by another transmission, the breakout instruction will still be heard on the PRM monitor frequency.

NOTE–
At some airports, the override capability may be on other than the tower frequency (KSFO overrides the final radar controller frequency). Pilots should carefully review the dual communications requirements on the AAUP prior to accepting a PRM approach.

20.5.3 Breakouts. The probability is extremely low that an aircraft will "blunder" from its assigned approach course and enter the NTZ, causing ATC to "breakout" the aircraft approaching on the adjacent ILS or LDA course. However, because of the close proximity of the final approach courses, it is essential that pilots follow the ATC breakout instructions precisely and expeditiously. The controller's "breakout" instructions provide conflict resolution for the threatened aircraft, with the turn portion of the "breakout" being the single most important element in achieving maximum protection. A descending breakout will only be issued when it is the only controller option. In no case will the controller descend an aircraft below the MVA, which will provide at least 1,000 feet clearance above obstacles. The pilot is not expected to exceed 1,000 feet per minute rate of descent in the event a descending breakout is issued.

20.5.4 Hand-flown Breakouts. The use of the autopilot is encouraged while flying an ILS PRM or LDA PRM approach, but the autopilot must be disengaged in the rare event that a breakout is issued. Simulation studies of breakouts have shown that a hand-flown breakout can be initiated consistently faster than a breakout performed using the autopilot.

20.5.5 TCAS. The ATC breakout instruction is the primary means of conflict resolution. TCAS, if installed, provides another form of conflict resolution in the unlikely event other separation standards would fail. TCAS is not required to conduct a closely spaced approach.

The TCAS provides only vertical resolution of aircraft conflicts, while the ATC breakout instruction provides both vertical and horizontal guidance for conflict resolutions. Pilots should always immediately follow the TCAS Resolution Advisory (RA), whenever it is received. Should a TCAS RA be received before, during, or after an ATC breakout instruction is issued, the pilot should follow the RA, even if it conflicts with the climb/descent portion of the breakout maneuver. If following an RA requires deviating from an ATC clearance, the pilot must advise ATC as soon as practical. While following an RA, it is **extremely important** that the pilot also comply with the turn portion of the ATC breakout instruction unless the pilot determines safety to be factor. Adhering to these procedures assures the pilot that acceptable "breakout" separation margins will always be provided, even in the face of a normal procedural or system failure.

21. Simultaneous Converging Instrument Approaches

21.1 ATC may conduct instrument approaches simultaneously to converging runways; i.e., runways having an included angle from 15 to 100 degrees, at airports where a program has been specifically approved to do so.

21.2 The basic concept requires that dedicated, separate standard instrument approach procedures be developed for each converging runway included. These approaches can be identified by the letter "V"

in the title; for example, “ILS V Rwy 17 (CONVERGING)”.Missed approach points must be at least 3 miles apart and missed approach procedures ensure that missed approach protected airspace does not overlap.

21.3 Other requirements are: radar availability, nonintersecting final approach courses, precision approach capability for each runway and, if runways intersect, controllers must be able to apply visual separation as well as intersecting runway separation criteria. Intersecting runways also require minimums of at least 700 foot ceilings and 2 miles visibility. Straight in approaches and landings must be made.

21.4 Whenever simultaneous converging approaches are in progress, aircraft will be informed by the controller as soon as feasible after initial contact or via ATIS. Additionally, the radar controller will have direct communications capability with the tower controller where separation responsibility has not been delegated to the tower.

22. Timed Approaches From a Holding Fix

22.1 Timed approaches may be conducted when the following conditions are met:

22.1.1 A control tower is in operation at the airport where the approaches are conducted.

22.1.2 Direct communications are maintained between the pilot and the center/approach controller until the pilot is instructed to contact the tower.

22.1.3 If more than one missed approach procedure is available, none requires a course reversal.

22.1.4 If only one missed approach procedure is available, the following conditions are met.

22.1.4.1 Course reversal is not required.

22.1.4.2 Reported ceiling and visibility are equal to or greater than the highest prescribed circling minimums for the instrument approach procedure.

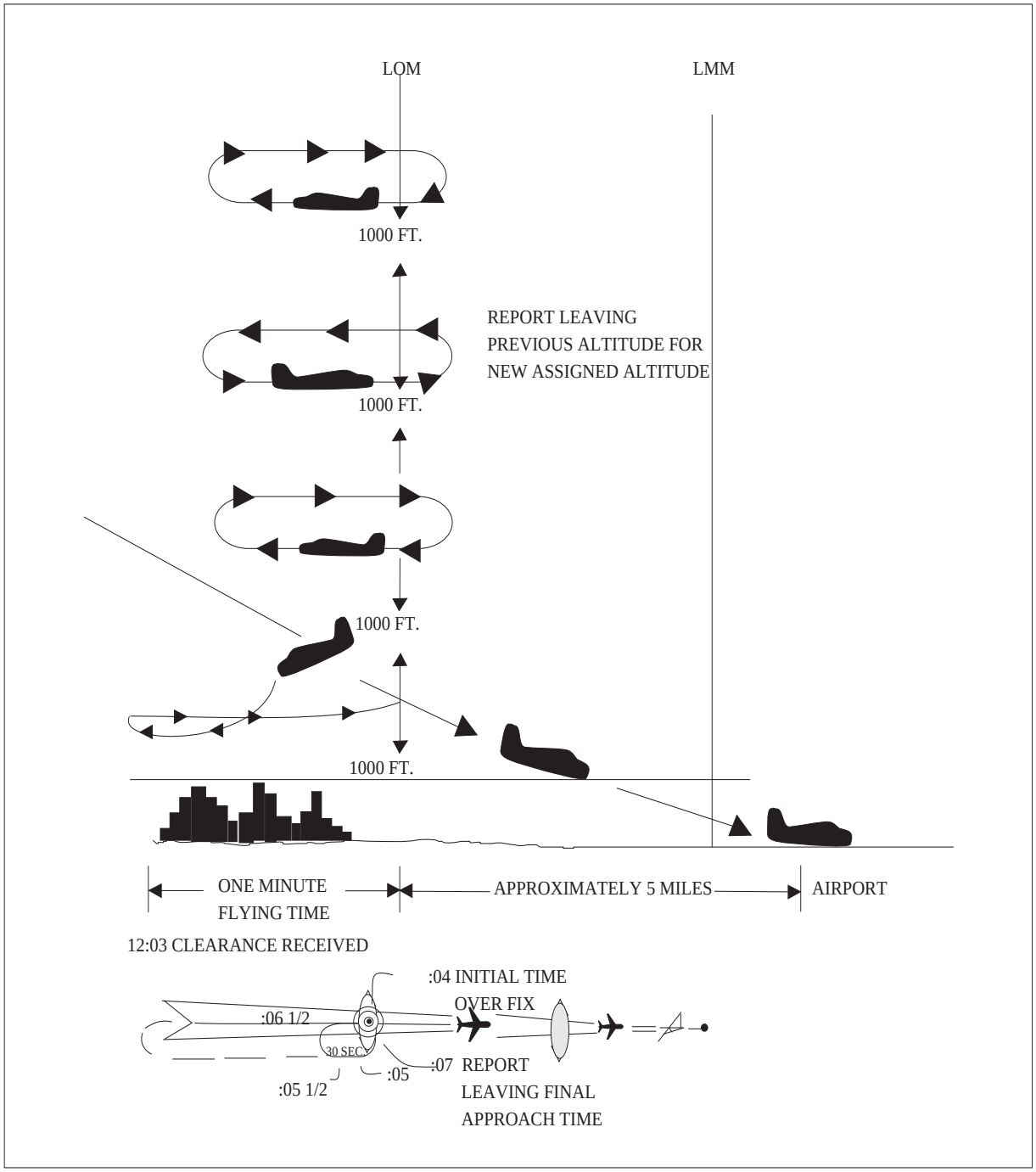
22.1.5 When cleared for the approach, pilots must not execute a procedure turn. (See 14 CFR Section 91.175j.)

22.2 Although the controller will not specifically state that “timed approaches are in progress,” the assigning a time to depart the final approach fix inbound (nonprecision approach) or the outer marker or the fix used in lieu of the outer marker inbound (precision approach) is indicative that timed approach procedures are being utilized, or in lieu of holding, the controller may use radar vectors to the final approach course to establish a mileage interval between aircraft that will insure the appropriate time sequence between the final approach fix/outer marker or the fix used in lieu of the outer marker and the airport.

22.3 Each pilot in an approach sequence will be given advance notice as to the time he/she should leave the holding point on approach to the airport. When a time to leave the holding point has been received, the pilot should adjust his/her flight path to leave the fix as closely as possible to the designated time. (See FIG ENR 1.5−38.)

FIG ENR 1.5−38

Timed Approaches from a Holding Fix



EXAMPLE−

At 12:03 local time, in the example shown, a pilot holding, receives instructions to leave the fix inbound at 12:07. These instructions are received just as the pilot has completed turn at the outbound end of the holding pattern and is proceeding inbound toward the fix. Arriving back over the fix, the pilot notes that the time is 12:04 and that there are 3 minutes to lose in order to leave the fix at the assigned time. Since the time remaining is more than two minutes, the pilot plans to fly a race track pattern rather than a 360 degree turn, which would use up 2 minutes. The turns at the ends of the race track pattern will consume approximately 2 minutes. Three minutes to go, minus 2 minutes required for the turns, leaves 1 minute for level flight. Since two portions of level flight will be required to get back to the fix inbound, the pilot halves the 1 minute remaining

and plans to fly level for 30 seconds outbound before starting the turn back to the fix on final approach. If the winds were negligible at flight altitude, this procedure would bring the pilot inbound across the fix precisely at the specified time of 12:07. However, if expecting headwind on final approach, the pilot should shorten the 30 second outbound course somewhat, knowing that the wind will carry the aircraft away from the fix faster while outbound and decrease the ground speed while returning to the fix. On the other hand, compensating for a tailwind on final approach, the pilot should lengthen the calculated 30 second outbound heading somewhat, knowing that the wind would tend to hold the aircraft closer to the fix while outbound and increase the ground speed while returning to the fix.

23. Contact Approach

23.1 Pilots operating in accordance with an IFR flight plan, provided they are clear of clouds and have at least 1 mile flight visibility and can reasonably expect to continue to the destination airport in those conditions, may request ATC authorization for a "contact approach."

23.2 Controllers may authorize a "contact approach" provided:

23.2.1 The contact approach is specifically requested by the pilot. ATC cannot initiate this approach.

EXAMPLE−
Request contact approach.

23.2.2 The reported ground visibility at the destination airport is at least 1 statute mile.

23.2.3 The contact approach will be made to an airport having a standard or special instrument approach procedure.

23.2.4 Approved separation is applied between aircraft so cleared and between these aircraft and other IFR or special VFR aircraft.

EXAMPLE−
Cleared contact approach (and if required) at or below (altitude) (routing) if not possible (alternative procedures) and advise.

23.3 A contact approach is an approach procedure that may be used by a pilot (with prior authorization from ATC) in lieu of conducting a standard or special instrument approach procedure (IAP) to an airport. It is not intended for use by a pilot on an IFR flight clearance to operate to an airport not having a published and functioning IAP. Nor is it intended for an aircraft to conduct an instrument approach to one airport and then, when "in the clear," discontinue that approach and proceed to another airport. In the execution of a contact approach, the pilot assumes the responsibility for obstruction clearance. If radar service is being received, it will automatically terminate when the pilot is instructed to change to advisory frequency.

24. Use of Enhanced Flight Vision Systems (EFVS) on Instrument Approaches

24.1 Introduction. An EFVS uses a head−up display (HUD), or an equivalent display that is a head−up presentation, to combine flight information, flight symbology, navigation guidance, and a real−time image of the external scene to the pilot on one display. Imaging sensors, which may be based on forward−looking infrared (FLIR), millimeter wave radiometry, millimeter wave radar, low−level light intensification, or other real−time imaging technologies produce a real−time image of the outside scene. During an instrument approach, an EFVS can enable a pilot to see the approach lights, visual references associated with the runway environment, and other objects or features that might not be visible using natural vision alone. Combining the flight information, navigation guidance, and sensor imagery on a HUD (or equivalent display) allows the pilot to continue looking forward along the flightpath throughout the entire approach, landing, and rollout.

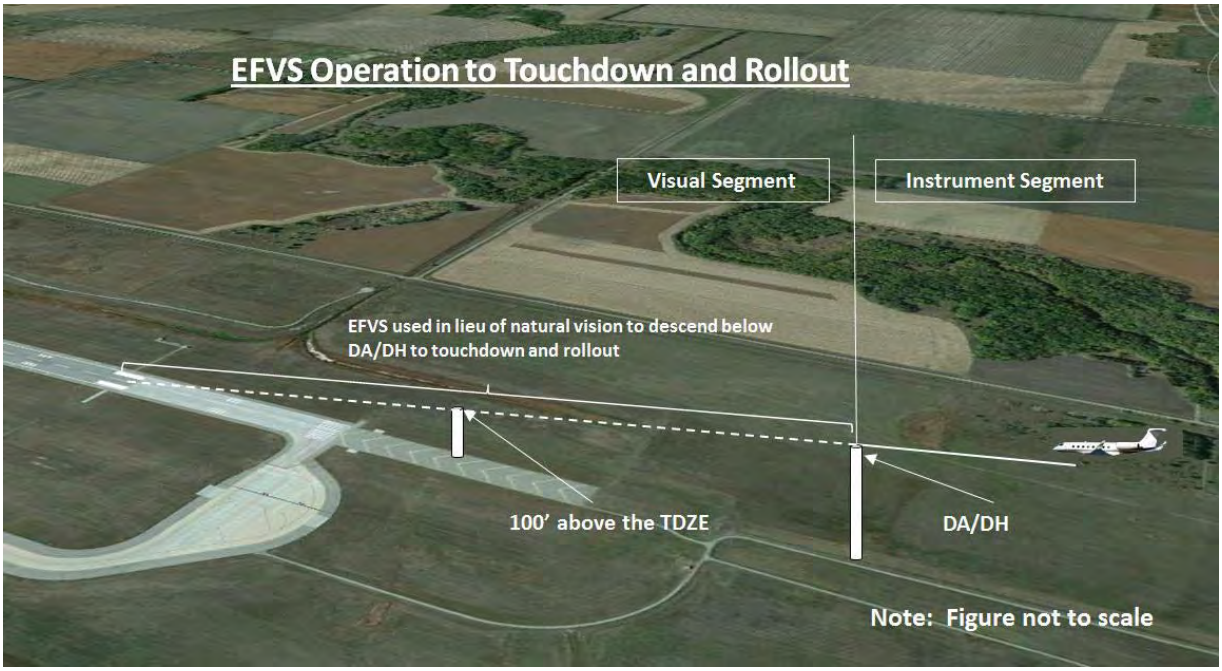
An EFVS operation is an operation in which visibility conditions require an EFVS to be used in lieu of natural vision to perform an approach or landing, determine enhanced flight visibility, identify required visual references, or conduct a rollout. There are two types of EFVS operations:

24.1.1 EFVS operations to touchdown and rollout.

24.1.2 EFVS operations to 100 feet above the touchdown zone elevation (TDZE).

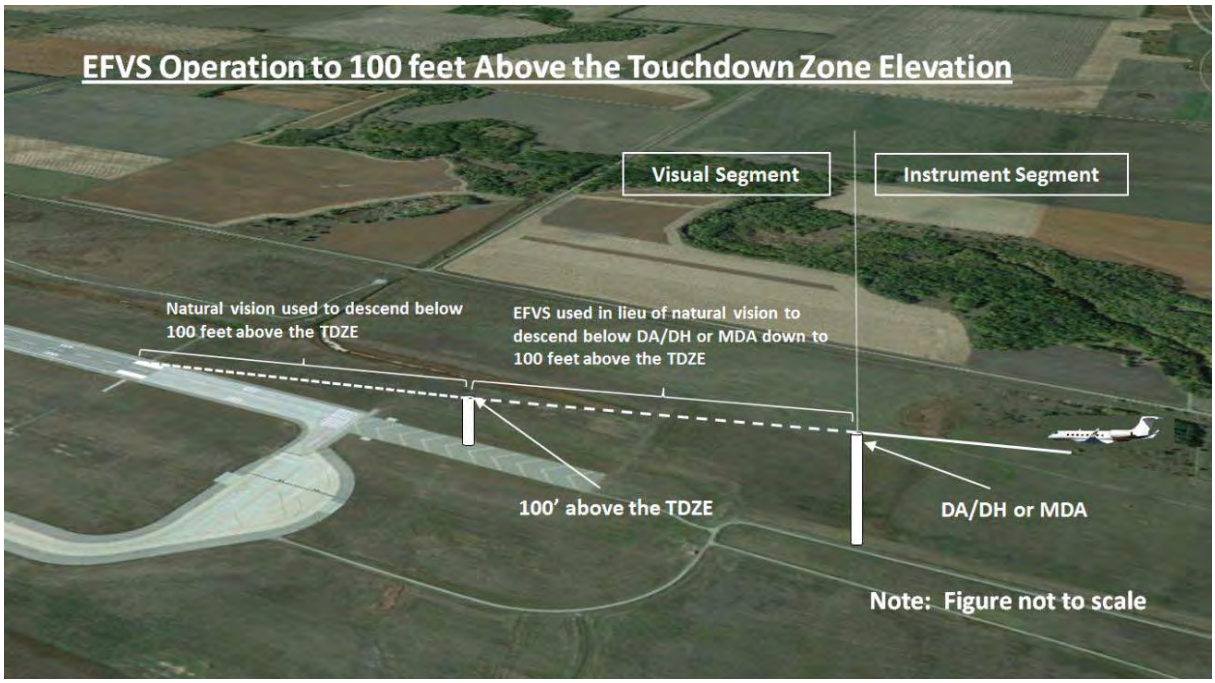
24.2 EFVS Operations to Touchdown and Rollout. An EFVS operation to touchdown and rollout is an operation in which the pilot uses the enhanced vision imagery provided by an EFVS in lieu of natural vision to descend below DA or DH to touchdown and rollout. (See FIG ENR 1.5–39.) These operations may be conducted only on Standard Instrument Approach Procedures (SIAP) or special IAPs that have a DA or DH (for example, precision or APV approach). An EFVS operation to touchdown and rollout may not be conducted on an approach that has circling minimums. The regulations for EFVS operations to touchdown and rollout can be found in 14 CFR § 91.176(a).

FIG ENR 1.5–39
EFVS Operation to Touchdown and Rollout
[Photo provided by Google Earth]



24.3 EFVS Operations to 100 Feet Above the TDZE. An EFVS operation to 100 feet above the TDZE is an operation in which the pilot uses the enhanced vision imagery provided by an EFVS in lieu of natural vision to descend below DA/DH or MDA down to 100 feet above the TDZE. (See FIG ENR 1.5–40.) Natural vision must be used to descend below 100 feet above the TDZE to touchdown. These operations may be conducted on SIAPs or special IAPs that have a DA/DH or MDA. An EFVS operation to 100 feet above the TDZE may not be conducted on an approach that has circling minimums. The regulations for EFVS operations to 100 feet above the TDZE can be found in 14 CFR § 91.176(b).

FIG ENR 1.5−40
EFVS Operation to 100 ft Above the TDZE
[Photo provided by Google Earth]



24.4 EFVS Equipment Requirements. An EFVS that is installed on a U.S.−registered aircraft and is used to conduct EFVS operations must conform to an FAA−type design approval (i.e., a type certificate (TC), amended TC, or supplemental type certificate (STC)). A foreign−registered aircraft used to conduct EFVS operations that does not have an FAA−type design approval must be equipped with an EFVS that has been approved by either the State of the Operator or the State of Registry to meet the requirements of ICAO Annex 6. Equipment requirements for an EFVS operation to touchdown and rollout can be found in 14 CFR § 91.176(a)(1), and the equipment requirements for an EFVS operation to 100 feet above the TDZE can be found in 14 CFR § 91.176(b)(1). An operator can determine the eligibility of their aircraft to conduct EFVS operations by referring to the Airplane Flight Manual, Airplane Flight Manual Supplement, Rotorcraft Flight Manual, or Rotorcraft Flight Manual Supplement as applicable.

24.5 Operating Requirements. Any operator who conducts EFVS operations to touchdown and rollout must have an OpSpec, MSpec, or LOA that specifically authorizes those operations. An operator's authorization to conduct EFVS operations to touchdown and rollout specifies a visibility minimum for the operation. Parts 91K, 121, 125, 129, and 135 operators who conduct EFVS operations to 100 feet above the TDZE must have an OpSpec, MSpec, or LOA that specifically authorizes the operation. Part 91 operators (other than 91K operators) are not required to have an LOA to conduct EFVS operations to 100 feet in the United States. Any operator conducting an EFVS operation during an authorized Category II or III operation must have an OpSpec, MSpec, or LOA authorizing EFVS operations during Category II or Category III operations.

24.6 Currently, EFVS operations in rotorcraft can only be conducted on IAPs that are flown to a runway. Instrument approach criteria, procedures, and appropriate visual references have not yet been developed for straight−in landing operations below DA/DH or MDA under IFR to heliports or platforms. An EFVS cannot be used in lieu of natural vision to descend below published minimums on copter approaches to a point in space (PinS) followed by a "proceed visual flight rules (VFR)" visual segment, or on approaches designed to a specific landing site using a "proceed visually" visual segment.

24.7 A pilot who conducts EFVS operations must receive ground and flight training specific to the

EFVS operation to be conducted. The training must be obtained from an authorized training provider under a training program approved by the FAA. Additionally, recent flight experience and proficiency or competency check requirements apply to EFVS operations. These requirements are addressed in 14 CFR §§ 61.66, 91.1065, 121.441, Appendix F to Part 121, 125.287, and 135.293.

24.8 Enhanced Flight Visibility and Visual Reference Requirements. To descend below DA/DH or MDA during EFVS operations under 14 CFR § 91.176(a) or (b), a pilot must make a determination that the enhanced flight visibility observed by using an EFVS is not less than what is prescribed by the IAP being flown. In addition, the visual references required in 14 CFR § 91.176(a) or (b) must be distinctly visible and identifiable to the pilot using the EFVS. The determination of enhanced flight visibility is a separate action from that of identifying required visual references, and is different from ground–reported visibility. Even though the reported visibility or the visibility observed using natural vision may be less, as long as the EFVS provides the required enhanced flight visibility and a pilot meets all of the other requirements, the pilot can continue descending below DA/DH or MDA using the EFVS. Suitable enhanced flight visibility is necessary to ensure the aircraft is in a position to continue the approach and land. It is important to understand that using an EFVS does not result in obtaining lower minima with respect to the visibility or the DA/DH or MDA specified in the IAP. An EFVS simply provides another means of operating in the visual segment of an IAP. The DA/DH or MDA and the visibility value specified in the IAP to be flown do not change.

24.9 Flight Planning and Beginning or Continuing an Approach Under IFR. 14 CFR Parts 121, 125, and 135 prohibit dispatching a flight, releasing a flight, taking off under IFR, or beginning or continuing an approach when weather conditions are less than the authorized minimums. A Part 121, 125, or 135 operator's OpSpec or LOA for EFVS operations authorizes a visibility for dispatching or releasing a flight and for beginning or continuing an approach. These operational minimums are based on the demonstrated performance of the EFVS. Once a pilot reaches DA/DH or MDA, the pilot conducts the EFVS operation in accordance with 14 CFR § 91.176(a) or (b) and their authorization to conduct EFVS operations.

24.10 Missed Approach Considerations. A missed approach after passing the DA/DH, or beyond the missed approach point (MAP), involves additional risk until established on the published missed approach segment. Initiating a go–around after passing the published MAP may result in loss of obstacle clearance. As with any approach, pilot planning should include contingencies between the published MAP and touchdown with reference to obstacle clearance, aircraft performance, and alternate escape plans.

24.11 Light Emitting Diode (LED) Airport Lighting Impact on EFVS Operations. Incandescent lamps have been replaced with LEDs at some airports in threshold lights, taxiway edge lights, taxiway centerline lights, low intensity runway edge lights, windcone lights, beacons, and some obstruction lighting. Additionally, there are plans to replace incandescent lamps with LEDs in approach lighting systems. Pilots should be aware that LED lights cannot be sensed by infrared–based EFVSs. Further, the FAA does not currently collect or disseminate information about where LED lighting is installed.

24.12 Other Vision Systems. An Enhanced Vision System (EVS) does not meet the requirements of an EFVS. An EVS may present the sensor image on a head–down display and may not be able to present the image and flight symbology in the same scale and alignment as the outside view. An EVS can also use a HUD as its display element, yet still not meet the regulatory requirements for an EFVS. While an EVS that uses a head–down display or HUD may provide situation awareness to the pilot, it does not meet the operating requirements for an EFVS. Consequently, a pilot cannot use an EVS in lieu of natural vision to descend below DA/DH or MDA. Unlike an EFVS, a Synthetic Vision System (SVS) or Synthetic Vision Guidance System (SVGS) does not provide a real–time sensor image of the outside scene and also does not meet the equipment requirements for EFVS operations. A pilot cannot use a synthetic vision image on a head–up or a head–down display in lieu of natural vision to descend below DA/DH or MDA. An EFVS can, however, be integrated with an SVS, also known as a Combined Vision System (CVS). A CVS can be used to conduct EFVS operations if all of the requirements for an EFVS are satisfied and the SVS image does not interfere with the pilot's ability

to see the external scene, to identify the required visual references, or to see the sensor image.

24.13 Additional Information. Operational criteria for EFVS can be found in Advisory Circular (AC) 90−106, Enhanced Flight Vision Systems, and airworthiness criteria for EFVS can be found in AC 20−167, Airworthiness Approval of Enhanced Vision System, Synthetic Vision System, Combined Vision System, and Enhanced Flight Vision System Equipment.

25. Visual Approach

25.1 A visual approach is conducted on an IFR flight plan and authorizes a pilot to proceed visually and clear of clouds to the airport. The pilot must have either the airport or the preceding identified aircraft in sight. This approach must be authorized and controlled by the appropriate air traffic control facility. Reported weather at the airport must have a ceiling at or above 1,000 feet and visibility 3 miles or greater. ATC may authorize this type approach when it will be operationally beneficial. Visual approaches are an IFR procedure conducted under Instrument Flight Rules in visual meteorological conditions. Cloud clearance requirements of 14 CFR Section 91.155 are not applicable, unless required by operation specifications.

25.2 Operating to an Airport Without Weather Reporting Service. ATC will advise the pilot when weather is not available at the destination airport. ATC may initiate a visual approach provided there is a reasonable assurance that weather at the airport is a ceiling at or above 1,000 feet and visibility 3 miles or greater (e.g., area weather reports, PIREPs, etc.).

25.3 Operating to an Airport with an Operating Control Tower. Aircraft may be authorized to conduct a visual approach to one runway while other aircraft are conducting IFR or VFR approaches to another parallel, intersecting, or converging runway. When operating to airports with parallel runways separated by less than 2,500 feet, the succeeding aircraft must report sighting the preceding aircraft unless standard separation is being provided by ATC. When operating to parallel runways separated by at least 2,500 feet but less than 4,300 feet, controllers will clear/vector aircraft to the final at an angle not greater than 30 degrees unless radar, vertical, or visual separation is provided during the turn−on. The purpose of the 30 degree intercept angle is to reduce the potential for overshoots of the final and to preclude side−by−side operations with one or both aircraft in a belly−up configuration during the turn−on. Once the aircraft are established within 30 degrees of final, or on the final, these operations may be conducted simultaneously. When the parallel runways are separated by 4,300 feet or more, or intersecting/converging runways are in use, ATC may authorize a visual approach after advising all aircraft involved that other aircraft are conducting operations to the other runway. This may be accomplished through use of the ATIS.

25.4 Separation Responsibilities. If the pilot has the airport in sight but cannot see the preceding aircraft, ATC may clear the aircraft for a visual approach; however, ATC retains both separation and wake vortex separation responsibility. When visually following a preceding aircraft, acceptance of the visual approach clearance constitutes acceptance of pilot responsibility for maintaining a safe approach interval and adequate wake turbulence separation.

25.5 A visual approach is not an IAP and therefore has no missed approach segment. If a go around is necessary for any reason, aircraft operating at controlled airports will be issued an appropriate advisory/clearance/instruction by the tower. At uncontrolled airports, aircraft are expected to remain clear of clouds and complete a landing as soon as possible. If a landing cannot be accomplished, the aircraft is expected to remain clear of clouds and contact ATC as soon as possible for further clearance. Separation from other IFR aircraft will be maintained under these circumstances.

25.6 Visual approaches reduce pilot/controller workload and expedite traffic by shortening flight paths to the airport. It is the pilot's responsibility to advise ATC as soon as possible if a visual approach is not desired.

25.7 Authorization to conduct a visual approach is an IFR authorization and does not alter IFR flight plan cancellation responsibility. See ENR 1.10, Paragraph 11.2, Canceling IFR Flight Plan.

25.8 Radar service is automatically terminated, without advising the pilot, when the aircraft is instructed to change to advisory frequency.

26. Charted Visual Flight Procedures (CVFPs)

26.1 CVFPs are charted visual approaches established for environmental/noise considerations, and/or when necessary for the safety and efficiency of air traffic operations. The approach charts depict prominent landmarks, courses, and recommended altitudes to specific runways. CVFPs are designed to be used primarily for turbojet aircraft.

26.2 These procedures will be used only at airports with an operating control tower.

26.3 Most approach charts will depict some NAVAID information which is for supplemental navigational guidance only.

26.4 Unless indicating a Class B airspace floor, all depicted altitudes are for noise abatement purposes and are recommended only. Pilots are not prohibited from flying other than recommended altitudes if operational requirements dictate.

26.5 When landmarks used for navigation are not visible at night, the approach will be annotated "PROCEDURE NOT AUTHORIZED AT NIGHT."

26.6 CVFPs usually begin within 20 flying miles from the airport.

26.7 Published weather minimums for CVFPs are based on minimum vectoring altitudes rather than the recommended altitudes depicted on charts.

26.8 CVFPs are not instrument approaches and do not have missed approach segments.

26.9 ATC will not issue clearances for CVFPs when the weather is less than the published minimum.

26.10 ATC will clear aircraft for a CVFP after the pilot reports siting a charted landmark or a preceding aircraft. If instructed to follow a preceding aircraft, pilots are responsible for maintaining a safe approach interval and wake turbulence separation.

26.11 Pilots should advise ATC if at any point they are unable to continue an approach or lose sight of a preceding aircraft. Missed approaches will be handled as a go−around.

27. Missed Approach

27.1 When a landing cannot be accomplished, advise ATC and, upon reaching the missed approach point defined on the approach procedure chart, the pilot must comply with the missed approach instructions for the procedure being used or with an alternate missed approach procedure specified by ATC.

27.2 Obstacle protection for missed approach is predicated on the missed approach being initiated at the decision altitude/height (DA/H) or at the missed approach point and not lower than minimum descent altitude (MDA). A climb gradient of at least 200 feet per nautical mile is required, (except for Copter approaches, where a climb of at least 400 feet per nautical mile is required), unless a higher climb gradient is published in the notes section of the approach procedure chart. When higher than standard climb gradients are specified, the end point of the non−standard climb will be specified at either an altitude or a fix. Pilots must preplan to ensure that the aircraft can meet the climb gradient (expressed in feet per nautical mile) required by the procedure in the event of a missed approach, and be aware that flying at a higher than anticipated ground speed increases the climb rate requirement (feet per minute). Tables for the conversion of climb gradients (feet per nautical mile) to climb rate (feet per minute), based on ground speed, are included on page D1 of the U.S. Terminal Procedures booklets. Reasonable buffers are provided for normal maneuvers. However, no consideration is given to an abnormally early turn. Therefore, when an early missed approach is executed, pilots should, unless otherwise cleared by ATC, fly the IAP as specified on the approach plate to the missed approach point at or above the MDA or DH before executing a turning maneuver.

27.3 If visual reference is lost while circling to land from an instrument approach, the missed approach specified for that particular procedure must be followed (unless an alternate missed approach procedure is specified by ATC). To become established on the prescribed missed approach course, the pilot should make an initial climbing turn toward the landing runway and continue the turn until established on the missed approach course. Inasmuch as the circling maneuver may be accomplished in more than one direction, different patterns will be required to become established on the prescribed missed approach course depending on the aircraft position at the time visual reference is lost. Adherence to the procedure will help assure that an aircraft will remain laterally within the circling and missed approach obstruction clearance areas. Refer to paragraph 27.8 concerning vertical obstruction

clearance when starting a missed approach at other than the MAP. (See FIG ENR 1.5−41.)

FIG ENR 1.5−41

Circling and Missed Approach Obstruction Clearance Areas

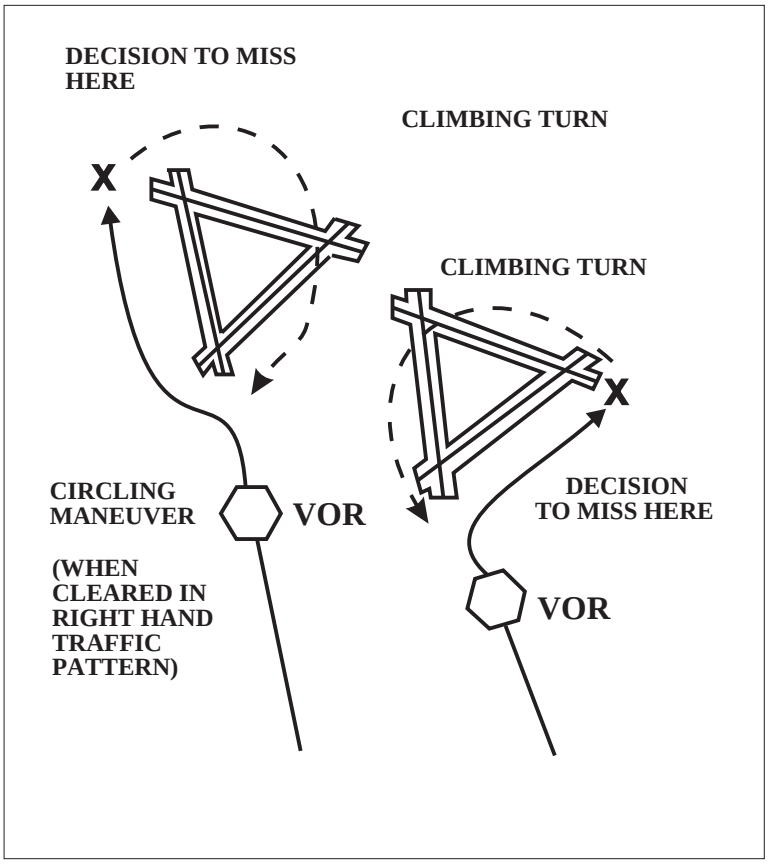


FIG ENR 1.5–42

Missed Approach

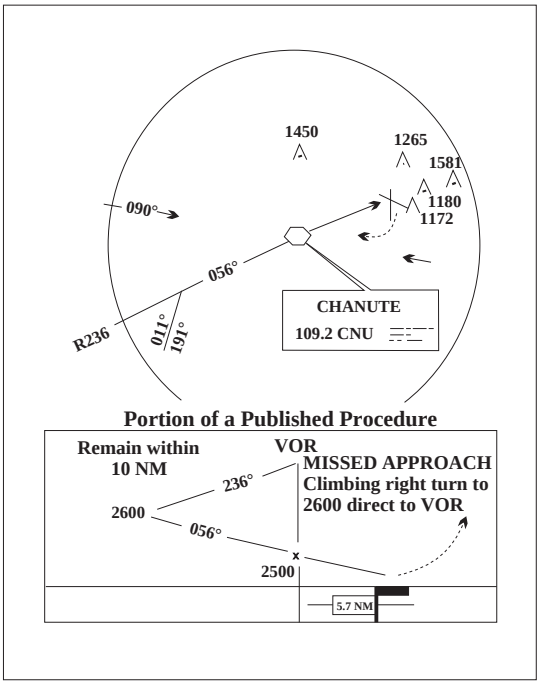
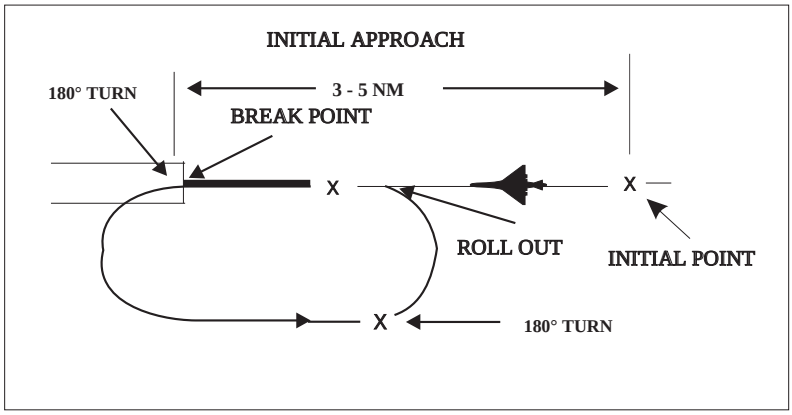


FIG ENR 1.5–43

Overhead Maneuver



27.4 At locations where ATC radar service is provided, the pilot should conform to radar vectors when provided by ATC in lieu of the published missed approach procedure.

27.5 Some locations may have a preplanned alternate missed approach procedure for use in the event the primary NAVAID used for the missed approach procedure is unavailable. To avoid confusion, the alternate missed approach instructions are not published on the chart. However, the alternate missed approach holding pattern will be depicted on the instrument approach chart for pilot situational awareness and to assist ATC by not having to issue detailed holding instructions. The alternate missed approach may be based on NAVAIDs not used in the approach procedure or the primary missed approach. When the alternate missed approach procedure is implemented by NOTAM, it becomes a mandatory part of the procedure. The NOTAM will specify both the textual instructions and any additional equipment requirements necessary to complete the procedure. Air traffic may also issue instructions for the alternate missed approach when necessary, such as when the primary missed approach NAVAID fails during the approach. Pilots may reject an ATC clearance for an alternate missed approach that requires equipment not necessary for the published approach procedure when the alternate missed approach is issued after beginning the approach. However, when the alternate missed approach is issued prior to beginning the approach the pilot must either accept the entire procedure (including the alternate missed approach), request a different approach procedure, or coordinate with ATC for alternative action to be taken, i.e., proceed to an alternate airport, etc.

27.6 When the approach has been missed, request a clearance for specific action; i.e., to alternative airport, another approach, etc.

27.7 Pilots must ensure that they have climbed to a safe altitude prior to proceeding off the published missed approach, especially in nonradar environments. Abandoning the missed approach prior to reaching the published altitude may not provide adequate terrain clearance. Additional climb may be required after reaching the holding pattern before proceeding back to the IAF or to an alternate.

27.8 A clearance for an instrument approach procedure includes a clearance to fly the published missed approach procedure, unless otherwise instructed by ATC. The published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point, and assumes a climb rate of 200 feet/NM or higher, as published. If the aircraft initiates a missed approach at a point other than the missed approach point (see paragraph 12.2), from below MDA or DA (H), or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure, nor is separation assured from other air traffic in the vicinity.

In the event a balked (rejected) landing occurs at a position other than the published missed approach point, the pilot should contact ATC as soon as possible to obtain an amended clearance. If unable to contact ATC for any reason, the pilot should attempt to re−intercept a published segment of the missed approach and comply with route and altitude instructions. If unable to contact ATC, and in the pilot's judgment it is no longer appropriate to fly the published missed approach procedure, then consider either maintaining visual conditions if practicable and reattempt a landing, or a circle−climb over the airport. Should a missed approach become necessary when operating to an airport that is not served by an operating control tower, continuous contact with an air traffic facility may not be possible. In this case, the pilot should execute the appropriate go−around/missed approach procedure without delay and contact ATC when able to do so.

Prior to initiating an instrument approach procedure, the pilot should assess the actions to be taken in the event of a balked (rejected) landing beyond the missed approach point or below the MDA or DA (H) considering the anticipated weather conditions and available aircraft performance. 14 CFR 91.175(e) authorizes the pilot to fly an appropriate missed approach procedure that ensures obstruction clearance, but it does not necessarily consider separation from other air traffic. The pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight, and/or minimum turning altitudes in the prescribed missed approach procedure. The pilot must also consider aircraft performance, visual climb restrictions, charted obstacles, published obstacle departure procedure, takeoff visual climb requirements as expressed by nonstandard takeoff minima, other traffic expected to be in the vicinity, or

other factors not specifically expressed by the approach procedures.

28. Overhead Approach Maneuver

28.1 Pilots operating in accordance with an IFR flight plan in Visual Meteorological Conditions (VMC) may request ATC authorization for an overhead maneuver. An overhead maneuver is not an instrument approach procedure. Overhead maneuver patterns are developed at airports where aircraft have an operational need to conduct the maneuver. An aircraft conducting an overhead maneuver is considered to be VFR and the IFR flight plan is cancelled when the aircraft reaches the initial point on the initial approach portion of the maneuver. (See FIG ENR 1.5–43.) The existence of a standard overhead maneuver pattern does not eliminate the possible requirement for an aircraft to conform to conventional rectangular patterns if an overhead maneuver cannot be approved. Aircraft operating to an airport without a functioning control tower must initiate cancellation of an IFR flight plan prior to executing the overhead maneuver. Cancellation of the IFR flight plan must be accomplished after crossing the landing threshold on the initial portion of the maneuver or after landing. Controllers may authorize an overhead maneuver and issue the following to arriving aircraft:

28.1.1 Pattern altitude and direction of traffic. This information may be omitted if either is standard.

PHRASEOLOGY–
PATTERN ALTITUDE (altitude). RIGHT TURNS.

28.1.2 Request for a report on initial approach.

PHRASEOLOGY–
REPORT INITIAL.

28.1.3 "Break" information and a request for the pilot to report. The "Break Point" will be specified if nonstandard. Pilots may be requested to report "break" if required for traffic or other reasons.

PHRASEOLOGY–
BREAK AT (specified point).
REPORT BREAK.

29. Departure Procedures

29.1 Pre–Taxi Clearance Procedures

29.1.1 Locations where these procedures are in effect are indicated in the Chart Supplement U.S.

29.1.2 Certain airports have established programs whereby pilots of departing IFR aircraft may elect to receive their IFR clearances before they start taxiing for takeoff. The following provisions are included in such procedures:

29.1.2.1 Pilot participation is not mandatory.

29.1.2.2 Participating pilots call clearance delivery/ground control not more than 10 minutes before proposed taxi time.

29.1.2.3 IFR clearance (or delay information, if clearance cannot be obtained) is issued at the time of this initial call–up.

29.1.2.4 When the IFR clearance is received on clearance delivery frequency, pilots call ground control when ready to taxi.

29.1.2.5 Normally, pilots need not inform ground control that they have received IFR clearance on clearance delivery frequency. Certain locations may, however, require that the pilot inform ground control of a portion of the routing or that the IFR clearance has been received.

29.1.2.6 If a pilot cannot establish contact on clearance delivery frequency or has not received an IFR clearance before ready to taxi, the pilot should contact ground control and inform the controller accordingly.

30. Automated Pre–Departure Clearance Procedures

30.1 Many airports in the National Airspace System are equipped with the Terminal Data Link System (TDLS) that includes the Pre–Departure Clearance (PDC) and Controller Pilot Data Link Communication–Departure Clearance (CPDLC-DCL) functions. Both the PDC and CPDLC-DCL functions automate the Clearance Delivery operations in the ATCT for participating users. Both functions display IFR clearances from the ARTCC to the ATCT. The Clearance Delivery controller in the ATCT can append local departure information and transmit the clearance via data link to participating airline/service provider computers for PDC. The airline/service provider will then deliver the clearance via the

Aircraft Communications Addressing and Reporting System (ACARS) or a similar data link system, or for non-data link equipped aircraft, via a printer located at the departure gate. For CPDLC-DCL, the departure clearance is uplinked from the ATCT via the Future Air Navigation System (FANS) to the aircraft avionics and requires a response from the flight crew. Both PDC and CPDLC-DCL reduce frequency congestion, controller workload, and are intended to mitigate delivery/read back errors.

30.2 Both services are available only to participating aircraft that have subscribed to the service through an approved service provider.

30.3 In all situations, the pilot is encouraged to contact clearance delivery if a question or concern exists regarding an automated clearance. Due to technical reasons, the following limitations/differences exist between the two services:

30.3.1 PDC

30.3.1.1 Aircraft filing multiple flight plans are limited to one PDC clearance per departure airport within a 24−hour period. Additional clearances will be delivered verbally.

30.3.1.2 If the clearance is revised or modified prior to delivery, it will be rejected from PDC and the clearance will need to be delivered verbally.

30.3.1.3 No acknowledgment of receipt or read back is required for a PDC.

30.3.2 CPDLC−DCL

30.3.2.1 No limitation to the number of clearances received.

30.3.2.2 Allows delivery of revised flight data, including revised departure clearances.

30.3.2.3 A response from the flight crew is required.

30.3.2.4 Requires a logon using the International Civil Aviation Organization (ICAO) airport facility identification (for example, KSLC utilizing the ATC FANS application).

30.3.2.5 To be eligible, operators must have received CPDLC/FANS authorization from the responsible civil aviation authority, and file appropriate equipment information in ICAO field 10a and in the ICAO field 18 DAT (Other Data Applications) of the flight plan.

31. Taxi Clearance

31.1 Pilots on IFR flight plans should communicate with the control tower on the appropriate ground control/clearance delivery frequency prior to starting engines to receive engine start time, taxi, and/or clearance information.

32. Line Up and Wait (LUAW)

32.1 Line up and wait is an air traffic control (ATC) procedure designed to position an aircraft onto the runway for an imminent departure. The ATC instruction "LINE UP AND WAIT" is used to instruct a pilot to taxi onto the departure runway and line up and wait.

EXAMPLE−
Tower: "N234AR Runway 24L, line up and wait."

32.2 This ATC instruction is not an authorization to takeoff. In instances where the pilot has been instructed to "line up and wait" and has been advised of a reason/condition (wake turbulence, traffic on an intersecting runway, etc.) or the reason/condition is clearly visible (another aircraft that has landed on or is taking off on the same runway), and the reason/condition is satisfied, the pilot should expect an imminent takeoff clearance, unless advised of a delay. If you are uncertain about any ATC instruction or clearance, contact ATC immediately.

32.3 If a takeoff clearance is not received within a reasonable amount of time after clearance to line up and wait, ATC should be contacted.

EXAMPLE−
Aircraft: Cessna 234AR holding in position Runway 24L.

Aircraft: Cessna 234AR holding in position Runway 24L at Bravo.

NOTE−
FAA analysis of accidents and incidents involving aircraft holding in position indicate that two minutes or more elapsed between the time the instruction was issued to "line up and wait" and the resulting event (for example, landover or go−around). Pilots should consider the length of time that they have been holding in position whenever they HAVE NOT been advised of any expected delay to determine when it is appropriate to query the controller.

REFERENCE−
Advisory Circulars 91−73A, Part 91 and Part 135 Single−Pilot Procedures during Taxi Operations, and 120−74A, Parts 91, 121, 125, and 135 Flightcrew Procedures during Taxi Operations.

32.4 Situational awareness during line up and wait operations is enhanced by monitoring ATC instruc-

tions/clearances issued to other aircraft. Pilots should listen carefully if another aircraft is on frequency that has a similar call sign and pay close attention to communications between ATC and other aircraft. If you are uncertain of an ATC instruction or clearance, query ATC immediately. Care should be taken to not inadvertently execute a clearance/instruction for another aircraft.

32.5 Pilots should be especially vigilant when conducting "line up and wait" operations at night or during reduced visibility conditions. They should scan the full length of the runway and look for aircraft on final approach or landing roll out when taxiing onto a runway. ATC should be contacted anytime there is a concern about a potential conflict.

32.6 When two or more runways are active, aircraft may be instructed to "LINE UP AND WAIT" on two or more runways. When multiple runway operations are being conducted, it is important to listen closely for your call sign and runway. Be alert for similar sounding call signs and acknowledge all instructions with your call sign. When you are holding in position and are not sure if the takeoff clearance was for you, ask ATC before you begin takeoff roll. ATC prefers that you confirm a takeoff clearance rather than mistake another aircraft's clearance for your own.

32.7 When ATC issues intersection "line up and wait" and takeoff clearances, the intersection designator will be used. If ATC omits the intersection designator, call ATC for clarification.

EXAMPLE−
Aircraft: "Cherokee 234AR, Runway 24L at November 4, line up and wait."

32.8 If landing traffic is a factor during line up and wait operations, ATC will inform the aircraft in position of the closest traffic within 6 flying miles requesting a full−stop, touch−and−go, stop−and−go, or an unrestricted low approach to the same runway. Pilots should take care to note the position of landing traffic. ATC will also advise the landing traffic when an aircraft is authorized to "line up and wait" on the same runway.

EXAMPLE−
Tower: "Cessna 234AR, Runway 24L, line up and wait. Traffic a Boeing 737, six mile final."

Tower: "Delta 1011, continue, traffic a Cessna 210 holding in position Runway 24L."

NOTE−
ATC will normally withhold landing clearance to arrival aircraft when another aircraft is in position and holding on the runway.

32.9 Never land on a runway that is occupied by another aircraft, even if a landing clearance was issued. Do not hesitate to ask the controller about the traffic on the runway and be prepared to execute a go−around.

NOTE−
Always clarify any misunderstanding or confusion concerning ATC instructions or clearances. ATC should be advised immediately if there is any uncertainty about the ability to comply with any of their instructions.

33. Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times

33.1 ATC may assign departure restrictions, clearance void times, hold for release, and release times, when necessary, to separate departures from other traffic or to restrict or regulate the departure flow.

33.1.1 Clearance Void Times. A pilot may receive a clearance, when operating from an airport without a control tower, which contains a provision for the clearance to be void if not airborne by a specific time. A pilot who does not depart prior to the clearance void time must advise ATC as soon as possible of his or her intentions. ATC will normally advise the pilot of the time allotted to notify ATC that the aircraft did not depart prior to the clearance void time. This time cannot exceed 30 minutes. Failure of an aircraft to contact ATC within 30 minutes after the clearance void time will result in the aircraft being considered overdue and search and rescue procedures initiated.

NOTE−
1. *Other IFR traffic for the airport where the clearance is issued is suspended until the aircraft has contacted ATC or until 30 minutes after the clearance void time or 30 minutes after the clearance release time if no clearance void time is issued.*

2. *Pilots who depart at or after their clearance void time are not afforded IFR separation and may be in violation of 14 CFR Section 91.173 which requires that pilots receive an appropriate ATC clearance before operating IFR in Class A, B, C, D, and E airspace.*

EXAMPLE−
Clearance void if not off by (clearance void time) and, if required, if not off by (clearance void time) advise (facility) not later than (time) of intentions.

33.1.2 Hold for Release. ATC may issue "hold for release" instructions in a clearance to delay an aircraft's departure for traffic management reasons (i.e., weather, traffic volume, etc.). When ATC states in the clearance, "hold for release," the pilot may not depart utilizing that IFR clearance until a release time or additional instructions are issued by ATC. This does not preclude the pilot from cancelling the IFR clearance with ATC and departing under VFR; but an IFR clearance may not be available after departure. In addition, ATC will include departure delay information in conjunction with "hold for release" instructions.

EXAMPLE−
(Aircraft identification) cleared to (destination) airport as filed, maintain (altitude), and, if required (additional instructions or information), hold for release, expect (time in hours and/or minutes) departure delay.

33.1.3 Release Times. A "release time" is a departure restriction issued to a pilot by ATC, specifying the earliest time an aircraft may depart. ATC will use "release times" in conjunction with traffic management procedures and/or to separate a departing aircraft from other traffic.

EXAMPLE−
(Aircraft identification) released for departure at (time in hours and/or minutes).

33.1.4 Expect Departure Clearance Time (EDCT). The EDCT is the runway release time assigned to an aircraft included in traffic management programs. Aircraft are expected to depart no earlier than 5 minutes before, and no later than 5 minutes after the EDCT.

33.2 If practical, pilots departing uncontrolled airports should obtain IFR clearances prior to becoming airborne when two−way communication with the controlling ATC facility is available.

34. Departure Control

34.1 Departure Control is an approach control function responsible for ensuring separation between departures. So as to expedite the handling of departures, Departure Control may suggest a takeoff direction other than that which may normally have been used under VFR handling. Many times it is preferred to offer the pilot a runway that will require the fewest turns after takeoff to place the pilot on course or selected departure route as quickly as possible. At many locations particular attention is paid to the use of preferential runways for local noise abatement programs, and route departures away from congested areas.

34.2 Departure Control utilizing radar will normally clear aircraft out of the terminal area using DPs via radio navigation aids.

34.2.1 When a departure is to be vectored immediately following takeoff, the pilot will be advised prior to takeoff of the initial heading to be flown but may not be advised of the purpose of the heading. When the initial heading will take the aircraft off an assigned procedure (for example, an RNAV SID with a published lateral path to a waypoint and crossing restrictions from the departure end of runway), the controller will assign an altitude to maintain with the initial heading.

34.2.2 At some airports when a departure will fly an RNAV SID that begins at the runway, ATC may advise aircraft of the initial fix/waypoint on the RNAV route. The purpose of the advisory is to remind pilots to verify the correct procedure is programmed in the FMS before takeoff. Pilots must immediately advise ATC if a different RNAV SID is entered in the aircraft's FMC. When this advisory is absent, pilots are still required to fly the assigned SID as published.

EXAMPLE−
Delta 345 RNAV to MPASS, Runway26L, cleared for takeoff.

NOTE−
1. *The SID transition is not restated as it is contained in the ATC clearance.*

2. *Aircraft cleared via RNAV SIDs designed to begin with a vector to the initial waypoint are assigned a heading before departure.*

34.2.3 Pilots operating in a radar environment are expected to associate departure headings or an RNAV departure advisory with vectors or the flight path to their planned route or flight. When given a vector taking the aircraft off a previously assigned nonradar route, the pilot will be advised briefly what the vector is to achieve. Thereafter, radar service will be provided until the aircraft has been reestablished "on-course" using an appropriate navigation aid and the pilot has been advised of the aircraft's position or a handoff is made to another radar controller with further surveillance capabilities.

34.3 Controllers will inform pilots of the departure control frequencies and, if appropriate, the transponder code before takeoff. Pilots must ensure their

transponder is adjusted to the "on" or normal operating position as soon as practical and remain on during all operations unless otherwise requested to change to "standby" by ATC. Pilots should not change to the departure control frequency until requested. Controllers may omit the departure control frequency if a DP has or will be assigned and the departure control frequency is published on the DP.

35. Abbreviated IFR Departure Clearance (Cleared . . . as Filed) Procedures

35.1 ATC facilities will issue an abbreviated IFR departure clearance based on the ROUTE of flight filed in the IFR flight plan, provided the filed route can be approved with little or no revision. These abbreviated clearance procedures are based on the following conditions:

35.1.1 The aircraft is on the ground or it has departed VFR and the pilot is requesting IFR clearance while airborne.

35.1.2 That a pilot will not accept an abbreviated clearance if the route or destination of a flight plan filed with ATC has been changed by him/her or the company or the operations officer before departure.

35.1.3 That it is the responsibility of the company or operations office to inform the pilot when they make a change to the filed flight plan.

35.1.4 That it is the responsibility of the pilot to inform ATC in the initial call–up (for clearance) when the filed flight plan has been either:

35.1.4.1 Amended.

35.1.4.2 Canceled and replaced with a new filed flight plan.

NOTE–
The facility issuing a clearance may not have received the revised route or the revised flight plan by the time a pilot requests clearance.

35.2 Controllers will issue a detailed clearance when they know that the original filed flight plan has been changed or when the pilot requests a full route clearance.

35.3 The clearance as issued will include the destination airport filed in the flight plan.

35.4 ATC procedures now require the controller to state the DP name, the current number and the DP Transition name after the phrase "Cleared to (destination) airport," and prior to the phrase, "then as filed," for ALL departure clearances when the DP or DP Transition is to be flown. The procedure applies whether or not the DP is filed in the flight plan.

35.5 Standard Terminal Arrivals (STARs), when filed in a flight plan, are considered a part of the filed route of flight and will not normally be stated in an initial departure clearance. If the ARTCC's jurisdictional airspace includes both the departure airport and the fix where a STAR or STAR Transition begins, the STAR name, the current number, and the STAR Transition name MAY be stated in the initial clearance.

35.6 "Cleared to (destination) airport as filed" does NOT include the en route altitude filed in a flight plan. An en route altitude will be stated in the clearance or the pilot will be advised to expect an assigned/filed altitude within a given time frame or at a certain point after departure. This may be done verbally in the departure instructions or stated in the DP.

35.7 In a radar and a nonradar environment, the controller will state "Cleared to (destination) airport as filed" or:

35.7.1 If a DP or DP Transition is to be flown, specify the DP name, the current DP number, the DP Transition name, the assigned altitude/flight level, and any additional instructions (departure control frequency, beacon code assignment, etc.) necessary to clear a departing aircraft via the DP/DP Transition and the route filed.

EXAMPLE–
National Seven Twenty cleared to Miami Airport Intercontinental one departure, Lake Charles transition then as filed, maintain Flight Level two seven zero.

35.7.2 When there is no DP or when the pilot cannot accept a DP, specify the assigned altitude/flight level, and any additional instructions necessary to clear a departing aircraft via an appropriate departure routing and the route filed.

NOTE–
A detailed departure route description or a radar vector may be used to achieve the desired departure routing.

35.7.3 If necessary to make a minor revision to the filed route, specify the assigned DP/DP Transition (or departure routing), the revision to the filed route, the assigned altitude/flight level, and any additional instructions necessary to clear a departing aircraft.

EXAMPLE−
Jet Star One Four Two Four cleared to Atlanta Airport, South Boston two departure then as filed except change route to read South Boston Victor 20 Greensboro, maintain one seven thousand.

35.7.4 Additionally, in a nonradar environment, specify one or more fixes as necessary to identify the initial route of flight.

EXAMPLE−
Cessna Three One Six Zero Foxtrot cleared to Charlotte Airport as filed via Brooke, maintain seven thousand.

35.8 To ensure success of the program, pilots should:

35.8.1 Avoid making changes to a filed flight plan just prior to departure.

35.8.2 State the following information in the initial call−up to the facility when no change has been made to the filed flight plan: Aircraft call sign, location, type operation (IFR), and the name of the airport (or fix) to which you expect clearance.

EXAMPLE−
"Washington clearance delivery (or ground control if appropriate) American Seventy Six at gate one, IFR Los Angeles."

35.8.3 If the flight plan has been changed, state the change and request a full route clearance.

EXAMPLE−
"Washington clearance delivery, American Seventy Six at gate one. IFR San Francisco. My flight plan route has been amended (or destination changed). Request full route clearance."

35.8.4 Request verification or clarification from ATC if ANY portion of the clearance is not clearly understood.

35.8.5 When requesting clearance for the IFR portion of a VFR−IFR flight, request such clearance prior to the fix where IFR operation is proposed to commence in sufficient time to avoid delay. Use the following phraseology:

EXAMPLE−
"Los Angeles center, Apache Six One Papa, VFR estimating Paso Robles VOR at three two, one thousand five hundred, request IFR to Bakersfield."

36. Instrument Departure Procedures (DP) − Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID)

36.1 Instrument departure procedures are preplanned instrument flight rule (IFR) procedures which provide obstruction clearance from the terminal area to the appropriate en route structure. There are two types of DPs, Obstacle Departure Procedures (ODPs), printed either textually or graphically, and Standard Instrument Departures (SIDs), always printed graphically. All DPs, either textual or graphic may be designed using either conventional or RNAV criteria. RNAV procedures will have RNAV printed in the title, e.g., SHEAD TWO DEPARTURE (RNAV). ODPs provide obstruction clearance via the least onerous route from the terminal area to the appropriate en route structure. ODPs are recommended for obstruction clearance and may be flown without ATC clearance unless an alternate departure procedure (SID or radar vector) has been specifically assigned by ATC. Graphic ODPs will have (OBSTACLE) printed in the procedure title; for example, GEYSR THREE DEPARTURE (OBSTACLE), or, CROWN ONE DEPARTURE (RNAV)(OBSTACLE). Standard Instrument Departures are air traffic control (ATC) procedures printed for pilot/controller use in graphic form to provide obstruction clearance and a transition from the terminal area to the appropriate en route structure. SIDs are primarily designed for system enhancement and to reduce pilot/controller workload. ATC clearance must be received prior to flying a SID. All DPs provide the pilot with a way to depart the airport and transition to the en route structure safely. Pilots operating under 14 CFR Part 91 are strongly encouraged to file and fly a DP at night, during marginal Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC), when one is available. The following paragraphs will provide an overview of the DP program, why DPs are developed, what criteria are used, where to find them, how they are to be flown, and finally pilot and ATC responsibilities.

36.2 Why are DPs necessary? The primary reason is to provide obstacle clearance protection information to pilots. A secondary reason, at busier airports, is to increase efficiency and reduce communications and departure delays through the use of SIDs. When an instrument approach is initially developed for an airport, the need for DPs is assessed. The procedure

designer conducts an obstacle analysis to support departure operations. If an aircraft may turn in any direction from a runway within the limits of the assessment area (see paragraph 36.3.3) and remain clear of obstacles, that runway passes what is called a diverse departure assessment and no ODP will be published. A SID may be published if needed for air traffic control purposes. However, if an obstacle penetrates what is called the 40:1 obstacle identification surface, then the procedure designer chooses whether to:

36.2.1 Establish a steeper than normal climb gradient; or

36.2.2 Establish a steeper than normal climb gradient with an alternative that increases takeoff minima to allow the pilot to visually remain clear of the obstacle(s); or

36.2.3 Design and publish a specific departure route; or

36.2.4 A combination or all of the above.

36.3 What criteria is used to provide obstruction clearance during departure?

36.3.1 Unless specified otherwise, required obstacle clearance for all departures, including diverse, is based on the pilot crossing the departure end of the runway at least 35 feet above the departure end of runway elevation, climbing to 400 feet above the departure end of runway elevation before making the initial turn, and maintaining a minimum climb gradient of 200 feet per nautical mile (FPNM), unless required to level off by a crossing restriction, until the minimum IFR altitude. A greater climb gradient may be specified in the DP to clear obstacles or to achieve an ATC crossing restriction. If an initial turn higher than 400 feet above the departure end of runway elevation is specified in the DP, the turn should be commenced at the higher altitude. If a turn is specified at a fix, the turn must be made at that fix. Fixes may have minimum and/or maximum crossing altitudes that must be adhered to prior to passing the fix. In rare instances, obstacles that exist on the extended runway centerline may make an "early turn" more desirable than proceeding straight ahead. In these cases, the published departure instructions will include the language "turn left(right) as soon as practicable." These departures will also include a ceiling and visibility minimum of at least 300 and 1. Pilots encountering one of these DPs should preplan the climb out to gain altitude and begin the turn as quickly as possible within the bounds of safe operating practices and operating limitations. This type of departure procedure is being phased out.

NOTE−
"Practical" or "feasible" may exist in some existing departure text instead of "practicable."

36.3.2 ODPs and SIDs assume normal aircraft performance, and that all engines are operating. Development of contingency procedures, required to cover the case of an engine failure or other emergency in flight that may occur after liftoff, is the responsibility of the operator. (More detailed information on this subject is available in Advisory Circular AC 120−91, Airport Obstacle Analysis, and in the "Departure Procedures" section of chapter 2 in the Instrument Procedures Handbook, FAA−H−8083−16.)

36.3.3 The 40:1 obstacle identification surface (OIS) begins at the departure end of runway (DER) and slopes upward at 152 FPNM until reaching the minimum IFR altitude or entering the en route structure. This assessment area is limited to 25 NM from the airport in nonmountainous areas and 46 NM in designated mountainous areas. Beyond this distance, the pilot is responsible for obstacle clearance if not operating on a published route, if below (having not reached) the MEA or MOCA of a published route, or an ATC assigned altitude. See FIG ENR 1.5−44. (Ref 14 CFR 91.177 for further information on en route altitudes.)

NOTE−
ODPs are normally designed to terminate within these distance limitations, however, some ODPs will contain routes that may exceed 25/46 NM; these routes will insure obstacle protection until reaching the end of the ODP.

36.3.4 Obstacles that are located within 1 NM of the DER and penetrate the 40:1 OCS are referred to as "low, close−in obstacles." The standard required obstacle clearance (ROC) of 48 feet per NM to clear these obstacles would require a climb gradient greater than 200 feet per NM for a very short distance, only until the aircraft was 200 feet above the DER. To eliminate publishing an excessive climb gradient, the obstacle AGL/MSL height and location relative to the DER is noted in the "Take−off Minimums and (OBSTACLE) Departure Procedures" section of a given Terminal Procedures Publication (TPP) booklet. The purpose of this note is to identify the obstacle(s) and alert the pilot to the height and

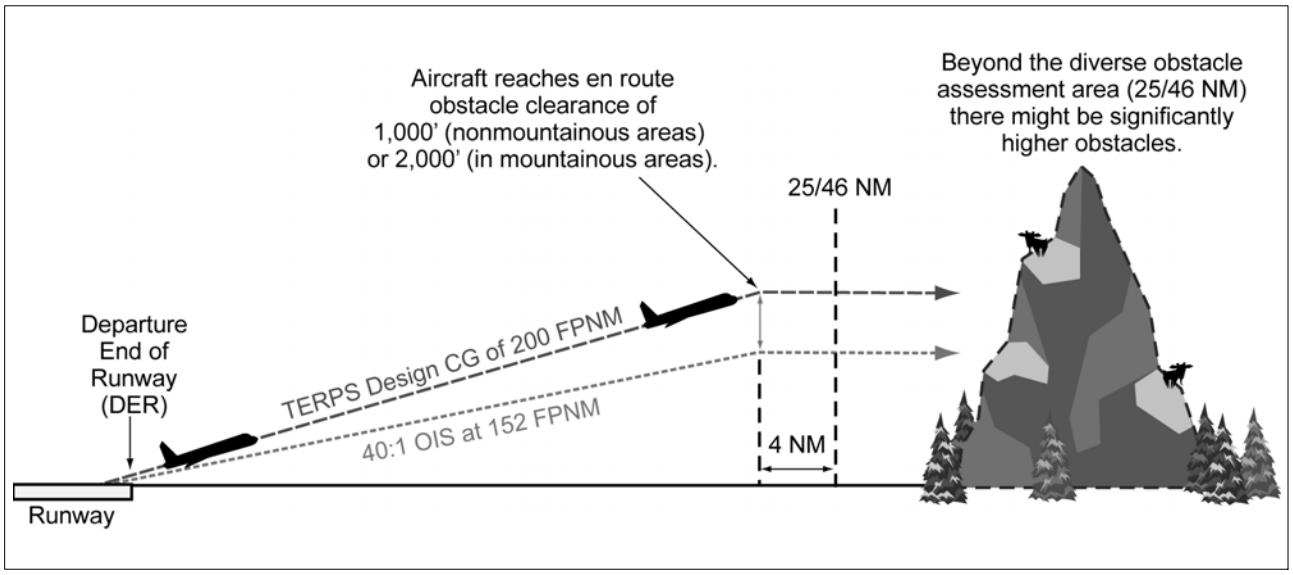
location of the obstacle(s) so they can be avoided. This can be accomplished in a variety of ways, e.g., the pilot may be able to see the obstruction and maneuver around the obstacle(s) if necessary; early liftoff/climb performance may allow the aircraft to cross well above the obstacle(s); or if the obstacle(s) cannot be visually acquired during departure, preflight planning should take into account what turns or other maneuver may be necessary immediately after takeoff to avoid the obstruction(s).

36.3.5 Climb gradients greater than 200 FPNM are specified when required to support procedure design constraints, obstacle clearance, and/or airspace restrictions. Compliance with a climb gradient for these purposes is mandatory when the procedure is part of the ATC clearance, unless increased takeoff minimums are provided and weather conditions allow compliance with these minimums. Additionally, ATC required crossing restrictions may also require climb gradients greater than 200 FPNM. These climb gradients may be amended or canceled at ATC's discretion. Multiple ATC climb gradients are permitted. An ATC climb gradient will not be used on an ODP.

EXAMPLE−
"Climb in visual conditions so as to cross the McElory Airport southbound, at or above 6000, then climb via Keemmling radial zero three three to Keemmling VORTAC."

EXAMPLE−
"Cross ALPHA intersection at or below 4000; maintain 6000." The pilot climbs at least 200 FPNM to 6000. If 4000 is reached before ALPHA, the pilot levels off at 4000 until passing ALPHA; then immediately resumes at least 200 FPNM climb.

FIG ENR 1.5−44
Diverse Departure Obstacle Assessment to 25/46 NM



EXAMPLE−
"TAKEOFF MINIMUMS: RWY 27, Standard with a minimum climb of 280' per NM to 2500, ATC climb of 310' per NM to 4000 ft." A climb of at least 280 FPNM is required to 2500 and is mandatory when the departure procedure is included in the ATC clearance. ATC requires a climb gradient of 310 FPNM to 4000, however, this ATC climb gradient may be amended or canceled.

36.3.6 Climb gradients may be specified only to an altitude/fix, above which the normal gradient applies.

EXAMPLE−
"Minimum climb 340 FPNM to ALPHA." The pilot climbs at least 340 FPNM to ALPHA, then at least 200 FPNM to MIA.

36.3.7 A Visual Climb Over Airport (VCOA) procedure is a departure option for an IFR aircraft, operating in visual meteorological conditions equal to or greater than the specified visibility and ceiling, to visually conduct climbing turns over the airport to the published "climb−to" altitude from which to proceed with the instrument portion of the departure. VCOA procedures are developed to avoid obstacles greater than 3 statute miles from the departure end of

the runway as an alternative to complying with climb gradients greater than 200 feet per nautical mile. Pilots are responsible to advise ATC as early as possible of the intent to fly the VCOA option prior to departure. These textual procedures are published in the Take-Off Minimums and (Obstacle) Departure Procedures section of the Terminal Procedures Publications and/or appear as an option on a Graphic ODP.

EXAMPLE−
"Climb in visual conditions so as to cross the McElory Airport southbound, at or above 6000, then climb via Keemmling radial zero three three to Keemmling VORTAC."

36.4 Who is responsible for obstacle clearance? DPs are designed so that adherence to the procedure by the pilot will ensure obstacle protection. Additionally:

36.4.1 Obstacle clearance responsibility also rests with the pilot when he/she chooses to climb in visual conditions in lieu of flying a DP and/or depart under increased takeoff minima rather than fly the climb gradient. Standard takeoff minima are one statute mile for aircraft having two engines or less and one−half statute mile for aircraft having more than two engines. Specified ceiling and visibility minima (VCOA or increased takeoff minima) will allow visual avoidance of obstacles until the pilot enters the standard obstacle protection area. Obstacle avoidance is not guaranteed if the pilot maneuvers farther from the airport than the specified visibility minimum prior to reaching the specified altitude. DPs may also contain what are called Low Close in Obstacles. These obstacles are less than 200 feet above the departure end of runway elevation and within one NM of the runway end, and do not require increased takeoff minimums. These obstacles are identified on the SID chart or in the Take−off Minimums and (Obstacle) Departure Procedures section of the U. S. Terminal Procedure booklet. These obstacles are especially critical to aircraft that do not lift off until close to the departure end of the runway or which climb at the minimum rate. Pilots should also consider drift following lift−off to ensure sufficient clearance from these obstacles. That segment of the procedure that requires the pilot to see and avoid obstacles ends when the aircraft crosses the specified point at the required altitude. In all cases continued obstacle clearance is based on having climbed a minimum of 200 feet per nautical mile to the specified point and then continuing to climb at least 200 foot per nautical mile during the departure until reaching the minimum enroute altitude, unless specified otherwise.

36.4.2 ATC may assume responsibility for obstacle clearance by vectoring the aircraft prior to reaching the minimum vectoring altitude by using a Diverse Vector Area (DVA). The DVA may be established below the Minimum Vectoring Altitude (MVA) or Minimum IFR Altitude (MIA) in a radar environment at the request of Air Traffic. This type of DP meets the TERPS criteria for diverse departures, obstacles, and terrain avoidance in which random radar vectors below the MVA/MIA may be issued to departing aircraft. The DVA has been assessed for departures which do not follow a specific ground track, but will remain within the specified area.

36.4.2.1 The existence of a DVA will be noted in the Takeoff Minimums and Obstacle Departure Procedure section of the U.S. Terminal Procedures Publication (TPP). The Takeoff Departure procedure will be listed first, followed by any applicable DVA.

EXAMPLE−
DIVERSE VECTOR AREA (RADAR VECTORS)
AMDT 1 14289 (FAA)

> ***Rwy 6R**, headings as assigned by ATC; requires minimum climb of 290' per NM to 400.*
> ***Rwys 6L, 7L, 7R, 24R, 25R**, headings as assigned by ATC.*

36.4.2.2 Pilots should be aware that Air Traffic facilities may utilize a climb gradient greater than the standard 200 FPNM in a DVA. This information will be identified in the DVA text for pilot evaluation against the aircraft's available climb performance. Pilots should note that the DVA has been assessed for departures which do not follow a specific ground track. ATC may also vector an aircraft off a previously assigned DP. In all cases, the minimum 200 FPNM climb gradient is assumed unless a higher climb gradient is specified on the departure, and obstacle clearance is not provided by ATC until the controller begins to provide navigational guidance in the form of radar vectors.

NOTE−
As is always the case, when used by the controller during departure, the term "radar contact" should not be interpreted as relieving pilots of their responsibility to maintain appropriate terrain and obstruction clearance which may include flying the obstacle DP.

36.4.3 Pilots must preplan to determine if the aircraft can meet the climb gradient (expressed in feet per nautical mile) required by the departure procedure, and be aware that flying at a higher than anticipated ground speed increases the climb rate requirement in feet per minute. Higher than standard climb gradients are specified by a note on the departure procedure chart for graphic DPs, or in the Take−Off Minimums and (Obstacle) Departure Procedures section of the U.S. Terminal Procedures booklet for textual ODPs. The required climb gradient, or higher, must be maintained to the specified altitude or fix, then the standard climb gradient of 200 ft/NM can be resumed. A table for the conversion of climb gradient (feet per nautical mile) to climb rate (feet per minute), at a given ground speed, is included on the inside of the back cover of the U.S. Terminal Procedures booklets.

36.5 Where are DPs located? DPs will be listed by airport in the IFR Takeoff Minimums and (Obstacle) Departure Procedures Section, Section L, of the Terminal Procedures Publications (TPPs). If the DP is textual, it will be described in TPP Section L. SIDs and complex ODPs will be published graphically and named. The name will be listed by airport name and runway in Section L. Graphic ODPs will also have the term "(OBSTACLE)" printed in the charted procedure title, differentiating them from SIDs.

36.5.1 An ODP that has been developed solely for obstacle avoidance will be indicated with the symbol "T" on appropriate Instrument Approach Procedure (IAP) charts and DP charts for that airport. The "T" symbol will continue to refer users to TPP Section C. In the case of a graphic ODP, the TPP Section C will only contain the name of the ODP. Since there may be both a textual and a graphic DP, Section C should still be checked for additional information. The nonstandard minimums and minimum climb gradients found in TPP Section C also apply to charted DPs and radar vector departures unless different minimums are specified on the charted DP. Takeoff minimums and departure procedures apply to all runways unless otherwise specified. New graphic DPs will have all the information printed on the graphic depiction. As a general rule, ATC will only assign an ODP from a nontowered airport when compliance with the ODP is necessary for aircraft to aircraft separation. Pilots may use the ODP to help ensure separation from terrain and obstacles.

36.6 Responsibilities

36.6.1 Each pilot, prior to departing an airport on an IFR flight should:

36.6.1.1 Consider the type of terrain and other obstacles on or in the vicinity of the departure airport;

36.6.1.2 Determine whether an ODP is available;

36.6.1.3 Determine if obstacle avoidance can be maintained visually or if the ODP should be flown; and

36.6.1.4 Consider the effect of degraded climb performance and the actions to take in the event of an engine loss during the departure. Pilots should notify ATC as soon as possible of reduced climb capability in that circumstance.

NOTE−
Guidance concerning contingency procedures that address an engine failure on takeoff after V_1 speed on a large or turbine−powered transport category airplane may be found in AC 120−91, Airport Obstacle Analysis.

36.6.2 Pilots should not exceed a published speed restriction associated with a SID waypoint until passing that waypoint.

36.6.3 After an aircraft is established on an SID and subsequently vectored or cleared to deviate off of the SID or SID transition, pilots must consider the SID canceled, unless the controller adds "expect to resume SID;" pilots should then be prepared to rejoin the SID at a subsequent fix or procedure leg. If the SID contains published altitude restrictions, pilots should expect the controller to issue an altitude to maintain. ATC may also interrupt the vertical navigation of a SID and provide alternate altitude instructions while the aircraft remains established on the published lateral path. Aircraft may not be vectored off of an ODP or issued an altitude lower than a published altitude on an ODP until at or above the MVA/MIA, at which time the ODP is canceled.

36.6.4 Aircraft instructed to resume a SID procedure such as a DP or SID which contains speed and/or altitude restrictions, must be:

36.6.4.1 Issued/reissued all applicable restrictions, or

36.6.4.2 Advised to "Climb via SID" or resume published speed.

EXAMPLE−
"Resume the Solar One departure, Climb via SID."
"Proceed direct CIROS, resume the Solar One departure, Climb via SID."

36.6.5 A clearance for a SID which does not contain published crossing restrictions, and/or is a SID with a Radar Vector segment or a Radar Vector SID, will be issued using the phraseology "Maintain (*altitude).*"

36.6.6 A clearance for a SID which contains published altitude restrictions may be issued using the phraseology "climb via." Climb via is an abbreviated clearance that requires compliance with the procedure lateral path, associated speed and altitude restrictions along the cleared route or procedure. Clearance to "climb via" authorizes the pilot to:

36.6.6.1 When used in the IFR departure clearance, in a PDC, DCL or when cleared to a waypoint depicted on a SID, to join the procedure after departure or to resume the procedure.

36.6.6.2 When vertical navigation is interrupted and an altitude is assigned to maintain which is not contained on the published procedure, to climb from that previously-assigned altitude at pilot's discretion to the altitude depicted for the next waypoint.

36.6.6.3 Once established on the depicted departure, to navigate laterally and climb to meet all published or assigned altitude and speed restrictions.

NOTE–
1. *When otherwise cleared along a route or procedure that contains published speed restrictions, the pilot must comply with those speed restrictions independent of a climb via clearance.*

2. *ATC anticipates pilots will begin adjusting speed the minimum distance necessary prior to a published speed restriction so as to cross the waypoint/fix at the published speed. Once at the published speed ATC expects pilots will maintain the published speed until additional adjustment is required to comply with further published or ATC assigned speed restrictions or as required to ensure compliance with 14 CFR Section 91.117.*

3. *If ATC interrupts lateral/vertical navigation while an aircraft is flying a SID, ATC must ensure obstacle clearance. When issuing a "climb via" clearance to join or resume a procedure ATC must ensure obstacle clearance until the aircraft is established on the lateral and vertical path of the SID.*

4. *ATC will assign an altitude to cross if no altitude is depicted at a waypoint/fix or when otherwise necessary/required, for an aircraft on a direct route to a waypoint/fix where the SID will be joined or resumed.*

5. *SIDs will have a "top altitude;" the "top altitude" is the charted "maintain" altitude contained in the procedure description or assigned by ATC.*

EXAMPLE–
1. ***Lateral route clearance:***
"Cleared Loop Six departure."

NOTE–
The aircraft must comply with the SID lateral path, and any published speed restrictions.

2. ***Routing with assigned altitude:***
"Cleared Loop Six departure, climb and maintain four thousand."

NOTE–
The aircraft must comply with the SID lateral path, and any published speed restriction while climbing unrestricted to four thousand.

3. *(A pilot filed a flight plan to the Johnston Airport using the Scott One departure, Jonez transition, then Q-145. The pilot filed for FL350. The Scott One includes altitude restrictions, a top altitude and instructions to expect the filed altitude ten minutes after departure). Before departure ATC uses PDC, DCL or clearance delivery to issue the clearance:*
"Cleared to Johnston Airport, Scott One departure, Jonez transition, Q-OneForty-five. Climb via SID."

NOTE–
In Example 3, the aircraft must comply with the Scott One departure lateral path and any published speed and altitude restrictions while climbing to the SID top altitude.

4. *(Using the Example 3 flight plan, ATC determines the top altitude must be changed to FL180). The clearance will read:*
"Cleared to Johnston Airport, Scott One departure, Jonez transition, Q-One Forty-five, Climb via SID except maintain flight level one eight zero."

NOTE–
In Example 4, the aircraft must comply with the Scott One departure lateral path and any published speed and altitude restrictions while climbing to FL180. The aircraft must stop climb at FL180 until issued further clearance by ATC.

5. *(An aircraft was issued the Suzan Two departure, "climb via SID" in the IFR departure clearance. After departure ATC must change a waypoint crossing restriction). The clearance will be:*
"Climb via SID except cross Mkala at or above seven thousand."

NOTE–
In Example 5, the aircraft will comply with the Suzan Two departure lateral path and any published speed and altitude restrictions and climb so as to cross Mkala at or

above 7,000; remainder of the departure must be flown as published.

6. *(An aircraft was issued the Teddd One departure, "climb via SID" in the IFR departure clearance. An interim altitude of 10,000 was issued instead of the published top altitude of FL 230). After departure ATC is able to issue the published top altitude. The clearance will be:*

"Climb via SID."

NOTE−
In Example 6, the aircraft will track laterally and vertically on the Teddd One departure and initially climb to 10,000; Once re-issued the "climb via" clearance the interim altitude is canceled aircraft will continue climb to FL230 while complying with published restrictions.

7. *(An aircraft was issued the Bbear Two departure, "climb via SID" in the IFR departure clearance. An interim altitude of 16,000 was issued instead of the published top altitude of FL 190). After departure, ATC is able to issue a top altitude of FL300 and still requires compliance with the published SID restrictions. The clearance will be:*

"Climb via SID except maintain flight level three zero zero."

NOTE−
In Example 7, the aircraft will track laterally and vertically on the Bbear Two departure and initially climb to 16,000; Once re-issued the "climb via" clearance the interim altitude is canceled and the aircraft will continue climb to FL300 while complying with published restrictions.

8. *(An aircraft was issued the Bizee Two departure, "climb via SID." After departure, ATC vectors the aircraft off of the SID, and then issues a direct routing to rejoin the SID at Rockr waypoint which does not have a published altitude restriction. ATC wants the aircraft to cross at or above 10,000). The clearance will read:*

"Proceed direct Rockr, cross Rockr at or above one-zero thousand, climb via the Bizee Two departure."

NOTE−
In Example 8, the aircraft will join the Bizee Two SID at Rockr at or above 10,000 and then comply with the published lateral path and any published speed or altitude restrictions while climbing to the SID top altitude.

9. *(An aircraft was issued the Suzan Two departure, "climb via SID" in the IFR departure clearance. After departure ATC vectors the aircraft off of the SID, and then clears the aircraft to rejoin the SID at Dvine waypoint, which has a published crossing restriction). The clearance will read:*

"Proceed direct Dvine, Climb via the Suzan Two departure."

NOTE−
In Example 9, the aircraft will join the Suzan Two departure at Dvine, at the published altitude, and then comply with the published lateral path and any published speed or altitude restrictions.

36.6.7 Pilots cleared for vertical navigation using the phraseology "climb via" must inform ATC, upon initial contact, of the altitude leaving and any assigned restrictions not published on the procedure.

EXAMPLE−
1. *(Cactus 711 is cleared to climb via the Laura Two departure. The Laura Two has a top altitude of FL190):*
"Cactus Seven Eleven leaving two thousand, climbing via the Laura Two departure."

2. *(Cactus 711 is cleared to climb via the Laura Two departure, but ATC changed the top altitude to16,000):*
"Cactus Seven Eleven leaving two thousand for one-six thousand, climbing via the Laura Two departure."

36.6.8 If prior to or after takeoff an altitude restriction is issued by ATC, all previously issued "ATC" altitude restrictions are canceled including those published on a SID. Pilots must still comply with all speed restrictions and lateral path requirements published on the SID unless canceled by ATC.

EXAMPLE−
Prior to takeoff or after departure ATC issues an altitude change clearance to an aircraft cleared to climb via a SID but ATC no longer requires compliance with published altitude restrictions:

"Climb and maintain flight level two four zero."

NOTE−
The published SID altitude restrictions are canceled; The aircraft should comply with the SID lateral path and begin an unrestricted climb to FL240. Compliance with published speed restrictions is still required unless specifically deleted by ATC.

36.6.9 Altitude restrictions published on an ODP are necessary for obstacle clearance and/or design constraints. Crossing altitudes and speed restrictions on ODPs cannot be canceled or amended by ATC.

36.7 RNAV Departure Procedures

36.7.1 All public RNAV SIDs and graphic ODPs are RNAV 1. These procedures generally start with an initial RNAV or heading leg near the departure end of runway (DER). In addition, these procedures require system performance currently met by GPS or DME/DME/IRU RNAV systems that satisfy the criteria discussed in AC 90−100A, U.S. Terminal and En Route Area Navigation (RNAV) Operations. RNAV 1 procedures must maintain a total system

error of not more than 1 NM for 95% of the total flight time.

REFERENCE–
ENR 4.1 Paragraph 16.2.5.11, Impact of Magnetic Variation on PBN Systems

3. Domestic Notice to Airmen (NOTAM) System

3.1 Time−critical aeronautical information which is of either a temporary nature or is not sufficiently known in advance to permit publication on aeronautical charts or in other operational publications, receives immediate dissemination via the U.S. Notice to Airmen (NOTAM) System.

NOTE−
1. *NOTAM information is that aeronautical information that could affect a pilot's decision to make a flight. It includes such information as airport or aerodrome primary runway closures, taxiways, ramps, obstructions, communications, airspace, changes in the status of navigational aids, ILSs, radar service availability, and other information essential to planned en route, terminal, or landing operations.*

2. *NOTAM information is transmitted using standard contractions to reduce transmission time. See TBL ENR 1.10−2 for a listing of the most commonly used contractions. For a complete listing of contractions, see FAA Order JO 7340.2, Contractions.*

3.2 NOTAM information is classified into five categories. These are NOTAM (D) or distant, Flight Data Center (FDC) NOTAMs, Pointer NOTAMs, Special Activity Airspace (SAA) NOTAMs, and Military NOTAMs.

3.2.1 NOTAM (D) information is disseminated for all navigational facilities that are part of the National Airspace System (NAS), all public use airports, seaplane bases, and heliports listed in the Chart Supplement U.S. The complete file of all NOTAM (D) information is maintained in a computer database at the Weather Message Switching Center (WMSC), located in Atlanta, Georgia. This category of information is distributed automatically via Service A telecommunications system. Air traffic facilities, primarily FSSs, with Service A capability have access to the entire WMSC database of NOTAMs. These NOTAMs remain available via Service A for the duration of their validity or until published. Once published, the NOTAM data is deleted from the system. NOTAM (D) information includes such data as taxiway closures, personnel and equipment near or crossing runways, and airport lighting aids that do not affect instrument approach criteria, such as VASI.

All NOTAM Ds must have one of the keywords listed in TBL ENR 1.10−1 as the first part of the text after the location identifier.

3.2.2 NOTAM Ds that crossover into International NOTAMs. These NOTAMs contain the same data as NOTAM Ds, only they are referenced differently. They are categorized, stored, and issued with a series letter preceding them and are distributed via Service A to countries requesting NOTAMs for that airport. The FAA currently uses the Series A (and may use Series K) for this type of NOTAM.

3.2.3 FDC NOTAMs. On those occasions when it becomes necessary to disseminate information which is regulatory in nature, the National Flight Data Center (NFDC), in Washington, DC, will issue an FDC NOTAM. FDC NOTAMs contain such things as amendments to published IAPs and other current aeronautical charts. They are also used to advertise temporary flight restrictions caused by such things as natural disasters or large-scale public events that may generate a congestion of air traffic over a site.

NOTE−
1. *DUATS vendors will provide FDC NOTAMs only upon site−specific requests using a location identifier.*

2. *NOTAM data may not always be current due to the changeable nature of the national airspace system components, delays inherent in processing the information, and occasional temporary outages of the United States NOTAM System. While en route, pilots should contact FSSs and obtain updated information for their route of flight and destination.*

3.2.4 Pointer NOTAMs. NOTAMs issued by a flight service station to highlight or point out another NOTAM, such as an FDC or NOTAM (D) NOTAM. This type of NOTAM will assist users in cross−referencing important information that may not be found under an airport or NAVAID identifier. Keywords in pointer NOTAMs must match the keywords in the NOTAM that is being pointed out. The keyword in pointer NOTAMs related to Temporary Flight Restrictions (TFR) must be AIRSPACE.

3.2.5 SAA NOTAMs. These NOTAMs are issued when Special Activity Airspace will be active outside the published schedule times and when required by the published schedule. Pilots and other users are still responsible to check published schedule times for Special Activity Airspace as well as any NOTAMs for that airspace.

3.2.6 Military NOTAMs. NOTAMs pertaining to U.S. Air Force, Army, Marine, and Navy navigational aids/airports that are part of the NAS.

3.3 Notices to Airmen Publication (NTAP). The NTAP is published by Mission Support Services, ATC Products and Publications, every 28 days. Data of a permanent nature can be published in the NTAP as an interim step between publication cycles of the Chart Supplement U.S. and aeronautical charts. The NTAP is divided into four parts:

3.3.1 Notices in part 1 are provided by ATC Products and Publications. This part contains selected FDC NOTAMs that are expected to be in effect on the effective date of the publication. This part is divided into three sections:

3.3.1.1 Section 1, Airway NOTAMs, reflects airway changes that fall within an ARTCC's airspace.

3.3.1.2 Section 2, Procedural NOTAMs.

3.3.1.3 Section 3, General NOTAMs, contains NOTAMs that are general in nature and not tied to a specific airport/facility (for example, flight advisories and restrictions, open duration special security instructions, and special flight rules area).

3.3.2 Part 2, provided by NFDC, contains Part 95 Revisions, Revisions to Minimum En Route IFR Altitudes and Changeover Points.

3.3.3 Part 3, International NOTAMs, is divided into two sections:

3.3.3.1 Section 1, International Flight Prohibitions, Potential Hostile Situations, and Foreign Notices.

3.3.3.2 Section 2, International Oceanic Airspace Notices.

3.3.4 Part 4, Graphic Notices, compiled by ATC Products and Publications from data provided by FAA service area offices and other lines of business, contains special notices and graphics pertaining to almost every aspect of aviation such as: military training areas, large scale sporting events, air show information, Special Traffic Management Programs (STMP), and airport-specific information. This part is comprised of 6 sections: General, Special Military Operations, Airport and Facility Notices, Major Sporting and Entertainment Events, Airshows, and Special Notices.

1.7.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.1.3 Maintain two–way radio communications with ATC;

1.7.1.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2;

1.7.1.5 Are operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation security program information) or are operating with and in accordance with an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information), if:

a) The aircraft is not registered in the U.S.; or

b) The aircraft is registered in the U.S. and its maximum takeoff gross weight is greater than 100,309 pounds (45,500 kgs);

1.7.1.6 Are in receipt of, and are operating in accordance with, an FAA routing authorization if the aircraft is registered in a U.S. State Department–designated special interest country or is operating with the ICAO 3LD of a company in a country listed as a U.S. State Department–designated special interest country, unless the operator holds valid FAA Part 129 operations specifications. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization. (See paragraph 1.11 for FAA routing authorization information.)

1.7.2 Civil aircraft registered in Canada or Mexico, and engaged in operations for the purposes of air ambulance, firefighting, law enforcement, search and rescue, or emergency evacuation are authorized to transit U.S. territorial airspace within 50 NM of their respective borders with the U.S., with or without an active flight plan, provided they have received and continuously transmit an ATC–assigned transponder code.

1.7.3 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less are authorized to transit U.S. territorial airspace if in compliance with all of the following conditions:

1.7.3.1 File and are on an active flight plan (IFR, VFR, or DVFR) that enters U.S. territorial airspace directly from any of the countries listed in this subparagraph 1.7.3. Flights that include a stop in a non–listed country prior to entering U.S. territorial airspace must comply with the requirements prescribed by subparagraph 1.7.1 above, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information);

1.7.3.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.3.3 Maintain two–way radio communications with ATC; and

1.7.3.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.7.4 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight greater than 100,309 pounds (45,500 kgs) must comply with the requirements in subparagraph 1.7.1, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information).

1.7.5 Civil aircraft registered in the U.S., Canada, or Mexico with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less that are operating without an operational transponder and/or the ability to maintain two–way radio communications with ATC, are authorized to transit U.S. territorial airspace over Alaska if in compliance with all of the following conditions:

1.7.5.1 Enter and exit U.S. territorial airspace over Alaska north of the fifty–fourth parallel;

1.7.5.2 File and are on an active flight plan;

1.7.5.3 Squawk 1200 if VFR and equipped with a transponder; and

1.7.5.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8 Foreign State Aircraft Operations

1.8.1 Foreign state aircraft are authorized to operate in U.S. territorial airspace if in compliance with all of the following conditions:

1.8.1.1 File and are on an active IFR flight plan;

1.8.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.8.1.3 Maintain two−way radio communications with ATC;

1.8.1.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8.2 Diplomatic Clearances. Foreign state aircraft may operate to or from, within, or in transit of U.S. territorial airspace only when authorized by the U.S. State Department by means of a diplomatic clearance, except as described in subparagraph 1.8.8 below.

1.8.2.1 Information about diplomatic clearances is available at the U.S. State Department website http://www.state.gov/t/pm/iso/c56895.htm (lower case only).

1.8.2.2 A diplomatic clearance may be initiated by contacting the U.S. State Department via email at DCAS@state.gov or via phone at (202) 663−3390.

NOTE−
A diplomatic clearance is not required for foreign state aircraft operations that transit U.S. controlled oceanic airspace but do not enter U.S. territorial airspace. (See subparagraph 1.8.4 for flight plan information.)

1.8.3 An FAA routing authorization for state aircraft operations of special interest countries listed in subparagraph 1.11.2 is required before the U.S. State Department will issue a diplomatic clearance for such operations. (See paragraph 1.11 for FAA routing authorizations information).

1.8.4 Foreign state aircraft operating with a diplomatic clearance must navigate U.S. territorial airspace on an active IFR flight plan, unless specifically approved for VFR flight operations by the U.S. State Department in the diplomatic clearance.

NOTE−
Foreign state aircraft operations to or from, within, or transiting U.S. territorial airspace; or transiting any U.S. controlled oceanic airspace, should enter ICAO code M in Item 8 of the flight plan to assist in identification of the aircraft as a state aircraft.

1.8.5 A foreign aircraft that operates to or from, within, or in transit of U.S. territorial airspace while conducting a state aircraft operation is not authorized to change its status as a state aircraft during any portion of the approved, diplomatically cleared itinerary.

1.8.6 A foreign aircraft described in subparagraph 1.8.5 above may operate from or within U.S. territorial airspace as a civil aircraft operation, once it has completed its approved, diplomatically cleared itinerary, if the aircraft operator is:

1.8.6.1 A foreign air carrier that holds valid FAA Part 129 operations specifications; and

1.8.6.2 Is in compliance with all other requirements applied to foreign civil aircraft operations from or within U.S. territorial airspace. (See paragraphs 1.5 and 1.6.)

1.8.7 Foreign state aircraft operations are not authorized to or from Ronald Reagan Washington National Airport (KDCA).

1.8.8 Diplomatic Clearance Exceptions. State aircraft operations on behalf of the governments of Canada and Mexico conducted for the purposes of air ambulance, firefighting, law enforcement, search and rescue, or emergency evacuation are authorized to transit U.S. territorial airspace within 50 NM of their respective borders with the U.S., with or without an active flight plan, provided they have received and continuously transmit an ATC assigned transponder code. State aircraft operations on behalf of the governments of Canada and Mexico conducted under this subparagraph 1.8.8 are not required to obtain a diplomatic clearance from the U.S. State Department.

1.9 FAA/TSA Airspace Waivers

1.9.1 Operators may submit requests for FAA/TSA airspace waivers at https://waivers.faa.gov by selecting “international” as the waiver type.

1.9.2 Information regarding FAA/TSA airspace waivers can be found at: http://www.tsa.gov/for−industry/general−aviation or can be obtained by contacting TSA at (571) 227−2071.

1.9.3 All existing FAA/TSA waivers issued under previous FDC NOTAMS remain valid until the expiration date specified in the waiver, unless sooner superseded or rescinded.

ENR 1.15 Medical Facts for Pilots

1. Fitness for Flight

1.1 Medical Certification

1.1.1 All pilots except those flying gliders and free air balloons must possess valid medical certificates in order to exercise the privileges of their airman certificates. The periodic medical examinations required for medical certification are conducted by designated Aviation Medical Examiners, who are physicians with a special interest in aviation safety and training in aviation medicine.

1.1.2 The standards for medical certification are contained the Federal Aviation Regulations (14 CFR Part 67). Pilots who have a history of certain medical conditions described in these standards are mandatorily disqualified from flying. These medical conditions include a personality disorder manifested by overt acts, a psychosis, alcoholism, drug dependence, epilepsy, an unexplained disturbance of consciousness, myocardial infarction, angina pectoris, and diabetes requiring medication for its control. Other medical conditions may be temporarily disqualifying, such as acute infections, anemia, and peptic ulcer. Pilots who do not meet medical standards may still be qualified under special issuance provisions or the exemption process. This may require that either additional medical information be provided or practical flight tests be conducted.

1.1.3 Student pilots should visit an aviation medical examiner as soon as possible in their flight training in order to avoid unnecessary training expenses should they not meet the medical standards. For the same reason, the student pilot who plans to enter commercial aviation should apply for the highest class of medical certificate that might be necessary in the pilot's career.

CAUTION–
The Federal Aviation Regulations prohibit a pilot who possesses a current medical certificate from performing crewmember duties while the pilot has a known medical condition or increase of a known medical condition that would make the pilot unable to meet the standards for the medical certificate.

1.2 Illness

1.2.1 Even a minor illness suffered in day–to–day living can seriously degrade performance of many piloting tasks vital to safe fight. Illness can produce fever and distracting symptoms that can impair judgment, memory, alertness, and the ability to make calculations. Although symptoms from an illness may be under adequate control with a medication, the medication itself may decrease pilot performance.

1.2.2 The safest rule is not to fly while suffering from any illness. If this rule is considered too stringent for a particular illness, the pilot should contact an aviation medical examiner for advice.

1.3 Medication

1.3.1 Pilot performance can be seriously degraded by both prescribed and over–the–counter medications, as well as by the medical conditions for which they are taken. Many medications, such as tranquilizers, sedatives, strong pain relievers, and cough–suppressant preparations, have primary effects that may impair judgment, memory, alertness, coordination, vision, and the ability to make calculations. Others, such as antihistamines, blood pressure drugs, muscle relaxants, and agents to control diarrhea and motion sickness, have side effects that may impair the same critical functions. Any medication that depresses the nervous system, such as a sedative, tranquilizer, or antihistamine, can make a pilot much susceptible to hypoxia (see below).

1.3.2 The Federal Aviation Regulations prohibit pilots from performing crewmember duties while using any medication that affects the faculties in any way contrary to safety. The safest rule is not to fly as a crewmember while taking any medication, unless approved to do so by the FAA.

1.4 Alcohol

1.4.1 Extensive research has provided a number of facts about the hazards of alcohol consumption and flying. As little as one ounce of liquor, one bottle of beer, or four ounces of wine can impair flying skills, with the alcohol consumed in these drinks being detectable in the breath and blood at least three hours. Even after the body completely destroys a moderate amount of alcohol, a pilot can still be severely

impaired for many hours by hangover. There is simply no way of increasing the destruction of alcohol or alleviating a hangover. Alcohol also renders a pilot much more susceptible to disorientation and hypoxia (see below).

1.4.2 A consistently high alcohol–related, fatal aircraft accident rate serves to emphasize that alcohol and flying are a potentially lethal combination. The Federal Aviation Regulations prohibit pilots from performing crewmember duties within eight hours after drinking any alcoholic beverage or while under the influence of alcohol. However, due to the slow destruction of alcohol, a pilot may still be under the influence eight hours after drinking a moderate amount of alcohol. Therefore, an excellent rule is to allow at least 12 to 24 hours between "bottle and throttle" depending on the amount of alcoholic beverage consumed.

1.5 Fatigue

1.5.1 Fatigue continues to be one of the most treacherous hazards to flight safety, as it may not be apparent to a pilot until serious errors are made. Fatigue is best described as either acute (short–term) or chronic (long–term).

1.5.2 A normal occurrence of everyday living, acute fatigue is the tiredness felt after long periods of physical and mental strain, including strenuous muscular effort, immobility, heavy mental workload, strong emotional pressure, monotony, and lack of sleep. Consequently, coordination and alertness, so vital to safe pilot performance, can be reduced. Acute fatigue is prevented by adequate rest and sleep, as well as regular exercise and proper nutrition.

1.5.3 Chronic fatigue occurs when there is not enough time for full recovery between episodes of acute fatigue. Performance continues to fall off, and judgment becomes impaired so that unwarranted risks may be taken. Recovery from chronic fatigue requires a prolonged period of rest.

1.5.4 OBSTRUCTIVE SLEEP APNEA (OSA). OSA is now recognized as an important preventable factor identified in transportation accidents. OSA interrupts the normal restorative sleep necessary for normal functioning and is associated with chronic illnesses such as hypertension, heart attack, stroke, obesity, and diabetes. Symptoms include snoring, excessive daytime sleepiness, intermittent prolonged breathing pauses while sleeping, memory impairment and lack of concentration. There are many available treatments which can reverse the day time symptoms and reduce the chance of an accident. OSA can be easily treated. Most treatments are acceptable for medical certification upon demonstrating effective treatment. If you have any symptoms described above, or neck size over 17 inches in men or 16 inches in women, or a body mass index greater than 30 you should be evaluated for sleep apnea by a sleep medicine specialist. (**https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html**) With treatment you can avoid or delay the onset of these chronic illnesses and prolong a quality life.

1.6 Stress

1.6.1 Stress from the pressures of everyday living can impair pilot performance, often in very subtle ways. Difficulties, particularly at work, can occupy thought processes enough to markedly decrease alertness. Distraction can so interfere with judgment that unwarranted risks are taken, such as flying into deteriorating weather conditions to keep on schedule. Stress and fatigue (see above) can be an extremely hazardous combination.

1.6.2 Most pilots do leave stress "on the ground." Therefore when more than usual difficulties are being experienced, a pilot should consider delaying flight until these difficulties are satisfactorily resolved.

1.7 Emotion

1.7.1 Certain emotionally upsetting events, including a serious argument, death of a family member, separation or divorce, loss of job, and financial catastrophe, can render a pilot unable to fly an aircraft safely. The emotions of anger, depression, and anxiety from such events not only decrease alertness but also may lead to taking risks that border on self–destruction. Any pilot who experiences an emotionally upsetting event should not fly until satisfactorily recovered from it.

1.8 Personal Checklist

1.8.1 Aircraft accident statistics show that pilots should be conducting preflight checklists on themselves as well as their aircraft, for pilot impairment contributes to many more accidents than failure of aircraft systems. A personal checklist that can be easily committed to memory, which includes all of the categories of pilot impairment discussed in

ENR 3. ATS ROUTES

ENR 3.1 Lower ATS Routes

See also ENR 1.10, ENR 1.17, ENR 3.3, ENR 3.5, and Appendix 1.

1. Low Altitude ATS Route Structure

1.1 The U.S. does not use the term "Lower ATS Routes." The published low altitude route structure in the U.S. consists of VOR Federal airways, L/MF Federal airways and low altitude RNAV routes (T–routes). The low altitude route structure is for use from 1,200 feet above the surface (or in some instances higher) up to but not including 18,000 feet MSL.

1.1.1 Route designators and significant points defining the routes are listed in FAA Order JO 7400.9, Airspace Designations and Reporting Points.

1.1.2 Applicable route tracks, radials, distances between points, changeover points, cruising altitudes for direction of flight, upper and lower limits, minimum flight altitudes and ARTCC boundaries are published on the IFR Enroute Low Altitude – U.S. chart series.

1.1.3 The low altitude routes are designated as Class E airspace.

ENR 3.2 Upper ATS Routes

See also ENR 1.10, ENR 1.17, ENR 3.3, ENR 3.5, and Appendix 1.

1. High Altitude ATS Route Structure

1.1 The U.S. does not use the term "Upper ATS Routes." The published high altitude route structure in the U.S. consists of jet routes and high altitude RNAV routes (Q–routes). The high altitude route structure is for use at and above 18,000 feet MSL.

1.1.1 Jet route and Q–route designators and significant points defining the routes are listed in FAA Order JO 7400.9, Airspace Designations and Reporting Points.

1.1.2 Applicable route tracks, radials, distances between points, changeover points, cruising altitudes for direction of flight, upper and lower limits, minimum flight altitudes and ARTCC boundaries are published on the IFR En Route High Altitude – U.S. chart series.

1.1.3 The high altitude route structure is contained within Class A airspace.

ENR 4. NAVIGATION AIDS/SYSTEMS

ENR 4.1 Navigation Aids – En Route

1. Nondirectional Radio Beacon (NDB)

1.1 A low or medium frequency radio beacon transmits nondirectional signals whereby the pilot of an aircraft properly equipped can determine bearings and "home" on the station. These facilities normally operate in a frequency band of 190 to 535 kilohertz (kHz), according to ICAO Annex 10 the frequency range for NDBs is between 190 and 1750 kHz, and transmit a continuous carrier with either 400 or 1020 hertz (Hz) modulation. All radio beacons except the compass locators transmit a continuous three–letter identification in code except during voice transmissions.

1.2 When a radio beacon is used in conjunction with the Instrument Landing System markers, it is called a Compass Locator.

1.3 Voice transmissions are made on radio beacons unless the letter "W" (without voice) is included in the class designator (HW).

1.4 Radio beacons are subject to disturbances that may result in erroneous bearing information. Such disturbances result from such factors as lightning, precipitation, static, etc. At night radio beacons are vulnerable to interference from distant stations. Nearly all disturbances which affect the aircraft's Automatic Direction Finder (ADF) bearing also affect the facility's identification. Noisy identification usually occurs when the ADF needle is erratic; voice, music, or erroneous identification will usually be heard when a steady false bearing is being displayed. Since ADF receivers do not have a "FLAG" to warn the pilot when erroneous bearing information is being displayed, the pilot should continuously monitor the NDB's identification.

2. VHF Omni–directional Range (VOR)

2.1 VORs operate within the 108.0 – 117.95 MHz frequency band and have a power output necessary to provide coverage within their assigned operational service volume. They are subject to line–of–sight restrictions, and range varies proportionally to the altitude of the receiving equipment.

NOTE–
Normal service ranges for the various classes of VORs are given in GEN 3.4, TBL GEN 3.4–1, VOR/DME/TACAN Standard Service Volumes.

2.2 Most VORs are equipped for voice transmission on the VOR frequency. VORs without voice capability are indicated by the letter "W" (without voice) included in the class designator (VORW).

2.3 The effectiveness of the VOR depends upon proper use and adjustment of both ground and airborne equipment.

2.3.1 Accuracy. The accuracy of course alignment of the VOR is excellent, being generally plus or minus 1 degree.

2.3.2 Roughness. On some VORs, minor course roughness may be observed, evidenced by course needle or brief flag alarm activity (some receivers are more subject to these irregularities than others). At a few stations, usually in mountainous terrain, the pilot may occasionally observe a brief course needle oscillation, similar to the indication of "approaching station." Pilots flying over unfamiliar routes are cautioned to be on the alert of these vagaries, and, in particular, to use the "to–from" indicator to determine positive station passage.

2.3.2.1 Certain propeller RPM settings or helicopter rotor speeds can cause the VOR Course Deviation Indicator (CDI) to fluctuate as much as plus or minus six degrees. Slight changes to the RPM setting will normally smooth out this roughness. Pilots are urged to check for this modulation phenomenon prior to reporting a VOR station or aircraft equipment for unsatisfactory operation.

2.4 The only positive method of identifying a VOR is by its Morse Code identification or by the recorded automatic voice identification which is always indicated by use of the word "VOR" following the range's name. Reliance on determining the identification of an omnirange should never be placed on listening to voice transmissions by the FSS (or approach control facility) involved. Many FSS remotely operate several omniranges which have different names from each other and, in some cases,

none have the name of the "parent" FSS. During periods of maintenance the facility may radiate a T−E−S−T code (− ● ●●● −) or the code may be removed. Some VOR equipment decodes the identifier and displays it to the pilot for verification to charts, while other equipment simply displays the expected identifier from a database to aid in verification to the audio tones. You should be familiar with your equipment and use it appropriately. If your equipment automatically decodes the identifier, it is not necessary to listen to the audio identification.

2.5 Voice identification has been added to numerous VORs. The transmission consists of a voice announcement; i.e., "AIRVILLE VOR," alternating with the usual Morse Code identification.

2.6 The VOR Minimum Operational Network (MON). As flight procedures and route structure based on VORs are gradually being replaced with Performance−Based Navigation (PBN) procedures, the FAA is removing selected VORs from service. PBN procedures are primarily enabled by GPS and its augmentation systems, collectively referred to as Global Navigation Satellite System (GNSS). Aircraft that carry DME/DME equipment can also use RNAV which provides a backup to continue flying PBN during a GNSS disruption. For those aircraft that do not carry DME/DME, the FAA is retaining a limited network of VORs, called the VOR MON, to provide a basic conventional navigation service for operators to use if GNSS becomes unavailable. During a GNSS disruption, the MON will enable aircraft to navigate through the affected area or to a safe landing at a MON airport without reliance on GNSS. Navigation using the MON will not be as efficient as the new PBN route structure, but use of the MON will provide nearly continuous VOR signal coverage at 5,000 feet AGL across the NAS, outside of the Western U.S. Mountainous Area (WUSMA).

NOTE−
There is no plan to change the NAVAID and route structure in the WUSMA.

The VOR MON has been retained principally for IFR aircraft that are not equipped with DME/DME avionics. However, VFR aircraft may use the MON as desired. Aircraft equipped with DME/DME navigation systems would, in most cases, use DME/DME to continue flight using RNAV to their destination. However, these aircraft may, of course, use the MON.

2.6.1 Distance to a MON airport. The VOR MON will ensure that regardless of an aircraft's position in the contiguous United States (CONUS), a MON airport (equipped with legacy ILS or VOR approaches) will be within 100 nautical miles. These airports are referred to as "MON airports" and will have an ILS approach or a VOR approach if an ILS is not available. VORs to support these approaches will be retained in the VOR MON. MON airports are charted on low−altitude en route charts and are contained in the Chart Supplement U.S. and other appropriate publications.

NOTE−
Any suitable airport can be used to land in the event of a VOR outage. For example, an airport with a DME−required ILS approach may be available and could be used by aircraft that are equipped with DME. The intent of the MON airport is to provide an approach that can be used by aircraft without ADF or DME when radar may not be available.

2.6.2 Navigating to an airport. The VOR MON will retain sufficient VORs to ensure that pilots will have nearly continuous signal reception of a VOR when flying at 5,000 feet AGL. The service volume of VORs will be increased to provide service at 5,000feet above the VOR. If the pilot encounters a GPS outage, the pilot will be able to proceed via VOR−to−VOR navigation at 5,000 feet above the VOR, either through the GPS outage area or to a safe landing at a MON airport or another suitable airport, as appropriate. Nearly all VORs inside of the WUSMA and outside the CONUS are being retained. In these areas, pilots use the existing (Victor and Jet) route structure and VORs to proceed through a GPS outage or to a landing.

2.6.3 Using the VOR MON.

2.6.3.1 In the case of a planned GPS outage (for example, one that is in a published NOTAM), pilots may plan to fly through the outage using the MON as appropriate and as cleared by ATC. Similarly, aircraft not equipped with GPS may plan to fly and land using the MON, as appropriate and as cleared by ATC.

NOTE−
1. *In many cases, flying using the MON may involve a more circuitous route than flying GPS−enabled RNAV.*

2. *Aircraft not equipped with GPS may be limited to a visual approach at the planned destination.*

2.6.3.2 In the case of an unscheduled GPS outage, pilots and ATC will need to coordinate the best outcome for all aircraft. It is possible that a GPS

9. ILS Minimums

9.1 The lowest authorized ILS minimums, with all required ground and airborne systems components operative, are:

9.1.1 Category I. Decision Height (DH) 200 feet and Runway Visual Range (RVR) 2,400 feet (with touchdown zone and centerline lighting, RVR 1,800 feet), or (with Autopilot or FD or HUD, RVR 1,800 feet);

9.1.2 Special Authorization Category I. DH 150 feet and Runway Visual Range (RVR) 1,400 feet, HUD to DH;

9.1.3 Category II. DH 100 feet and RVR 1,200 feet (with autoland or HUD to touchdown and noted on authorization, RVR 1,000 feet);

9.1.4 Special Authorization Category II with Reduced Lighting. DH 100 feet and RVR 1,200 feet with autoland or HUD to touchdown and noted on authorization, (touchdown zone, centerline lighting and ALSF–2 are not required);

9.1.5 Category IIIa. No DH or DH below 100 feet and RVR not less than 700 feet;

9.1.6 Category IIIb. No DH or DH below 50 feet and RVR less than 700 feet but not less than 150 feet; and

9.1.7 Category IIIc. No DH and no RVR limitation.

NOTE–
Special authorization and equipment are required for Category II and III.

10. Inoperative ILS Components

10.1 Inoperative Localizer. When the localizer fails, an ILS approach is not authorized.

10.2 Inoperative Glide Slope. When the glide slope fails, the ILS reverts to a nonprecision localizer approach.

REFERENCE–
See the Inoperative Component Table in the U.S. Government Terminal Procedures Publication (TPP) for adjustments to minimums due to inoperative airborne or ground system equipment.

11. ILS Course Distortion

11.1 All pilots should be aware that disturbance to ILS localizer/glide slope courses may occur when surface vehicles/aircraft are operated near the localizer/glide slope antennas. Most ILS installations are subject to signal interference by either surface vehicles, aircraft, or both. ILS "CRITICAL AREAS" are established near each localizer and glide slope antenna.

11.2 Air traffic control issues control instructions to avoid interfering operations within ILS critical areas at controlled airports during the hours the airport traffic control tower is in operation as follows:

11.2.1 Weather Conditions. Official weather observation is a ceiling of less than 800 feet and/or visibility 2 miles.

11.2.1.1 No critical area protection action is provided.

11.2.1.2 If an aircraft advises the tower that an "AUTOLAND"/"COUPLED" approach will be conducted, an advisory will be promptly issued if a vehicle/aircraft will be in or over a critical area when the arriving aircraft is inside the ILS middle marker.

EXAMPLE–
Critical Area not protected.

11.2.2 Weather Conditions. Less than ceiling 800 feet and/or visibility 2 miles.

11.2.2.1 Glide Slope Critical Area. Do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the ILS outer marker (OM), or the fix used in lieu of the OM, unless the arriving aircraft has reported the runway in sight and is circling or side–stepping to land on another runway.

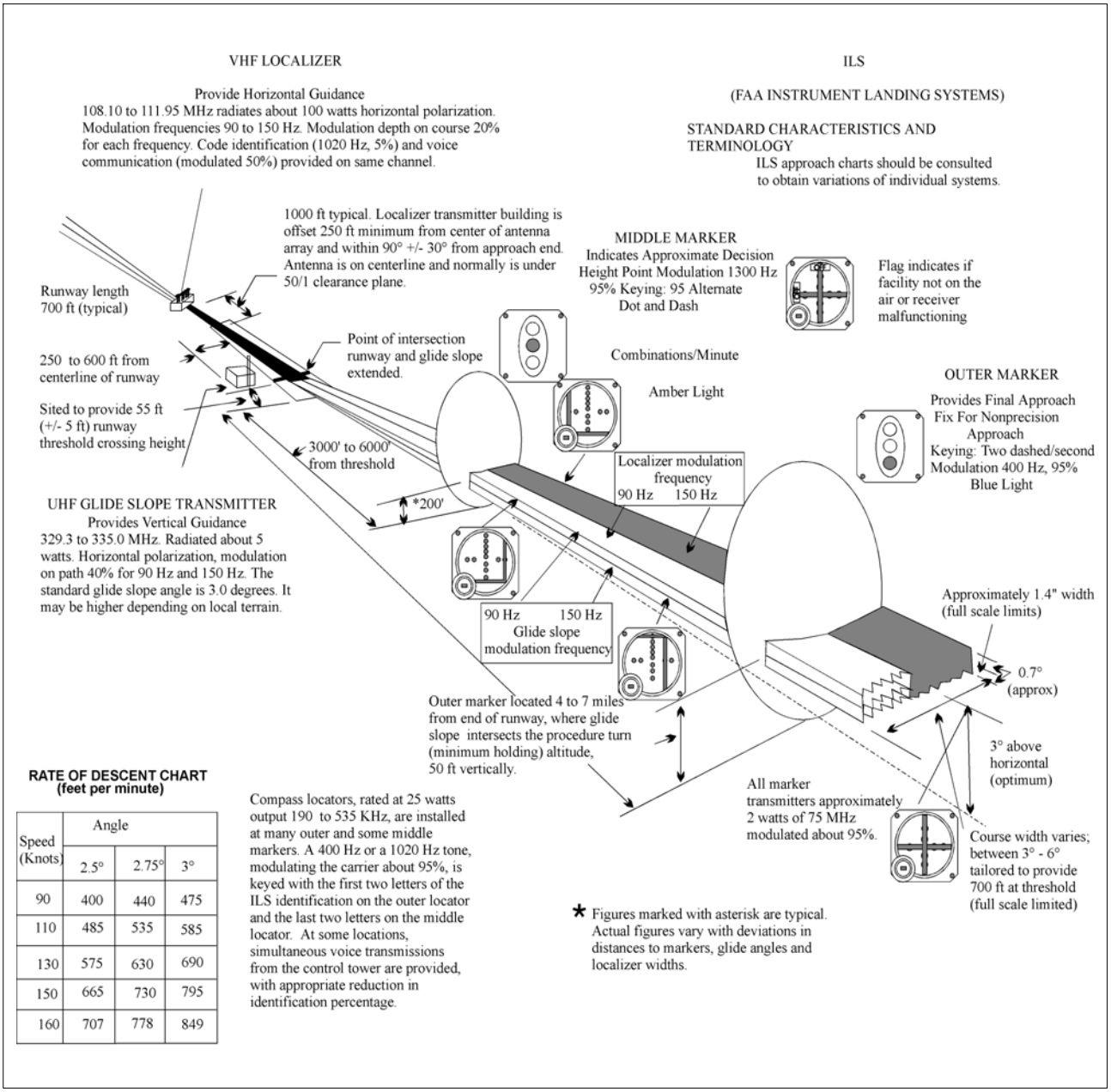
11.2.2.2 Localizer Critical Area. Except for aircraft that land, exit a runway, depart, or execute a missed approach, vehicles and aircraft are not authorized in or over the critical area when an arriving aircraft is inside the outer marker (OM) or the fix used in lieu of the OM. Additionally, whenever the official weather observation is a ceiling of less than 200 feet or RVR less than 2,000 feet, do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the MM, or in the absence of a MM, ½ mile final.

11.3 Aircraft holding below 5000 feet between the outer marker and the airport may cause localizer signal variations for aircraft conducting the ILS approach. Accordingly, such holding is not authorized when weather or visibility conditions are less than ceiling 800 feet and/or visibility 2 miles.

11.4 Pilots are cautioned that vehicular traffic not subject to control by ATC may cause momentary deviation to ILS course/glide slope signals. Also, "critical areas" are not protected at uncontrolled airports or at airports with an operating control tower when weather/visibility conditions are above those requiring protective measures. Aircraft conducting "coupled" or "autoland" operations should be especially alert in monitoring automatic flight control systems. (See FIG ENR 4.1–2.)

NOTE–
Unless otherwise coordinated through Flight Standards, ILS signals to Category I runways are not flight inspected below the point that is 100 feet less than the decision altitude (DA). Guidance signal anomalies may be encountered below this altitude.

FIG ENR 4.1–2
FAA Instrument Landing Systems



ENR 5. NAVIGATION WARNINGS

ENR 5.1 Prohibited, Restricted, and Other Areas

1. Special Use Airspace

1.1 General

1.1.1 Special use airspace consists of that airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both. Except for controlled firing areas, special use airspace areas are depicted on aeronautical charts.

1.1.2 Prohibited and restricted areas are regulatory special use airspace and are established in 14 CFR Part 73 through the rulemaking process.

1.1.3 Warning areas, military operations areas (MOA), alert areas, and controlled firing areas (CFA) are non–regulatory special use airspace. See ENR 5.2 for information on MOAs, alert areas, and CFAs.

1.1.4 Special use airspace descriptions (except CFAs) are contained in FAA Order JO 7400.8, Special Use Airspace.

1.1.5 Special use airspace (except CFAs) are charted on IFR and visual charts and include the hours of operation, altitudes, and the controlling agency.

1.2 Prohibited Areas

1.2.1 Prohibited areas contain airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft is prohibited. Such areas are established for security or other reasons associated with the national welfare. These areas are published in the Federal Register and are depicted on aeronautical charts.

1.3 Restricted Areas

1.3.1 Restricted areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restrictions. Activities within these areas must be confined because of their nature or limitations imposed upon aircraft operations that are not a part of those activities or both. Restricted areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants. Restricted areas are published in the Federal Register and constitute 14 CFR Part 73.

1.3.2 ATC facilities apply the following procedures when aircraft are operating on an IFR clearance (including those cleared by ATC to maintain VFR–on–top) via a route which lies within joint–use restricted airspace.

1.3.2.1 If the restricted area is not active and has been released to the controlling agency (FAA), the ATC facility will allow the aircraft to operate in the restricted airspace without issuing specific clearance for it to do so.

1.3.2.2 If the restricted area is active and has not been released to the controlling agency (FAA), the ATC facility will issue a clearance which will ensure the aircraft avoids the restricted airspace unless it is on an approved altitude reservation mission or has obtained its own permission to operate in the airspace and so informs the controlling facility.

NOTE–
The above apply only to joint–use restricted airspace and not to prohibited and nonjoint–use airspace. For the latter categories, the ATC facility will issue a clearance so the aircraft will avoid the restricted airspace unless it is on an approved altitude reservation mission or has obtained its own permission to operate in the airspace and so informs the controlling facility.

1.3.3 Restricted airspace is depicted on the en route chart appropriate for use at the altitude or flight level being flown. For joint–use restricted areas, the name of the controlling agency is shown on these charts. For all prohibited areas and nonjoint–use restricted areas, unless otherwise requested by the using agency, the phrase “NO A/G” is shown.

1.4 Warning Areas

1.4.1 A warning area is airspace of defined dimensions, extending from three nautical miles outward from the coast of the U.S., that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

2. Other Airspace Areas

2.1 National Security Area (NSA)

2.1.1 National Security Areas consist of airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities. Pilots are requested to voluntarily avoid flying through the depicted NSA. When it is necessary to provide a greater level of security and safety, flight in NSAs may be temporarily prohibited by regulation under the provisions of 14 CFR Section 99.7. Regulatory prohibitions will be issued by System Operations, System Operations Airspace and AIM Office, Airspace and Rules, and disseminated via NOTAM. Inquiries about NSAs should be directed to Airspace and Rules.

2.2 Temporary Flight Restrictions

2.2.1 General. This paragraph describes the types of conditions under which the FAA may impose temporary flight restrictions. It also explains which FAA elements have been delegated authority to issue a temporary flight restrictions NOTAM and lists the types of responsible agencies/offices from which the FAA will accept requests to establish temporary flight restrictions. The 14 CFR is explicit as to what operations are prohibited, restricted, or allowed in a temporary flight restrictions area. Pilots are responsible to comply with 14 CFR Sections 91.137, 91.138, 91.141, and 91.143 when conducting flight in an area where a temporary flight restrictions area is in effect, and should check appropriate NOTAMs during flight planning.

2.2.2 The purpose for establishing a temporary flight restrictions area is to:

2.2.2.1 Protect persons and property in the air or on the surface from an existing or imminent hazard associated with an incident on the surface when the presence of low–flying aircraft would magnify, alter, spread, or compound that hazard (14 CFR Section 91.137(a)(1)).

2.2.2.2 Provide a safe environment for the operation of disaster relief aircraft (14 CFR Section 91.137(a)(2)).

2.2.2.3 Prevent an unsafe congestion of sightseeing aircraft above an incident or event which may generate a high degree of public interest (14 CFR Section 91.137(a)(3)).

2.2.2.4 Protect declared national disasters for humanitarian reasons in the State of Hawaii (14 CFR Section 91.138).

2.2.2.5 Protect the President, Vice President, or other public figures (14 CFR Section 91.141).

2.2.2.6 Provide a safe environment for space agency operations (14 CFR Section 91.143).

2.2.3 Except for hijacking situations, when the provisions of 14 CFR Section 91.137(a)(1) or (a)(2) are necessary, a temporary flight restrictions area will only be established by or through the area manager at the Air Route Traffic Control Center (ARTCC) having jurisdiction over the area concerned. A temporary flight restrictions NOTAM involving the conditions of 14 CFR Section 91.137(a)(3) will be issued at the direction of the service area office director having oversight of the airspace concerned. When hijacking situations are involved, a temporary flight restrictions area will be implemented through the TSA Aviation Command Center. The appropriate FAA air traffic element, upon receipt of such a request, will establish a temporary flight restrictions area under 14 CFR Section 91.137(a)(1).

2.2.4 The FAA accepts recommendations for the establishment of a temporary flight restrictions area under 14 CFR Section 91.137(a)(1) from military major command headquarters, regional directors of the Office of Emergency Planning, Civil Defense State Directors, State Governors, or other similar authority. For the situations involving 14 CFR Section 91.137(a)(2), the FAA accepts recommendations from military commanders serving as regional, subregional, or Search and Rescue (SAR) coordinators; by military commanders directing or coordinating air operations associated with disaster relief; or by civil authorities directing or coordinating organized relief air operations (includes representatives of the Office of Emergency Planning, U.S. Forest Service,

2.3.2 Pilots of aircraft engaged in parachute jump operations are reminded that all reported altitudes must be with reference to mean sea level, or flight level, as appropriate, to enable ATC to provide meaningful traffic information.

2.3.3 Parachute Operations in the Vicinity of an Airport Without an Operating Control Tower. There is no substitute for alertness while in the vicinity of an airport. It is essential that pilots conducting parachute operations be alert, look for other traffic, and exchange traffic information as recommended in GEN 3.3, Paragraph 9.2, Traffic Advisory Practices at Airports Without Operating Control Towers. In addition, pilots should avoid releasing parachutes while in an airport traffic pattern when there are other aircraft in that pattern. Pilots should make appropriate broadcasts on the designated Common Traffic Advisory Frequency (CTAF), and monitor that CTAF until all parachute activity has terminated or the aircraft has left the area. Prior to commencing a jump operation, the pilot should broadcast the aircraft's altitude and position in relation to the airport, the approximate relative time when the jump will commence and terminate, and listen to the position reports of other aircraft in the area.

2.4 Special Air Traffic Rules (SATR) and Special Flight Rules Area (SFRA)

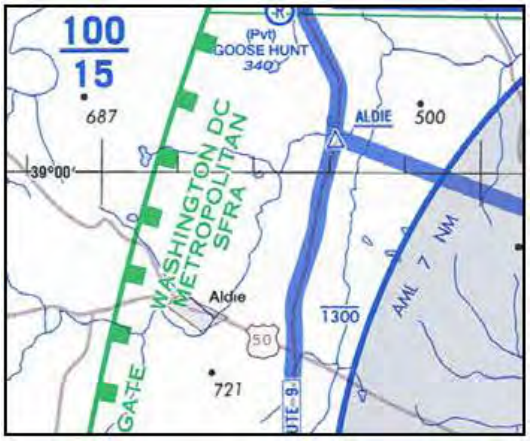
2.4.1 Background. The Code of Federal Regulations (CFR) prescribes special air traffic rules for aircraft operating within the boundaries of certain designated airspace. These areas are listed in 14 CFR Part 93 and can be found throughout the NAS. Procedures, nature of operations, configuration, size, and density of traffic vary among the identified areas.

2.4.2 SFRAs. Airspace of defined dimensions, above land areas or territorial waters, within which the flight of aircraft is subject to the rules set forth in 14 CFR Part 93, unless otherwise authorized by air traffic control. Not all areas listed in 14 CFR Part 93 are designated SFRA, but special air traffic rules apply to all areas described in 14 CFR Part 93.

2.4.3 Participation. Each person operating an aircraft to, from, or within airspace designated as a SATR area or SFRA must adhere to the special air traffic rules set forth in 14 CFR Part 93, as applicable, unless otherwise authorized or required by ATC.

2.4.4 Charts. SFRAs are depicted on VFR sectional, terminal area, and helicopter route charts. (See FIG ENR 5.1–1.)

FIG ENR 5.1–1
SFRA Boundary



2.5 Weather Reconnaissance Area (WRA)

2.5.1 General. Hurricane Hunters from the United States Air Force Reserve 53rd Weather Reconnaissance Squadron (WRS) and the National Oceanic and Atmospheric Administration (NOAA) Aircraft Operations Center (AOC) operate weather reconnaissance/research aircraft missions, in support of the National Hurricane Operations Plan (NHOP), to gather meteorological data on hurricanes and tropical cyclones. 53rd WRS and NOAA AOC aircraft normally conduct these missions in airspace identified in a published WRA Notice to Airmen (NOTAM).

2.5.2 WRAs. Airspace with defined dimensions and published by a NOTAM, which is established to support weather reconnaissance/research flights. ATC services are not provided within WRAs. Only participating weather reconnaissance/research aircraft from the 53rd WRS and NOAA AOC are permitted to operate within a WRA. A WRA may only be established in airspace within U. S. Flight Information Regions (FIR) outside of U. S. territorial airspace.

2.5.3 A published WRA NOTAM describes the airspace dimensions of the WRA and the expected activities within the WRA. WRAs may border adjacent foreign FIRs, but are wholly contained within U.S. FIRs. As ATC services are not provided within a WRA, non–participating aircraft should avoid WRAs, and IFR aircraft should expect to be rerouted to avoid WRAs.

ENR 5.6 Bird Migration and Areas With Sensitive Fauna

1. Migratory Bird Activity

1.1 Bird strike risk increases because of bird migration during the months of March through April and August through November.

1.2 The altitudes of migrating birds vary with winds aloft, weather fronts, terrain elevations, cloud conditions, and other environmental variables. While over 90 percent of the reported bird strikes occur at or below 3,000 feet AGL, strikes at higher altitudes are common during migration. Ducks and geese are frequently observed up to 7,000 feet AGL and pilots are cautioned to minimize en route flying at lower altitudes during migration.

1.3 Considered the greatest potential hazard to aircraft because of their size, abundance, or habit of flying in dense flocks are gulls, waterfowl, vultures, hawks, owls, egrets, blackbirds, and starlings. Four major migratory flyways exist in the U.S. The Atlantic Flyway parallels the Atlantic coast, the Mississippi Flyway stretches from Canada through the Great Lakes and follows the Mississippi River. The Central Flyway represents a broad area east of the Rockies, stretching from Canada through Central America. The Pacific Flyway follows the west coast and overflies major parts of Washington, Oregon, and California. There are also numerous smaller flyways which cross these major north–south migratory routes.

2. Reducing Bird Strike Risks

2.1 The most serious strikes are those involving ingestion into an engine (turboprop and turbine jet engines) or windshield strikes. These strikes can result in emergency situations requiring prompt action by the pilot.

2.2 Engine ingestions may result in sudden loss of power or engine failure. Review engine out procedures, especially when operating from airports with known bird hazards or when operating near high bird concentrations.

2.3 Windshield strikes have resulted in pilots experiencing confusion, disorientation, loss of communications, and aircraft control problems. Pilots are encouraged to review their emergency procedures before flying in these areas.

2.4 When encountering birds en route, climb to avoid collision because birds in flocks generally distribute themselves downward, with lead birds being at the highest altitude.

2.5 Avoid overflight of known areas of bird concentration and flying low altitudes during bird migration. Charted wildlife refuges and other natural areas contain unusually high local concentration of birds which may create a hazard to aircraft.

3. Reporting Bird Strikes

3.1 Pilots are urged to report any bird or other wildlife strike using FAA Form 5200–7, Bird/Other Wildlife Strike Report (FIG ENR 5.6–1). Forms are available at any FSS or any FAA Regional Office. Wildlife strikes can also be reported electronically at: https://www.faa.gov/airports/airport_safety/wildlife/. The data derived from these reports are used to develop standards to cope with this potential hazard to aircraft and for documentation of necessary habitat control on airports.

4. Reporting Bird and Other Wildlife Activities

4.1 If you observe birds or other animals on or near the runway, request airport management to disperse the wildlife before taking off. Also contact the nearest FAA ARTCC, FSS, or tower (including non–Federal towers) regarding large flocks of birds and report the:

4.1.1 Geographic location.

4.1.2 Bird type (geese, ducks, gulls, etc.).

4.1.3 Approximate numbers.

4.1.4 Altitude.

4.1.5 Direction of bird flight path.

5. Pilot Advisories on Bird and Other Wildlife Hazards

5.1 Many airports advise pilots of other wildlife hazards caused by large animals on the runway through the Chart Supplement U.S. and the NOTAM system. Collisions between landing and departing aircraft with animals on the runway are increasing and are not limited to rural airports. These accidents have also occurred at several major airports. Pilots should exercise extreme caution when warned of the presence of wildlife on and in the vicinity of airports. If in close proximity to movement areas you observe deer or other large animals, advise the FSS, tower, or airport management.

6. Flights Over Charted U.S. Wildlife Refuges, Parks, and Forest Service Areas

6.1 The landing of aircraft is prohibited on lands or waters administered by the National Park Service, U.S. Fish and Wildlife Service, or U.S. Forest Service without authorization from the respective agency. Exceptions include (1) when forced to land due to an emergency beyond the control of the operator, (2) at officially designated landing sites, or (3) an approved official business of the Federal Government.

6.2 All pilots are requested to maintain a minimum altitude of 2,000 feet above the terrain of the following: National Parks, Monuments, Seashores, Lakeshores, Recreation Areas and Scenic Riverways administered by the National Park Service, National Wildlife Refuges, Big Game Refuges, Game Ranges, and Wildlife Ranges administered by the U.S. Fish and Wildlife Service, and Wilderness and Primitive Areas administered by the U.S. Forest Service.

NOTE−
FAA Advisory Circular 91−36, Visual Flight Rules (VFR) Flight Near Noise−sensitive Areas, defines the surface of a national park area (including parks, forests, primitive areas, wilderness areas, recreational areas, national seashores, national monuments, national lakeshores, and national wildlife refuge and range areas) as: "The highest terrain within 2,000 feet laterally of the route of flight, or the upper−most rim of a canyon or valley."

6.3 Federal statutes prohibit certain types of flight activity and/or provide altitude restrictions over designated U.S. Wildlife Refuges, Parks, and Forest Service Areas. These designated areas are charted on Sectional Charts, for example: Boundary Waters Canoe Wilderness Areas, Minnesota; Haleakala National Park, Hawaii; Yosemite National Park, California; and Grand Canyon National Park, Arizona,

6.4 Federal regulations also prohibit airdrops by parachute or other means of persons, cargo, or objects from aircraft on lands administered by the three agencies without authorization from the respective agency. Exceptions include: (1) emergencies involving the safety of human life or (2) threat of serious property loss.

ENR 7. Oceanic Operations

ENR 7.1 General Procedures

1. IFR/VFR Operations

1.1 Flights in oceanic airspace must be conducted under Instrument Flight Rule (IFR) procedures when operating:

1.1.1 Between sunset and sunrise.

1.1.2 At or above Flight Level (FL) 055 when operating within the New York, Oakland, and Anchorage Oceanic Flight Information Regions (FIRs).

1.1.3 Above FL180 when operating within the Miami and Houston FIRs and in the San Juan Control Area. Flights between the east coast of the U.S., and Bermuda or Caribbean terminals, and traversing the New York FIR at or above 5,500 feel MSL should be especially aware of this requirement.

1.1.4 At or above FL230 when operating within the Anchorage Arctic FIR.

1.2 San Juan CTA/FIR VFR Traffic.

1.2.1 All VFR aircraft entering and departing the San Juan FIR/CTA will provide San Juan Radio with an ICAO flight plan. All aircraft must establish two–way communications with San Juan Radio on 126.7, 122.2, 123.65, or 255.4.

1.2.2 Communication can also be established by transmitting on 122.1 and receive using the appropriate VOR frequency for Borinquen (BQN), Mayaguez (MAZ), Ponce (PSE), and St. Croix (COY). For St. Thomas (STT), transmit on 123.6 and receive on the VOR frequency. If unable to contact San Juan Radio, the pilot is responsible for notifying adjacent ATS units and request that a position report be relayed to San Juan Radio for search and rescue purposes and flight following.

NOTE–
This is in accordance with ICAO Doc 4444, Part II, paragraphs 14.1.1, 14.1.4; Part VI, paragraphs 1.2.1, 2.2.2; Annex 11, chapter 6, paragraphs 6.1.2.1, 5.1.1, 5.2.1, 5.2.2, 5.2.2.3, 5.3.2.4, 5.4.1.

1.3 Non–RVSM aircraft are not permitted in RVSM airspace unless they meet the criteria of excepted aircraft and are previously approved by the ATS unit having authority for the airspace. In addition to those aircraft listed in ENR 1.1, General Rules, Paragraph 38, Operational Policy/Procedures for Reduced Vertical Separation Minimum (RVSM) in the Domestic U.S., Alaska, Offshore Airspace, and the San Juan FIR, the following aircraft operating within oceanic and offshore airspace are excepted:

1.3.1 Aircraft being initially delivered to the State of Registry or Operator.

1.3.2 Aircraft that was formerly RVSM–approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval.

1.3.3 Aircraft being utilized for mercy or humanitarian purposes.

NOTE–
These exceptions are accommodated on a workload or traffic–permitting basis.

2. Flight Plan Filing Requirements

NOTE–
In addition to the following guidance, operators must also consult current Notices to Airmen (NOTAMs) and chart supplements (Supplement Alaska, Supplement Pacific) to gain a complete understanding of requirements. NOTAMs and supplements may contain guidance that is short term and/or short notice – i.e., having immediate effect.

2.1 If you are eligible for oceanic 50 NM lateral separation:

2.1.1 PBN/A1 or PBN/L1 in Field 18.

2.1.2 R in Field 10a.

2.1.3 See FAA Advisory Circular (AC) 90-105, *Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace*, for guidance on RNP 10 (RNAV 10) authorization.

2.2 If you are eligible for oceanic 50 NM longitudinal and lateral separation:

2.2.1 PBN/A1 or PBN/L1 in Field 18.

2.2.2 D1 in Field 10b.

2.2.3 (J5, J6, or J7) and R in Field 10a.

2.2.4 See FAA Advisory Circular 90-105 for guidance on RNP 10 (RNAV 10) authorization.

2.3 If you are eligible for oceanic 30 NM longitudinal and lateral separation:

2.3.1 PBN/L1 in Field 18.

2.3.2 D1 in Field 10b.

2.3.3 (J5, J6, or J7) and R in Field 10a.

2.3.4 See FAA Advisory Circular 90-105 for guidance on RNP 4 authorization.

2.4 Oakland Oceanic FIR

2.4.1 In accordance with ICAO Doc 4444, flight plans with routes entering the Oakland Oceanic FIR (KZAK) must contain, among the estimated elapsed times (EET) in Field 18, an entry point for KZAK and an estimated time. It is not mandatory to file the boundary crossing point in Field 15 of the route of flight, but it is permitted.

3. Flight Plan Addressing

3.1 In an effort to eliminate erroneous or duplicate flight plans that may be received from diverse locations, and to increase the safety of flight, operators must adhere to the following procedures when filing flight plans for departing flights from foreign aerodromes entering the United States National Airspace System:

3.1.1 If the filer sends an FPL to an FAA En Route facility in addition to the air traffic service unit (ATSU) responsible for the departure aerodrome, the filer must ensure that the flight plan filed is the same as the flight plan entered by the ATS unit having authority for the departure aerodrome. Note that per ICAO Doc. 4444, an operator may request that movement messages distributed by the responsible ATS unit be routed to the operator.

3.1.2 Changes to IFR flight plans must be submitted as soon as possible, but no more than 24 hours prior to the flight, to ensure proper processing and distribution before departure.

3.1.3 The FAA expects changes to be transmitted using the DLA and CHG messages as outlined in ICAO Doc. 4444. Transmitting changes to the FAA by cancelling (CNL) and refiling an FPL creates the potential for multiple FPLs in the computer system.

3.1.4 If Cancel and Refile is used, it is imperative that the cancellation of the original FPL in the FAA system be verified by computer response or verbal coordination before submitting another FPL.

3.1.5 Changes to an IFR flight plan less than 30 minutes prior to departure must be accomplished via verbal coordination with the ATSU having authority for the departure aerodrome.

NOTE–
These references are contained in ICAO DOC 4444 and FAA Order JO 7210.3, Facility Operation and Administration. Operators should be aware that failure to adhere to these procedures could result in an operational delay or pilot deviation.

3.2 Oakland Oceanic FIR

3.2.1 All flights that will enter the Oakland Oceanic CTA/FTR must address flight plans to KZAKZQZX.

3.3 New York FIR

3.3.1 All flights entering the New York Oceanic CTA/FIR must address flight plans to KZWYZOZX.

3.3.2 All flights entering the New York Oceanic CTA/FIR and a U.S. ARTCC (except Boston) and/or Bermuda airspace must address flight plans to both KZWYZOZX and the appropriate U.S. ARTCC. (See TBL ENR 7.1–1).

TBL ENR 7.1–1

Airspace to be Entered: New York Oceanic CTA/FIR and U.S. ARTCCs	Required AFTN Addresses
New York (NY) Oceanic CTA/FIR	KZWYZOZX
Boston ARTCC & NY Oceanic	KZWYZOZX only
NY domestic and/or Bermuda & NY Oceanic	KZNYZQZX & KZWYZOZX
Washington (KZDC) & NY Oceanic	KZDCZQZX & KZWYZOZX
Jacksonville (KZJX) & NY Oceanic	KZJXZQZX & KZWYZOZX
Miami (KZMA) & NY Oceanic	KZMAZQZX & KZWYZOZX
San Juan & NY Oceanic	TZSUZQZX & KZWYZOZX
Houston (KZHU)	KZHUZRZX

NOTE–
If, as a result of actions taken under the provisions of items 4.5.1.2 and 4.5.1.3 above, 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.

4.5.1.4 Turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

4.5.1.5 Deviations of less than 10 NM (19 km) should REMAIN at ASSIGNED altitude. Otherwise, when the aircraft is approximately 10 NM (19 km) from track, initiate an altitude change in accordance with TBL ENR 7.3–1.

4.5.1.6 When returning to track, be at its assigned flight level when the aircraft is within approximately 10 NM (19 km) of the centerline; and

4.5.1.7 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.

4.6 The pilot must 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.

TBL ENR 7.3–1

Route Centerline Track	Deviations > 10 NM (19 km)	Altitude Change
EAST (000° – 179° magnetic)	LEFT RIGHT	DESCEND 300 ft (90 m) CLIMB 300 ft (90 m)
WEST (180° – 359° magnetic)	LEFT RIGHT	CLIMB 300 ft (90 m) DESCEND 300 ft (90 m)
Pilot Memory Slogan: "East right up, West right down."		

5. Houston/Miami/New York Oceanic CTA/FIR National Winter Storm Operations

5.1 During the winter season, the U.S. Air Force Reserves (AFRES), 53rd Weather Squadron has responsibility for flying winter storm reconnaissance missions. Mission aircraft will fly at altitudes between FL290 and FL350. At designated points, the aircraft will release dropsondes, 16–inch cardboard weather cylinders weighing one pound, each with an attached parachute. When in areas with no direct pilot–controller VHF/UHF communications, at five minutes prior to dropsonde release, the mission aircraft commander will broadcast on 121.5 and 243 the time and position of the intended drop. The dropsonde falls at a rate of approximately 2500 feet per minute.

5.2 Aircraft commanders are directly responsible for or the release of any objects from the aircraft. ATC must provide traffic advisories, when feasible, to the aircraft. ATC will provide separation between the mission aircraft and any nonparticipating aircraft. ATC cannot provide separation between aircraft and the dropsonde.

5.3 NOTAMs will be issued as early as possible prior to each mission. Airspace operators should consider any national winter storm operations during flight planning in the affected area(s) and nonparticipating aircrews should be especially alert to pertinent broadcasts on 121.5 or 243.0 during national winter storm operations.

ENR 7.10 Y–Routes

1. Introduction

1.1 The FAA is expanding the number of area navigation (RNAV) routes both over the Atlantic coastal states and within the Atlantic High Offshore Airspace. High Offshore Airspace is considered Class A airspace in accordance with 14 CFR Part 71, § 71.1 and § 71.33. These routes will be situated to enable ATC radar surveillance of, and VHF communications with, aircraft flying them. The offshore RNAV routes will be charted as "Y" routes. Existing Y–routes remain active and will be part of the final offshore Y–route network.

2. General Requirements

2.1 The Y–routes are designated RNAV 2 with GNSS required. Aircraft flying the Y–routes must be equipped with GNSS and able to meet RNAV 2 performance requirements. RNAV systems relying solely on DME/DME or inertial navigation are not suitable (and therefore not authorized) for use on any Y–route.

2.2 In order to fly the Y–routes, U.S. certificated operators require operations specification/management specification B035, Class I Navigation in the U.S. Class A Airspace using Area or Long–Range Navigation Systems, indicating aircraft equipage with GNSS. Foreign commercial operators should obtain authorization for operations with RNAV 2 and equipage with GNSS as required by their applicable civil aviation authority.

2.3 General aviation operators (ICAO Annex 6 Part II) do not require any specific authorization to fly on a Y–route. Nevertheless, the requirements for GNSS equipage and RNAV 2 performance remain. General aviation operators should refer to Advisory Circular (AC) 90–100, U.S. Terminal and En Route Area Navigation (RNAV) Operations, in order to verify their aircraft meets the airworthiness and installation criteria for RNAV 2. A current list of RNAV 2 compliant equipment can be found in the AC 90–100 Compliance Table posted on the Performance–Based Flight Systems Branch website at: **http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs470/pbn**. Operators may contact their local Flight Standards District Office, or applicable International Field Office, for help in determining aircraft eligibility as needed.

2.4 Pilots must indicate on their ATC flight plan at least the minimum equipment and capability required for RNAV 2 with GNSS. Item 10 of the flight plan must indicate G and R. Item 18 must indicate PBN/C2.

3. Operational Requirements

3.1 Pilots are expected to fly the route centerline, as defined by the aircraft RNAV system. Pilots must not use strategic lateral offset procedures (SLOP) while on the Y–routes.

3.2 Operators must check predicted RAIM availability for the expected duration of their flight on a Y–route. Five (5) minutes is the maximum predicted continuous loss of RAIM allowed for flight on a Y–route.

4. Pilot Knowledge

4.1 AC 90–100 contains pilot knowledge subject matter that is generally applicable to any RNAV operation. General aviation pilots in particular should use the RNAV subject matter contained in AC 90–100 in preparation for any flight on an RNAV route, including Y–routes.

PART 3 – AERODROMES (AD)

AD 0.

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

AD 0.4 Checklist of Pages

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

per minute. The top light is normally installed near the top of the supporting structure, while the lower light indicates the approximate lower portion of the wire span. The lights are beamed towards the companion structure and identify the area of the wire span.

15.3.4 High intensity flashing white lights are also employed to identify tall structures, such as chimneys and towers, and obstructions to air navigation. The lights provide a 360 degree coverage about the structure at 40 flashes per minute and consist of from one to seven levels of lights depending upon the height of the structure. Where more than one level is used, the vertical banks flash simultaneously.

16. Runway Lead–in Light System (RLLS)

16.1 The lead–in lighting system consists of a series of flashing lights installed at or near ground level to describe the desired course to a runway or final approach. Each group of lights is positioned and aimed so as to be conveniently sighted and followed from the approaching aircraft under conditions at or above approach minimums under consideration. The system may be curved, straight, or combination thereof, as required. The lead–in lighting system may be terminated at any approved approach lighting system, or it may be terminated at a distance from the landing threshold which is compatible with authorized visibility minimums permitting visual reference to the runway environment.

16.2 The outer portion uses groups of lights to mark segments of the approach path beginning at a point within easy visual range of a final approach fix. These groups are spaced close enough together (approximately one mile) to give continuous lead–in guidance. A group consists of at least three flashing lights in a linear or cluster configuration and may be augmented by steady burning lights where required. When practicable, groups flash in sequence toward runways. Each system is designed to suit local conditions and to provide the visual guidance intended. The design of all RLLS is compatible with the requirements of U.S. Standards for Terminal Instrument Procedures (TERPS) where such procedures are applied for establishing instrument minimums.

17. Airport Marking Aids and Signs

17.1 General

17.1.1 Airport pavement markings and signs provide information that is useful to a pilot during takeoff, landing, and taxiing.

17.1.2 Uniformity in airport markings and signs from one airport to another enhances safety and improves efficiency. Pilots are encouraged to work with the operators of the airports they use to achieve the marking and sign standards described in this section.

17.1.3 Pilots who encounter ineffective, incorrect, or confusing markings or signs on an airport should make the operator of the airport aware of the problem. These situations may also be reported under the Aviation Safety Reporting Program as described in ENR 1.16. Pilots may also report these situations to the FAA regional airports division.

17.1.4 The markings and signs described in this section reflect the current FAA recommended standards.

REFERENCE–
AC 150/5340–1, Standards for Airport Markings.
AC 150/5340–18, Standards for Airport Sign Systems.

17.2 Airport Pavement Markings

17.2.1 General. For the purpose of this section, the airport pavement markings have been grouped into the four areas:

17.2.1.1 Runway Markings.

17.2.1.2 Taxiway Markings.

17.2.1.3 Holding Position Markings.

17.2.1.4 Other Markings.

17.2.2 Marking Colors. Markings for runways are white. Markings defining the landing area on a heliport are also white except for hospital heliports which use a red “H” on a white cross. Markings for taxiways, areas not intended for use by aircraft (closed and hazardous areas), and holding positions (even if they are on a runway) are yellow.

17.3 Runway Markings

17.3.1 General. There are three types of markings for runways: visual, nonprecision instrument, and precision instrument. TBL AD 1.1–5 identifies the marking elements for each type of runway, and TBL AD 1.1–6 identifies runway threshold markings.

17.3.2 Runway Designators. Runway numbers and letters are determined from the approach direction. The runway number is the whole number nearest one–tenth the magnetic azimuth of the centerline of the runway, measured clockwise from the magnetic north. The letters differentiate between left (L), right (R), or center (C) parallel runways, as applicable:

17.3.2.1 For two parallel runways "L" "R."

17.3.2.2 For three parallel runways "L" "C" "R."

17.3.3 Runway Centerline Marking. The runway centerline identifies the center of the runway and provides alignment guidance during takeoff and landing. The centerline consists of a line of uniformly spaced stripes and gaps.

17.3.4 Runway Aiming Point Marking. The aiming point marking serves as a visual aiming point for a landing aircraft. These two rectangular markings consist of a broad white stripe located on each side of the runway centerline and approximately 1,000 feet from the landing threshold, as shown in FIG AD 1.1–15, Precision Instrument Runway Markings.

17.3.5 Runway Touchdown Zone Markers. The touchdown zone markings identify the touchdown zone for landing operations and are coded to provide distance information in 500 feet (150 m) increments. These markings consist of groups of one, two, and three rectangular bars symmetrically arranged in pairs about the runway centerline as shown in FIG AD 1.1–15. For runways having touchdown zone markings on both ends, those pairs of markings which extend to within 900 feet (270 m) of the midpoint between the thresholds are eliminated.

TBL AD 1.1–5
Runway Marking Elements

Marking Element	Visual Runway	Nonprecision Instrument Runway	Precision Instrument Runway
Designation	X	X	X
Centerline	X	X	X
Threshold	X[1]	X	X
Aiming Point	X[2]	X	X
Touchdown Zone			X
Side Stripes			X

[1]On runways used, or intended to be used, by international commercial transports.

[2]On runways 4,000 feet (1200 m) or longer used by jet aircraft.

TBL AD 1.1–6
Number of Runway Threshold Stripes

Runway Width	Number of Stripes
60 feet (18 m)	4
75 feet (23 m)	6
100 feet (30 m)	8
150 feet (45 m)	12
200 feet (60 m)	16

17.3.6 Runway Side Stripe Marking. Runway side stripes delineate the edges of the runway. They provide a visual contrast between the runway and the abutting terrain or shoulders. Side stripes consist of continuous white stripes located on each side of the runway. (See FIG AD 1.1–19.)

17.3.7 Runway Shoulder Markings. Runway shoulder stripes may be used to supplement runway side stripes to identify pavement areas contiguous to the runway sides that are not intended for use by aircraft. Runway shoulder stripes are yellow. (See FIG AD 1.1–17.)

17.3.8 Runway Threshold Markings. Runway threshold markings come in two configurations. They consist of either eight longitudinal stripes of uniform dimensions disposed symmetrically about the runway centerline (as shown in FIG AD 1.1–15) or the number of stripes is related to the runway width as indicated in TBL AD 1.1–6. A threshold marking helps identify the beginning of the runway that is available for landing. In some instances, the landing threshold may be relocated or displaced.

17.3.8.1 Relocation of a Threshold. Sometimes construction, maintenance, or other activities require the threshold to be relocated towards the rollout end of the runway. (See FIG AD 1.1–18.) When a threshold is relocated, it closes not only a set portion of the approach end of a runway, but also shortens the length of the opposite direction runway. In these cases, a NOTAM should be issued by the airport operator identifying the portion of the runway that is closed (for example, 10/28 W 900 CLSD). Because the duration of the relocation can vary from a few hours to several months, methods identifying the new threshold may vary. One common practice is to use a ten–foot wide white threshold bar across the width of the runway. Although the runway lights in the area between the old threshold and new threshold will not be illuminated, the runway markings in this area may or may not be obliterated, removed, or covered.

17.3.8.2 Displaced Threshold. A displaced threshold is a threshold located at a point on the runway other than the designated beginning of the runway. Displacement of a threshold reduces the length of runway available for landings. The portion of runway behind a displaced threshold is available for takeoffs in either direction and landings from the opposite direction. A ten–foot wide white threshold bar is located across the width of the runway at the displaced threshold. White arrows are located along the centerline in the area between the beginning of the runway and displaced threshold. White arrowheads are located across the width of the runway just prior to the threshold bar, as shown in FIG AD 1.1–19.

NOTE–
Airport operator. When reporting the relocation or displacement of a threshold, the airport operator should avoid language which confuses the two.

17.3.9 Demarcation Bar. A demarcation bar delineates a runway with a displaced threshold from a blast pad, stopway, or taxiway that precedes the runway. A demarcation bar is 3 feet (1 m) wide and yellow, since it is not located on the runway. (See FIG AD 1.1–20.)

17.3.10 Chevrons. These markings are used to show pavement areas aligned with the runway that are unusable for landing, takeoff, and taxiing. Chevrons are yellow. (See FIG AD 1.1–21).

17.3.11 Runway Threshold Bar. A threshold bar delineates the beginning of the runway that is available for landing when the threshold has been relocated or displaced. A threshold bar is 10 feet (3 m) in width and extends across the width of the runway, as shown in FIG AD 1.1–19.

18. Taxiway Markings

18.1 General. All taxiways should have centerline markings and runway holding position markings whenever they intersect a runway. Taxiway edge markings are present whenever there is a need to separate the taxiway from a pavement that is not intended for aircraft use or to delineate the edge of the taxiway. Taxiways may also have shoulder markings and holding position markings for Instrument Landing System (ILS) critical areas and taxiway/taxiway intersection markings.

REFERENCE–
AD 1.1, Paragraph 19. Holding Position Markings

18.2 Taxiway Centerline.

18.2.1 Normal Centerline. The taxiway centerline is a single continuous yellow line, 6 inches (15 cm) to 12 inches (30 cm) in width. This provides a visual cue to permit taxiing along a designated path. Ideally, the aircraft should be kept centered over this line during taxi. However, being centered on the taxiway centerline does not guarantee wingtip clearance with other aircraft or other objects.

18.2.2 Enhanced Centerline. At some airports, mostly the larger commercial service airports, an

enhanced taxiway centerline will be used. The enhanced taxiway centerline marking consists of a parallel line of yellow dashes on either side of the normal taxiway centerline. The taxiway centerlines are enhanced for a maximum of 150 feet prior to a runway holding position marking. The purpose of this enhancement is to warn the pilot that he/she is approaching a runway holding position marking and should prepare to stop unless he/she has been cleared onto or across the runway by ATC.
(See FIG AD 1.1–22.)

18.3 Taxiway Edge Markings. Taxiway edge markings are used to define the edge of the taxiway. They are primarily used when the taxiway edge does not correspond with the edge of the pavement. There are two types of markings depending upon whether the aircraft is supposed to cross the taxiway edge:

18.3.1 Continuous Markings. These consist of a continuous double yellow line, with each line being at least 6 inches (15 cm) in width spaced 6 inches (15 cm) apart. They are used to define the taxiway edge from the shoulder or some other abutting paved surface not intended for use by aircraft.

18.3.2 Dashed Markings. These markings are used when there is an operational need to define the edge of a taxiway or taxilane on a paved surface where the adjoining pavement to the taxiway edge is intended for use by aircraft (for example, an apron). Dashed taxiway edge markings consist of a broken double yellow line, with each line being at least 6 inches (15 cm) in width, spaced 6 inches (15 cm) apart (edge to edge). These lines are 15 feet (4.5 m) in length with 25–foot (7.5 m) gaps. (See FIG AD 1.1–23.)

18.4 Taxi Shoulder Markings. Taxiways, holding bays, and aprons are sometimes provided with paved shoulders to prevent blast and water erosion. Although shoulders may have the appearance of full strength pavement, they are not intended for use by aircraft and may be unable to support an aircraft. Usually the taxiway edge marking will define this area. Where conditions exist such as islands or taxiway curves that may cause confusion as to which side of the edge stripe is for use by aircraft, taxiway shoulder markings may be used to indicate the pavement is unusable. Taxiway shoulder markings are yellow. (See FIG AD 1.1–24.)

18.5 Surface Painted Taxiway Direction Signs. Surface painted taxiway direction signs have a yellow background with a black inscription. These signs are provided when it is not possible to provide taxiway direction signs at intersections or when it is necessary to supplement such signs. These markings are located adjacent to the centerline with signs indicating turns to the left being on the left side of the taxiway centerline, and signs indicating turns to the right being on the right side of the centerline.
(See FIG AD 1.1–25.)

18.6 Surface Painted Location Signs. Surface painted location signs have a black background with a yellow inscription. When necessary, these markings are used to supplement location signs located along side the taxiway and assist the pilot in confirming the designation of the taxiway on which the aircraft is located. These markings are located on the right side of the centerline. (See FIG AD 1.1–25.)

18.7 Geographic Position Markings. These markings are located at points along low visibility taxi routes designated in the airport's Surface Movement Guidance Control System (SMGCS) plan. They are used to identify the location of taxiing aircraft during low visibility operations. Low visibility operations are those that occur when the runway visible range (RVR) is below 1,200 feet (360 m). They are positioned to the left of the taxiway centerline in the direction of taxiing. (See FIG AD 1.1–26.) The geographic position marking is a circle comprised of an outer black ring contiguous to a white ring with a pink circle in the middle. When installed on asphalt or other dark–colored pavements, the white ring and the black ring are reversed (i.e., the white ring becomes the outer ring and the black ring becomes the inner ring). It is designated with either a number or a number and letter. The number corresponds to the consecutive position of the marking on the route.

19. Holding Position Markings

19.1 Runway Holding Position Markings. For runways, these markings indicate where aircraft MUST STOP when approaching a runway. They consist of four yellow lines, two solid and two dashed, spaced six or twelve inches apart, and extending across the width of the taxiway or runway. The solid lines are always on the side where the aircraft must hold. There are three locations where runway holding position markings are encountered.

19.1.1 Runway Holding Position Markings on Taxiways. These markings identify the locations on a taxiway where aircraft MUST STOP when a clearance has not been issued to proceed onto the runway. Generally, runway holding position markings also identify the boundary of the runway safety area (RSA) for aircraft exiting the runway. Runway holding position markings are shown in FIG AD 1.1–27 and FIG AD 1.1–30. When instructed by ATC, "*Hold short of Runway XX*," the pilot MUST STOP so that no part of the aircraft extends beyond the runway holding position marking. When approaching runways at airports with an operating control tower, pilots must not cross the runway holding position marking without ATC clearance. Pilots approaching runways at airports without an operating control tower must ensure adequate separation from other aircraft, vehicles, and pedestrians prior to crossing the holding position markings. An aircraft exiting a runway is not clear of the runway until all parts of the aircraft have crossed the applicable holding position marking.

NOTE–
Runway holding position markings identify the beginning of an RSA, and a pilot MUST STOP to get clearance before crossing (at airports with operating control towers).

REFERENCE–
ENR 1.1, Paragraph 23, Exiting the Runway After Landing.

19.1.2 Runway Holding Position Markings on Runways. These markings identify the locations on runways where aircraft MUST STOP. These markings are located on runways used by ATC for Land And Hold Short Operations (for example, see FIG ENR 1.1–8) and Taxiing operations. For taxiing operations, the pilot MUST STOP prior to the holding position markings unless explicitly authorized to cross by ATC. A sign with a white inscription on a red background is located adjacent to these holding position markings. (See FIG AD 1.1–28.) The holding position markings are placed on runways prior to the intersection with another runway, or some designated point. Pilots receiving and accepting instructions "*Cleared to land Runway XX, hold short of Runway YY*" from ATC must either exit Runway XX prior to the holding position markings, or stop at the holding position markings prior to Runway YY. Otherwise, pilots are authorized to use the entire landing length of the runway and disregard the holding position markings.

19.1.3 Holding Position Markings on Taxiways Located in Runway Approach Areas. These markings are used at some airports where it is necessary to hold an aircraft on a taxiway located in the approach or departure area of a runway so that the aircraft does not interfere with the operations on that runway. This marking is collocated with the runway approach area holding position sign. When specifically instructed by ATC, "*Hold short of Runway XX approach area*," the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. (See Paragraph 21.2.2, Runway Approach Area Holding Position Sign, and FIG AD 1.1–29, Taxiways Located in Runway Approach Area.)

19.2 Holding Position Markings for Instrument Landing System (ILS). Holding position markings for ILS critical areas consist of two yellow solid lines spaced two feet apart connected by pairs of solid lines spaced ten feet apart extending across the width of the taxiway as shown in FIG AD 1.1–30. A sign with an inscription in white on a red background is located adjacent to these hold position markings. When instructed by ATC to hold short of the ILS critical area, pilots MUST STOP so that no part of the aircraft extends beyond the holding position marking. When approaching the holding position marking, pilots must not cross the marking without ATC clearance. The ILS critical area is not clear until all parts of the aircraft have crossed the applicable holding position marking.

REFERENCE–
ENR 4.1, Paragraph 6, Instrument Landing System (ILS).

19.3 Holding Position Markings for Intersecting Taxiways Holding position markings for intersecting taxiways consist of a single dashed line extending across the width of the taxiway as shown in FIG AD 1.1–31. They are located on taxiways where ATC holds aircraft short of a taxiway intersection. When instructed by ATC, "*Hold short of Taxiway XX*," the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. When the marking is not present, the pilot MUST STOP the aircraft at a point which provides adequate clearance from an aircraft on the intersecting taxiway.

19.4 Surface Painted Holding Position Signs. Surface painted holding position signs have a red background with a white inscription and supplement the signs located at the holding position. This type of marking is normally used where the width of the holding position on the taxiway is greater than

200 feet (60 m). It is located to the left side of the taxiway centerline on the holding side and prior to the holding position marking. (See FIG AD 1.1–25.)

20. Other Markings

20.1 Vehicle Roadway Markings. The vehicle roadway markings are used when necessary to define a pathway for vehicle operations on or crossing areas that are also intended for aircraft. These markings consist of a white solid line to delineate each edge of the roadway and a dashed line to separate lanes within the edges of the roadway. In lieu of the solid lines, zipper markings may be used to delineate the edges of the vehicle roadway. (See FIG AD 1.1–32.) Details of the zipper markings are shown in FIG AD 1.1–33.

20.2 VOR Receiver Checkpoint Markings. The VOR receiver checkpoint marking allows the pilot to check aircraft instruments with navigational aid signals. It consists of a painted circle with an arrow in the middle; the arrow is aligned in the direction of the checkpoint azimuth. This marking, and an associated sign, is located on the airport apron or taxiway at a point selected for easy access by aircraft but where other airport traffic is not to be unduly obstructed. (See FIG AD 1.1–34.)

NOTE–
The associated sign contains the VOR station identification letter and course selected (published) for the check, the words "VOR check course," and DME data (when applicable). The color of the letters and numerals are black on a yellow background.

EXAMPLE–
VOR SIGN
DCA 176–356
VOR check course
DME XXX

20.3 Nonmovement Area Boundary Markings.

These markings delineate the movement area; i.e., area under ATC. These markings are yellow and located on the boundary between the movement and nonmovement area. The nonmovement area boundary markings consist of two yellow lines (one solid and one dashed) 6 inches (15 cm) in width. The solid line is located on the nonmovement area side, while the dashed yellow line is located on the movement area side. The nonmovement boundary marking area is shown in FIG AD 1.1–35.

20.4 Marking and Lighting of Permanently Closed Runways and Taxiways. For runways and taxiways which are permanently closed, the lighting circuits will be disconnected. The runway threshold, runway designation, and touchdown markings are obliterated and yellow crosses are placed at each end of the runway and at 1,000 foot intervals. (See FIG AD 1.1–36.)

20.5 Temporarily Closed Runways and Taxiways. To provide a visual indication to pilots that a runway is temporarily closed, crosses are placed on the runway only at each end of the runway. The crosses are yellow in color. (See FIG AD 1.1–36.)

20.5.1 A raised lighted yellow cross may be placed on each runway end in lieu of the markings described in paragraph 20.5 to indicate the runway is closed.

20.5.2 A visual indication may not be present depending on the reason for the closure, duration of the closure, airfield configuration, and the existence and the hours of operation of an airport traffic control tower. Pilots should check NOTAMs and the Automated Terminal Information System (ATIS) for local runway and taxiway closure information.

20.5.3 Temporarily closed taxiways are usually treated as hazardous areas, in which no part of an aircraft may enter, and are blocked with barricades. However, as an alternative, a yellow cross may be installed at each entrance to the taxiway.

20.6 Helicopter Landing Areas. The markings illustrated in FIG AD 1.1–37 are used to identify the landing and takeoff area at a public use heliport and hospital heliport. The letter "H" in the markings is oriented to align with the intended direction of approach. FIG AD 1.1–37 also depicts the markings for a closed airport.

20.7 Airport Signs. There are six types of signs installed on airfields: mandatory instruction signs, location signs, direction signs, destination signs, information signs, and runway distance remaining signs. The characteristics and use of these signs are discussed below.

REFERENCE–
Advisory Circular–150/5340–18, Standards for Airport Sign Systems.

21. Mandatory Instruction Signs

21.1 These signs have a red background with a white inscription and are used to denote:

21.1.1 An entrance to a runway or critical area.

21.1.2 Areas where an aircraft is prohibited from entering.

21.2 Typical mandatory signs and applications are:

21.2.1 Runway Holding Position Sign. This sign is located at the holding position on taxiways that intersect a runway or on runways that intersect other runways. The inscription on the sign contains the designation of the intersecting runway, as shown in FIG AD 1.1–38. The runway numbers on the sign are arranged to correspond to the respective runway threshold. For example, "15–33" indicates that the threshold for Runway 15 is to the left and the threshold for Runway 33 is to the right.

21.2.1.1 On taxiways that intersect the beginning of the takeoff runway, only the designation of the takeoff runway may appear on the sign (as shown in FIG AD 1.1–39) while all other signs will have the designation of both runway directions.

21.2.1.2 If the sign is located on a taxiway that intersects the intersection of two runways, the designations for both runways will be shown on the sign along with arrows showing the approximate alignment of each runway, as shown in FIG AD 1.1–40. In addition to showing the approximate runway alignment, the arrow indicates the direction to the threshold of the runway whose designation is immediately next to the arrow.

21.2.2 Runway Approach Area Holding Position Sign. At some airports, it is necessary to hold an aircraft on a taxiway located in the approach or departure area for a runway so that the aircraft does not interfere with operations on that runway. In these situations, a sign with the designation of the approach end of the runway followed by a "dash" (–) and letters "APCH" will be located at the holding position on the taxiway. Holding position markings in accordance with Paragraph 19. Holding Position Markings, will be located on the taxiway pavement. An example of this sign is shown in FIG AD 1.1–41. In this example, the sign may protect the approach to Runway 15 and/or the departure for Runway 33.

21.2.3 ILS Critical Area Holding Position Sign. At some airports, when the instrument landing system is being used, it is necessary to hold an aircraft on a taxiway at a location other than the holding position described in Paragraph 19. Holding Position Markings. In these situations, the holding position sign for these operations will have the inscription "ILS" and be located adjacent to the holding position marking on the taxiway described in paragraph 19. An example of this sign is shown in FIG AD 1.1–42.

21.2.4 No Entry Sign. This sign, shown in FIG AD 1.1–43, prohibits an aircraft from entering an area. Typically, this sign would be located on a taxiway intended to be used in only one direction or at the intersection of vehicle roadways with runways, taxiways or aprons where the roadway may be mistaken as a taxiway or other aircraft movement surface.

NOTE–
Holding position signs provide the pilot with a visual cue as to the location of the holding position marking.

REFERENCE–
AD 1.1, Paragraph 19. Holding Position Markings

22. Location Signs

Location signs are used to identify either a taxiway or runway on which the aircraft is located. Other location signs provide a visual cue to pilots to assist them in determining when they have exited an area. The various location signs are described below.

22.1 Taxiway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1–44. The inscription is the designation of the taxiway on which the aircraft is located. These signs are installed along taxiways either by themselves or in conjunction with direction signs or runway holding position signs.
(See FIG AD 1.1–45 and FIG AD 1.1–49.)

22.2 Runway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1–46. The inscription is the designation of the runway on which the aircraft is located. These signs are intended to complement the information available to pilots through their magnetic compass and typically are installed where the proximity of two or more runways to one another could cause pilots to be confused as to which runway they are on.

22.3 Runway Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the pavement holding position marking, as shown in FIG AD 1.1–47. This sign, which faces the runway and is visible to the pilot exiting the runway, is located adjacent to the holding position marking on the pavement. The sign is

intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the runway."

22.4 ILS Critical Area Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the ILS pavement holding position marking, as shown in FIG AD 1.1–48. This sign is located adjacent to the ILS holding position marking on the pavement and can be seen by pilots leaving the critical area. The sign is intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the ILS critical area."

23. Direction Signs

23.1 Direction signs have a yellow background with a black inscription. The inscription identifies the designation(s) of the intersecting taxiway(s) leading out of intersection that a pilot would normally be expected to turn onto or hold short of. Each designation is accompanied by an arrow indicating the direction of the turn.

23.2 Except as noted in subparagraph 23.5, each taxiway designation shown on the sign is accompanied by only one arrow. When more than one taxiway designation is shown on the sign, each designation and its associated arrow is separated from the other taxiway designations by either a vertical message divider or a taxiway location sign as shown in FIG AD 1.1–49.

23.3 Direction signs are normally located on the left prior to the intersection. When used on a runway to indicate an exit, the sign is located on the same side of the runway as the exit. FIG AD 1.1–50 shows a direction sign used to indicate a runway exit.

23.4 The taxiway designations and their associated arrows on the sign are arranged clockwise starting from the first taxiway on the pilot's left.
(See FIG AD 1.1–49.)

23.5 If a location sign is located with the direction signs, it is placed so that the designations for all turns to the left will be to the left of the location sign; the designations for continuing straight ahead or for all turns to the right would be located to the right of the location sign. (See FIG AD 1.1–49.)

23.6 When the intersection is comprised of only one crossing taxiway, it is permissible to have two arrows associated with the crossing taxiway, as shown in FIG AD 1.1–51. In this case, the location sign is located to the left of the direction sign.

24. Destination Signs

24.1 Destination signs also have a yellow background with a black inscription indicating a destination on the airport. These signs always have an arrow showing the direction of the taxiing route to that destination. FIG AD 1.1–52 is an example of a typical destination sign. When the arrow on the destination sign indicates a turn, the sign is located prior to the intersection.

24.2 Destinations commonly shown on these types of signs include runways, aprons, terminals, military areas, civil aviation areas, cargo areas, international areas, and fixed base operators. An abbreviation may be used as the inscription on the sign for some of these destinations.

24.3 When the inscription for two or more destinations having a common taxiing route are placed on a sign, the destinations are separated by a "dot" (●) and one arrow would be used, as shown in FIG AD 1.1–53. When the inscription on a sign contains two or more destinations having different taxiing routes, each destination will be accompanied by an arrow and will be separated from the other destinations on the sign with a vertical black message divider as shown in FIG AD 1.1–54.

25. Information Signs

25.1 Information signs have a yellow background with a black inscription. They are used to provide the pilot with information on such things as areas that cannot be seen from the control tower, applicable radio frequencies, and noise abatement procedures. The airport operator determines the need, size, and location for these signs.

26. Runway Distance Remaining Signs

26.1 Runway distance remaining signs have a black background with a white numeral inscription and may be installed along one or both side(s) of the runway. The number on the signs indicates the distance (in thousands of feet) of landing runway remaining. The last sign (i.e., the sign with the numeral "1") will be located at least 950 feet from the runway end. FIG AD 1.1–55 shows an example of a runway distance remaining sign.

27. Aircraft Arresting Systems

27.1 Certain airports are equipped with a means of rapidly stopping military aircraft on a runway. This equipment, normally referred to as EMERGENCY ARRESTING GEAR, generally consists of pendant cables supported over the runway surface by rubber "donuts." Although most devices are located in the overrun areas, a few of these arresting systems have cables stretched over the operational areas near the ends of a runway.

27.2 Arresting cables which cross over a runway require special markings on the runway to identify the cable location. These markings consist of 10 feet diameter solid circles painted "identification yellow," 30 feet on center, perpendicular to the runway centerline across the entire runway width. Additional details are contained in AC 150/5220–9, Aircraft Arresting Systems for Joint Civil/Military Airports.

NOTE–
Aircraft operations on the runway are not restricted by the installation of aircraft arresting devices.

27.3 Engineered Materials Arresting Systems (EMAS). EMAS, which is constructed of high energy–absorbing materials of selected strength, is located in the safety area beyond the end of the runway. EMAS will be marked with yellow chevrons. EMAS is designed to crush under the weight of commercial aircraft and will exert deceleration forces on the landing gear. These systems do not affect the normal landing and takeoff of airplanes. More information concerning EMAS is in FAA Advisory Circular AC 150/5220–22, Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns. (See FIG AD 1.1–56.)

NOTE–
EMAS may be located as close as 35 feet beyond the end of the runway. Aircraft and ground vehicles should never taxi or drive across the EMAS or beyond the end of the runway if EMAS is present.

28. Security Identifications Display Area (Aerodrome Ramp Area)

28.1 Security Identification Display Areas (SIDA) are limited access areas that require a badge issued in accordance with procedures in CFR 49 Part 1542. Movement through or into these areas is prohibited without proper identification being displayed. If you are unsure of the location of a SIDA, contact the airport authority for additional information. Airports that have a SIDA must have the following information available:

28.1.1 A description and map detailing boundaries and pertinent features;

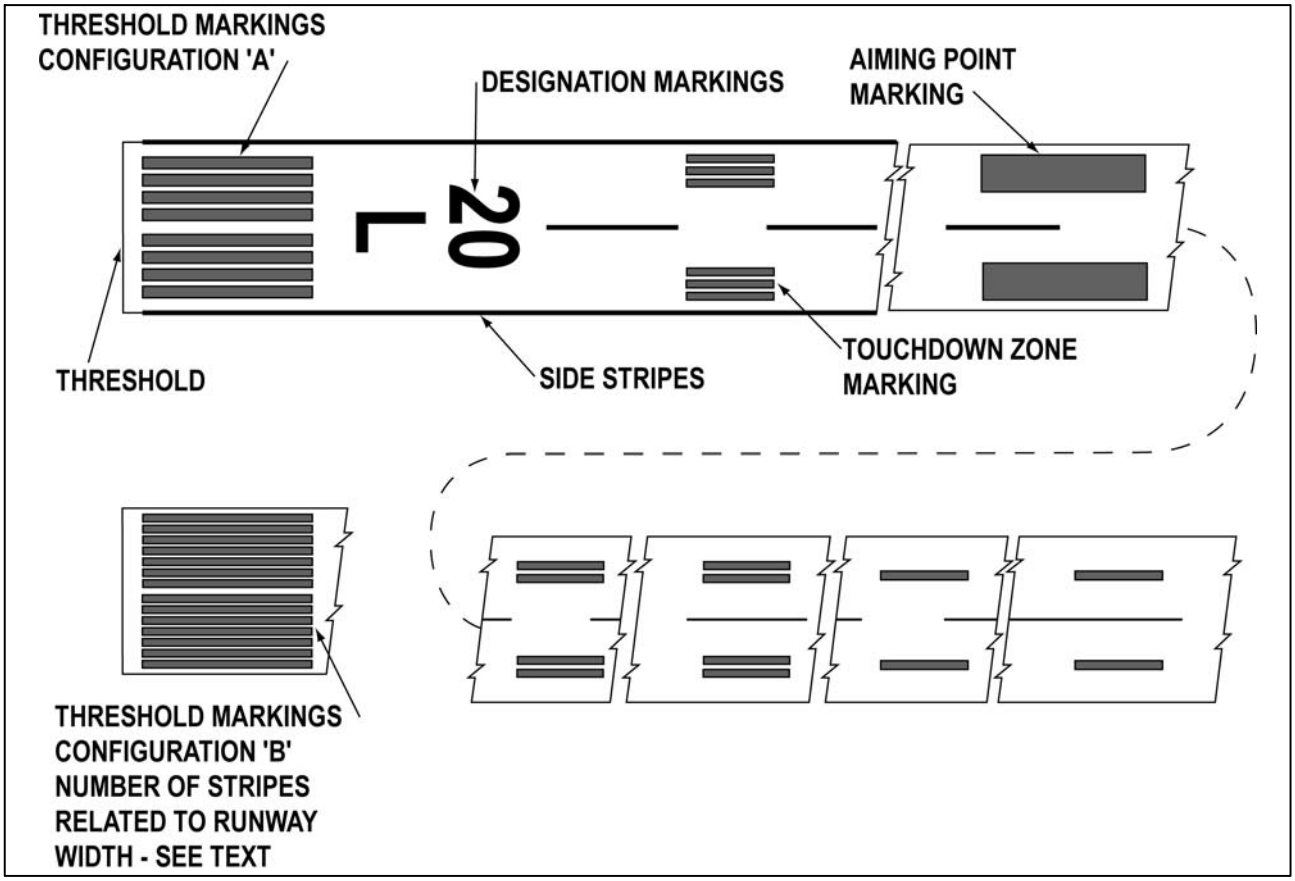
28.1.2 Measures used to perform the access control functions required under CFR 49 Part 1542.201(b)(1);

28.1.3 Procedures to control movement within the secured area, including identification media required under CFR 49 Part 1542.201(b)(3); and

28.1.4 A description of the notification signs required under CFR 49 Part 1542.201(b)(6).

28.2 Pilots or passengers without proper identification that are observed entering a SIDA (ramp area) may be reported to TSA or airport security. Pilots are advised to brief passengers accordingly.

FIG AD 1.1–15
Precision Instrument Runway Markings



AD 2. AERODROMES

1. The following is a partial list of U.S. airports designated to serve international operations. This list contains U.S. airports with scheduled passenger service in large aircraft and certain airports designated as alternate service airports. Omitted from this list are designated general aviation airports, airports with scheduled cargo but no scheduled passenger service, and certain airports having international service in commuter–type aircraft.

ICAO ID	Location	Airport Name	Designation
Alaska			
PANC	Anchorage	Ted Stevens Anchorage International	Regular
PAED	Anchorage	Elmendorf AFB	Alternate
PACD	Cold Bay	Cold Bay	Alternate
PAEI	Fairbanks	Eielson AFB	Alternate
PAFA	Fairbanks	Fairbanks International	Regular
PAJN	Juneau	Juneau International	Regular
PAKN	King Salmon	King Salmon	Alternate
American Samoa			
NSTU	Pago Pago	Pago Pago International	Regular
Arizona			
KPHX	Phoenix	Phoenix Sky Harbor International	Regular
KTUS	Tucson	Tucson International	Regular
California			
KFAT	Fresno	Fresno Yosemite International	Alternate
KLAX	Los Angeles	Los Angeles International	Regular
KOAK	Oakland	Metropolitan Oakland International	Regular
KONT	Ontario	Ontario International	Alternate
KPMD	Palmdale	Palmdale Regional/ USAF Plant 42	Alternate
KSMF	Sacramento	Sacramento International	Alternate
KSAN	San Diego	San Diego International	Regular
KSFO	San Francisco	San Francisco International	Regular
KSJC	San Jose	San Jose Norman Y. Mineta International	Regular
KSCK	Stockton	Stockton Metropolitan	Alternate
Colorado			
KDEN	Denver	Denver International	Regular
KPUB	Pueblo	Pueblo Memorial	Alternate
Connecticut			
KBDL	Windsor Locks	Bradley International	Regular
District of Columbia			
KIAD	Washington	Washington Dulles International	Regular
Florida			
KFLL	Fort Lauderdale	Fort Lauderdale–Hollywood International	Regular
KRSW	Fort Myers	Southwest Florida International	Regular
KMIA	Miami	Miami International	Regular
KMCO	Orlando	Orlando International	Regular
KTPA	Tampa	Tampa International	Regular
KPBI	West Palm Beach	Palm Beach International	Regular
Georgia			
KATL	Atlanta	Hartsfield – Jackson Atlanta International	Regular
Guam			
PGUM	Agana	Guam International	Regular
PGUA	Guam Island	Andersen AFB	Alternate
Hawaii			
PHTO	Hilo	Hilo International	Alternate
PHNL	Honolulu	Honolulu International	Regular
PHOG	Kahului	Kahului	Regular

ICAO ID	Location	Airport Name	Designation
Illinois			
KORD	Chicago	Chicago–O'Hare International	Regular
Indiana			
KIND	Indianapolis	Indianapolis International	Regular
Kansas			
KICT	Wichita	Wichita Mid–Continent	Alternate
Kentucky			
KCVG	Covington	Cincinnati/ Northern Kentucky International	Regular
Louisiana			
KMSY	New Orleans	Louis Armstrong New Orleans International	Regular
Maine			
KBGR	Bangor	Bangor International	Alternate
Maryland			
KBWI	Baltimore	Baltimore–Washington International Thurgood Marshall	Regular
Massachusetts			
KBOS	Boston	General Edward Lawrence Logan International	Regular
Michigan			
KDTW	Detroit	Detroit Metropolitan Wayne County	Regular
Minnesota			
KMSP	Minneapolis	Minneapolis–St. Paul International (Wold–Chamberlain)	Regular
Missouri			
KMCI	Kansas City	Kansas City International	Regular
KSTL	St. Louis	Lambert–St. Louis International	Regular
Nevada			
KLAS	Las Vegas	McCarran International	Regular
KRNO	Reno	Reno/Tahoe International	Regular

ICAO ID	Location	Airport Name	Designation
New Jersey			
KEWR	Newark	Newark Liberty International	Regular
New York			
KJFK	New York	John F. Kennedy International	Regular
KIAG	Niagara Falls	Niagara Falls International	Alternate
KSYR	Syracuse	Syracuse Hancock International	Regular
North Carolina			
KCLT	Charlotte	Charlotte/ Douglas International	Regular
KRDU	Raleigh–Durham	Raleigh–Durham International	Regular
Northern Mariana Islands			
PGSN	Saipan Island	Francisco C. Ada/Saipan International	Regular
Ohio			
KCLE	Cleveland	Cleveland–Hopkins International	Regular
KCMH	Columbus	Port Columbus International	Regular
Oregon			
KPDX	Portland	Portland International	Regular
Palau Island			
PTRO	Babelthuap Island	Babelthuap/ Koror	Regular
Pennsylvania			
KPHL	Philadelphia	Philadelphia International	Regular
KPIT	Pittsburgh	Pittsburgh International	Regular
Puerto Rico			
TJMZ	Mayaguez	Eugenio Maria De Hostos	Regular
TJSJ	San Juan	Luis Munoz Marin International	Regular
Tennessee			
KMEM	Memphis	Memphis International	Regular
KBNA	Nashville	Nashville International	Regular

ICAO ID	Location	Airport Name	Designation
Texas			
KDFW	Dallas	Dallas–Fort Worth International	Regular
KELP	El Paso	El Paso International	Regular
KIAH	Houston	George Bush Intercontinental/ Houston	Regular
KLRD	Laredo	Laredo International	Regular
KSAT	San Antonio	San Antonio International	Regular
Utah			
KSLC	Salt Lake City	Salt Lake City International	Regular
Virgin Islands			
TIST	Charlotte Amalie St. Thomas	Cyril E King	Regular
TISX	Christiansted St. Croix	Henry E Rohlsen	Regular
Washington			
KPAE	Everett	Snohomish County (Paine Field)	Alternate
KSEA	Seattle	Seattle–Tacoma International	Regular
KGEG	Spokane	Spokane International	Alternate
Wisconsin			
KMKE	Milwaukee	General Mitchell International	Regular

1.1 Diagrams of these airports, arranged alphabetically by state and in the order listed above, are on the pages following. The most up–to–date diagrams of these and other U.S. airports are in the Terminal Procedures Publication (TPP). For additional information on these airports, see the Chart Supplement U.S.

1.2 Public sales of the Chart Supplement U.S. and TPP are available through a network of FAA approved print providers. A listing of products, dates of latest editions, and print providers is available on the AIS website at:**http://www.faa.gov/air_traffic/flight_info/aeronav**.

Instrument Approach Procedures (Charts)
Airport Diagram/Airport Sketch

12096

LEGEND

INSTRUMENT APPROACH PROCEDURES (CHARTS)

AIRPORT DIAGRAM/AIRPORT SKETCH

Runways

Hard Surface | Other Than Hard Surface | Stopways, Taxiways, Parking Areas, Water Runways | Displaced Threshold

Closed Runway | Closed Taxiway | Under Construction | Metal Surface

ARRESTING GEAR: Specific arresting gear systems; e.g., BAK12, MA-1A etc., shown on airport diagrams, not applicable to Civil Pilots. Military Pilots refer to appropriate DOD publications.

uni-directional | bi-directional | Jet Barrier

ARRESTING SYSTEM

REFERENCE FEATURES

Buildings
Tanks
Obstructions
Airport Beacon #
Runway
Radar Reflectors
Hot Spot
Control Tower #.....TWR

When Control Tower and Rotating Beacon are co-located, Beacon symbol will be used and further identified as TWR.

Runway length depicted is the physical length of the runway (end-to-end, including displaced thresholds if any) but excluding areas designated as stopways.

A (D) symbol is shown to indicate runway declared distance information available, see appropriate A/FD, Alaska or Pacific Supplement for distance information.

Helicopter Alighting Areas

Negative Symbols used to identify Copter Procedures

landing point.....

Runway Threshold elevation.....THRE 123
Runway TDZ elevation.....TDZE 123
←0.3% DOWN
Runway Slope.....0.8% UP→
(shown when runway slope is greater than or equal to 0.3%)

NOTE:
Runway Slope measured to midpoint on runways 8000 feet or longer.

U.S. Navy Optical Landing System (OLS) "OLS" location is shown because of its height of approximately 7 feet and proximity to edge of runway may create an obstruction for some types of aircraft.

Approach light symbols are shown in the Flight Information Handbook.

Airport diagram scales are variable.

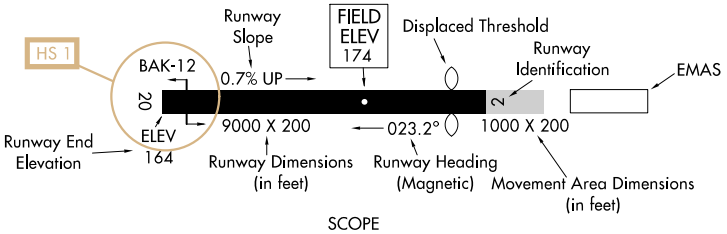
True/magnetic North orientation may vary from diagram to diagram

Coordinate values are shown in 1 or ½ minute increments. They are further broken down into 6 second ticks, within each 1 minute increments.

Positional accuracy within ±600 feet unless otherwise noted on the chart.

NOTE:
All new and revised airport diagrams are shown referenced to the World Geodetic System (WGS) (noted on appropriate diagram), and may not be compatible with local coordinates published in FLIP. (Foreign Only)

Runway Weight Bearing Capacity/or PCN Pavement Classification Number is shown as a codified expression.
Refer to the appropriate Supplement/Directory for applicable codes e.g.,
RWY 14-32 PCN 80 F/D/X/U S-75, D-185, 2S-175, 2D-325



SCOPE

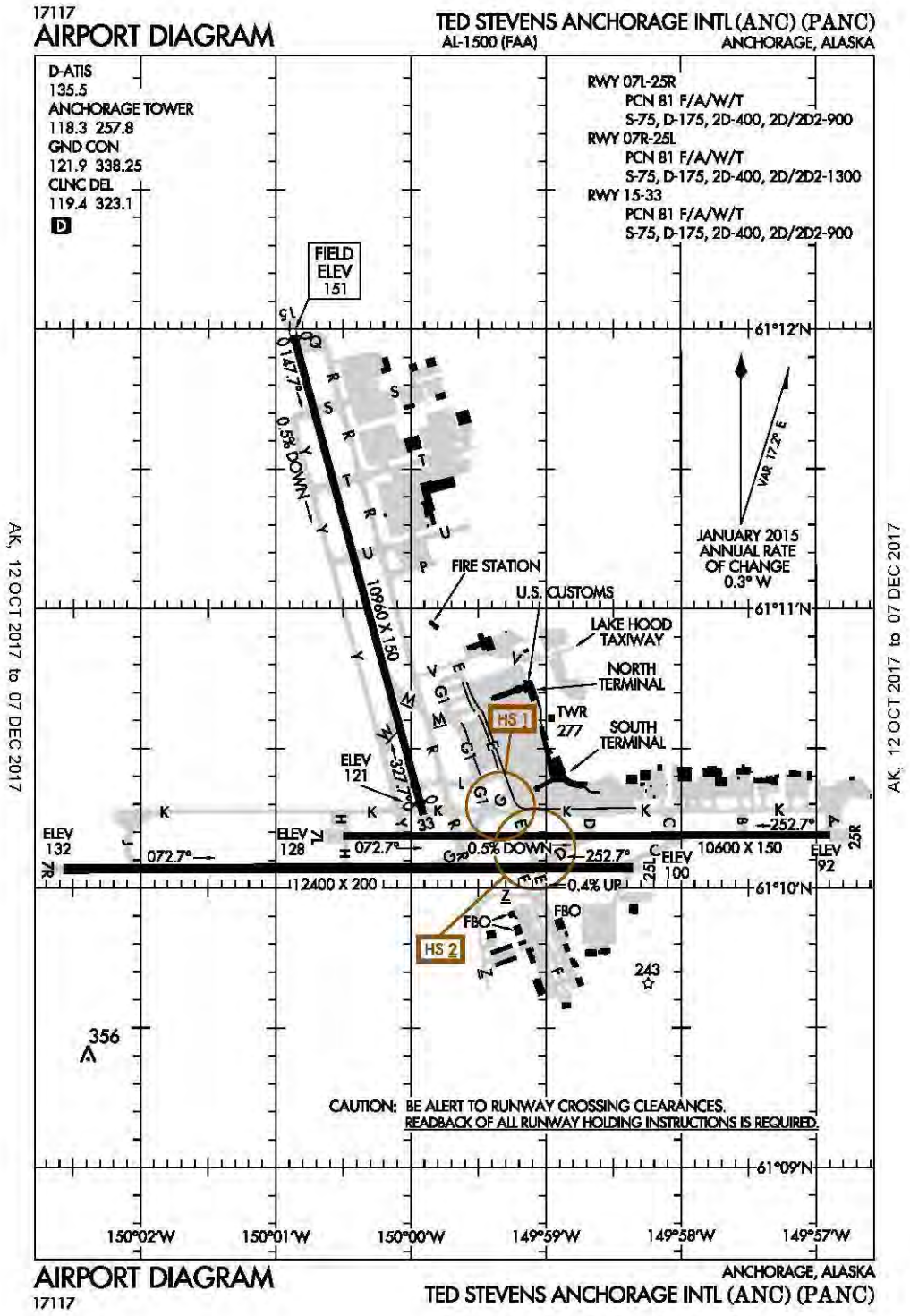
Airport diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations. Airport diagrams are not intended to be used for approach and landing or departure operations. For revisions to Airport Diagrams: Consult FAA Order 7910.4.

LEGEND

31 MAY 2012 to 28 JUN 2012

31 MAY 2012 to 28 JUN 2012

Anchorage, Alaska
Ted Stevens Anchorage International
ICAO Identifier PANC



Anchorage, AK
Ted Stevens Anchorage Intl
ICAO Identifier PANC

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 61−10−26.96N / 149−59−53.48W
2.2.2 From City: 4 Miles SW Of Anchorage, AK
2.2.3 Elevation: 151.4 ft
2.2.5 Magnetic variation: 18E (2020)
2.2.6 Airport Contact: John Parrott
BOX 196960
Anchorage, AK 99519
(907−266−2525)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,A1,100,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 4/1/2005

AD 2.12 Runway physical characteristics

2.12.1 Designation: 07R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−00.00N / 150−02−34.34W
2.12.6 Threshold elevation: 132 ft
2.12.6 Touchdown zone elevation: 132 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−00.00N / 149−58−21.54W
2.12.6 Threshold elevation: 100 ft
2.12.6 Touchdown zone elevation: 115 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 07L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10600 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−11.15N / 150−00−30.00W
2.12.6 Threshold elevation: 128 ft
2.12.6 Touchdown zone elevation: 128 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 25R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10600 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−11.32N / 149−56−53.88W
2.12.6 Threshold elevation: 92 ft
2.12.6 Touchdown zone elevation: 92 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 165
2.12.3 Dimensions: 10960 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−11−59.97N / 150−00−52.84W
2.12.6 Threshold elevation: 151 ft
2.12.6 Touchdown zone elevation: 151 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 33
2.12.2 True Bearing: 345
2.12.3 Dimensions: 10960 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−15.78N / 149−59−54.53W
2.12.6 Threshold elevation: 121 ft
2.12.6 Touchdown zone elevation: 121 ft

AD 2.13 Declared distances

2.13.1 Designation: 07R
2.13.2 Takeoff run available: 10900
2.13.3 Takeoff distance available: 10900
2.13.4 Accelerate−stop distance available: 10900
2.13.5 Landing distance available: 12400

2.13.1 Designation: 25L
2.13.2 Takeoff run available: 12400
2.13.3 Takeoff distance available: 12400
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 07L
2.13.2 Takeoff run available: 10600
2.13.3 Takeoff distance available: 10600
2.13.4 Accelerate–stop distance available: 10600
2.13.5 Landing distance available: 10600

2.13.1 Designation: 25R
2.13.2 Takeoff run available: 10600
2.13.3 Takeoff distance available: 10600
2.13.4 Accelerate–stop distance available: 10600
2.13.5 Landing distance available: 10600

2.13.1 Designation: 15
2.13.2 Takeoff run available: 10760
2.13.3 Takeoff distance available: 10760
2.13.4 Accelerate–stop distance available: 10094
2.13.5 Landing distance available: 10094

2.13.1 Designation: 33
2.13.2 Takeoff run available: 10960
2.13.3 Takeoff distance available: 11960
2.13.4 Accelerate–stop distance available: 10960
2.13.5 Landing distance available: 10694

AD 2.14 Approach and runway lighting

2.14.1 Designation: 07R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 25L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 07L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 25R
2.14.4 Visual approach slope indicator system: 4–box VASI on left

2.14.1 Designation: 15
2.14.2 Approach lighting system: Omnidirectional approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 33
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135.5 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 338.25 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 119.4 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: CD/S
2.18.3 Service designation: 128.65 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 323.1 MHz

2.18.1 Service designation: USB ANG OPS
2.18.3 Service designation: 4897.5 MHz

2.18.1 Service designation: ANG OPS
2.18.3 Service designation: 311 MHz

2.18.1 Service designation: ANG OPNS
2.18.3 Service designation: 140.15 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 07R. Magnetic variation: 18E
2.19.2 ILS identification: ANC
2.19.5 Coordinates: 61−10−00.00N / 149−57−55.50W
2.19.6 Site elevation: 97.7 ft

2.19.1 ILS type: Localizer for runway 07L. Magnetic variation: 18E
2.19.2 ILS identification: TGN
2.19.5 Coordinates: 61−10−11.33N / 149−56−32.65W
2.19.6 Site elevation: 84.7 ft

2.19.1 ILS type: Localizer for runway 15. Magnetic variation: 18E
2.19.2 ILS identification: BSC
2.19.5 Coordinates: 61−09−59.92N / 149−59−45.64W
2.19.6 Site elevation: 120.9 ft

2.19.1 ILS type: DME for runway 15. Magnetic variation: 18E
2.19.2 ILS identification: BSC
2.19.5 Coordinates: 61−10−00.00N / 149−59−40.34W
2.19.6 Site elevation: 134.7 ft

2.19.1 ILS type: Glide Slope for runway 07R. Magnetic variation: 18E
2.19.2 ILS identification: ANC
2.19.5 Coordinates: 61−10−00.00N / 150−02−12.46W
2.19.6 Site elevation: 124.9 ft

2.19.1 ILS type: Glide Slope for runway 15. Magnetic variation: 18E
2.19.2 ILS identification: BSC
2.19.5 Coordinates: 61−11−45.22N / 150−00−52.61W
2.19.6 Site elevation: 141.9 ft

2.19.1 ILS type: Outer Marker for runway 07L. Magnetic variation: 18E
2.19.2 ILS identification: TGN
2.19.5 Coordinates: 61−10−00.00N / 150−10−37.20W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 07R. Magnetic variation: 18E
2.19.2 ILS identification: ANC
2.19.5 Coordinates: 61−10−00.00N / 150−10−37.20W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 07R. Magnetic variation: 18E
2.19.2 ILS identification: ANC
2.19.5 Coordinates: 61−10−00.00N / 150−02−51.67W
2.19.6 Site elevation: 127 ft

2.19.1 ILS type: Glide Slope for runway 07L. Magnetic variation: 18E
2.19.2 ILS identification: TGN
2.19.5 Coordinates: 61−10−13.64N / 150−00−10.18W
2.19.6 Site elevation: 122.8 ft

2.19.1 ILS type: Middle Marker for runway 07R. Magnetic variation: 18E
2.19.2 ILS identification: ANC
2.19.5 Coordinates: 61−10−00.00N / 150−02−56.82W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 07L. Magnetic variation: 18E
2.19.2 ILS identification: TGN
2.19.5 Coordinates: 61−10−14.06N / 149−56−33.03W
2.19.6 Site elevation: 105.5 ft

2.19.1 ILS type: DME for runway 07R. Magnetic variation: 18E

2.19.2 ILS identification: ANC

2.19.5 Coordinates: 61–10–00.00N / 149–57–58.40W

2.19.6 Site elevation: 112 ft

General Remarks:

MIGRATORY BIRDS IN THE VICINITY OF AIRPORT SPRING THROUGH FALL.

ONE HR PRIOR PERMISSION REQUIRED FOR NON–TRANSPONDER AIRCRAFT OPERATIONS. PRIOR PERMISSION REQUIRED FOR NON–RADIO AIRCRAFT OPERATIONS. NO NIGHTTIME NON–RADIO AIRCRAFT OPERATIONS PERMITTED. PILOTS MUST PROVIDE AN ESTIMATED TIME OF ARRIVAL & REMAIN WITHIN PLUS OR MINUS 15 MINUTES OF ESTIMATED TIME OF ARRIVAL.

FOR WEATHER SERVICE OFFICE PHONE 907–266–5105.

NOISE SENSITIVE AREA IN EFFECT; CONTACT AIRPORT MANAGER AT 907–266–2525 OR AIRPORT OPERATIONS 907–266–2600 FOR FURTHER INFORMATION.

TO COORDINATE NON–TRANSPONDER OR NON–RADIO OPERATIONS CONTACT AERONAUTICAL CHART ATCT AT 907–271–2700 DURING ADMIN HRS (0730–1600 WKDAYS). DURING NON–ADMIN HRS & HOLIDAYS CONTACT FAA AT 907–271–5936.

UNLIGHTED 489 FT TOWER 2 1/2 MILES NORTHEAST.

PORTIONS OF TAXIWAY K BETWEEN TAXIWAY H & TAXIWAY J NOT VISIBILITY FROM ATCT.

NO COMPASS CALIBRATION PAD.

RIGHT TURN OUT OF RAMP PARKING AREA R–2 THROUGH R–4 PROHIBITED.

USE FREQ 122.55 (RCO) FOR FILING, ACTIVATING & CANCELING FLIGHT PLANS IN THE ANCHORAGE BOWL AREA.

FAA RAMP PRIOR PERMISSION REQUIRED – CONTACT AERONAUTICAL CHART FLIGHT INSPECTION FIELD OFFICE FREQ 135.85, 907–271–2414 OR AVIATION 405–954–9780 MON–FRI 0600–1430L.

ANCHORAGE WX CAMERA AVAILABLE ON INTERNET AT HTTP://AVCAMS.FAA.GOV

TAXIWAY V SECURITY GATE EAST OF TAXIWAY E; KEY 121.75 5 TIMES TO ACTIVATE.TWY V RESTRICTED TO AIRCRAFT WEIGHING 12500 LBS OR LESS. SUBJECT TO JET BLAST WEST OF TAXIWAY E.

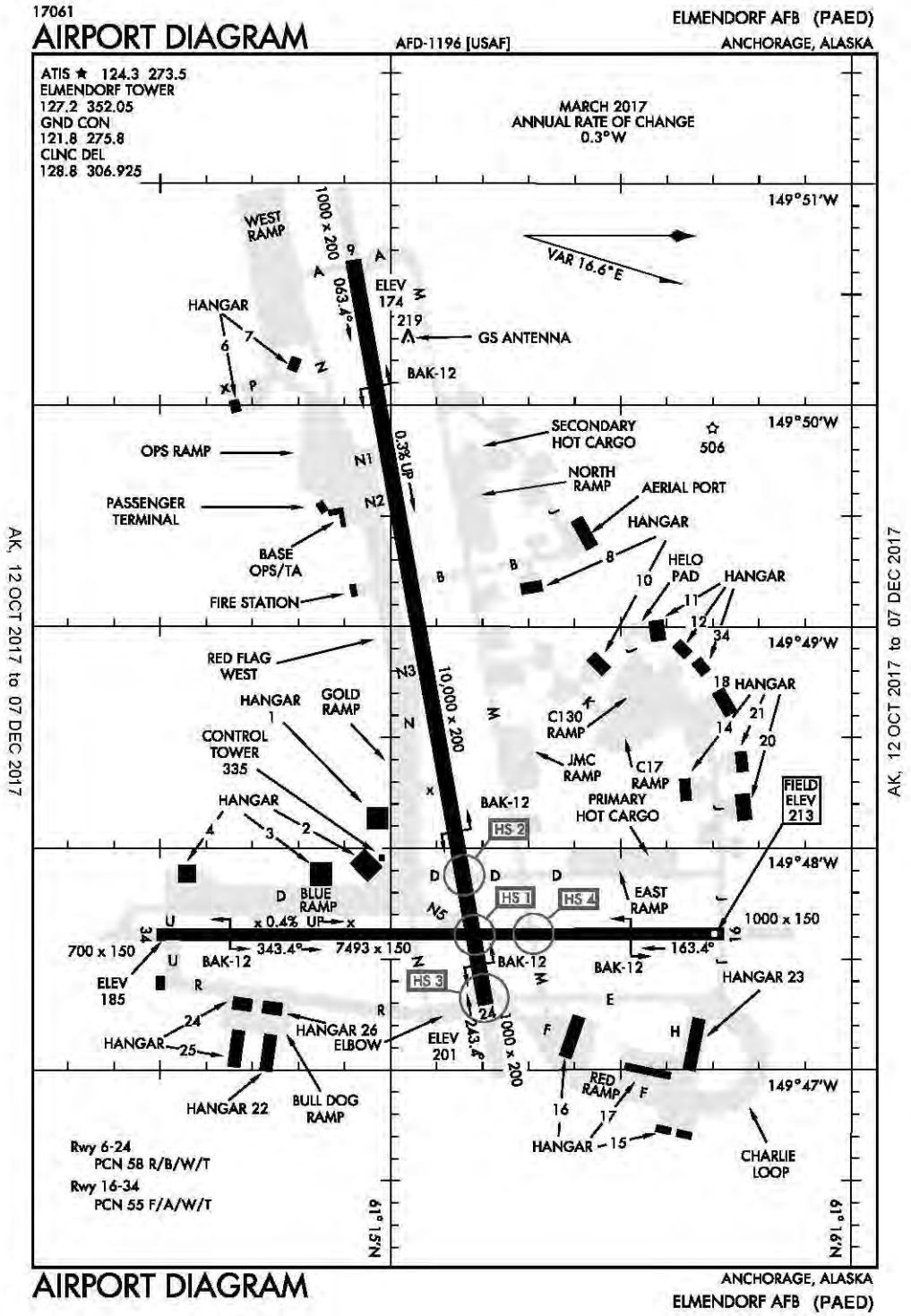
TRANSIENT MILITARY AIRCRAFT PRIOR PERMISSION REQUIRED.

RUNWAY 07R: BACK TAXIING FROM TAXIWAY J FOR DEP PROHIBITED.

REMOTE PARKING SPOTS R12–14 LEAD–IN LIGHTS OUT OF SERVICE INDEFINITELY.

RUNWAY END 25L HAS 200’ BLAST PAD.

Anchorage, Alaska
Elmendorf AFB
ICAO Identifier PAED



Anchorage, AK
Elmendorf AFB
ICAO Identifier PAED

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 61–15–00.00N / 149–48–23.49W
2.2.2 From City: 3 Miles NE Of Anchorage, AK
2.2.3 Elevation: 213 ft
2.2.5 Magnetic variation: 18E (2015)
2.2.6 Airport Contact: Airfield Mgr
300SS/DOFJ
Elmendorf AFB, AK 99506
(907–552–2444)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: None
2.4.4 De–icing facilities: Units Deploying To, Staging Out Of, Or Flying Lcl Sorties At Elmendorf AFB Must Deploy With Maint Pers Required To Complete Operations To Include De–Ice Qualified Crewmembers Dur Cold Wx Operations.
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: None
2.6.4 Remarks: ARFF FAA Index D/ Cat 8/10.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 24
2.10.1.b Type of obstacle: Pline Pole. Not Lighted or Marked

2.10.1.a. Runway designation: 16
2.10.1.b Type of obstacle: Trees Hill. Not Lighted or Marked

2.10.1.a. Runway designation: 34
2.10.1.b Type of obstacle: Pline Tree. Not Lighted or Marked

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 80
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61–14–55.08N / 149–50–39.33W
2.12.6 Threshold elevation: 174 ft
2.12.6 Touchdown zone elevation: 174 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 260
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61–15–12.17N / 149–47–18.01W
2.12.6 Threshold elevation: 201 ft
2.12.6 Touchdown zone elevation: 201 ft

2.12.1 Designation: 16
2.12.2 True Bearing: 180
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61–15–43.43N / 149–47–36.52W
2.12.6 Threshold elevation: 212 ft
2.12.6 Touchdown zone elevation: 212 ft

2.12.1 Designation: 34
2.12.2 True Bearing: 360
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61–14–29.64N / 149–47–36.57W
2.12.6 Threshold elevation: 185 ft
2.12.6 Touchdown zone elevation: 194 ft
2.12.7 Slope: 0.4UP

AD 2.14 Approach and runway lighting

2.14.1 Designation: 06
2.14.2 Approach lighting system: ALSAF: 3000 feet high intensity approach lighting system with centerline sequence flashers
2.14.4 Visual approach slope indicator system: 2–light PAPI on left
2.14.10 Remarks: Approach Lights Extended 15'' Above Surface Up To 100' Prior To Threshold Runway 06 PAPI Unusable Beyond 8 Degs Either Side Of Course Path.

2.14.1 Designation: 24
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: PAPI Runway 24 Unusable Beyond 7 Degrees Right Of Course.

2.14.1 Designation: 16
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 34
2.14.2 Approach lighting system: ALSAF: 3000 feet high intensity approach lighting system with centerline sequence flashers
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 352.05 MHz

2.18.1 Service designation: 11AF RESCUE COORD CNTR
2.18.3 Service designation: 123.1 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 124.3 MHz
2.18.4 Hours of operation: 0700–2300

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 127.2 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 134.8 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 273.5 MHz
2.18.4 Hours of operation: 0700–2300

2.18.1 Service designation: 11AF RESCUE COORD CNTR
2.18.3 Service designation: 282.8 MHz

2.18.1 Service designation: PMSV
2.18.3 Service designation: 346.6 MHz
2.18.1 Service designation: PTD
2.18.3 Service designation: 372.2 MHz

2.18.1 Service designation: 11AF COMD CEN
2.18.3 Service designation: 381 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 128.8 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 306.925 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 275.8 MHz

2.18.1 Service designation: ARTIC WARRIOR OPS
2.18.3 Service designation: 381 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 06. Magnetic variation: 18E
2.19.2 ILS identification: EDF
2.19.5 Coordinates: 61–15–14.34N / 149–46–52.33W
2.19.6 Site elevation: 212 ft

2.19.1 ILS type: Glide Slope for runway 06. Magnetic variation: 18E
2.19.2 ILS identification: EDF
2.19.5 Coordinates: 61–15–00.00N / 149–50–16.98W
2.19.6 Site elevation: 168 ft

2.19.1 ILS type: Inner Marker for runway 06. Magnetic variation: 18E
2.19.2 ILS identification: EDF
2.19.5 Coordinates: 61–14–52.87N / 149–51–00.00W
2.19.6 Site elevation: 192 ft

2.19.1 ILS type: Middle Marker for runway 06. Magnetic variation: 18E
2.19.2 ILS identification: EDF
2.19.5 Coordinates: 61–14–49.02N / 149–51–49.94W
2.19.6 Site elevation:

General Remarks:

LANDING RUNWAY 16 NOT RECOMMENDED FOR JET AIRCRAFT EXCEPT DURING DAY VFR DUE OBSTRUCTION 337’ MSL LOCATED 1950’ FROM THR & 574’ W OF CENTERLINE.

HANGAR SPACE & WARM STORAGE EXTREMELY LIMITED OCT–MAY.

PREVENTIVE MAINT: TACAN WED AND FRI 1600–1700Z; ILS TUE AND THR 1500–1700Z; PRECISION APPROACH RADAR SAT–SUN 1800–2000Z; AIRPORT SURVEILLANCE RADAR SAT–SUN 2000–2200.

QUIET HR 0630–1400Z WEEKDAYS; 0630–1600Z WEEKEND & HOLS, AIR MOBILITY COMMAND AIRCRAFT EXEMPT.

CAUTION: MOOSE ON & IN THE VICINITY OF RUNWAY.

DURING VISUAL METEOROLOGICAL CONDITIONS DEPS/MISSED APCHS/GO AROUNDS; AIRCRAFT SHALL MAINTAIN AT OR BELOW 1200' MLS UNTIL DEP END OF RUNWAY 06.

ALL FIGHTER AIRCRAFT ON ARR EXPECT REDUCED SEPARATION; SAME TYPE AIRCRAFT AND DAY 3000 FT; DISSIMILAR AIRCRAFT AND/OR NIGHT 6000 FT; AHEAD/BEHIND FORMATION LANDING–6000 FT.

NOTICE: A RIDGE EXTENDING FROM APPROXIMATELY 260 – 020 DEGREES ONE TO TWO MILES FROM THE TOWER PREVENTS OBSERVATION OF FOG OVER KNIK ARM. VISIBILITY MAY DROP RAPIDLY AS FOG POURS OVER RIDGE.

ALL AIRCRAFT MAINTAIN IDLE POWER ON OUTBOARD ENGINE WHILE TAXIING.

NO SIGNS OR PAINTED HOLD SHORT LINES ON INTERSECTING RUNWAYS.

EXTENSIVE SERVICE DELAY FOR FUEL.

FREQUENT ACTIVITY IN R2203. WHEN UNABLE TO AVOID CONTACT ATCT.

SPECIAL AIR TRAFFIC RULES FAR PART 93, SEE REGULATORY NOTICES IN THE SUPPLEMENT.

FIRST 1000 FT RUNWAY 06 IS CONCRETE, REMAINING 9000 FT IS ASPHALT.

LIMITED MAINTENANCE CAPABILITIES ON WEEKEND.

JOAP, JOINT OIL ANALYSIS PROGRAM AVAILABLE. L/H NIT, LOW & HIGH PRESSURE NITROGEN SERVICING AVAILABLE.

CHANGE JET AIRCRAFT STARTING UNITS (JASU) TO, (A/M32A–86), MC–1A), (MC–2A), (AM32A–60A). (AM32–95)150 +/–5 LBS/MIN (2055 +/–68CFM) AT 51 +/–02 PSIA. LASS 150 +/–5 LBS/MIN @ 49 +/–2 PSIA.

FUEL: J8

OIL: O–123, O–128, O–133, O–148, O–156, JOAP.

JOAP & LOW & HIGH PRESURE NITROGEN SERVICING FURNISHED DURING NORMAL DUTY HOURS, OTHER TIMES ON REQUEST.

FLUID: PRESAIR, DE–ICE, NITROGEN–L/H NIT.

RUNWAY 16/34 RUBBER ACCUMULATE NORTH & SOUTH 1000FT.

IFF SERVICE AVAILABLE. AIRFIELD WX IS AUTOMATICALLY MONITOR BY AN/FQ–19 AUTOMATED WX OBSERVING SYSTEM AND BACKED–UP/ AUGMENTED BY HUMAN OBSERVER WHEN NECESSARY 24/7. DSN 317–552–4903/4397OR C907–552–4903/4397. FULL SERVICE WX BRIEFING 24HRS 17 OPERATIONAL WEATHER SQUADRON DSN 315–449–8333 OR C808–449–8333.

C17/C130 OVERT LIGHTS AVAILABLE ON RY16/34. C17/C130 COVERT LIGHTS AVAILABLE ON RUNWAY 16.

NVD OPERATIONS ON RUNWAY 16/34 & RUNWAY 06/24 MON–FRI FROM 0400–1000Z++.

DURING EVACUATION OF WX STATION, CONTACT 17 OPERATIONAL WX SQUADRON AT DSN 315–449–8333.

ALTERNATE WX LOCATION VISIBILITY OBSTRUCTED FROM SE–W DUE TO HANGARS. USE PHONE PATCH

WHEN WX RELOCATES TO ALTERNATE LOCATION.PHONE PATCH CAPABILITY THROUGH 3 WG/CP AT 907−552−3000.

CAUTION: NUMEROUS AIRCRAFT WILL BE OPR IFR BETWEEN 1500−2000 MSL FROM BGQ 092/10 INTO R2203 TO EDF 320/07 IN THE VICINITY OF BIG LAKE, PALMER, BIRCHWOOD, GOOSEBAY AND WASILLA, AK., MON−SAT 0300−0800Z++, AND TUES AND THU 1800−2200Z++.

CAUTION: HEAVY RAINFALL MAY CAUSE HIGH POTENTIAL FOR HYDROPLANING FOR CONCRETE ENDS OF RUNWAY 06 AND RUNWAY 24.

RUNWAY 34 DEPARTURES FOR AIRCRAFT WITH WINGSPANS GREATER THAN 98 FT REQUIRE PRIOR COORD WITH AIR MOBILITY COMMAND, ATC TOWER, OR ALD MANAGEMENT.

DV SPOTS 1 AND 3 LIMITED TO AIRCRAFT WITH WINGSPANS OF 136 FT OR LESS.

CAUTION: UNLIT TERRAIN 0 FT AGL/341 FT MSL, 1909 FT PRIOR TO THRESHOLD, 1914 FT RIGHT OF COURSE.

CAUTION: WHEN RUNWAY 16 VGSI INOPERATIVE, STR−IN TO RUNWAY 16 ONLY AUTHORIZED AT NIGHT WITH MAJCOM A3 APPROVAL.

TAXIWAYS D1, D2, N4 & N5 PERMANENT CLOSED.

AIRFIELD MANAGEMENT DOES NOT HAVE COMSEC STORAGE AVAILABLE, FOR COMSEC STORAGE CONTACT COMMAND POST DSN 317−552−3000.

ALL TRANSIENT AIRCREWS OPERATING AT ELMENDORF AIRFIELD MUST DROP OFF A COPY OF THEIR CREW ORDERS TO AIRFIELD MANAGEMENT UPON ARR.

ALL VIP AIRCRAFT CONTACT BASE OPERATIONS 30 MIN PRIOR TO ARR ON PILOT TO DISPATCH 372.2 OR 134.1 OR C907−552−2107.

AIRCRAFT REQUIRING CUSTOMS AND AIR GROUND INSPECTIONS ARE REQUIRE TO CONTACT BASE OPERATIONS NO LATER THAN 90 MIN PRIOR TO ARR.

PRIOR PERMISSION REQUIRED REQUIRE FOR ALL NON−JBER ASSIGN AIRCRAFT.

SUBMIT ALL PRIOR PERMISSION REQUIREDUESTS UTILIZING THE PAED PRIOR PERMISSION REQUIREDUEST FORM LOCATED IN THE PAED GIANT REPORT STIF TO BASEOPS3@US.AF.MIL NO EARLIER THAN 30 DAYS PRIOR AND NO LATER THAN 48 HOURS PRIOR TO ARRIVAL TO BEGIN COORDINATION FOR PRIOR PERMISSION REQUIRED.

PPRS WILL BE ISSUED NO EARLIER THAN 7 DAYS PRIOR TO ARR.

NORMAL BARRIER CONFIGURATION DUR FIGHTER FLY WINDOW LEAVES 5675’ BETWEEN CABLES ON RUNWAY 06/24, OUTSIDE OF FIGHTER FLY WINDOWS THERE IS 7658’ BETWEEN CABLES.

AIRCRAFT REQUIRING CABLES DE−RIGGED MUST CONTACT BASE OPERATIONS 24HRS PRIOR TO ARR OR MAKE REQUEST PRIOR TO PRIOR PERMISSION REQUIRED BEING ISSUED.

AIR MOBILITY COMMAND AIRCRAFT ON AN AIR MOBILITY COMMAND ASSIGN MSN CAN EXPECT TO HAVE MAINT SERVICE ACCOMPLISHED BY 732 AMS.

UNITS DEPLOYING TO, STAGING OUT OF, OR FLYING LOCAL SORTIES AT ELMENDORF AFB MUST DEPLOY WITH MAINT PERS REQUIRED TO COMPLETE OPERATIONS TO INCLUDE DE−ICE QUALIFIED CREWMEMBERS DUR COLD WX OPERATIONS.

ANY DEPLOYED OR STAGED AIRCRAFT WILL NOT RECEIVE TA SUPPORT BEYOND INITIAL BLOCK IN.

UNLESS PARTICIPATING IN MAJCOM SPONSORED EXERCISE AT ELMENDORF; DEPLOYED OR STAGED UNITS MUST CONTACT 3 WG SCHEDULING AT DSN 317–551–2406 OR C907–551–2406 AS EARLY AS POSSIBLE TO COORD LOCAL AREA ORIENTATION BRIEFING, MAINT SPONSORSHIP IF APPLICABLE, AND 3 OG/CC APPROVAL PRIOR TO LOCAL AREA OPERATIONS.

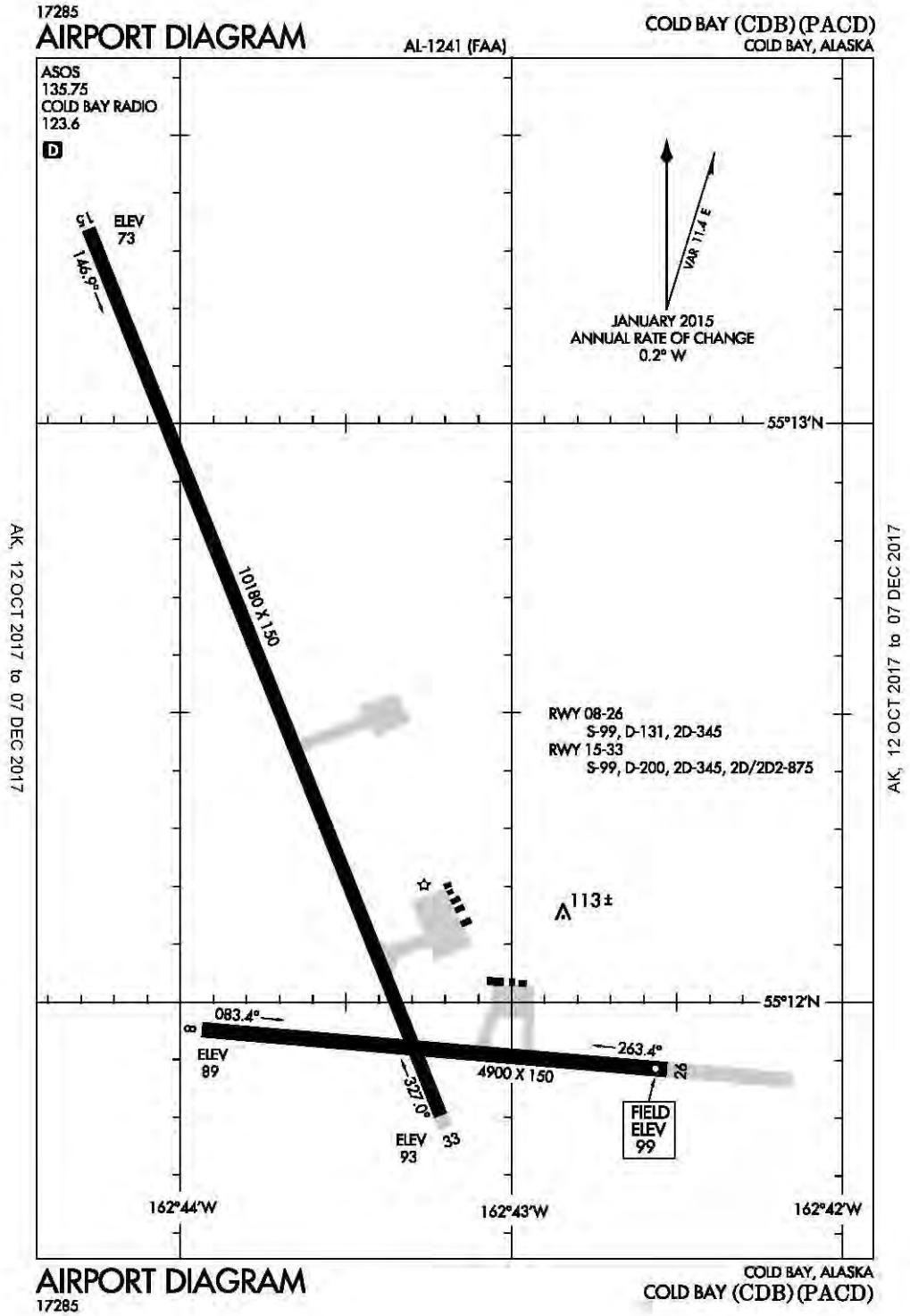
TRANSIENT ALERT AIRCRAFT SERVICE LIMITED TO POL SERVICING, INTAKE INSPECTIONS, MAGNETIC CHIP DETECTOR INSPECTIONS AND END OF RUNWAY INSPECTIONS.

IF EXPECT TO USE RUNWAY 16 FOR DEP OR RUNWAY 34 FOR LANDING SEE JBER CARTEE AIRSPACE DESCRIPTION IN NOTICES SECOND OF THIS SUPPLEMENT.

ALL NON–AMC AIRCRAFT REQUIRE 732 AMS MAINT/SVC MAY EXPERIENCE LOGISTICAL DELAYS DUE TO MISSION NECESSITIES.

FOR CURRENT RUNWAY CONDITION READING/RUNWAY SURFACE CONDITIONS ON RUNWAY 06/24 AND RUNWAY 16/34, AND AIRFIELD RCRS CONTACT TOWER.

Cold Bay, Alaska
Cold Bay
ICAO Identifier PACD



Cold Bay, AK
Cold Bay
ICAO Identifier PACD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 55–12–21.29N / 162–43–34.51W
2.2.2 From City: 0 Miles N Of Cold Bay, AK
2.2.3 Elevation: 101.3 ft
2.2.5 Magnetic variation: 12E (2015)
2.2.6 Airport Contact: Harold Kremer
BOX 97
Cold Bay, AK 99571
(907–532–5000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: OCT–APR Months, ALL Days, 0530–1800 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: None
2.4.7 Remarks: Maint Duty Hours:0530–1730 Mon–Wed,0530–1630 Thurs, 0530–1630 Fri–Sun (1 Oct–30 Apr) 0700–1730 Mon–Wed,0700–1530 Thu–Sun (1 May–30 Sep)

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 4/1/2005
2.6.4 Remarks: Closed To Aircraft 0 Operations With More Than 30 Passenger Seats Except Prior Permission Required In Writing To Airport Manager Box 97 Cold Bay Ak 99571. ARFF Is Available For Part 121 Carriers Involved In Etops Operations With 30 Minutes Notice.

AD 2.12 Runway physical characteristics

2.12.1 Designation: 15
2.12.2 True Bearing: 158
2.12.3 Dimensions: 10180 ft x 150 ft
2.12.5 Coordinates: 55–13–20.50N / 162–44–16.42W
2.12.6 Threshold elevation: 73 ft
2.12.6 Touchdown zone elevation: 75 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 338
2.12.3 Dimensions: 10180 ft x 150 ft
2.12.5 Coordinates: 55–11–47.24N / 162–43–11.70W
2.12.6 Threshold elevation: 93 ft
2.12.6 Touchdown zone elevation: 94 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 95
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.5 Coordinates: 55–11–57.16N / 162–43–56.73W
2.12.6 Threshold elevation: 89 ft
2.12.6 Touchdown zone elevation: 98 ft
2.12.7 Slope: 0.2UP

2.12.1 Designation: 26
2.12.2 True Bearing: 275
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.5 Coordinates: 55–11–53.14N / 162–42–32.59W
2.12.6 Threshold elevation: 99 ft
2.12.6 Touchdown zone elevation: 101 ft

AD 2.13 Declared distances

2.13.1 Designation: 08
2.13.2 Takeoff run available: 6235
2.13.3 Takeoff distance available: 6235
2.13.4 Accelerate–stop distance available: 5900
2.13.5 Landing distance available: 4900

2.13.1 Designation: 26
2.13.2 Takeoff run available: 6235
2.13.3 Takeoff distance available: 6235
2.13.4 Accelerate–stop distance available: 5900
2.13.5 Landing distance available: 4900

AD 2.14 Approach and runway lighting

2.14.1 Designation: 15
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 33
2.14.4 Visual approach slope indicator system: 4–box VASI on left

2.14.1 Designation: 08
2.14.4 Visual approach slope indicator system: 4–box VASI on left
2.14.10 Remarks: Line Of Sight For VASI Rwy 08 Offset 5 Degrees To The North.

2.14.1 Designation: 26
2.14.4 Visual approach slope indicator system: 4–box VASI on left

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 15. Magnetic variation: 12E
2.19.2 ILS identification: CDB
2.19.5 Coordinates: 55−11−41.00N / 162−43−00.00W
2.19.6 Site elevation: 85.3 ft

2.19.1 ILS type: Glide Slope for runway 15. Magnetic variation: 12E
2.19.2 ILS identification: CDB
2.19.5 Coordinates: 55−13−12.78N / 162−44−00.00W
2.19.6 Site elevation: 71.3 ft

2.19.1 ILS type: Outer Marker for runway 15. Magnetic variation: 12E
2.19.2 ILS identification: CDB
2.19.5 Coordinates: 55−17−49.16N / 162−47−24.07W
2.19.6 Site elevation: 36 ft

2.19.1 ILS type: Middle Marker for runway 15. Magnetic variation: 12E
2.19.2 ILS identification: CDB
2.19.5 Coordinates: 55−13−53.76N / 162−44−39.55W
2.19.6 Site elevation:

General Remarks:

SNOW & ICE REMOVAL AND AIRPORT HAZARD REPORTING ONLY PERFORMED DURING DUTY HRS UNLESS BY PRIOR ARRANGEMENT IN WRITING WITH AIRPORT MANAGER.

LARGE BIRDS NEAR APPROACH ENDS OF ALL RUNWAYS.

BRAKELOCK TURNS NOT ALLOWED ON RUNWAYS.

CODE OF FEDERAL REGULATIONS INDEX B. INDEX MAY BE REDUCED FOR AIRCRAFT LESS THAN 90'.

NO CUSTOMS AVAILABLE; WRITTEN PERMISSION REQUIRED FOR REFUELING STOPS 24−48 HRS IN ADVANCE IF ARRIVING FROM A FOREIGN COUNTY; FAX 907−271−2684 OR 907−271−2686.

TOWER 4.8 NAUTICAL MILE NW OF AIRPORT UNLIGHTED.

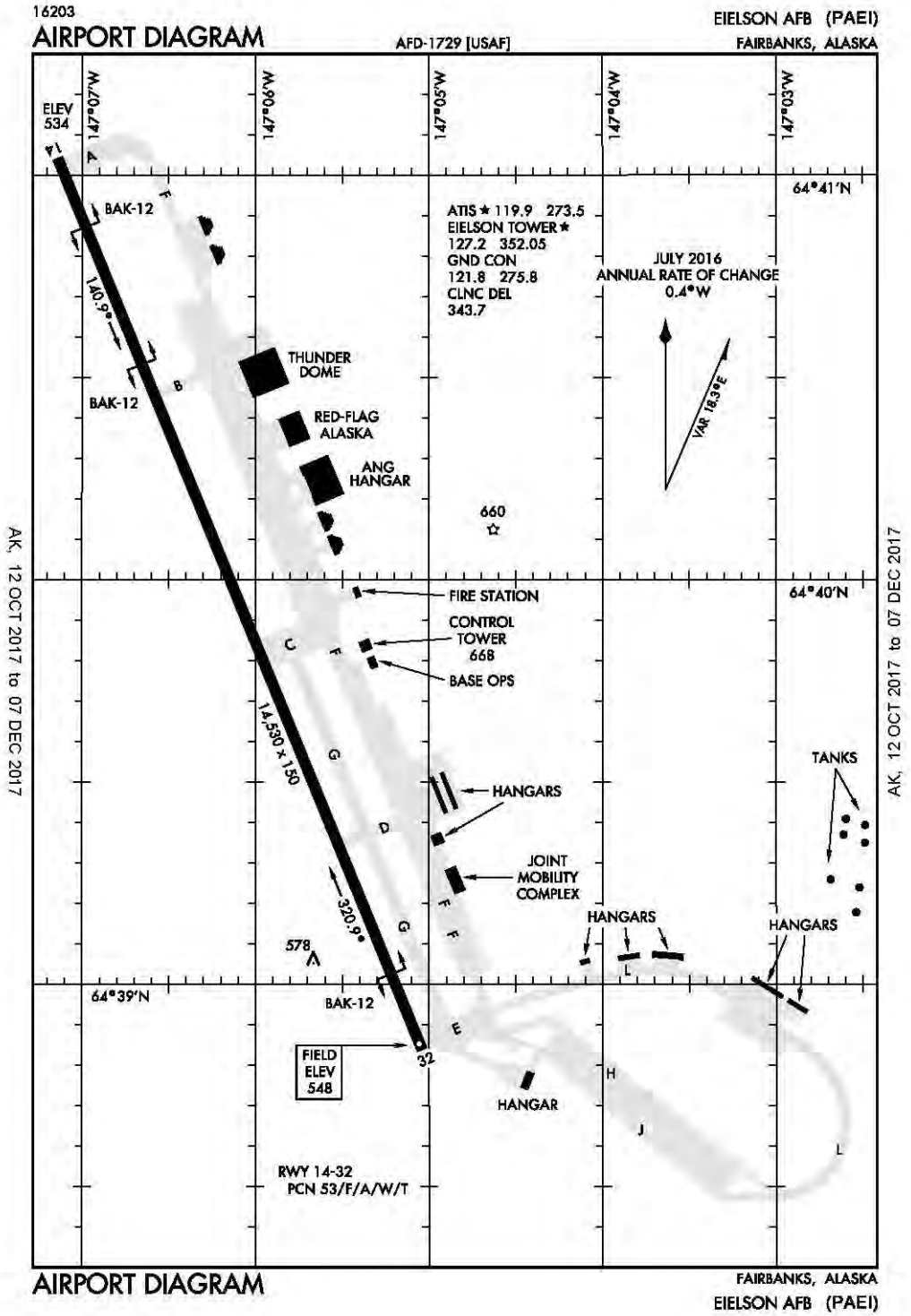
PERSONNEL AND EQUIPMENT MAY BE WORKING ON THE RUNWAY AT ANY TIME.

AIRPORT SAND LARGER GRADATION THAN FAA RECOMMENDED/SEE AC150/5200−30.

WX CAMERA AVAILABLE ON INTERNET AT HTTP://AVCAMS.FAA.GOV

ROTATING BEACON OPERATIONS UNMONITORED WHEN CDB FSS UNMANNED.

Fairbanks, Alaska
Eielson AFB
ICAO Identifier PAEI



Fairbanks, AK
Eielson AFB
ICAO Identifier PAEI

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 64−39−56.32N / 147−06−00.00W
2.2.2 From City: 17 Miles SE Of Fairbanks, AK
2.2.3 Elevation: 547.5 ft
2.2.5 Magnetic variation: 19E (2015)
2.2.6 Airport Contact: Chief Airfield Management
343 CSG/OTM
Eielson AFB, AK 99702
(907−377−3201)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 1600−0800Z++ Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: None
2.4.4 De−icing facilities: Military−Fluid De−Ice, Anti−Ice Unavailable.
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: None

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 32
2.10.1.b Type of obstacle: Trees. Not Lighted or Marked

AD 2.12 Runway physical characteristics

2.12.1 Designation: 14
2.12.2 True Bearing: 159
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 53 F/A/W/T
2.12.5 Coordinates: 64−41−00.00N / 147−07−00.00W
2.12.6 Threshold elevation: 534 ft
2.12.6 Touchdown zone elevation: 537 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 339
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 53 F/A/W/T
2.12.5 Coordinates: 64−38−49.48N / 147−05−00.00W
2.12.6 Threshold elevation: 548 ft
2.12.6 Touchdown zone elevation: 548 ft

AD 2.14 Approach and runway lighting

2.14.1 Designation: 14
2.14.2 Approach lighting system: ALSF1: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category 1 configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 32
2.14.2 Approach lighting system: ALSF1: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category 1 configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: SOURDOUGH
2.18.3 Service designation: 139.6 MHz

2.18.1 Service designation: 168 ANG OPS
2.18.3 Service designation: 293.6 MHz

2.18.1 Service designation: CP (HAVE QUICK)
2.18.3 Service designation: 289.4 MHz

2.18.1 Service designation: 168 ANG OPS
2.18.3 Service designation: 238.3 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 119.9 MHz
2.18.4 Hours of operation: 1600−0800Z++

2.18.1 Service designation: SOURDOUGH
2.18.3 Service designation: 359.15 MHz

2.18.1 Service designation: RDR SFA
2.18.3 Service designation: 118.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: SUAIS RADIO
2.18.3 Service designation: 125.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 127.2 MHz

2.18.1 Service designation: RDR SFA
2.18.3 Service designation: 259.1 MHz

2.18.1 Service designation: ATIS

2.18.3 Service designation: 273.5 MHz
2.18.4 Hours of operation: 1600–0800Z++

2.18.1 Service designation: GND/P
2.18.3 Service designation: 275.8 MHz

2.18.1 Service designation: RDR SFA
2.18.3 Service designation: 318.2 MHz

2.18.1 Service designation: RDR SFA
2.18.3 Service designation: 320.1 MHz

2.18.1 Service designation: RDR SFA
2.18.3 Service designation: 324.3 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 343.7 MHz

2.18.1 Service designation: PMSV
2.18.3 Service designation: 346.6 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 372.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 352.05 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 139.3 MHz
2.18.1 Service designation: COMD POST/IGLOO OPS
2.18.3 Service designation: 259.5 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 32. Magnetic variation: 19E
2.19.2 ILS identification: EAF
2.19.5 Coordinates: 64–41–22.13N / 147–07–21.41W
2.19.6 Site elevation: 528 ft

2.19.1 ILS type: Localizer for runway 14. Magnetic variation: 19E
2.19.2 ILS identification: EIL
2.19.5 Coordinates: 64–38–33.05N / 147–04–51.27W
2.19.6 Site elevation: 548 ft

2.19.1 ILS type: Glide Slope for runway 32. Magnetic variation: 19E
2.19.2 ILS identification: EAF
2.19.5 Coordinates: 64–38–58.93N / 147–05–25.28W
2.19.6 Site elevation: 540 ft

2.19.1 ILS type: Glide Slope for runway 14. Magnetic variation: 19E
2.19.2 ILS identification: EIL
2.19.5 Coordinates: 64–40–51.59N / 147–07–00.00W
2.19.6 Site elevation: 532 ft

2.19.1 ILS type: Middle Marker for runway 32. Magnetic variation: 19E
2.19.2 ILS identification: EAF
2.19.5 Coordinates: 64–38–10.49N / 147–04–32.62W
2.19.6 Site elevation:

General Remarks:

TRANSMIT ALERT SERVICE AVAILABLE 0700–0000 MON–FRI EXCEPT HOLIDAY; OTHER TIMES PRIOR PERMISSION REQUIRED THROUGH BASE OPERATIONS OFFICE.

CRYPTO MATERIALS NOT AVAILABLE TRANSIENT CREW. ALL AIRCRAFT WITH VIP CONTACT AIRFIELD MANAGEMENT 20–30 MINUTES PRIOR TO ESTIMATED TIME OF ARRIVAL WITH FIRM CHOCK TIME. LIMITED FLEET SERVICE AVAILABLE, NO POTABLE WATER.

OVERHEAD TRAFFIC PATTERN ALTITUDE 2000 FT MSL; RECTANGULAR TRAFFIC PATTERN ALTITUDE 1500 FT MSL.

AVOID SMALL ARMS RANGE LOCATED 2.5 NAUTICAL MILE E OF APPROACH END RUNWAY 32. SMALL ARM RANGE ACTIVE WEEKEND 1700–0100Z++, SURFACE TO 3500 FT AGL.

CARGO & PASSENGER CARRYING AIRCRAFT CALL COMMAND POST 3 HRS PROIR TO LANDING AND 30 MIN PROIR TO LANDING AND STATE NUMBER OF PASSENGERS.

BASH PHASE II MONTHS ARE APR, MAY, AUG AND SEPT. DURING PERIODS OF STANDING WATER ON THE AIRFIELD, GULLS, DUCKS, GEESE AND OTHER BIRDS POSE A SIGNIFICANT HAZARD TO AIRCRAFT. REPORT ALL BIRD AND ANIMAL STRIKES ON & IN THE VICINITY OF EILSON TO AIRFIELD MANAGEMENT, DSN 317–377–186, PILOT TO DISPATCH OR 354 FW/SE DSN 317–377–4110.

TO AVOID DELAY FILE FLIGHT PLAN AT LEAST 2 HRS PRIOR TO ESTIMATED TIME OF DEPARTURE. ARRIVALS REQUIRING CUSTOMS MUST NOTIFY AIRFIELD MANAGEMENT 1.5 HRS PRIOR TO LANDING. U.S. IMMIGRATION SERVICE NOT AVAILABLE. AIR TERMINAL AND GROUND HANDLING SERVICE OPRS 1630–0030Z++ WEEKDAYS.

DEP AIRCRAFT REMAIN AT OR BELOW 1500 FT UNTIL DEP END OF RUNWAY.

ALL PACAF FIGHTER AIRCRAFT ON ARR EXPECT REDUCED RUNWAY SEPARATION; SIMILAR FIGHTER TYPE/DAY – 3000 FT; DISSIMILAR FIGHTER TYPE AND/OR NIGHT WET RUNWAY OR RUNWAY CONDITION READING REPORT LESS THAN 17 – 6000 FT; BEHIND FORMATION LANDING – 6000 FT; FIGHTER TYPE LANDING BEHIND NON–FTR TYPE – 9000 FT; RUNWAY CONDITION READING VALIDATED AS CONDITIONS WARRANT.

TRANSMIT BILLETING EXTREMELY LIMITED/EXTENSIVE FUEL DELAYS DURING RED FLAG ALASKA EXERCISE (APR–OCT).

AIR TERMINAL AND GROUND HANDLING SERVICE OPRS 1630–0030Z++ WEEKDAYS. AIRCRAFT REQUIRING TERMINAL AND GROUND HANDLING SERVICE ARE REQUIRED TO PROVIDE ADVANCE NOTICE OR DELAYS IN SERVICE MAY BE EXPERIENCED. AIRCRAFT REQUIRING SERVICE SHOULD MAKE PRIOR COORDINATION WITH AIRFIELD MANAGEMENT.

ALASKA ANG 168TH AREFS OPERATIONS DSN (317–377–8800, C 907–377–8800) ANG OPR 24 HRS. AIRFIELD MANAGEMENT DSN 317–377–1861/3201.

FOR FLIGHT ADVISORIES OR STATUS OF RESTRICTED & MOAS CONTACT EIELSON RANGE CONTROL ON SAUIS RADIO 125.3 OR CALL 1–800–758–8723.

RUNWAY 14 & 32 PAPI GS NOT COINCIDENTAL WITH ILS GS.

CONTACT AIRFIELD MANAGEMENT DSN 317–377–1861, C907–377–1861 FOR PRIOR PERMISSION REQUIRED NUMBER NO EARLIER THAN 5 DAYS AND NO LATER THAN 24 HR PRIOR TO ARR. PRIOR PERMISSION REQUIRED GOOD FOR +/– 30 MIN OF PRIOR PERMISSION REQUIRED TIME. COORD OF PRIOR PERMISSION REQUIRED OUTSIDE OF TIME BY TELEPHONE IS REQ OR PRIOR PERMISSION REQUIRED NR WILL BE CONSIDERED CANCEL. EXPECT ARR TIME RESTRICTION FOR ALL AIRCRAFT EXCEPT AIR EVACUATION AND DV CODE 7 OR HIGHER.

DURING BIRD WATCH CONDITION MODERATE LOCAL PATTERN WORK LIMITED TO MIN REQUIRE WITH OG/CC APPROVAL, NO TOUCH AND GO LANDING, FORMATION TKOF/LNDG PROHIBITED AND LOW APPROACH LIMITED TO 300 FT AGL. DURING BIRD WATCH CONDITION SEVERE; TAKE-OFF, PATTERN, AND LANDING PROHIBITED WITHOUT OG/CC APPROVAL, EXCEPT FOR EMERGENCY.

MOOSE HAVE BEEN SPOTTED ON OR NEAR THE RUNWAY ENVIRONMENT ALL HRS OF THE DAY.

N & S BARRIER RUNOUT REDUCED TO 950 FT.

ALL TRANSIENT AIRCREWS MUST REGISTER WITH AIRFIELD MANAGEMENT UPON ARRIVAL. SEE AP1 SUPPLEMENTARY AIRPORT REMARKS. LIMITED SECRET AND COMSEC STORAGE AVAILABLE AT AIRFIELD MANAGEMENT.

LIMITED SECRET AND COMSEC STORAGE AVAILABLE AT BASE OPERATIONS. AIRFIELD MANAGEMENT DOES NOT HAVE COMSEC RESPONSIBILITIES. FOR TOP SECRET AND COMSEC ISSUE/STORAGE CONTACT COMMAND COMMAND POST DSN 317–377–1500.

PORTIONS OF APRON 'O' ROW AND SOUTH RAMP NOT VISIBLE FROM TOWER.

ALL CONTINGENCY OPER CONTACT AIRPORT MANAGER FOR COORDINATION.

TRANSIENT ALERT: TRANSIENT MAINT LIMITED TO F16 SERVICING UPON AIRCREW REQ. THRU FLIGHT/BPO/PREFLIGHT INSPECTION OF F16 NOT AVAILABLE.

AIRPORT OPR 1600−0800Z++.

RADIO/NAV/WEATHER REMARKS − (F) 1500−0700Z ++ DAILY.

PERSONNEL AND EQUIPMENT WORKING ON RUNWAY 14−32 WHEN TOWER UNMANNED.

PRE−COORDINATE WITH MAINT OPERATIONS CENTER DSN 317−377−1205 NO LATER THAN 48 HRS FROM ESTIMATED TIME OF ARRIVAL. UHF IS THE PREFERRED PATTERN FREQ.

AIRPORT REMARKS: PRIME KNIGHT NOT AVAILABLE.

AIRPORT REMARKS: RUNWAY 300 FT WIDE ENTIRE LENGTH, CENTER 150 FT USABLE.

FAIRBANKS FSS LOCAL CONTROL 474−0137. FOR FLIGHT ADVISORIES OR STATUS OF RESTRICTED AND MILITARY OPERATING AREAS, CONTACT EIELSON RANGE CONTROL ON SUAIS RADIO 125.3 OR TELEPHONE 1−800−758−8723.

BASE OPERATIONS DOES NOT HAVE COMSEC RESPONSIBILITIES. BASE OPERATIONS WILL NOT ISSUE COMSEC.

PMSV: METRO BELOW 3000 FT RECEPTION FROM 300−090 IS LIMITED BEYOND 15NM BY TERRAIN, BELOW 15000 FT LIMITED BEYOND 75NM, NO LIMITATIONS WITHIN 100NM AT 20000 FT.

AUGMENTATION CAPABLE DURING NORMAL OPR HR. DUR EVACUATION OF WX STATION CONTACT OP WX SQUADRON AT NUMBER ABOVE. ALTITUDE WX LOCATION VISIBILITY SEVERELY LIMITED DUE TO BUILDING AND PARK AIRCRAFT.

PHONE PATCH CAPABILITY THROUGH 354 FW/CP AT 907−377−1500. FMQ19 907−377−5846.

CAUTION: NONSTANDARD LIGHT, 2000 FT OF RUNWAY EDGE LIGHT BETWEEN DELTA−CHARLIE TAXIWAYS LOCATED 12 FT FR RUNWAY EDGE.

UNMONITORED WHEN PAEI TOWER CLOSED. FULL SERVICE AVAILABLE 1600−0800Z++, EXTEND AS REQ. SERVICE PRIORITY GIVEN TO LOCAL FLYING SCHEDULE. WX BRIEFING AVAILABLE DSN 317−377−3140/1160.

BRIEFING FOR TRANSIENT AIRCREWS BEYOND NORMAL OPERATING HRS BY WAY OF 17TH OWS AT JOINT BASE PEARL HARBOR−HICKAM DSN 315−449−8333/7950 C808−449−8333/7950 OR DSN 315−448−3809, C808−448−3809.

CAUTION: FIRE HYDRANTS LOCATED 64 FT NE OF TAXIWAY H CNTLN.

NO ENGINE RUNNING ON−LOADS/OFF−LOADS (ERO) SERVICES AVAILABLE FOR AIR MOBILITY COMMAND AIRCRAFT.

VHF PILOT TO DISPATCH FREQUENCY IS UNMONITORED.

QUIET HRS DAILY 0700−1500Z−, NO TAKE-OFF, LANDING, LO APPROACH, OR TOUCH AND GO LANDING, EXCEPTIONS REQUIRE OPERATIONS GROUP COMMANDER APPROVAL. UNCONTROLLED TKOF/LDG NOT AUTH.

LOOP TAXIWAY EAST OF CORROSION/ HANGAR 1348 THROUGH THE 4/8 BAY AREA RESTRICTED TO AIRCRAFT W/WINGSPAN OF 45 FT OR SMALLER.

NONSTANDARD RUNWAY EDGE LIGHTS.

RUNWAY 14/32 BAK–12 DEP END CABLES IN RAISED POSITION; BAK–12 APPROACH END RUNWAY 14/32 AVAILABLE WITH 20 MIN PRIOR NOTICE. NORTH BARRIER RUNOUT REDUCED TO 950 FT, HOOK EQUIPPPED AIRCRAFT BE ALERT.

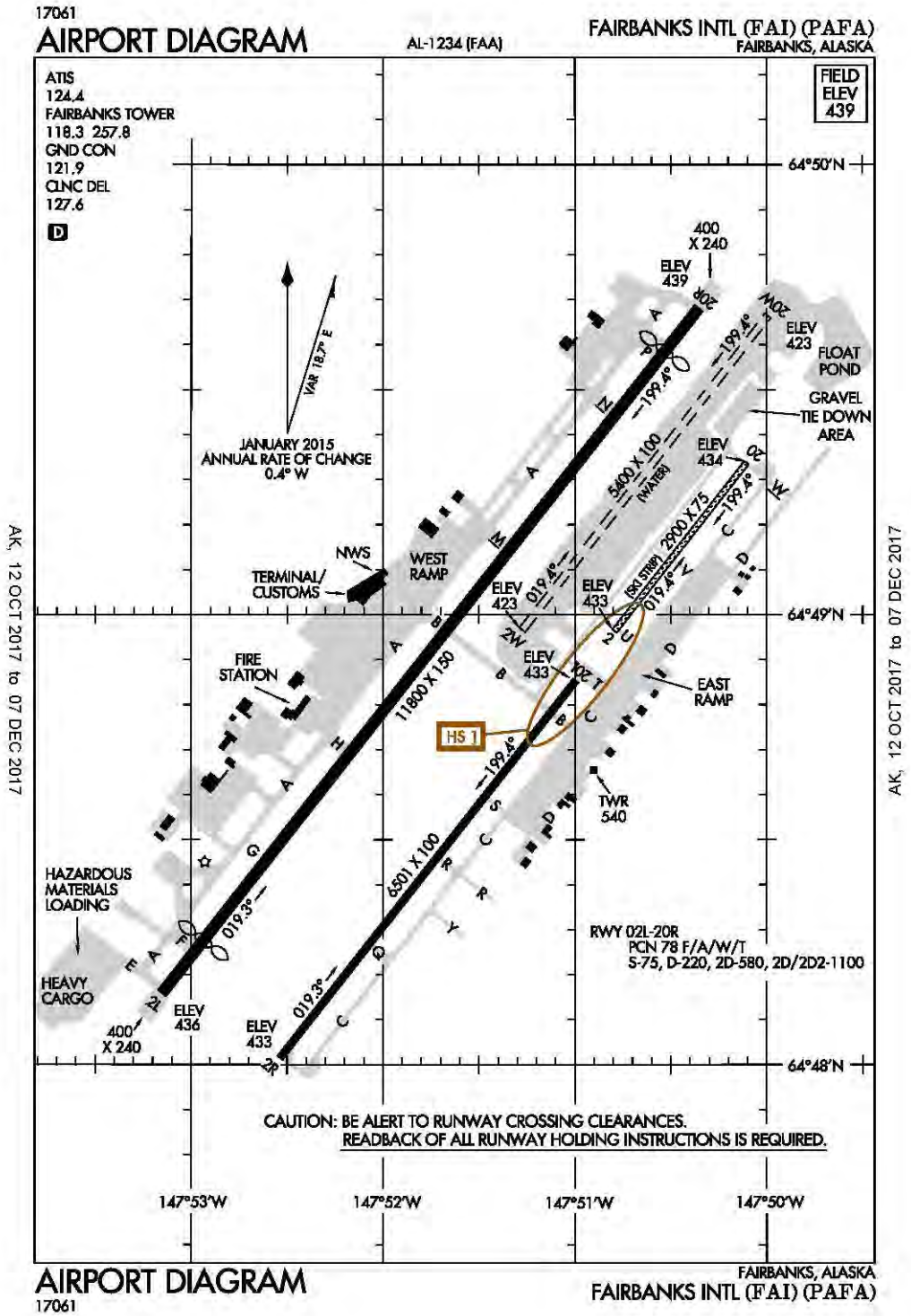
MILITARY–FLUID DE–ICE, ANTI–ICE UNAVAILABLE.

EDGE LIGHT NONSTANDARD RUNWAY 32/14 AT TAXIWAY A RUNWAY EDGE LIGHT AT TAXIWAY A ENTRANCE ON THE EAST SIDE OF THE RUNWAY; RESULTING GAP BETWEEN LIGHT IS 446’.

EDGE LIGHT NONSTANDARD RUNWAY 32/14 AT TAXIWAY C RUNWAY EDGE LIGHT AT TAXIWAY C ENTRANCE ON THE EAST SIDE OF THE RUNWAY; RESULTING GAP BETWEEN LIGHT IS 400’.

AIRCREW BE ADVISED FIELD CONDITION NOTAM (FICON) AND RUNWAY CONDITION CODE (RWYCC) NOT REPORTED BY AMOPS.

Fairbanks, Alaska
Fairbanks International
ICAO Identifier PAFA



Fairbanks, AK
Fairbanks Intl
ICAO Identifier PAFA

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 64−48−54.40N / 147−51−23.20W
2.2.2 From City: 3 Miles SW Of Fairbanks, AK
2.2.3 Elevation: 439 ft
2.2.5 Magnetic variation: 18E (2020)
2.2.6 Airport Contact: Jeff Roach
6450 AIRPORT WAY − SUITE 1
Fairbanks, AK 99709
(907−474−2500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 3/1/2005

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 20W
2.10.1.b Type of obstacle: Fence (11 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 02L
2.10.1.b Type of obstacle: Tree (72 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 652 ft from Centerline

2.10.1.a. Runway designation: 20R
2.10.1.b Type of obstacle: Tree (86 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 430 ft from Centerline

2.10.1.a. Runway designation: 02W
2.10.1.b Type of obstacle: Fence (14 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 170 ft from Centerline

2.10.1.a. Runway designation: 02R
2.10.1.b Type of obstacle: Trees (79 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 350 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 02W
2.12.2 True Bearing: 38
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.5 Coordinates: 64−48−58.00N / 147−51−16.59W
2.12.6 Threshold elevation: 423 ft
2.12.6 Touchdown zone elevation: 423 ft

2.12.1 Designation: 20W
2.12.2 True Bearing: 218
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.5 Coordinates: 64−49−39.83N / 147−49−59.63W
2.12.6 Threshold elevation: 423 ft
2.12.6 Touchdown zone elevation: 423 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 38
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−48−00.00N / 147−53−00.00W
2.12.6 Threshold elevation: 436 ft
2.12.6 Touchdown zone elevation: 439 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 218
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−49−40.91N / 147−50−21.13W
2.12.6 Threshold elevation: 439 ft
2.12.6 Touchdown zone elevation: 439 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 38
2.12.3 Dimensions: 6501 ft x 100 ft
2.12.5 Coordinates: 64−48−00.00N / 147−52−32.24W
2.12.6 Threshold elevation: 433 ft
2.12.6 Touchdown zone elevation: 433 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 218
2.12.3 Dimensions: 6501 ft x 100 ft
2.12.5 Coordinates: 64−48−51.24N / 147−50−59.67W
2.12.6 Threshold elevation: 433 ft
2.12.6 Touchdown zone elevation: 434 ft

2.12.1 Designation: 02

2.12.2 True Bearing: 38
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.5 Coordinates: 64–48–57.80N / 147–50–47.60W
2.12.6 Threshold elevation: 433 ft
2.12.6 Touchdown zone elevation: 435 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 218
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.5 Coordinates: 64–49–20.26N / 147–50–00.00W
2.12.6 Threshold elevation: 434 ft
2.12.6 Touchdown zone elevation: 435 ft

AD 2.13 Declared distances
2.13.1 Designation: 02L
2.13.2 Takeoff run available: 11800
2.13.3 Takeoff distance available: 12800
2.13.4 Accelerate–stop distance available: 11800
2.13.5 Landing distance available: 11050

2.13.1 Designation: 20R
2.13.2 Takeoff run available: 11800
2.13.3 Takeoff distance available: 12800
2.13.4 Accelerate–stop distance available: 11800
2.13.5 Landing distance available: 11050

AD 2.14 Approach and runway lighting
2.14.1 Designation: 02L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 20R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Runway 20R PAPI Unusable Beyond 8 Degs Right Of Centerline .

2.14.1 Designation: 02R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 20L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 118.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS(907–456–1244)
2.18.3 Service designation: 124.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P DEP/P TRSA IC
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: APCH/P DEP/P TRSA
2.18.3 Service designation: 126.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 127.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: DEP/S
2.18.3 Service designation: 327.1 MHz

2.18.1 Service designation: APCH/P DEP/P TRSA IC
2.18.3 Service designation: 363.2 MHz

2.18.1 Service designation: APCH/P DEP/P TRSA
2.18.3 Service designation: 381.4 MHz

2.18.1 Service designation: RADAR
2.18.3 Service designation: 319.1 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 02L. Magnetic variation: 18E
2.19.2 ILS identification: CNA
2.19.5 Coordinates: 64–49–49.84N / 147–50–00.00W
2.19.6 Site elevation: 438.1 ft

2.19.1 ILS type: Localizer for runway 20R. Magnetic variation: 18E
2.19.2 ILS identification: FAI
2.19.5 Coordinates: 64−48−00.00N / 147−53−23.88W
2.19.6 Site elevation: 429.1 ft

2.19.1 ILS type: DME for runway 02L. Magnetic variation: 18E
2.19.2 ILS identification: CNA
2.19.5 Coordinates: 64−49−50.74N / 147−50−15.02W
2.19.6 Site elevation: 434.8 ft

2.19.1 ILS type: Glide Slope for runway 20R. Magnetic variation: 18E
2.19.2 ILS identification: FAI
2.19.5 Coordinates: 64−49−24.42N / 147−50−39.71W
2.19.6 Site elevation: 434.3 ft

2.19.1 ILS type: Glide Slope for runway 02L. Magnetic variation: 18E
2.19.2 ILS identification: CNA
2.19.5 Coordinates: 64−48−21.00N / 147−52−36.30W
2.19.6 Site elevation: 431.4 ft

2.19.1 ILS type: Outer Marker for runway 20R. Magnetic variation: 18E
2.19.2 ILS identification: FAI
2.19.5 Coordinates: 64−53−59.27N / 147−42−24.01W
2.19.6 Site elevation: 655 ft

2.19.1 ILS type: Inner Marker for runway 02L. Magnetic variation: 18E
2.19.2 ILS identification: CNA
2.19.5 Coordinates: 64−48−00.00N / 147−53−12.53W
2.19.6 Site elevation: 429.8 ft

2.19.1 ILS type: Middle Marker for runway 20R. Magnetic variation: 18E
2.19.2 ILS identification: FAI
2.19.5 Coordinates: 64−49−56.80N / 147−49−51.90W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 02L. Magnetic variation: 18E
2.19.2 ILS identification: CNA
2.19.5 Coordinates: 64−47−53.40N / 147−53−39.80W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 20R. Magnetic variation: 18E
2.19.2 ILS identification: FAI
2.19.5 Coordinates: 64−48−00.00N / 147−53−28.16W
2.19.6 Site elevation: 430 ft

General Remarks:
ATCT LOCATED AT 64−48−39.438N 147−50−55.722W ELEVATION 538’ MSL.

SEAPLANE BASE TAXI, TAKE−OFF AND LANDINGS CONTROLLED BY FAIRBANKS INTL TOWER, CONTACT TOWER ON FREQ. 118.3 FOR ALL REQUESTS. ALL PILOTS CONTACT TOWER. AS SOON AS PRACTICAL AFTER START UP FOR TAXI INSTRUCTIONS. USE CAUTION TO AVOID UNAUTHORIZED OPPOSITE DIRECTION DEPARTURES. FLOAT POND TRAFFIC. AS ASSIGNED BY FAIRBANKS TOWER. NO STEP TAXI EXCEPT IN CHANNEL FOR RUNWAY 02W−20W. RUNWAY 02W−20W TOUCHDOWN REFERENCE MARKERS 500 FT FROM SHORELINE, MARKED WITH BUOYS. LIMITED TRANSIENT FLOAT PLANE PARKING AVAILABLE CONTACT OPERATIONS 907−474−2530 FOR INFORMATION. SURFACE FROZEN IN WINTER, NOT MONITORED. MIGRATORY BIRDS IN VICINITY OF AIRPORT DURING SPRING THRU FALL, CONDITION NOT MONITORED.

BE ALERT FOR SNOW REMOVAL EQUIPMENT OPERATIONS FROM 1 OCT TO 15 MAY.

MILITARY CONTRACT FUEL AVAILABLE.

FOR FLIGHTS IN MOA’S EAST OF FAIRBANKS RECOMMEND CONTACTING EIELSON RANGR CONTROL ON 125.3 OR CALL 1−800−758−8723 FOR INFORMATION ON MILITARY ACTIVITES.

NOISE ABATEMENT PROCEDURES IN EFECT FROM 2200−0800 ALL LARGE AIRCRAFT, TURBINE ENGINE, AND HEAVY AIRCRAFT UTILIZE RUNWAY 02L FOR ARRS AND 20R FOR DEPS WHEN WIND IS NOT AN OPERATIOINAL FACTOR. CONTACT AIRPORT OPERATIONS FOR ENGINE RUN−UP LOCATIONS.

RUNWAY 02R/20L CLOSED TO JET AIRCRAFT.

TRANSIENT PARKING EAST RAMP FOR NON JET AIRCRAFT WITH WINGSPAN LESS THAN 79 FT. NO TRANSIENT AIRCRAFT PARKING ON WEST RAMP, CONTACT APT OPERATIONS 907–474–2530 FOR INFORMATION & MEDIVAC PARKING.

FOR AVAILABILITY OF SUMMER GRAVEL STRIP RUNWAY 02/20 AND WINTER SKI STRIP RUNWAY 02/20 CONSULT LOCAL NOTAMS AND CONTACT TOWER PRIOR TO ARRIVAL /DEPARTURE.

N/S TAXIWAY (TWY A) IS WEST AND PARALLEL TO RUNWAY 02L/20R. BE ALERT TO AVOID LANDING ON TAXIWAY.

NE COMPASS ROSE CLOSED TO HELICOPTERS OVER 12,500 LBS. FROST HEAVES SOUTH 2600 FT RUNWAY 02R/20L CONTACT AIRPORT OPERS 907–474–2530 WITH SAFETY CONCERNS.

WX CAMERA AVAILABLE ON INTERNET AT HTTP://AVCAMS.FAA.GOV

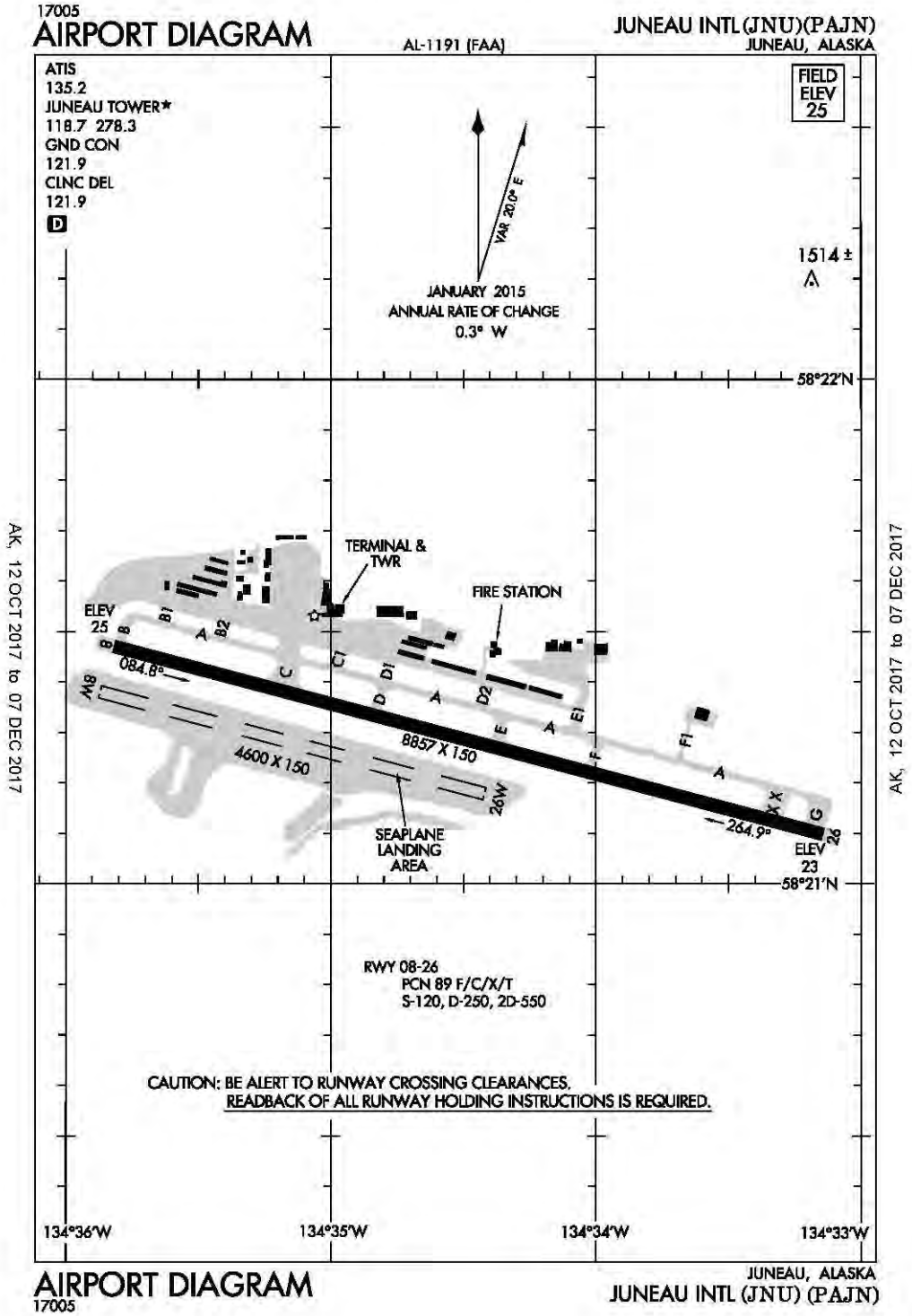
ALL RUNWAY HOLD LINES AND COMPASS ROSE AT TAXIWAY W OBSCURED OCTOBER 1 THRU APRIL 1.

FOR TRANSIENT HELICOPTER PARKING CALL AIRPORT OPERATIONS 907–474–2530.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW –20C.

SEE ADDITIONAL PAGES UNDER NOTICES FOR TERMINAL RADAR SERVICE AREA AND FAIRBANKS AREA INFORMATION.

Juneau, Alaska
Juneau International
ICAO Identifier PAJN



Juneau, AK
Juneau Intl
ICAO Identifier PAJN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 58–21–16.96N / 134–34–42.49W
2.2.2 From City: 7 Miles NW Of Juneau, AK
2.2.3 Elevation: 25.3 ft
2.2.5 Magnetic variation: 20E (2015)
2.2.6 Airport Contact: Patty Wahto
1873 SHELL SIMMONS DR, SUITE 200
Juneau, AK 99801 (907–789–7821)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major
2.4.7 Remarks: Airframe/Power Plant Service For Single/Twin Prop Eng Aircraft Turbin & Avionics.

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 4/1/2005

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 08
2.10.1.b Type of obstacle: Tower (573 ft). Marked and Lighted
2.10.1.c Location of obstacle: 900 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 105
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58–21–28.25N / 134–35–49.09W
2.12.6 Threshold elevation: 25 ft
2.12.6 Touchdown zone elevation: 25 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 285
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58–21–00.00N / 134–33–00.00W
2.12.6 Threshold elevation: 23 ft
2.12.6 Touchdown zone elevation: 23 ft
2.12.1 Designation: 08W
2.12.3 Dimensions: 4600 ft x 150 ft
2.12.5 Coordinates: 58–21–22.82N / 134–35–52.23W
2.12.1 Designation: 26W
2.12.3 Dimensions: 4600 ft x 150 ft
2.12.5 Coordinates: 58–21–10.71N / 134–34–25.26W

AD 2.13 Declared distances

2.13.1 Designation: 08
2.13.2 Takeoff run available: 8857
2.13.3 Takeoff distance available: 8857
2.13.4 Accelerate–stop distance available: 8457
2.13.5 Landing distance available: 8457

2.13.1 Designation: 26
2.13.2 Takeoff run available: 8857
2.13.3 Takeoff distance available: 8857
2.13.4 Accelerate–stop distance available: 8457
2.13.5 Landing distance available: 8457

AD 2.14 Approach and runway lighting

2.14.1 Designation: 08
2.14.4 Visual approach slope indicator system: 2–box VASI on left
2.14.10 Remarks: VASI Aligned Aprxly 13 Degs Right Of Runway Centerline And Is Not Visible On Runway Cntrl. VASI Unusable Beyond 06 Degs Left Of Crs. Rlls Lights: (Jnub Battleship Island, Jnua Engineers Cut, jnu Wetlands/Flats)

2.14.1 Designation: 26
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Runway 26 PAPI Unusable Beyond 2 Nm Due To Terrain. Runway 26 MALS Non Standard; Length 800 Ft.

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.7 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 124.65 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 135.2 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 278.3 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 64.7 MHz

2.18.1 Service designation: SEASONAL USE ONLY.
2.18.3 Service designation: 120.7 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 08. Magnetic variation: 20E
2.19.2 ILS identification: JDL
2.19.5 Coordinates: 58−21−32.04N / 134−38−10.39W
2.19.6 Site elevation: 165 ft

2.19.1 ILS type: DME for runway 08. Magnetic variation: 20E
2.19.2 ILS identification: JDL
2.19.5 Coordinates: 58−21−31.02N / 134−38−10.22W
2.19.6 Site elevation: 179.8 ft

General Remarks:

NATIONAL GUARD 24 HR PRIOR PERMISSION REQUIRED DUE TO LIMITED PARKING C907−789−3366. 0730−1600 WEEKDAYS CONTACT GUARD OPERATIONS 10 MIN PRIOR TO LANDING ON 124.65.

WILDLIFE & BIRDS ON & IN THE VICINITY OF AIRPORT.

BATTLESHIP ISLAND RUNWAY LEAD-IN LIGHTING SYSTEM GROUPING; CENTER LIGHT 582132.88N 1344012.22W. IJDL−LOCALIZER RUNWAY LEAD-IN LIGHTING SYSTEM GROUPING; CENTER LIGHT 582132.02N 1343810.39W.

INCREASED HELICOPTER/LIGH AIRCRAFT ACTIVITY APR 15−OCT 1 ENTIRE LENGTH ON GASTINEAU CHANNEL & WITHIN 5 MILES OF AIRPORT.

PARAGLIDING ACTIVITY 3 MILES N OF AIRPORT IN THE VICINITY OF THUNDER MOUNTAIN & OVER GASTINEAU CHANNEL NEARS DOWNTOWN APR 15−OCT 1 6000 FT & BELOW.

TRAFFIC PATTERN ALTITUDE 1500 AGL FOR LARGE TURBINE AIRCRAFT; 1000 FT AGL FOR FIXED WING AIRCRAFT; 500 FT AGL FOR HELICOPTERS.

FOR A LOCAL CALL TO JNU AUTOMATED FLIGHT SERVICE STATION CALL 907−789−7380.

TRANSIENT DOCK AVAILABLE FOR PUBLIC USE FOR UP TO SIX AIRCRAFT, SW CORNER.

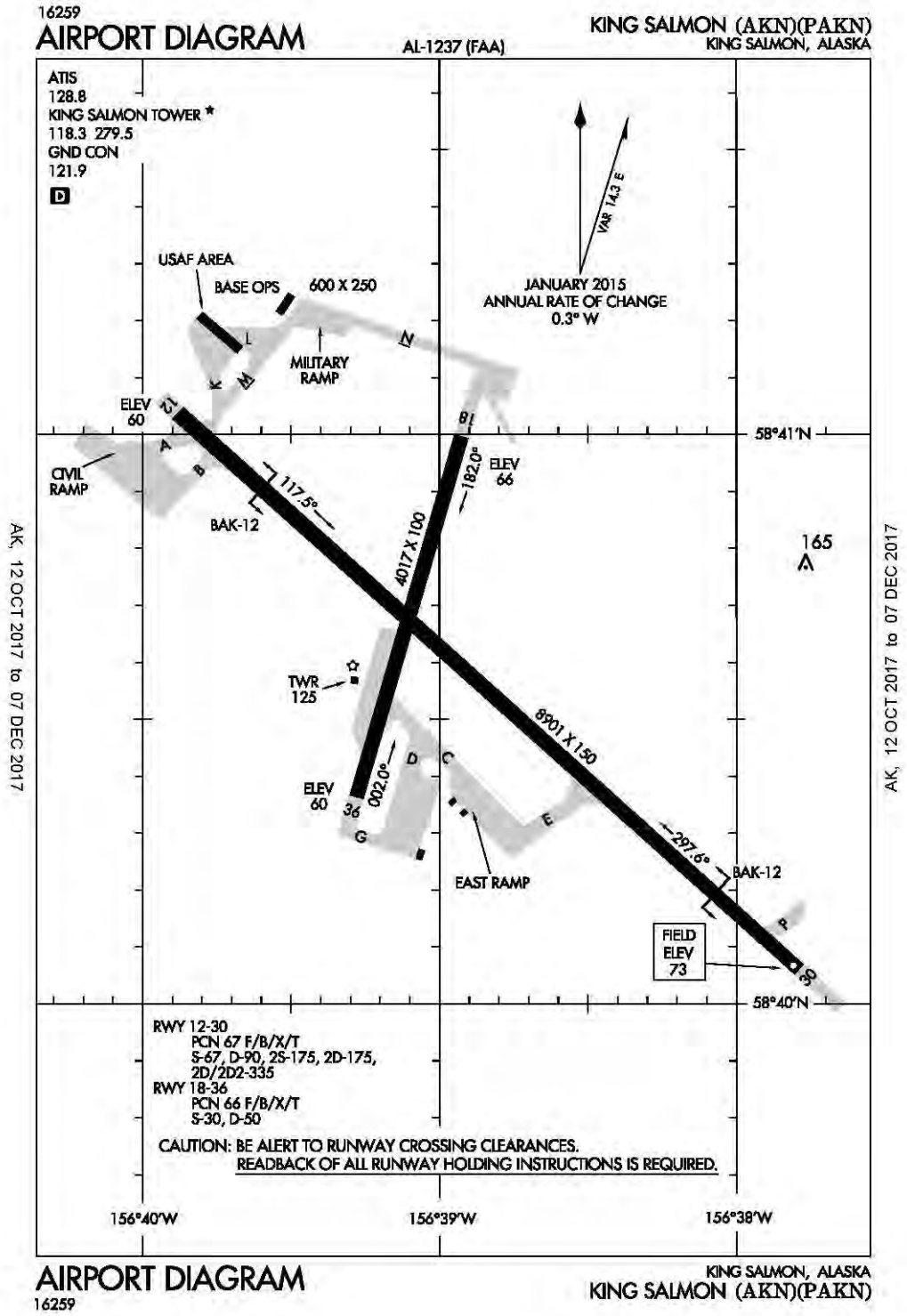
SEE SPECIAL NOTICES AND GENERAL NOTICES FOR ADDITIONAL INFORMATION ON OPERATIONS IN JUNEAU AREA.

LENA POINT, PEDERSON HILL AND SISTERS ISLAND WX CAMERAS AVAILABLE ON INTERNET AT HTTP://AVCAMS.FAA.GOV

RUNWAY 08/26 SAND USED TO ENHANCE RUNWAY FRICTION MAY NOT MEET FAA SPECS.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −13C.

King Salmon, Alaska
King Salmon
ICAO Identifier PAKN



King Salmon, AK
King Salmon
ICAO Identifier PAKN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 58−40−35.38N / 156−38−55.29W
2.2.2 From City: 0 Miles SE Of King Salmon, AK
2.2.3 Elevation: 73.4 ft
2.2.5 Magnetic variation: 16E (2010)
2.2.6 Airport Contact: Kyler Hylton
PO BOX 65
King Salmon, AK 99613
(907−246−3325)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 0800−1800 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major
2.4.7 Remarks: Transient Parking Marked At North End Of General Aviation Ramp And East End Of Cargo Ramp.

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 3/21/2005
2.6.4 Remarks: Closed To Aircraft 0 Operations With More Than 30 Passenger Seats Except Prior Permission Required In Writing To Airport Manager PO Box 65 King Salmon Ak, 99613.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 18
2.10.1.b Type of obstacle: Trees (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: NW
2.12.3 Dimensions: 4000 ft x 500 ft

2.12.1 Designation: SE
2.12.3 Dimensions: 4000 ft x 500 ft

2.12.1 Designation: 18
2.12.2 True Bearing: 196
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58−40−59.78N / 156−38−55.61W
2.12.6 Threshold elevation: 66 ft
2.12.6 Touchdown zone elevation: 66 ft

2.12.1 Designation: 36
2.12.2 True Bearing: 16
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58−40−21.80N / 156−39−16.96W
2.12.6 Threshold elevation: 60 ft
2.12.6 Touchdown zone elevation: 65 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58−41−00.00N / 156−39−53.02W
2.12.6 Threshold elevation: 60 ft
2.12.6 Touchdown zone elevation: 62 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58−40−00.00N / 156−37−47.63W
2.12.6 Threshold elevation: 73 ft
2.12.6 Touchdown zone elevation: 73 ft

AD 2.13 Declared distances

2.13.1 Designation: 12
2.13.2 Takeoff run available: 8901
2.13.3 Takeoff distance available: 8901
2.13.4 Accelerate−stop distance available: 8501
2.13.5 Landing distance available: 8501

2.13.1 Designation: 30
2.13.2 Takeoff run available: 8901
2.13.3 Takeoff distance available: 8901
2.13.4 Accelerate−stop distance available: 8501
2.13.5 Landing distance available: 8501

AD 2.14 Approach and runway lighting

2.14.1 Designation: 12
2.14.2 Approach lighting system: SSALR: Simplified short approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light

PAPI on left

2.14.1 Designation: 30
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 128.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: PTD
2.18.3 Service designation: 372.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 279.5 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Outer Marker for runway 12. Magnetic variation: 16E
2.19.2 ILS identification: AKN
2.19.5 Coordinates: 58–44–14.14N / 156–46–45.49W
2.19.6 Site elevation:

2.19.1 ILS type: Localizer for runway 12. Magnetic variation: 16E
2.19.2 ILS identification: AKN
2.19.5 Coordinates: 58–39–56.55N / 156–37–32.37W
2.19.6 Site elevation: 78 ft

2.19.1 ILS type: Glide Slope for runway 12. Magnetic variation: 16E
2.19.2 ILS identification: AKN
2.19.5 Coordinates: 58–40–57.34N / 156–39–29.89W
2.19.6 Site elevation: 64 ft

2.19.1 ILS type: Middle Marker for runway 12. Magnetic variation: 16E
2.19.2 ILS identification: AKN
2.19.5 Coordinates: 58–41–25.44N / 156–40–42.92W
2.19.6 Site elevation: 1 ft

2.19.1 ILS type: DME for runway 12. Magnetic variation: 16E
2.19.2 ILS identification: AKN
2.19.5 Coordinates: 58–39–59.60N / 156–37–31.70W
2.19.6 Site elevation: 78 ft

General Remarks:
LANDING AREA RUNWAY NW/SE ALSO USED BY BOATS.

FLOCKS OF LARGE MIGRATORY BIRDS IN VICINITY DURING SEASON.

OFF PAVEMENT OPERATIONS BY AIRCRAFT; INCLUDING HELICOPTERS; NOT AUTHORIZED AT THE AIR CARRIER APRON. NO LANDING; PARKING OR TAKE-OFFS PERMITTED FROM DIRT OR GRASS.

ONE INCH DIP ON CENTERLINE 1850 FT FROM APPROACH END RUNWAY 36 EXTENDS TO THREE INCH DIP 25 FT WIDE ON WEST EDGE.

CIVILIAN TRANSIENT PARKING ON SE RAMP ONLY; OTHER PARKING LONGER THAN 48 HRS REQUIRES PERMIT.

ALL FIGHTER AIRCRAFT ON ARR EXPECT REDUCED SEPARATION; SIMILAR APPROACH CHARACTERISTICS AND DAY – 3000 FT; DISSIMILAR APPROACH CHARACTERISTICS AND/OR NIGHT – 6000 FT; AHEAD/BEHIND FORMATION LANDING – 6000 FT.

600 FT SAFETY AREA APPROACH END RUNWAY 12.

RUNWAY CONDITION READING UPDATED AS REQUIRED DURING 11TH AF FIGHTER FLYING WINDOW. AIRCREWS COORD RUNWAY CONDITION READING CHECKS WITH KING SALMON OPERATIONS – 907–439–3001 OR 907–439–6000. AIRCRAFT OPERATIONS RESTRICTED TO LOW APPROACH/FULL STOP LANDING ONLY.

FIGHTER AIRCRAFT COORDINATE DESIRED BARRIER CONFIGURATION OR ENGAGEMENT AS EARLY AS

POSSIBLE. EXPECT AT LEAST 30 MIN DELAY FOR SHORT−NOTICE REQUIREMENT.

FLIGHTS ORIG OUTSIDE ALASKA REFER TO USAF FOREIGN CLEARANCE GUIDE. NO CUSTOMS AVAILABLE.

SNOW, ICE REMOVAL & AIRPORT HAZARD CONDITION PERFORMED & REPORTED DURING MAINT DUTY HRS.

USAF FACILITIES MINIMALLY OPR BY CIVILIAN CONTRACTORS WITH LIMITED SUPPORT CAPABILITY. CALL TO CONFIRM OPR HRS NOT LATER THAN 24 HRS IN ADVANCE OF EXPECTED ARRIVAL. MILITARY AIRCRAFT NEED TO CONFIRM FUEL REQUIREMENTS 24−48 HOURS IN ADVANCE.

MILITARY FTRS/EMERGENCY DIVERTS CALL WARRIOR SOF/ELMENDORF SOF ON UHF AT 395.15. NON−EMERG/NON−FTR AIRCRAFT CALL KING SALMON OPERATIONS; 24 HR POINT NORMALLY MONITORS COMMON TRAFFIC ADVISORY FREQUENCY DURING OPR HRS.

RUNWAY 18/36 NOT INSPECTED FOR MILITARY OPERATIONS.

AIRCRAFT RESCUE AND FIRE FIGHTING EQUIPMENT STAFFED DURING PERIODS OF AIR CARRIER ACTIVITY ONLY.

PRIVATE JETS MAY PARK ON THE SE SECTION OF E RAMP; CALL AIRPORT MANAGER AT 907−246−3325 FOR INFORMATION.

AIRPORT MAINT DUTY HRS 0800−1700.

GENERAL AVIATION APRON,PAVEMENT CRUMBLING, POSSIBLE FOREIGN OBJECT DAMAGE HAZARD. JET AIRCRAFT BE ALERT DURING RUN−UP TO AVOID DAMAGE WITH JET WASH.

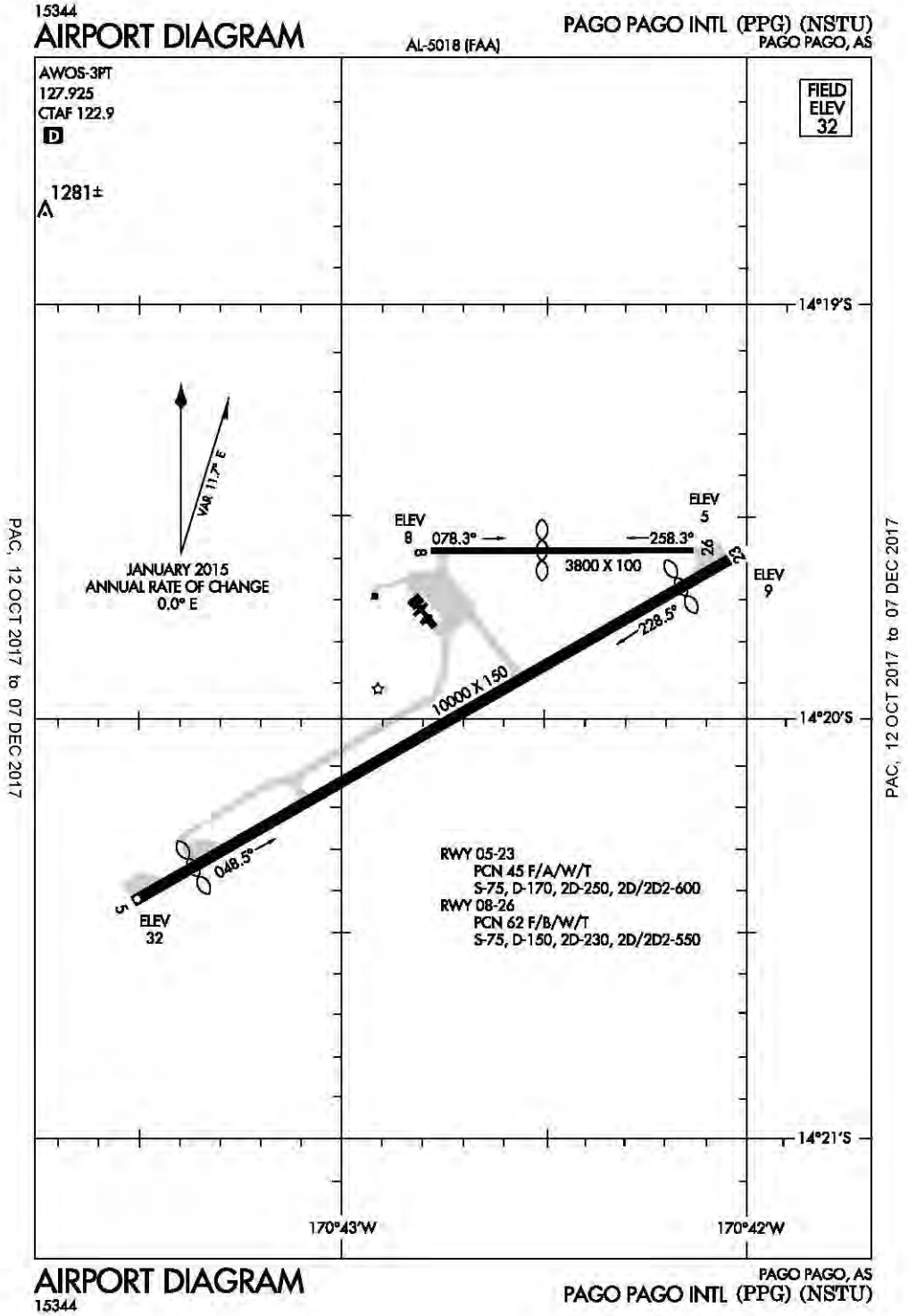
WX CAMERA AVAILABLE ON INTERNET AT HTTP://AVCAMS.FAA.GOV

APRON SPOTS 4, 5, 6, 7 NORTH OF MILITARY HANGARS CLOSED EXCEPT PROPELLER AIRCRAFT. TAXIWAY P CLOSED.

AIRCRAFT RESCUE AND FIRE FIGHTING IS AVAILABLE FOR PART 121 CARRIERS INVOLVED IN ETOPS OPERATIONS WITH 30 MINUTES NOTICE.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −31C.

Pago Pago, American Samoa
Pago Pago/International
ICAO Identifier NSTU



Pago Pago, AS
Pago Pago Intl
ICAO Identifier NSTU

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 14−19−53.98S / 170−42−41.41W
2.2.2 From City: 3 Miles SW Of Pago Pago, AS
2.2.3 Elevation: 32 ft
2.2.5 Magnetic variation: 12E (1990)
2.2.6 Airport Contact: Dr. Claire Poumele
1539 AIRPORT WAY P.O. BOX 1539
Pago Pago, AS 96799 ((684) 733−3076)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 05
2.10.1.b Type of obstacle: Hill (446 ft). Lighted
2.10.1.c Location of obstacle: 1000 ft from Centerline

2.10.1.a. Runway designation: 23
2.10.1.b Type of obstacle: Fence (8 ft). Lighted

AD 2.12 Runway physical characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3800 ft x 100 ft
2.12.4 PCN: 62 F/B/W/T
2.12.5 Coordinates: 14−19−35.13S / 170−42−46.75W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 6 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 3800 ft x 100 ft
2.12.4 PCN: 62 F/B/W/T
2.12.5 Coordinates: 14−19−35.10S / 170−42−00.00W
2.12.6 Threshold elevation: 5 ft
2.12.6 Touchdown zone elevation: 6 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 60
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−20−25.82S / 170−43−30.84W
2.12.6 Threshold elevation: 32 ft
2.12.6 Touchdown zone elevation: 32 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 240
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−19−36.47S / 170−42−00.00W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 9 ft

AD 2.13 Declared distances
2.13.1 Designation: 05
2.13.2 Takeoff run available: 9200
2.13.3 Takeoff distance available: 10200
2.13.4 Accelerate−stop distance available: 9200
2.13.5 Landing distance available: 8200

2.13.1 Designation: 23
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 9200

AD 2.14 Approach and runway lighting
2.14.1 Designation: 05
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 23
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 05. Magnetic variation: 12E
2.19.2 ILS identification: TUT
2.19.5 Coordinates: 14−19−38.78S / 170−42−12.90W
2.19.6 Site elevation: 5.7 ft

2.19.1 ILS type: DME for runway 05. Magnetic variation: 12E
2.19.2 ILS identification: TUT
2.19.5 Coordinates: 14–19–37.63S / 170–42–14.71W
2.19.6 Site elevation: 22 ft

2.19.1 ILS type: Glide Slope for runway 05. Magnetic variation: 12E
2.19.2 ILS identification: TUT
2.19.5 Coordinates: 14–20–13.06S / 170–43–15.19W
2.19.6 Site elevation: 25.4 ft

2.19.1 ILS type: Middle Marker for runway 05. Magnetic variation: 12E
2.19.2 ILS identification: TUT
2.19.5 Coordinates: 14–20–36.10S / 170–43–49.30W
2.19.6 Site elevation: 74 ft

General Remarks:
ALL FLIGHTS (EXCEPT SCHEDULED) PRIOR PERMISSION FROM AIRPORT MANAGER WITH 24 HRS PRIOR NOTICE.

SEA SPRAY FROM SURF & BLOW HOLES MAY DRIFT ACROSS RUNWAY 05/23 UNDER ROUGH SEA CONDITIONS.

ALL AIRCRAFT TRANSITING PAGO PAGO (EXCEPT COMMERCIAL CARRIERS) MUST MAKE FUEL ARRANGEMENTS WITH PPG AT 684–733–3158.

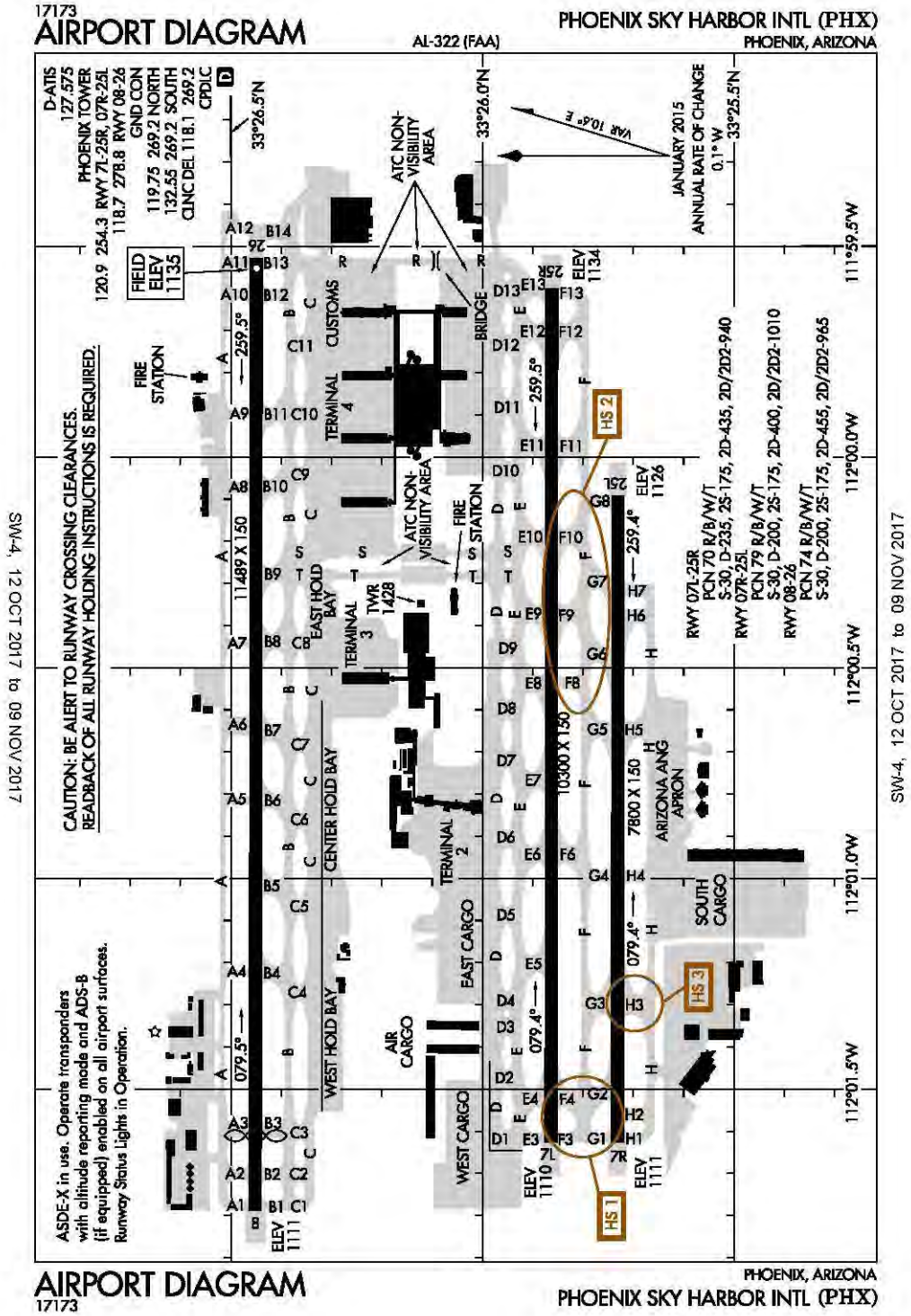
ALL AIRCRAFT EXCEEDING 100000 GROSS WEIGHT UPON TOUCHDOWN TAXI TO THR TURN– AROUND BEFORE TAXIING TO APRON. AIRCRAFT UNDER 100000 MAKE TURN–ARND WHERE FEASIBLE.

OLOTELE MOUNTAIN 1617 FT MSL 3.5 MILES WEST OF THRESHOLD RUNWAY 08.

PERMANENTLY LIGHTED & MARKED 226’ TOWER ATOP MOUNTAIN ALAVA 4.3SM NNE AIRPORT.

FOR NOTAM CONTACT NEW ZEALAND (643) 358–1688 FSS: NEW ZEALAND.

Phoenix, Arizona
Phoenix Sky Harbor International
ICAO Identifier KPHX



Phoenix, AZ
Phoenix Sky Harbor Intl
ICAO Identifier KPHX

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 33–26–00.00N / 112–00–41.70W
2.2.2 From City: 3 Miles E Of Phoenix, AZ
2.2.3 Elevation: 1134.6 ft
2.2.5 Magnetic variation: 12E (2000)
2.2.6 Airport Contact: James E Bennett
3400 SKY HARBOR BLVD, SUITE 3300
Phoenix, AZ 85034 (602–273–3300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 07L
2.10.1.b Type of obstacle: Pole (62 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 750 ft from Centerline

2.10.1.a. Runway designation: 25R
2.10.1.b Type of obstacle: Ant (416 ft). Marked and Lighted
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 08
2.10.1.b Type of obstacle: Bldg (66 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 503 ft from Centerline

2.10.1.a. Runway designation: 26
2.10.1.b Type of obstacle: Road (9 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 540 ft from Centerline

2.10.1.a. Runway designation: 07R
2.10.1.b Type of obstacle: Pole (33 ft). Lighted
2.10.1.c Location of obstacle: 640 ft from Centerline

2.10.1.a. Runway designation: 25L
2.10.1.b Type of obstacle: Ant (424 ft). Marked and Lighted
2.10.1.c Location of obstacle: 1193 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33–26–27.10N / 112–01–47.26W
2.12.6 Threshold elevation: 1111 ft
2.12.6 Touchdown zone elevation: 1118 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33–26–26.96N / 111–59–31.69W
2.12.6 Threshold elevation: 1135 ft
2.12.6 Touchdown zone elevation: 1135 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33–25–51.81N / 112–01–37.56W
2.12.6 Threshold elevation: 1110 ft
2.12.6 Touchdown zone elevation: 1116 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33–25–51.73N / 111–59–36.05W
2.12.6 Threshold elevation: 1134 ft
2.12.6 Touchdown zone elevation: 1134 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33–25–43.89N / 112–01–37.57W
2.12.6 Threshold elevation: 1111 ft
2.12.6 Touchdown zone elevation: 1116 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270

2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33−25−43.84N / 112−00−00.00W
2.12.6 Threshold elevation: 1126 ft
2.12.6 Touchdown zone elevation: 1126 ft

AD 2.13 Declared distances
2.13.1 Designation: 08
2.13.2 Takeoff run available: 11489
2.13.3 Takeoff distance available: 11489
2.13.4 Accelerate−stop distance available: 11489
2.13.5 Landing distance available: 10591

2.13.1 Designation: 26
2.13.2 Takeoff run available: 11489
2.13.3 Takeoff distance available: 11489
2.13.4 Accelerate−stop distance available: 11489
2.13.5 Landing distance available: 11489

2.13.1 Designation: 07L
2.13.2 Takeoff run available: 10300
2.13.3 Takeoff distance available: 10300
2.13.4 Accelerate−stop distance available: 10300
2.13.5 Landing distance available: 10300

2.13.1 Designation: 25R
2.13.2 Takeoff run available: 10300
2.13.3 Takeoff distance available: 10300
2.13.4 Accelerate−stop distance available: 10300
2.13.5 Landing distance available: 10300

2.13.1 Designation: 07R
2.13.2 Takeoff run available: 7800
2.13.3 Takeoff distance available: 7800
2.13.4 Accelerate−stop distance available: 7800
2.13.5 Landing distance available: 7800

2.13.1 Designation: 25L
2.13.2 Takeoff run available: 7800
2.13.3 Takeoff distance available: 7800
2.13.4 Accelerate−stop distance available: 7800
2.13.5 Landing distance available: 7800

AD 2.14 Approach and runway lighting
2.14.1 Designation: 08
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 07L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 25R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 07R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 25L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.7 MHz

2.18.1 Service designation: GND/P (NORTH)
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.9 MHz

2.18.1 Service designation: GND/P (SOUTH)
2.18.3 Service designation: 132.55 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 254.3 MHz

2.18.1 Service designation: GND/P CD/P
2.18.3 Service designation: 269.2 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 127.575 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 278.8 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.1 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: PHX
2.19.5 Coordinates: 33–25–51.72N / 111–59–20.41W
2.19.6 Site elevation: 1133.4 ft

2.19.1 ILS type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: PHX
2.19.5 Coordinates: 33–25–54.14N / 111–59–19.06W
2.19.6 Site elevation: 1142.3 ft

2.19.1 ILS type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: PHX
2.19.5 Coordinates: 33–25–49.05N / 112–01–25.22W
2.19.6 Site elevation: 1106.4 ft

2.19.1 ILS type: Outer Marker for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: PHX
2.19.5 Coordinates: 33–25–53.81N / 112–06–23.58W
2.19.6 Site elevation: 1056 ft

2.19.1 ILS type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: RJG
2.19.5 Coordinates: 33–25–43.83N / 111–59–52.33W
2.19.6 Site elevation: 1112 ft

2.19.1 ILS type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: RJG
2.19.5 Coordinates: 33–25–40.93N / 112–00–16.87W
2.19.6 Site elevation: 1120 ft

2.19.1 ILS type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: RJG
2.19.5 Coordinates: 33–25–43.90N / 112–01–50.78W
2.19.6 Site elevation: 1110 ft

2.19.1 ILS type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS identification: AHA
2.19.5 Coordinates: 33–25–43.83N / 111–59–52.33W
2.19.6 Site elevation: 1112 ft

2.19.1 ILS type: Glide Slope for runway 07R. Magnetic variation: 12E
2.19.2 ILS identification: AHA
2.19.5 Coordinates: 33–25–46.63N / 112–01–25.09W
2.19.6 Site elevation: 1108 ft

2.19.1 ILS type: Localizer for runway 07R. Magnetic variation: 12E
2.19.2 ILS identification: AHA
2.19.5 Coordinates: 33–25–43.83N / 111–59–52.33W
2.19.6 Site elevation: 1135 ft

2.19.1 ILS type: Middle Marker for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: PHX
2.19.5 Coordinates: 33–25–51.76N / 112–02–00.00W
2.19.6 Site elevation: 1304 ft

2.19.1 ILS type: DME for runway 08. Magnetic variation: 12E
2.19.2 ILS identification: SYQ
2.19.5 Coordinates: 33–26–24.32N / 111–59–19.70W
2.19.6 Site elevation: 1149.2 ft

2.19.1 ILS type: Glide Slope for runway 08. Magnetic variation: 12E
2.19.2 ILS identification: SYQ
2.19.5 Coordinates: 33–26–29.65N / 112–01–24.63W
2.19.6 Site elevation: 1114 ft

2.19.1 ILS type: Localizer for runway 08. Magnetic variation: 12E
2.19.2 ILS identification: SYQ
2.19.5 Coordinates: 33–26–26.95N / 111–59–19.75W
2.19.6 Site elevation: 1145.2 ft

2.19.1 ILS type: DME for runway 26. Magnetic variation: 12E
2.19.2 ILS identification: CWJ
2.19.5 Coordinates: 33–26–24.18N / 112–01–59.25W
2.19.6 Site elevation: 1118.9 ft

2.19.1 ILS type: Glide Slope for runway 26. Magnetic variation: 12E
2.19.2 ILS identification: CWJ
2.19.5 Coordinates: 33–26–29.60N / 111–59–44.43W
2.19.6 Site elevation: 1129.1 ft

2.19.1 ILS type: Localizer for runway 26. Magnetic variation: 12E
2.19.2 ILS identification: CWJ
2.19.5 Coordinates: 33−26−27.11N / 112−01−59.23W
2.19.6 Site elevation: 1105 ft

General Remarks:
FEE FOR ALL CHARTERS; TRAVEL CLUBS AND CERTAIN REVENUE PRODUCING AIRCRAFT.

NOISE ABATEMENT PROCEDURES ARE IN AFFECT AT ALL TIMES. CONTACT 602−273−4300 FOR MORE INFORMATION.

BIRD ACTIVITY WITHIN 10 MILES OF AIRPORT UP TO 10,000 MSL.

TAXIWAY R AND PORTIONS OF TAXIWAYS S AND T DIRECTLY BELOW THE ATCT ARE NON VISIBLE AREAS FROM THE ATCT. PHOENIX ATCT UNABLE TO PROVIDE AIR TRAFFIC CONTROL SERVICES TO AIRCRAFT WHILE ON TAXIWAY R, AND PORTIONS OF TAXIWAYS S AND T.

TAXIWAY D BETWEEN INTERSECTIONS TAXIWAYS D8 & D9 RESTRICTED TO AIRCRAFT WITH WINGSPAN 135 FT OR LESS.

TAXIWAY R OVERHEAD TRAIN BRIDGE AT MIDPOINT PROVIDES 82FT−4 IN. CLEARANCE.

WHEN ANG AIRFIELD CLOSED, TRANSIENT AIRCRAFT USE FBO CUTTER AVIATION FOR SERVICE C602−273−1237, 128.875."

FAA NAV EQUIPMENT SHACKS LOCATED 117 FT NORTH AND 117 FT SOUTH OF TAXIWAY F CENTERLINE BETWEEN TAXIWAYS G2 AND G3 INTERSECTIONS.

NO EXPERIMENTAL FLIGHT OR GROUND DMSTRN ON AIRPORT WITHOUT PRIOR WRITTEN CONSENT FROM THE AIRPORT.

THIS AIRPORT HAS BEEN SURVEYED BY THE NATIONAL GEODETIC SURVEY.

NATIONAL GUARD HAS LIMITED TRANSIENT MAINTENANCE AND PARKING REMAINING OVERNIGHT BY PRIOR PERMISSION.

AIRCRAFT DESIGN GROUP VI OPERATIONS WITH PRIOR PERMISSION REQUIRED.

NO TOUCH AND GO OR STOP AND GO OPERATIONS ALLOWED BETWEEN 0600 AND 2300 WITHOUT PRIOR WRITTEN CONSENT FROM THE AIRPORT.

OVERNIGHT PARKING FEE.

NO ENGINE RUNS ON AIRPORT WITHOUT PRIOR COORDN WITH AIRSIDE OPERATIONS.

NO ENGINE RUNS ON AIRPORT BETWEEN 2300L – 0500L.

INTERNATIONAL GATE USE REQUEST SUPPLEMENTARY FLIGHT PLAN COORDN WITH AIRPORT OPERATIONS 48 HOURS PRIOR TO ARRIVAL.

INTERNATIONAL LANDING RIGHTS REQUIRES US CUSTOMS AND BORDER PROTECTION NOTIFICATION 48 HOURS PRIOR TO LANDING.

GA SHOULD REVIEW AIRPORT SAFETY VIDEO @ HTTP://SKYHARBOR.COM/BUSINESS/FORPILOTS/SAFETYVIDEOFORPILOTS

FAA NAVIGATIONAL ANTS LOCATED 114 FT N AND S OF TAXIWAY F CENTERLINE, 525 W TAXIWAY G3

INTERSECTION.

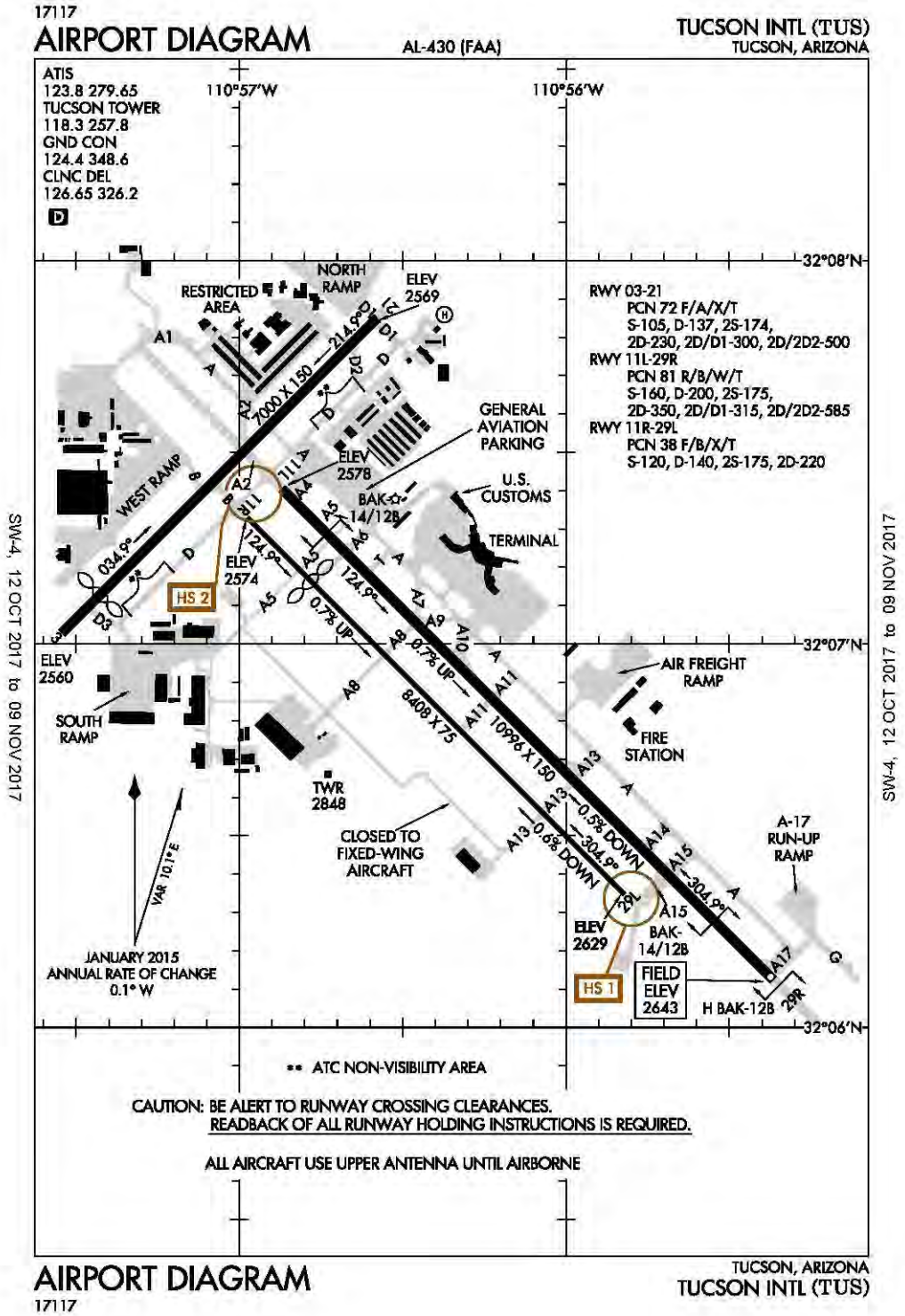
RUNWAY STATUS LIGHTS ARE IN OPN.

AIRPORT COMMUNICATIONS CENTER (602) 273−3302

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RUNWAY 08 PAPI 7 DEGREE LEFT OF RUNWAY CENTER LINE UNUSABLE.

Tucson, Arizona
Tucson International
ICAO Identifier KTUS



Tucson, AZ
Tucson Intl
ICAO Identifier KTUS

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 32−06−57.90N / 110−56−27.70W
2.2.2 From City: 6 Miles S Of Tucson, AZ
2.2.3 Elevation: 2643.1 ft
2.2.5 Magnetic variation: 12E (1995)
2.2.6 Airport Contact: Bonnie Allin
TUCSON APT AUTH 7250 S TUCSON BLVD
Tucson, AZ 85756 (520−573−8100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 03
2.10.1.b Type of obstacle: Rr (21 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

2.10.1.a. Runway designation: 29R
2.10.1.b Type of obstacle: Gnd (8 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 29L
2.10.1.b Type of obstacle: Pole (37 ft). Lighted
2.10.1.c Location of obstacle: 350 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 11R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−07−19.57N / 110−56−58.75W
2.12.6 Threshold elevation: 2574 ft
2.12.6 Touchdown zone elevation: 2605 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 29L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−06−20.72N / 110−55−49.66W
2.12.6 Threshold elevation: 2629 ft
2.12.6 Touchdown zone elevation: 2629 ft
2.12.7 Slope: 0.6DOWN

2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32−07−00.00N / 110−57−32.55W
2.12.6 Threshold elevation: 2560 ft
2.12.6 Touchdown zone elevation: 2572 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32−07−50.74N / 110−56−34.96W
2.12.6 Threshold elevation: 2569 ft
2.12.6 Touchdown zone elevation: 2573 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−07−24.13N / 110−56−52.49W
2.12.6 Threshold elevation: 2578 ft
2.12.6 Touchdown zone elevation: 2599 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 29R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−06−00.00N / 110−55−22.14W
2.12.6 Threshold elevation: 2643 ft
2.12.6 Touchdown zone elevation: 2643 ft
2.12.7 Slope: 0.5DOWN

AD 2.13 Declared distances

2.13.1 Designation: 11R
2.13.2 Takeoff run available: 6998
2.13.3 Takeoff distance available: 6998
2.13.4 Accelerate−stop distance available: 6998

2.13.5 Landing distance available: 6998

2.13.1 Designation: 29L
2.13.2 Takeoff run available: 6998
2.13.3 Takeoff distance available: 6998
2.13.4 Accelerate−stop distance available: 6998
2.13.5 Landing distance available: 6998

2.13.1 Designation: 03
2.13.2 Takeoff run available: 7000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 7000
2.13.5 Landing distance available: 6150

2.13.1 Designation: 21
2.13.2 Takeoff run available: 6000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 6000
2.13.5 Landing distance available: 6000

2.13.1 Designation: 11L
2.13.2 Takeoff run available: 10996
2.13.3 Takeoff distance available: 10996
2.13.4 Accelerate−stop distance available: 10996
2.13.5 Landing distance available: 10996

2.13.1 Designation: 29R
2.13.2 Takeoff run available: 10996
2.13.3 Takeoff distance available: 10996
2.13.4 Accelerate−stop distance available: 10996
2.13.5 Landing distance available: 10996

AD 2.14 Approach and runway lighting
2.14.1 Designation: 11R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 21
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 11L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 29R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: ANG COMD POST
2.18.3 Service designation: 138.525 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 119 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 124.4 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 126.65 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 326.2 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 123.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: ATIS
2.18.3 Service designation: 279.65 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 11L. Magnetic variation: 12E
2.19.2 ILS identification: TUS
2.19.5 Coordinates: 32−05−53.51N / 110−55−00.00W
2.19.6 Site elevation: 2660 ft

2.19.1 ILS type: Glide Slope for runway 11L. Magnetic variation: 12E
2.19.2 ILS identification: TUS
2.19.5 Coordinates: 32−07−14.77N / 110−56−48.06W
2.19.6 Site elevation: 2580.3 ft

2.19.1 ILS type: Outer Marker for runway 11L. Magnetic variation: 12E
2.19.2 ILS identification: TUS
2.19.5 Coordinates: 32–10–54.55N / 111–00–57.52W
2.19.6 Site elevation: 2500 ft

2.19.1 ILS type: Middle Marker for runway 11L. Magnetic variation: 12E
2.19.2 ILS identification: TUS
2.19.5 Coordinates: 32–07–51.90N / 110–57–22.60W
2.19.6 Site elevation: 2550 ft

2.19.1 ILS type: DME for runway 11L. Magnetic variation: 12E
2.19.2 ILS identification: TUS
2.19.5 Coordinates: 32–05–54.98N / 110–55–00.00W
2.19.6 Site elevation: 2676.1 ft

General Remarks:
AIRCRAFT DEPG RUNWAY 11R REQUIRED TO ATTAIN AT LEAST 400 FT AGL PRIOR TO STARTING TURN.

PORTIONS OF TAXIWAY D NOT VISIBLE FROM ATCT DUE TO HANGARS.

RUNWAY 11L/29R HAS DISTANCE REMAINING MARKINGS ON NE SIDE. RUNWAY 03/21 HAS DISTANCE REMAINING MARKERS ON SE SIDE.

NO B–747 TRAINING EXCEPT PRIOR PERMISSION REQUIRED; NO FLIGHT TRAINING 2200–0600 EXCEPT PRIOR PERMISSION REQUIRED; CALL AIRSIDE OPERATIONS DEPT. (520) 573–8190.

B747 AIRCRAFT TAXI WITH INBOARD ENGINES ONLY.

TAXIWAY T – GENERAL AVIATION TAXIWAY, 30,000 LBS OR LESS.

AIR CARRIERS USE RUNWAY 11L/29R & RUNWAY 03/21

RUNWAY 11R/29L RESTRICTED TO TKOF/LAND AIRCRAFT WITH WINGSPAN LESS THAN 73 FT & LANDING SPEED LESS THAN 120 KNOTS.

SERVICE–A–GEAR: BAK–14/BAK–12B APPROACH END RUNWAY 11L AND BAK–14/BAK–12B APPROACH END RUNWAY 29R, ENGAGEMENTS AVAILABLE ONLY DUR ANG DUTY HR AND 15 MIN PRIOR NOTICE REQUIRE. BAK–12B OVERRUN RUNWAY 29R AND BAK–12B OVERRUN RUNWAY 11L SERVICEABLE BUT NOT CERTIFIED. BAK–12B IN RUNWAY 11L OVERRUN HAS 850’ RUN OUT.

HELICOPTER OPERATIONS LOCATED SOUTH OF RUNWAY 11R/29L & WEST OF TAXIWAY A13.

TAXIWAY A5 LIMITED TO 70,000 LBS OR LESS.

ANG – OFFICIAL BUSINESS ONLY. PRIOR PERMISSION REQUIRED DSN 844–6731, C520–295–6731, FAX EXTENSION 6732. 24 HR NOTIFICATION REQ FOR ALL PPR’S. BASE OPERATIONS OPR 1300–2200Z++ MON–FRI EXCEPT HOLIDAY. NO TRANSIENT ALERT MAINT AVAILABLE. NO CONTRACT FUEL AVAILABLE. TRANSIENT AIRCRAFT EXPECT STR–IN FULL STOP ONLY.

ALL AIRCRAFT USE UPPER ANTENNA UNTIL AIRBORNE.

NO PUBLIC SERVICES AVAILABLE AT THE TUS EXECUTIVE TERMINAL.

CALL OPERATIONS OFFICE AT 520–573–8190.

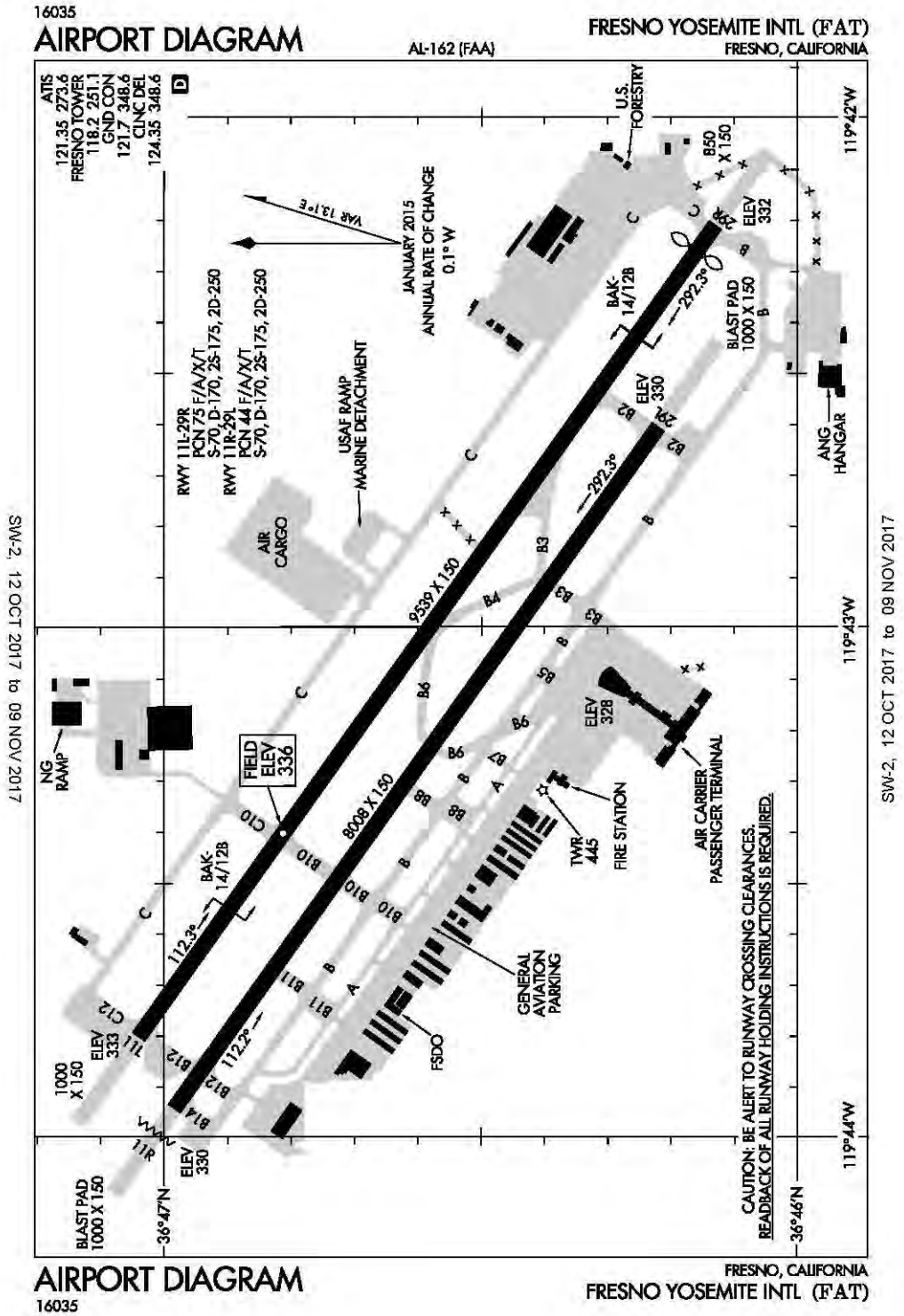
ANG: TAXIWAY ONTO APRON FENCE OPENING 78 FT 10 IN WIDE, 10 FT 2 IN HIGH.

SERVICE–FUEL: A++(MIL)

PRIOR PERMISSION REQUIREDUIRED FOR ALL CHARTER, SPORTS TEAM, CARGO AND MILITARY

AIRCRAFT. CONTACT AIRSIDE OPERATIONS FOR PRIOR PERMISSION REQUIRED NUMBER AT 520−573−8190. LANDING AND PARKING FEES MAY APPLY.

Fresno, California
Fresno Yosemite International
ICAO Identifier KFAT



Fresno, CA
Fresno Yosemite Intl
ICAO Identifier KFAT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 36−46−35.60N / 119−43−00.00W
2.2.2 From City: 5 Miles NE Of Fresno, CA
2.2.3 Elevation: 335.9 ft
2.2.5 Magnetic variation: 14E (2005)
2.2.6 Airport Contact: Kevin R. Meikle
4995 E CLINTON WAY
Fresno, CA 93727
(559−621−4500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100,A++
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 11L
2.10.1.b Type of obstacle: Pole (31 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 650 ft from Centerline

2.10.1.a. Runway designation: 29R
2.10.1.b Type of obstacle: Road (16 ft). Lighted
2.10.1.c Location of obstacle: 580 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 11L
2.12.2 True Bearing: 125
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−47−00.00N / 119−43−48.31W
2.12.6 Threshold elevation: 333 ft
2.12.6 Touchdown zone elevation: 336 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 305
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−46−00.00N / 119−42−12.69W
2.12.6 Threshold elevation: 332 ft
2.12.6 Touchdown zone elevation: 333 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 125
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36−46−59.02N / 119−43−56.71W
2.12.6 Threshold elevation: 330 ft
2.12.6 Touchdown zone elevation: 333 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 305
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36−46−13.21N / 119−42−36.44W
2.12.6 Threshold elevation: 330 ft
2.12.6 Touchdown zone elevation: 331 ft

AD 2.13 Declared distances

2.13.1 Designation: 11L
2.13.2 Takeoff run available: 9539
2.13.3 Takeoff distance available: 9539
2.13.4 Accelerate−stop distance available: 9279
2.13.5 Landing distance available: 9279

2.13.1 Designation: 29R
2.13.2 Takeoff run available: 9539
2.13.3 Takeoff distance available: 9539
2.13.4 Accelerate−stop distance available: 9539
2.13.5 Landing distance available: 9227

AD 2.14 Approach and runway lighting

2.14.1 Designation: 11L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 29R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 29L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.2 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 119.6 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 121.35 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 132 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 132.35 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 251.1 MHz

2.18.1 Service designation: NG OPNS
2.18.3 Service designation: 255.8 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 273.6 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: ANG
2.18.3 Service designation: 298.3 MHz

2.18.1 Service designation: GND/P CD/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: NG OPNS
2.18.3 Service designation: 40.95 MHz

2.18.1 Service designation: ANG
2.18.3 Service designation: 140 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 323.25 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 268.7 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 351.95 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36–47–00.00N / 119–43–58.60W
2.19.6 Site elevation: 333.8 ft

2.19.1 ILS type: DME for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36–47–10.81N / 119–43–56.63W
2.19.6 Site elevation: 347.2 ft

2.19.1 ILS type: Glide Slope for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36–46–18.84N / 119–42–23.48W
2.19.6 Site elevation: 332.3 ft

2.19.1 ILS type: Outer Marker for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36–43–48.19N / 119–38–00.00W
2.19.6 Site elevation: 340 ft

2.19.1 ILS type: Middle Marker for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36–45–47.67N / 119–41–37.41W
2.19.6 Site elevation: 330 ft

2.19.1 ILS type: DME for runway 11L. Magnetic variation: 14E
2.19.2 ILS identification: RPW
2.19.5 Coordinates: 36–47–10.81N / 119–43–56.63W
2.19.6 Site elevation: 347.3 ft

2.19.1 ILS type: Localizer for runway 11L. Magnetic

variation: 14E
2.19.2 ILS identification: RPW
2.19.5 Coordinates: 36−46−00.00N / 119−42−00.00W
2.19.6 Site elevation: 331.4 ft

2.19.1 ILS type: Inner Marker for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: FAT
2.19.5 Coordinates: 36−46−00.00N / 119−42−00.00W
2.19.6 Site elevation: 330.7 ft

General Remarks:
FRESNO YOSEMITE INTL IS NOISE SENSITIVE; NOISE ABATEMENT PROCEDURES IN EFFECT.

NO MULTIPLE APPROACHES AND LANDINGS MON−SAT 2200−0700 AND SUN 1800−1000.

POSSIBLE WAKE TURBULENCE OR WIND SHEAR ARR TO RUNWAY 29L OR DEP FROM RUNWAY 11R. JET TESTING CONDUCTED AT AIR NATIONAL GUARD RAMP LOCATED AT SE CORNER OF AIRPORT.

NUMEROUS BIRDS IN THE VICINITY OF AIRPORT.

LIGHTED RUNWAY DISTANCE REMAINING MARKERS ON SOUTH SIDE OF RUNWAY 11R/29L; LIGHTED RUNWAY DISTANCE REMAINING MARKERS BOTH SIDES OF RUNWAY 11L/29R− 11L DRM ON NORTH SIDE; 29R DRM ON SOUTH SIDE.

RETRACTABLE BAK−12/14 AVAILABLE ON RUNWAY 11L AND RUNWAY 29R ARE KEPT IN RECESSED POSITION UNTIL REQ FOR USE; TOWER MUST BE NOTIFIED AT LEAST 5 SECONDS PRIOR TO ENGAGEMENT SO THAT THE AIR GROUND CABLE MAY BE RAISED.

SERVICE− JET AIR START UNIT (JASU): (AM32A−60) 2(AGPU)

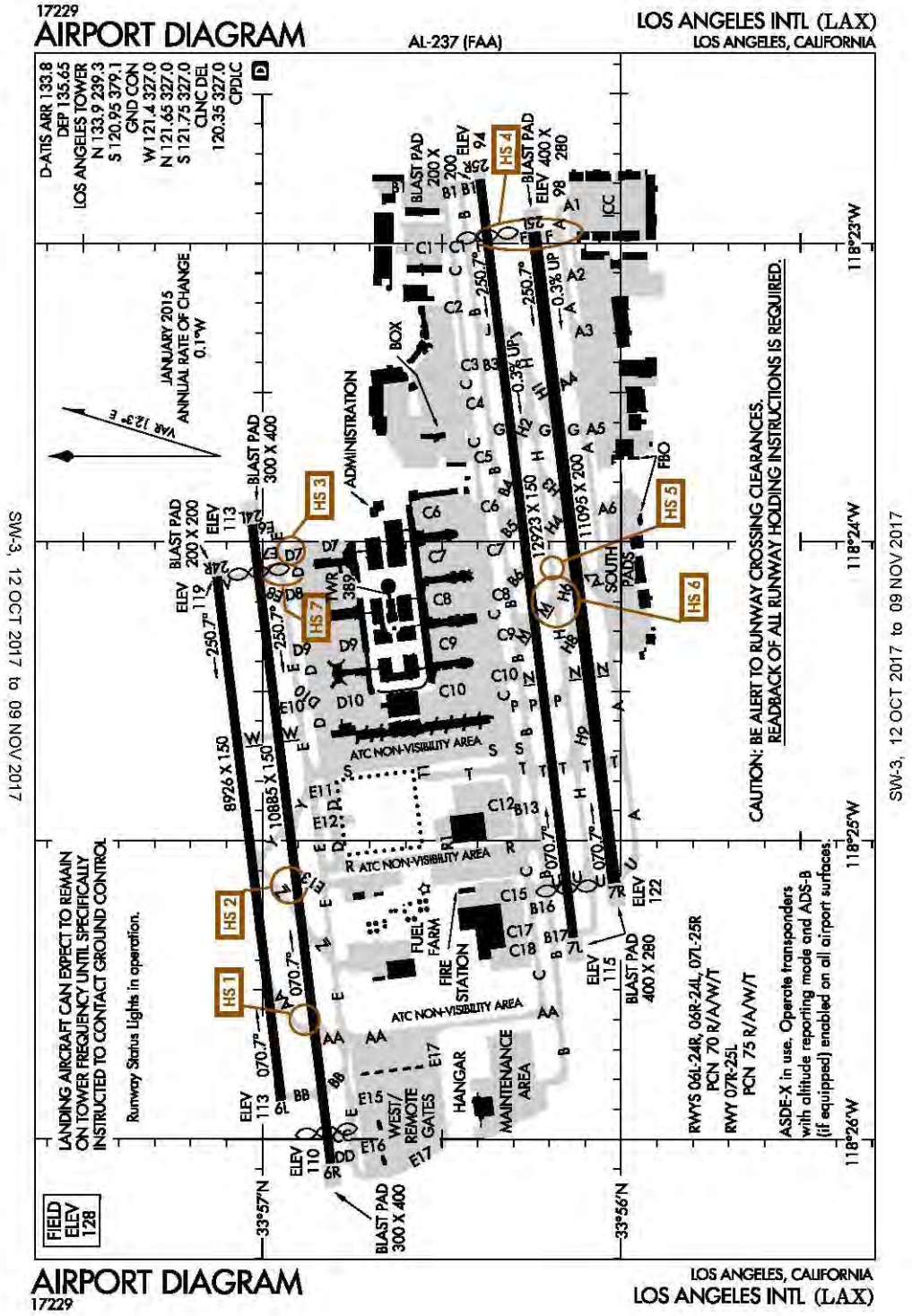
SERVICE−FUEL: SIGNATURE FLIGHT SUPPORT, C559−981−2490

SERVICE − FUEL: ROSS AVIATION, C559−251−1555

MILITARY: ANG: CONTACT ANG OPERATIONS FOR LOCAL BIRD WATCH CONDITION (BWC).

MILITARY: SERVICE: RUNWAY 29R AND 11L ARRESTING GEAR CABLE AVAILABLE UPON REQ ONLY; DEFAULT POSITION DOWN.

Los Angeles, California
Los Angeles International
ICAO Identifier KLAX



Los Angeles, CA
Los Angeles Intl
ICAO Identifier KLAX

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 33−56−32.98N / 118−24−28.97W
2.2.2 From City: 9 Miles SW Of Los Angeles, CA
2.2.3 Elevation: 127.7 ft
2.2.5 Magnetic variation: 12E (2020)
2.2.6 Airport Contact: Keith Wilschetz
ONE WORLD WAY
Los Angeles, CA 90009
(424−646−5060)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 06R
2.10.1.b Type of obstacle: Pole (9 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 375 ft from Centerline

2.10.1.a. Runway designation: 06L
2.10.1.b Type of obstacle: Pole (61 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

2.10.1.a. Runway designation: 24R
2.10.1.b Type of obstacle: Sign (42 ft). Lighted
2.10.1.c Location of obstacle: 350 ft from Centerline

2.10.1.a. Runway designation: 07R
2.10.1.b Type of obstacle: Pole (67 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 825 ft from Centerline

2.10.1.a. Runway designation: 25L
2.10.1.b Type of obstacle: Rr (21 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 25R
2.10.1.b Type of obstacle: Rr (25 ft). Lighted
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 07L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−00.00N / 118−25−19.43W
2.12.6 Threshold elevation: 115 ft
2.12.6 Touchdown zone elevation: 128 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 263
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−23.56N / 118−22−47.20W
2.12.6 Threshold elevation: 94 ft
2.12.6 Touchdown zone elevation: 104 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−00.00N / 118−25−00.00W
2.12.6 Threshold elevation: 122 ft
2.12.6 Touchdown zone elevation: 128 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−14.51N / 118−22−57.77W
2.12.6 Threshold elevation: 98 ft
2.12.6 Touchdown zone elevation: 104 ft

2.12.1 Designation: 06L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−56.80N / 118−25−52.18W
2.12.6 Threshold elevation: 113 ft
2.12.6 Touchdown zone elevation: 119 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 263

2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33–57–00.00N / 118–24–00.00W
2.12.6 Threshold elevation: 119 ft
2.12.6 Touchdown zone elevation: 122 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33–56–48.53N / 118–26–00.00W
2.12.6 Threshold elevation: 110 ft
2.12.6 Touchdown zone elevation: 116 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33–57–00.00N / 118–23–56.56W
2.12.6 Threshold elevation: 113 ft
2.12.6 Touchdown zone elevation: 122 ft

AD 2.13 Declared distances
2.13.1 Designation: 07L
2.13.2 Takeoff run available: 12091
2.13.3 Takeoff distance available: 12091
2.13.4 Accelerate–stop distance available: 12091
2.13.5 Landing distance available: 11259

2.13.1 Designation: 25R
2.13.2 Takeoff run available: 12091
2.13.3 Takeoff distance available: 12091
2.13.4 Accelerate–stop distance available: 12091
2.13.5 Landing distance available: 11134

2.13.1 Designation: 07R
2.13.2 Takeoff run available: 11095
2.13.3 Takeoff distance available: 11095
2.13.4 Accelerate–stop distance available: 11095
2.13.5 Landing distance available: 11095

2.13.1 Designation: 25L
2.13.2 Takeoff run available: 11095
2.13.3 Takeoff distance available: 11095
2.13.4 Accelerate–stop distance available: 11095
2.13.5 Landing distance available: 11095

2.13.1 Designation: 06L
2.13.2 Takeoff run available: 8925
2.13.3 Takeoff distance available: 8925
2.13.4 Accelerate–stop distance available: 8566
2.13.5 Landing distance available: 8566

2.13.1 Designation: 24R
2.13.2 Takeoff run available: 8925
2.13.3 Takeoff distance available: 8925
2.13.4 Accelerate–stop distance available: 8925
2.13.5 Landing distance available: 8925

2.13.1 Designation: 06R
2.13.2 Takeoff run available: 10285
2.13.3 Takeoff distance available: 10285
2.13.4 Accelerate–stop distance available: 10285
2.13.5 Landing distance available: 9748

2.13.1 Designation: 24L
2.13.2 Takeoff run available: 10285
2.13.3 Takeoff distance available: 10285
2.13.4 Accelerate–stop distance available: 10285
2.13.5 Landing distance available: 9483

AD 2.14 Approach and runway lighting
2.14.1 Designation: 07L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 25R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 07R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 25L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right
2.14.10 Remarks: ALSF2 Operates As SSALR Till Wx Goes Below Vfr.

2.14.1 Designation: 06L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: ALSF2 Operates As SSALR Till Wx Goes Below Vfr.

2.14.1 Designation: 06R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135.65 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P
2.18.3 Service designation: 120.35 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.4 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 133.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.8 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 120.95 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.75 MHz

2.18.1 Service designation: SPECIAL FLIGHT RULE AREA
2.18.3 Service designation: 128.55 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 133.9 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 239.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: GND/P CD
2.18.3 Service designation: 327 MHz

2.18.1 Service designation: SAMSO FLT OPS
2.18.3 Service designation: 372.2 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 379.1 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: IAS
2.19.5 Coordinates: 33−56−24.76N / 118−22−35.45W
2.19.6 Site elevation: 112.2 ft

2.19.1 ILS type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33−55−59.86N / 118−25−20.87W
2.19.6 Site elevation: 118.4 ft

2.19.1 ILS type: Localizer for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33−56−53.16N / 118−26−27.68W
2.19.6 Site elevation: 125.5 ft

2.19.1 ILS type: Localizer for runway 07R. Magnetic

variation: 12E
2.19.2 ILS identification: MKZ
2.19.5 Coordinates: 33–56–15.79N / 118–22–45.24W
2.19.6 Site elevation: 92.5 ft

2.19.1 ILS type: Localizer for runway 25R. Magnetic variation: 12E
2.19.2 ILS identification: CFN
2.19.5 Coordinates: 33–56–00.00N / 118–25–26.62W
2.19.6 Site elevation: 118.1 ft

2.19.1 ILS type: Localizer for runway 06L. Magnetic variation: 12E
2.19.2 ILS identification: UWU
2.19.5 Coordinates: 33–57–00.00N / 118–23–57.20W
2.19.6 Site elevation: 108.5 ft

2.19.1 ILS type: Localizer for runway 24L. Magnetic variation: 12E
2.19.2 ILS identification: HQB
2.19.5 Coordinates: 33–56–46.75N / 118–26–22.25W
2.19.6 Site elevation: 123.4 ft

2.19.1 ILS type: Localizer for runway 06R. Magnetic variation: 12E
2.19.2 ILS identification: GPE
2.19.5 Coordinates: 33–57–00.00N / 118–23–49.32W
2.19.6 Site elevation: 105.2 ft

2.19.1 ILS type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: IAS
2.19.5 Coordinates: 33–56–00.00N / 118–25–24.83W
2.19.6 Site elevation: 104.5 ft

2.19.1 ILS type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33–56–00.00N / 118–25–20.79W
2.19.6 Site elevation: 126 ft

2.19.1 ILS type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: IAS
2.19.5 Coordinates: 33–56–00.00N / 118–24–56.67W
2.19.6 Site elevation: 119.6 ft

2.19.1 ILS type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33–56–17.77N / 118–23–10.21W
2.19.6 Site elevation: 97.3 ft

2.19.1 ILS type: DME for runway 06R. Magnetic variation: 12E
2.19.2 ILS identification: GPE
2.19.5 Coordinates: 33–56–49.92N / 118–26–22.77W
2.19.6 Site elevation: 134.3 ft

2.19.1 ILS type: DME for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33–56–50.75N / 118–26–26.62W
2.19.6 Site elevation: 139.3 ft

2.19.1 ILS type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS identification: MKZ
2.19.5 Coordinates: 33–56–00.00N / 118–25–20.79W
2.19.6 Site elevation: 126 ft

2.19.1 ILS type: DME for runway 25R. Magnetic variation: 12E
2.19.2 ILS identification: CFN
2.19.5 Coordinates: 33–56–00.00N / 118–25–24.83W
2.19.6 Site elevation: 104.5 ft

2.19.1 ILS type: DME for runway 24L. Magnetic variation: 12E
2.19.2 ILS identification: HQB
2.19.5 Coordinates: 33–56–49.92N / 118–26–22.77W
2.19.6 Site elevation: 134.3 ft

2.19.1 ILS type: DME for runway 06L. Magnetic variation: 12E
2.19.2 ILS identification: UWU
2.19.5 Coordinates: 33–56–50.75N / 118–26–26.62W
2.19.6 Site elevation: 139.3 ft

2.19.1 ILS type: Glide Slope for runway 06R. Magnetic variation: 12E
2.19.2 ILS identification: GPE
2.19.5 Coordinates: 33–56–53.31N / 118–25–47.36W
2.19.6 Site elevation: 107.6 ft

2.19.1 ILS type: Glide Slope for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33–57–00.00N / 118–24–18.52W
2.19.6 Site elevation: 116.7 ft

2.19.1 ILS type: Glide Slope for runway 07R. Magnetic

variation: 12E
2.19.2 ILS identification: MKZ
2.19.5 Coordinates: 33−55−59.93N / 118−24−55.05W
2.19.6 Site elevation: 118.2 ft

2.19.1 ILS type: Glide Slope for runway 25R. Magnetic variation: 12E
2.19.2 ILS identification: CFN
2.19.5 Coordinates: 33−56−17.87N / 118−23−10.22W
2.19.6 Site elevation: 97.7 ft

2.19.1 ILS type: Glide Slope for runway 06L. Magnetic variation: 12E
2.19.2 ILS identification: UWU
2.19.5 Coordinates: 33−56−54.59N / 118−25−39.82W
2.19.6 Site elevation: 110.5 ft

2.19.1 ILS type: Glide Slope for runway 24L. Magnetic variation: 12E
2.19.2 ILS identification: HQB
2.19.5 Coordinates: 33−57−00.00N / 118−24−18.51W
2.19.6 Site elevation: 116.7 ft

2.19.1 ILS type: Outer Marker for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33−57−53.70N / 118−16−40.70W
2.19.6 Site elevation: 136 ft

2.19.1 ILS type: Outer Marker for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33−56−53.50N / 118−16−32.20W
2.19.6 Site elevation: 127 ft

2.19.1 ILS type: Middle Marker for runway 07L. Magnetic variation: 12E
2.19.2 ILS identification: IAS
2.19.5 Coordinates: 33−56−00.00N / 118−25−46.90W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33−57−00.00N / 118−23−55.75W
2.19.6 Site elevation: 107.7 ft

2.19.1 ILS type: Inner Marker for runway 25L. Magnetic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33−56−15.69N / 118−22−46.13W
2.19.6 Site elevation: 92.6 ft

2.19.1 ILS type: Middle Marker for runway 24L. Magnetic variation: 12E
2.19.2 ILS identification: HQB
2.19.5 Coordinates: 33−57−00.00N / 118−23−31.30W
2.19.6 Site elevation: 103 ft

2.19.1 ILS type: Middle Marker for runway 06L. Magnetic variation: 12E
2.19.2 ILS identification: UWU
2.19.5 Coordinates: 33−56−50.80N / 118−26−25.80W
2.19.6 Site elevation: 121 ft

2.19.1 ILS type: Middle Marker for runway 25R. Magnetic variation: 12E
2.19.2 ILS identification: CFN
2.19.5 Coordinates: 33−56−25.90N / 118−22−24.40W
2.19.6 Site elevation: 87 ft

2.19.1 ILS type: Middle Marker for runway 24R. Magnetic variation: 12E
2.19.2 ILS identification: OSS
2.19.5 Coordinates: 33−57−11.00N / 118−23−33.00W
2.19.6 Site elevation: 104 ft

2.19.1 ILS type: Outer Marker for runway 25R. Magnetic variation: 12E
2.19.2 ILS identification: CFN
2.19.5 Coordinates: 33−56−53.50N / 118−16−32.20W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 07R. Magnetic variation: 12E
2.19.2 ILS identification: MKZ
2.19.5 Coordinates: 33−55−58.50N / 118−25−41.70W
2.19.6 Site elevation: 104 ft

2.19.1 ILS type: Outer Marker for runway 24L. Magnetic variation: 12E
2.19.2 ILS identification: HQB
2.19.5 Coordinates: 33−57−53.70N / 118−16−40.70W
2.19.6 Site elevation: 136 ft

2.19.1 ILS type: Middle Marker for runway 06R. Magnetic variation: 12E
2.19.2 ILS identification: GPE
2.19.5 Coordinates: 33−56−45.50N / 118−26−33.30W
2.19.6 Site elevation: 65 ft

2.19.1 ILS type: Middle Marker for runway 25L. Mag-

netic variation: 12E
2.19.2 ILS identification: LAX
2.19.5 Coordinates: 33−56−18.50N / 118−22−23.90W
2.19.6 Site elevation: 84 ft

General Remarks:
NUMEROUS BIRDS ON AND IN VICINITY OF AIRPORT.

TURBULENCE MAY BE DEFLECTED UPWARD FROM THE BLAST FENCE 180 FT E OF RUNWAY 25R.

NOISE SENSITIVITY AIRPORT ON WESTERLY TAKEOFFS NO TURNS BEFORE CROSSING SHORELINE OVER−OCEAN APPROACHES UTILIZED 0000−0630.

PRACTICE INSTRUMENT APPROACHES & TOUCH AND GO LANDINGS ARE PROHIBITED.

RUNWAY 25L PREFERRED EMERGENCY RUNWAY.

SIMULTANEOUS AIRCRAFT OPERATIONS PROHIBITED ON TAXIWAYS T AND H9 BETWEEN RUNWAYS 07L/25R AND 07R/25L.

SIMULTANEOUS AIRCRAFT OPERATIONS PROHIBITED ON TAXIWAY H2 AND G BETWEEN RUNWAYS 07L/25R AND 07R/25L.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

MILITARY RESTRICTED: ALL MILITARY AIRCRAFT OFFICIAL BUSINESS ONLY, MIN 24 HR PRIOR PERMISSION REQUIRED, CONTACT 61 ABW/CP FLIGHT OPERATIONS DSN 633−3779/4014, C310−653−3779/4014.

MILITARY AF: ALL MILITARY AIRCREWS MUST CONTACT 61 ABW/CP FLIGHT OPERATIONS FOR PARK LOCATION/INSTR. NO GOVERNMENT TRANSPORTATION, QUARTERS OR SECURITY AVAILABLE. VIP NOTIFICATION PRO APPLY. USER FEES ASSESSED USING AVCARD CREDIT. CONTACT ATLANTIC AVIATION FBO 131.6 INBOUND. INBOUND RELAY ESTIMATED TIME OF ARRIVAL, VIP CODE, SERVICE REQUIRE 30 MIN PRIOR TO ARR.

TAXIWAY D BETWEEN TAXIWAY D−7 AND D−8 (NORTH OF TERMINAL ONE) CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 157 FT.

WEST REMOTE GATES: AIRCRAFT USE OF OPEN GATES AS TAXI PATH IS PROHIBITED (GATES 206, 207,208,209).

TAXIWAY E13 S OF TAXIWAY E CLOSED TO AIRCRAFT WITH WINGSPAN OVER 125 FT.

AIRCRAFT USE MINIMAL POWER WHEN TAXIING VICINITY TRMLS DUE BLAST HAZARD.

FOR AIRCRAFT WITH WINGSPAN GREATER THAN 214 FT CONTACT LAX AIRSIDE OPERATIONS (424)−646−5292 FOR AIRPORT RESTRICTIONS.

MAJOR CONSTRUCTION ON AIRPORT, DAILY.

AMERICAN EAGLE TERMINAL SOUTHBOUND TAXING AIRCRAFT USE MINIMUM POWER DUE TO BLAST HAZARD.

WEST/REMOTE GATES RAMP GATE 208 SOUTHBOUND TURN NOT AVAIL

ANY AIRCRAFT THAT COMES TO A STOP OR HAS ITS MOMENTUM INTRPD WHILE TURNING AND TAXING INTO ITS PARKING POSITION, MUST STOP AND BE TOWED.

ALL A346, B773, B77W AIRCRAFT ARE PROHIBITED ON TAXILANES C8 AND C9 BETWEEN TAXILANE C AND TAXIWAY B

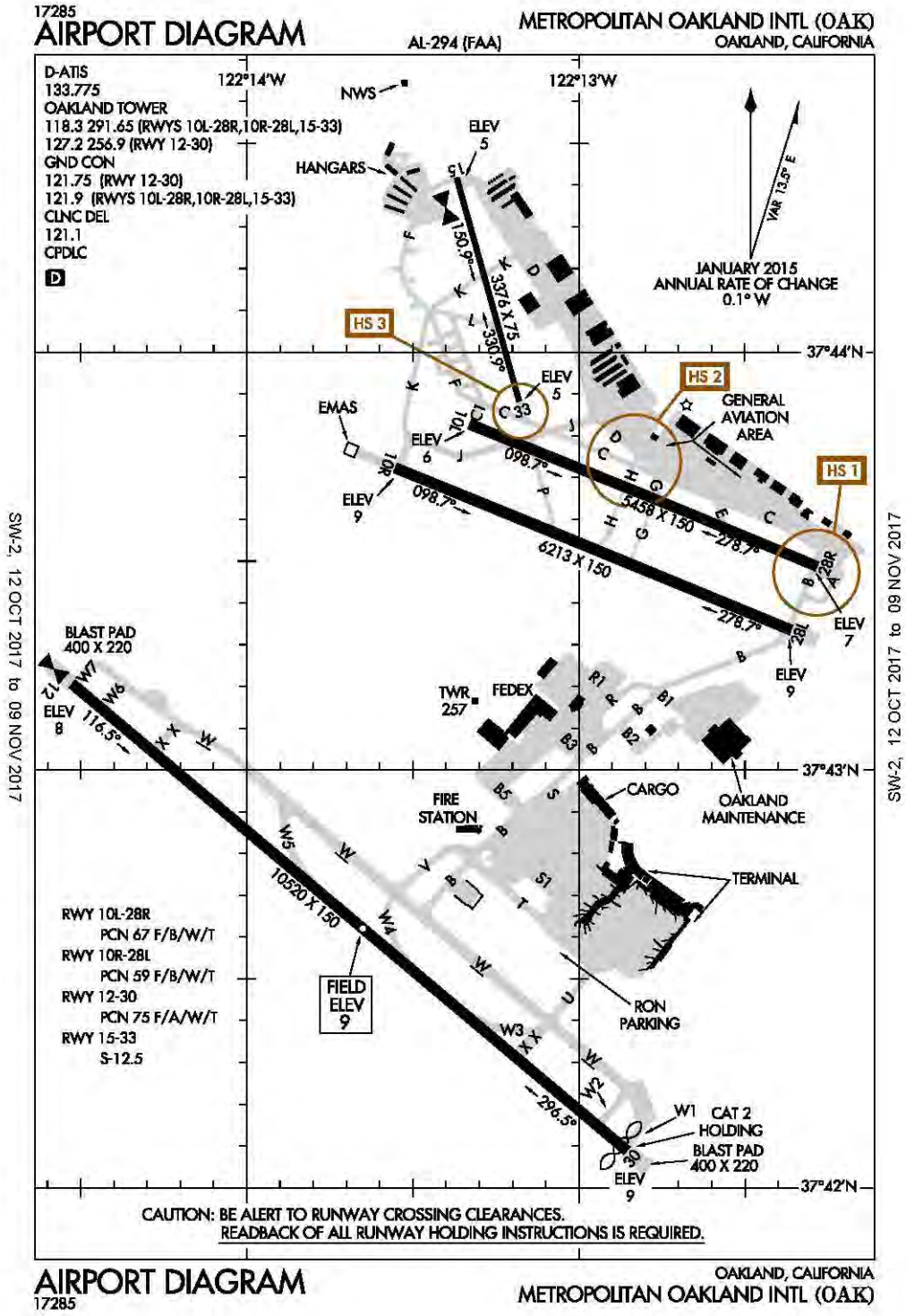
B772 AIRCRAFT EASTBOUND ON TAXILANE C ARE NOT AUTHD TO TRANSITION TO TAXIWAY B AT TAXIWAY C9

B747, B777, OR A340 AIRCRAFT OUTBOUND FROM TAXILANE D8 MAY NOT TURN WESTBOUND ONTO TAXILANE D UNDER POWER

AIRCRAFT WITH WINGSPAN GREATER THAN 157 FT HOLDING ON TAXILANE C ABEAM T4 ARE NOT AUTHD TO MAKE THE LEFT TURN ON TAXIWAY C10 UNDER POWER

RUNWAY STATUS LIGHTS IN OPN.

Oakland, California
Metropolitan Oakland International
ICAO Identifier KOAK



Oakland, CA
Metropolitan Oakland Intl
ICAO Identifier KOAK

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 37−43−16.50N / 122−13−16.10W
2.2.2 From City: 4 Miles S Of Oakland, CA
2.2.3 Elevation: 9 ft
2.2.5 Magnetic variation: 14E (2015)
2.2.6 Airport Contact: Matt Davis
METROPOLITAN OAKLAND INTL ARPT
Oakland, CA 94621 (510−563−6436)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Bldg (11 ft). Lighted
2.10.1.c Location of obstacle: 480 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 12
2.12.2 True Bearing: 130
2.12.3 Dimensions: 10520 ft x 150 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 37−43−12.23N / 122−14−31.61W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 310
2.12.3 Dimensions: 10520 ft x 150 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 37−42−00.00N / 122−12−51.33W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 112
2.12.3 Dimensions: 5458 ft x 150 ft
2.12.4 PCN: 67 F/B/W/T
2.12.5 Coordinates: 37−43−49.69N / 122−13−19.85W
2.12.6 Threshold elevation: 6 ft
2.12.6 Touchdown zone elevation: 6 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 292
2.12.3 Dimensions: 5458 ft x 150 ft
2.12.4 PCN: 67 F/B/W/T
2.12.5 Coordinates: 37−43−29.32N / 122−12−16.93W
2.12.6 Threshold elevation: 6 ft
2.12.6 Touchdown zone elevation: 7 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 164
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.5 Coordinates: 37−44−25.05N / 122−13−22.11W
2.12.6 Threshold elevation: 2 ft
2.12.6 Touchdown zone elevation: 5 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 344
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.5 Coordinates: 37−43−52.90N / 122−13−10.83W
2.12.6 Threshold elevation: 4 ft
2.12.6 Touchdown zone elevation: 5 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 112
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 59 F/B/W/T
2.12.5 Coordinates: 37−43−43.35N / 122−13−33.25W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 292
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 59 F/B/W/T
2.12.5 Coordinates: 37−43−20.18N / 122−12−21.63W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

AD 2.13 Declared distances

2.13.1 Designation: 12
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000

2.13.5 Landing distance available: 10000

2.13.1 Designation: 30
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 5458
2.13.3 Takeoff distance available: 5458
2.13.4 Accelerate−stop distance available: 5336
2.13.5 Landing distance available: 5336

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 5458
2.13.3 Takeoff distance available: 5458
2.13.4 Accelerate−stop distance available: 5458
2.13.5 Landing distance available: 5458

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 6213
2.13.3 Takeoff distance available: 6213
2.13.4 Accelerate−stop distance available: 6213
2.13.5 Landing distance available: 6213

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 6213
2.13.3 Takeoff distance available: 6213
2.13.4 Accelerate−stop distance available: 6213
2.13.5 Landing distance available: 6213

AD 2.14 Approach and runway lighting
2.14.1 Designation: 12
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 30
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10L
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28L
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 291.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.75 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 133.775 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 127.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 121.1 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 124.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: OAK

2.19.5 Coordinates: 37−43−54.55N / 122−13−34.86W
2.19.6 Site elevation: 5.2 ft

2.19.1 ILS type: Localizer for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−43−29.87N / 122−14−58.10W
2.19.6 Site elevation: 9.3 ft

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: OAK
2.19.5 Coordinates: 37−41−54.13N / 122−07−25.03W
2.19.6 Site elevation: 30 ft

2.19.1 ILS type: Localizer for runway 12. Magnetic variation: 14E
2.19.2 ILS identification: AAZ
2.19.5 Coordinates: 37−42−00.00N / 122−12−46.65W
2.19.6 Site elevation: 7.2 ft

2.19.1 ILS type: Outer Marker for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−39−00.00N / 122−08−25.68W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: OAK
2.19.5 Coordinates: 37−43−28.60N / 122−12−30.62W
2.19.6 Site elevation: 3.3 ft

2.19.1 ILS type: Glide Slope for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−42−00.00N / 122−13−00.00W
2.19.6 Site elevation: 4.3 ft

2.19.1 ILS type: Glide Slope for runway 12. Magnetic variation: 14E
2.19.2 ILS identification: AAZ
2.19.5 Coordinates: 37−43−00.00N / 122−14−22.84W
2.19.6 Site elevation: 3.3 ft

2.19.1 ILS type: Outer Marker for runway 12. Magnetic variation: 14E
2.19.2 ILS identification: AAZ
2.19.5 Coordinates: 37−46−54.04N / 122−19−53.69W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: Inner Marker for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−42−00.00N / 122−12−44.56W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: OAK
2.19.5 Coordinates: 37−43−16.88N / 122−11−38.86W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: Middle Marker for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−41−44.61N / 122−12−20.00W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: Middle Marker for runway 12. Magnetic variation: 14E
2.19.2 ILS identification: AAZ
2.19.5 Coordinates: 37−43−31.45N / 122−15−00.00W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: DME for runway 30. Magnetic variation: 14E
2.19.2 ILS identification: INB
2.19.5 Coordinates: 37−43−29.85N / 122−14−58.10W
2.19.6 Site elevation: 18 ft

General Remarks:
BIRDS ON & IN THE VICINITY OF AIRPORT.

400 FT BY 220 FT BLAST PAD RUNWAY 12 AND RUNWAY 30.

NOISE ABATEMENT PROCS NOT APPLICABLE IN EMERGS OR WHENEVER RUNWAY 12/30 IS CLOSED DUE TO MAINT, SAFETY, WINDS OR WX.

AIRCRAFT WITH EXPERIMENTAL OR LIMITED CERTIFICATION HAVING OVER 1000 HORSEPOWER OR 4000 LBS ARE RESTRICTED TO RUNWAY 12/30.

1000 FT CLEARWAY RUNWAY 12 & RUNWAY 30.

100 FT LIGHTED MICROWAVE ANTENNA TOWER LOCATED 1320 FT WSW OF OAK VORTAC; S OF UPWIND END OF RUNWAY 28L.

RUNWAYS 30, 28R AND RUNWAY 28L DIST REMAINING SIGNS L SIDE.

FOR NOISE ABATEMENT INFORMATION CONTACT NOISE ABATEMENT OFFICE AT (510) 563−6463.

RUNWAY 15/33 CLOSED TO AIR CARRIER AIRCRAFT.

PREFERENTIAL RUNWAY USE PROGRAM IN EFFECT 2200−0600. NORTH FIELD PREFERRED ARR RUNWAY 28L, NORTH FIELD PREFERRED DEP RUNWAYS 10R OR 28R. IF THESE RUNWAYS UNACCEPTABLE FOR SAFETY OR ATC INSTRN THEN RUNWAY 12/30 MUST BE USED.

24 HR NOISE ABATEMENT PROCEDURE − TURBOJET AND TURBOFAN PWRD AIRCRAFT, TURBOROPS OVER 17,000 LBS, FOUR−ENGINE RECIPROCATING PWRD AIRCRAFT, AND SURPLUS MILITARY AIRCRAFT OVER 12,500 POUNDS SHOULD NOT DEP RUNWAYS 28L & 28R OR LAND ON RUNWAYS 10R & 10L.

TAXIWAY A, E, G, H BETWEEN RUNWAY 28R AND TAXIWAY C MAX AIRCRAFT WEIGHT 150,000 LBS.

TAXIWAY G & H BETWEEN RUNWAY 28L & 28R: MAX AIRCRAFT WEIGHT 12,500 LBS.

TAXIWAY P MAX AIRCRAFT WEIGHT 116,000 LBS SINGLE; 190,000 LBS DUAL; 305,000 LBS DUAL TANDEM; 735,000 LBS DOUBLE DUAL TANDEM.

TAXIWAY C BETWEEN RUNWAY 28R & TAXIWAY G AND TAXIWAYS B, J, AND D MAX AIRCRAFT WEIGHT 861,000 LBS.

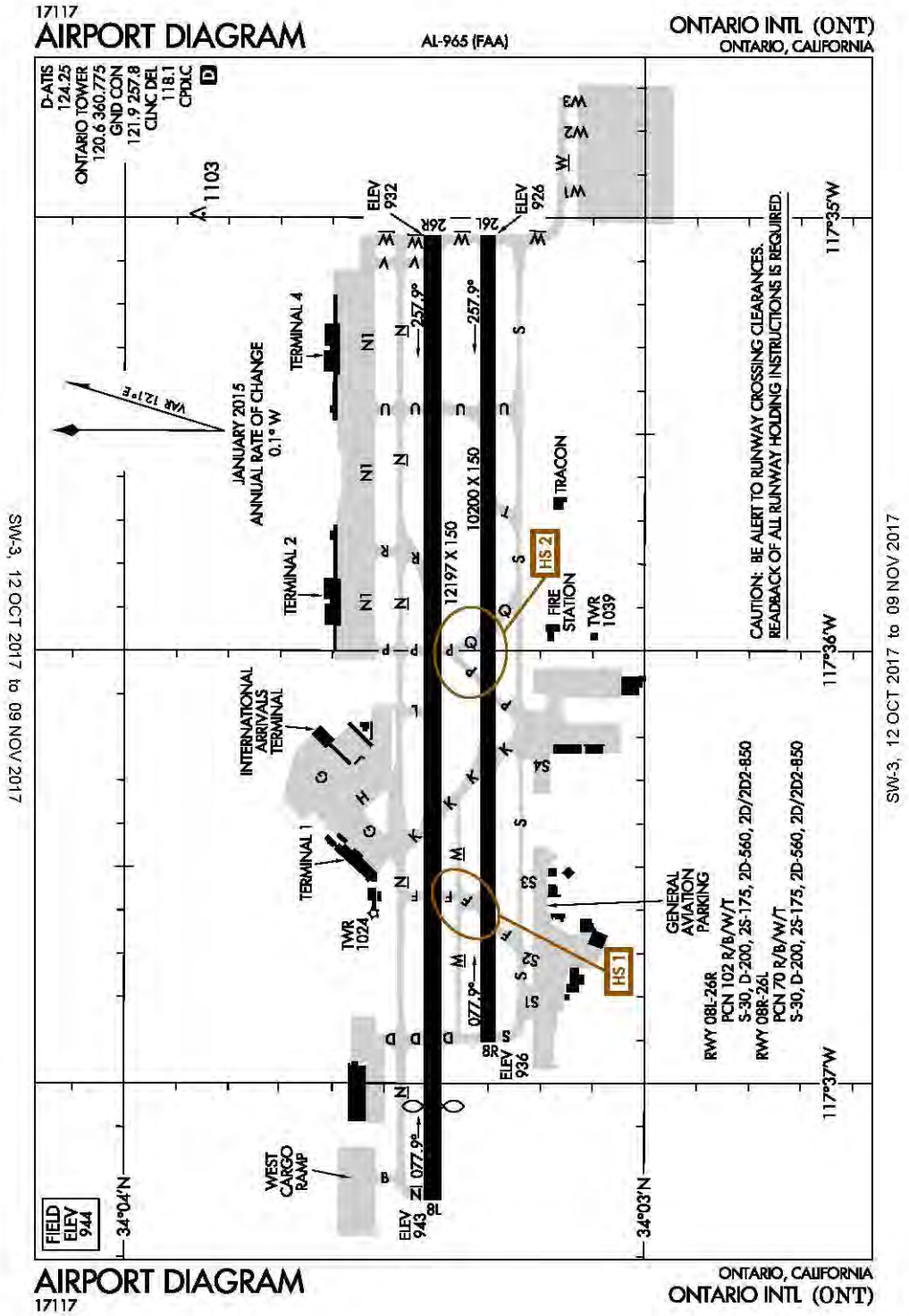
TAXIWAY C BETWEEN TAXIWAY G & J MAX AIRCRAFT WEIGHT 90,000 LBS SINGLE; 144,000 LBS DUAL; 257,000 LBS TANDEM.

TAXIWAY C BETWEEN TAXIWAY J & F MAX AIRCRAFT WEIGHT 76,000 LBS SINGLE; 115,000 LBS DUAL; 257,000 LBS TANDEM (DUAL TANDEM NA).

TAXIWAY K BETWEEN TAXIWAY D & INTERSECTION TAXIWAYS F, L, K MAX AIRCRAFT WEIGHT 56,000 LBS SINGLE; 70,000 LBS DUAL; 130,000 LBS TANDEM.

TAXIWAY K BETWEEN RUNWAY 10R AND INTERSECTION TAXIWAYS F, L, K MAX AIRCRAFT WEIGHT 33,000 LBS SINGLE; 45,000 LBS DUAL; TANDEM NOT AUTHORIZED.

Ontario, California
Ontario International
ICAO Identifier KONT



Ontario, CA
Ontario Intl
ICAO Identifier KONT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 34–03–21.60N / 117–36–00.00W
2.2.2 From City: 2 Miles E Of Ontario, CA
2.2.3 Elevation: 944 ft
2.2.5 Magnetic variation: 12E (2020)
2.2.6 Airport Contact: Kelly Fredericks
1923 EAST AVION STREET
Ontario, CA 91761
(909–544–5300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 26L
2.10.1.b Type of obstacle: Pole (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

2.10.1.a. Runway designation: 08L
2.10.1.b Type of obstacle: Rr (20 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

2.10.1.a. Runway designation: 26R
2.10.1.b Type of obstacle: Pole (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34–03–24.75N / 117–37–22.15W
2.12.6 Threshold elevation: 943 ft
2.12.6 Touchdown zone elevation: 944 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34–03–24.82N / 117–34–57.19W
2.12.6 Threshold elevation: 932 ft
2.12.6 Touchdown zone elevation: 932 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34–03–17.85N / 117–36–58.41W
2.12.6 Threshold elevation: 936 ft
2.12.6 Touchdown zone elevation: 936 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34–03–17.89N / 117–34–57.19W
2.12.6 Threshold elevation: 926 ft
2.12.6 Touchdown zone elevation: 926 ft

AD 2.13 Declared distances

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 12197
2.13.3 Takeoff distance available: 12197
2.13.4 Accelerate–stop distance available: 12197
2.13.5 Landing distance available: 11200

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 12197
2.13.3 Takeoff distance available: 12197
2.13.4 Accelerate–stop distance available: 12197
2.13.5 Landing distance available: 12197

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 10200
2.13.3 Takeoff distance available: 10200
2.13.4 Accelerate–stop distance available: 10200
2.13.5 Landing distance available: 10200

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 10200
2.13.3 Takeoff distance available: 10200
2.13.4 Accelerate–stop distance available: 10200

2.13.5 Landing distance available: 10200

AD 2.14 Approach and runway lighting
2.14.1 Designation: 08L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 124.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 360.775 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 257.8 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 26R. Magnetic variation: 12E
2.19.2 ILS identification: ONT
2.19.5 Coordinates: 34−03−24.75N / 117−37−34.63W
2.19.6 Site elevation: 943 ft

2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34−03−17.84N / 117−37−10.29W
2.19.6 Site elevation: 931.3 ft

2.19.1 ILS type: Localizer for runway 08L. Magnetic variation: 12E
2.19.2 ILS identification: AOD
2.19.5 Coordinates: 34−03−24.82N / 117−34−45.07W
2.19.6 Site elevation: 926.1 ft

2.19.1 ILS type: DME for runway 26R. Magnetic variation: 12E
2.19.2 ILS identification: ONT
2.19.5 Coordinates: 34−03−22.03N / 117−37−33.66W
2.19.6 Site elevation: 955 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34−03−20.47N / 117−37−00.00W
2.19.6 Site elevation: 947.9 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34−03−21.89N / 117−35−10.97W
2.19.6 Site elevation: 925.3 ft

2.19.1 ILS type: Glide Slope for runway 26R. Magnetic variation: 12E
2.19.2 ILS identification: ONT
2.19.5 Coordinates: 34−03−22.01N / 117−35−10.97W
2.19.6 Site elevation: 925.8 ft

2.19.1 ILS type: Glide Slope for runway 08L. Magnetic variation: 12E
2.19.2 ILS identification: AOD
2.19.5 Coordinates: 34−03−21.21N / 117−36−59.90W
2.19.6 Site elevation: 936 ft

2.19.1 ILS type: Outer Marker for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34–03–22.33N / 117–28–17.72W
2.19.6 Site elevation: 1010 ft

2.19.1 ILS type: Inner Marker for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34–03–17.89N / 117–34–47.85W
2.19.6 Site elevation: 921 ft

2.19.1 ILS type: Middle Marker for runway 08L. Magnetic variation: 12E
2.19.2 ILS identification: AOD
2.19.5 Coordinates: 34–03–25.80N / 117–37–51.55W
2.19.6 Site elevation: 947 ft

2.19.1 ILS type: Middle Marker for runway 26L. Magnetic variation: 12E
2.19.2 ILS identification: TWO
2.19.5 Coordinates: 34–03–17.88N / 117–34–24.41W
2.19.6 Site elevation: 924 ft

2.19.1 ILS type: Middle Marker for runway 26R. Magnetic variation: 12E
2.19.2 ILS identification: ONT
2.19.5 Coordinates: 34–03–24.79N / 117–34–24.33W
2.19.6 Site elevation: 940 ft

General Remarks:
FBO ON FREQ 130.75.

WILDLIFE HAZARD MANAGEMENT PLAN IN EFFECT; POTENTIAL BIRD HAZARDS MAY EXIST ON AND IN THE VICINITY OF AIRPORT; BE ALERT TO LARGE NUMBERS OF STARLINGS AND CROWS POSSIBLE ON APPROACH TO RUNWAY 26L AND RUNWAY 26R, HAWKS, EAGLES, FALCONS AND OWLS SPOTTED ON OCCASION.

TAXIWAY M, TAXIWAY S–3 AND TAXIWAY S–4 RESTRICTED TO AIRCRAFT WITH WINGSPAN 117 FT OR SMALLER.

PILOTS SHOULD USE JUDGEMENTAL OVERSTEER ON TAXIWAY M, TAXIWAY H, TAXIWAY S–3 AND TAXIWAY S–4.

NOISE ABATEMENT PROCEDURES IN EFFECT; FULL–LENGTH TURBOJET DEP ENCOURAGED, NIGHTLY PREFERENTIAL RUNWAY USAGE, 2200–0700.

EASTBOUND B747, B777, A330, A340 OR LARGER AIRCRAFT ON TAXIWAY S PROHIBITED FROM NORTHBOUND TURNS ONTO TAXIWAY K.

B747, B777, A330, A340 OR LARGER AIRCRAFT ON TAXIWAY S PROHIBITED FROM NORTHBOUND TURNS ONTO TAXIWAY P.

AIRCRAFT PARKING AND CONTRACT GROUND SERVICES ARE LIMITED FOR NON–SCHEDULED OPERATIONS. FOR SCHEDULING INFORMATION CALL AIRFIELD OPERATIONS (909) 544–5344.

TAXIWAY W SOUTH OF TAXIWAY S IS A NON–MOVEMENT AREA; ALL AIRCRAFT CONTACT RAMP CONTROL 131.325 FOR ACCESS.

ALL MILITARY AND GENERAL AVIATION (FIXED OR ROTOR WING) AIRCRAFT OPERATIONS ARE RESTRICTED TO FBO FACILITIES WITH ADVANCE COORDINATION; OVERNIGHT TIEDOWN AND PARKING FEE.

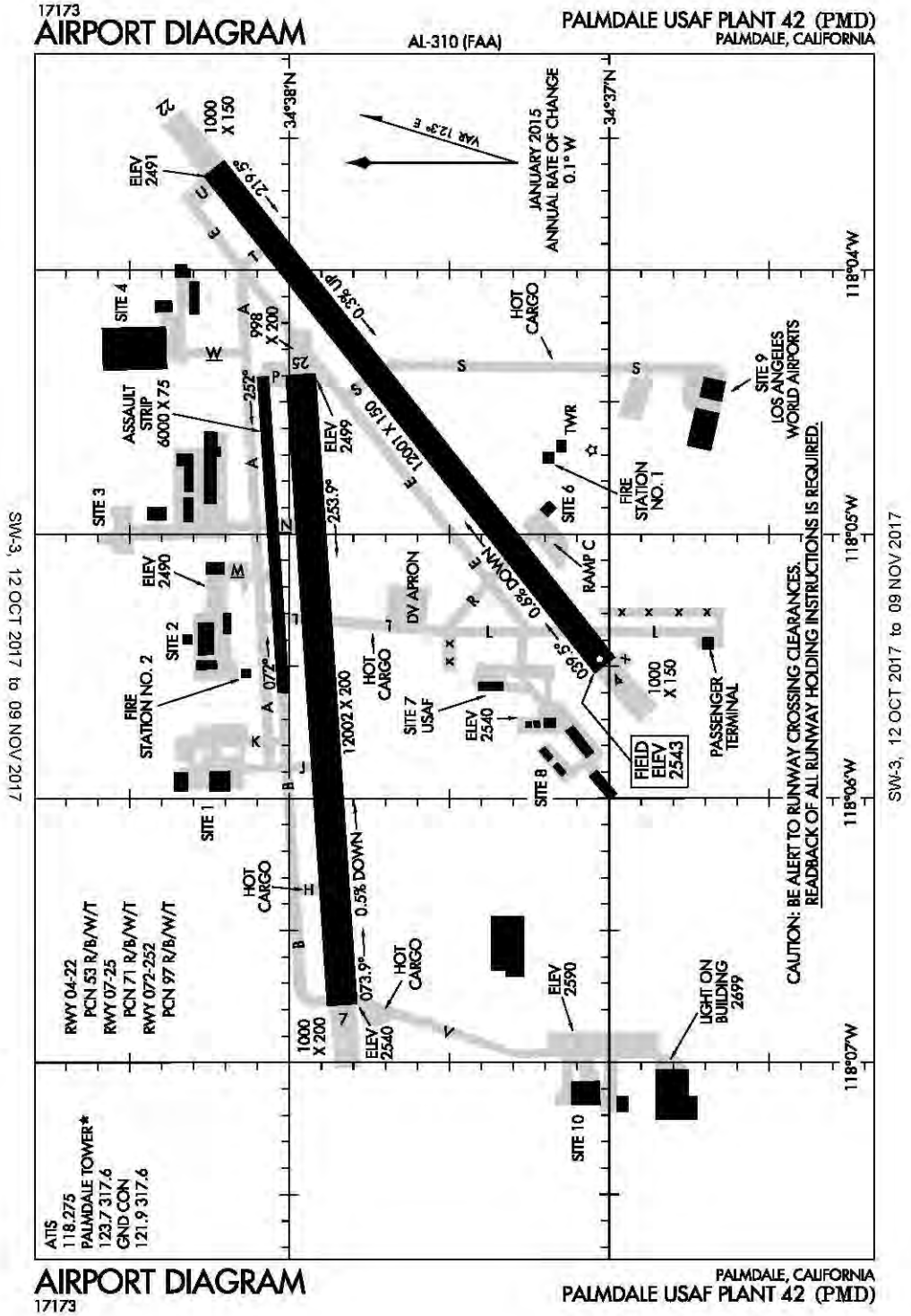
TAXIWAY S SOUTH OF CENTERLINE BETWEEN TXLN S–2 AND S–3, AND THE SOUTHERN HALF OF TXLN S–2 AND S–3 ARE NOT VISIBLE FROM ATCT; PILOTS USE CAUTION ENTERING TXLN S–2 AND S–3.

AIRCRAFT ACCESS TO TAXIWAY R FROM RUNWAY 26R PROHIBITED

TAXIWAY R AIRCRAFT ACCESS FROM RUNWAY 26L IS PROHIBITED

TAXIWAY S2 RESTRICTED TO AIRCRAFT WITH 117 FT WINGSPAN AND SMALLER.

Palmdale, California
Palmdale Regional/USAF Plant 42
ICAO Identifier KPMD



Palmdale, CA
Palmdale Rgnl/USAF Plant 42
ICAO Identifier KPMD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 34−37−45.80N / 118−05−00.00W
2.2.2 From City: 3 Miles NE Of Palmdale, CA
2.2.3 Elevation: 2542.5 ft
2.2.5 Magnetic variation: 15E (1980)
2.2.6 Airport Contact: Ken Neitzel
2503 E AVE P
Palmdale, CA 93550
(661−272−6715)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 1330−0600Z++ Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: None
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: None

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 04
2.10.1.b Type of obstacle: Hill. Not Lighted or Marked

AD 2.12 Runway physical characteristics

2.12.1 Designation: 07
2.12.2 True Bearing: 86
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−50.11N / 118−06−47.03W
2.12.6 Threshold elevation: 2540 ft
2.12.6 Touchdown zone elevation: 2540 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 25
2.12.2 True Bearing: 266
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−57.99N / 118−04−23.74W
2.12.6 Threshold elevation: 2499 ft
2.12.6 Touchdown zone elevation: 2503 ft
2.12.7 Slope: 0.2UP

2.12.1 Designation: 04
2.12.2 True Bearing: 52
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−37−00.00N / 118−05−29.80W
2.12.6 Threshold elevation: 2542 ft
2.12.6 Touchdown zone elevation: 2542 ft
2.12.7 Slope: 0.6DOWN

2.12.1 Designation: 22
2.12.2 True Bearing: 232
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−38−14.24N / 118−03−36.97W
2.12.6 Threshold elevation: 2491 ft
2.12.6 Touchdown zone elevation: 2498 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: 072
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T
2.12.1 Designation: 252
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T

AD 2.14 Approach and runway lighting

2.14.1 Designation: 25
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 25. Magnetic variation: 15E
2.19.2 ILS identification: PMD
2.19.5 Coordinates: 34−37−48.79N / 118−07−10.91W
2.19.6 Site elevation: 2552.2 ft
2.19.1 ILS type: Glide Slope for runway 25. Magnetic variation: 15E
2.19.2 ILS identification: PMD
2.19.5 Coordinates: 34−38−00.00N / 118−04−40.08W
2.19.6 Site elevation: 2491.8 ft

2.19.1 ILS type: Outer Marker for runway 25. Magnetic variation: 15E
2.19.2 ILS identification: PMD

2.19.5 Coordinates: 34–38–22.66N / 117–57–30.34W
2.19.6 Site elevation: 2550 ft

2.19.1 ILS type: Middle Marker for runway 25. Magnetic variation: 15E
2.19.2 ILS identification: PMD
2.19.5 Coordinates: 34–38–00.00N / 118–03–46.16W
2.19.6 Site elevation: 2492 ft

General Remarks:
MISC: INDUSTRIAL INSTLN – NO TRNSPN, LODGING OR NORMAL SERVICE AVAILABLE ON SITE.

PARKING RAMP LOCATED S OF RUNWAY 22 & TAXIWAY V NOT VISIBLE FROM ATCT.

UNLIGHTED OBSTRUCTION SURROUND AIRFIELD.

DRAINAGE DITCHES PARALLEL RUNWAY 22 FROM TAXIWAY S TO TAXIWAY U.

BIRD HAZARD POTENTIAL EXISTS. MIGRATORY SEASON PHASE II 1 OCT – 31 AT SEA. DURING BIRD WATCH CONDITION MODERATE, TAKE-OFF AND LANDING PERMITTED. DURING BIRD WATCH CONDITION SEVERE, TAKE-OFF AND LANDING PROHIBITED.

MILITARY USE: ASSAULT LANDING ZONE LOCATED 1ST 6,000 EAST END OF TAXIWAY B. RUNWAY 252 MRK ONLY FOR C–130 ASSAULT OPR; ONE–WAY LANDING ONLY.

MISC: WINDS ARE ESTIMATE DUE TO FMQ–13 WIND SENSORS BEING ACCURATE TO WITHIN ONLY +/– 2 KNOTS. ATC/WX WILL NOT INCLUDE/RELAY WIND CORRECTION INTO FORECAST/PHRASEOLOGY. THEREFORE, AIRCREWS WILL INCORPORATE A +/– 2 KNOTS ACCURACY INTO THEIR DECISION MAKING PROCESS FOR FLYING OPR.

SERVICE–LGT: GATED THRESHOLD LIGHT RUNWAY 07–25 AND RUNWAY 04–22.

TRANSIENT ALERT (1 OF 2): NO FLEET SERVICE AVAILABLE. NO FOLLOW ME SERVICE AVAILABLE. EXPECT PROGRESSIVE TAXI TO PARK. AIRCREW RESPONSIBLE FOR AIRCRAFT PINNING/SAFING.

MISC: COMSEC STORAGE UNAVAILABLE.

CAUTION: USE EXTREME CAUTION FOR UNMANNED AERIAL SYSTEMS (UAS) OPERATIONS IN VICINITY.

FUEL: A++ AVAILABLE. NO TRANSMIT AIRCRAFT FUEL SERVICE AVAILABLE. LIMITED FUELING AVAILABLE; GOVERNMENT AIRCRAFT ONLY 1600–2300Z++ MON–FRI. 24 HR PRIOR NOTICE WITH AIRFIELD MANAGER REQUIRE; NO SAME DAY REQ; GAS AND GO UNAVAILABLE. EXPECT 2+ HR DELAY FOR FUEL.

RESTRICTED – OFFICIAL BUSINESS ONLY. MILITARY AIRPORT. CIVIL USE REQUIRE USAF APPROVAL AND DD FORM 2400/01/02. PRIOR PERMISSION REQUIRED REQUIRE FOR FULL STOP LANDING ONLY. CALL C661–272–6619/6614.

TRANSIENT ALERT (2 OF 2): UNABLE TO SERVICE AIRCRAFT WITH ORDNANCE. LIMITED GRD SUPPORT EQUIPMENT AVAILABLE. NO POTABLE WATER SERVICE. NO TRANSIENT MAINT AVAILABLE. GROUND SERVICE UNAVAILABLE WHEN LIGHTNING WITHIN 5 NAUTICAL MILE.

MISC: FLIGHT PLANS MUST BE FILED AND ACTIVATED WITH P42 AIRFIELD MANAGEMENT. USE PRESCOTT FSS WHEN P42 AIRFIELD MANAGEMENT CLOSED.

CAUTION: VARIOUS AIRCRAFT TEST OPERATIONS MARKINGS PAINTED IN WHITE ON TAXIWAY UNIFORM.

CAUTION: RUNWAY 25 NONSTANDARD MRK: SPOT LANDING ZONE MRK LOCATED AT 6000 FT REMAINING MRK. RUNWAY 07−25 DECEPTIVE SURFACE MRK EXCEED STANDARD BY APPROX 50 FT.

RESTRICTED: OVERNIGHT PARK UNAUTHD ON C−RAMP.

RESTRICTED: TAXIWAY L BETWEEN RUNWAY 04/22 AND PASSENGER TERMINAL UNLIGHTED AND USABLE FOR DAYLT VFR ONLY.

ALL DEPT AIRCRAFT MUST FILE FPL WITH P42 AIRFIELD MANAGEMENT OPERATIONS.

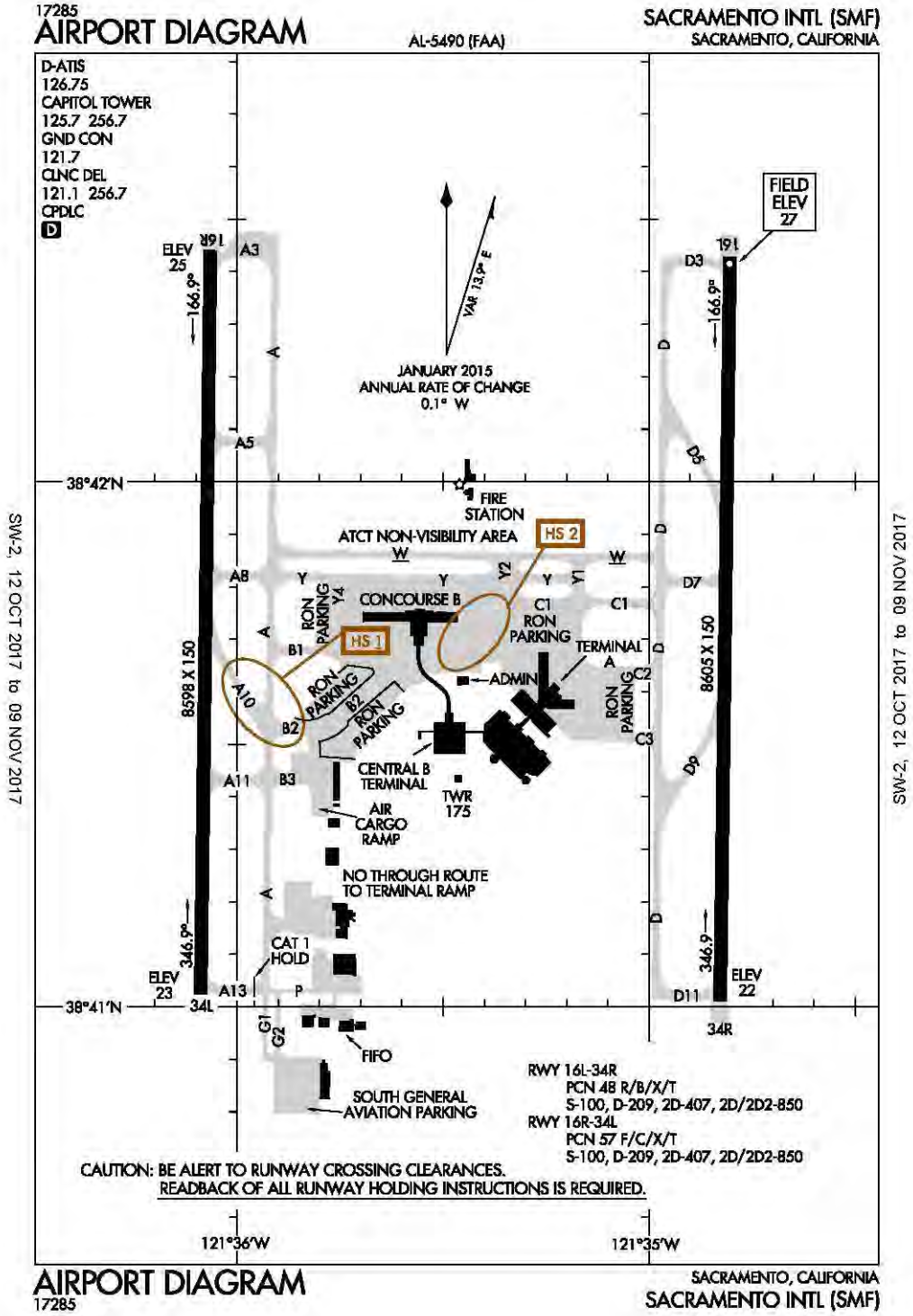
CAUTION: FOREIGN OBJECT DAMAGE HAZARD ON TAXIWAY S; ALL LARGE BODY AIRCRAFT MUST TAXI WITH OUTBOARD MOTORS SHUT OFF.

SERVICE−JASU: POWER CARS UNAVAILABLE.

BASE OPERATIONS OPR 1330−0600Z++ MON−SAT, CLOSED SUN AND FEDERAL HOLIDAY.

RESTRICTED: RUNWAY RESERVED FOR AIRCRAFT BASED THEREIN ON SAT AND SUN. GRD CREWS MUST INSPECT ALL ANTICIPATED AIRFIELD PAVEMENTS REQUIRE FOR THEIR MSN PRIOR TO EACH AIRCRAFT ARR OR DEP.

Sacramento, California
Sacramento International
ICAO Identifier KSMF



Sacramento, CA
Sacramento Intl
ICAO Identifier KSMF

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 38−41−43.60N / 121−35−26.80W
2.2.2 From City: 10 Miles NW Of Sacramento, CA
2.2.3 Elevation: 26.9 ft
2.2.5 Magnetic variation: 13E (2020)
2.2.6 Airport Contact: Sheri Thompson−Duarte
6900 AIRPORT BLVD
Sacramento, CA 95837
((916) 874−0560)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 16L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 48 R/B/X/T
2.12.5 Coordinates: 38−42−25.70N / 121−34−48.21W
2.12.6 Threshold elevation: 27 ft
2.12.6 Touchdown zone elevation: 27 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 48 R/B/X/T
2.12.5 Coordinates: 38−41−00.00N / 121−34−49.64W
2.12.6 Threshold elevation: 22 ft
2.12.6 Touchdown zone elevation: 24 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 57 F/C/X/T
2.12.5 Coordinates: 38−42−26.42N / 121−36−00.00W
2.12.6 Threshold elevation: 25 ft
2.12.6 Touchdown zone elevation: 25 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 57 F/C/X/T
2.12.5 Coordinates: 38−41−00.00N / 121−36−00.00W
2.12.6 Threshold elevation: 22 ft
2.12.6 Touchdown zone elevation: 24 ft

AD 2.13 Declared distances

2.13.1 Designation: 16L
2.13.2 Takeoff run available: 8605
2.13.3 Takeoff distance available: 8605
2.13.4 Accelerate−stop distance available: 8605
2.13.5 Landing distance available: 8605

2.13.1 Designation: 34R
2.13.2 Takeoff run available: 8605
2.13.3 Takeoff distance available: 8605
2.13.4 Accelerate−stop distance available: 8605
2.13.5 Landing distance available: 8605

2.13.1 Designation: 16R
2.13.2 Takeoff run available: 8598
2.13.3 Takeoff distance available: 8598
2.13.4 Accelerate−stop distance available: 8598
2.13.5 Landing distance available: 8598

2.13.1 Designation: 34L
2.13.2 Takeoff run available: 8598
2.13.3 Takeoff distance available: 8598
2.13.4 Accelerate−stop distance available: 8598
2.13.5 Landing distance available: 8598

AD 2.14 Approach and runway lighting

2.14.1 Designation: 16L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 16R
2.14.2 Approach lighting system: ALSF2: Standard 2400

feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 34L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 126.75 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P
2.18.3 Service designation: 121.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: CD/P GND/P LCL/P
2.18.3 Service designation: 256.7 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 16L. Magnetic variation: 13E
2.19.2 ILS identification: MDK
2.19.5 Coordinates: 38–40–50.67N / 121–34–49.81W
2.19.6 Site elevation: 17.4 ft

2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–40–35.75N / 121–36–00.00W
2.19.6 Site elevation: 19.6 ft

2.19.1 ILS type: Localizer for runway 34L. Magnetic variation: 13E
2.19.2 ILS identification: HUX
2.19.5 Coordinates: 38–42–36.65N / 121–36–00.00W
2.19.6 Site elevation: 22 ft

2.19.1 ILS type: DME for runway 16L. Magnetic variation: 13E
2.19.2 ILS identification: MDK
2.19.5 Coordinates: 38–40–50.22N / 121–34–46.30W
2.19.6 Site elevation: 30.9 ft

2.19.1 ILS type: DME for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–40–34.70N / 121–36–00.00W
2.19.6 Site elevation: 34 ft

2.19.1 ILS type: Glide Slope for runway 34L. Magnetic variation: 13E
2.19.2 ILS identification: HUX
2.19.5 Coordinates: 38–41–12.50N / 121–36–00.00W
2.19.6 Site elevation: 21.7 ft

2.19.1 ILS type: Glide Slope for runway 16L. Magnetic variation: 13E
2.19.2 ILS identification: MDK
2.19.5 Coordinates: 38–42–15.23N / 121–34–44.36W
2.19.6 Site elevation: 21.7 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–42–15.86N / 121–36–00.00W
2.19.6 Site elevation: 22.9 ft

2.19.1 ILS type: Outer Marker for runway 34L. Magnetic variation: 13E
2.19.2 ILS identification: HUX
2.19.5 Coordinates: 38–37–00.00N / 121–36–11.87W
2.19.6 Site elevation: 15 ft

2.19.1 ILS type: Inner Marker for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–42–34.10N / 121–36–00.00W
2.19.6 Site elevation: 23 ft

2.19.1 ILS type: Middle Marker for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–42–53.08N / 121–36–00.00W
2.19.6 Site elevation: 22 ft

2.19.1 ILS type: Outer Marker for runway 16R. Magnetic variation: 13E
2.19.2 ILS identification: SMF
2.19.5 Coordinates: 38–47–41.76N / 121–35–57.70W
2.19.6 Site elevation: 22 ft

2.19.1 ILS type: Middle Marker for runway 34L. Magnetic variation: 13E
2.19.2 ILS identification: HUX
2.19.5 Coordinates: 38−40−32.75N / 121−36−00.00W
2.19.6 Site elevation: 17 ft

2.19.1 ILS type: DME for runway 34L. Magnetic variation: 13E
2.19.2 ILS identification: HUX
2.19.5 Coordinates: 38−40−34.70N / 121−36−00.00W
2.19.6 Site elevation: 34 ft

General Remarks:
BIRDS ON AND IN VICINITY OF AIRPORT.

FAA GROSS WEIGHT STRENGTH EVALUATION MD−11 = 590,000 LBS.

NOISE SENSITIVE AREAS W OF AIRPORT ON SAC RIVER. LOCAL TURN DISCOURAGED FOR JET AIRCRAFT. WHEN CONDUCTING IFR APPROACH IN VFR CONDITIONS EXECUTE MISSED APPROACH AT DEP END OF RUNWAYS. PLAN VFR PATTERNS TO E. USE MIN POWER SETTINGS.

ALL AIRCRAFT CONTACT ATC GROUND CONTROL PRIOR TO MOVEMENT ON RAMP.

CROP DUSTERS OPER IN THE VICINITY OF AIRPORT AT OR BELOW 200 FT AGL.

(A49A−16R) ALSF2 OPERS AS SSALR TILL WEATHER GOES BELOW VFR.

TAXIWAY REMARK #2: THE MAXIMUM ALLOWABLE GROSS AIRCRAFT LOAD FOR TAXIWAYS G1, G2, AND THE GENERAL AVIATION PARKING APRON IS: 70,000 LBS FOR SINGLE GEAR AIRCRAFT; 170,000 LBS FOR DUAL GEAR AIRCRAFT; AND 250,000 LBS FOR DUAL TANDEM GEAR AIRCRAFT.

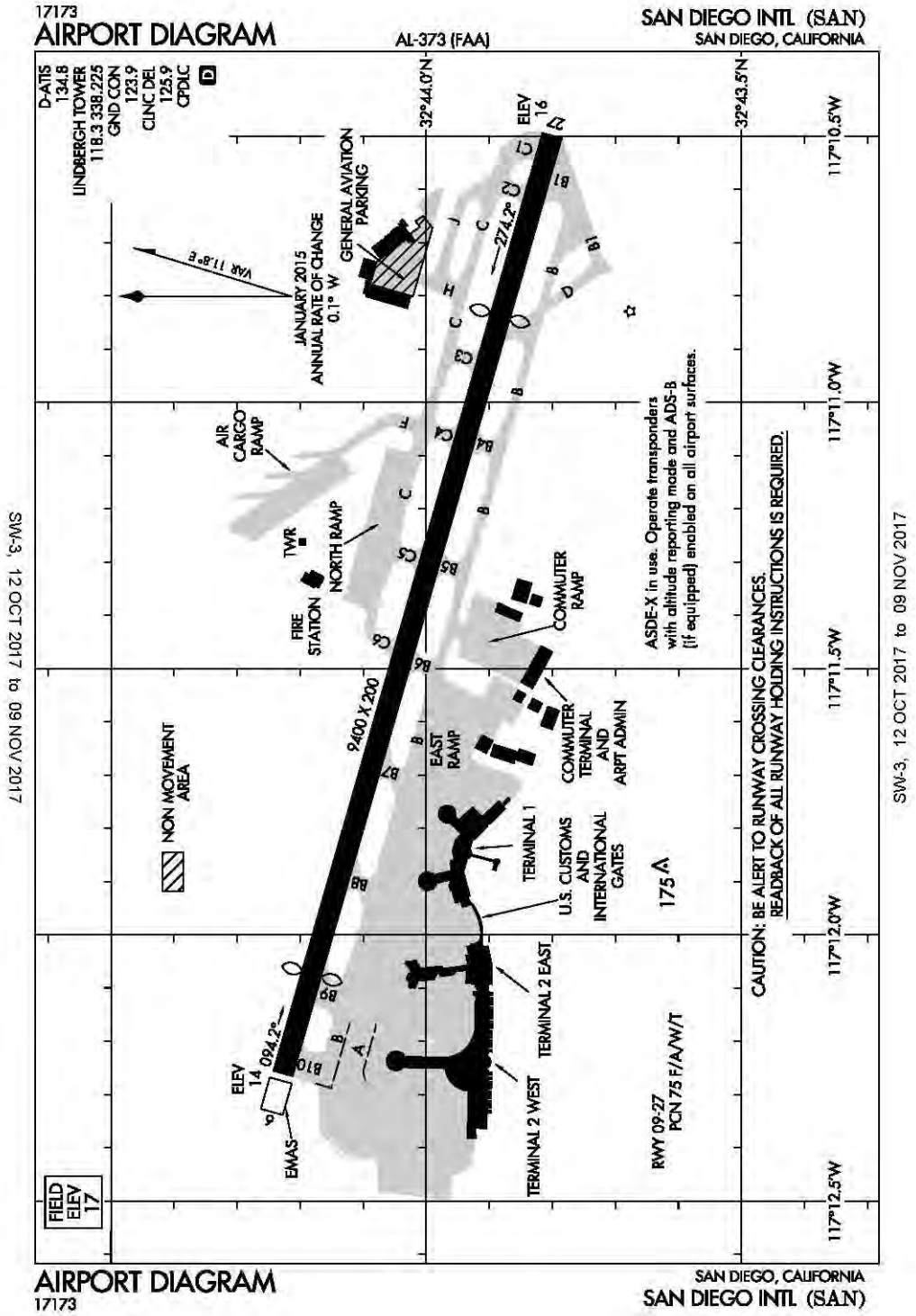
TAXIWAY REMARK #2 CONT'D: AN AIRCRAFT CANNOT EXCEED THE AIRPLANE DESIGN GROUP III CRITERIA AND MUST HAVE A WHEEL BASE OF LESS THAN 60 FT.

MILITARY AIRCRAFT PARKING LIMITED. CONTACT AIRPORT OPERATIONS IF PARKING IS REQUIRED (916) 806−5309.

PORTION OF TAXIWAY W 500 FT EAST OF TAXIWAY A TO 2100 FT EAST OF TAXIWAY A IS NOT VISIBLE FROM ATCT.

TAXIWAY Y4 RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 118 FT (GROUP III).

San Diego, California
San Diego International
ICAO Identifier KSAN



San Diego, CA
San Diego Intl
ICAO Identifier KSAN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 32−44−00.00N / 117−11−22.80W
2.2.2 From City: 2 Miles W Of San Diego, CA
2.2.3 Elevation: 16.8 ft
2.2.5 Magnetic variation: 11E (2020)
2.2.6 Airport Contact: Dean Robbins
3225 N HARBOR DRIVE
San Diego, CA 92101
((619) 400−2710)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 09
2.10.1.b Type of obstacle: Tree (31 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 385 ft from Centerline

2.10.1.a. Runway designation: 27
2.10.1.b Type of obstacle: Sign (61 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 106
2.12.3 Dimensions: 9400 ft x 200 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 32−44−13.64N / 117−12−15.68W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 286
2.12.3 Dimensions: 9400 ft x 200 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 32−43−48.01N / 117−10−29.90W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 17 ft

AD 2.13 Declared distances
2.13.1 Designation: 09
2.13.2 Takeoff run available: 8280
2.13.3 Takeoff distance available: 9401
2.13.4 Accelerate−stop distance available: 8280
2.13.5 Landing distance available: 7280

2.13.1 Designation: 27
2.13.2 Takeoff run available: 9401
2.13.3 Takeoff distance available: 9401
2.13.4 Accelerate−stop distance available: 9401
2.13.5 Landing distance available: 7591

AD 2.14 Approach and runway lighting
2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 27
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4−light PAPI on right
2.14.10 Remarks: PAPI Unusable Beyond 5 Degrees L & R Of Cntln. MALS Rwy 27 Threshold To 1400’.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 123.9 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 125.9 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 134.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P

2.18.3 Service designation: 338.225 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 11E
2.19.2 ILS identification: SAN
2.19.5 Coordinates: 32–43–47.60N / 117–10–28.24W
2.19.6 Site elevation: 25.9 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 11E
2.19.2 ILS identification: UBR
2.19.5 Coordinates: 32–44–14.79N / 117–12–20.43W
2.19.6 Site elevation: 10.9 ft

2.19.1 ILS type: DME for runway 27. Magnetic variation: 11E
2.19.2 ILS identification: UBR
2.19.5 Coordinates: 32–44–11.46N / 117–12–20.06W
2.19.6 Site elevation: 22.7 ft

2.19.1 ILS type: DME for runway 09. Magnetic variation: 11E
2.19.2 ILS identification: SAN
2.19.5 Coordinates: 32–43–47.08N / 117–10–28.47W
2.19.6 Site elevation: 27.4 ft

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 11E
2.19.2 ILS identification: SAN
2.19.5 Coordinates: 32–44–10.76N / 117–11–52.14W
2.19.6 Site elevation: 16 ft

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 11E
2.19.2 ILS identification: SAN
2.19.5 Coordinates: 32–44–23.65N / 117–12–57.08W
2.19.6 Site elevation:

General Remarks:
TERRAIN & BUILDINGS TO 500’ MSL N & E WITHIN 1 1/2 MI.

PRACTICE APPROACHES AND TOUCH AND GO LANDING PROHIBITED.

TO REDUCE JET BLAST IMPACT AT N END OF TAXIWAY F AIRCRAFT WILL NOT START ENGINE UNTIL 800 FT FROM N END OF TAXIWAY F; ABEAM THE SECOND PARKING PAD.

ULTRALIGHT AIRCRAFT PROHIBITED ON AP.

747 AND LARGER AIRCRAFT ARE PROHIBITED FROM MAKING INTERSECTION TAKE-OFFS.

INTERMITTENT PRESENCE OF BIRDS ON AND IN THE VICINITY OF OF AIRPORT.

CROSS–BLEED ENGINE STARTS PERMITTED ONLY ON PARALLEL TAXIWAY WITH AIRCRAFT ALIGNED ON TAXIWAY CENTERLINE.

OUTBOARD ENGINES OF FOUR–ENGINE AIRCRAFT ARE TO BE KEPT AT IDLE POWER FOR ALL GROUND MANEUVERING.

PILOTS REQUIRED TO CONTACT ATCT GROUND CONTROLLER PRIOR TO PUSHBACK, TOW OUT AND TAXI FOR TRAFFIC ADVISORIES.

MILITARY AIRCRAFT ON OFFICIAL BUSINESS ONLY CONTACT AIRPORT OPERATIONS AT 619–400–2710 FOR PRIOR PERMISSION REQUIRED.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TAXIWAY C EDGE LIGHTS OUT OF SERVICE INDEFINITELY.

AIRCRAFT CROSSING RUNWAY 09/27 ON TAXIWAY C6, HOLD SHORT OF TAXIWAY C6 FACING WEST ON TAXIWAY C, PARALLEL TO RUNWAY.

DUE TO PERSONNEL AND EQUIPMENT WORKING ON RUNWAY 09−27, 30 MINUTE PRIOR PERMISSION REQUIRED 0830−1230Z FOR ALL LANDINGS AND DEPARTURES CALL 619−400−2710.

30 MIN PRIOR PERMISSION REQUIRED (619−400−2710) FOR AIRCRAFT WITH OVER 171 FT WINGSPAN.

IN THE EVENT OF A DIVERSION OR IRREGULAR OPERATIONS EVENTS, AIRCRAFT OPERATORS CONTACT THE APT DUTY MANAGER (619) 400−2710 FOR PRIOR PERMISSION REQUIRED DUE TO LIMITATIONS ASSOCIATED WITH HANDLING DIVERTED FLIGHTS. LIMITATIONS INCLUDE RESTRICTED GATE SPACE, CUSTOMS SERVICES AS WELL AS AIRCRAFT SERVICING & PARKING.

TAXIWAY B RESTRICTED TO AIRCRAFT WITH WINGSPANS GREATER THAN 171 FT BETWEEN TAXIWAY B6 & TAXIWAY D.

AIRCRAFT WITH WINSPANS GREATER THAN 171 FT (52M) RESTRICTED FROM USING TAXIWAY D SOUTH OF TAXIWAY B, AND WHEN EXITING RUNWAY 9 WESTBOUND ON TAXIWAY B.

TAXIING AIRCRAFT ARE PROHIBITED FROM PASSING TO THE SOUTH OF AIRCRAFT LOCATED ON TAXIWAY B INTO ALLEY LOCATED BETWEEN GATES 7 AND 14.

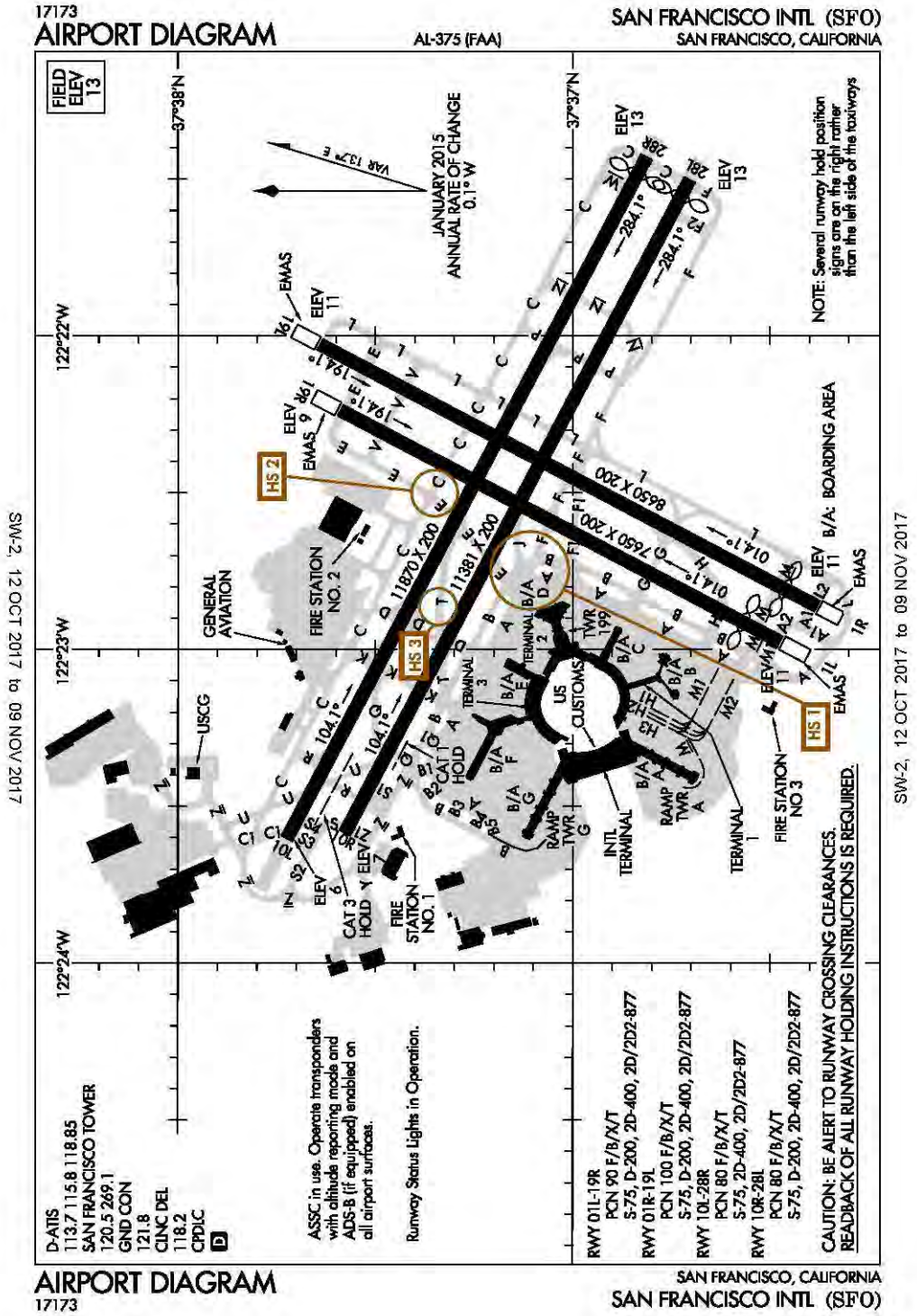
TAXIING AIRCRAFT SHALL FOLLOW LEAD−IN LINES UNTIL THE NOSE WHEEL OF THE AIRCRAFT HAS ENTERED THE NON−MOVEMENT AREA OF THE ALLEY.

FOR ACCESS TO/FR TERMINAL 2: GATES 23, 25, 27, 29, 31, 33−51 AND THE ISLAND AND WEST REMAINING OVERNIGHT PARKING RAMPS, CONTACT RAMP CONTROL ON 129.775 FR 0600−2400. FR 0000−0600 CONTACT GROUND CONTROL ON 123.9.

TAXILANE A RESTRICTED TO AIRCRAFT WITH WINGSPANS OF 135 FT OR LESS.

AIRCRAFT WITH WINGSPANS GREATER THAN 200 FT INBOUND TO WEST RAMP OR GATES 47 OR 51 MUST ACCESS BY WAY OF TRANSFER OF CONTROL POINT #1.

San Francisco, California
San Francisco International
ICAO Identifier KSFO



San Francisco, CA
San Francisco Intl
ICAO Identifier KSFO

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 37−37−00.00N / 122−22−31.50W
2.2.2 From City: 8 Miles SE Of San Francisco, CA
2.2.3 Elevation: 13.1 ft
2.2.5 Magnetic variation: 14E (2015)
2.2.6 Airport Contact: Ivar Satero
PO BOX 8097
San Francisco, CA 94128
((650) 821−3355)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 01R
2.10.1.b Type of obstacle: Tree (177 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 200 ft from Centerline

2.10.1.a. Runway designation: 10L
2.10.1.b Type of obstacle: Tower (88 ft). Marked and Lighted
2.10.1.c Location of obstacle: 1300 ft from Centerline

2.10.1.a. Runway designation: 10R
2.10.1.b Type of obstacle: Tower (87 ft). Marked and Lighted
2.10.1.c Location of obstacle: 950 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 28X
2.12.3 Dimensions: 0 ft x 0 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 28
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−36−22.79N / 122−22−51.75W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 208
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−37−38.43N / 122−22−00.00W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−37−43.46N / 122−23−36.21W
2.12.6 Threshold elevation: 6 ft
2.12.6 Touchdown zone elevation: 7 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−36−48.72N / 122−21−25.71W
2.12.6 Threshold elevation: 13 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 28
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−36−28.43N / 122−22−58.54W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 208
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−37−35.33N / 122−22−14.19W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T

2.12.5 Coordinates: 37–37–34.65N / 122–23–35.18W
2.12.6 Threshold elevation: 7 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37–36–42.16N / 122–21–30.06W
2.12.6 Threshold elevation: 13 ft
2.12.6 Touchdown zone elevation: 13 ft

AD 2.13 Declared distances
2.13.1 Designation: 01R
2.13.2 Takeoff run available: 8650
2.13.3 Takeoff distance available: 8650
2.13.4 Accelerate–stop distance available: 8650
2.13.5 Landing distance available: 8090

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 8650
2.13.3 Takeoff distance available: 8650
2.13.4 Accelerate–stop distance available: 8650
2.13.5 Landing distance available: 8650

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 11870
2.13.3 Takeoff distance available: 11870
2.13.4 Accelerate–stop distance available: 11193
2.13.5 Landing distance available: 11193

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 11870
2.13.3 Takeoff distance available: 11870
2.13.4 Accelerate–stop distance available: 11870
2.13.5 Landing distance available: 11236

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 7650
2.13.3 Takeoff distance available: 7650
2.13.4 Accelerate–stop distance available: 7650
2.13.5 Landing distance available: 7010

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 7650
2.13.3 Takeoff distance available: 7650
2.13.4 Accelerate–stop distance available: 7650
2.13.5 Landing distance available: 7650

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 11381
2.13.3 Takeoff distance available: 11381
2.13.4 Accelerate–stop distance available: 10704
2.13.5 Landing distance available: 10704

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 11381
2.13.3 Takeoff distance available: 11381
2.13.4 Accelerate–stop distance available: 10981
2.13.5 Landing distance available: 10275

AD 2.14 Approach and runway lighting
2.14.1 Designation: 19L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Runway 19L MALSf Has A Non Standard Length Of 1,115 Ft With 3 Sequenced Flashers.

2.14.1 Designation: 10L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 10R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 113.7 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 115.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LDA PRM RY 28R IC
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 118.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 128.65 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: IC
2.18.3 Service designation: 351.8 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 118.85 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: MONITOR LDA PRM RY 28R
2.18.3 Service designation: 127.675 MHz

2.18.1 Service designation: MONITOR ILS PRM RY 28L
2.18.3 Service designation: 125.15 MHz

2.18.1 Service designation: ILS PRM RY 28L IC
2.18.3 Service designation: 120.5 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 14E
2.19.2 ILS identification: SFO
2.19.5 Coordinates: 37−37−37.47N / 122−23−41.92W
2.19.6 Site elevation: 9.3 ft

2.19.1 ILS type: Localizer for runway 19L. Magnetic variation: 14E
2.19.2 ILS identification: SIA
2.19.5 Coordinates: 37−36−16.28N / 122−22−56.06W
2.19.6 Site elevation: 19 ft

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37−37−46.36N / 122−23−43.12W
2.19.6 Site elevation: 5.3 ft

2.19.1 ILS type: DME for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37−37−48.20N / 122−23−40.61W
2.19.6 Site elevation: 17.7 ft

2.19.1 ILS type: DME for runway 19L. Magnetic variation: 14E
2.19.2 ILS identification: SIA
2.19.5 Coordinates: 37−36−18.72N / 122−22−59.41W
2.19.6 Site elevation: 20.6 ft

2.19.1 ILS type: DME for runway 28L. Magnetic variation: 14E
2.19.2 ILS identification: SFO
2.19.5 Coordinates: 37−37−39.54N / 122−23−41.46W
2.19.6 Site elevation: 20.3 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37−36−51.40N / 122−21−43.12W
2.19.6 Site elevation: 8.2 ft

2.19.1 ILS type: Glide Slope for runway 19L. Magnetic variation: 14E
2.19.2 ILS identification: SIA
2.19.5 Coordinates: 37−37−30.74N / 122−22−11.06W
2.19.6 Site elevation: 6.3 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 14E
2.19.2 ILS identification: SFO
2.19.5 Coordinates: 37−36−51.28N / 122−21−43.20W
2.19.6 Site elevation: 8.2 ft

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37−34−19.93N / 122−15−35.65W
2.19.6 Site elevation: 11 ft

2.19.1 ILS type: Inner Marker for runway 28R. Magnetic

variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37–36–46.16N / 122–21–19.74W
2.19.6 Site elevation: 13 ft

2.19.1 ILS type: Middle Marker for runway 19L. Magnetic variation: 14E
2.19.2 ILS identification: SIA
2.19.5 Coordinates: 37–38–10.77N / 122–21–40.14W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 28L. Magnetic variation: 14E
2.19.2 ILS identification: SFO
2.19.5 Coordinates: 37–34–19.93N / 122–15–35.65W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 14E
2.19.2 ILS identification: GWQ
2.19.5 Coordinates: 37–36–33.79N / 122–20–50.18W
2.19.6 Site elevation: 11 ft

2.19.1 ILS type: DME for runway 28X. Magnetic variation: 14E
2.19.2 ILS identification: FNP
2.19.5 Coordinates: 37–37–14.91N / 122–22–00.00W
2.19.6 Site elevation: 22.4 ft

2.19.1 ILS type: Localizer for runway 28X. Magnetic variation: 14E
2.19.2 ILS identification: FNP
2.19.5 Coordinates: 37–37–16.68N / 122–22–00.00W
2.19.6 Site elevation: 15.5 ft

2.19.1 ILS type: Glide Slope for runway 28X. Magnetic variation: 14E
2.19.2 ILS identification: FNP
2.19.5 Coordinates: 37–36–51.54N / 122–21–43.05W
2.19.6 Site elevation: 8.2 ft

General Remarks:
FLOCKS OF BIRDS FEEDING ALONG SHORELINE ADJACENT TO AIRPORT; ON OCCASIONS FLY ACROSS VARIOUS PARTS OF THE AIRPORT.

HIGH SPEED TAXIWAY (T) GRAVELLED FULL WIDTH BETWEEN RUNWAY 28R AND 28L.

NOISE SENSITIVE AIRPORT; FOR NOISE ABATEMENT PROCEDURES CONTACT AIRPORT NOISE OFFICE MON–FRI 0800–1700 BY CALLING 650–821–5100.

747–400'S SHALL TAXI AT A SPEED OF LESS THAN 10 MPH ON ALL NON–RESTRICTED TAXIWAYS ON THE TERMINAL SIDE OF THE INTERSECTING RUNWAYS. MOVEMENT SPEED OF NOT MORE THAN 5 MPH IS REQUIRED WHEN TWO 747–400'S PASS OR OVERTAKE EACH OTHER ON PARALLEL TAXIWAYS A & B.

SEVERAL RUNWAY HOLD POSITION SIGNS ARE ON THE RIGHT RATHER THAN THE LEFT SIDE OF THE TAXIWAYS.

NO GROOVING EXISTS AT AIRPORT RUNWAY INTERSECTIONS.

RUNWAY 10 PREFERRED RUNWAY BETWEEN 0100–0600 WEATHER AND FLIGHT CONDITIONS PERMITTING.

AIRLINE PILOTS SHALL STRICTLY FOLLOW THE PAINTED NOSE GEAR LINES AND NO OVERSTEERING ADJUSTMENT IS PERMITTED.

PERSONNEL AND EQUIPMENT WORKING APPROACH END RUNWAYS 28L, 28R, 19L INDEFINITELY.

RUNWAYS 01L/19R, 01R/19L, 10R/28L, 10L/28R GROOVED FULL LENGTH EXCEPT AT RUNWAY INTERSECTIONS.

B747, B777, A330, A340 OR LARGER AIRCRAFT ARE RESTRICTED FROM USING TAXIWAY A1 WHEN B747–400, A340–600, OR LARGER AIRCRAFT ARE HOLDING SHORT OF RUNWAY 1R ON TAXIWAY A.

RAMP CLOSED TO AIRCRAFT WITH WINGSPANS OVER 117 FT AT TERMINAL 1, GATE C41 INDEFINITELY.

ALL OUTBOUND TAXIWAY YANKEE HEAVY AIRCRAFT WITH A WINGSPAN OF 171 FT. OR GREATER UNDER POWER PROHIBITED FROM ENTERING WESTBOUND TAXIWAY ZULU.

SIMULTANEOUS OPERATIONS IN EFFECT ALL RUNWAYS.

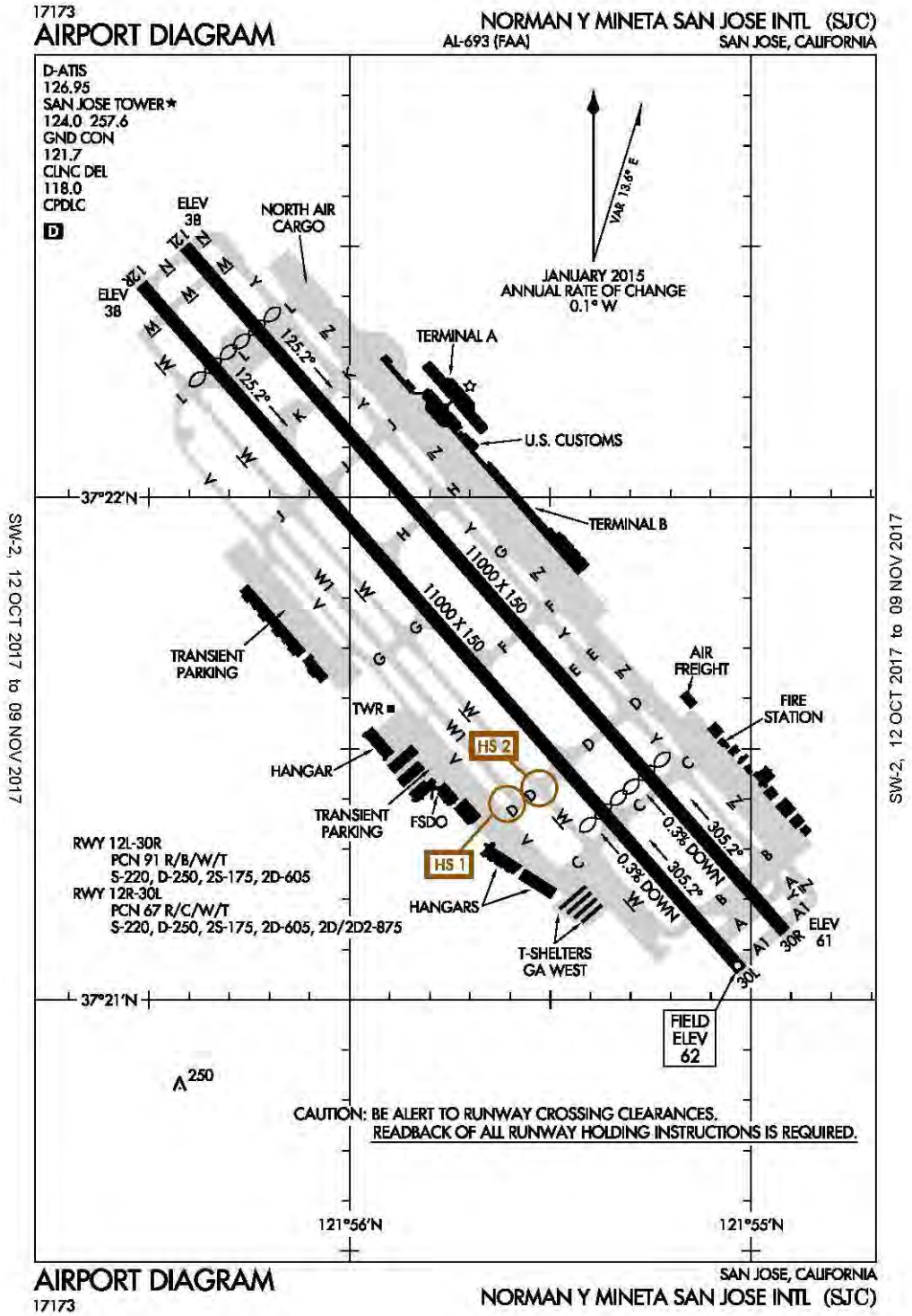
TAXIWAY Z1 NORTHBOUND ENTRANCE CLOSED TO RUNWAY 10R FOR JET AIRCRAFT AND FOUR ENGINE TURBOPROPS.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RUNWAY 1L CLOSED TO DEPARTING TRIJET AIRCRAFT WITH WINGSPAN GREATER THAN 155 FT. RUNWAY STATUS LIGHTS IN OPN.

TAXIWAY S2 BETWEEN TAXIWAY Z AND TAXIWAY S3 CLOSED TO AIRCRAFT WITH WINGSPAN OVER THAN 215 FT.

San Jose, California
Norman Y. Mineta San Jose International
ICAO Identifier KSJC



San Jose, CA
Norman Y. Mineta San Jose Intl
ICAO Identifier KSJC

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 37−21−46.77N / 121−55−43.03W
2.2.2 From City: 2 Miles NW Of San Jose, CA
2.2.3 Elevation: 62.2 ft
2.2.5 Magnetic variation: 13E (2020)
2.2.6 Airport Contact: Kimberly Becker
1701 AIRPORT BLVD., SUITE B−1130
San Jose, CA 95110 ((408) 277−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 12R
2.10.1.b Type of obstacle: Pole (29 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 480 ft from Centerline

2.10.1.a. Runway designation: 30L
2.10.1.b Type of obstacle: Fence (14 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 170 ft from Centerline

2.10.1.a. Runway designation: 12L
2.10.1.b Type of obstacle: Pole (32 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 580 ft from Centerline

2.10.1.a. Runway designation: 30R
2.10.1.b Type of obstacle: Tree (54 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 550 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 12R
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−22−25.42N / 121−56−31.15W
2.12.6 Threshold elevation: 38 ft
2.12.6 Touchdown zone elevation: 46 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−21−00.00N / 121−55−00.00W
2.12.6 Threshold elevation: 62 ft
2.12.6 Touchdown zone elevation: 57 ft
2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 12L
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 37−22−29.97N / 121−56−24.63W
2.12.6 Threshold elevation: 38 ft
2.12.6 Touchdown zone elevation: 44 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 37−21−00.00N / 121−54−54.92W
2.12.6 Threshold elevation: 61 ft
2.12.6 Touchdown zone elevation: 55 ft
2.12.7 Slope: 0.3DOWN

AD 2.13 Declared distances

2.13.1 Designation: 12R
2.13.2 Takeoff run available: 9883
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 9883
2.13.5 Landing distance available: 8587

2.13.1 Designation: 30L
2.13.2 Takeoff run available: 10152
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 10152
2.13.5 Landing distance available: 7614

2.13.1 Designation: 12L
2.13.2 Takeoff run available: 10139
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 10139

2.13.5 Landing distance available: 8833

2.13.1 Designation: 30R
2.13.2 Takeoff run available: 10134
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 10134
2.13.5 Landing distance available: 7597

AD 2.14 Approach and runway lighting
2.14.1 Designation: 12R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 30L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Runway 30L PAPI Unusable Beyond 7 Degrees Of Cntrl Of Ry.

2.14.1 Designation: 12L
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 30R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 118 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 257.6 MHz
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 126.95 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 124 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 12R. Magnetic variation: 13E
2.19.2 ILS identification: SLV
2.19.5 Coordinates: 37−21−00.00N / 121−55−00.00W
2.19.6 Site elevation: 61 ft

2.19.1 ILS type: Localizer for runway 30L. Magnetic variation: 13E
2.19.2 ILS identification: SJC
2.19.5 Coordinates: 37−22−27.19N / 121−56−33.10W
2.19.6 Site elevation: 34.6 ft

2.19.1 ILS type: Glide Slope for runway 30L. Magnetic variation: 13E
2.19.2 ILS identification: SJC
2.19.5 Coordinates: 37−21−33.00N / 121−55−27.87W
2.19.6 Site elevation: 48.6 ft

2.19.1 ILS type: Glide Slope for runway 12R. Magnetic variation: 13E
2.19.2 ILS identification: SLV
2.19.5 Coordinates: 37−22−00.00N / 121−56−14.58W
2.19.6 Site elevation: 36.5 ft

2.19.1 ILS type: Middle Marker for runway 12R. Magnetic variation: 13E
2.19.2 ILS identification: SLV
2.19.5 Coordinates: 37−22−36.25N / 121−56−43.05W
2.19.6 Site elevation: 32 ft

2.19.1 ILS type: DME for runway 12R. Magnetic variation: 13E
2.19.2 ILS identification: SLV
2.19.5 Coordinates: 37−21−00.00N / 121−55−00.00W
2.19.6 Site elevation: 81.1 ft

2.19.1 ILS type: DME for runway 30L. Magnetic variation: 13E
2.19.2 ILS identification: SJC
2.19.5 Coordinates: 37−22−27.56N / 121−56−32.60W
2.19.6 Site elevation: 55.9 ft

General Remarks:
BIRDS FREQUENTLY ON OR IN VICINITY OF AIRPORT.

TAXIWAY Y WILL BE PERIODICALLY RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 171 FT (MD−11 OR SMALLER) DURING B−787 AND A−340 OPERATIONS ON RUNWAY 12L/30R.

TAXIWAY Z WILL BE PERIODICALLY RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER) DURING B−787 AND A−340 OPERATIONS.

TAXIWAY V LIMITED TO AIRCRAFT WITH WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

UNSCHEDULED OPERATIONS BY GROUP 5 AIRCRAFT (B747) AND LARGER NOT AUTH EXCEPT WITH PRIOR AIRPORT APPROVAL CONTACT AIRPORT MANAGER (408) 392−3500.

NOISE ABATEMENT PROCEDURE: RUNWAY 30L/12R IS PREFERRED ARRIVAL RUNWAY FOR JET AIRCRAFT AND RUNWAY 12L/30R IS THE PREFERRED DEP RUNWAY FOR JET AIRCRAFT. ALL JET AIRCRAFT TAKE-OFFS ARE TO BE INITIATED FROM END OF RUNWAY UNLESS DIRECTED OTHERWISE BY ATCT.

CURFEW HRS 2300−0700 FAR 36 STAGE II, 2330−0630 FAR 36 STAGE III AIRCRAFT LISTED ON THE SCHEDULE OF AUTHORIZED AIRCRAFT ISSUED BY THE DIRECTOR OF AVIATION. DELAYED SCHEDULED FLIGHTS, AND ALTERNATE/EMERGENCY OPERATIONS MAY BE EXEMPT FROM CURFEW HOUR RESTRICTIONS.

PRIOR AIRPORT NOTIFICATION IS REQUIRED FOR ALL LATE/EARLY ARRIVALS. CONTACT MANAGER ON DUTY AT (408) 392−3500.

FIRST 400 FT RUNWAY 30R & RUNWAY 30L CLOSED FOR TAKE-OFF DC10, MD11, L1011.

ALL TURBINE ENGINE RUN−UPS REQUIRE PRIOR AIRPORT APPROVAL, CONTACT MANAGER ON DUTY (408) 392−3500.

TAXIWAY D BETWEEN TAXIWAY W AND TAXIWAY V LIMITED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

TAXIWAY W BETWEEN TAXIWAY J AND TAXIWAY L CAN SUPPORT GROUP IV AIRCRAFT.

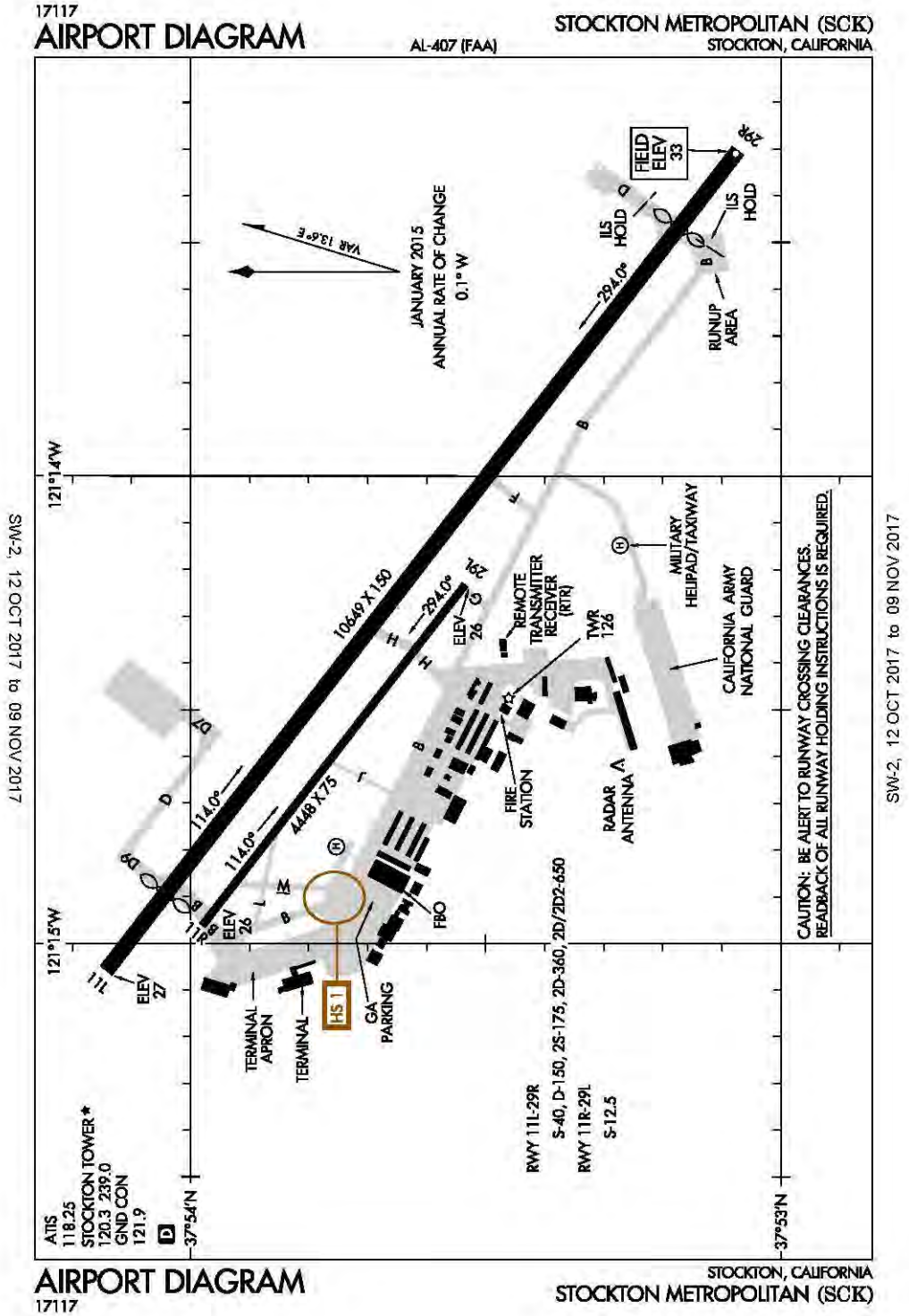
HOT SPOT 3: RUNWAY 11−29 IS NOW TAXIWAY W1. SURFACE IS USABLE ONLY AS TAXIWAY AND IS MARKED AND SIGNED AS A TAXIWAY.

HIGH INTENSITY LIGHT ACTIVITY: HIGH INTENSITY LIGHTS (LASERS AND LARGE MEDIA SCREENS) MAY BE VISIBLE TO ARR AND DEP AIRCRAFT TO SAN JOSE INTERNATIONAL AIRPORT DURING EVENTS AT THE LEVI STADIUM COMPLEX (37−24−15N/121−58−14W, SJC VORTAC R−303/2.1 DME). FLIGHT CREWS SHOULD USE CAUTION WHEN OPERATING IN THIS AREA DURING STADIUM EVENTS. COCKPIT ILLUMINATION AND GLARE EFFECT REDUCING VISIBILITY MAY BE INTENSIFIED DURING ARR AND DEP OPERATIONS ESPECIALLY AT NIGHT.

RUNWAY REFERENCE POINT REQUIRED FROM FBO FOR TRANSIENT HELICOPTER OPERATIONS.

FOR CD WHEN ATCT IS CLOSED CONTACT NORCAL APPROACH AT 916−361−3748.

Stockton, California
Stockton Metropolitan
ICAO Identifier KSCK



Stockton, CA
Stockton Metropolitan
ICAO Identifier KSCK

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 37−53−39.00N / 121−14−17.90W
2.2.2 From City: 3 Miles SE Of Stockton, CA
2.2.3 Elevation: 33.2 ft
2.2.5 Magnetic variation: 14E (2010)
2.2.6 Airport Contact: Harry Mavrogenes
5000 S. AIRPORT WAY ROOM 202
Stockton, CA 95206 (209−468−4700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 5/1/1973
2.6.4 Remarks: Closed To Unscheduled Air Carrier Operations With More Than 30 Passenger Seats Except One Hr Prior Permission Required Call Airport Manager (209) 468−4700 Or 4722; After Hrs Call (209) 468−4722.

AD 2.12 Runway physical characteristics

2.12.1 Designation: H1
2.12.3 Dimensions: 70 ft x 70 ft
2.12.5 Coordinates: 37−53−45.27N / 121−14−47.57W
2.12.6 Threshold elevation: 26 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 128
2.12.3 Dimensions: 10649 ft x 150 ft
2.12.5 Coordinates: 37−54−00.00N / 121−15−00.00W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 29 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 308
2.12.3 Dimensions: 10649 ft x 150 ft
2.12.5 Coordinates: 37−53−00.00N / 121−13−17.93W
2.12.6 Threshold elevation: 33 ft
2.12.6 Touchdown zone elevation: 32 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 128
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.5 Coordinates: 37−53−58.67N / 121−14−57.42W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 26 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 308
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.5 Coordinates: 37−53−31.86N / 121−14−13.45W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 27 ft

AD 2.13 Declared distances

2.13.1 Designation: 11L
2.13.2 Takeoff run available: 8474
2.13.3 Takeoff distance available: 9474
2.13.4 Accelerate−stop distance available: 8604
2.13.5 Landing distance available: 8650

2.13.1 Designation: 29R
2.13.2 Takeoff run available: 9202
2.13.3 Takeoff distance available: 10202
2.13.4 Accelerate−stop distance available: 9556
2.13.5 Landing distance available: 8650

AD 2.14 Approach and runway lighting

2.14.1 Designation: H1
2.14.2 Approach lighting system: Omnidirectional approach lighting system

2.14.1 Designation: 11L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 29R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: ATIS
2.18.3 Service designation: 118.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.3 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239 MHz

2.18.1 Service designation: ANG OPNS
2.18.3 Service designation: 49 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 139.4 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 356.9 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: SCK
2.19.5 Coordinates: 37−54−14.48N / 121−15−13.13W
2.19.6 Site elevation: 23.5 ft

2.19.1 ILS type: Glide Slope for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: SCK
2.19.5 Coordinates: 37−53−20.80N / 121−13−36.95W
2.19.6 Site elevation: 29.3 ft

2.19.1 ILS type: Outer Marker for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: SCK
2.19.5 Coordinates: 37−49−54.29N / 121−08−00.00W
2.19.6 Site elevation: 52 ft

2.19.1 ILS type: Middle Marker for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: SCK
2.19.5 Coordinates: 37−52−53.73N / 121−13−00.00W
2.19.6 Site elevation: 30 ft

2.19.1 ILS type: DME for runway 29R. Magnetic variation: 14E
2.19.2 ILS identification: SCK
2.19.5 Coordinates: 37−54−12.58N / 121−15−15.20W
2.19.6 Site elevation: 22 ft

General Remarks:

SEAGULLS ON AND IN VICINITY OF AIRPORT MOSTLY DURING RAINY WEATHER.

AVOID OVERFLYING SAN JOAQUIN GENERAL HOSPITAL & THE CITY OF MANTECA.

AIRPORT CLOSED TO TOUCH AND GO LANDING & PLANNED LOW APPROACHES FOR TURBOJET AIRCRAFT 2200−0700 EXCEPT BY PRIOR PERMISSION REQUIRED FROM AIRPORT MANAGER PART 36 STAGE 3 AIRCRAFT.

PRACTICE CIRCLING APPROACHES TO RUNWAYS 11L/11R NOT AUTHORIZED FOR ANY TURBINE POWERED ACFT/PROP DRIVEN AIRCRAFT EXCEEDING 12500 LBS EXCEPT BY PRIOR PERMISSION REQUIRED FROM AIRPORT MANAGER.

MILITARY USE: ARRANGE OPR 1500−2330Z++ MON−FRI. DSN 466−5319, C209−983−5319, FAX 5391. PRIOR PERMISSION REQUIREDUIRED. LIMITED TRANSIENT SERVICE AND MAINT AVAILABLE FOR CH47.

THE FOLLOWING AREAS NOT VISIBLE FROM ATCT: TAXIWAY B FROM TERMINAL APRON TO INTERSECTION AT TAXIWAY M; TAXIWAY B FROM 300 FT W OF TAXIWAY J TO 375 FT E OF TAXIWAY J; MOVEMENT AREA S OF TAXIWAY B FROM TERMINAL APRON TO 200 FT W OF TAXIWAY H; SE HALF OF TERMINAL APRON; TRANSIENT PARKING APRON.

TRANSIENT PARKING AVAILABLE AT FBO.

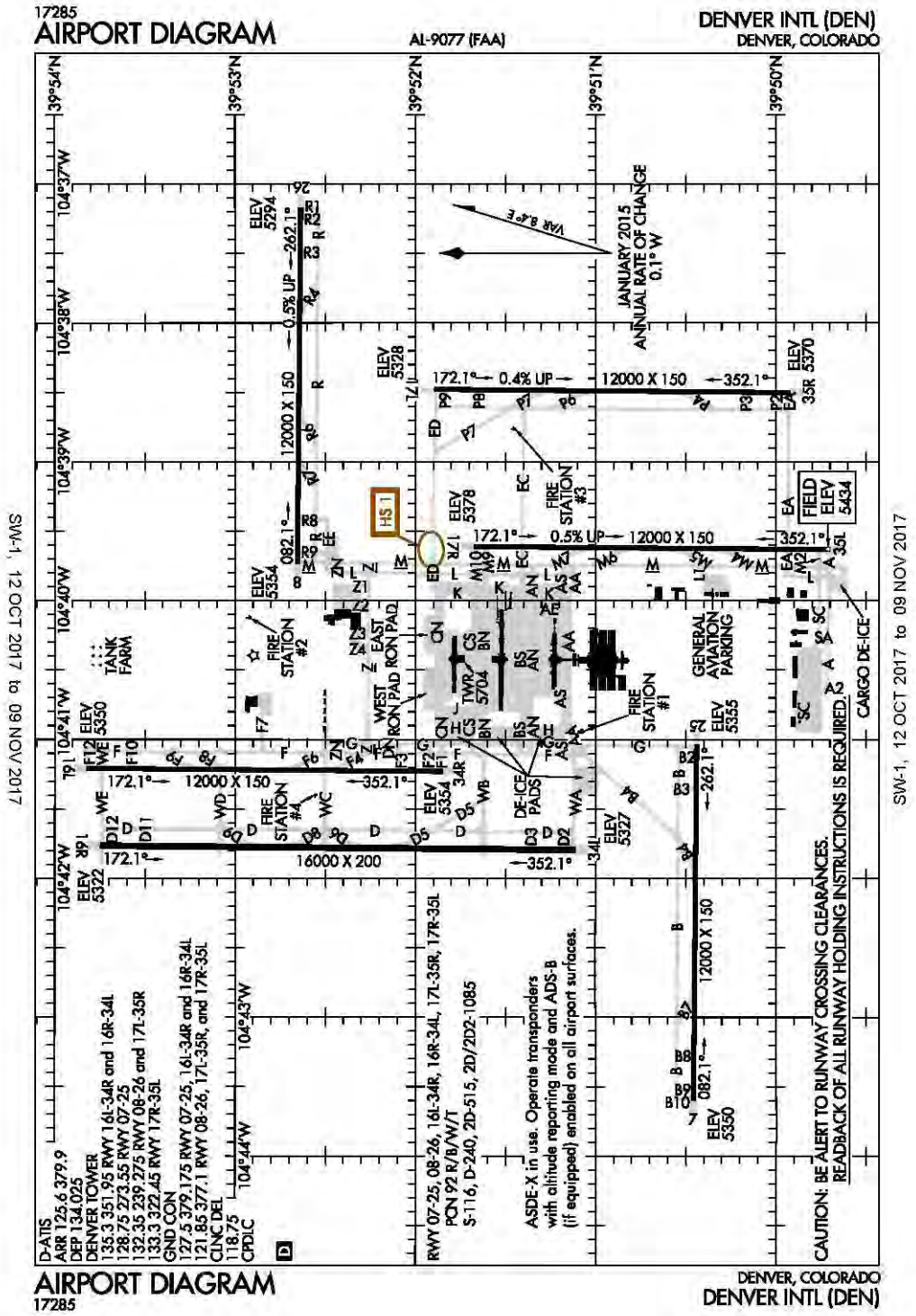
BE ALERT TO ELEVATED MALSR APPROACH END RUNWAY 29R LOCATED AT DSPLCD THRESHOLD DEMARCATION BAR WHEN USING FULL LENGTH OF RUNWAY 29R.

TERMINAL APRON AND TAXIWAYS B, F, D, D9, AND H FOR AIRCRAFT ABOVE 12,500 LBS. ALL OTHER TAXIWAYS RESTRICTED TO AIRCRAFT LESS THAN 12,500 LBS.

PAVEMENT PRIOR TO THRESHOLDS NOT AVAILABLE FOR TAXI BACK OPERATIONS.

FOR CD WHEN ATCT CLOSED CONTACT NORCAL APPROACH AT 916−361−0516.

Denver, Colorado
Denver International
ICAO Identifier KDEN



Denver, CO
Denver Intl
ICAO Identifier KDEN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−51−42.00N / 104−40−23.40W
2.2.2 From City: 16 Miles NE Of Denver, CO
2.2.3 Elevation: 5433.8 ft
2.2.5 Magnetic variation: 8E (2015)
2.2.6 Airport Contact: Kim Day
ADMIN BLDG, 8500 PENA BLVD
Denver, CO 80249 ((303) 342−2206)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL,100,MOGAS
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 2/1/1995

AD 2.12 Runway physical characteristics
2.12.1 Designation: 16L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−53−49.33N / 104−41−12.50W
2.12.6 Threshold elevation: 5350 ft
2.12.6 Touchdown zone elevation: 5357 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−50.77N / 104−41−13.88W
2.12.6 Threshold elevation: 5354 ft
2.12.6 Touchdown zone elevation: 5354 ft

2.12.1 Designation: 07
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−50−27.40N / 104−43−35.96W
2.12.6 Threshold elevation: 5350 ft
2.12.6 Touchdown zone elevation: 5352 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−50−26.37N / 104−41−00.00W
2.12.6 Threshold elevation: 5355 ft
2.12.6 Touchdown zone elevation: 5355 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 91
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−52−39.20N / 104−39−44.03W
2.12.6 Threshold elevation: 5354 ft
2.12.6 Touchdown zone elevation: 5354 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−52−38.08N / 104−37−10.15W
2.12.6 Threshold elevation: 5294 ft
2.12.6 Touchdown zone elevation: 5309 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−53−44.87N / 104−41−45.90W
2.12.6 Threshold elevation: 5322 ft
2.12.6 Touchdown zone elevation: 5326 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−00.00N / 104−41−47.72W
2.12.6 Threshold elevation: 5327 ft
2.12.6 Touchdown zone elevation: 5327 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−53.83N / 104−38−28.70W
2.12.6 Threshold elevation: 5328 ft
2.12.6 Touchdown zone elevation: 5338 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–49–55.27N / 104–38–30.16W
2.12.6 Threshold elevation: 5370 ft
2.12.6 Touchdown zone elevation: 5370 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–51–40.48N / 104–39–36.56W
2.12.6 Threshold elevation: 5378 ft
2.12.6 Touchdown zone elevation: 5392 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39–49–41.93N / 104–39–37.98W
2.12.6 Threshold elevation: 5434 ft
2.12.6 Touchdown zone elevation: 5434 ft

AD 2.13 Declared distances

2.13.1 Designation: 16L
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 34R
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 13000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 07
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 25
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 13000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 08
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 13000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 26
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 16R
2.13.2 Takeoff run available: 16000
2.13.3 Takeoff distance available: 16000
2.13.4 Accelerate–stop distance available: 16000
2.13.5 Landing distance available: 16000

2.13.1 Designation: 34L
2.13.2 Takeoff run available: 16000
2.13.3 Takeoff distance available: 16000
2.13.4 Accelerate–stop distance available: 16000
2.13.5 Landing distance available: 16000

2.13.1 Designation: 17L
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 35R
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 17R
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 35L
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 16L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 07
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 25
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 16R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 34L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 17L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 17R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 125.6 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 125.6 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 379.9 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 379.9 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 273.55 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 273.55 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 134.025 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 134.025 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.35 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.35 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 351.95 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 351.95 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 379.175 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 379.175 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.75 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.75 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.85 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 133.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 133.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 322.45 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 322.45 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 377.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 377.1 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.275 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.275 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39–53–59.44N / 104–41–12.38W
2.19.6 Site elevation: 5349.7 ft

2.19.1 ILS type: Localizer for runway 07. Magnetic variation: 8E
2.19.2 ILS identification: DZG
2.19.5 Coordinates: 39–50–26.28N / 104–40–49.06W
2.19.6 Site elevation: 5354.9 ft

2.19.1 ILS type: Localizer for runway 16L. Magnetic variation: 8E
2.19.2 ILS identification: LTT
2.19.5 Coordinates: 39–51–40.67N / 104–41–14.00W
2.19.6 Site elevation: 5343.2 ft

2.19.1 ILS type: Localizer for runway 26. Magnetic variation: 8E
2.19.2 ILS identification: JOY

2.19.5 Coordinates: 39–52–39.30N / 104–39–57.14W
2.19.6 Site elevation: 5347.6 ft

2.19.1 ILS type: Localizer for runway 08. Magnetic variation: 8E
2.19.2 ILS identification: FUI
2.19.5 Coordinates: 39–52–37.98N / 104–36–57.04W
2.19.6 Site elevation: 5283.1 ft

2.19.1 ILS type: Localizer for runway 25. Magnetic variation: 8E
2.19.2 ILS identification: ERP
2.19.5 Coordinates: 39–50–27.49N / 104–43–49.07W
2.19.6 Site elevation: 5348.9 ft

2.19.1 ILS type: Localizer for runway 17L. Magnetic variation: 8E
2.19.2 ILS identification: BXP
2.19.5 Coordinates: 39–49–45.17N / 104–38–30.28W
2.19.6 Site elevation: 5362.9 ft

2.19.1 ILS type: Localizer for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39–51–50.60N / 104–39–36.44W
2.19.6 Site elevation: 5377.3 ft

2.19.1 ILS type: Localizer for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: ACX
2.19.5 Coordinates: 39–49–31.82N / 104–39–38.10W
2.19.6 Site elevation: 5427.6 ft

2.19.1 ILS type: Localizer for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39–52–00.00N / 104–38–28.57W
2.19.6 Site elevation: 5335.5 ft

2.19.1 ILS type: DME for runway 07. Magnetic variation: 8E
2.19.2 ILS identification: DZG
2.19.5 Coordinates: 39–50–23.66N / 104–40–48.62W
2.19.6 Site elevation: 5359.1 ft

2.19.1 ILS type: DME for runway 16L. Magnetic variation: 8E
2.19.2 ILS identification: LTT
2.19.5 Coordinates: 39–53–59.61N / 104–41–15.77W
2.19.6 Site elevation: 5357 ft

2.19.1 ILS type: DME for runway 26. Magnetic variation: 8E
2.19.2 ILS identification: JOY
2.19.5 Coordinates: 39–52–41.88N / 104–39–57.51W
2.19.6 Site elevation: 5360.2 ft

2.19.1 ILS type: DME for runway 08. Magnetic variation: 8E
2.19.2 ILS identification: FUI
2.19.5 Coordinates: 39–52–41.88N / 104–39–57.51W
2.19.6 Site elevation: 5360.2 ft

2.19.1 ILS type: DME for runway 25. Magnetic variation: 8E
2.19.2 ILS identification: ERP
2.19.5 Coordinates: 39–50–23.66N / 104–40–48.62W
2.19.6 Site elevation: 5359.1 ft

2.19.1 ILS type: DME for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39–52–00.00N / 104–38–25.19W
2.19.6 Site elevation: 5345.1 ft

2.19.1 ILS type: Glide Slope for runway 07. Magnetic variation: 8E
2.19.2 ILS identification: DZG
2.19.5 Coordinates: 39–50–23.27N / 104–43–22.66W
2.19.6 Site elevation: 5340.5 ft

2.19.1 ILS type: Glide Slope for runway 16L. Magnetic variation: 8E
2.19.2 ILS identification: LTT
2.19.5 Coordinates: 39–53–39.55N / 104–41–17.87W
2.19.6 Site elevation: 5346.5 ft

2.19.1 ILS type: Glide Slope for runway 26. Magnetic variation: 8E
2.19.2 ILS identification: JOY
2.19.5 Coordinates: 39–52–42.22N / 104–37–22.39W
2.19.6 Site elevation: 5293.2 ft

2.19.1 ILS type: DME for runway 17L. Magnetic variation: 8E
2.19.2 ILS identification: BXP
2.19.5 Coordinates: 39–52–00.00N / 104–38–25.19W
2.19.6 Site elevation: 5345.1 ft

2.19.1 ILS type: DME for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: ACX

2.19.5 Coordinates: 39–51–50.92N / 104–39–33.05W
2.19.6 Site elevation: 5388 ft

2.19.1 ILS type: DME for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39–53–59.61N / 104–41–15.77W
2.19.6 Site elevation: 5357 ft

2.19.1 ILS type: DME for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39–51–50.92N / 104–39–33.05W
2.19.6 Site elevation: 5388 ft

2.19.1 ILS type: Outer Marker for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39–45–13.30N / 104–39–48.60W
2.19.6 Site elevation: 5606 ft

2.19.1 ILS type: Glide Slope for runway 17L. Magnetic variation: 8E
2.19.2 ILS identification: BXP
2.19.5 Coordinates: 39–51–44.06N / 104–38–23.56W
2.19.6 Site elevation: 5326 ft

2.19.1 ILS type: Glide Slope for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39–49–52.76N / 104–39–32.60W
2.19.6 Site elevation: 5422.6 ft

2.19.1 ILS type: Glide Slope for runway 08. Magnetic variation: 8E
2.19.2 ILS identification: FUI
2.19.5 Coordinates: 39–52–43.15N / 104–39–29.86W
2.19.6 Site elevation: 5342.2 ft

2.19.1 ILS type: Glide Slope for runway 25. Magnetic variation: 8E
2.19.2 ILS identification: ERP
2.19.5 Coordinates: 39–50–22.41N / 104–41–15.79W
2.19.6 Site elevation: 5344.2 ft

2.19.1 ILS type: Glide Slope for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39–52–00.00N / 104–41–19.01W
2.19.6 Site elevation: 5346.4 ft

2.19.1 ILS type: Glide Slope for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: ACX
2.19.5 Coordinates: 39–51–30.91N / 104–39–31.42W
2.19.6 Site elevation: 5378 ft

2.19.1 ILS type: Glide Slope for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39–50–00.00N / 104–38–24.77W
2.19.6 Site elevation: 5359.9 ft

2.19.1 ILS type: Outer Marker for runway 17L. Magnetic variation: 8E
2.19.2 ILS identification: BXP
2.19.5 Coordinates: 39–56–35.40N / 104–38–23.70W
2.19.6 Site elevation: 5161 ft

2.19.1 ILS type: Outer Marker for runway 16L. Magnetic variation: 8E
2.19.2 ILS identification: LTT
2.19.5 Coordinates: 39–58–19.70N / 104–41–26.10W
2.19.6 Site elevation: 5161 ft

2.19.1 ILS type: Outer Marker for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39–45–13.10N / 104–38–27.20W
2.19.6 Site elevation: 5504 ft

2.19.1 ILS type: Outer Marker for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: ACX
2.19.5 Coordinates: 39–56–35.50N / 104–39–32.20W
2.19.6 Site elevation: 5286 ft

2.19.1 ILS type: Outer Marker for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39–47–00.00N / 104–41–33.80W
2.19.6 Site elevation: 5561 ft

2.19.1 ILS type: Outer Marker for runway 07. Magnetic variation: 8E
2.19.2 ILS identification: DZG
2.19.5 Coordinates: 39–50–31.70N / 104–49–41.50W
2.19.6 Site elevation: 5215 ft

2.19.1 ILS type: Outer Marker for runway 25. Magnetic variation: 8E
2.19.2 ILS identification: ERP

2.19.5 Coordinates: 39−50−15.80N / 104−34−56.30W
2.19.6 Site elevation: 5319 ft

2.19.1 ILS type: Outer Marker for runway 08. Magnetic variation: 8E
2.19.2 ILS identification: FUI
2.19.5 Coordinates: 39−52−40.50N / 104−46−20.00W
2.19.6 Site elevation: 5245 ft

2.19.1 ILS type: Outer Marker for runway 26. Magnetic variation: 8E
2.19.2 ILS identification: JOY
2.19.5 Coordinates: 39−52−34.30N / 104−29−18.70W
2.19.6 Site elevation: 5111 ft

2.19.1 ILS type: Inner Marker for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39−49−33.44N / 104−39−38.09W
2.19.6 Site elevation: 5428.6 ft

2.19.1 ILS type: Inner Marker for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39−49−46.78N / 104−38−30.27W
2.19.6 Site elevation: 5364.5 ft

2.19.1 ILS type: Inner Marker for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39−51−42.29N / 104−41−13.98W
2.19.6 Site elevation: 5345 ft

2.19.1 ILS type: Middle Marker for runway 35L. Magnetic variation: 8E
2.19.2 ILS identification: AQD
2.19.5 Coordinates: 39−49−14.60N / 104−39−38.40W
2.19.6 Site elevation: 5411 ft

2.19.1 ILS type: Middle Marker for runway 17L. Magnetic variation: 8E
2.19.2 ILS identification: BXP
2.19.5 Coordinates: 39−52−23.20N / 104−38−28.30W
2.19.6 Site elevation: 5323 ft

2.19.1 ILS type: Middle Marker for runway 07. Magnetic variation: 8E
2.19.2 ILS identification: DZG
2.19.5 Coordinates: 39−50−27.60N / 104−44−11.80W
2.19.6 Site elevation: 5283 ft

2.19.1 ILS type: Middle Marker for runway 35R. Magnetic variation: 8E
2.19.2 ILS identification: DPP
2.19.5 Coordinates: 39−49−27.90N / 104−38−30.60W
2.19.6 Site elevation: 5356 ft

2.19.1 ILS type: Middle Marker for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: ACX
2.19.5 Coordinates: 39−52−10.50N / 104−39−36.20W
2.19.6 Site elevation: 5365 ft

2.19.1 ILS type: Middle Marker for runway 34R. Magnetic variation: 8E
2.19.2 ILS identification: OUF
2.19.5 Coordinates: 39−51−23.40N / 104−41−14.10W
2.19.6 Site elevation: 5298 ft

2.19.1 ILS type: Middle Marker for runway 25. Magnetic variation: 8E
2.19.2 ILS identification: ERP
2.19.5 Coordinates: 39−50−26.10N / 104−40−25.50W
2.19.6 Site elevation: 5325 ft

2.19.1 ILS type: Middle Marker for runway 08. Magnetic variation: 8E
2.19.2 ILS identification: FUI
2.19.5 Coordinates: 39−52−39.40N / 104−40−19.50W
2.19.6 Site elevation: 5352 ft

2.19.1 ILS type: Middle Marker for runway 26. Magnetic variation: 8E
2.19.2 ILS identification: JOY
2.19.5 Coordinates: 39−52−37.80N / 104−36−31.00W
2.19.6 Site elevation: 5256 ft

2.19.1 ILS type: Middle Marker for runway 16L. Magnetic variation: 8E
2.19.2 ILS identification: LTT
2.19.5 Coordinates: 39−54−18.00N / 104−41−12.20W
2.19.6 Site elevation: 5347 ft

2.19.1 ILS type: DME for runway 34L. Magnetic variation: 8E
2.19.2 ILS identification: DXU
2.19.5 Coordinates: 39−53−55.74N / 104−41−50.90W
2.19.6 Site elevation: 5323.5 ft

2.19.1 ILS type: Glide Slope for runway 34L. Magnetic variation: 8E
2.19.2 ILS identification: DXU

2.19.5 Coordinates: 39–51–17.60N / 104–41–52.85W
2.19.6 Site elevation: 5317.6 ft

2.19.1 ILS type: Localizer for runway 34L. Magnetic variation: 8E
2.19.2 ILS identification: DXU
2.19.5 Coordinates: 39–53–54.88N / 104–41–45.78W
2.19.6 Site elevation: 5320.1 ft

2.19.1 ILS type: Inner Marker for runway 34L. Magnetic variation: 8E
2.19.2 ILS identification: DXU
2.19.5 Coordinates: 39–50–58.30N / 104–41–47.81W
2.19.6 Site elevation: 5321.4 ft

2.19.1 ILS type: DME for runway 16R. Magnetic variation: 8E
2.19.2 ILS identification: DQQ
2.19.5 Coordinates: 39–53–55.74N / 104–41–50.90W
2.19.6 Site elevation: 5323.5 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic variation: 8E
2.19.2 ILS identification: DQQ
2.19.5 Coordinates: 39–53–34.82N / 104–41–51.28W
2.19.6 Site elevation: 5316.8 ft

2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 8E
2.19.2 ILS identification: DQQ
2.19.5 Coordinates: 39–50–56.78N / 104–41–47.83W
2.19.6 Site elevation: 5320.8 ft

General Remarks:
OVERHEAD PASSENGER BRIDGE ON SOUTH SIDE OF CONCOURSE 'A' PROVIDES 42 FT TAIL & 118 FT WINGSPAN CLEARANCE WHEN ON TAXIWAY CENTERLINE.

CUSTOMS AVAILABLE WITH PRIOR PERMISSION.

INFORMAL RUNWAY USE PROGRAM IS IN EFFECT 24 HRS A DAY. FOR ADDITIONAL NOISE ABATEMENT INFORMATION CONTACT AIRPORT MANAGEMENT AT 303–342–4200.

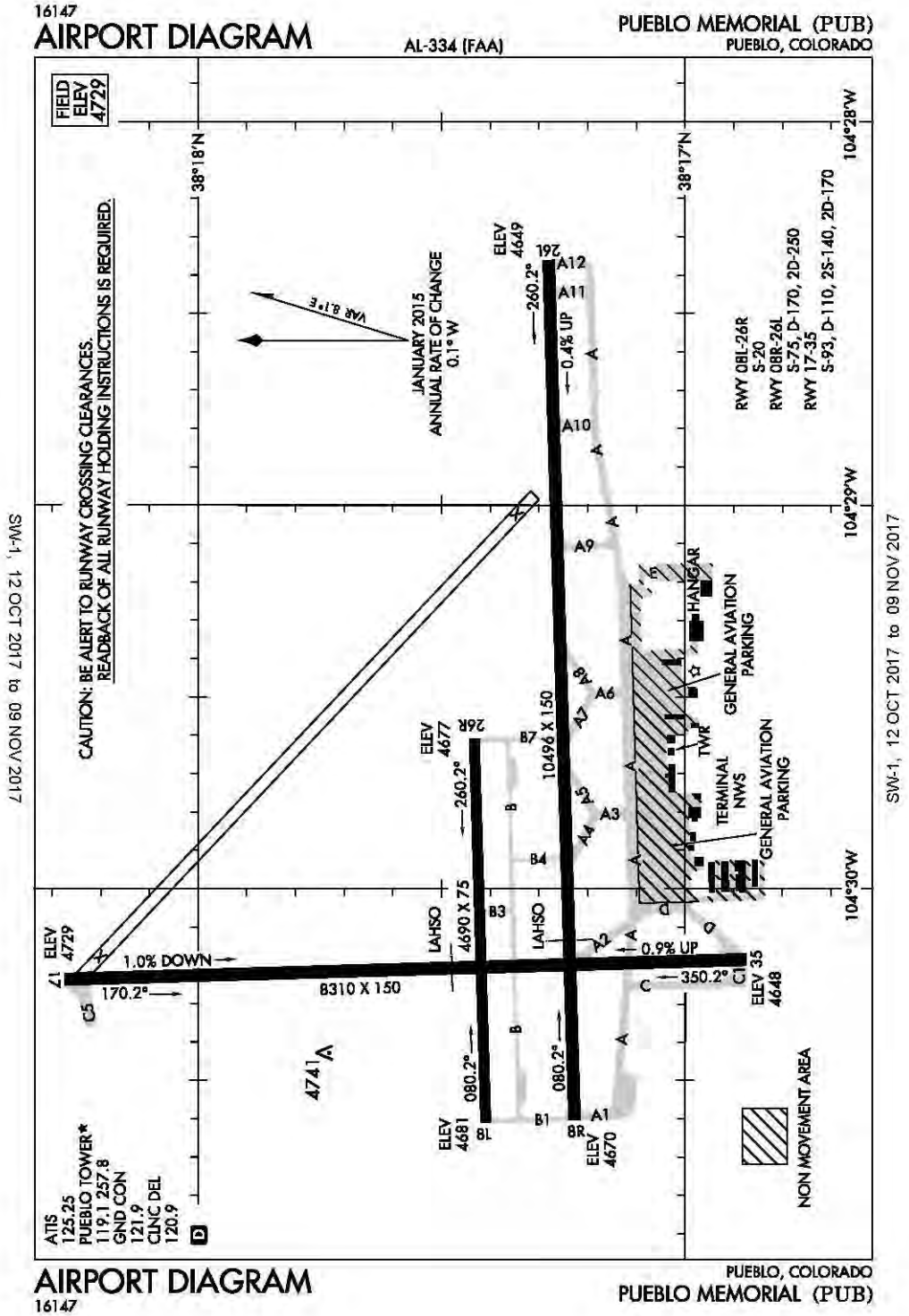
WATERFOWL AND MIGRATORY BIRD ACTIVITY IN THE VICINITY OF AIRPORT YEAR ROUND.

AIRPORT MAINTAINS CLEARWAYS (500 FT X 1,000 FT, 1.25% SLOPE) ON DEP RUNWAY 08, RUNWAY 25, & RUNWAY 34R.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

AIRPORT AREAS OF IRREG SURFACE – RUNWAY 17R/35L SOUTH BLAST PAD, RUNWAY 8/26 SOUTH SHOULDER BETWEEN R3/R4, TAXIWAY EC SOUTH SHOULDER 500FT WEST OF RY17R/35L, TAXIWAY B4 BETWEEN B4 AND AIRMET PAD.

Pueblo, Colorado
Pueblo Memorial
ICAO Identifier KPUB



Pueblo, CO
Pueblo Memorial
ICAO Identifier KPUB

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 38–17–23.80N / 104–29–52.90W
2.2.2 From City: 5 Miles E Of Pueblo, CO
2.2.3 Elevation: 4729.4 ft
2.2.5 Magnetic variation: 8E (2015)
2.2.6 Airport Contact: Ian Turner
31201 BRYAN CIRCLE
Pueblo, CO 81001
(719–553–2760)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 0600–2200 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index Ii A certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 17
2.12.2 True Bearing: 178
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.5 Coordinates: 38–18–15.06N / 104–30–14.69W
2.12.6 Threshold elevation: 4729 ft
2.12.6 Touchdown zone elevation: 4729 ft
2.12.7 Slope: 1DOWN

2.12.1 Designation: 35
2.12.2 True Bearing: 358
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.5 Coordinates: 38–16–52.97N / 104–30–11.65W
2.12.6 Threshold elevation: 4648 ft
2.12.6 Touchdown zone elevation: 4677 ft
2.12.7 Slope: 0.9UP

2.12.1 Designation: 08L
2.12.2 True Bearing: 88
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.5 Coordinates: 38–17–24.31N / 104–30–36.65W
2.12.6 Threshold elevation: 4681 ft
2.12.6 Touchdown zone elevation: 4681 ft
2.12.7 Slope: 0DOWN

2.12.1 Designation: 26R
2.12.2 True Bearing: 268
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.5 Coordinates: 38–17–25.70N / 104–29–37.86W
2.12.6 Threshold elevation: 4677 ft
2.12.6 Touchdown zone elevation: 4678 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 88
2.12.3 Dimensions: 10496 ft x 150 ft
2.12.5 Coordinates: 38–17–13.65N / 104–30–36.23W
2.12.6 Threshold elevation: 4670 ft
2.12.6 Touchdown zone elevation: 4671 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 268
2.12.3 Dimensions: 10496 ft x 150 ft
2.12.5 Coordinates: 38–17–16.77N / 104–28–24.67W
2.12.6 Threshold elevation: 4649 ft
2.12.6 Touchdown zone elevation: 4659 ft
2.12.7 Slope: 0.4UP

AD 2.13 Declared distances

2.13.1 Designation: 17
2.13.2 Takeoff run available: 8308
2.13.3 Takeoff distance available: 8308
2.13.4 Accelerate–stop distance available: 8308
2.13.5 Landing distance available: 8308

2.13.1 Designation: 35
2.13.2 Takeoff run available: 8308
2.13.3 Takeoff distance available: 8308
2.13.4 Accelerate–stop distance available: 8308
2.13.5 Landing distance available: 8308

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 4690
2.13.3 Takeoff distance available: 4690
2.13.4 Accelerate–stop distance available: 4690
2.13.5 Landing distance available: 4690

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 4690
2.13.3 Takeoff distance available: 4690
2.13.4 Accelerate–stop distance available: 4690
2.13.5 Landing distance available: 4690

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 10496
2.13.3 Takeoff distance available: 10496
2.13.4 Accelerate−stop distance available: 10496
2.13.5 Landing distance available: 10496

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 10496
2.13.3 Takeoff distance available: 10496
2.13.4 Accelerate−stop distance available: 10496
2.13.5 Landing distance available: 10496

AD 2.14 Approach and runway lighting
2.14.1 Designation: 17
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 125.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: CLNC DEL
2.18.3 Service designation: 120.9 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 8E
2.19.2 ILS identification: TFR
2.19.5 Coordinates: 38−17−13.25N / 104−30−52.56W
2.19.6 Site elevation: 4668 ft

2.19.1 ILS type: Localizer for runway 08R. Magnetic variation: 8E
2.19.2 ILS identification: PUB
2.19.5 Coordinates: 38−17−17.20N / 104−28−00.00W
2.19.6 Site elevation: 4653.2 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 8E
2.19.2 ILS identification: TFR
2.19.5 Coordinates: 38−17−21.36N / 104−28−39.20W
2.19.6 Site elevation: 4649.6 ft

2.19.1 ILS type: Outer Marker for runway 08R. Magnetic variation: 8E
2.19.2 ILS identification: PUB
2.19.5 Coordinates: 38−17−00.00N / 104−38−49.50W
2.19.6 Site elevation: 4730.3 ft

2.19.1 ILS type: Glide Slope for runway 08R. Magnetic variation: 8E
2.19.2 ILS identification: PUB
2.19.5 Coordinates: 38−17−18.93N / 104−30−21.58W
2.19.6 Site elevation: 4672.9 ft

2.19.1 ILS type: Outer Marker for runway 26L. Magnetic variation: 8E
2.19.2 ILS identification: TFR
2.19.5 Coordinates: 38−17−26.64N / 104−21−17.89W
2.19.6 Site elevation: 4660.4 ft

2.19.1 ILS type: Middle Marker for runway 08R. Magnetic variation: 8E

2.19.2 ILS identification: PUB
2.19.5 Coordinates: 38−17−12.61N / 104−31−20.10W
2.19.6 Site elevation:

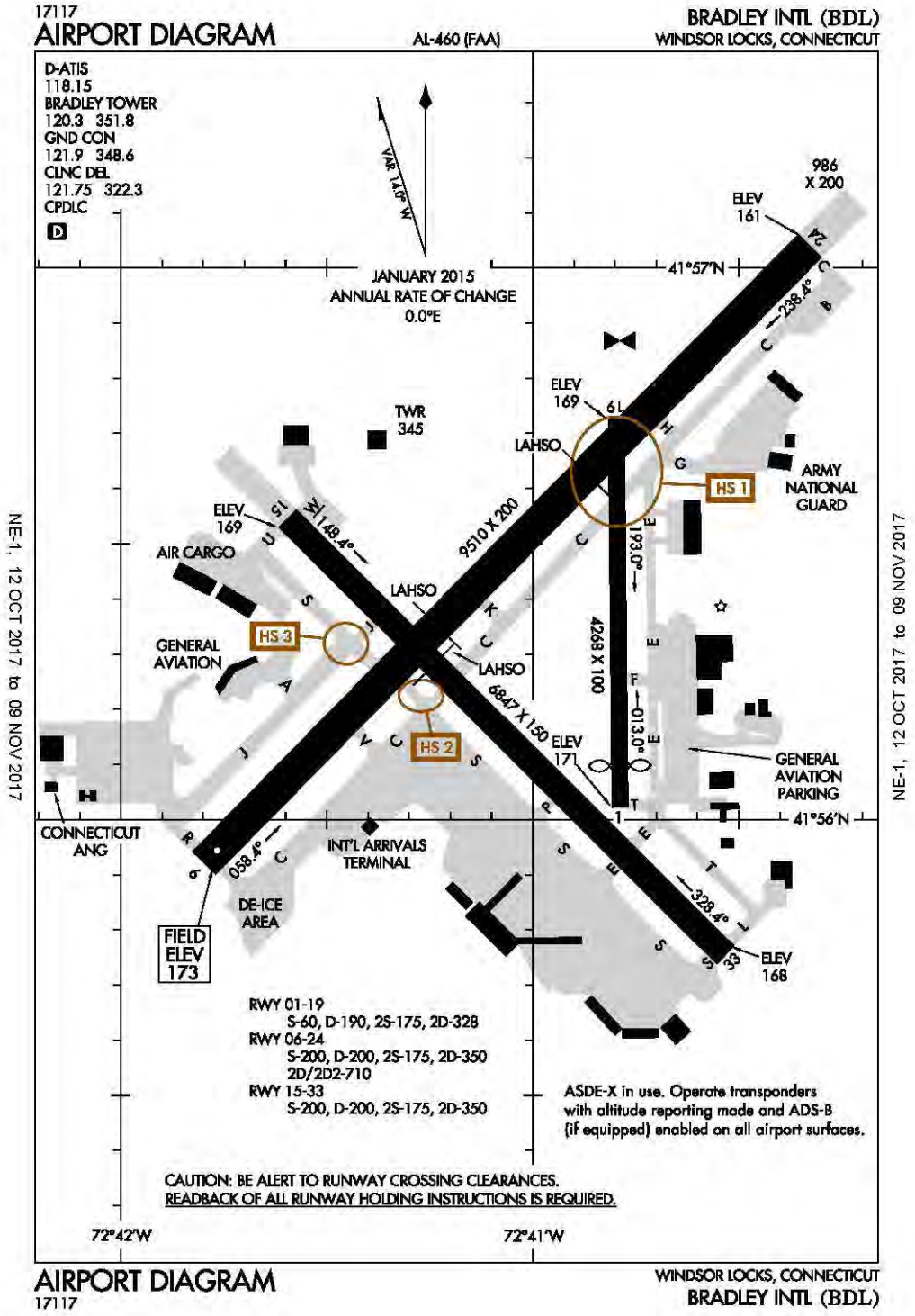
2.19.1 ILS type: Middle Marker for runway 26L. Magnetic variation: 8E
2.19.2 ILS identification: TFR
2.19.5 Coordinates: 38−17−17.69N / 104−27−45.32W
2.19.6 Site elevation: 4640.4 ft

General Remarks:
HIGH VOLUME TRAINING DA−20 AIRCRAFT SR−SS MON−FRI. OVERHEAD PATTERN DURING TRAINING. EXTENSIVE USE OF TRAINING AREA 12−28 DME N−SW OF AIRPORT 500 FT AGL−8500 FT MSL.

BE ALERT; INTENSIVE USAF STUDENT TRAINING IN VICINITY OF COLORADO SPRINGS & PUEBLO COLORADO.

SEE FLIGHT INFORMATION PUBLICATION AP/1 SUPPLEMENTARY AIRPORT INFORMATION.

Windsor Locks, Connecticut
Bradley International
ICAO Identifier KBDL



Windsor Locks, CT
Bradley Intl
ICAO Identifier KBDL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 41–56–20.92N / 72–41–00.00W
2.2.2 From City: 3 Miles W Of Windsor Locks, CT
2.2.3 Elevation: 173.2 ft
2.2.5 Magnetic variation: 14W (1980)
2.2.6 Airport Contact: Kevin Dillon, Aae
BRADLEY INTL AIRPORT
Windsor Locks, CT 6096
(860–292–2003)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 15
2.10.1.b Type of obstacle: Trees (75 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 33
2.10.1.b Type of obstacle: Trees (44 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 430 ft from Centerline

2.10.1.a. Runway designation: 06
2.10.1.b Type of obstacle: Trees (185 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

2.10.1.a. Runway designation: 24
2.10.1.b Type of obstacle: Trees (71 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 01
2.10.1.b Type of obstacle: Acft (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 350 ft from Centerline

2.10.1.a. Runway designation: 19
2.10.1.b Type of obstacle: Trees (90 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 44
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.5 Coordinates: 41–55–55.25N / 72–41–47.69W
2.12.6 Threshold elevation: 173 ft
2.12.6 Touchdown zone elevation: 173 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 224
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.5 Coordinates: 41–57–00.00N / 72–40–19.68W
2.12.6 Threshold elevation: 161 ft
2.12.6 Touchdown zone elevation: 170 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.5 Coordinates: 41–56–32.63N / 72–41–35.71W
2.12.6 Threshold elevation: 169 ft
2.12.6 Touchdown zone elevation: 171 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.5 Coordinates: 41–55–45.32N / 72–40–30.96W
2.12.6 Threshold elevation: 168 ft
2.12.6 Touchdown zone elevation: 171 ft

2.12.1 Designation: 01
2.12.2 True Bearing: 359
2.12.3 Dimensions: 4268 ft x 100 ft
2.12.5 Coordinates: 41–56–00.00N / 72–40–46.63W
2.12.6 Threshold elevation: 171 ft
2.12.6 Touchdown zone elevation: 171 ft

2.12.1 Designation: 19
2.12.2 True Bearing: 179
2.12.3 Dimensions: 4268 ft x 100 ft
2.12.5 Coordinates: 41–56–43.56N / 72–40–47.58W
2.12.6 Threshold elevation: 169 ft

2.12.6 Touchdown zone elevation: 170 ft

AD 2.13 Declared distances
2.13.1 Designation: 06
2.13.2 Takeoff run available: 9509
2.13.3 Takeoff distance available: 9509
2.13.4 Accelerate−stop distance available: 9509
2.13.5 Landing distance available: 9509

2.13.1 Designation: 24
2.13.2 Takeoff run available: 9509
2.13.3 Takeoff distance available: 9509
2.13.4 Accelerate−stop distance available: 9509
2.13.5 Landing distance available: 9509

2.13.1 Designation: 15
2.13.2 Takeoff run available: 6847
2.13.3 Takeoff distance available: 6847
2.13.4 Accelerate−stop distance available: 6847
2.13.5 Landing distance available: 6847

2.13.1 Designation: 33
2.13.2 Takeoff run available: 6847
2.13.3 Takeoff distance available: 6847
2.13.4 Accelerate−stop distance available: 6847
2.13.5 Landing distance available: 6847

2.13.1 Designation: 01
2.13.2 Takeoff run available: 4268
2.13.3 Takeoff distance available: 4268
2.13.4 Accelerate−stop distance available: 4268
2.13.1 Designation: 19
2.13.5 Landing distance available: 4268

AD 2.14 Approach and runway lighting
2.14.1 Designation: 06
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Vgsi And Glidepath Not Coincident.

2.14.1 Designation: 24
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Vgsi And Glidepath Not Coincident.

2.14.1 Designation: 15
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 33
2.14.4 Visual approach slope indicator system: 4−light PAPI on right
2.14.10 Remarks: Vgsi And Glidepath Not Coincident.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: ANG OPS
2.18.3 Service designation: 138.55 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 121.75 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 123.45 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 243.9 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 322.3 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: ANG−OPS
2.18.3 Service designation: 349.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 351.8 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 41.9 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 118.15 MHz

2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 41–55–47.66N / 72–41–57.63W
2.19.6 Site elevation: 169.9 ft

2.19.1 ILS type: Localizer for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–57–17.85N / 72–39–59.41W
2.19.6 Site elevation: 149.4 ft

2.19.1 ILS type: Localizer for runway 33. Magnetic variation: 14W
2.19.2 ILS identification: IKX
2.19.5 Coordinates: 41–56–40.16N / 72–41–46.01W
2.19.6 Site elevation: 168.3 ft

2.19.1 ILS type: DME for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 41–57–17.28N / 72–39–56.50W
2.19.6 Site elevation: 163.8 ft

2.19.1 ILS type: Glide Slope for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 41–56–53.58N / 72–40–25.96W
2.19.6 Site elevation: 156.6 ft

2.19.1 ILS type: DME for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–57–17.28N / 72–39–56.50W
2.19.6 Site elevation: 163.8 ft

2.19.1 ILS type: DME for runway 33. Magnetic variation: 14W
2.19.2 ILS identification: IKX
2.19.5 Coordinates: 41–56–37.97N / 72–41–47.43W
2.19.6 Site elevation: 182.9 ft

2.19.1 ILS type: Glide Slope for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–56–00.00N / 72–41–41.89W
2.19.6 Site elevation: 169.1 ft

2.19.1 ILS type: Glide Slope for runway 33. Magnetic variation: 14W
2.19.2 ILS identification: IKX
2.19.5 Coordinates: 41–55–54.77N / 72–40–38.59W
2.19.6 Site elevation: 167.4 ft

2.19.1 ILS type: Outer Marker for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 42–01–16.18N / 72–34–53.96W
2.19.6 Site elevation: 114 ft

2.19.1 ILS type: Inner Marker for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–55–49.46N / 72–41–56.05W
2.19.6 Site elevation: 173 ft

2.19.1 ILS type: Middle Marker for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–55–35.77N / 72–42–13.17W
2.19.6 Site elevation: 166 ft

2.19.1 ILS type: Outer Marker for runway 06. Magnetic variation: 14W
2.19.2 ILS identification: BDL
2.19.5 Coordinates: 41–52–38.58N / 72–45–58.34W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 41–57–20.88N / 72–39–55.38W
2.19.6 Site elevation: 159 ft

2.19.1 ILS type: Inner Marker for runway 24. Magnetic variation: 14W
2.19.2 ILS identification: MYQ
2.19.5 Coordinates: 41–57–12.08N / 72–40–00.00W
2.19.6 Site elevation: 141 ft

General Remarks:

NUMEROUS BIRDS FREQUENTLY ON OR IN VICINITY OF AIRPORT.

OPERATIONS CONTACT AUTOVON 636–8385; COMMERCIAL 860–627–3001.

ANG − OPR 0700−1530 TUES/FRI/SAT; 0700−2300 WED/THUR.

ANG − PRIOR PERMISSION REQUIRED V220−2356.

NO DE−ICING AVAILABLE AT ANG.

TAXIWAY J CLOSED BETWEEN S & R TO AIRCRAFT WITH WINGSPANS IN EXCESS OF 170 FT.

NO TRAINING FLIGHTS; NO PRACTICE APPROACHES; NO TOUCH AND GO LANDING BETWEEN: 2300 − 0700 MON THRU SAT & 2300 − 1200 SUN.

(E117) CT ANG AND U.S. ARMY NATIONAL GUARD.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

EXCEPT FOR TAXIING, RUNWAY 01/19 OPEN FOR AIRCRAFT WITH WINGSPAN LESS THAN 79 FT.

RUNWAY 01 IS CLOSED FOR ARRS TO ALL FIXED WING AIRCRAFT.

RUNWAY 19 CLOSED FOR DEPS TO ALL FIXED WING AIRCRAFT.

ANG: NONSTANDARD YELLOW AEROSPACE GROUND EQUIPMENT AND FIRE BOTTLE BOXES PAINTED ON ANG RAMP.

ARRANGE − DSN 636−7519/7520. C860−292−4519/4520.

ANG: AIRFIELD MANAGER DOES NOT ISSUE OR STORE COMSEC FOR TRANSIENT CREWS.

CAUTION: ANG RAMP MRK MAY NOT BE APPROPRIATE FOR LARGE AIRCRAFT: FOLLOW MARSHALLERS INSTR. KC35 AIRCRAFT USE CAUTION, FIRE HYDRANTS ARE 33” AND ARE LESS THAN 84 FT FROM TAXILANE CENTERLINE.

PARALLEL TAXIWAY OPERATIONS ON TAXIWAY C AND TAXIWAY B RESTRICTED TO AIRCRAFT WITH WINGSPANS OF 171 FT OR LESS.

AIRCRAFT REQUESTING US CUSTOMS SERVICES MUST PARK ON THE CUSTOMS SPOT WITH THE NOSE OF THE AIRCRAFT FACING SOUTHWEST. CONTACT CUSTOMS AT 860−292−1314 WHEN PARKED.

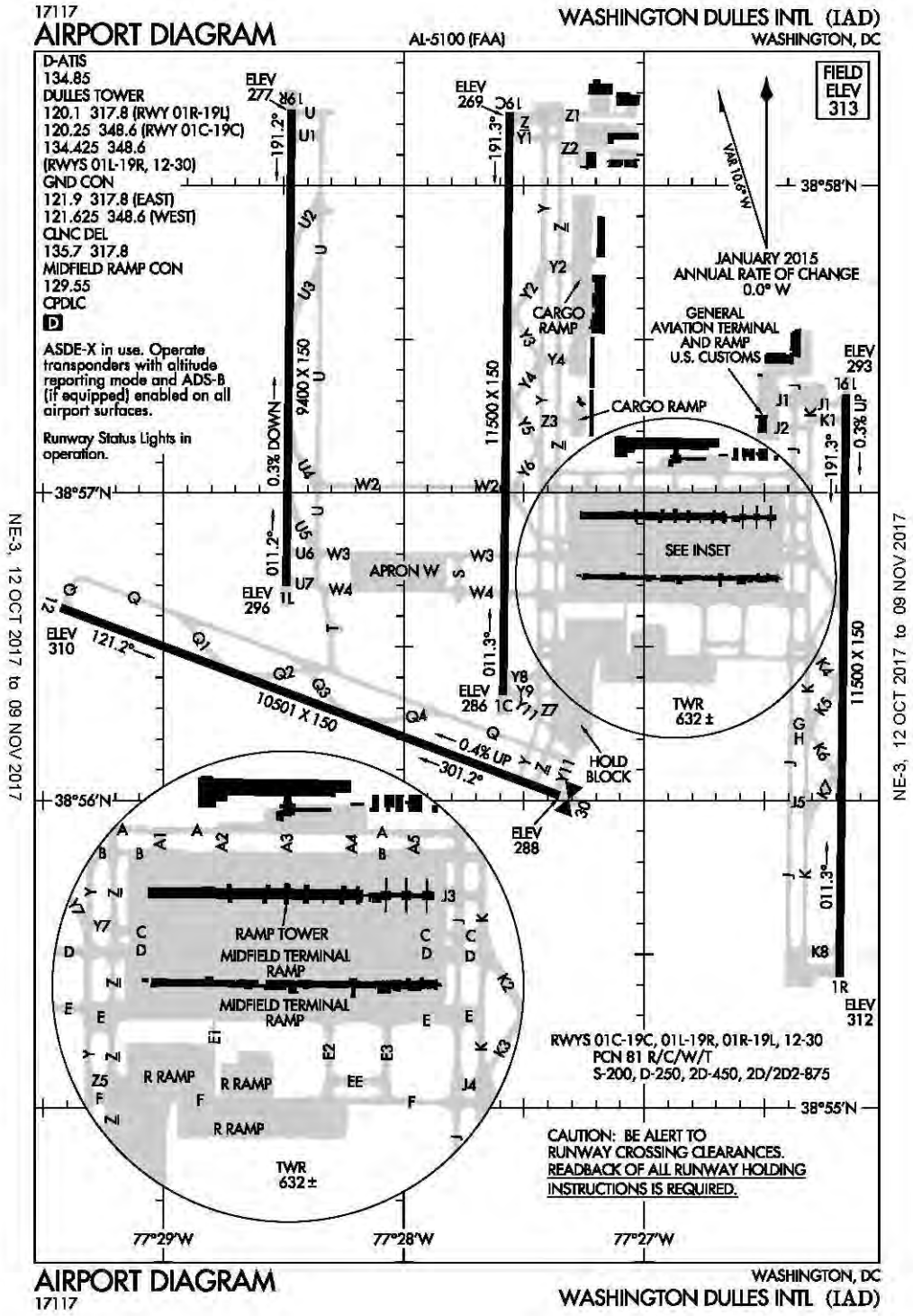
BASH PHASE II INCREASED BIRD ACTIVITY SEP−OCT AND MAR−APR.

FUEL: A++ (MIL).

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −23C.

FIXED WING AIRCRAFT USE LOW IDLE FOR TAXI, NO ENGINE CHECKS OR POWER RUNS ALLOWED ON THE ARRANGE RAMP DUE TO POSSIBLE FOREIGN OBJECT DAMAGE HAZARD.

Washington, District of Columbia
Washington Dulles International
ICAO Identifier KIAD



Washington, DC
Washington Dulles Intl
ICAO Identifier KIAD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 38−56−50.80N / 77−27−35.80W
2.2.2 From City: 20 Miles W Of Washington, VA
2.2.3 Elevation: 313 ft
2.2.5 Magnetic variation: 10W (2000)
2.2.6 Airport Contact: Brian Leuck
1 SAARINEN CIRCLE
Dulles, VA 20166
(703−572−2730)
2.2.7 Traffic: IFR/VFR
2.2.8 Remarks: Located In Both Fairfax County Va And Loudoun County Va.

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 19L
2.10.1.b Type of obstacle: Pole (38 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 720 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 12
2.12.2 True Bearing: 111
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−37.58N / 77−29−25.60W
2.12.6 Threshold elevation: 310 ft
2.12.6 Touchdown zone elevation: 310 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 291
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−00.00N / 77−27−21.23W
2.12.6 Threshold elevation: 288 ft
2.12.6 Touchdown zone elevation: 288 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 01L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−41.88N / 77−28−29.32W
2.12.6 Threshold elevation: 296 ft
2.12.6 Touchdown zone elevation: 296 ft
2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 19R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−58−14.78N / 77−28−27.98W
2.12.6 Threshold elevation: 277 ft
2.12.6 Touchdown zone elevation: 278 ft

2.12.1 Designation: 01C
2.12.2 True Bearing: 1
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−20.64N / 77−27−35.20W
2.12.6 Threshold elevation: 286 ft
2.12.6 Touchdown zone elevation: 286 ft

2.12.1 Designation: 19C
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−58−14.31N / 77−27−33.55W
2.12.6 Threshold elevation: 268 ft
2.12.6 Touchdown zone elevation: 271 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−55−25.53N / 77−26−11.22W
2.12.6 Threshold elevation: 312 ft
2.12.6 Touchdown zone elevation: 312 ft
2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 19L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T

2.12.5 Coordinates: 38–57–19.19N / 77–26–00.00W
2.12.6 Threshold elevation: 293 ft
2.12.6 Touchdown zone elevation: 302 ft
2.12.7 Slope: 0.3UP

AD 2.13 Declared distances
2.13.1 Designation: 12
2.13.2 Takeoff run available: 10501
2.13.3 Takeoff distance available: 10501
2.13.4 Accelerate–stop distance available: 10501
2.13.5 Landing distance available: 10501

2.13.1 Designation: 30
2.13.2 Takeoff run available: 10501
2.13.3 Takeoff distance available: 10501
2.13.4 Accelerate–stop distance available: 10501
2.13.5 Landing distance available: 10501

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 9400
2.13.3 Takeoff distance available: 9400
2.13.4 Accelerate–stop distance available: 9400
2.13.5 Landing distance available: 9400

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 9400
2.13.3 Takeoff distance available: 9400
2.13.4 Accelerate–stop distance available: 9400
2.13.5 Landing distance available: 9400

2.13.1 Designation: 01C
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11500
2.13.5 Landing distance available: 11500

2.13.1 Designation: 19C
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11500
2.13.5 Landing distance available: 11500

2.13.1 Designation: 01R
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11500
2.13.5 Landing distance available: 11500

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11500
2.13.5 Landing distance available: 11500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 12
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 30
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 01L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 01C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 01R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 19L

2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.625 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 125.8 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 128.42 MHz

2.18.1 Service designation: MIDFLD RAMP CTL
2.18.3 Service designation: 129.55 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 132.45 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 135.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 317.8 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 128.525 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.25 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 134.425 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 134.85 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 317.8 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 317.8 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 120.1 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 12. Magnetic variation: 10W
2.19.2 ILS identification: AJU
2.19.5 Coordinates: 38−55−57.51N / 77−27−00.00W
2.19.6 Site elevation: 279.8 ft

2.19.1 ILS type: Localizer for runway 19L. Magnetic variation: 10W
2.19.2 ILS identification: SGC
2.19.5 Coordinates: 38−55−11.81N / 77−26−11.43W
2.19.6 Site elevation: 315.3 ft

2.19.1 ILS type: Localizer for runway 01C. Magnetic variation: 10W
2.19.2 ILS identification: OSZ
2.19.5 Coordinates: 38−58−24.67N / 77−27−33.39W
2.19.6 Site elevation: 263.2 ft

2.19.1 ILS type: Localizer for runway 19C. Magnetic variation: 10W
2.19.2 ILS identification: DLX
2.19.5 Coordinates: 38−56−14.61N / 77−27−35.29W
2.19.6 Site elevation: 283.9 ft

2.19.1 ILS type: Localizer for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD
2.19.5 Coordinates: 38−57−30.87N / 77−26−00.00W
2.19.6 Site elevation: 301.8 ft

2.19.1 ILS type: Glide Slope for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD

2.19.5 Coordinates: 38–55–35.85N / 77–26–00.00W
2.19.6 Site elevation: 306.5 ft

2.19.1 ILS type: Glide Slope for runway 01C. Magnetic variation: 10W
2.19.2 ILS identification: OSZ
2.19.5 Coordinates: 38–56–31.06N / 77–27–40.74W
2.19.6 Site elevation: 283.3 ft

2.19.1 ILS type: Glide Slope for runway 19L. Magnetic variation: 10W
2.19.2 ILS identification: SGC
2.19.5 Coordinates: 38–57–00.00N / 77–26–00.00W
2.19.6 Site elevation: 291.1 ft

2.19.1 ILS type: Glide Slope for runway 12. Magnetic variation: 10W
2.19.2 ILS identification: AJU
2.19.5 Coordinates: 38–56–30.40N / 77–29–15.54W
2.19.6 Site elevation: 303.5 ft

2.19.1 ILS type: Glide Slope for runway 19C. Magnetic variation: 10W
2.19.2 ILS identification: DLX
2.19.5 Coordinates: 38–58–00.00N / 77–27–38.00W
2.19.6 Site elevation: 266.3 ft

2.19.1 ILS type: Outer Marker for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD
2.19.5 Coordinates: 38–50–50.18N / 77–26–16.38W
2.19.6 Site elevation: 242 ft

2.19.1 ILS type: Outer Marker for runway 19L. Magnetic variation: 10W
2.19.2 ILS identification: SGC
2.19.5 Coordinates: 39–01–14.61N / 77–25–55.33W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD
2.19.5 Coordinates: 38–55–17.13N / 77–26–11.35W
2.19.6 Site elevation: 319 ft

2.19.1 ILS type: Middle Marker for runway 12. Magnetic variation: 10W
2.19.2 ILS identification: AJU
2.19.5 Coordinates: 38–56–47.20N / 77–29–58.37W
2.19.6 Site elevation: 319 ft

2.19.1 ILS type: Middle Marker for runway 19C. Magnetic variation: 10W
2.19.2 ILS identification: DLX
2.19.5 Coordinates: 38–58–46.70N / 77–27–33.10W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 01C. Magnetic variation: 10W
2.19.2 ILS identification: OSZ
2.19.5 Coordinates: 38–50–31.20N / 77–27–35.06W
2.19.6 Site elevation: 219 ft

2.19.1 ILS type: Outer Marker for runway 12. Magnetic variation: 10W
2.19.2 ILS identification: AJU
2.19.5 Coordinates: 38–58–35.61N / 77–36–00.00W
2.19.6 Site elevation: 382 ft

2.19.1 ILS type: Middle Marker for runway 01C. Magnetic variation: 10W
2.19.2 ILS identification: OSZ
2.19.5 Coordinates: 38–55–53.17N / 77–27–35.57W
2.19.6 Site elevation: 272 ft

2.19.1 ILS type: Outer Marker for runway 19C. Magnetic variation: 10W
2.19.2 ILS identification: DLX
2.19.5 Coordinates: 39–01–50.27N / 77–27–29.64W
2.19.6 Site elevation: 234 ft

2.19.1 ILS type: Middle Marker for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD
2.19.5 Coordinates: 38–54–53.77N / 77–26–11.67W
2.19.6 Site elevation: 317 ft

2.19.1 ILS type: Middle Marker for runway 19L. Magnetic variation: 10W
2.19.2 ILS identification: SGC
2.19.5 Coordinates: 38–57–43.15N / 77–26–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 19C. Magnetic variation: 10W
2.19.2 ILS identification: DLX
2.19.5 Coordinates: 38–58–22.94N / 77–27–33.42W
2.19.6 Site elevation: 263.4 ft

2.19.1 ILS type: DME for runway 19L. Magnetic variation: 10W
2.19.2 ILS identification: SGC

2.19.5 Coordinates: 38−55−11.08N / 77−26−00.00W
2.19.6 Site elevation: 313.9 ft

2.19.1 ILS type: DME for runway 01R. Magnetic variation: 10W
2.19.2 ILS identification: IAD
2.19.5 Coordinates: 38−55−11.08N / 77−26−00.00W
2.19.6 Site elevation: 313.9 ft

2.19.1 ILS type: Inner Marker for runway 01L. Magnetic variation: 10W
2.19.2 ILS identification: OIU
2.19.5 Coordinates: 38−56−33.39N / 77−28−29.45W
2.19.6 Site elevation: 275 ft

2.19.1 ILS type: Inner Marker for runway 19R. Magnetic variation: 10W
2.19.2 ILS identification: ISU
2.19.5 Coordinates: 38−58−23.51N / 77−28−27.86W
2.19.6 Site elevation: 276 ft

2.19.1 ILS type: Localizer for runway 19R. Magnetic variation: 10W
2.19.2 ILS identification: ISU
2.19.5 Coordinates: 38−56−31.90N / 77−28−29.46W
2.19.6 Site elevation: 298.2 ft

2.19.1 ILS type: Glide Slope for runway 19R. Magnetic variation: 10W
2.19.2 ILS identification: ISU
2.19.5 Coordinates: 38−58−00.00N / 77−28−33.32W
2.19.6 Site elevation: 272 ft

2.19.1 ILS type: DME for runway 19R. Magnetic variation: 10W
2.19.2 ILS identification: ISU
2.19.5 Coordinates: 38−58−25.08N / 77−28−31.16W
2.19.6 Site elevation: 279.3 ft

2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 10W
2.19.2 ILS identification: OIU
2.19.5 Coordinates: 38−58−24.77N / 77−28−27.84W
2.19.6 Site elevation: 276.9 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 10W
2.19.2 ILS identification: OIU
2.19.5 Coordinates: 38−56−52.87N / 77−28−34.35W
2.19.6 Site elevation: 287.9 ft

2.19.1 ILS type: DME for runway 01L. Magnetic variation: 10W
2.19.2 ILS identification: OIU
2.19.5 Coordinates: 38−58−25.08N / 77−28−31.16W
2.19.6 Site elevation: 279.3 ft

General Remarks:
ITINERANT AIRCRAFT CONTACT FBO ON 122.95 FOR SERVICES.

AIR CARRIER PUSH BACKS & POWER FROM ALL APRON POSITIONS REQUIRE CLEARANCE FROM MWAA RAMP TOWER.

LARGE FLOCKS OF BIRDS ON & IN THE VICINITY OF ARPT/DEER IN THE VICINITY OF AIRPORT.

DURING PERIODS OF AIRCRAFT SATURATION LONG TERM PARKING MAY NOT BE AVAILABLE. SERVICES FOR FUEL AND GO ONLY WILL BE AVAILABLE.

FLIGHT TRAINING BETWEEN 2200−0700 IS PROHIBITED.

TAXILANE 'C' ACTIVE; PUSHBACK CLEARANCES ON NORTH SIDE OF MIDFIELD TERMINAL ARE ONTO TAXILANE 'D' ONLY UNLESS OTHERWISE AUTH.

ALL AIRCRAFT WITH WINGSPAN EXCEEDING 118 FT ARE RESTRICTED FROM USING TAXILANE A BETWEEN A1 & A5.

RUNUP BLOCKS FOR RUNWAY 30 DESIGNATED AS NON−MOVEMENT AREA.

ALL 180 DEGREE TURNS OUT OF APRON POSITIONS SHALL BE MADE USING MINIMUM POWER.

LANDING FEE. FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE. NOTE: SEE SPECIAL NOTICES

––CONTINUOUS POWER FACILITIES.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TAXIWAY E1 RESTRICTED TO AIRCRAFT WITH A WINGSPAN LESS THAN 79 FT.

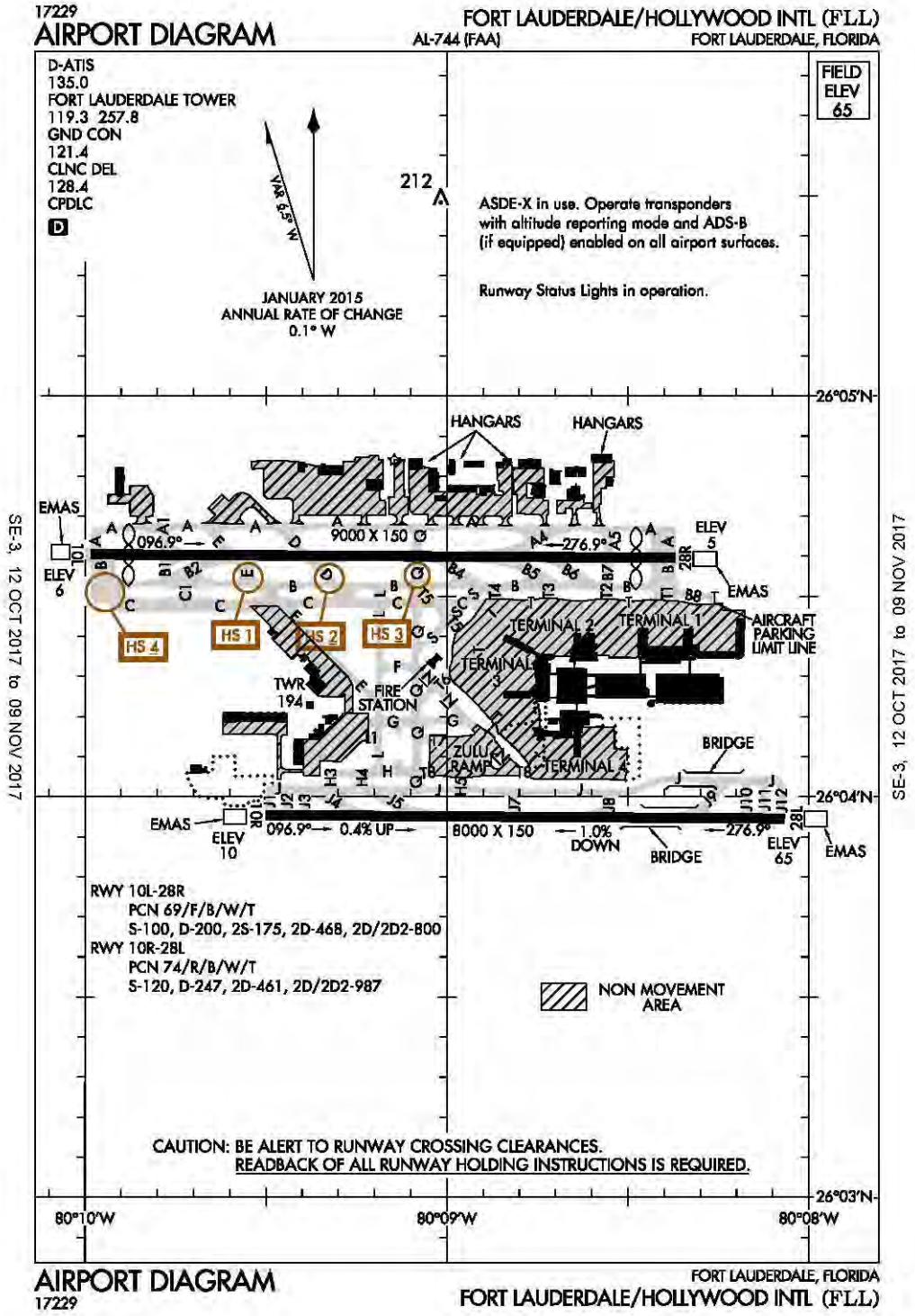
B747–8 RESTRICTED TO MAXIMUM TAXI SPEED 17 KTS (20 MPH) ON TAXIWAY J.

ENGINE RUN–UPS BETWEEN 2200L & 0700L REQUIRE PRIOR APPROVAL FROM AIRPORT OPERATIONS.

RUNWAY 30 DEPARTURES USE UPPER ANTENNA FOR ATC COMMUNICATIONS.

RUNWAY STATUS LIGHTS ARE IN OPN.

Fort Lauderdale, Florida
Fort Lauderdale–Hollywood International
ICAO Identifier KFLL



Fort Lauderdale, FL
Fort Lauderdale/Hollywood Intl
ICAO Identifier KFLL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 26–04–18.00N / 80–08–58.90W
2.2.2 From City: 3 Miles SW Of Fort Lauderdale, FL
2.2.3 Elevation: 65.1 ft
2.2.5 Magnetic variation: 6W (2015)
2.2.6 Airport Contact: Mark Gale
2200 SW 45TH STREET, SUITE 101
Dania Beach, FL 33312 (954–359–6100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/21/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10L
2.10.1.b Type of obstacle: Road (14 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Rr (33 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 530 ft from Centerline

2.10.1.a. Runway designation: 10R
2.10.1.b Type of obstacle: Pole (35 ft). Lighted
2.10.1.c Location of obstacle: 587 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 26–04–37.02N / 80–09–59.54W
2.12.6 Threshold elevation: 6 ft
2.12.6 Touchdown zone elevation: 7 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 26–04–36.45N / 80–08–20.84W
2.12.6 Threshold elevation: 5 ft
2.12.6 Touchdown zone elevation: 6 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26–03–57.19N / 80–09–30.06W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 14 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26–03–56.68N / 80–08–00.00W
2.12.6 Threshold elevation: 65 ft
2.12.6 Touchdown zone elevation: 65 ft
2.12.7 Slope: 0.1DOWN

AD 2.13 Declared distances

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 8424

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 8394

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000

2.13.5 Landing distance available: 8000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10R
2.14.4 Visual approach slope indicator system: 4−light PAPI on right
2.14.10 Remarks: Rwy 10R MALSf Non Standard With A 370 Ft Gap Between 8+00 And Station 11+70. The Standard Is 200 Ft Between Stations.

2.14.1 Designation: 28L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Runway 28L PAPI And Runway Aiming Point Marking Do Not Coincide.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: RAMP CTL
2.18.3 Service designation: 129.875 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.4 MHz

2.18.1 Service designation: GND/ALTERNATE
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.3 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 120.2 MHz

2.18.1 Service designation: RAMP CTL
2.18.3 Service designation: 118.175 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: BAHMA SID
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: PREDA SID
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: THNDR SID
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: ZAPPA SID
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: FORT LAUDERDALE SID
2.18.3 Service designation: 128.6 MHz

2.18.1 Service designation: FORT LAUDERDALE SID
2.18.3 Service designation: 128.6 MHz

2.18.1 Service designation: FORT LAUDERDALE SID
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: ARKES SID
2.18.3 Service designation: 126.05 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS identification: UDL
2.19.5 Coordinates: 26−04−37.04N / 80−10−00.00W
2.19.6 Site elevation: 4.6 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: LHI
2.19.5 Coordinates: 26−04−36.41N / 80−08−13.15W
2.19.6 Site elevation: 4.2 ft

2.19.1 ILS type: DME for runway 28R. Magnetic variation: 6W
2.19.2 ILS identification: UDL
2.19.5 Coordinates: 26−04−34.53N / 80−10−00.00W
2.19.6 Site elevation: 10.9 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic

variation: 6W
2.19.2 ILS identification: UDL
2.19.5 Coordinates: 26–04–39.63N / 80–08–39.07W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: LHI
2.19.5 Coordinates: 26–04–40.18N / 80–08–15.67W
2.19.6 Site elevation: 11.3 ft

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: LHI
2.19.5 Coordinates: 26–04–39.64N / 80–09–42.34W
2.19.6 Site elevation: 2.7 ft

2.19.1 ILS type: Middle Marker for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: LHI
2.19.5 Coordinates: 26–04–37.62N / 80–10–35.57W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 6W
2.19.2 ILS identification: UDL
2.19.5 Coordinates: 26–04–36.29N / 80–07–54.09W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: DME for runway 28L. Magnetic variation: 6W
2.19.2 ILS identification: ADI
2.19.5 Coordinates: 26–03–59.49N / 80–09–40.45W
2.19.6 Site elevation: 14.9 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 6W
2.19.2 ILS identification: ADI
2.19.5 Coordinates: 26–03–52.74N / 80–08–15.53W
2.19.6 Site elevation: 44.9 ft

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 6W
2.19.2 ILS identification: ADI
2.19.5 Coordinates: 26–03–57.24N / 80–09–37.77W
2.19.6 Site elevation: 7.4 ft

2.19.1 ILS type: DME for runway 10R. Magnetic variation: 6W
2.19.2 ILS identification: FLL
2.19.5 Coordinates: 26–03–58.84N / 80–07–55.71W
2.19.6 Site elevation: 68.2 ft

2.19.1 ILS type: Glide Slope for runway 10R. Magnetic variation: 6W
2.19.2 ILS identification: FLL
2.19.5 Coordinates: 26–03–53.17N / 80–09–18.57W
2.19.6 Site elevation: 5.5 ft

2.19.1 ILS type: Localizer for runway 10R. Magnetic variation: 6W
2.19.2 ILS identification: FLL
2.19.5 Coordinates: 26–03–56.63N / 80–07–55.57W
2.19.6 Site elevation: 64.4 ft

General Remarks:
CLOSED TO AIR CARRIER TRAINING. CLOSED TO LARGE AIRCRAFT TRAINING OVER 58000 LBS MAX CERTIFIED GROSS TAKE-OFF WEIGHT. CLOSED TO ALL TRAINING 2300–0700.

NOISE ABATEMENT IN EFFECT CONTACT AIRPORT NOISE ABATEMENT OFFICE–954–359–6181 FOR DETAILS. ALL RUNWAYS ARE NOISE SENSITIVE.

JET RUNUPS PROHIBITED 2300–0700.

FLOCKS OF BIRDS ON AND IN THE VICINITY OF THE AIRPORT.

PRIOR PERMISSION REQUIRED FOR AIRCRAFT WITH EXPLOSIVES.

AIRCRAFT WITH WINGSPANS GREATER THAN 118’ MAY UTILIZE TAXIWAY E BETWEEN TAXIWAY C AND TAXIWAY L BY PRIOR PERMISSION REQUIRED ONLY.

ARR AIRCRAFT FROM THE NORTH MAINTAIN 6000 FT UNTIL ABEAM RUNWAY 10L ON DOWNWIND.

ARR AIRCRAFT FROM ’N’ & ’W’ MAINTAIN 6000 FT UNTIL ABEAM RUNWAY 28R ON DOWNWIND.

NO VFR APPROACHES OR BASE LEGS UNTIL OFFSHORE.

TAXIWAY B8 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 126 FT AND TAIL HEIGHT GREATER THAN 46 FT.

AIR CARRIER AIRCRAFT USE RAMP PUSH BACK PROCEDURES AS PRESCRIBED BY AIRPORT OPERATIONS.

EAST SIDE OF CONCOURSE B AVAILBLE ONLY TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 124.9 FT.

AIRCRAFT OPERATING FROM TERMINAL 1, 2, 3, 4 MUST CONTACT RAMP CONTROL. RAMP CONTROL EFFECTIVE 0545–2245.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

CONCENTRATION OF BIRDS BELOW 500 FT, 2.0 NAUTICAL MILE WEST OF THE APPROACH ENDS OF RUNWAY 10L AND 10R.

TURBULENCE BELOW 1000 FT OVER LANDFILL LOCATED 2NM WEST.

NUMEROUS CRANES SE QUADRANT OF AIRPORT.

TAXIWAY J BEGINS TO ELEV 900’ EAST OF TAXIWAY Q. DUE TO ELEV ALL AIRCRAFT SHOULD REMAIN ON TAXIWAY CENTERLINE. TAXIWAY T8 AND TAXILANE T ARE NOT ACCESSIBLE FROM TAXIWAY J.

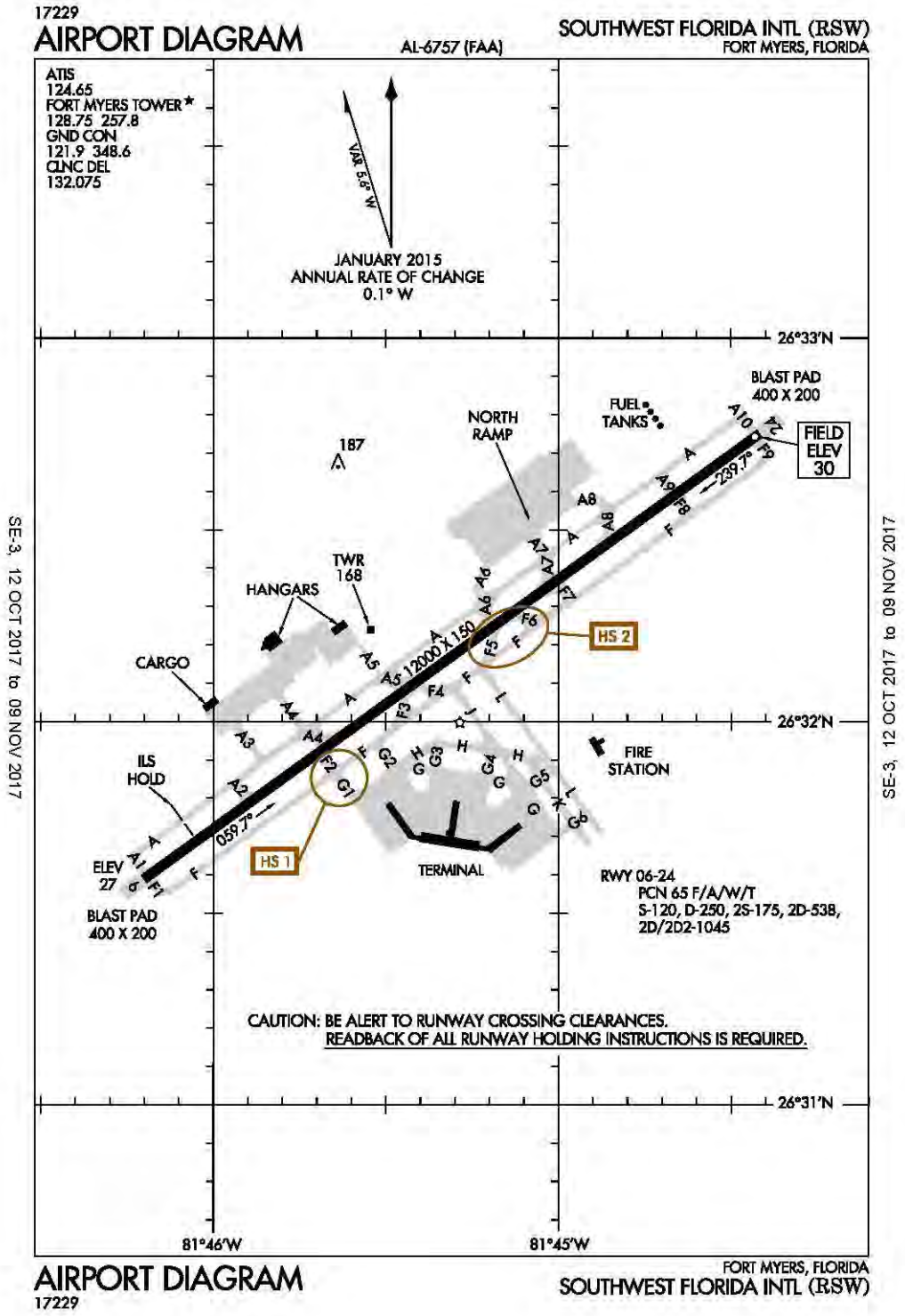
RUNWAY STATUS LIGHTS IN OPERATION

RUNWAY 10L RUNWAY VISUAL RANGE TOUCHDOWN AVAILABLE.

AIRCRAFT LANDING RUNWAY 10R AND EXITING AT J9 SHOULD FOLLOW TAXIWAY LEAD OFF LINE ONTO J9.

PREFERENTIAL RUNWAY USE PROGRAM IN EFFECT. CONTACT NOISE ABATEMENT OFICE FOR DETAILS.

Fort Myers, Florida
Southwest Florida International
ICAO Identifier KRSW



Fort Myers, FL
Southwest Florida Intl
ICAO Identifier KRSW

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 26−32−10.20N / 81−45−18.60W
2.2.2 From City: 10 Miles SE Of Fort Myers, FL
2.2.3 Elevation: 29.7 ft
2.2.5 Magnetic variation: 4W (2000)
2.2.6 Airport Contact: Jeff Mulder
11000 TERMINAL ACCESS RD.
Fort Myers, FL 33913
(239−590−4800)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL,A+
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1983

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 24
2.10.1.b Type of obstacle: Trees (48 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 190 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 54
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−31−35.35N / 81−46−12.07W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 27 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 234
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−32−45.02N / 81−44−25.03W
2.12.6 Threshold elevation: 30 ft
2.12.6 Touchdown zone elevation: 30 ft

AD 2.14 Approach and runway lighting

2.14.1 Designation: 06
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 343.75 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 124.65 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 125.15 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 126.8 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 306.2 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 327.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 132.075 MHz

2.18.1 Service designation: GND
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LCL
2.18.3 Service designation: 257.8 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Glide Slope for runway 06. Magnetic variation: 4W
2.19.2 ILS identification: RSW
2.19.5 Coordinates: 26−31−43.49N / 81−46−00.00W
2.19.6 Site elevation: 26 ft

2.19.1 ILS type: Localizer for runway 06. Magnetic variation: 4W
2.19.2 ILS identification: RSW
2.19.5 Coordinates: 26−32−51.12N / 81−44−15.66W
2.19.6 Site elevation: 27.6 ft

2.19.1 ILS type: Outer Marker for runway 06. Magnetic variation: 4W
2.19.2 ILS identification: RSW
2.19.5 Coordinates: 26−29−00.00N / 81−50−00.00W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: DME for runway 06. Magnetic variation: 4W
2.19.2 ILS identification: RSW
2.19.5 Coordinates: 26−32−53.21N / 81−44−17.42W
2.19.6 Site elevation: 26 ft

General Remarks:
AIR CARRIER PILOTS USE RAMP PROC AS PRESCRIBED BY AIRPORT OPERATIONS.

NO HELICOPTER OPERATIONS PERMITTED ON TERMINAL APRON.

LIGHTS ON PARALLEL ROAD & PARKING LOT NW OF RUNWAY 06/24 CAN BE MISTAKEN FOR THE RUNWAY & APPROACH ENVIRONMENT.

GROUND CLEARANCE REQUIRED PRIOR TO ENTERING TAXIWAY G.

AIRPORT HAS RUNWAY USE PROGRAM. USE DISTANT NOISE ABATEMENT DEP PROFILE. VISUAL APPROACHES TO RUNWAY 06 W OF FORT MYERS BEACH ARE REQUESTED TO MAINTAIN 3000 FT UNTIL CROSSING FORT MYERS BEACH SHORELINE 12 NAUTICAL MILE SW OF AIRPORT. RUNWAY 24 PREFERRED BETWEEN 2200−0600. FOR NOISE ABATEMENT PROCEDURES CONTACT AIRPORT MANAGER 239−590−4810

CAUTION: OPEN BAGGAGE BAYS AND CONSTRUCTION WITHIN THE TERMINAL RAMP AREA. AIRCREWS SHOULD USE MINIMUM THRUST SETTINGS IN THESE AREAS, ESPECIALLY DURING SINGLE ENGINE TAXI. CROSS−BLEED STARTS ONLY ALLOWED AFTER REACHING THE TUG RELEASE POINT.

ALL AIRCRAFT TRAFFIC ON THE RAMP SHOULD EXPECT A CLOCKWISE FLOW. OUTBOUND TRAFFIC FROM GATES D2, D4, D6, D8 AND D10 PROCEED TO CALL SPOT 1. OUTBOUND TRAFFIC FROM GATES C2, C4, C6, D1, D3, D5 & D7 PROCEED TO CALL SPOT # 3. OUTBOUND TRAFFIC FROM GATES B2, B4, B6, B8, C1, C3, C5 & C7 PROCEED TO CALL SPOT # 5. OUTBOUND TRAFFIC FROM GATES B1, B3 & B5 PROCEED TO CALL SPOT # 9. ALL OUTBOUND TRAFFIC REQUEST TAXI INSTRUCTIONS.

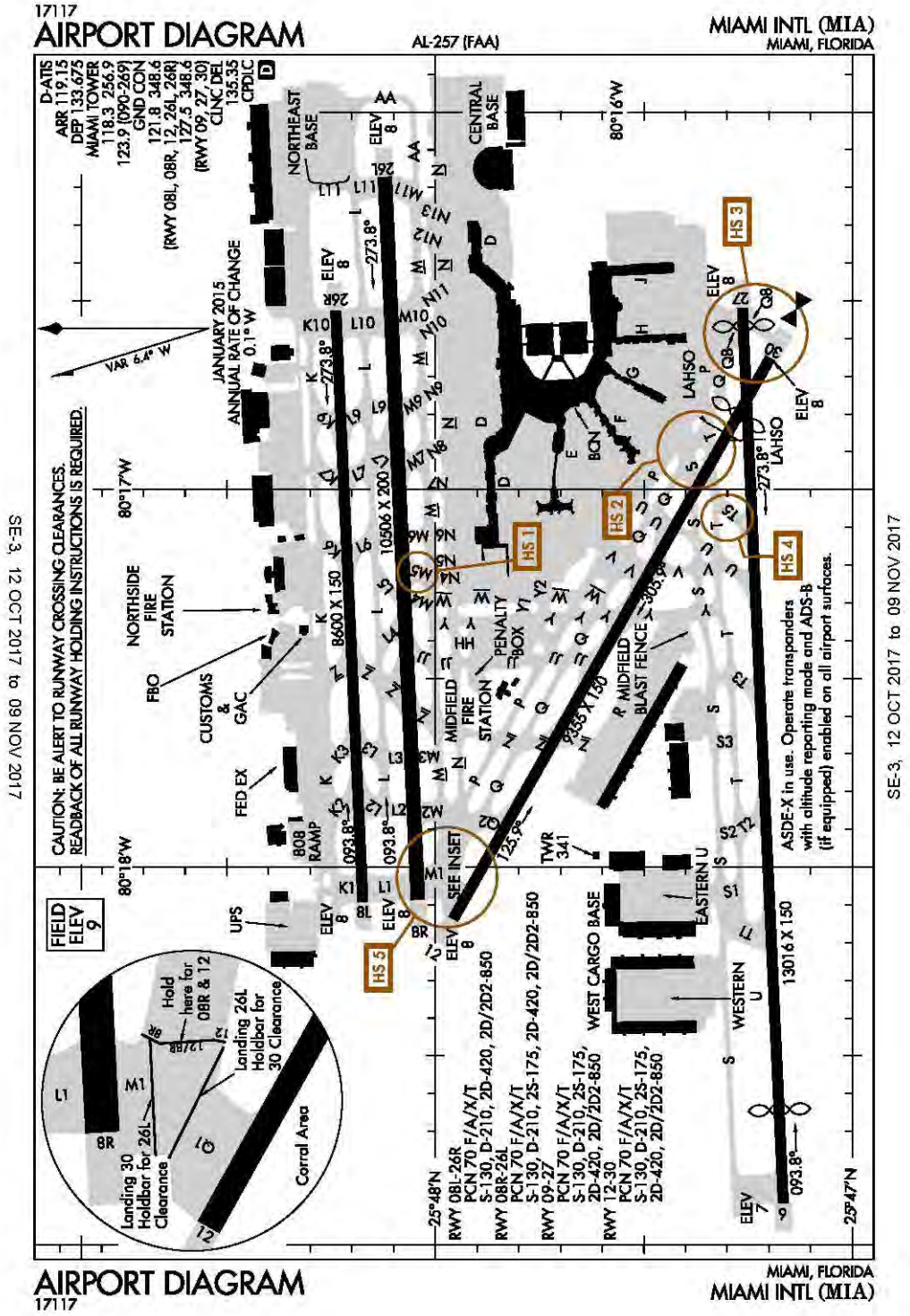
TAXIWAY F6 EXIT SIGN IS LOCATED IMMEDIATELY BEFORE TAXIWAY F5.

ARR − INBOUND TRAFFIC FOR ALL GATES, PROCEED DIRECTLY TO THE GATE UNLESS OTHERWISE DIRECTED BY ATC. ADVISE ATC IF GATE IS NOT AVAILABLE.

DEP − AIRCRAFT MUST OBTAIN APPROVAL FROM GROUND CONTROL PRIOR TO PUSHBACK FROM GATES B7, B9, C8, C9 & D10A. PILOTS ADVISE TUG OPERATORS THAT YOU HAVE OBTAINED CLEARANCE FROM GROUND CONTROL PRIOR TO ENTERING TAXIWAY G. DEPARTURES CONTACT GROUND CONTROL PRIOR TO LEAVING THE COMMUTER RAMP FROM GATES D9A AND D9B.

GATES B7, & B9 EXPECT CALL SPOT #7. GATES C8 & C9 EXPECT CALL SPOT #4. GATE D10A EXPECT CALL SPOT #2.

Miami, Florida
Miami International
ICAO Identifier KMIA



Miami, FL
Miami Intl
ICAO Identifier KMIA

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 25–47–43.30N / 80–17–24.40W
2.2.2 From City: 8 Miles NW Of Miami, FL
2.2.3 Elevation: 8.5 ft
2.2.5 Magnetic variation: 5W (2000)
2.2.6 Airport Contact: Emilio T. Gonzalez
PO BOX 025504
Miami, FL 33102
(305–876–7077)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 12
2.10.1.b Type of obstacle: Tower (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 200 ft from Centerline

2.10.1.a. Runway designation: 30
2.10.1.b Type of obstacle: Tree (52 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

2.10.1.a. Runway designation: 09
2.10.1.b Type of obstacle: Rr (23 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 580 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 12
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9355 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–57.43N / 80–18–00.00W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9355 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–11.85N / 80–16–39.13W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 87
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–00.00N / 80–18–53.42W
2.12.6 Threshold elevation: 7 ft
2.12.6 Touchdown zone elevation: 7 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 267
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–47–15.83N / 80–16–31.17W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 87
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–48–10.43N / 80–18–00.00W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 267
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–48–14.32N / 80–16–31.55W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 87
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25–48–00.00N / 80–18–00.00W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 267
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−00.00N / 80−16−10.33W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 8 ft

AD 2.13 Declared distances
2.13.1 Designation: 12
2.13.2 Takeoff run available: 9355
2.13.3 Takeoff distance available: 9355
2.13.4 Accelerate−stop distance available: 8579
2.13.5 Landing distance available: 8579

2.13.1 Designation: 30
2.13.2 Takeoff run available: 9355
2.13.3 Takeoff distance available: 9355
2.13.4 Accelerate−stop distance available: 8853
2.13.5 Landing distance available: 7913

2.13.1 Designation: 09
2.13.2 Takeoff run available: 13016
2.13.3 Takeoff distance available: 13016
2.13.4 Accelerate−stop distance available: 12755
2.13.5 Landing distance available: 11397

2.13.1 Designation: 27
2.13.2 Takeoff run available: 13016
2.13.3 Takeoff distance available: 13016
2.13.4 Accelerate−stop distance available: 13016
2.13.5 Landing distance available: 12755

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 8600
2.13.3 Takeoff distance available: 8600
2.13.4 Accelerate−stop distance available: 8600
2.13.5 Landing distance available: 8600

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 8600
2.13.3 Takeoff distance available: 8600
2.13.4 Accelerate−stop distance available: 8600
2.13.5 Landing distance available: 8600

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 10506
2.13.3 Takeoff distance available: 10506
2.13.4 Accelerate−stop distance available: 10506
2.13.5 Landing distance available: 10506

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 10506
2.13.3 Takeoff distance available: 10506
2.13.4 Accelerate−stop distance available: 10506
2.13.5 Landing distance available: 10506

AD 2.14 Approach and runway lighting
2.14.1 Designation: 12
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 30
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 27
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26L
2.14.4 Visual approach slope indicator system: 4−light

PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: GATE HOLD
2.18.3 Service designation: 120.35 MHz

2.18.1 Service designation: GATE HOLD
2.18.3 Service designation: 120.35 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.9 MHz

2.18.1 Service designation: RTIS(120−300 WITHIN 25 NM)
2.18.3 Service designation: 125.25 MHz

2.18.1 Service designation: RTIS(120−300 WITHIN 25 NM)
2.18.3 Service designation: 125.25 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.5 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.5 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 125.75 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 125.75 MHz

2.18.1 Service designation: CD/P IC
2.18.3 Service designation: 135.35 MHz

2.18.1 Service designation: CD/P IC
2.18.3 Service designation: 135.35 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 290.325 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 290.325 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 263.025 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 263.025 MHz

2.18.1 Service designation: APCH/P CLASS B IC
2.18.3 Service designation: 322.3 MHz

2.18.1 Service designation: APCH/P CLASS B IC
2.18.3 Service designation: 322.3 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 354.1 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 354.1 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 379.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 379.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B

2.18.3 Service designation: 125.75 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 125.75 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 119.15 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 119.15 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 133.675 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 133.675 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 124.85 MHz

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 124.85 MHz

2.18.1 Service designation: DEP/P IC
2.18.3 Service designation: 119.45 MHz

2.18.1 Service designation: DEP/P IC
2.18.3 Service designation: 119.45 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: MFA
2.19.5 Coordinates: 25−48−00.00N / 80−16−00.00W
2.19.6 Site elevation: 5.7 ft

2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 5W
2.19.2 ILS identification: BUL
2.19.5 Coordinates: 25−47−16.42N / 80−16−17.14W
2.19.6 Site elevation: 7 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 5W
2.19.2 ILS identification: MIA
2.19.5 Coordinates: 25−47−00.00N / 80−19−00.00W
2.19.6 Site elevation: 8.6 ft

2.19.1 ILS type: Localizer for runway 30. Magnetic variation: 5W
2.19.2 ILS identification: DCX
2.19.5 Coordinates: 25−47−59.88N / 80−18−13.04W
2.19.6 Site elevation: 8.3 ft

2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: VIN
2.19.5 Coordinates: 25−48−00.00N / 80−18−13.77W
2.19.6 Site elevation: 7.1 ft

2.19.1 ILS type: Localizer for runway 12. Magnetic variation: 5W
2.19.2 ILS identification: GEM
2.19.5 Coordinates: 25−47−00.00N / 80−16−34.81W
2.19.6 Site elevation: 7.7 ft

2.19.1 ILS type: DME for runway 12. Magnetic variation: 5W
2.19.2 ILS identification: GEM
2.19.5 Coordinates: 25−47−11.28N / 80−16−32.41W
2.19.6 Site elevation: 7.7 ft

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 5W
2.19.2 ILS identification: BUL
2.19.5 Coordinates: 25−47−00.00N / 80−18−26.71W
2.19.6 Site elevation: 6.8 ft

2.19.1 ILS type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: MFA
2.19.5 Coordinates: 25−48−00.00N / 80−16−00.00W
2.19.6 Site elevation: 4.8 ft

2.19.1 ILS type: DME for runway 30. Magnetic variation: 5W
2.19.2 ILS identification: DCX

2.19.5 Coordinates: 25–47–57.77N / 80–18–14.51W
2.19.6 Site elevation: 7.3 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: VIN
2.19.5 Coordinates: 25–48–00.00N / 80–18–14.94W
2.19.6 Site elevation: 5.8 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 5W
2.19.2 ILS identification: MIA
2.19.5 Coordinates: 25–47–11.73N / 80–16–45.40W
2.19.6 Site elevation: 4 ft

2.19.1 ILS type: Glide Slope for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: MFA
2.19.5 Coordinates: 25–48–00.00N / 80–17–54.81W
2.19.6 Site elevation: 4.1 ft

2.19.1 ILS type: Glide Slope for runway 12. Magnetic variation: 5W
2.19.2 ILS identification: GEM
2.19.5 Coordinates: 25–47–49.35N / 80–17–59.90W
2.19.6 Site elevation: 6.3 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: VIN
2.19.5 Coordinates: 25–48–00.00N / 80–16–22.51W
2.19.6 Site elevation: 5.5 ft

2.19.1 ILS type: Outer Marker for runway 09. Magnetic variation: 5W
2.19.2 ILS identification: BUL
2.19.5 Coordinates: 25–46–59.35N / 80–23–00.00W
2.19.6 Site elevation: 3.8 ft

2.19.1 ILS type: Outer Marker for runway 27. Magnetic variation: 5W
2.19.2 ILS identification: MIA
2.19.5 Coordinates: 25–47–26.47N / 80–11–39.14W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: VIN
2.19.5 Coordinates: 25–48–00.00N / 80–15–44.08W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: VIN
2.19.5 Coordinates: 25–48–18.83N / 80–11–42.26W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 5W
2.19.2 ILS identification: BUL
2.19.5 Coordinates: 25–47–00.00N / 80–19–00.00W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: Middle Marker for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: MFA
2.19.5 Coordinates: 25–48–00.00N / 80–18–43.38W
2.19.6 Site elevation: 7 ft

2.19.1 ILS type: Middle Marker for runway 27. Magnetic variation: 5W
2.19.2 ILS identification: MIA
2.19.5 Coordinates: 25–47–16.87N / 80–16–12.26W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: CNV
2.19.5 Coordinates: 25–48–00.00N / 80–18–16.47W
2.19.6 Site elevation: 6 ft

2.19.1 ILS type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: CNV
2.19.5 Coordinates: 25–48–00.00N / 80–18–16.67W
2.19.6 Site elevation: 6.9 ft

2.19.1 ILS type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: ROY
2.19.5 Coordinates: 25–48–16.34N / 80–16–18.29W
2.19.6 Site elevation: 5.2 ft

2.19.1 ILS type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: ROY
2.19.5 Coordinates: 25–48–14.86N / 80–16–18.43W
2.19.6 Site elevation: 6.8 ft

2.19.1 ILS type: Glide Slope for runway 30. Magnetic variation: 5W
2.19.2 ILS identification: DCX

2.19.5 Coordinates: 25−47−17.64N / 80−16−59.57W
2.19.6 Site elevation: 6.5 ft

2.19.1 ILS type: DME for runway 09. Magnetic variation: 5W
2.19.2 ILS identification: BUL
2.19.5 Coordinates: 25−47−15.82N / 80−16−17.24W
2.19.6 Site elevation: 6.2 ft

General Remarks:
CLOSED NON ENGINE AIRCRAFT.

AIRCRAFT WITH A WINGSPAN GREATER THAN 171 FT ARE PROHIBITED FROM TAXIING ON TAXIWAY P EAST OF TAXIWAY U. AIRCRAFT WITH A WINGSPAN GREATER THAN 143 FT ARE PROHIBITED FROM USING TAXIWAY AA.

ALL TURBOJET AIRCRAFT USE DISTANT NOISE ABATEMENT DEP PROFILE FROM ALL RUNWAYS EXCEPT A320, B727, B737−800, B767−400, AND DC9 WHICH SHOULD USE CLOSE−IN NOISE ABATEMENT ABATEMENT PROFILE.

BIRDS ON & IN THE VICINITY OF AIRPORT.

PRIOR PERMISSION REQUIRED 3 HRS PRIOR TO ALL ARRIVALS ON THE GENERAL AVIATION CENTER (GAC) RAMP 305−876−7550 CONTACT RAMP CONTROL UPON ARRIVAL ON FREQUENCY 131.600. AIRCRAFT WITH WINGSPAN GREATER THAN 78 FT ARE PROHIBITED FROM ENTERING THE GENERAL AVIATION AIRCRAFT RAMP.

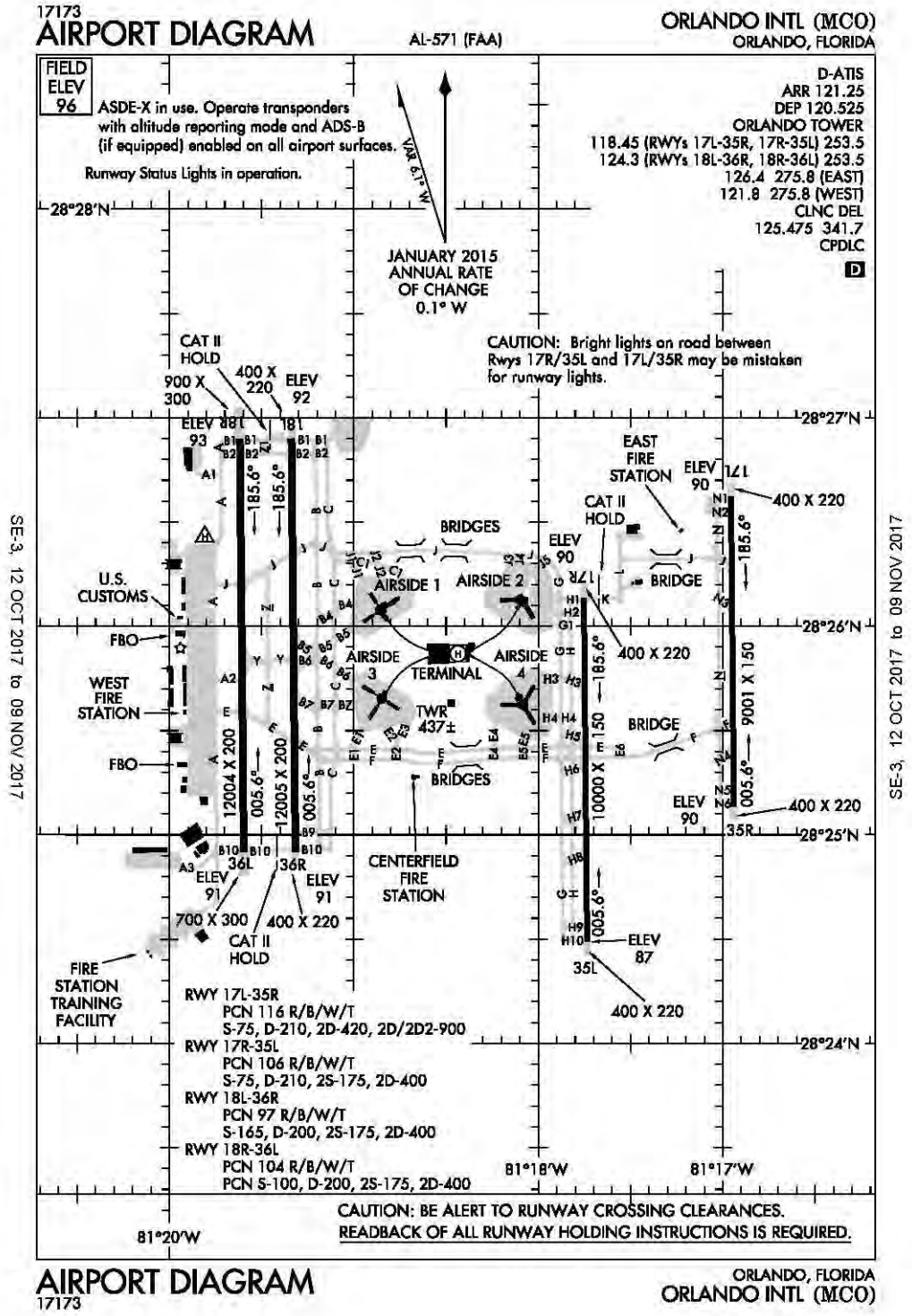
ALL MEDICAL EMERGENCIES ARRIVALS, WITH THE EXCEPTION OF AIR AMBULANCE FLIGHTS, MUST SECURE DOORS UNTIL AIRCRAFT RESCUE AND FIRE FIGHTING IS ON SCENE.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRIOR PERMISSION REQUIRED FOR INBOUND MILITARY FLIGHTS 100 NAUTICAL MILE ON FREQ 130.5. ALL DIVERSION CONTACT FREQ 130.5 UPON ARR.

B757, HEAVY AND SUPER AIRCRAFT ARE NOT AUTH INTERSECTION DEP FOR ANY RUNWAY UNLESS A PTN IS CLOSED OR UNUNSL.

Orlando, Florida
Orlando International
ICAO Identifier KMCO



Orlando, FL
Orlando Intl
ICAO Identifier KMCO

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 28−25−45.80N / 81−18−32.40W
2.2.2 From City: 6 Miles SE Of Orlando, FL
2.2.3 Elevation: 96.4 ft
2.2.5 Magnetic variation: 6W (2015)
2.2.6 Airport Contact: Phillip N. Brown, A.A.E.
1 JEFF FUQUA BLVD
Orlando, FL 32827
(407−825−7445)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/21/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−26−54.00N / 81−19−20.30W
2.12.6 Threshold elevation: 92 ft
2.12.6 Touchdown zone elevation: 96 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−24−55.15N / 81−19−19.04W
2.12.6 Threshold elevation: 91 ft
2.12.6 Touchdown zone elevation: 92 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−26−53.86N / 81−19−37.11W
2.12.6 Threshold elevation: 92 ft
2.12.6 Touchdown zone elevation: 94 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−24−55.01N / 81−19−35.83W
2.12.6 Threshold elevation: 91 ft
2.12.6 Touchdown zone elevation: 93 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28−26−00.00N / 81−17−45.17W
2.12.6 Threshold elevation: 90 ft
2.12.6 Touchdown zone elevation: 90 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28−24−29.20N / 81−17−44.13W
2.12.6 Threshold elevation: 87 ft
2.12.6 Touchdown zone elevation: 88 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28−26−37.31N / 81−16−57.29W
2.12.6 Threshold elevation: 90 ft
2.12.6 Touchdown zone elevation: 90 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28−25−00.00N / 81−16−56.38W
2.12.6 Threshold elevation: 90 ft
2.12.6 Touchdown zone elevation: 90 ft

2.12.1 Designation: H1
2.12.3 Dimensions: 44 ft x 44 ft

AD 2.13 Declared distances

2.13.1 Designation: 18L
2.13.2 Takeoff run available: 12005
2.13.3 Takeoff distance available: 12005

2.13.4 Accelerate–stop distance available: 12005
2.13.5 Landing distance available: 12005

2.13.1 Designation: 36R
2.13.2 Takeoff run available: 12005
2.13.3 Takeoff distance available: 12005
2.13.4 Accelerate–stop distance available: 11601
2.13.5 Landing distance available: 11601

2.13.1 Designation: 18R
2.13.2 Takeoff run available: 12004
2.13.3 Takeoff distance available: 12004
2.13.4 Accelerate–stop distance available: 12004
2.13.5 Landing distance available: 12004

2.13.1 Designation: 36L
2.13.2 Takeoff run available: 12004
2.13.3 Takeoff distance available: 12004
2.13.4 Accelerate–stop distance available: 11621
2.13.5 Landing distance available: 11621

2.13.1 Designation: 17R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 35L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 17L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 35R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 18L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 36R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 18R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 36L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 17R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 35L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 17L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 35R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: CD/P
2.18.3 Service designation: 125.475 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: LCL/P (RYS 18L/36R & 18R/36L)
2.18.3 Service designation: 124.3 MHz

2.18.1 Service designation: AR OPS
2.18.3 Service designation: 148.8 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 341.7 MHz

2.18.1 Service designation: AR OPS
2.18.3 Service designation: 41.5 MHz

2.18.1 Service designation: LCL/P (RYS 17L/35R & 17R/35L)
2.18.3 Service designation: 118.45 MHz

2.18.1 Service designation: D−ATIS ARR
2.18.3 Service designation: 121.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 120.525 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 126.4 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 275.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 253.5 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: OJP
2.19.5 Coordinates: 28−27−00.00N / 81−19−20.38W
2.19.6 Site elevation: 90.8 ft

2.19.1 ILS type: Localizer for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: TFE
2.19.5 Coordinates: 28−24−41.97N / 81−19−35.69W
2.19.6 Site elevation: 86 ft

2.19.1 ILS type: Localizer for runway 17R. Magnetic variation: 6W
2.19.2 ILS identification: DIZ
2.19.5 Coordinates: 28−24−18.77N / 81−17−44.03W
2.19.6 Site elevation: 81.6 ft

2.19.1 ILS type: Localizer for runway 35L. Magnetic variation: 6W
2.19.2 ILS identification: DDO
2.19.5 Coordinates: 28−26−18.60N / 81−17−45.27W
2.19.6 Site elevation: 87.7 ft

2.19.1 ILS type: DME for runway 17R. Magnetic variation: 6W
2.19.2 ILS identification: DIZ
2.19.5 Coordinates: 28−24−18.95N / 81−17−47.08W
2.19.6 Site elevation: 86.4 ft

2.19.1 ILS type: DME for runway 35L. Magnetic variation: 6W
2.19.2 ILS identification: DDO
2.19.5 Coordinates: 28−26−18.39N / 81−17−48.15W
2.19.6 Site elevation: 95.5 ft

2.19.1 ILS type: Glide Slope for runway 17R. Magnetic variation: 6W
2.19.2 ILS identification: DIZ
2.19.5 Coordinates: 28−25−57.84N / 81−17−40.58W
2.19.6 Site elevation: 92.7 ft

2.19.1 ILS type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: TFE
2.19.5 Coordinates: 28−26−43.50N / 81−19−32.21W
2.19.6 Site elevation: 89 ft

2.19.1 ILS type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: OJP
2.19.5 Coordinates: 28−25−00.00N / 81−19−23.63W
2.19.6 Site elevation: 87.7 ft

2.19.1 ILS type: Glide Slope for runway 35L. Magnetic variation: 6W
2.19.2 ILS identification: DDO
2.19.5 Coordinates: 28−24−39.53N / 81−17−39.76W
2.19.6 Site elevation: 83.7 ft

2.19.1 ILS type: Outer Marker for runway 18R. Magnet-

ic variation: 6W
2.19.2 ILS identification: TFE
2.19.5 Coordinates: 28–33–00.00N / 81–19–38.75W
2.19.6 Site elevation: 103 ft

2.19.1 ILS type: Inner Marker for runway 17R. Magnetic variation: 6W
2.19.2 ILS identification: DIZ
2.19.5 Coordinates: 28–26–16.70N / 81–17–45.26W
2.19.6 Site elevation: 84.9 ft

2.19.1 ILS type: Inner Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: OJP
2.19.5 Coordinates: 28–24–46.65N / 81–19–18.94W
2.19.6 Site elevation: 86.6 ft

2.19.1 ILS type: Inner Marker for runway 35L. Magnetic variation: 6W
2.19.2 ILS identification: DDO
2.19.5 Coordinates: 28–24–20.53N / 81–17–44.04W
2.19.6 Site elevation: 82.1 ft

2.19.1 ILS type: Middle Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: OJP
2.19.5 Coordinates: 28–24–31.89N / 81–19–18.78W
2.19.6 Site elevation: 84.5 ft

2.19.1 ILS type: Middle Marker for runway 35L. Magnetic variation: 6W
2.19.2 ILS identification: DDO
2.19.5 Coordinates: 28–24–00.00N / 81–17–43.86W
2.19.6 Site elevation: 82.4 ft

2.19.1 ILS type: Middle Marker for runway 17R. Magnetic variation: 6W
2.19.2 ILS identification: DIZ
2.19.5 Coordinates: 28–26–34.25N / 81–17–45.44W
2.19.6 Site elevation: 87.8 ft

2.19.1 ILS type: Middle Marker for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: TFE
2.19.5 Coordinates: 28–27–20.04N / 81–19–37.39W
2.19.6 Site elevation: 87.4 ft

2.19.1 ILS type: DME for runway 35R. Magnetic variation: 6W
2.19.2 ILS identification: CER
2.19.5 Coordinates: 28–26–48.24N / 81–16–52.84W
2.19.6 Site elevation: 98.3 ft

2.19.1 ILS type: Glide Slope for runway 35R. Magnetic variation: 6W
2.19.2 ILS identification: CER
2.19.5 Coordinates: 28–25–18.63N / 81–16–51.87W
2.19.6 Site elevation: 87.3 ft

2.19.1 ILS type: Localizer for runway 35R. Magnetic variation: 6W
2.19.2 ILS identification: CER
2.19.5 Coordinates: 28–26–47.61N / 81–16–57.40W
2.19.6 Site elevation: 89.6 ft

2.19.1 ILS type: DME for runway 17L. Magnetic variation: 6W
2.19.2 ILS identification: ARK
2.19.5 Coordinates: 28–24–57.99N / 81–16–51.74W
2.19.6 Site elevation: 97 ft

2.19.1 ILS type: Glide Slope for runway 17L. Magnetic variation: 6W
2.19.2 ILS identification: ARK
2.19.5 Coordinates: 28–26–27.05N / 81–16–52.59W
2.19.6 Site elevation: 94.4 ft

2.19.1 ILS type: Localizer for runway 17L. Magnetic variation: 6W
2.19.2 ILS identification: ARK
2.19.5 Coordinates: 28–24–57.89N / 81–16–56.27W
2.19.6 Site elevation: 89.1 ft

2.19.1 ILS type: Middle Marker for runway 17L. Magnetic variation: 6W
2.19.2 ILS identification: ARK
2.19.5 Coordinates: 28–26–59.77N / 81–16–57.52W
2.19.6 Site elevation: 89.1 ft

2.19.1 ILS type: Inner Marker for runway 17L. Magnetic variation: 6W
2.19.2 ILS identification: ARK
2.19.5 Coordinates: 28–26–45.82N / 81–16–57.40W
2.19.6 Site elevation: 89.6 ft

2.19.1 ILS type: Inner Marker for runway 35R. Magnetic variation: 6W
2.19.2 ILS identification: CER
2.19.5 Coordinates: 28–24–59.68N / 81–16–56.29W
2.19.6 Site elevation: 89.2 ft

2.19.1 ILS type: Middle Marker for runway 35R. Mag-

netic variation: 6W
2.19.2 ILS identification: CER
2.19.5 Coordinates: 28–24–45.67N / 81–16–56.15W
2.19.6 Site elevation: 81.1 ft

2.19.1 ILS type: DME for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: TFE
2.19.5 Coordinates: 28–24–42.20N / 81–19–38.58W
2.19.6 Site elevation: 94.7 ft

2.19.1 ILS type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: OJP
2.19.5 Coordinates: 28–27–00.00N / 81–19–18.01W
2.19.6 Site elevation: 96.2 ft

General Remarks:
BIRDS & DEER ON & IN THE VICINITY OF AIRPORT.

AVOID CONTACT WITH TAXIWAY EDGE LIGHTS; ALL AIRCRAFT DETERMINED TO BE FAA DESIGN GROUP IV AND ABOVE MUST PERFORM JUDGEMENTAL OVERSTEERING INSTEAD OF COCKPIT CENTERLINE STEERING WHEN TAXIING.

WHEN OVERRUN LIGHTS ILS RUNWAY 7 AND MCO ILS RUNWAYS 17 & 18R SIMULTANEOUS OPERATIONS ARE CONDUCTED, ATC RADAR REQUIRED.

BRIGHT LIGHTS ON ROAD BETWEEN RUNWAY 17R/35L AND RUNWAY 17L/35R MAY BE MISTAKEN FOR RUNWAY LIGHTS.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

USE CAUTION IN VICINITY OF TAXIWAY ”A” ALONG WEST RAMP.

UNLESS ADV BY AUTOMATIC TERMINAL INFORMATION SERVICE, DEP FLIGHTS ON INITIAL CONTACT WITH GROUND CONTROL: AIRCRAFT ON WEST RAMP, AIRSIDE 1 & 3 (GATES 1–59) USE GROUND CONTROL 121.8. AIRCRAFT AT AIRSIDE 2 & 4 (GATES 60 AND HIGHER), USE GROUND CONTROL 126.4.

TAXIWAY J3 AND TAXIWAY J4 RESTRICTED TO WINGSPAN OF LESS THAN 118 FT.

RUNWAY STATUS LIGHTS ARE IN OPERATION.

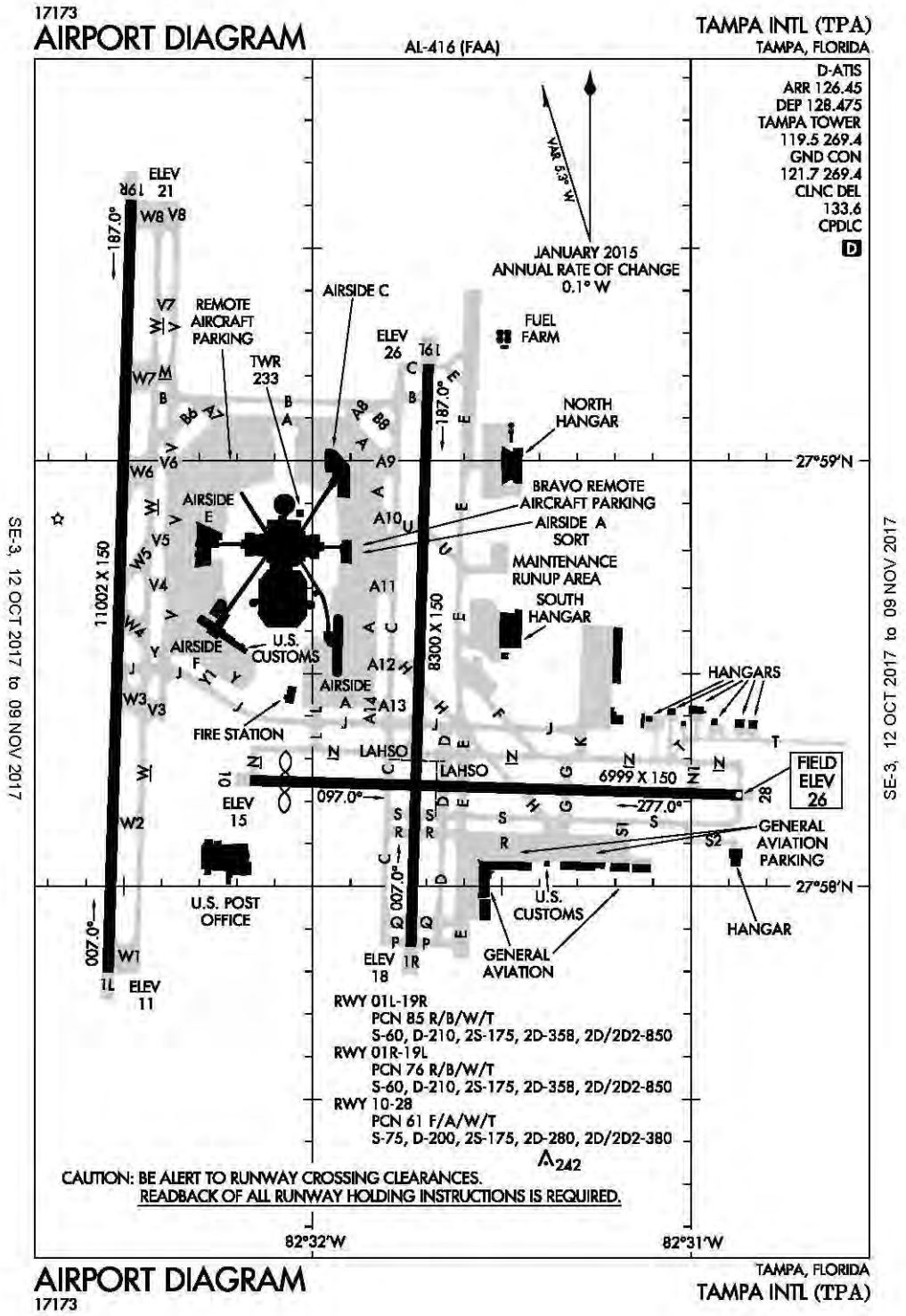
AIRCRAFT WITH WINGSPAN GREATER THAN 214 FT MUST ADHERE TO SPECIFIC RUNWAY AND TAXI ROUTES. CONTACT AIRFIELD OPERATIONS AT 407–825–2036 FOR DETAILS.

TAXIWAY A, SOUTH OF TAXIWAY A3 RESTRICTED TO WINGSPAN OF LESS THAN 118 FT. PRIOR PERMISSION REQUIREDUIRED FOR WINGSPAN 118 FT OR GREATER.

RUNWAY 17L–35R UNLIT 0400–1100Z.

WEST RAMP CUSTOMS INSPECTION PARKING AREA RESTRICTED TO AIRCRAFT WINGSPAN LESS THAN 118’.

Tampa, Florida
Tampa International
ICAO Identifier KTPA



Tampa, FL
Tampa Intl
ICAO Identifier KTPA

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 27−58−31.70N / 82−31−59.70W
2.2.2 From City: 6 Miles W Of Tampa, FL
2.2.3 Elevation: 26.4 ft
2.2.5 Magnetic variation: 5W (2010)
2.2.6 Airport Contact: John Tiliacos
PO BOX 22287
Tampa, FL 33622
(813−870−8700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Trees (26 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 301 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10
2.12.2 True Bearing: 92
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27−58−14.99N / 82−32−00.00W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 22 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 272
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27−58−12.89N / 82−30−51.88W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 26 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 2
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27−57−51.52N / 82−31−44.37W
2.12.6 Threshold elevation: 18 ft
2.12.6 Touchdown zone elevation: 20 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 182
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27−59−13.66N / 82−31−41.57W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 26 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 2
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−57−47.86N / 82−32−32.48W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 182
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−59−36.74N / 82−32−28.78W
2.12.6 Threshold elevation: 21 ft
2.12.6 Touchdown zone elevation: 21 ft

AD 2.13 Declared distances

2.13.1 Designation: 10
2.13.2 Takeoff run available: 6999
2.13.3 Takeoff distance available: 6999
2.13.4 Accelerate−stop distance available: 6999
2.13.5 Landing distance available: 6501

2.13.1 Designation: 28
2.13.2 Takeoff run available: 6999
2.13.3 Takeoff distance available: 6999
2.13.4 Accelerate−stop distance available: 6501
2.13.5 Landing distance available: 6501

2.13.1 Designation: 01R
2.13.2 Takeoff run available: 8300
2.13.3 Takeoff distance available: 8300
2.13.4 Accelerate−stop distance available: 8300

2.13.5 Landing distance available: 8300

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 8300
2.13.3 Takeoff distance available: 8300
2.13.4 Accelerate–stop distance available: 8300
2.13.5 Landing distance available: 8300

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 11002
2.13.3 Takeoff distance available: 11002
2.13.4 Accelerate–stop distance available: 10800
2.13.5 Landing distance available: 10800

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 11002
2.13.3 Takeoff distance available: 11002
2.13.4 Accelerate–stop distance available: 11002
2.13.5 Landing distance available: 11002

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Rwy 10 PAPI Unusable 8 Degrees Left And Right Of Rcl.

2.14.1 Designation: 28
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 01R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 01L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 118.15 MHz

2.18.1 Service designation: FINAL–CTL IC
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 118.8 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 119.05 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 119.65 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 119.9 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.35 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 125.3 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 133.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: GND/P LCL/P
2.18.3 Service designation: 269.4 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 290.3 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 285.625 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 353.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 316.05 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 353.75 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 128.475 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 126.45 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 01R. Magnetic variation: 5W
2.19.2 ILS identification: TWJ
2.19.5 Coordinates: 27−59−23.93N / 82−31−41.22W
2.19.6 Site elevation: 25.6 ft

2.19.1 ILS type: Localizer for runway 19L. Magnetic variation: 5W
2.19.2 ILS identification: TPA
2.19.5 Coordinates: 27−57−40.97N / 82−31−44.73W
2.19.6 Site elevation: 13.7 ft

2.19.1 ILS type: Localizer for runway 19R. Magnetic variation: 5W
2.19.2 ILS identification: JRT
2.19.5 Coordinates: 27−57−37.46N / 82−32−32.84W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−59−44.79N / 82−32−28.50W
2.19.6 Site elevation: 20.6 ft

2.19.1 ILS type: DME for runway 19R. Magnetic variation: 5W
2.19.2 ILS identification: JRT
2.19.5 Coordinates: 27−57−37.34N / 82−32−31.94W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: DME for runway 01R. Magnetic variation: 5W
2.19.2 ILS identification: TWJ
2.19.5 Coordinates: 27−59−22.98N / 82−31−38.43W
2.19.6 Site elevation: 35.9 ft

2.19.1 ILS type: Glide Slope for runway 19R. Magnetic variation: 5W
2.19.2 ILS identification: JRT
2.19.5 Coordinates: 27−59−26.46N / 82−32−33.59W
2.19.6 Site elevation: 17.2 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−57−58.24N / 82−32−36.59W
2.19.6 Site elevation: 7.6 ft

2.19.1 ILS type: Glide Slope for runway 19L. Magnetic variation: 5W
2.19.2 ILS identification: TPA
2.19.5 Coordinates: 27−59−00.00N / 82−31−37.46W
2.19.6 Site elevation: 23.8 ft

2.19.1 ILS type: Outer Marker for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−51−40.24N / 82−32−44.87W
2.19.6 Site elevation: 5.8 ft

2.19.1 ILS type: Inner Marker for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−57−39.62N / 82−32−32.76W
2.19.6 Site elevation: 6.4 ft

2.19.1 ILS type: Middle Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS identification: TPA
2.19.5 Coordinates: 27−59−40.39N / 82−31−40.66W
2.19.6 Site elevation: 29.4 ft

2.19.1 ILS type: Outer Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS identification: TPA
2.19.5 Coordinates: 28−05−00.00N / 82−31−30.89W
2.19.6 Site elevation: 42.5 ft

2.19.1 ILS type: Middle Marker for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−57−15.71N / 82−32−33.57W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS identification: TPA
2.19.5 Coordinates: 27−59−23.66N / 82−31−41.23W
2.19.6 Site elevation: 25.7 ft

2.19.1 ILS type: Middle Marker for runway 19R. Magnetic variation: 5W
2.19.2 ILS identification: JRT
2.19.5 Coordinates: 28−00−00.00N / 82−32−27.94W
2.19.6 Site elevation: 21 ft

2.19.1 ILS type: DME for runway 01L. Magnetic variation: 5W
2.19.2 ILS identification: AMP
2.19.5 Coordinates: 27−59−43.40N / 82−32−25.65W
2.19.6 Site elevation: 20 ft

General Remarks:

RUNWAY 19L IS NOISE SENSITIVE TO TURBOJET DEPARTURES. RUNWAY 01R IS NOISE SENSITIVE TO TURBOJET ARRIVALS. PUBLISHED NOISE ABATEMENT PROCEDURES IN EFFECT.

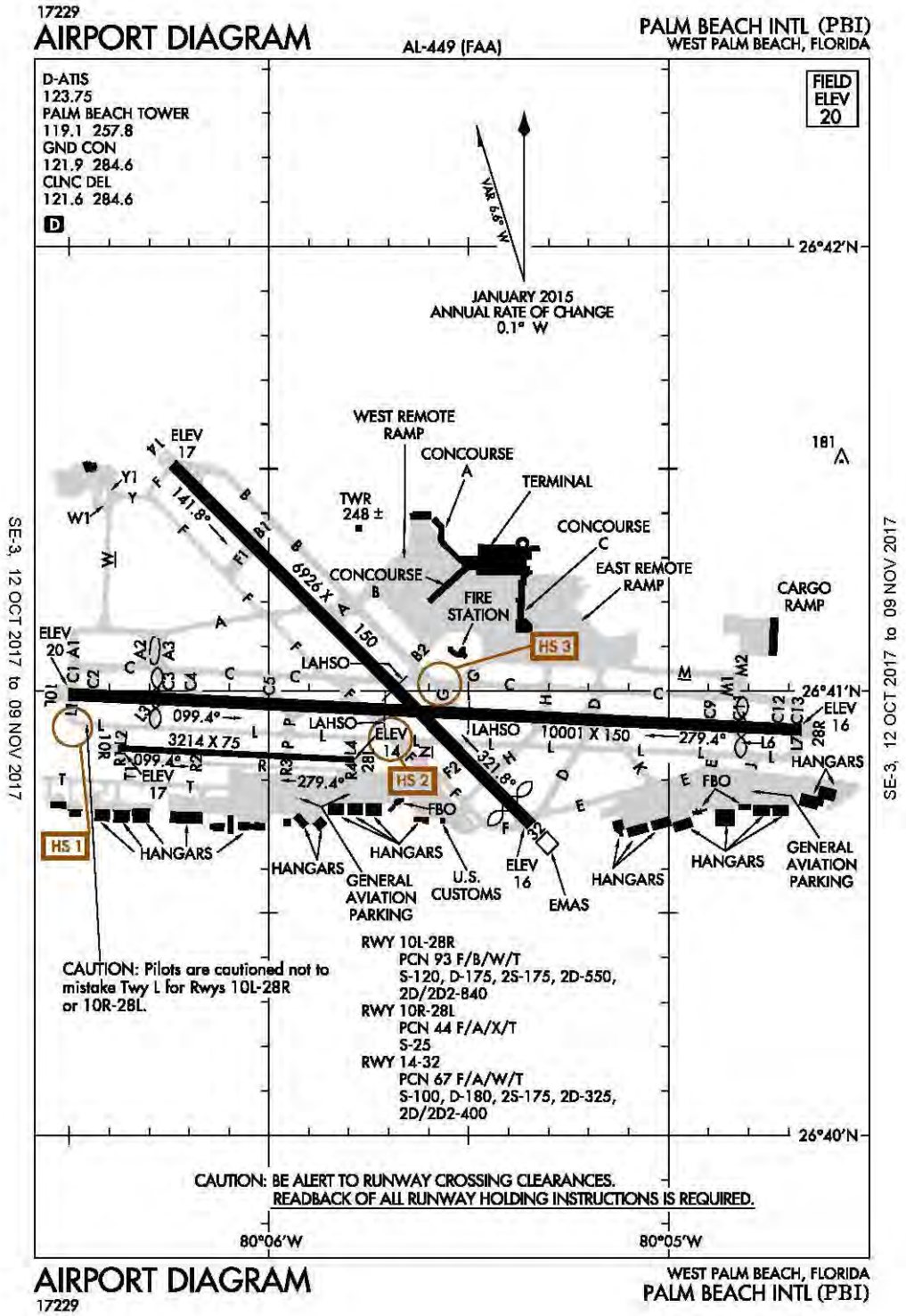
ONLY AIRCRAFT WITH PRIOR PERMISSION MAY USE TERMINAL APRON; ALL OTHERS USE GA APRON.

BIRD ACTIVITY ON AND IN VICINITY OF AIRPORT.

TAXIWAY RSTRS: AIRPLANE DESIGN GRP V OR LGR − TAXIWAY N WEST OF TAXIWAY L UNAVAILABLE. TAXIWAY E NORTH OF TAXIWAY J ALSO UNUSABLE FOR WINGSPAN GREATER THAN 171 FT UNLESS PRIOR PERMISSION REQUIRED FROM AIRPORT OPERATIONS.

TAXIWAY RSTRS: GRP IV AIRCRAFT WITH WINGSPAN GREATER THAN 118 FT −− TAXILANE E SOUTH OF TAXIWAY S, AND TAXILANE R EAST OF TAXIWAY D ARE NON−MOVEMENT AREAS AND UNAVAILABLE WO PRIOR PERMISSION REQUIRED FROM AIRPORT OPERATIONS.

West Palm Beach, Florida
Palm Beach International
ICAO Identifier KPBI



West Palm Beach, FL
Palm Beach Intl
ICAO Identifier KPBI

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 26–40–59.40N / 80–05–44.10W
2.2.2 From City: 3 Miles W Of West Palm Beach, FL
2.2.3 Elevation: 19.6 ft
2.2.5 Magnetic variation: 6W (2010)
2.2.6 Airport Contact: Bruce V Pelly
BLDG 846–PALM BEACH INTL
West Palm Beach, FL 33406
(561–471–7412)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/21/1973
2.6.4 Remarks: Index D ARFF Equipment Available

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 14
2.10.1.b Type of obstacle: Trees (84 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 150 ft from Centerline

2.10.1.a. Runway designation: 32
2.10.1.b Type of obstacle: Road (32 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10L
2.12.2 True Bearing: 93
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26–40–59.55N / 80–06–30.13W
2.12.6 Threshold elevation: 20 ft
2.12.6 Touchdown zone elevation: 16 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26–40–54.74N / 80–04–40.01W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 18 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26–40–52.28N / 80–06–22.64W
2.12.6 Threshold elevation: 17 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26–40–50.73N / 80–05–47.25W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 6926 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26–41–30.56N / 80–06–14.44W
2.12.6 Threshold elevation: 17 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 6926 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26–40–41.91N / 80–05–20.62W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 16 ft

AD 2.13 Declared distances

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 8800

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000

2.13.5 Landing distance available: 9189

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 3213
2.13.3 Takeoff distance available: 3213
2.13.4 Accelerate−stop distance available: 3213
2.13.5 Landing distance available: 3213

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 3213
2.13.3 Takeoff distance available: 3213
2.13.4 Accelerate−stop distance available: 3213
2.13.5 Landing distance available: 3213

2.13.1 Designation: 14
2.13.2 Takeoff run available: 6931
2.13.3 Takeoff distance available: 6931
2.13.4 Accelerate−stop distance available: 6000
2.13.5 Landing distance available: 6000

2.13.1 Designation: 32
2.13.2 Takeoff run available: 6931
2.13.3 Takeoff distance available: 6931
2.13.4 Accelerate−stop distance available: 6931
2.13.5 Landing distance available: 6513

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 28R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 14
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: CD/P
2.18.3 Service designation: 284.6 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 128.3 MHz

2.18.1 Service designation: APCH/P/DEP/P
2.18.3 Service designation: 125.925 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.2 MHz

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 343.6 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 118.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 121.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: FINAL APCH
2.18.3 Service designation: 125 MHz

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 125.2 MHz

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 128.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 317.4 MHz

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 343.6 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 384.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 284.6 MHz

2.18.1 Service designation: D−ATIS

2.18.3 Service designation: 123.75 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CLASS C /S
2.18.3 Service designation: 127.35 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS identification: PWB
2.19.5 Coordinates: 26–40–59.91N / 80–06–38.52W
2.19.6 Site elevation: 18.5 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: PBI
2.19.5 Coordinates: 26–40–54.24N / 80–04–28.61W
2.19.6 Site elevation: 13 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 6W
2.19.2 ILS identification: PWB
2.19.5 Coordinates: 26–40–53.09N / 80–05–00.00W
2.19.6 Site elevation: 13.5 ft

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: PBI
2.19.5 Coordinates: 26–40–55.98N / 80–06–00.00W
2.19.6 Site elevation: 14.5 ft

2.19.1 ILS type: Outer Marker for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: PBI
2.19.5 Coordinates: 26–41–15.72N / 80–12–36.74W
2.19.6 Site elevation: 17 ft

2.19.1 ILS type: Middle Marker for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: PBI
2.19.5 Coordinates: 26–41–00.00N / 80–06–56.66W
2.19.6 Site elevation: 18 ft

2.19.1 ILS type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS identification: PBI
2.19.5 Coordinates: 26–40–51.43N / 80–04–29.01W
2.19.6 Site elevation: 23.3 ft

General Remarks:

MIGRATORY BIRDS ON AND IN THE VICINITY OF AIRPORT.

NOISE ABATEMENT PROCEDURES IN EFFECT. MULTIENGINE FLIGHT TRAINING PROHIBITED SS TO SR SUN AND HOLIDAY; STRICT ENVIRONMENTAL OPERATING STAGE 2 AIRCRAFT 0300–1200Z CALL NOISE ABATEMENT OFFICER 561–471–7467.

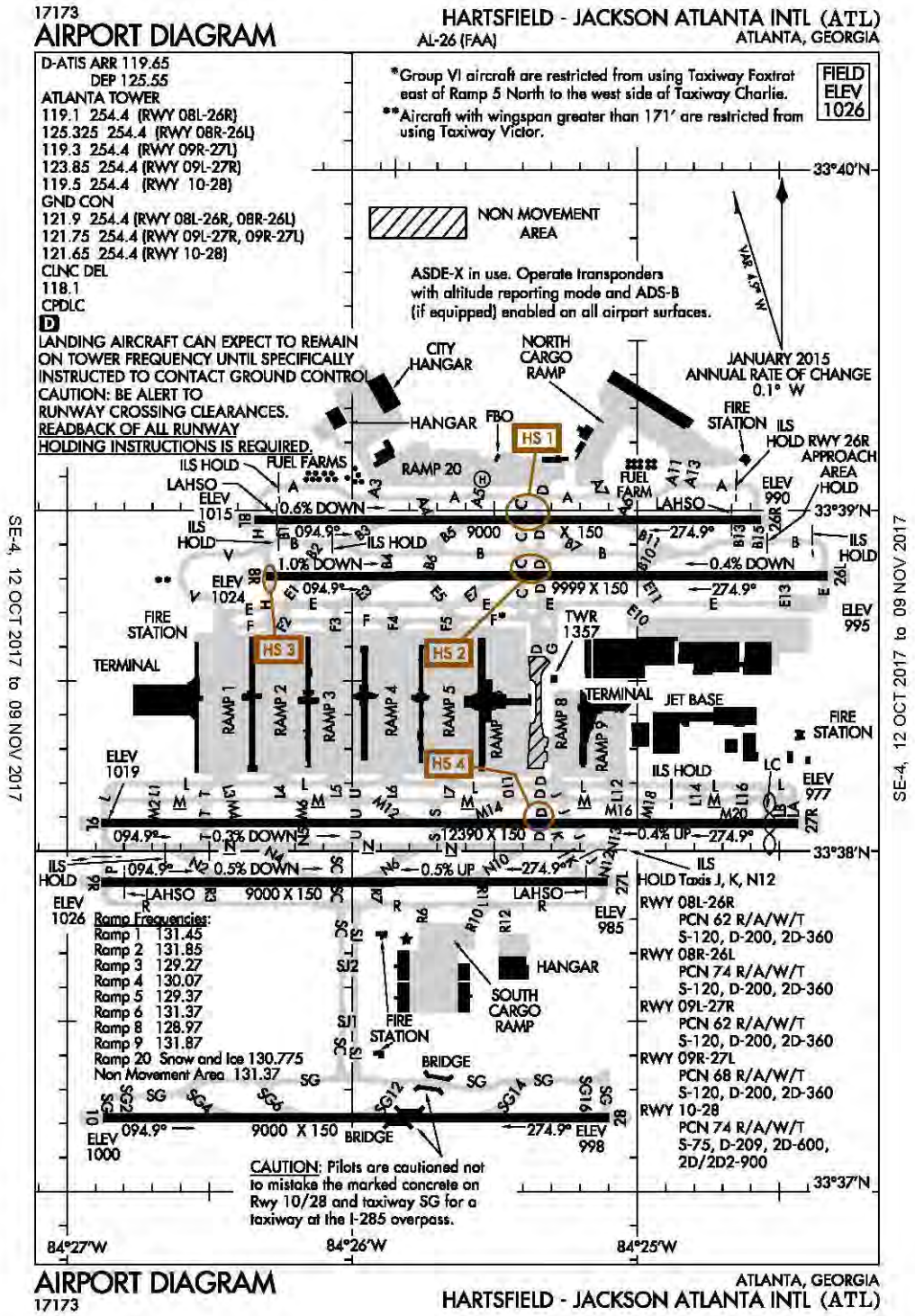
BE ALERT; RUNWAYS 28L & 28R THRESHOLDS STAGGERED BY 5400 FT.

RUNWAY 10R/28L NON–AIR CARRIER AIRCRAFT ONLY.

BE ALERT: TAXIWAY L IS LOCATED BETWEEN RUNWAYS 10L/28R & 10R/28L. TAXIWAY L IS WIDER AND LONGER THAN RUNWAY 10R/28L – DO NOT CONFUSE TAXIWAY L FOR RUNWAY. AIRCRAFT WITH WINGSPAN OF 118 FT OR GREATER IS PROHIBITED ON TAXIWAY L.

NO AIRCRAFT WILL CROSS HOLD LINE WITHOUT AUTHORIZATION.

Atlanta, Georgia
Hartsfield–Jackson Atlanta International
ICAO Identifier KATL



Atlanta, GA
Hartsfield – Jackson Atlanta Intl
ICAO Identifier KATL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 33–38–12.12N / 84–25–40.31W
2.2.2 From City: 7 Miles S Of Atlanta, GA
2.2.3 Elevation: 1026.2 ft
2.2.5 Magnetic variation: 5W (2015)
2.2.6 Airport Contact: Roosevelt Council Jr
PO BOX 20509
Atlanta, GA 30320
(404–530–6600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 08R
2.10.1.b Type of obstacle: Rr (64 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 26L
2.10.1.b Type of obstacle: Other (13 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 560 ft from Centerline

2.10.1.a. Runway designation: 08L
2.10.1.b Type of obstacle: Sign (14 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

2.10.1.a. Runway designation: 26R
2.10.1.b Type of obstacle: Ant (53 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 800 ft from Centerline

2.10.1.a. Runway designation: 09L
2.10.1.b Type of obstacle: Other (108 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 200 ft from Centerline

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Tower (136 ft). Lighted
2.10.1.c Location of obstacle: 410 ft from Centerline

2.10.1.a. Runway designation: 09R
2.10.1.b Type of obstacle: Tower (88 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 1000 ft from Centerline

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Sign (51 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 770 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33–38–00.00N / 84–26–52.68W
2.12.6 Threshold elevation: 1019 ft
2.12.6 Touchdown zone elevation: 1019 ft
2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33–38–00.00N / 84–24–26.16W
2.12.6 Threshold elevation: 977 ft
2.12.6 Touchdown zone elevation: 985 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 09R

2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.53N / 84−26−52.68W
2.12.6 Threshold elevation: 1026 ft
2.12.6 Touchdown zone elevation: 1026 ft
2.12.7 Slope: 0.4DOWN

2.12.1 Designation: 27L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.56N / 84−25−00.00W
2.12.6 Threshold elevation: 985 ft
2.12.6 Touchdown zone elevation: 999 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: H1
2.12.3 Dimensions: 52 ft x 52 ft
2.12.5 Coordinates: 33−39−00.00N / 84−25−32.60W
2.12.6 Threshold elevation: 988 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−58.32N / 84−26−20.49W
2.12.6 Threshold elevation: 1015 ft
2.12.6 Touchdown zone elevation: 1015 ft
2.12.7 Slope: 0.6DOWN

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−58.35N / 84−24−34.03W
2.12.6 Threshold elevation: 990 ft
2.12.6 Touchdown zone elevation: 990 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−12.98N / 84−26−52.36W
2.12.6 Threshold elevation: 1000 ft
2.12.6 Touchdown zone elevation: 1000 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−13.03N / 84−25−00.00W
2.12.6 Threshold elevation: 998 ft
2.12.6 Touchdown zone elevation: 998 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.43N / 84−26−18.10W
2.12.6 Threshold elevation: 1024 ft
2.12.6 Touchdown zone elevation: 1024 ft
2.12.7 Slope: 1DOWN

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.46N / 84−24−19.83W
2.12.6 Threshold elevation: 995 ft
2.12.6 Touchdown zone elevation: 996 ft
2.12.7 Slope: 0.4DOWN

AD 2.13 Declared distances

2.13.1 Designation: 09L
2.13.2 Takeoff run available: 12390
2.13.3 Takeoff distance available: 12390
2.13.4 Accelerate−stop distance available: 11730
2.13.5 Landing distance available: 11730

2.13.1 Designation: 27R
2.13.2 Takeoff run available: 12390
2.13.3 Takeoff distance available: 12390
2.13.4 Accelerate−stop distance available: 12190
2.13.5 Landing distance available: 11690

2.13.1 Designation: 09R
2.13.2 Takeoff run available: 9000

2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8925
2.13.5 Landing distance available: 8925

2.13.1 Designation: 27L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8865
2.13.5 Landing distance available: 8865

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8800
2.13.5 Landing distance available: 8800

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8800
2.13.5 Landing distance available: 8800

2.13.1 Designation: 10
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 28
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 9999
2.13.3 Takeoff distance available: 10999
2.13.4 Accelerate–stop distance available: 9999
2.13.5 Landing distance available: 9999

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 9999
2.13.3 Takeoff distance available: 9999
2.13.4 Accelerate–stop distance available: 9999
2.13.5 Landing distance available: 9999

AD 2.14 Approach and runway lighting

2.14.1 Designation: 09L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 27R
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 09R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 27L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 08L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 26R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: PAPI Rwy 26R Unusable Beyond 6 De-

grees Left And 7 Degrees Right Of Rcl.

2.14.1 Designation: 10
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 28
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 08R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: PAPI Rwy 26L Unusable Beyond 7 Degrees Left And Right Of Rcl.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 135.375 MHz

2.18.1 Service designation: LCL/P GND/P
2.18.3 Service designation: 254.4 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 125.325 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 123.85 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 119.3 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 119.5 MHz

2.18.1 Service designation: ILS PRM MONITOR/P
2.18.3 Service designation: 133.425 MHz

2.18.1 Service designation: ILS PRM MONITOR/P
2.18.3 Service designation: 126.9 MHz

2.18.1 Service designation: ILS PRM MONITOR/P
2.18.3 Service designation: 132.55 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 119.65 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 125.55 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.75 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: BRU
2.19.5 Coordinates: 33−38−48.45N / 84−26−30.17W
2.19.6 Site elevation: 1021 ft

2.19.1 ILS type: Outer Marker for runway 09L. Magnetic variation: 5W
2.19.2 ILS identification: HZK
2.19.5 Coordinates: 33–37–57.07N / 84–32–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33–38–58.32N / 84–26–30.19W
2.19.6 Site elevation: 1016 ft

2.19.1 ILS type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33–38–48.46N / 84–24–00.00W
2.19.6 Site elevation: 986.8 ft

2.19.1 ILS type: Localizer for runway 27R. Magnetic variation: 5W
2.19.2 ILS identification: AFA
2.19.5 Coordinates: 33–38–00.00N / 84–27–00.00W
2.19.6 Site elevation: 1019.5 ft

2.19.1 ILS type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33–38–58.35N / 84–24–23.39W
2.19.6 Site elevation: 985.2 ft

2.19.1 ILS type: Localizer for runway 09L. Magnetic variation: 5W
2.19.2 ILS identification: HZK
2.19.5 Coordinates: 33–38–00.00N / 84–24–19.08W
2.19.6 Site elevation: 949.5 ft

2.19.1 ILS type: Localizer for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33–37–54.57N / 84–24–52.61W
2.19.6 Site elevation: 976.2 ft

2.19.1 ILS type: Localizer for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33–37–54.53N / 84–27–00.00W
2.19.6 Site elevation: 1015.7 ft

2.19.1 ILS type: DME for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33–37–56.63N / 84–24–54.24W
2.19.6 Site elevation: 995.5 ft

2.19.1 ILS type: Glide Slope for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33–39–00.00N / 84–24–47.63W
2.19.6 Site elevation: 983.8 ft

2.19.1 ILS type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33–38–45.77N / 84–24–00.00W
2.19.6 Site elevation: 992.1 ft

2.19.1 ILS type: Glide Slope for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33–37–58.50N / 84–25–18.96W
2.19.6 Site elevation: 986.7 ft

2.19.1 ILS type: Glide Slope for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33–39–00.00N / 84–26–00.00W
2.19.6 Site elevation: 1001.7 ft

2.19.1 ILS type: Glide Slope for runway 09L. Magnetic variation: 5W
2.19.2 ILS identification: HZK
2.19.5 Coordinates: 33–38–00.00N / 84–26–39.67W
2.19.6 Site elevation: 1016.6 ft

2.19.1 ILS type: Glide Slope for runway 27R. Magnetic variation: 5W
2.19.2 ILS identification: AFA
2.19.5 Coordinates: 33–38–00.00N / 84–24–44.13W

2.19.6 Site elevation: 977.7 ft

2.19.1 ILS type: Glide Slope for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33−38−52.40N / 84−26−00.00W
2.19.6 Site elevation: 1005 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: BRU
2.19.5 Coordinates: 33−38−52.41N / 84−24−32.84W
2.19.6 Site elevation: 993.7 ft

2.19.1 ILS type: Glide Slope for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33−37−58.48N / 84−26−39.05W
2.19.6 Site elevation: 1019.1 ft

2.19.1 ILS type: Outer Marker for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33−38−48.52N / 84−32−31.60W
2.19.6 Site elevation: 956 ft

2.19.1 ILS type: Outer Marker for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33−38−00.00N / 84−18−36.44W
2.19.6 Site elevation: 905 ft

2.19.1 ILS type: Outer Marker for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33−37−57.07N / 84−32−34.28W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: BRU
2.19.5 Coordinates: 33−38−43.61N / 84−18−39.88W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33−38−48.52N / 84−32−31.60W
2.19.6 Site elevation: 956 ft

2.19.1 ILS type: Outer Marker for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33−38−43.61N / 84−18−39.88W
2.19.6 Site elevation: 834 ft

2.19.1 ILS type: Outer Marker for runway 27R. Magnetic variation: 5W
2.19.2 ILS identification: AFA
2.19.5 Coordinates: 33−38−00.00N / 84−18−36.44W
2.19.6 Site elevation: 905 ft

2.19.1 ILS type: Inner Marker for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33−38−58.31N / 84−26−30.52W
2.19.6 Site elevation: 1017.7 ft

2.19.1 ILS type: Inner Marker for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33−37−54.52N / 84−27−00.00W
2.19.6 Site elevation: 1029.2 ft

2.19.1 ILS type: Inner Marker for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33−38−48.43N / 84−26−28.57W
2.19.6 Site elevation: 1033 ft

2.19.1 ILS type: Inner Marker for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33−38−58.36N / 84−24−22.79W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 09L. Magnetic variation: 5W

2.19.2 ILS identification: HZK
2.19.5 Coordinates: 33–38–00.00N / 84–27–20.50W
2.19.6 Site elevation: 987 ft

2.19.1 ILS type: Middle Marker for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33–38–58.31N / 84–26–47.75W
2.19.6 Site elevation: 1024 ft

2.19.1 ILS type: Middle Marker for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33–38–56.36N / 84–23–56.86W
2.19.6 Site elevation: 945 ft

2.19.1 ILS type: Middle Marker for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33–37–53.20N / 84–24–32.45W
2.19.6 Site elevation: 950.4 ft

2.19.1 ILS type: Middle Marker for runway 09R. Magnetic variation: 5W
2.19.2 ILS identification: FUN
2.19.5 Coordinates: 33–37–55.49N / 84–27–19.57W
2.19.6 Site elevation: 992.6 ft

2.19.1 ILS type: DME for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33–37–53.70N / 84–27–00.00W
2.19.6 Site elevation: 1003.8 ft

2.19.1 ILS type: Inner Marker for runway 27L. Magnetic variation: 5W
2.19.2 ILS identification: FSQ
2.19.5 Coordinates: 33–37–54.59N / 84–24–52.99W
2.19.6 Site elevation: 983 ft

2.19.1 ILS type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS identification: HFW
2.19.5 Coordinates: 33–39–00.00N / 84–24–24.70W
2.19.6 Site elevation: 977.2 ft

2.19.1 ILS type: Middle Marker for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: BRU
2.19.5 Coordinates: 33–38–48.54N / 84–23–43.58W
2.19.6 Site elevation: 993.5 ft

2.19.1 ILS type: Middle Marker for runway 08R. Magnetic variation: 5W
2.19.2 ILS identification: ATL
2.19.5 Coordinates: 33–38–49.70N / 84–26–48.56W
2.19.6 Site elevation: 1008 ft

2.19.1 ILS type: Middle Marker for runway 27R. Magnetic variation: 5W
2.19.2 ILS identification: AFA
2.19.5 Coordinates: 33–38–00.00N / 84–23–54.35W
2.19.6 Site elevation: 954 ft

2.19.1 ILS type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS identification: GXZ
2.19.5 Coordinates: 33–38–53.87N / 84–26–32.61W
2.19.6 Site elevation: 1008 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS identification: BRU
2.19.5 Coordinates: 33–38–49.10N / 84–26–30.17W
2.19.6 Site elevation: 1030.3 ft

2.19.1 ILS type: DME for runway 10. Magnetic variation: 5W
2.19.2 ILS identification: OMO
2.19.5 Coordinates: 33–37–12.45N / 84–24–53.95W
2.19.6 Site elevation: 999.7 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 5W
2.19.2 ILS identification: OMO
2.19.5 Coordinates: 33–37–00.00N / 84–26–38.77W
2.19.6 Site elevation: 985.4 ft

2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 5W
2.19.2 ILS identification: OMO
2.19.5 Coordinates: 33−37−13.02N / 84−24−53.96W
2.19.6 Site elevation: 991.1 ft

2.19.1 ILS type: Inner Marker for runway 10. Magnetic variation: 5W
2.19.2 ILS identification: OMO
2.19.5 Coordinates: 33−37−12.98N / 84−27−00.00W
2.19.6 Site elevation: 1001 ft

2.19.1 ILS type: DME for runway 28. Magnetic variation: 5W
2.19.2 ILS identification: PKU
2.19.5 Coordinates: 33−37−12.40N / 84−27−00.00W
2.19.6 Site elevation: 1003.5 ft

2.19.1 ILS type: Glide Slope for runway 28. Magnetic variation: 5W
2.19.2 ILS identification: PKU
2.19.5 Coordinates: 33−37−17.06N / 84−25−18.94W
2.19.6 Site elevation: 989.2 ft

2.19.1 ILS type: Localizer for runway 28. Magnetic variation: 5W
2.19.2 ILS identification: PKU
2.19.5 Coordinates: 33−37−12.98N / 84−27−00.00W
2.19.6 Site elevation: 994.5 ft

2.19.1 ILS type: Inner Marker for runway 28. Magnetic variation: 5W
2.19.2 ILS identification: PKU
2.19.5 Coordinates: 33−37−13.02N / 84−24−55.77W
2.19.6 Site elevation: 982.2 ft

2.19.1 ILS type: DME for runway 09L. Magnetic variation: 5W
2.19.2 ILS identification: HZK
2.19.5 Coordinates: 33−38−00.00N / 84−24−44.38W
2.19.6 Site elevation: 978 ft

General Remarks:
BE ALERT TO RUNWAY CROSSING CLEARANCES. READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

PREFERENTIAL RUNWAY USE IN EFFECT, EXPECT TO USE RUNWAYS 08R/26L, 09L/27R FOR DEPS; RUNWAYS 08L/26R, 09R/27L ARE USED PRIMARILY FOR ARRIVALS.

RUNUPS ARE PERMITTED AT VARIOUS SITES; COORDINATE USE OF CITY FACILITIES, MOVEMENT AREAS, ALLOWABLE NON−MOVEMENT AREAS WITH DEPT OF AVIATION OPERATIONS, 404−530−6620; AND COORDINATE THE USE OF THE AIRLINES' FACILITIES WITH THEM.

NOISE & OPERATIONS MONITORING SYSTEM (NOMS) PROGRAM IN EFFECT; CALL THE ATLANTA DEPT OF AVIATION 770−43−NOISE OR 770−436−6473 FOR MORE INFORMATION.

ALL RUNWAYS, TOUCH AND GO OPERATIONS, LOW APPROACHES, AND PRACTICE INSTRUMENT APPROACHES NOT PERMITTED.

GROUP VI AIRCRAFT (LOCKHEED GALAXY C−5; ANTONOV AN−124 & AN−125) WITH A WINGSPAN OF GREATER THAN 214 FT ARE RESTRICTED FROM USING TAXIWAY F EAST OF RAMP 5 NORTH AND WEST OF TAXIWAY DIXIE.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT ARE RESTRICTED FROM USING TAXIWAY V. AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT ARE REQUIRED TO USE TAXI SPEEDS LESS THAN 15 MPH WHEN PASSING AIRCRAFT WITH WINGSPAN GREATER THAN 214FT ON TAXIWAY L/M (EAST OF L7).

RUNWAY 9L DEPARTURES CAN EXPECT INTERSECTION DEPARTURE FROM M2 WITH RUNWAY

REMAINING 11,440 FT (TORA/TODA) AND 10,780 (ASDA).

ALL AIRCRAFT WITH WINGSPANS GREATER THAN 214 FT ARE REQUIRED TO USE TAXI SPEEDS NOT GREATER THAN 15 MPH ON TAXIWAYS A, L, M, AND SJ.

WHEN AIRCRAFT WITH WINGSPANS GREATER THAN 214 FT ARE PRESENT ON THE FIELD, ALL OTHER AIRCRAFT MUST ADHERE TO THE TAXIWAY CENTERLINE ON TAXIWAYS L AND M, TAXIWAYS E AND F, AND TAXIWAYS STRATOCUMULUS AND SJ BETWEEN SNOW GRAINS AND R DUE TO SEPARATION BETWEEN THE PARALLEL TAXIWAYS.

AIRCRAFT WITH WINGSPAN GREATER THAN 214 FT SHOULD EXPECT TO USE RUNWAYS 09L/27R AND 9R/27L.

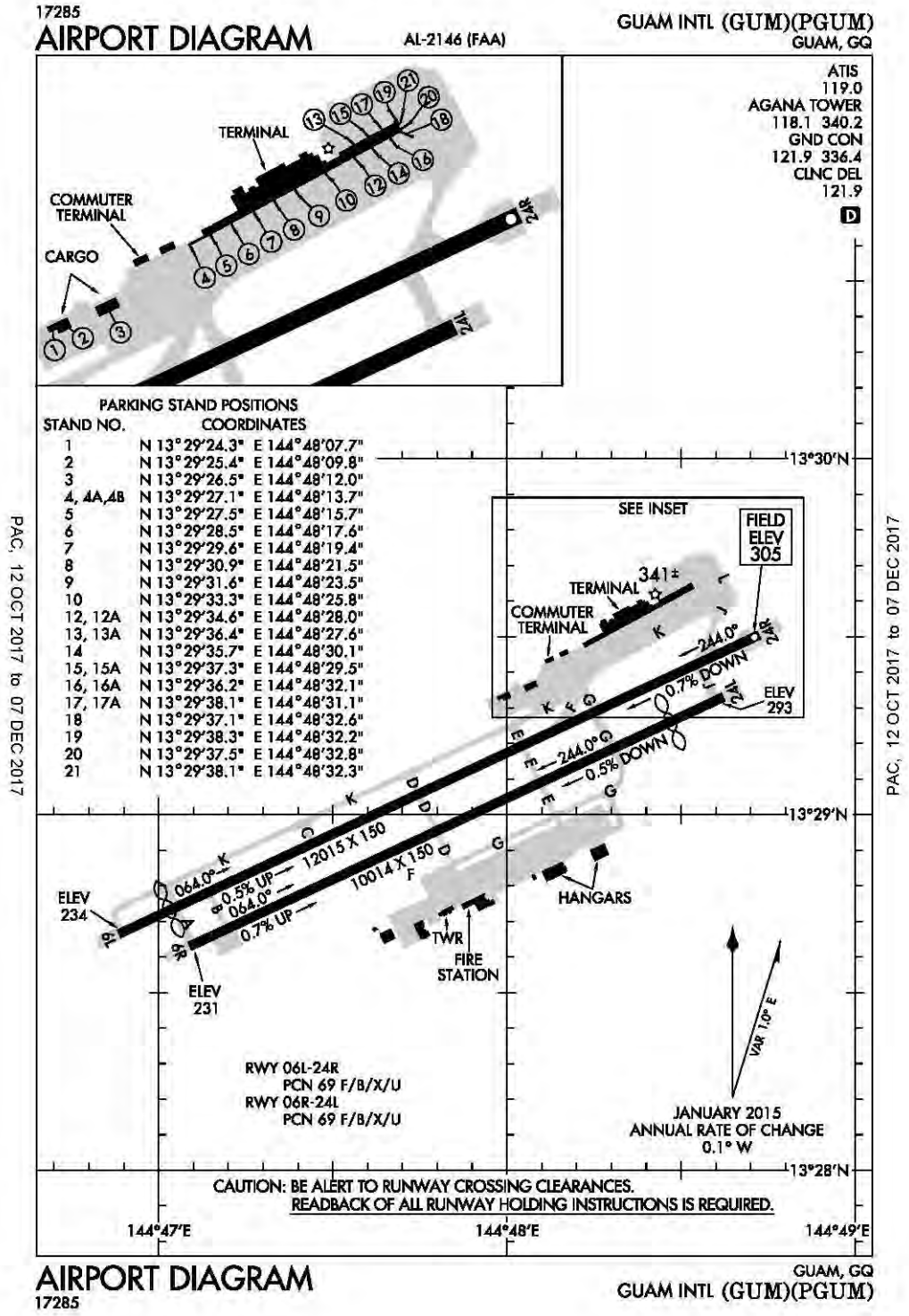
TWO AIRCRAFT WITH WINGSPANS GREATER THAN OR EQUAL TO 225 FT MAY NOT TAXI SIMULTANEOUSLY ON ADJACENT PARALLEL TAXIWAYS L/M EXCEPT WEST OF L7 AT SPEEDS LESS THAN 15 MPH.

NO AIRCRAFT WITH WINGSPAN GREATER THAN 213 FT MAY PASS ANOTHER AIRCRAFT WITH WINGSPAN GREATER THAN OR EQUAL TO 225 FT ON TAXIWAY L/M EAST OF L7.

NO AIRCRAFT WITH WINGSPAN GEATER THAN OR EQUAL TO 225 FT MAY TAXI ON TAXIWAY M BETWEEN L14 AND L16, TAXIWAY N BETWEEN P AND STRATOCUMULUS, AND TAXIWAY N BETWEEN U AND K.

TAXIWAY D IS REFERRED TO AS ”DIXIE”.

Agana, Guam
Guam International
ICAO Identifier PGUM



Agana, GU
Guam Intl
ICAO Identifier PGUM

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 13–29–00.00N / 144–47–49.68E
2.2.2 From City: 3 Miles NE Of Guam, GU
2.2.3 Elevation: 305.3 ft
2.2.5 Magnetic variation: 2E (2000)
2.2.6 Airport Contact: Charles H. Ada Ii
P.O. BOX 8770
Tamuning, GU 96931
(671–646–0300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 4/1/1995

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 06R
2.10.1.b Type of obstacle: Tower (420 ft). Marked
2.10.1.c Location of obstacle: 1500 ft from Centerline

2.10.1.a. Runway designation: 24L
2.10.1.b Type of obstacle: Hill (220 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 1200 ft from Centerline

2.10.1.a. Runway designation: 06L
2.10.1.b Type of obstacle: Tower (420 ft). Marked
2.10.1.c Location of obstacle: 1500 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06L
2.12.2 True Bearing: 65
2.12.3 Dimensions: 12015 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13–28–39.87N / 144–46–53.15E
2.12.6 Threshold elevation: 234 ft
2.12.6 Touchdown zone elevation: 240 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 245
2.12.3 Dimensions: 12015 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13–29–30.31N / 144–48–43.47E
2.12.6 Threshold elevation: 305 ft
2.12.6 Touchdown zone elevation: 305 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 65
2.12.3 Dimensions: 10014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13–28–37.78N / 144–47–00.00E
2.12.6 Threshold elevation: 231 ft
2.12.6 Touchdown zone elevation: 258 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 24L
2.12.2 True Bearing: 245
2.12.3 Dimensions: 10014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13–29–19.82N / 144–48–37.29E
2.12.6 Threshold elevation: 293 ft
2.12.6 Touchdown zone elevation: 293 ft
2.12.7 Slope: 0.5DOWN

AD 2.13 Declared distances

2.13.1 Designation: 06L
2.13.2 Takeoff run available: 12015
2.13.3 Takeoff distance available: 12015
2.13.4 Accelerate–stop distance available: 12015
2.13.5 Landing distance available: 11015

2.13.1 Designation: 24R
2.13.2 Takeoff run available: 12015
2.13.3 Takeoff distance available: 12015
2.13.4 Accelerate–stop distance available: 12015
2.13.5 Landing distance available: 12015

2.13.1 Designation: 06R
2.13.2 Takeoff run available: 10014
2.13.3 Takeoff distance available: 10014
2.13.4 Accelerate–stop distance available: 10014
2.13.5 Landing distance available: 10014

2.13.1 Designation: 24L
2.13.2 Takeoff run available: 10014
2.13.3 Takeoff distance available: 10014
2.13.4 Accelerate–stop distance available: 10014

2.13.5 Landing distance available: 9014

AD 2.14 Approach and runway lighting
2.14.1 Designation: 06L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 06R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 24L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: PAPI Rwy 24L Unusable Beyond 5 Degrees Left Of Centerline .

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 06L. Magnetic variation: 2E
2.19.2 ILS identification: GUM
2.19.5 Coordinates: 13−29−34.72N / 144−48−53.10E
2.19.6 Site elevation: 312.6 ft
2.19.1 ILS type: Glide Slope for runway 06L. Magnetic variation: 2E
2.19.2 ILS identification: GUM
2.19.5 Coordinates: 13−28−53.08N / 144−47−00.00E
2.19.6 Site elevation: 246 ft

2.19.1 ILS type: Outer Marker for runway 06L. Magnetic variation: 2E
2.19.2 ILS identification: GUM
2.19.5 Coordinates: 13−26−41.70N / 144−42−29.30E
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 06L. Magnetic variation: 2E
2.19.2 ILS identification: GUM
2.19.5 Coordinates: 13−28−33.30N / 144−46−31.80E
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 06L. Magnetic variation: 2E
2.19.2 ILS identification: GUM
2.19.5 Coordinates: 13−29−38.08N / 144−48−51.50E
2.19.6 Site elevation: 331.8 ft

2.19.1 ILS type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS identification: AWD
2.19.5 Coordinates: 13−28−38.00N / 144−47−15.40E
2.19.6 Site elevation: 236.5 ft

2.19.1 ILS type: Localizer for runway 06R. Magnetic variation: 2E
2.19.2 ILS identification: AWD
2.19.5 Coordinates: 13−29−24.23N / 144−48−46.93E
2.19.6 Site elevation: 310.6 ft

2.19.1 ILS type: DME for runway 06R. Magnetic variation: 2E
2.19.2 ILS identification: AWD
2.19.5 Coordinates: 13−29−21.74N / 144−48−48.12E
2.19.6 Site elevation: 315.9 ft

General Remarks:
1000’ OVERRUN S END & 450’ OVERRUN N END RUNWAY 6L−24R.

FOR PARKING INFORMATION ALL AIRCRAFT CONTACT RAMP CONTROL. ALL AIRCRAFT DEP TERMINAL PARKING CONTACT RAMP CONTROL FOR ENGINE START AND PUSHBACK.

TRANSIENT AIRCRAFT PROVIDE 24 HRS ADVANCE INFORMATION TO EXECUTIVE MANAGER GUAM INTL AIRPORT AUTHORITY; 1−671−642−4455 MON−FRI 0800−1700 OR FAX 1−671−646−8823.

EFFECTIVE RUNWAY GRADIENT RUNWAY 06L 0.46% UP NE; RUNWAY 24R 0.70% DOWN SW; RUNWAY 06R 0.80 % UP NE; RUNWAY 24L 0.52% DOWN SW.

LIGHTED TOWER 780 FT 1.3 NAUTICAL MILE ENE OF RUNWAY 24L THRESHOLD.

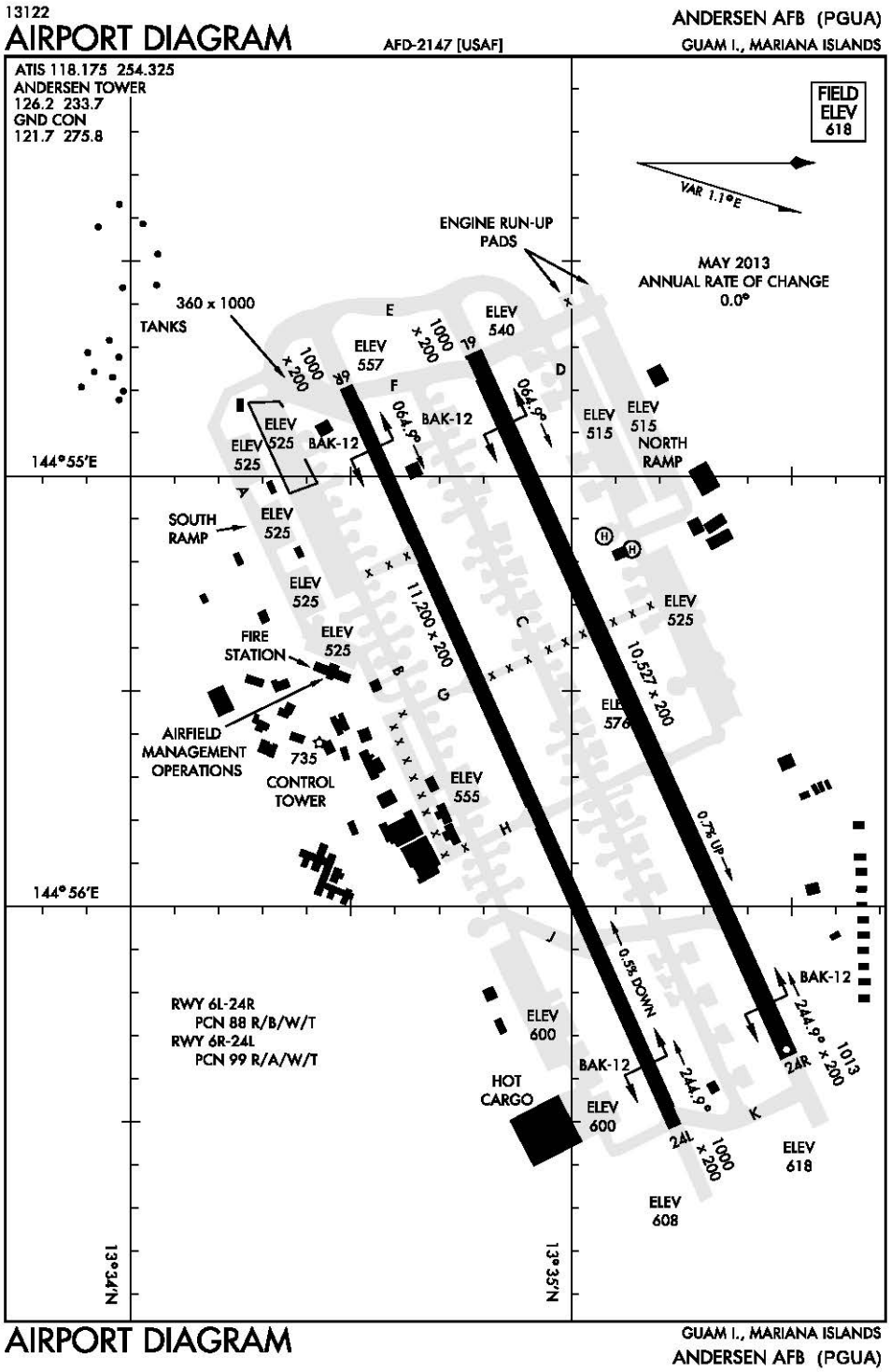
RISING TERRAIN 75 FT FROM RUNWAY 24L THRESHOLD 140 FT EAST OF CENTERLINE EXTENDED +8 FT.

DEP VFR AIRCRAFT MAINT RUNWAY HEADING UNTIL PAST DEP END OF RUNWAY AND REACHING 1000 FT AGL; RIGHT PATTERN 24L/R DO NOT EXCEED 1500 FT AGL IN TRAFFIC PATTERN.

CLASS III AIRCRAFT ARE PROHIBITED FROM MAKING ANY TURNS ONTO OR OFF TAXIWAY GOLF (SOUTH) WHILE UTILIZING TAXIWAY ECHO.

THE FIRST 500 FT OF THE LEFT SHOULDER OF RUNWAY 24L IS NOT VISIBLE FROM THE TOWER. PILOTS ARE ADVISED TO CAUTION FOR ANY PRESENCE OF WILDLIFE IN THAT AREA.

Andersen, Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA



Andersen,Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 13–35–00.00N / 144–55–48.21E
2.2.2 From City: 0 Miles N Of Andersen,Mariana Island, GU
2.2.3 Elevation: 618 ft
2.2.5 Magnetic variation: 2E (1980)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: None
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: None

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 06R
2.10.1.b Type of obstacle: Tower–L. Not Lighted or Marked

AD 2.12 Runway physical characteristics
2.12.1 Designation: 06L
2.12.3 Dimensions: 10527 ft x 200 ft
2.12.4 PCN: 111 R/B/W/T
2.12.5 Coordinates: 13–34–49.28N / 144–54–56.32E
2.12.6 Threshold elevation: 540 ft
2.12.6 Touchdown zone elevation: 540 ft

2.12.1 Designation: 24R
2.12.3 Dimensions: 10527 ft x 200 ft
2.12.4 PCN: 111 R/B/W/T
2.12.5 Coordinates: 13–35–31.93N / 144–56–33.74E
2.12.6 Threshold elevation: 618 ft
2.12.6 Touchdown zone elevation: 618 ft

2.12.1 Designation: 06R
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 111 R/B/W/T
2.12.5 Coordinates: 13–34–31.17N / 144–54–59.38E
2.12.6 Threshold elevation: 557 ft
2.12.6 Touchdown zone elevation: 557 ft

2.12.1 Designation: 24L
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 111 R/B/W/T
2.12.5 Coordinates: 13–35–16.58N / 144–56–43.00E
2.12.6 Threshold elevation: 608 ft
2.12.6 Touchdown zone elevation: 608 ft

AD 2.14 Approach and runway lighting
2.14.1 Designation: 06L
2.14.2 Approach lighting system: SALS: Short approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 24R
2.14.2 Approach lighting system: ALSF1: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category 1 configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 06R
2.14.2 Approach lighting system: ALSF1: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category 1 configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 24L
2.14.2 Approach lighting system: SALS: Short approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Mod 1300’ Length.

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Glide Slope for runway 24L. Magnetic variation: 2E
2.19.2 ILS identification: PMY
2.19.5 Coordinates: 13–35–15.55N / 144–56–29.18E
2.19.6 Site elevation: 596.1 ft

2.19.1 ILS type: Localizer for runway 24L. Magnetic variation: 2E
2.19.2 ILS identification: PMY
2.19.5 Coordinates: 13–34–25.70N / 144–54–46.90E
2.19.6 Site elevation: 568.8 ft

2.19.1 ILS type: Glide Slope for runway 24R. Magnetic

variation: 2E
2.19.2 ILS identification: YIG
2.19.5 Coordinates: 13−35−30.26N / 144−56−17.53E
2.19.6 Site elevation: 593.6 ft

2.19.1 ILS type: Localizer for runway 24R. Magnetic variation: 2E
2.19.2 ILS identification: YIG
2.19.5 Coordinates: 13−34−43.23N / 144−54−42.50E
2.19.6 Site elevation: 533.6 ft

2.19.1 ILS type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS identification: UAM
2.19.5 Coordinates: 13−34−40.04N / 144−55−00.00E
2.19.6 Site elevation: 544.6 ft

2.19.1 ILS type: Localizer for runway 06R. Magnetic variation: 2E
2.19.2 ILS identification: UAM
2.19.5 Coordinates: 13−35−21.67N / 144−56−54.64E
2.19.6 Site elevation: 606.6 ft

General Remarks:
FREQUENT RAIN SHOWERS OF SHORT DURATION, EXPECT WET RUNWAY BRAKING ACTION.

HAZARDOUS AIR TURBULENCE FINAL APPROACH RUNWAYS 24L/24R. NO VISIBILITY REFERENCE AVAILABLE ON NIGHT TAKE-OFF BEYOND END RUNWAY 6.

ARRESTING GEAR BAK−12 RUNWAYS 06L & 06R 30 MIN NOTICE REQUIRE.

AREA BETWEEN 1000' ROLL BAR AND THU LIGHT RUNWAY 06R AND 06L UNLIGHTED. LAST 642' PRIOR TO THU LIGHT 24R UNLIGHTED.

MAINT AVAILABLE 0100−0400 WEEKDAY ONLY; CLOSED WEEKEND & HOLIDAY.

BASE OPERATIONS V366−4188; FAX V366−6217.

TAXIWAY B AND C BETWEEN TAXIWAY J AND K CLOSED DUE TO CONSTRUCTION.

NO ARRESTING GEAR MARKERS LOCATED ON THE LEFT SIDE OF ALL APPROACH END BARRIERS.

RESTRICTED: BRAKING ACTION ON BOTH RUNWAYS MAY BE LESS THAN EXPECT DUE TO RUBBER BUILD−UP; PROBABILITY OF HYDROPLANING EXISTS.

RESTRICTED: PRIOR PERMISSION NOT REQUIRED FOR AIR MOBILITY COMMAND MSN. ALL AEROMEDICAL EVACUATION MSN ARE REQUIRE TO CONTACT COMMAND POST (DSN 366−2961, C671−366−2961) BY ANY MEANS AVAIL 3 HRS PRIOR TO ARR. ALL AIRCRAFT REQUIRE TO MAKE CALL 30 MIN PRIOR ARR.

MISC: AIRFIELD MANAGEMENT HAS NO COMSEC STORAGE AVAILABLE FOR TRANSIENT AIRCREWS. TRANSMIT AIRCREWS CAN STORE COMSEC UP TO TOP−SECRET AT 36 WG CIRCULAR POLARIZATION.

MISC: ALL AIRCREWS TO REMAINING OVERNIGHT MUST CHECK INTO AIRFIELD MANAGEMENT OPERATIONS AND PROVIDE POC INFORMATION UPON ARR.

MISC: BASE WX STATION PROVIDES CONTINUOUS 24-HOUR SERVICE OBSN, LIMITED WX BRIEF SUPPORT. WX OBSERVERS VIEW OBSTRUCTED BY BUILDINGS N−SSW. REMOTE BRIEF AVAILABLE CONTINUOUS 24-HOUR SERVICE FOR USN/USMC FR FWCAD PH AT DSN 315−449−8333/7950.

RESTRICTED: ALL AIRCRAFT CONTACT 36 WG COMMAND POST 90 MIN OUT AND AT 30 MIN OUT PRIOR TO ARR.

MISC: AIRCRAFT EXCEEDING AIRFIELD WEIGHTS MUST REQUEST WEIGHT BEARING CAPACITY WAIVER WITH 24 HR NOTICE TO AIRFIELD OPERATIONS TO PROCESS ANY APPROVALS NEEDED. IF REQUESTS ARE NOT MADE WITHIN 24 HRS EXPECT DELAYS.

SERVICE–A–GEAR: CONTACT CONTROL TOWER 30 MIN PRIOR FOR DEPARTURE END BAK12 CABLE CONFIGURATION. 30 MIN PRIOR NOTICE REQ FOR CHANGE CONFIGURATION. BAK12 HOUSING LOCATED 317' FROM RUNWAY CENTERLINE, 217' FROM RUNWAY EDGE, MAX HEIGHT 8'. NO ARRESTING–GEAR MARKER LOCATED ON LEFT SIDE OF ALL APPROACH END BARRIERS.

RESTRICTED: PRIOR PERMISSION REQUIRED DSN 366–4188/1010.

MISC: ATTENTION: ALL DRY ICE REQ MUST BE MADE THRU 734TH MS/ATOC DSN 315–366–3125/3137/3162 OR C671–366–3125/3137/3162. REQ MUST BE MADE AT LEAST 24 HR IN ADVANCE FOR AIRCRAFT LANDING TUE–FRI AND 72 HR IN ADVANCE FOR AIRCRAFT LANDING SAT–MON. DUR HOLIDAY, ADD 2 HR TO COORD TIME.

RESTRICTED: RESTRICTIONS TO FLIGHT OPERATIONS DUR EA BIRD WATCH CONDITION. MODERATE: NO TOUCH AND GO LANDING. RESTRICTED LOW APPROACH NO LOWER THAN 200' OR AS DETERMINED BY SOF. SEVERE: RESTRICTED LOW APPROACH NO LOWER THAN 200' OR AS DETERMINED BY SOF. EMERGENCY LANDING AND 36 OG/CC APPROVE DEP ONLY. PHASE I: PHASE I:1 APR – 31 JUL. PHASE II: 1 AUG – 31 AT SEA.

RESTRICTED 1 OF 2: THERE WILL BE NO OVERFLIGHT OF MARIANA CROW TERRITORIES BELOW 1,000 FT AGL FROM SEP–MAY. OVERFLIGHT BELOW 1,000 FT AGL IS ALLOWED BETWEEN JUNE AND AUG, THE CROW NON–BREEDING SEASON.

MISC: RUNWAY 06L AND 06R UNDERRUNS 1000' AVAILABLE FOR TWY/TKOF. RUNWAY 24R UNDERRUN AVAILABLE 500' FOR TAXI/TKOF.

CAUTION: USE EXTREME CAUTION FOR EXTV UAS OPERATIONS IN VICINITY OF ANDERSEN AFB.

NS ABATEMENT: QUIET HR 1200–2000Z (2200–0600L) DAILY. NO AFTERBURNER, OR OVER FLIGHT OF BASE AND LOCAL POPULATED AREAS. OTHER RESTRICTIONS BY NOTAM.

CAUTION: 47' TACAN ANTENNAE LOCATED 1,300 FT NE OF RUNWAY 24L & 1,300 FT SE OF RUNWAY 24R THRESHOLDS.

CAUTION: NONSTANDARD DSPLCD THRESHOLD MARKINGS FOR RUNWAYS 06R, 06L, AND 24R.

SERVICE–FLUID: C–5 NITROGEN SERVICE CAPABILITY UNAVAILABLE.

CAUTION: FAA SIZE 1 SIGNS LOCATED 74.3 FT FR TAXIWAY EDGES TO ACCOMMODATE B–52.

SERVICE–LGT: AIRPORT BEACON 763 FT MSL LOCATED 1.4 NAUTICAL MILE SSW OF AIRFIELD.

MISC: PAVEMENT PRIOR TO RUNWAY 06R AND RUNWAY 06L THRESHOLDS AVAILABLE FOR TAKE-OFF RUN WHEN NECESSARY FOR MSN ACCOMPLISHMENT.

CAUTION: POTENTIAL FOR REDUCED BRAKING CAPABILITY AND/OR DIREC CONTROL EXISTS, PARTICULARLY DURING WET RESCUE SUB-CENTER FOR RUNWAY 06L.

MISC: ANDERSEN AFB DOES NOT HAVE CAPABILITY TO STORE REFRIGERATED CARGO.

RESTRICTED: AIRCRAFT MUST ADHERE TO PRIOR PERMISSION REQUIRED ARR +/– 30 MIN. AIRCRAFT WITH WINGSPANS GREATER THAN 261' NOT AUTHORIZED.

RESTRICTED: ALL OPR MUST OBTAIN APPROVAL FR GROUND AND AMOPS PRIOR TO ENGINE START/RUN.

RESTRICTED: PRIOR PERMISSION REQUIRED MUST BE MADE 24 HR PRIOR EXCEPT FOR WX–EVAC

OPERATIONS.

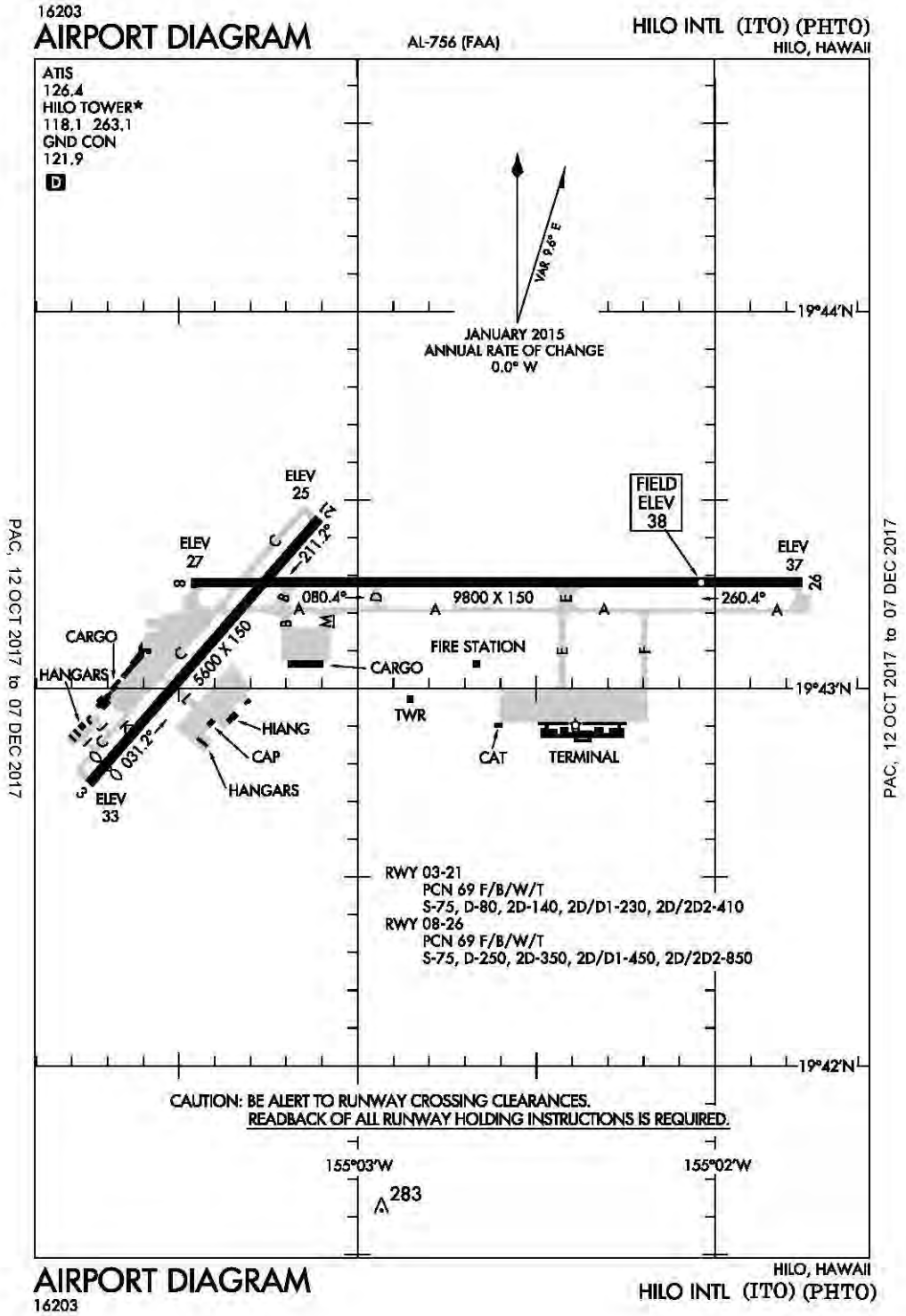
RESTRICTED: PRIOR PERMISSION REQUIRED NOT ISSUED MORE THAN 14 DAYS PRIOR TO ARR/DEP.

MISC: ”NO VHF CAPABILITIES WITH AIRFIELD MANAGEMENT.”

PARK SPOT C40, C54, C70, N2, AND S74 CLOSED.

MISC: NORTHWEST FLD−CLSD.

Hilo, Hawaii
Hilo International
ICAO Identifier PHTO



Hilo, HI
Hilo Intl
ICAO Identifier PHTO

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 19−43−12.95N / 155−02−54.49W
2.2.2 From City: 2 Miles E Of Hilo, HI
2.2.3 Elevation: 37.6 ft
2.2.5 Magnetic variation: 11E (1985)
2.2.6 Airport Contact: Steven J. Santiago
ASSISTANT AIRPORT DISTRICT MANAGER
Hilo, HI 96720 (808−961−9300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, 0700−2030 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: 100LL,A
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 03
2.10.1.b Type of obstacle: Fence (7 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 21
2.10.1.b Type of obstacle: Pole (37 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 20 ft from Centerline

2.10.1.a. Runway designation: 08
2.10.1.b Type of obstacle: Tree (32 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 26
2.10.1.b Type of obstacle: Tree (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.93N / 155−03−27.99W
2.12.6 Threshold elevation: 27 ft
2.12.6 Touchdown zone elevation: 30 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.92N / 155−01−45.41W
2.12.6 Threshold elevation: 37 ft
2.12.6 Touchdown zone elevation: 38 ft

2.12.1 Designation: 03
2.12.2 True Bearing: 41
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−42−44.96N / 155−03−44.78W
2.12.6 Threshold elevation: 33 ft
2.12.6 Touchdown zone elevation: 34 ft
2.12.7 Slope: 0.1DOWN

2.12.1 Designation: 21
2.12.2 True Bearing: 221
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−26.99N / 155−03−00.00W
2.12.6 Threshold elevation: 25 ft
2.12.6 Touchdown zone elevation: 31 ft
2.12.7 Slope: 0.1UP

AD 2.13 Declared distances

2.13.1 Designation: 03
2.13.2 Takeoff run available: 5600
2.13.3 Takeoff distance available: 5600
2.13.4 Accelerate−stop distance available: 5600
2.13.5 Landing distance available: 5251

2.13.1 Designation: 21
2.13.2 Takeoff run available: 5251
2.13.3 Takeoff distance available: 5251
2.13.4 Accelerate−stop distance available: 5510
2.13.5 Landing distance available: 5510

AD 2.14 Approach and runway lighting

2.14.1 Designation: 08
2.14.2 Approach lighting system: Omnidirectional ap-

proach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on right
2.14.10 Remarks: PAPI Rwy 08 Unusable Beyond 3.0 Nm

2.14.1 Designation: 26
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 03
2.14.4 Visual approach slope indicator system: 4–box VASI on left
2.14.10 Remarks: VASI Usable Dist Limited To 4 Nm From Threshold Due Obstruction.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 119.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 126.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 263.1 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 269.2 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 323 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 120.25 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 26. Magnetic variation: 11E
2.19.2 ILS identification: ITO
2.19.5 Coordinates: 19–43–16.93N / 155–03–38.78W
2.19.6 Site elevation: 25.8 ft

2.19.1 ILS type: DME for runway 26. Magnetic variation: 11E
2.19.2 ILS identification: ITO
2.19.5 Coordinates: 19–43–13.74N / 155–03–39.51W
2.19.6 Site elevation: 39 ft

2.19.1 ILS type: Glide Slope for runway 26. Magnetic variation: 11E
2.19.2 ILS identification: ITO
2.19.5 Coordinates: 19–43–20.89N / 155–01–58.10W
2.19.6 Site elevation: 32.5 ft

2.19.1 ILS type: Middle Marker for runway 26. Magnetic variation: 11E
2.19.2 ILS identification: ITO
2.19.5 Coordinates: 19–43–16.90N / 155–01–00.00W
2.19.6 Site elevation: 26 ft

General Remarks:
RUNWAY 08 PAVED 1325’ MARKED BY CHEVRONS, UNUSABLE FOR LANDING/TAKEOFF/OVERUN/STY; CANNOT BE USED IN COMPUTING TAKE-OFF DATA.

ATCT CONTROLS ENTRY/EXIT TRAFFIC ON TAXIWAYS F&E TO EAST TERMINAL RAMP.

181’ LIGHTED SMOKE STACK 1/2 STATUTE MILE SOUTH OF FIELD.

PRIOR PERMISSION REQUIRED FROM AIRPORT MANAGER FOR TRANSIENT PARKING.

BE ALERT OCCASIONAL BIRD FLOCKS ON AIRPORT AND IN FLIGHT ACROSS RUNWAY 08/26 AND 03/21.

(A70A) JET FUEL AVAILABLE MON–SAT 0800–1700 CALL (808) 935–6881/6122 OR 961–6601.

(E93) NO MARKED PAD, HELICOPTER OPER FROM FBO HANGER AREA.

DIVISION 1.1, 1.2, 1.3 EXPLOSIVES PROHIBITED.

PRIOR PERMISSION REQUIRED FROM AIRPORT MANAGER FOR TRANSPORTATION OF DIVISION 1.4 EXPLOSIVES AND HAZARDOUS MATERIAL IN OR OUT OF AIRPORT.

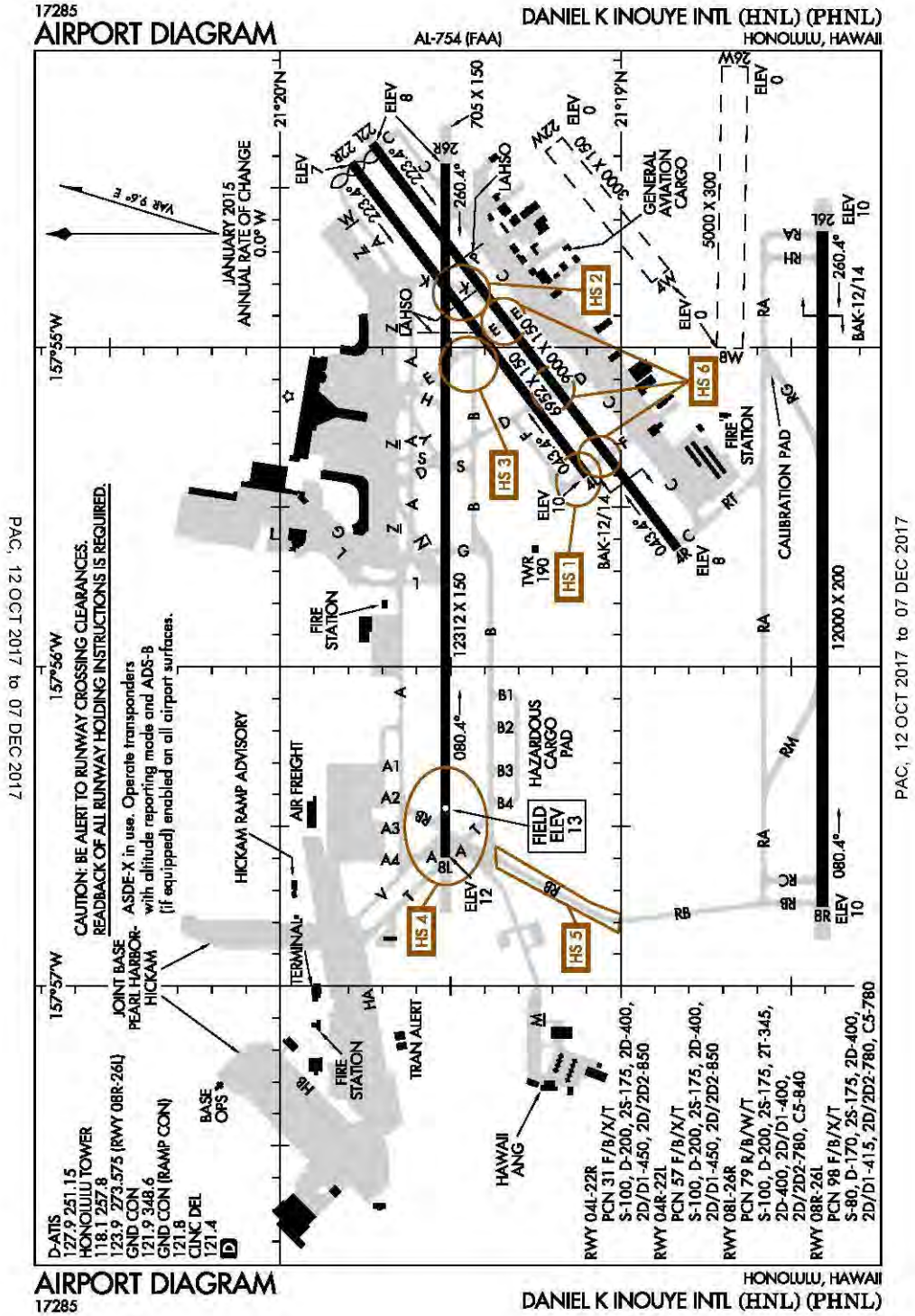
NOISE ABATEMENT: AVOID OVERFLIGHT OF NOISE SENSITIVE RESIDENTIAL AREAS N, W AND SW OF AIRPORT.

RUNWAY 3/21 CLOSED TO TURBINE AIRCRAFT 1800−0600.

RUNWAY 08/26 SINGLE−BELLY TWIN TANDEM (SBTT) GROSS WEIGHT 450,000 LBS.

RUNWAY 03/21 SINGLE−BELLY TWIN TANDEM (SBTT) GROSS WEIGHT 230,000 LBS.

Honolulu, Hawaii
Honolulu International
ICAO Identifier PHNL



Honolulu, HI
Honolulu Intl
ICAO Identifier PHNL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 21−19−00.00N / 157−55−12.95W
2.2.2 From City: 3 Miles NW Of Honolulu, HI
2.2.3 Elevation: 12.9 ft
2.2.5 Magnetic variation: 11E (1990)
2.2.6 Airport Contact: Roy Sakata
300 RODGERS BLVD. #12
Honolulu, HI 96819
(808−836−6533)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,A1+,B,100
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 22R
2.10.1.b Type of obstacle: Ant (50 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 20 ft from Centerline

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Stack (74 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 475 ft from Centerline

2.10.1.a. Runway designation: 04R
2.10.1.b Type of obstacle: Tree (20 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 200 ft from Centerline

2.10.1.a. Runway designation: 26R
2.10.1.b Type of obstacle: Road (15 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.88N / 157−56−35.66W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.88N / 157−54−25.43W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 53
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−18−50.10N / 157−55−37.68W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 233
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−19−43.76N / 157−54−21.65W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.49N / 157−56−45.06W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.49N / 157−54−38.15W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 53

2.12.3 Dimensions: 6952 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21–19–00.00N / 157–55–23.95W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 233
2.12.3 Dimensions: 6952 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21–19–47.45N / 157–54–25.22W
2.12.6 Threshold elevation: 7 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 04W
2.12.2 True Bearing: 51
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.5 Coordinates: 21–18–53.09N / 157–54–46.44W
2.12.6 Threshold elevation: 0 ft

2.12.1 Designation: 22W
2.12.2 True Bearing: 231
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.5 Coordinates: 21–19–11.80N / 157–54–21.78W
2.12.6 Threshold elevation: 0 ft

2.12.1 Designation: 08W
2.12.2 True Bearing: 91
2.12.3 Dimensions: 5000 ft x 300 ft
2.12.5 Coordinates: 21–18–40.85N / 157–55–00.00W
2.12.6 Threshold elevation: 0 ft

2.12.1 Designation: 26W
2.12.2 True Bearing: 271
2.12.3 Dimensions: 5000 ft x 300 ft
2.12.5 Coordinates: 21–18–39.98N / 157–54–00.00W
2.12.6 Threshold elevation: 0 ft

AD 2.13 Declared distances

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 12300
2.13.3 Takeoff distance available: 12300
2.13.4 Accelerate–stop distance available: 12300
2.13.5 Landing distance available: 12300

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 12300
2.13.3 Takeoff distance available: 12300
2.13.4 Accelerate–stop distance available: 12300
2.13.5 Landing distance available: 12300

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8950
2.13.5 Landing distance available: 8950

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 8937
2.13.5 Landing distance available: 8937

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 04L
2.13.2 Takeoff run available: 6952
2.13.3 Takeoff distance available: 6952
2.13.4 Accelerate–stop distance available: 6952
2.13.5 Landing distance available: 6952

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 6952
2.13.3 Takeoff distance available: 6952
2.13.4 Accelerate–stop distance available: 6952
2.13.5 Landing distance available: 6952

AD 2.14 Approach and runway lighting

2.14.1 Designation: 08L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 26R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Rwy 26R PAPI Unusable Beyond 1.5 Nm From Thr

2.14.1 Designation: 04R

2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Rwy 22L PAPI Unusable Beyond 2 Nm.

2.14.1 Designation: 08R
2.14.4 Visual approach slope indicator system: 6−box VASI on left
2.14.10 Remarks: Rwy 08R VASI Upper GA 3.25 Degrees Threshold Crossing Height 96 Ft; Lower GA 3.00 Degrees Threshold Crossing Height 52 Ft.

2.14.1 Designation: 26L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Rwy 26L PAPI Aligned 05 Degrees L Of Rwy Centerline . Rwy 26L PAPI Unusablee Beyond 5 Degrees R Of Rwy Centerline .

2.14.1 Designation: 04L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P
2.18.3 Service designation: 317.6 MHz

2.18.1 Service designation: KEAHI SID
2.18.3 Service designation: 124.8 MHz

2.18.1 Service designation: AS ASIGNED
2.18.3 Service designation: 338.2 MHz

2.18.1 Service designation: AS ASIGNED
2.18.3 Service designation: 285.4 MHz

2.18.1 Service designation: APCH/P DEP/P IC
2.18.3 Service designation: 269 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 273.575 MHz

2.18.1 Service designation: SHAKA OPS
2.18.3 Service designation: 349.4 MHz

2.18.1 Service designation: SHAKA OPS
2.18.3 Service designation: 125.3 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 127.9 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 251.15 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 120.9 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 121.4 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 133.6 MHz

2.18.1 Service designation: CP
2.18.3 Service designation: 141.8 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 281.4 MHz

2.18.1 Service designation: ANG−OPNS
2.18.3 Service designation: 293.7 MHz

2.18.1 Service designation: SAC−OPNS

2.18.3 Service designation: 311 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 372.2 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 239.05 MHz

2.18.1 Service designation: HONOLULU RAMP ADVISORY
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: HICKAM ADVSY RAMP
2.18.3 Service designation: 133.6 MHz

2.18.1 Service designation: DEP/P CLASS B
2.18.3 Service designation: 124.8 MHz

2.18.1 Service designation: DEP/P CLASS B
2.18.3 Service designation: 317.6 MHz

2.18.1 Service designation: APCH/P DEP/P IC
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: COMD POST
2.18.3 Service designation: 292.5 MHz

2.18.1 Service designation: HICKAM ADVSY RAMP
2.18.3 Service designation: 254.4 MHz

2.18.1 Service designation: MOLOKAI SID
2.18.3 Service designation: 124.8 MHz

2.18.1 Service designation: PALAY SID
2.18.3 Service designation: 124.8 MHz

2.18.1 Service designation: MOLOKAI SID
2.18.3 Service designation: 317.6 MHz

2.18.1 Service designation: PALAY SID
2.18.3 Service designation: 317.6 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 11E
2.19.2 ILS identification: IUM
2.19.5 Coordinates: 21–19–49.82N / 157–54–13.05W
2.19.6 Site elevation: 5.3 ft

2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS identification: EPC
2.19.5 Coordinates: 21–19–35.07N / 157–54–28.29W
2.19.6 Site elevation: 6.7 ft

2.19.1 ILS type: Localizer for runway 08L. Magnetic variation: 11E
2.19.2 ILS identification: HNL
2.19.5 Coordinates: 21–19–30.88N / 157–54–14.75W
2.19.6 Site elevation: 5.6 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS identification: EPC
2.19.5 Coordinates: 21–19–36.96N / 157–54–25.90W
2.19.6 Site elevation: 21 ft

2.19.1 ILS type: DME for runway 04R. Magnetic variation: 11E
2.19.2 ILS identification: IUM
2.19.5 Coordinates: 21–19–47.86N / 157–54–11.08W
2.19.6 Site elevation: 20 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 11E
2.19.2 ILS identification: IUM
2.19.5 Coordinates: 21–18–53.99N / 157–55–26.90W
2.19.6 Site elevation: 5.9 ft

2.19.1 ILS type: Glide Slope for runway 08L. Magnetic variation: 11E
2.19.2 ILS identification: HNL
2.19.5 Coordinates: 21–19–26.67N / 157–56–24.53W
2.19.6 Site elevation: 6.7 ft

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 11E
2.19.2 ILS identification: IUM
2.19.5 Coordinates: 21–18–33.00N / 157–55–59.70W
2.19.6 Site elevation: 4 ft

2.19.1 ILS type: Middle Marker for runway 08L. Magnetic variation: 11E
2.19.2 ILS identification: HNL
2.19.5 Coordinates: 21–19–31.00N / 157–57–10.30W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 08L. Magnetic variation: 11E
2.19.2 ILS identification: HNL

2.19.5 Coordinates: 21−19−29.70N / 158−02−55.90W
2.19.6 Site elevation: 42 ft

2.19.1 ILS type: DME for runway 08L. Magnetic variation: 11E
2.19.2 ILS identification: HNL
2.19.5 Coordinates: 21−19−27.88N / 157−54−17.17W
2.19.6 Site elevation: 20 ft

General Remarks:
REMAIN AT LEAST 1 MILE OFF SHORE OF WAIKIKI DIAMOND HEAD KOKO HEAD & EWA BEACH. ARR RUNWAY 08L; FLY ILS APPROACH PROC OR A CLOSE−IN BASE LEG REMAINING OVER CENTER OF PEARL HARBOR CHANNEL. ARR 26L/R; RNM AT TRAFFIC PATTERN ALTITUDES AS LONG AS POSSIBLE BEFORE BEGINNING DESCENT FOR LANDING.

RUNWAY 04R/22L DC10 450000+; L−1011 450000+; RUNWAY 04L/22R DC10 450000; L−1011 450000+; RUNWAY 08L/26R DC10 400000; L−1011 410000; RUNWAY 08R/26L DC10 415000; L−1011 400000.

PRIOR PERMISSION REQUIRED FROM AIRPORT MANAGER FOR TRANSPORATION OF CLASS A OR B EXPLOSIVES IN AND/OR OUT OF HNL.

DUE TO NON−VISIBILITY TOWER UNABLE TO DETERMINE IF THE FOLLOWING AREAS ARE CLEAR OF OBSTRUCTIONS AND/OR TRAFFIC: PORTIONS OF TAXIWAY RB BETWEEN TAXIWAY B & RUNWAY 08R; PORTIONS OF INTER−ISLAND AIRCRAFT PARKING RAMP.

DUE TO LOCATION OF ATCT, CONTROLLERS UNABLE TO DETERMINE WHETHER AIRCRAFT ARE ON CORRECT FINAL APPROACH TO RUNWAYS 04L−04R AND 22L−22R.

TAXIWAYS G ADG IV AND BELOW POWER IN W/PPR.

RUNWAYS CLOSED EVERY MONTH AS FOLLOWS: RUNWAY 04R−22L 1730−2030Z FIRST TUE; RUNWAY 08R−26L 1700−1900Z SECOND TUE; RUNWAY 08L−26R 1730−2030Z THIRD TUE.

CAUTION: DURING PERIODS OF REPEATED PRECIPITATION ANTICIPATE WET RUNWAY CONDTIONS, IF CURRENT CONDITIONS REQUIRE CONFIRMATION CONTACT HONOLULU TOWER ON INITIAL CONTACT.

CAUTION: RECREATIONAL BOATING ACTIVITIES ON AND IN THE VICINITY OF WATERWAYS.

MILITARY: ALL AIRCRAFT INBOUND TO HICKAM SHOULD ADDRESS FLIGHT PLAN TO PHIKYXYX.

MILITARY: ALL MILITARY AIRCRAFT WITH VIP CODE 7 OR ABOVE CONTACT 15WG COMMAND POST OR RELAY THRU HF/SSB AIRWAY 1 HR OUT TO CONFIRM BLOCKTIME.

TRAFFIC PATTERN OVERHEAD ALTITUDE 2000 FT, RESTRICTED TO HIANG AND SENTRY ALOHA AIRCRAFT.

MILITARY: ALL MILITARY AIRCRAFT REQUIRE CUSTOMS/AGRICULTURE/IMIGRATION INSPECTION MUST CONTACT 15WG COMMAND POST OR IF AIR MOBILITY COMMAND CONTACT HICKAM AMCC, NOT LATER THAN 3 HRS PRIOR TO ARR WITH DEPARTURE LOCATION, ESTIMATE BLOCK TIME, NR OF AIRCREW, CIV/MIL PASSENGER, FOREIGN NATIONALS, AND DV CODES.*

RUNWAYS 04W/22W AND 08W/26W RECREATIONAL BOATING ACTIVITIES ON AND IN THE VICINITY OF WATERWAYS.

BIRD STRIKE HAZARD ALL RUNWAYS.

MILITARY ARRESTING GEAR: HOOK MB100(B) LOCATED 200 FT FROM THRESHOLD RUNWAY 26R.

MILITARY: TO MINIMIZE FOREIGN OBJECT DAMAGE POTENTIAL, ALL AIRCRAFT SHOULD USE MINIMUM THRUST, ESPECIALLY OUTBOARD ENGINES, WHEN TAXIING PAST THE F−22 ALERT FACILITY ON

TAXIWAY T.

MILITARY CAUTION: FOREIGN OBJECT DAMAGE HAZARD EXISTS ON ALL MOVEMENT AREAS E OF TAXIWAY S. FIGHTER AIRCRAFT EXERCISE EXTREME CAUTION WHEN TAXIING.

MILITARY CAUTION: A FOREIGN OBJECT DAMAGE HAZARD EXISTS ON ALL TAXIWAYS AND RUNWAYS BUT ESPECIALLY ON RUNWAY 4L/22R AND TAXIWAYS NORTH OF RUNWAY 8L/26R.

MILITARY CAUTION: NO FIGHTER TRANSIENT SUPPORT AVAILABLE IN ACCORDANCE WITH AREA CONTROL CENTER LSET FLASH SAFETY 06–02. TRANSIENT FIGHTER UNITS SHOULD PROVIDE THEIR OWN MAINTENANCE SUPPORT.

MILITARY RESTRICTED: UPON ARRIVAL, CREWS WILL PROCEED DIRECTLY TO COMMAND POST (BLDG 2050) AND COMPLETE AN OUTBOUND SETUP SHEET TO FACILITATE DEPARTURE REQUIREMENTS.

MILITARY/COMMUNICATIONS: BEDTIME (ALL CORONET W TANKERS USE 311.0 FOR TANKER–FIGHTER INTER–PLANE ON LAUNCH DAY. AFTER DUTY HR DSN 448–8888 613AOC/AMD, FLIGHT MGMT).

MILITARY MISC (1 OF 2): HICKAM BASE WX STATION OPEN MON–FRI 1400Z–0800Z; CLOSED WEEKENDS/HOL EXCEPT DUR LOCAL FLYING, AS MANNING PERMITS.

MILITARY MISC (2 OF 2 CONT'D): LIMITED WX BRIEF SUPPORT.REMOTE FLIGHT WX BRIEFINGS CONTACT 17TH WX SQUALL CONTINUOUS 24-HOUR SERVICE, DSN 315–449–7950/8333, FAX DSN 315–449–8336; 2 HR PRIOR NOTICE REQUIRE FOR TIMELY BRIEF.OFFICIAL OBSN TAKEN BY FAA. COOPERATIVE WX WATCH PROCEDURES DO NOT EXIST BETWEEN WX AND ATC.

MILITARY MISC: NO COMSEC MATERIAL AVAILABLE THRU HICKAM AIRFIELD OPERATIONS.

MILITARY REMARKS: SEE FLIGHT INFORMATION PUBLICATION AP/3 SUPPLEMENTARY AIRPORT INFORMATION, ROUTE AND AREA RESTRICTED, AND OAKLAND FIR FLIGHT HAZARD.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

MILITARY MISC: AIRFIELD OPERATIONS DSN 449–0046/0048 FAX DSN 449–7624.

MILITARY RESTRICTED: TOWER APPROVAL REQUIRED TO USE TAXIWAY KILO FROM RUNWAY 4R. TAXIWAY RA HOLD SHORT APPROACH ZONE RUNWAY 04L/R AT HOLD LINE. TAXIWAY P CLOSED TO AIRCRAFT OVER 12,500 LB.

MILITARY SERVICE–A–GEAR: RUNWAY 4R/22L AND 8R/26L SURFACE GROOVED WITHIN 10 FT OF A–G SYSTEM. POTENTIAL FOR FIGHTER AIRCRAFT TAIL HOOK SKIP EXISTS.

MILITARY MISC 1 OF 2: DUE TO SENSITIVITIES OF CITIZENS, FIGHTER AIRCRAFT DEP ONLY AUTHORIZED FR 1700–0700Z MON–SAT, AND 1800–0700Z SUN AND HOLIDAY. ALL REQ FOR WAIVERS WILL BE SENT TO THE 15/OG/CC OR 154 OG/CC FOR HIANG AIRCRAFT AT LEAST 5 WORKING DAYS IN ADVANCE.

MILITARY MISC 2 OF 2: WAIVERS WILL BE GRANTED ON EXTREME NECESSARY. IF SHORT NOTICE MSN ESSENTIAL WAIVERS ARE NECESSARY, CONTACT 15OG/CC BY TELEPHONE THRU 15 WG COMMAND POST(15 WG/CP) OR 154 OG/CC FOR HIANG AIRCRAFT. 15 WG COMMAND POST WILL PASS APPROVAL TO HICKAM FLIGHT SERVICE AND HICKAM RAMP ADVISORY.

MILITARY TRANSIENT ALERT: 15 WG CAN PROVIDE EQUIPMENT BUT CREWS MUST PROVIDE OWN PERS WHEN NEEDED.

MILITARY RESTRICTED: JBPH–H IS PRIOR PERMISSION REQUIRED TO ALL NON–TFWC MSN, AIR

MOBILITY COMMAND TRAINING MSN AND KC−135 8 UNABLE & 8 EN MSN CALL 735TH MINIMUM OBSTACLE CLEARANCE AT DSN (315) 499−6970 FOR PRIOR PERMISSION REQUIRED. ALL AIR MOBILITY COMMAND PRIOR PERMISSION REQUIRED WILL BE COORD MON−FRI 1700−0400Z ONLY. ALL NON−AMC AIRCRAFT SUCH AS FOREIGN, SISTER SERVICE, TRANSIENT AIRCRAFT OR KC−135 AND, QDN, QEN, PEN, KEN, CJZ, DV1, DV7, DC5, AND C−130 MSN MUST CONTACT 15 OSS/OSA (AMOPS) AT DSN (315) 449−0046 FOR PRIOR PERMISSION REQUIRED. ALL PRIOR PERMISSION REQUIRED WILL BE APPROVED NO EARLIER THAN 72 HR BUT NO LATER THAN 24 HR PRIOR.

MILITARY RESTRICTED: ALL TRANSIENT AIRCRAFT NOT ON AN AMC/TWCF MSN AND HOME STATION AIRCRAFT TERMINATING AT JBPH−H, WILL PROVIDE A 3 HR OUT CALL (COMM 808−448−6900) AS WELL AS A 20−30 MIN OUT CALL ON 292.5 TO THE 15 WG/CP (KOA CONTROL).

MILITARY RESTRICTED: MILITARY AIRCRAFT OPR DUR BIRD WATCH CONDITION MODERATE (INITIAL TAKE-OFF OR FULL STOP LANDING ONLY, NO MULTIPLE IFR/VFR APCH) AND SEVERE (TKOF AND LANDING PROH WO 15 OG/CC APPROVAL OR 154 OG/CC APPROVAL FOR HIANG ACFT) CONTACT HIK RAMP, PILOT TO DISPATCH, 15 WG COMMAND POST, 735 AIR MOBILITY COMMAND COMMAND POST, 154 WG COMMAND POST FOR CURRENT CONDITION.

ALL JET AIRCRAFT CONTACT RAMP CONTROL PRIOR TO ENGINE START AT GATE OR HARD STAND.

WIDE BODY AND 4 ENGINE TURBOJETS LANDING ON RUNWAY 04R ROLL TO END OF RUNWAY, NO LEFT TURN AT TAXIWAY K WO APPROVAL.

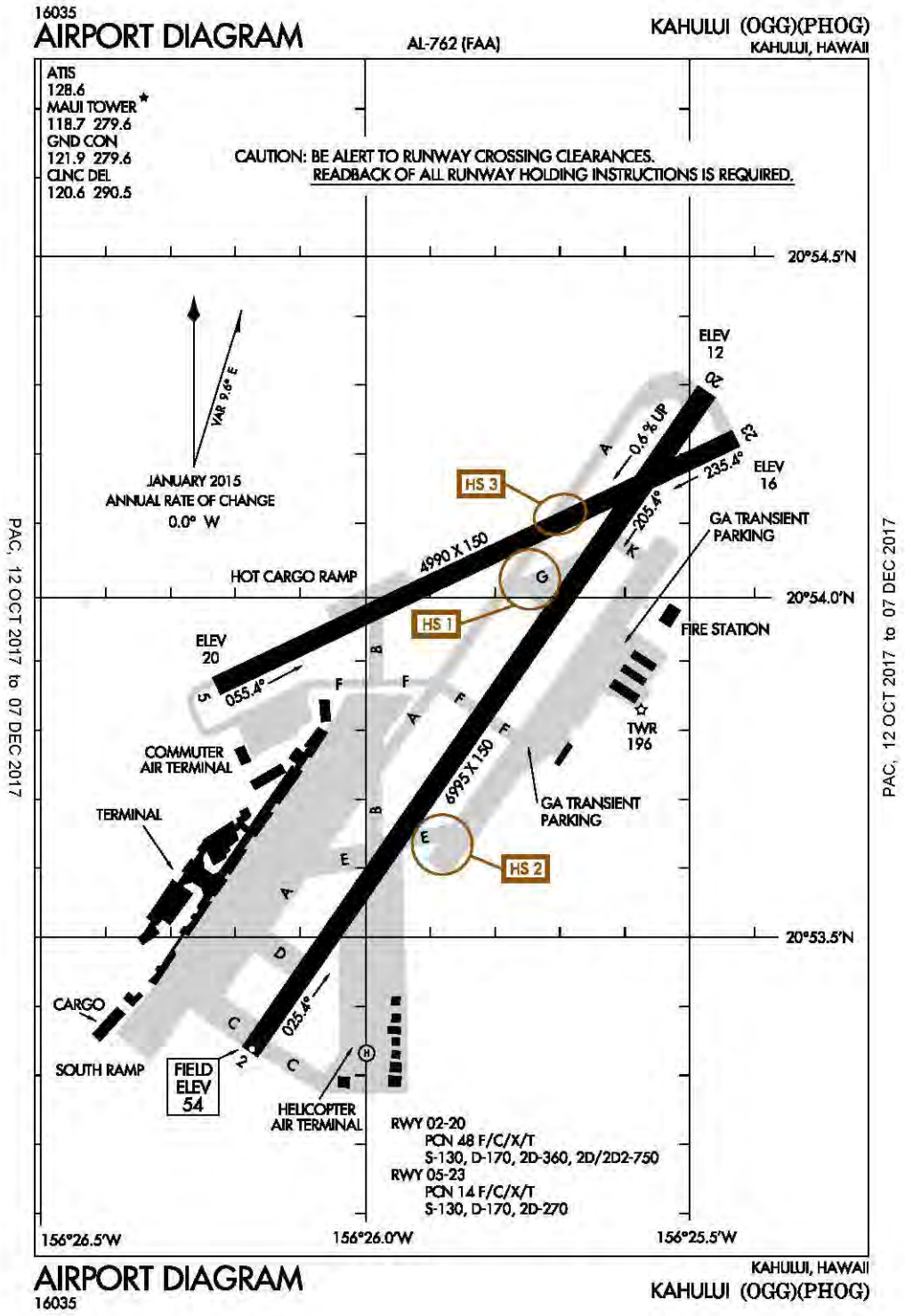
APRON TAXILANE 2 EAST END 360 FT CLOSED.

APRON TAXILANE 6 BETWEEN TAXIWAY C AND SOUTH RAMP CLOSED EXCEPT GA/FIXED WING LOADING/UNLOADING ONLY.

MILITARY SERVICE−FUEL: A++ (MIL; AVAILABLE H24).

TAXIWAY G ADG IV AND BELOW POWER IN W/PPR.

Kahului, Hawaii
Kahului
ICAO Identifier PHOG



Kahului, HI
Kahului
ICAO Identifier PHOG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 20−53−55.14N / 156−25−49.65W
2.2.2 From City: 3 Miles E Of Kahului, HI
2.2.3 Elevation: 53.5 ft
2.2.5 Magnetic variation: 11E (1990)
2.2.6 Airport Contact: Marvin Moniz
1 KAHULUI AIRPORT ROAD, UNIT 5
Kahului, HI 96732 (808−872−3808)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 05
2.10.1.b Type of obstacle: Trees (31 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 23
2.10.1.b Type of obstacle: Pole (35 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 02
2.10.1.b Type of obstacle: Stack (198 ft). Lighted
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 20
2.10.1.b Type of obstacle: Bldg (5 ft). Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 35
2.12.3 Dimensions: 6995 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20−53−20.90N / 156−26−10.75W
2.12.6 Threshold elevation: 54 ft
2.12.6 Touchdown zone elevation: 54 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 215
2.12.3 Dimensions: 6995 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20−54−17.71N / 156−25−28.47W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 25 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 65
2.12.3 Dimensions: 4990 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20−53−52.88N / 156−26−13.56W
2.12.6 Threshold elevation: 20 ft
2.12.6 Touchdown zone elevation: 20 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 245
2.12.3 Dimensions: 4990 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20−54−13.75N / 156−25−25.85W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: H1
2.12.3 Dimensions: 125 ft x 125 ft

AD 2.14 Approach and runway lighting
2.14.1 Designation: 02
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 20
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 05
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: PAPI Unusable Beyond 4 Nm From Threshold Due To Rapidly Rising Terrain.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: GND/P

2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.7 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 119.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 120.2 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 120.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 128.6 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 290.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 322.4 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 225.4 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 02. Magnetic variation: 11E
2.19.2 ILS identification: OGG
2.19.5 Coordinates: 20–54–25.92N / 156–25–22.36W
2.19.6 Site elevation: 8.3 ft

2.19.1 ILS type: Glide Slope for runway 02. Magnetic variation: 11E
2.19.2 ILS identification: OGG
2.19.5 Coordinates: 20–53–29.55N / 156–25–59.23W
2.19.6 Site elevation: 47.7 ft

2.19.1 ILS type: Middle Marker for runway 02. Magnetic variation: 11E
2.19.2 ILS identification: OGG
2.19.5 Coordinates: 20–52–59.70N / 156–26–26.50W
2.19.6 Site elevation: 66 ft

2.19.1 ILS type: Outer Marker for runway 02. Magnetic variation: 11E
2.19.2 ILS identification: OGG
2.19.5 Coordinates: 20–48–13.30N / 156–29–59.30W
2.19.6 Site elevation: 39 ft

2.19.1 ILS type: DME for runway 02. Magnetic variation: 11E
2.19.2 ILS identification: OGG
2.19.5 Coordinates: 20–54–27.37N / 156–25–23.81W
2.19.6 Site elevation: 5.4 ft

General Remarks:
570’ LIGHTED TOWER APPROXIMATE 3 MI. W.

24 HRS PRIOR PERMISSION REQUIRED FOR DIVISION 1.1,1.2,1.3 EXPLOSIVES AND 4 HRS PRIOR PERMISSION REQUIRED FOR OTHER HAZARDOUS CARGO IN/OUT OF AIRPORT; CONTACT (808) 872–3830 0745–1630 OTHER TIMES (808) 872–3888.

RAMP AREA E SIDE RUNWAY 02 UNDER STATE AUTHORITY. FAA NOT RESPONSIBLE FOR DIRECTION & CONTROL GROUND TRAFFIC IN AREA.

MIGRATORY BIRD ACTIVITY BELOW 1500 FT WITHIN 5 NAUTICAL MILE RADIUS OF AIRPORT DURING AUG–MAY.

MILITARY HELICOPTER OPERATIONS RESTRICTED TO THE SW CORNER OF HOT CARGO APRON (HAZMAT) N OF RUNWAY 05–23.

COMMUTER TERMINAL RAMP RESTRICTED TO AIRCRAFT 140000 LBS OR LESS.

AREA E OF APPROACH END RUNWAY 02 DESIGNATED AS HELICOPTER OPER AREA. NO FIXED WING AIRCRAFT MAY OPER ON HELIPAD DURING OPERATIONAL HRS SR−SS.

PRIOR PERMISSION REQUIRED FOR FIXED WING AIRCRAFT OPERATIONS ON HELIPAD DURING NON−OPERATIONAL HRS CALL (808) 872−3880 5:15A−10:00P.

ACCESS TO HELIPAD FROM TAXIWAY C ONLY.

DUE TO NONVISIBILITY ATCT UNABLE TO DETERMINE IF FOLLOWING AREA IS CLEAR OF OBSTRUCTIONS AND/OR TRAFFIC: PORTION OF TAXIWAY F BETWEEN THE COMMUTER AIR TERMINAL & APPROACH END RUNWAY 05.

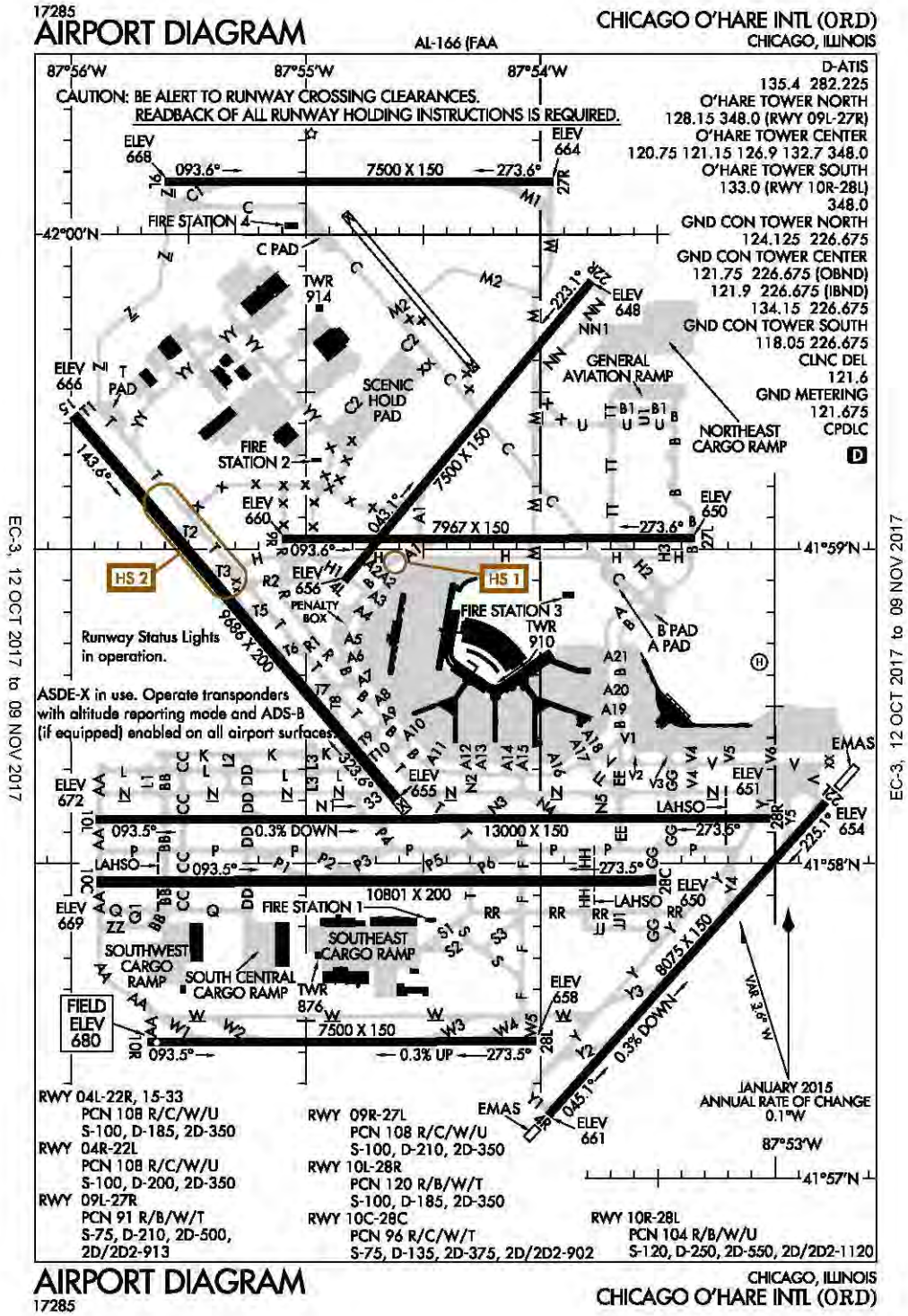
DUE TO NONVISIBILITY ATCT UNABLE TO PROVIDE ATC SERVICE BETWEEN AIRCRAFT & GROUND VEHICLES ON THE COMMUTER AIR TERMINAL S OF TAXIWAY F AND THE HELICOPTER AIR TERMINAL E OF APPROACH END RUNWAY 02.

TRANSIENT PARKING LOCATED ON NE SECTION OF E RAMP.

RUNWAY 02/20 SINGLE−BELLY TWIN TANDEM (SBTT) GROSS WEIGHT 460,000 LBS.

AIRCRAFT OVER 30,000 LB LANDING ON RUNWAY 02/20 UNABLE TO TURN OFF ONTO RUNWAY 05/23 DUE TO PAVEMENT CONDITION.

Chicago, Illinois
Chicago–O'Hare International
ICAO Identifier KORD



Chicago, IL
Chicago O'Hare Intl
ICAO Identifier KORD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−58−38.35N / 87−54−28.82W
2.2.2 From City: 14 Miles NW Of Chicago, IL
2.2.3 Elevation: 680 ft
2.2.5 Magnetic variation: 3W (2010)
2.2.6 Airport Contact: Ginger Evans
P.O. BOX 66142, 10510 WEST ZEMKE RO
Chicago, IL 60666 (773−686−8060)
2.2.7 Traffic: IFR/VFR
2.2.8 Remarks: And Du Page Co.

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: 100LL,A
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 27L
2.10.1.b Type of obstacle: Rr (34 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 44 ft from Centerline

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Ant (109 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 545 ft from Centerline

2.10.1.a. Runway designation: 10L
2.10.1.b Type of obstacle: Tree (68 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 770 ft from Centerline

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Sign (56 ft). Lighted
2.10.1.c Location of obstacle: 723 ft from Centerline

2.10.1.a. Runway designation: 09L
2.10.1.b Type of obstacle: Ant (743 ft). Marked and Lighted
2.10.1.c Location of obstacle: 4443 ft from Centerline

2.10.1.a. Runway designation: 27R
2.10.1.b Type of obstacle: Ant (87 ft). Marked and Lighted
2.10.1.c Location of obstacle: 118 ft from Centerline

2.10.1.a. Runway designation: 04L
2.10.1.b Type of obstacle: Pole (29 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 411 ft from Centerline

2.10.1.a. Runway designation: 15
2.10.1.b Type of obstacle: Pole (51 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 770 ft from Centerline

2.10.1.a. Runway designation: 10R
2.10.1.b Type of obstacle: Tree (78 ft). Lighted
2.10.1.c Location of obstacle: 817 ft from Centerline

2.10.1.a. Runway designation: 10C
2.10.1.b Type of obstacle: Pole (48 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 759 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 15
2.12.2 True Bearing: 140
2.12.3 Dimensions: 9686 ft x 200 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−59−25.57N / 87−55−59.30W
2.12.6 Threshold elevation: 666 ft
2.12.6 Touchdown zone elevation: 668 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 320
2.12.3 Dimensions: 9686 ft x 200 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−12.30N / 87−54−36.83W
2.12.6 Threshold elevation: 655 ft
2.12.6 Touchdown zone elevation: 659 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 39
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−53.96N / 87−54−50.10W
2.12.6 Threshold elevation: 656 ft

2.12.6 Touchdown zone elevation: 658 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 219
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41–59–51.13N / 87–53–46.94W
2.12.6 Threshold elevation: 648 ft
2.12.6 Touchdown zone elevation: 652 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 42
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41–57–11.98N / 87–53–57.91W
2.12.6 Threshold elevation: 661 ft
2.12.6 Touchdown zone elevation: 661 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 222
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41–58–11.72N / 87–52–47.08W
2.12.6 Threshold elevation: 654 ft
2.12.6 Touchdown zone elevation: 654 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42–00–10.20N / 87–55–36.03W
2.12.6 Threshold elevation: 668 ft
2.12.6 Touchdown zone elevation: 668 ft
2.12.7 Slope: 0.1DOWN

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42–00–10.19N / 87–53–56.70W
2.12.6 Threshold elevation: 664 ft
2.12.6 Touchdown zone elevation: 664 ft
2.12.7 Slope: 0.1UP

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41–58–00.00N / 87–55–53.51W
2.12.6 Threshold elevation: 672 ft
2.12.6 Touchdown zone elevation: 672 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41–58–00.00N / 87–53–00.00W
2.12.6 Threshold elevation: 651 ft
2.12.6 Touchdown zone elevation: 651 ft

2.12.1 Designation: 10X
2.12.3 Dimensions: 0 ft x 0 ft
2.12.1 Designation: 09R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7967 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41–59–00.00N / 87–55–00.00W
2.12.6 Threshold elevation: 660 ft
2.12.6 Touchdown zone elevation: 660 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7967 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41–59–00.00N / 87–53–20.58W
2.12.6 Threshold elevation: 650 ft
2.12.6 Touchdown zone elevation: 654 ft

2.12.1 Designation: H1
2.12.3 Dimensions: 200 ft x 100 ft
2.12.1 Designation: 10C
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10801 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41–57–56.53N / 87–55–53.48W
2.12.6 Threshold elevation: 669 ft
2.12.6 Touchdown zone elevation: 669 ft

2.12.1 Designation: 28C
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10801 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41–57–56.76N / 87–53–30.52W
2.12.6 Threshold elevation: 650 ft
2.12.6 Touchdown zone elevation: 651 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41–57–25.92N / 87–55–40.30W
2.12.6 Threshold elevation: 680 ft
2.12.6 Touchdown zone elevation: 680 ft

2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41−57−26.09N / 87−54−00.00W
2.12.6 Threshold elevation: 658 ft
2.12.6 Touchdown zone elevation: 667 ft
2.12.7 Slope: 0.3UP

AD 2.13 Declared distances

2.13.1 Designation: 15
2.13.2 Takeoff run available: 9686
2.13.3 Takeoff distance available: 9686
2.13.4 Accelerate−stop distance available: 9662
2.13.5 Landing distance available: 8650

2.13.1 Designation: 33
2.13.2 Takeoff run available: 9686
2.13.3 Takeoff distance available: 9686
2.13.4 Accelerate−stop distance available: 9686

2.13.1 Designation: 04L
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 8075
2.13.3 Takeoff distance available: 8075
2.13.4 Accelerate−stop distance available: 8075
2.13.5 Landing distance available: 8075

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 8075
2.13.3 Takeoff distance available: 8075
2.13.4 Accelerate−stop distance available: 8075
2.13.5 Landing distance available: 8075

2.13.1 Designation: 09L
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

2.13.1 Designation: 27R
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 13000
2.13.3 Takeoff distance available: 13000
2.13.4 Accelerate−stop distance available: 13000
2.13.5 Landing distance available: 12246

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 13000
2.13.3 Takeoff distance available: 13000
2.13.4 Accelerate−stop distance available: 13000
2.13.5 Landing distance available: 13000

2.13.1 Designation: 09R
2.13.2 Takeoff run available: 7967
2.13.3 Takeoff distance available: 7967
2.13.4 Accelerate−stop distance available: 7709
2.13.5 Landing distance available: 7709

2.13.1 Designation: 27L
2.13.2 Takeoff run available: 7967
2.13.3 Takeoff distance available: 7967
2.13.4 Accelerate−stop distance available: 7782
2.13.5 Landing distance available: 7782

2.13.1 Designation: 10C
2.13.2 Takeoff run available: 10801
2.13.3 Takeoff distance available: 10801
2.13.4 Accelerate−stop distance available: 10540
2.13.5 Landing distance available: 10540

2.13.1 Designation: 28C
2.13.2 Takeoff run available: 10801
2.13.3 Takeoff distance available: 10801
2.13.4 Accelerate−stop distance available: 10801
2.13.5 Landing distance available: 10801

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

2.13.1 Designation: 28L

2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate–stop distance available: 7500
2.13.5 Landing distance available: 7500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 15
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 22R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Vgsi And ILS Glidepath Not Coincident.

2.14.1 Designation: 04R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 22L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 09L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 27R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 10L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 09R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 27L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 10C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 10R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 28L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 282.225 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: RY 28L PRM
2.18.3 Service designation: 128.05 MHz

2.18.1 Service designation: RY 10C PRM
2.18.3 Service designation: 119.625 MHz

2.18.1 Service designation: RY 28C PRM
2.18.3 Service designation: 119.625 MHz

2.18.1 Service designation: O'HARE ALL TWRS GC/P
2.18.3 Service designation: 226.675 MHz

2.18.1 Service designation: O'HARE TWR NORTH LCL/P
2.18.3 Service designation: 348 MHz

2.18.1 Service designation: O'HARE TWR CENTER LCL/P
2.18.3 Service designation: 348 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND METERING
2.18.3 Service designation: 121.675 MHz

2.18.1 Service designation: VFR ADV
2.18.3 Service designation: 126.8 MHz

2.18.1 Service designation: O'HARE TWR CENTER LCL/P
2.18.3 Service designation: 120.75 MHz

2.18.1 Service designation: O'HARE TWR CENTER LCL/P
2.18.3 Service designation: 126.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: ALCP
2.18.3 Service designation: 252.1 MHz

2.18.1 Service designation: O'HARE TWR CENTER LCL/P
2.18.3 Service designation: 121.15 MHz

2.18.1 Service designation: O'HARE TWR CENTER LCL/P
2.18.3 Service designation: 132.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.15 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 124.125 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: O'HARE TWR CENTER LCL/S
2.18.3 Service designation: 127.925 MHz

2.18.1 Service designation: GND/P (INBOUND)
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: GND/P (OUTBOUND)
2.18.3 Service designation: 121.75 MHz

2.18.1 Service designation: GND
2.18.3 Service designation: 134.15 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 133 MHz

2.18.1 Service designation: RY 10R PRM
2.18.3 Service designation: 128.05 MHz

2.18.1 Service designation: PRE−TAXI CLNC
2.18.3 Service designation: 121.6 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 121.6 MHz

2.18.1 Service designation: O'HARE TWR SOUTH LCL/P
2.18.3 Service designation: 348 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 118.05 MHz

2.18.1 Service designation: CD/S PRE−TAXI CLNC/S
2.18.3 Service designation: 119.25 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 22L. Magnetic variation: 3W
2.19.2 ILS identification: LQQ
2.19.5 Coordinates: 41−57−00.00N / 87−54−00.00W
2.19.6 Site elevation: 653 ft

2.19.1 ILS type: Localizer for runway 22R. Magnetic variation: 3W
2.19.2 ILS identification: RXZ
2.19.5 Coordinates: 41–58–46.49N / 87–54–58.35W
2.19.6 Site elevation: 655.5 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41–58–00.00N / 87–52–39.70W
2.19.6 Site elevation: 644.9 ft

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 3W
2.19.2 ILS identification: FJU
2.19.5 Coordinates: 41–58–16.20N / 87–52–41.76W
2.19.6 Site elevation: 646.6 ft

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41–58–00.00N / 87–56–00.00W
2.19.6 Site elevation: 679.1 ft

2.19.1 ILS type: Localizer for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41–59–00.00N / 87–55–17.98W
2.19.6 Site elevation: 665 ft

2.19.1 ILS type: Localizer for runway 09R. Magnetic variation: 3W
2.19.2 ILS identification: JAV
2.19.5 Coordinates: 41–59–00.00N / 87–53–10.49W
2.19.6 Site elevation: 642.8 ft

2.19.1 ILS type: Localizer for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 41–58–00.00N / 87–54–28.47W
2.19.6 Site elevation: 653.3 ft

2.19.1 ILS type: Localizer for runway 04L. Magnetic variation: 3W
2.19.2 ILS identification: HNA
2.19.5 Coordinates: 41–59–58.86N / 87–53–38.40W
2.19.6 Site elevation: 644.5 ft

2.19.1 ILS type: DME for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41–58–00.00N / 87–52–41.68W
2.19.6 Site elevation: 656 ft

2.19.1 ILS type: DME for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41–58–00.00N / 87–52–41.68W
2.19.6 Site elevation: 656 ft

2.19.1 ILS type: DME for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 41–57–37.70N / 87–54–00.00W
2.19.6 Site elevation: 665.4 ft

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41–58–00.00N / 87–55–38.77W
2.19.6 Site elevation: 665.3 ft

2.19.1 ILS type: Glide Slope for runway 22R. Magnetic variation: 3W
2.19.2 ILS identification: RXZ
2.19.5 Coordinates: 41–59–46.51N / 87–53–59.03W
2.19.6 Site elevation: 645.1 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41–58–00.00N / 87–53–15.05W
2.19.6 Site elevation: 648.2 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 3W
2.19.2 ILS identification: FJU
2.19.5 Coordinates: 41–57–16.86N / 87–53–44.35W
2.19.6 Site elevation: 654.1 ft

2.19.1 ILS type: Glide Slope for runway 22L. Magnetic variation: 3W
2.19.2 ILS identification: LQQ
2.19.5 Coordinates: 41–58–00.00N / 87–52–52.61W
2.19.6 Site elevation: 645.9 ft

2.19.1 ILS type: Glide Slope for runway 09R. Magnetic variation: 3W
2.19.2 ILS identification: JAV
2.19.5 Coordinates: 41–59–00.00N / 87–54–51.29W
2.19.6 Site elevation: 658.1 ft

2.19.1 ILS type: Glide Slope for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 41−59−15.81N / 87−55−55.22W
2.19.6 Site elevation: 662.1 ft

2.19.1 ILS type: Glide Slope for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41−59−00.00N / 87−53−34.35W
2.19.6 Site elevation: 646.5 ft

2.19.1 ILS type: Outer Marker for runway 04L. Magnetic variation: 3W
2.19.2 ILS identification: HNA
2.19.5 Coordinates: 41−54−51.77N / 87−59−19.38W
2.19.6 Site elevation: 701.9 ft

2.19.1 ILS type: Outer Marker for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 42−03−21.36N / 88−00−28.05W
2.19.6 Site elevation: 693 ft

2.19.1 ILS type: Outer Marker for runway 09R. Magnetic variation: 3W
2.19.2 ILS identification: JAV
2.19.5 Coordinates: 41−59−00.00N / 88−01−39.29W
2.19.6 Site elevation: 717 ft

2.19.1 ILS type: Outer Marker for runway 22L. Magnetic variation: 3W
2.19.2 ILS identification: LQQ
2.19.5 Coordinates: 42−02−16.02N / 87−47−46.00W
2.19.6 Site elevation: 629 ft

2.19.1 ILS type: Outer Marker for runway 04R. Magnetic variation: 3W
2.19.2 ILS identification: FJU
2.19.5 Coordinates: 41−53−54.57N / 87−57−51.36W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 22R. Magnetic variation: 3W
2.19.2 ILS identification: RXZ
2.19.5 Coordinates: 42−03−20.68N / 87−50−00.00W
2.19.6 Site elevation: 665 ft

2.19.1 ILS type: Outer Marker for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41−58−00.00N / 88−01−35.55W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41−58−00.00N / 87−47−22.63W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41−58−00.00N / 87−55−52.10W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 41−59−32.73N / 87−56−00.00W
2.19.6 Site elevation: 657.8 ft

2.19.1 ILS type: Middle Marker for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41−59−00.00N / 87−52−41.36W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41−59−00.00N / 87−47−20.48W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 22R. Magnetic variation: 3W
2.19.2 ILS identification: RXZ
2.19.5 Coordinates: 42−00−10.86N / 87−53−25.14W
2.19.6 Site elevation: 636 ft

2.19.1 ILS type: Middle Marker for runway 15. Magnetic variation: 3W
2.19.2 ILS identification: ORD
2.19.5 Coordinates: 41−59−46.54N / 87−56−22.90W
2.19.6 Site elevation: 674 ft

2.19.1 ILS type: Middle Marker for runway 09R. Magnetic variation: 3W
2.19.2 ILS identification: JAV
2.19.5 Coordinates: 41−59−00.00N / 87−55−54.53W
2.19.6 Site elevation: 659 ft

2.19.1 ILS type: Middle Marker for runway 22L. Magnetic variation: 3W
2.19.2 ILS identification: LQQ
2.19.5 Coordinates: 41–58–34.71N / 87–52–19.73W
2.19.6 Site elevation: 642 ft

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 3W
2.19.2 ILS identification: FJU
2.19.5 Coordinates: 41–56–48.83N / 87–54–28.68W
2.19.6 Site elevation: 655 ft

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41–58–00.00N / 87–52–23.76W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 28R. Magnetic variation: 3W
2.19.2 ILS identification: TSL
2.19.5 Coordinates: 41–58–00.00N / 87–52–49.13W
2.19.6 Site elevation: 649 ft

2.19.1 ILS type: DME for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41–59–00.00N / 87–53–10.23W
2.19.6 Site elevation: 653.7 ft

2.19.1 ILS type: Inner Marker for runway 27L. Magnetic variation: 3W
2.19.2 ILS identification: IAC
2.19.5 Coordinates: 41–59–00.00N / 87–53–00.00W
2.19.6 Site elevation: 641.5 ft

2.19.1 ILS type: DME for runway 09R. Magnetic variation: 3W
2.19.2 ILS identification: JAV
2.19.5 Coordinates: 41–59–00.00N / 87–53–10.23W
2.19.6 Site elevation: 653.7 ft

2.19.1 ILS type: DME for runway 09L. Magnetic variation: 3W
2.19.2 ILS identification: SAJ
2.19.5 Coordinates: 42–00–14.10N / 87–55–48.23W
2.19.6 Site elevation: 669.5 ft

2.19.1 ILS type: Glide Slope for runway 09L. Magnetic variation: 3W
2.19.2 ILS identification: SAJ
2.19.5 Coordinates: 42–00–14.22N / 87–55–20.67W
2.19.6 Site elevation: 651.3 ft

2.19.1 ILS type: Localizer for runway 09L. Magnetic variation: 3W
2.19.2 ILS identification: SAJ
2.19.5 Coordinates: 42–00–10.19N / 87–53–43.33W
2.19.6 Site elevation: 660.9 ft

2.19.1 ILS type: Inner Marker for runway 09L. Magnetic variation: 3W
2.19.2 ILS identification: SAJ
2.19.5 Coordinates: 42–00–10.19N / 87–55–47.42W
2.19.6 Site elevation: 668.8 ft

2.19.1 ILS type: DME for runway 10C. Magnetic variation: 3W
2.19.2 ILS identification: SXH
2.19.5 Coordinates: 41–58–00.00N / 87–56–00.00W
2.19.6 Site elevation: 689.3 ft

2.19.1 ILS type: Inner Marker for runway 10C. Magnetic variation: 3W
2.19.2 ILS identification: SXH
2.19.5 Coordinates: 41–57–56.50N / 87–56–00.00W
2.19.6 Site elevation: 674.3 ft

2.19.1 ILS type: Glide Slope for runway 10C. Magnetic variation: 3W
2.19.2 ILS identification: SXH
2.19.5 Coordinates: 41–57–52.85N / 87–55–39.02W
2.19.6 Site elevation: 663 ft

2.19.1 ILS type: Localizer for runway 10C. Magnetic variation: 3W
2.19.2 ILS identification: SXH
2.19.5 Coordinates: 41–57–56.80N / 87–52–57.29W
2.19.6 Site elevation: 646.3 ft

2.19.1 ILS type: Inner Marker for runway 28C. Magnetic variation: 3W
2.19.2 ILS identification: VZE
2.19.5 Coordinates: 41–57–58.75N / 87–53–19.17W
2.19.6 Site elevation: 648 ft

2.19.1 ILS type: DME for runway 28C. Magnetic variation: 3W
2.19.2 ILS identification: VZE
2.19.5 Coordinates: 41–58–00.00N / 87–56–00.00W
2.19.6 Site elevation: 689.3 ft

2.19.1 ILS type: Localizer for runway 28C. Magnetic variation: 3W
2.19.2 ILS identification: VZE
2.19.5 Coordinates: 41−57−56.50N / 87−56−00.00W
2.19.6 Site elevation: 676.4 ft

2.19.1 ILS type: Glide Slope for runway 28C. Magnetic variation: 3W
2.19.2 ILS identification: VZE
2.19.5 Coordinates: 41−57−53.03N / 87−53−44.32W
2.19.6 Site elevation: 642.4 ft

2.19.1 ILS type: Inner Marker for runway 27R. Magnetic variation: 3W
2.19.2 ILS identification: ABU
2.19.5 Coordinates: 42−00−00.00N / 87−53−45.30W
2.19.6 Site elevation: 663.1 ft

2.19.1 ILS type: Localizer for runway 27R. Magnetic variation: 3W
2.19.2 ILS identification: ABU
2.19.5 Coordinates: 42−00−10.19N / 87−55−50.20W
2.19.6 Site elevation: 668.1 ft

2.19.1 ILS type: Glide Slope for runway 27R. Magnetic variation: 3W
2.19.2 ILS identification: ABU
2.19.5 Coordinates: 42−00−14.21N / 87−54−11.74W
2.19.6 Site elevation: 648.4 ft

2.19.1 ILS type: DME for runway 27R. Magnetic variation: 3W
2.19.2 ILS identification: ABU
2.19.5 Coordinates: 42−00−14.10N / 87−55−48.23W
2.19.6 Site elevation: 669.5 ft

2.19.1 ILS type: Inner Marker for runway 10L. Magnetic variation: 3W
2.19.2 ILS identification: MED
2.19.5 Coordinates: 41−58−00.00N / 87−56−00.00W
2.19.6 Site elevation: 676.8 ft

2.19.1 ILS type: Localizer for runway 10X. Magnetic variation: 4W
2.19.2 ILS identification: IZJ
2.19.5 Coordinates: 41−57−26.13N / 87−53−32.54W
2.19.6 Site elevation: 652.2 ft

2.19.1 ILS type: Inner Marker for runway 10X. Magnetic variation: 4W
2.19.2 ILS identification: IZJ
2.19.5 Coordinates: 41−57−25.91N / 87−55−51.67W
2.19.6 Site elevation: 680 ft

2.19.1 ILS type: Glide Slope for runway 10X. Magnetic variation: 4W
2.19.2 ILS identification: IZJ
2.19.5 Coordinates: 41−57−22.11N / 87−55−25.57W
2.19.6 Site elevation: 671.7 ft

2.19.1 ILS type: DME for runway 10X. Magnetic variation: 4W
2.19.2 ILS identification: IZJ
2.19.5 Coordinates: 41−57−22.23N / 87−53−34.24W
2.19.6 Site elevation: 656.1 ft

2.19.1 ILS type: DME for runway 10R. Magnetic variation: 4W
2.19.2 ILS identification: BYW
2.19.5 Coordinates: 41−57−28.34N / 87−53−27.46W
2.19.6 Site elevation: 655 ft

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 4W
2.19.2 ILS identification: VQX
2.19.5 Coordinates: 41−57−25.90N / 87−55−53.71W
2.19.6 Site elevation: 680.2 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 4W
2.19.2 ILS identification: VQX
2.19.5 Coordinates: 41−57−22.03N / 87−54−14.18W
2.19.6 Site elevation: 654 ft

2.19.1 ILS type: DME for runway 28L. Magnetic variation: 4W
2.19.2 ILS identification: VQX
2.19.5 Coordinates: 41−57−22.23N / 87−53−34.24W
2.19.6 Site elevation: 656.1 ft

2.19.1 ILS type: Localizer for runway 10R. Magnetic variation: 4W
2.19.2 ILS identification: BYW
2.19.5 Coordinates: 41−57−31.61N / 87−53−26.41W
2.19.6 Site elevation: 649.5 ft

2.19.1 ILS type: Glide Slope for runway 10R. Magnetic variation: 4W
2.19.2 ILS identification: BYW
2.19.5 Coordinates: 41−57−21.91N / 87−55−25.57W
2.19.6 Site elevation: 671.7 ft

2.19.1 ILS type: Inner Marker for runway 28L. Magnetic variation: 4W
2.19.2 ILS identification: VQX
2.19.5 Coordinates: 41–57–26.95N / 87–53–47.46W
2.19.6 Site elevation: 650.4 ft

General Remarks:
AIRPORT NIGHTTIME NOISE ABATEMENT PROCEDURES ARE IN EFFECT FROM 2200 TO 0700; CONTACT AIRPORT MANAGER ON 773–686–2255.

BIRDS ON & IN THE VICINITY OF AIRPORT. PYROTECHNICS & BIRD CANNONS IN USE FOR BIRD CONTROL.

AIRCRAFT WITH WINGSPAN GREATER THAN 214 FT REQUIRE 48 HRS PRIOR PERMISSION REQUIRED – CALL 773–686–2255.

SEE LAND AND HOLD SHORT OPERATIONS SECTION.

BE ALERT: OF DUPLICATE ALPHA–NUMERIC TAXIWAY DESIGNATORS & TERMINAL GATE DESIGNATIONS INVOLVING THE LETTERS B, C, H, K, L & M.

MAGNETIC DEVIATION POSSIBLE IMMEDIATELY WEST OF TAXIWAY Y & RUNWAY 22L APPROACH ON TAXIWAY N.

PERSONNEL AND EQUIPMENT WORKING NEAR VARIOUS TAXIWAYS.

PERIODIC FIRE DEPT TRAINING AT N SECTOR OF THE AIRPORT.

PRIMARY RUN–UP LOCATION GROUND RUN UP ENCLOSURE; SECONDARY RUN UP LOCATIONS AVAILABLE UPON REQ CONTACT CITY OPERATIONS 773–686–2255.

LINE UP AND WAIT AUTHORIZATION IN EFFECTIVE BETWEEN SS AND SR AT THE FOLLOWING INTENSE: RUNWAY 33 AT TAXIWAY T10 AND TAXIWAY L; RUNWAY 28R AT TAXIWAY GG, TAXIWAY EE AND TAXIWAY N5; RUNWAY 10L AT TAXIWAY DD AND TAXIWAY CC. THESE RUNWAYS WILL BE USED FOR DEPS ONLY WHEN EXERCISING THE PROVISIONS OF THIS AUTHORIZATION.

ALL PART 91 & UNSCHEDULED PART 125, 133 & 135 CHARTER OPERATORS CONTACT SIGNATURE FLIGHT SUPPORT AT 773–686–7000 REGARDING NEW SECURITY REGULATIONS PRIOR TO DEP.

RUNWAY H1, APPROACH/ DEP PATHS ARE EAST & WEST.

B747–400, B747–8, B777–300ER, B777–200LR(F), A340–600 OR A340–500, & A350–900 CANNOT PASS ON TAXIWAYS 'A' & 'B' INSUFFICIENT WINGTIP CLEARANCE.

ATCT IS AUTHORIZED TO CONDUCT ARRS TO RUNWAY 15 WHILE CONDUCTING SIMULTANEOUS OPPOSITE DIRECTION DEPS OFF OF RUNWAY 09R & RUNWAY 28R DURING IFR WEATHER CONDITIONS.

ATCT IS AUTHORIZED TO CONDUCT SIMULTANEOUS OPPOSITE DIRECTION DEPS ON RUNWAY 09R AND RUNWAY 28R DURING INSTRUMENT FLIGHT RULES (IFR) WX CONDITIONS.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RUNWAY 9L/27R TRIPLE DUAL TANDEM 690,000 LBS; DUAL TANDUM W/DUAL WHEEL (2D/D1) 633,000 LBS.

EAST AND WEST GATES ARE MANNED 24 HRS A DAY.

RUNWAY 33 CLOSED TO ARRIVALS. RUNWAY 15/33 DUAL USE RWY/TWY. EDGE/TDZL AVAILABLE FOR RUNWAY OPERATIONS; GREEN CL AVAILABLE FOR TAXI OPERATIONS.

ATCT IS AUTHORIZED TO CONDUCT SIMULTANEOUS DEPS FROM RUNWAY 4L/4R, RUNWAY 22R/22L, RUNWAY 9R WITH RUNWAY 9L OR RUNWAY 10L, RUNWAY 27L WITH 28R OR RUNWAY 27R, RUNWAY 10C WITH RUNWAY 9R AND RUNWAY 28C WITH RUNWAY 27L WITH COURSE DIVERGENCE BEGINNING NO LATER THAN 4 MILES FROM RUNWAY END.

BE ALERT: TAXIWAY S−1 OUTBOUND OR EASTBOUND ONLY, TAXIWAY S−2 INBOUND OR WESTBOUND ONLY, TAXIWAY Y5 NORTHBOUND ONLY EXITING RUNWAY, TAXIWAYS P1, P2, P3, P5, AND P6 NORTHBOUND ONLY, TAXIWAY A1 SOUTHBOUND ONLY FROM RUNWAY 09R−27L.

A380−800 OPERATIONAL CONSTRAINTS EXIST ON RUNWAYS, TAXIWAYS, AND RAMPS. CONTACT AIRPORT OPERATIONS FOR ADDNL INFORMATION 773−686−2255.

DIVERSION ACROSS WO A PRESENCE AT ORDER, INDICATION OF SHOULD CONTACT AIRPORT OPERATIONS 773−686−2255 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PROVIDE: CO, FLIGHT OPERATIONS CONTACT INFORMATION, AIRCRAFT TYPE, PERSONS ON BOARD, INTL OR DOMESTIC, ANY GROUND HANDLER AGRMTS IN PLACE.

BE ALERT: THE NORTHEAST/SOUTHWEST PORTION OF TAXIWAY YY IS NOT VISIBLE FROM THE CENTER ATCT.

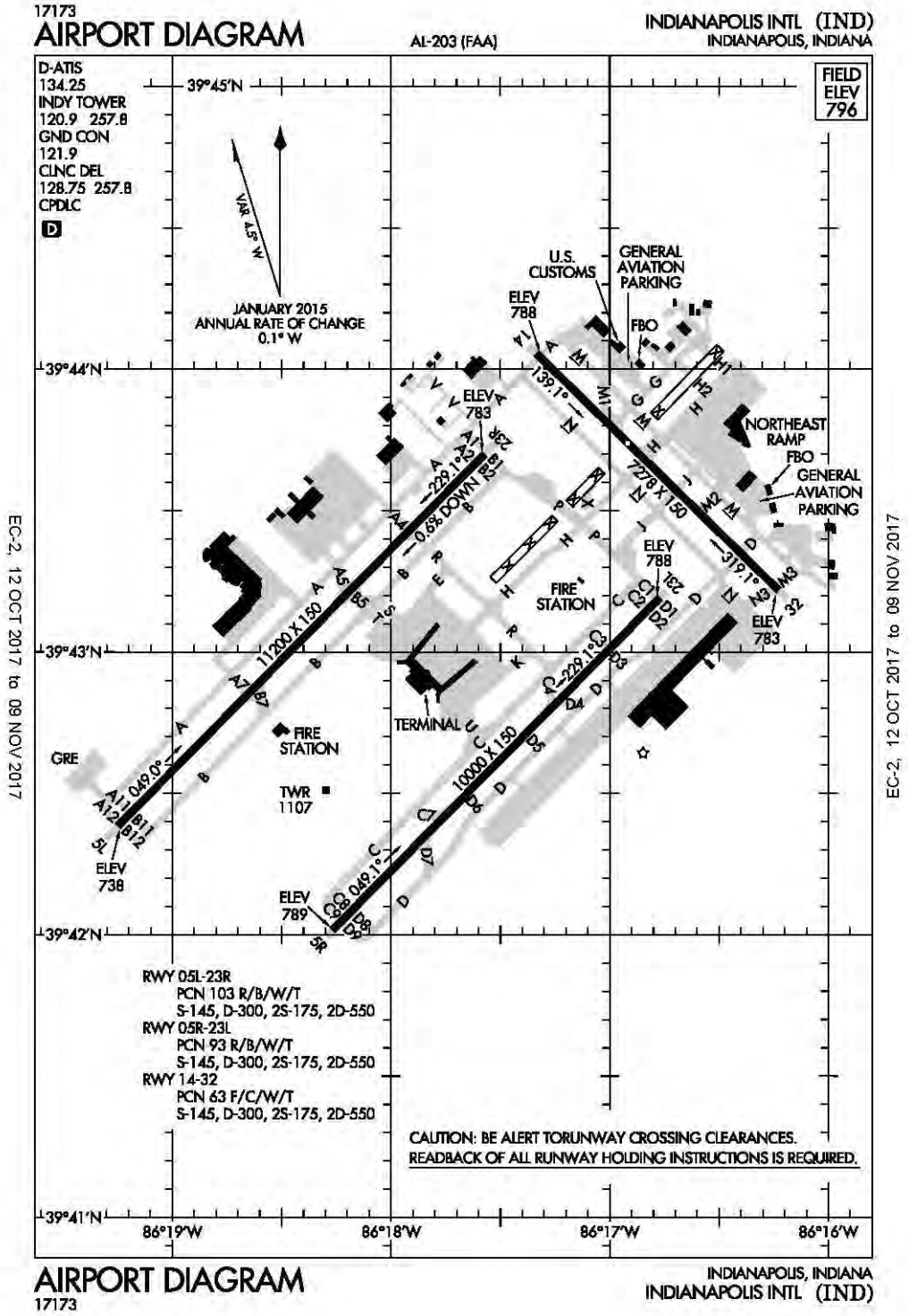
B747−8 OPERATIONS NOT AUTHORIZED ON RUNWAYS 09R/27L, 09L/27R AND 10R/28L.

AIRCRAFT ARE NOT PERMITTED TO STOP ON EITHER TAXIWAY A OR B BRIDGES.

RUNWAY 9R PAPI UNUSABLE BEYOND 5 DEGREE RIGHT OF CENTERLINE

RUNWAY STATUS LIGHTS ARE IN OPN.

Indianapolis, Indiana
Indianapolis International
ICAO Identifier KIND



Indianapolis, IN
Indianapolis Intl
ICAO Identifier KIND

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39−43−00.00N / 86−17−40.70W
2.2.2 From City: 7 Miles SW Of Indianapolis, IN
2.2.3 Elevation: 796.2 ft
2.2.5 Magnetic variation: 5W (2015)
2.2.6 Airport Contact: Mario Rodriguez
7800 COL. H. WEIR COOK MEMORIAL DR.
Indianapolis, IN 46241 (317−487−9594)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,A1+,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 14
2.10.1.b Type of obstacle: Ant (61 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 756 ft from Centerline

2.10.1.a. Runway designation: 23L
2.10.1.b Type of obstacle: Ant (78 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 484 ft from Centerline

2.10.1.a. Runway designation: 23R
2.10.1.b Type of obstacle: Ant (140 ft). Lighted
2.10.1.c Location of obstacle: 138 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39−42−23.03N / 86−19−14.90W
2.12.6 Threshold elevation: 738 ft
2.12.6 Touchdown zone elevation: 747 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39−43−41.91N / 86−17−34.36W
2.12.6 Threshold elevation: 783 ft
2.12.6 Touchdown zone elevation: 783 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39−42−00.00N / 86−18−15.91W
2.12.6 Threshold elevation: 789 ft
2.12.6 Touchdown zone elevation: 791 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39−43−11.29N / 86−16−46.12W
2.12.6 Threshold elevation: 788 ft
2.12.6 Touchdown zone elevation: 790 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39−44−00.00N / 86−17−19.76W
2.12.6 Threshold elevation: 788 ft
2.12.6 Touchdown zone elevation: 796 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39−43−12.75N / 86−16−13.39W
2.12.6 Threshold elevation: 783 ft
2.12.6 Touchdown zone elevation: 793 ft

AD 2.13 Declared distances

2.13.1 Designation: 05L
2.13.2 Takeoff run available: 11200
2.13.3 Takeoff distance available: 11200
2.13.4 Accelerate−stop distance available: 11200
2.13.5 Landing distance available: 11200

2.13.1 Designation: 23R
2.13.2 Takeoff run available: 11200

2.13.3 Takeoff distance available: 11200
2.13.4 Accelerate–stop distance available: 11200
2.13.5 Landing distance available: 11200

2.13.1 Designation: 05R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 23L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 14
2.13.2 Takeoff run available: 7278
2.13.3 Takeoff distance available: 7278
2.13.4 Accelerate–stop distance available: 7278
2.13.5 Landing distance available: 7278

2.13.1 Designation: 32
2.13.2 Takeoff run available: 7278
2.13.3 Takeoff distance available: 7278
2.13.4 Accelerate–stop distance available: 7278
2.13.5 Landing distance available: 7278

AD 2.14 Approach and runway lighting
2.14.1 Designation: 05L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 23R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 05R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 23L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 14
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Unusable Beyond 8 Degrees Right Of Course.

2.14.1 Designation: 32
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right
2.14.10 Remarks: Vgsi And ILS Glidepath Not Coincident.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: DEP/P
2.18.3 Service designation: 119.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 124.65 MHz

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 127.15 MHz

2.18.1 Service designation: CD PRE TAXI CLNC
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CD LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 317.8 MHz

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 128.175 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.9 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 134.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 124.95 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 23L. Magnetic variation: 5W
2.19.2 ILS identification: FVJ
2.19.5 Coordinates: 39−41−53.53N / 86−18−25.26W
2.19.6 Site elevation: 777.3 ft

2.19.1 ILS type: Localizer for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39−43−18.38N / 86−16−37.08W
2.19.6 Site elevation: 785.5 ft

2.19.1 ILS type: Localizer for runway 23R. Magnetic variation: 5W
2.19.2 ILS identification: UZK
2.19.5 Coordinates: 39−42−15.92N / 86−19−23.97W
2.19.6 Site elevation: 736.6 ft

2.19.1 ILS type: Localizer for runway 32. Magnetic variation: 5W
2.19.2 ILS identification: COA
2.19.5 Coordinates: 39−44−10.35N / 86−17−29.17W
2.19.6 Site elevation: 782.3 ft

2.19.1 ILS type: Localizer for runway 05L. Magnetic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39−43−49.03N / 86−17−25.28W
2.19.6 Site elevation: 787.8 ft

2.19.1 ILS type: Localizer for runway 14. Magnetic variation: 5W
2.19.2 ILS identification: BJP
2.19.5 Coordinates: 39−43−00.00N / 86−16−00.00W
2.19.6 Site elevation: 763.6 ft

2.19.1 ILS type: Glide Slope for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39−42−00.00N / 86−18−00.00W
2.19.6 Site elevation: 788.5 ft

2.19.1 ILS type: Glide Slope for runway 23R. Magnetic variation: 5W
2.19.2 ILS identification: UZK
2.19.5 Coordinates: 39−43−36.51N / 86−17−48.43W
2.19.6 Site elevation: 772.4 ft

2.19.1 ILS type: Glide Slope for runway 32. Magnetic variation: 5W
2.19.2 ILS identification: COA
2.19.5 Coordinates: 39−43−16.28N / 86−16−25.51W
2.19.6 Site elevation: 781.7 ft

2.19.1 ILS type: Glide Slope for runway 05L. Magnetic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39−42−32.77N / 86−19−00.00W
2.19.6 Site elevation: 735.4 ft

2.19.1 ILS type: Glide Slope for runway 14. Magnetic variation: 5W
2.19.2 ILS identification: BJP
2.19.5 Coordinates: 39−43−59.31N / 86−17−00.00W
2.19.6 Site elevation: 790 ft

2.19.1 ILS type: Glide Slope for runway 23L. Magnetic variation: 5W
2.19.2 ILS identification: FVJ
2.19.5 Coordinates: 39−43−00.00N / 86−16−54.29W
2.19.6 Site elevation: 785 ft

2.19.1 ILS type: Outer Marker for runway 23R. Magnetic variation: 5W
2.19.2 ILS identification: UZK
2.19.5 Coordinates: 39−47−44.67N / 86−12−24.00W
2.19.6 Site elevation: 731 ft

2.19.1 ILS type: Outer Marker for runway 14. Magnetic variation: 5W
2.19.2 ILS identification: BJP
2.19.5 Coordinates: 39−47−34.33N / 86−22−00.00W
2.19.6 Site elevation: 867.1 ft

2.19.1 ILS type: Outer Marker for runway 05L. Magnet-

ic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39–37–43.65N / 86–25–00.00W
2.19.6 Site elevation: 688.5 ft

2.19.1 ILS type: Outer Marker for runway 32. Magnetic variation: 5W
2.19.2 ILS identification: COA
2.19.5 Coordinates: 39–39–25.01N / 86–11–00.00W
2.19.6 Site elevation: 686.4 ft

2.19.1 ILS type: Outer Marker for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39–37–00.00N / 86–24–28.44W
2.19.6 Site elevation: 708.6 ft

2.19.1 ILS type: Inner Marker for runway 05L. Magnetic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39–42–15.71N / 86–19–24.44W
2.19.6 Site elevation: 735.9 ft

2.19.1 ILS type: Middle Marker for runway 23L. Magnetic variation: 5W
2.19.2 ILS identification: FVJ
2.19.5 Coordinates: 39–43–30.36N / 86–16–21.76W
2.19.6 Site elevation: 785 ft

2.19.1 ILS type: Middle Marker for runway 23R. Magnetic variation: 5W
2.19.2 ILS identification: UZK
2.19.5 Coordinates: 39–44–24.76N / 86–16–00.00W
2.19.6 Site elevation: 789 ft

2.19.1 ILS type: Outer Marker for runway 23L. Magnetic variation: 5W
2.19.2 ILS identification: FVJ
2.19.5 Coordinates: 39–47–10.92N / 86–11–46.58W
2.19.6 Site elevation: 703.8 ft

2.19.1 ILS type: Inner Marker for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39–41–52.06N / 86–18–27.14W
2.19.6 Site elevation: 776.4 ft

2.19.1 ILS type: Middle Marker for runway 14. Magnetic variation: 5W
2.19.2 ILS identification: BJP
2.19.5 Coordinates: 39–44–19.96N / 86–17–42.27W
2.19.6 Site elevation: 776 ft

2.19.1 ILS type: DME for runway 23L. Magnetic variation: 5W
2.19.2 ILS identification: FVJ
2.19.5 Coordinates: 39–43–20.19N / 86–16–39.54W
2.19.6 Site elevation: 802 ft

2.19.1 ILS type: DME for runway 05L. Magnetic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39–43–51.35N / 86–17–27.57W
2.19.6 Site elevation: 797.6 ft

2.19.1 ILS type: DME for runway 23R. Magnetic variation: 5W
2.19.2 ILS identification: UZK
2.19.5 Coordinates: 39–43–51.35N / 86–17–27.57W
2.19.6 Site elevation: 797.6 ft

2.19.1 ILS type: Middle Marker for runway 32. Magnetic variation: 5W
2.19.2 ILS identification: COA
2.19.5 Coordinates: 39–42–52.06N / 86–15–44.56W
2.19.6 Site elevation: 752 ft

2.19.1 ILS type: Middle Marker for runway 05L. Magnetic variation: 5W
2.19.2 ILS identification: IND
2.19.5 Coordinates: 39–42–00.00N / 86–19–43.10W
2.19.6 Site elevation: 726 ft

2.19.1 ILS type: Middle Marker for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39–42–00.00N / 86–19–43.10W
2.19.6 Site elevation: 770 ft

2.19.1 ILS type: DME for runway 05R. Magnetic variation: 5W
2.19.2 ILS identification: OQV
2.19.5 Coordinates: 39–43–20.19N / 86–16–39.54W
2.19.6 Site elevation: 802 ft

General Remarks:
PRIMARY STUDENT TOUCH AND GO LANDING NOT PERMITTED.

LARGE FLOCKS OF BIRDS ON & IN THE VICINITY OF AIRPORT.

NOISE ABATEMENT PROCEDURES IN EFFECT CONTACT AIRPORT MANAGEMENT ON 317−487−9594.

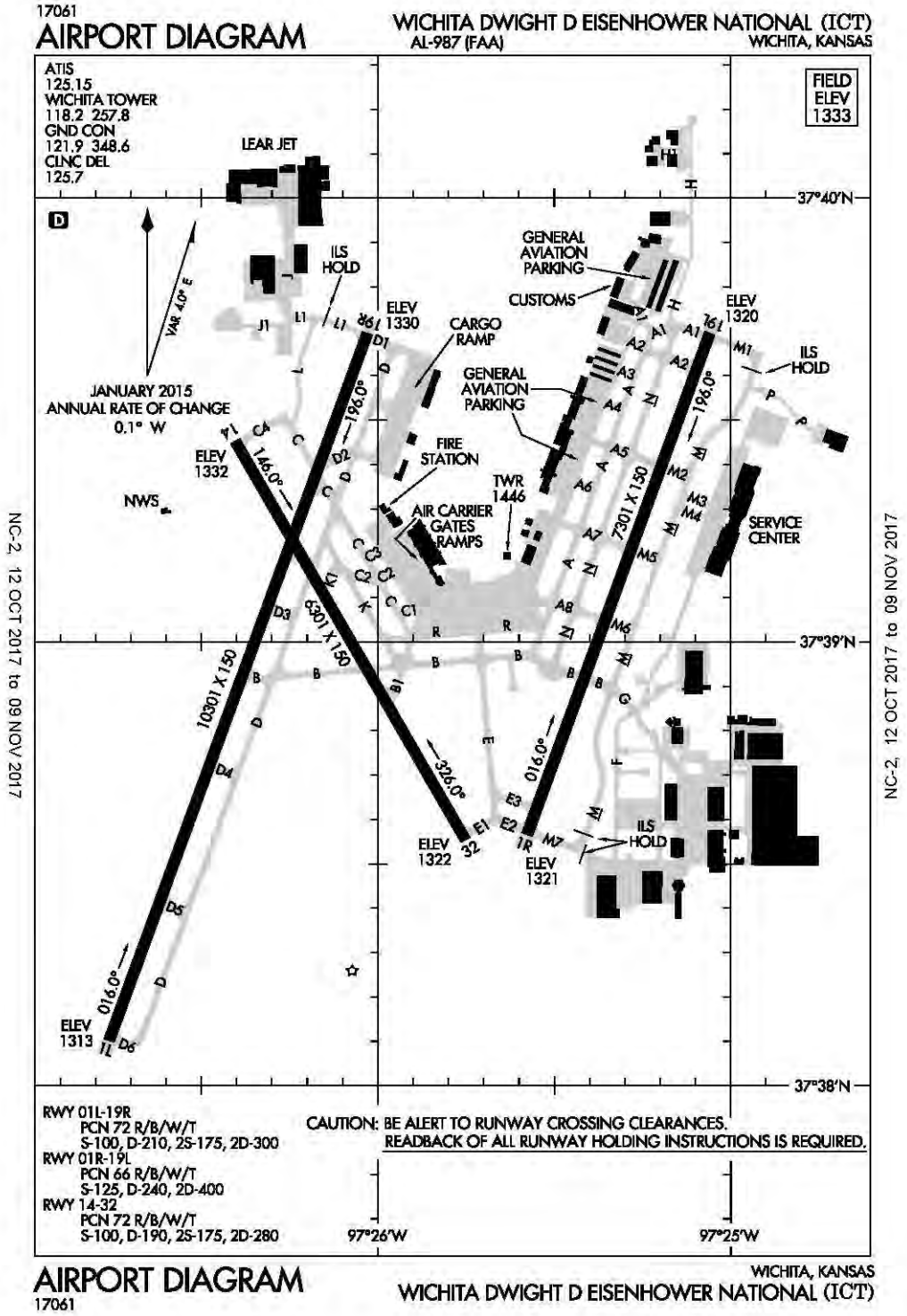
BE ALERT TO CLOSE PROXIMITY OF RUNWAY 14/32 TO NORTHEAST RAMP.

TAXIWAY 'H' RUNS CONTIGUOUS AT NORTHEAST RAMP.

RUNWAY 05R/23L & RUNWAY 14/32 HAVE 200 FT BLAST PADS BOTH ENDS. RUNWAY 5L/23R HAS 400 FT BLAST PAD AT BOTH ENDS.

TAXIWAY V IS NOT AVAILABLE FOR AIR CARRIER OPERATIONS.

Wichita, Kansas
Wichita Mid–Continent
ICAO Identifier KICT



Wichita, KS
Wichita Mid−Continent
ICAO Identifier KICT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 37−38−59.80N / 97−25−59.00W
2.2.2 From City: 5 Miles SW Of Wichita, KS
2.2.3 Elevation: 1332.5 ft
2.2.5 Magnetic variation: 4E (2015)
2.2.6 Airport Contact: Mr. Victor White, A.A.E.
2173 AIR CARGO ROAD
Wichita, KS 67209
(316−946−4700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 01L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−38−00.00N / 97−26−45.59W
2.12.6 Threshold elevation: 1313 ft
2.12.6 Touchdown zone elevation: 1314 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 200
2.12.3 Dimensions: 10301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−39−41.76N / 97−26−00.00W
2.12.6 Threshold elevation: 1330 ft
2.12.6 Touchdown zone elevation: 1330 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 20
2.12.3 Dimensions: 7301 ft x 150 ft
2.12.4 PCN: 66 R/B/W/T
2.12.5 Coordinates: 37−38−33.95N / 97−25−34.63W
2.12.6 Threshold elevation: 1321 ft
2.12.6 Touchdown zone elevation: 1321 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7301 ft x 150 ft
2.12.4 PCN: 66 R/B/W/T
2.12.5 Coordinates: 37−39−41.77N / 97−25−00.00W
2.12.6 Threshold elevation: 1320 ft
2.12.6 Touchdown zone elevation: 1320 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 150
2.12.3 Dimensions: 6301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−39−27.16N / 97−26−24.27W
2.12.6 Threshold elevation: 1332 ft
2.12.6 Touchdown zone elevation: 1332 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 330
2.12.3 Dimensions: 6301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−38−33.22N / 97−25−45.10W
2.12.6 Threshold elevation: 1322 ft
2.12.6 Touchdown zone elevation: 1322 ft

AD 2.13 Declared distances

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 10301
2.13.3 Takeoff distance available: 10301
2.13.4 Accelerate−stop distance available: 10301
2.13.5 Landing distance available: 10301

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 10301
2.13.3 Takeoff distance available: 10301
2.13.4 Accelerate−stop distance available: 10301
2.13.5 Landing distance available: 10301

2.13.1 Designation: 01R
2.13.2 Takeoff run available: 7301
2.13.3 Takeoff distance available: 7301
2.13.4 Accelerate−stop distance available: 7301
2.13.5 Landing distance available: 7301

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 7301
2.13.3 Takeoff distance available: 7301
2.13.4 Accelerate−stop distance available: 7301

2.13.5 Landing distance available: 7301

2.13.1 Designation: 14
2.13.2 Takeoff run available: 6301
2.13.3 Takeoff distance available: 6301
2.13.4 Accelerate–stop distance available: 6301
2.13.5 Landing distance available: 6301

2.13.1 Designation: 32
2.13.2 Takeoff run available: 6301
2.13.3 Takeoff distance available: 6301
2.13.4 Accelerate–stop distance available: 6301
2.13.5 Landing distance available: 6301

AD 2.14 Approach and runway lighting
2.14.1 Designation: 01L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 19R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 01R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 19L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 14
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: ATIS
2.18.3 Service designation: 125.15 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 134.8 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 134.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.2 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 125.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 126.7 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 134.85 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 325.8 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 327.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 353.5 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 290.275 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 290.275 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 4E
2.19.2 ILS identification: TWI
2.19.5 Coordinates: 37–39–51.34N / 97–25–57.41W
2.19.6 Site elevation: 1320 ft

2.19.1 ILS type: Localizer for runway 19R. Magnetic variation: 4E
2.19.2 ILS identification: HOV
2.19.5 Coordinates: 37–37–54.74N / 97–26–50.78W
2.19.6 Site elevation: 1319.4 ft

2.19.1 ILS type: Localizer for runway 01R. Magnetic variation: 4E
2.19.2 ILS identification: ICT
2.19.5 Coordinates: 37–39–51.99N / 97–24–58.88W
2.19.6 Site elevation: 1307 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 4E
2.19.2 ILS identification: TWI
2.19.5 Coordinates: 37–38–16.71N / 97–26–46.01W
2.19.6 Site elevation: 1310 ft

2.19.1 ILS type: DME for runway 01R. Magnetic variation: 4E
2.19.2 ILS identification: ICT
2.19.5 Coordinates: 37–39–52.04N / 97–25–00.00W
2.19.6 Site elevation: 1326.6 ft

2.19.1 ILS type: Outer Marker for runway 01R. Magnetic variation: 4E
2.19.2 ILS identification: ICT
2.19.5 Coordinates: 37–34–41.50N / 97–27–21.09W
2.19.6 Site elevation:

2.19.1 ILS type: Glide Slope for runway 01R. Magnetic variation: 4E
2.19.2 ILS identification: ICT
2.19.5 Coordinates: 37–38–42.64N / 97–25–24.70W
2.19.6 Site elevation: 1314.7 ft

2.19.1 ILS type: Glide Slope for runway 19R. Magnetic variation: 4E
2.19.2 ILS identification: HOV
2.19.5 Coordinates: 37–39–33.86N / 97–26–10.83W
2.19.6 Site elevation: 1325.7 ft

2.19.1 ILS type: Outer Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS identification: TWI
2.19.5 Coordinates: 37–33–33.95N / 97–28–51.78W
2.19.6 Site elevation: 1310 ft

2.19.1 ILS type: Middle Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS identification: TWI
2.19.5 Coordinates: 37–37–39.47N / 97–26–57.83W
2.19.6 Site elevation: 1323 ft

2.19.1 ILS type: Inner Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS identification: TWI
2.19.5 Coordinates: 37–37–57.14N / 97–26–49.69W
2.19.6 Site elevation: 1317 ft

2.19.1 ILS type: Middle Marker for runway 19R. Magnetic variation: 4E
2.19.2 ILS identification: HOV
2.19.5 Coordinates: 37–40–00.00N / 97–25–49.89W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 01R. Magnetic variation: 4E
2.19.2 ILS identification: ICT
2.19.5 Coordinates: 37–38–00.00N / 97–25–49.07W
2.19.6 Site elevation: 999 ft

2.19.1 ILS type: Outer Marker for runway 19R. Magnetic variation: 4E
2.19.2 ILS identification: HOV
2.19.5 Coordinates: 37–44–16.61N / 97–24–00.00W
2.19.6 Site elevation: 1325.7 ft

2.19.1 ILS type: DME for runway 19L. Magnetic variation: 4E
2.19.2 ILS identification: MVP
2.19.5 Coordinates: 37–38–21.53N / 97–25–43.26W
2.19.6 Site elevation: 1320 ft

2.19.1 ILS type: Localizer for runway 19L. Magnetic variation: 4E
2.19.2 ILS identification: MVP
2.19.5 Coordinates: 37–38–21.32N / 97–25–40.42W
2.19.6 Site elevation: 1318 ft

2.19.1 ILS type: Glide Slope for runway 19L. Magnetic variation: 4E

2.19.2 ILS identification: MVP
2.19.6 Site elevation: 1312 ft
2.19.5 Coordinates: 37−39−30.78N / 97−25−00.00W

General Remarks:
PRIOR PERMISSION REQUIREDUIRED FOR AIRCRAFT CARRYING CLASS 1 − DIVISION 1.1; 1.2 OR 1.3 EXPLOSIVES AS DEFINED BY 49 CODE OF FEDERAL REGULATIONS 173.50 OR AS AMENDED.

TAXIWAYS F, G, H, J, P AND ALL PARKING RAMPS ARE NON−MOVEMENT AREAS.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE.

MIGRATORY BIRDS ON AND IN THE VICINITY OF AIRPORT.

ATCT HAS LIMITED VISIBILITY OF TERMINAL GATES 1−8.

TAXIWAY H CLOSED TO AIRCRAFT WITH WINGSPAN MORE THAN 75 FT. TAXIWAY H CONGESTED AND NOT VISIBLE FROM ATCT; USE CAUTION.

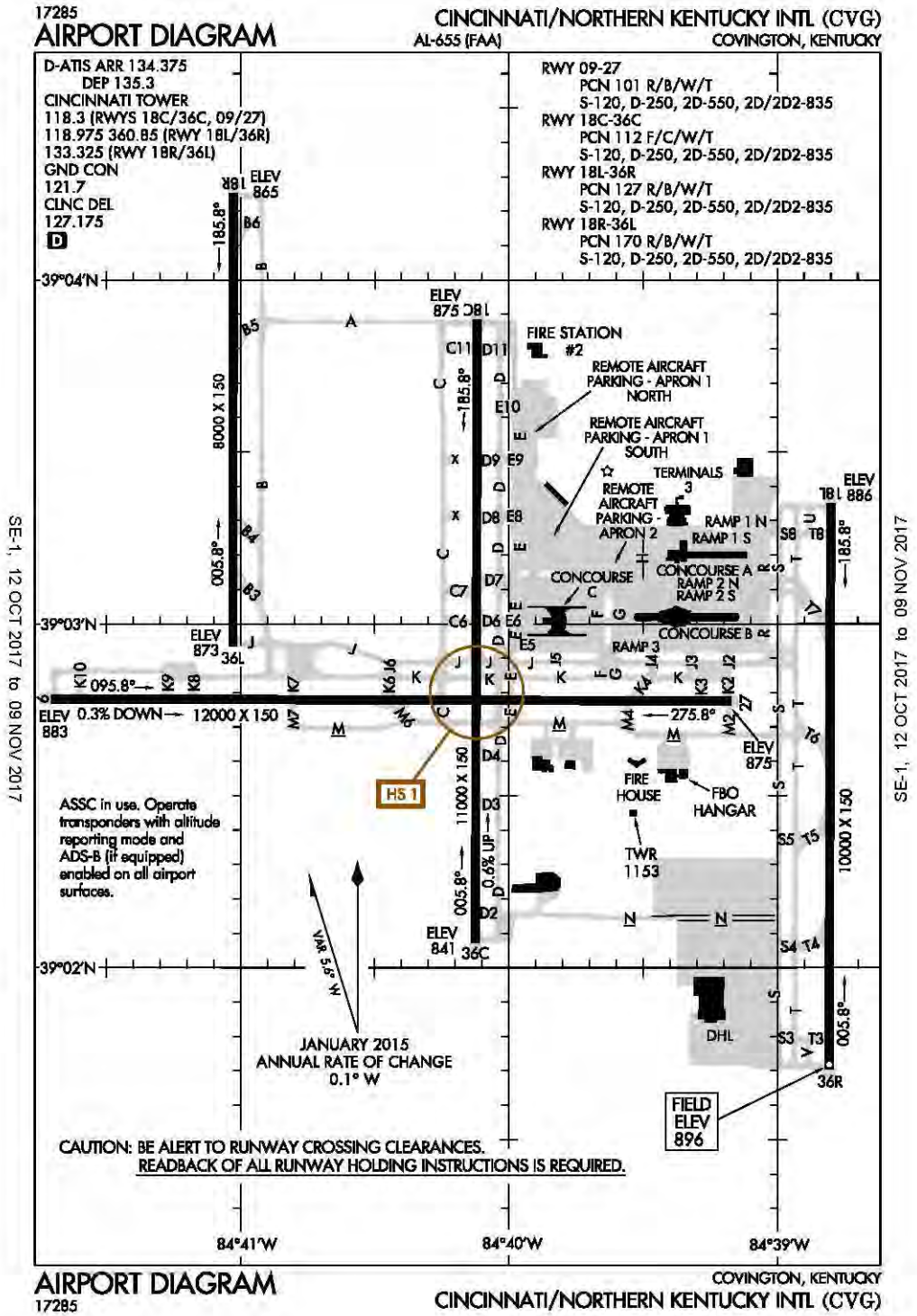
TAXIWAY L AND L1 CLOSED TO AIRCRAFT WITH WINGSPAN MORE THAN 118FT.

TAXIWAY P CLOSED TO AIRCRAFT WITH WINGSPAN MORE THAN 79FT.

NOTE: SEE SPECIAL NOTICES−CONTINUOUS POWER FACILITIES.

AIRCRAFT ENGINE RUNS ABOVE IDLE NOT APPROVED ON AIRCRAFT PARKING RAMPS.

Covington, Kentucky
Cincinnati/Northern Kentucky International
ICAO Identifier KCVG



Covington, KY
Cincinnati/Northern Kentucky Intl
ICAO Identifier KCVG

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39–02–55.81N / 84–40–00.00W
2.2.2 From City: 8 Miles SW Of Covington, KY
2.2.3 Elevation: 896.2 ft
2.2.5 Magnetic variation: 6W (2020)
2.2.6 Airport Contact: Candace Mcgraw
PO BOX 752000
Cincinnati, OH 45275
(859–767–3151)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 18C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39–03–53.07N / 84–40–00.00W
2.12.6 Threshold elevation: 875 ft
2.12.6 Touchdown zone elevation: 875 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39–02–00.00N / 84–40–00.00W
2.12.6 Threshold elevation: 841 ft
2.12.6 Touchdown zone elevation: 851 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39–03–21.08N / 84–38–48.00W
2.12.6 Threshold elevation: 886 ft
2.12.6 Touchdown zone elevation: 889 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39–01–42.24N / 84–38–48.46W
2.12.6 Threshold elevation: 896 ft
2.12.6 Touchdown zone elevation: 896 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 101 R/B/W/T
2.12.5 Coordinates: 39–02–46.91N / 84–41–42.36W
2.12.6 Threshold elevation: 883 ft
2.12.6 Touchdown zone elevation: 883 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 101 R/B/W/T
2.12.5 Coordinates: 39–02–46.54N / 84–39–10.26W
2.12.6 Threshold elevation: 875 ft
2.12.6 Touchdown zone elevation: 875 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39–04–15.18N / 84–41–00.00W
2.12.6 Threshold elevation: 865 ft
2.12.6 Touchdown zone elevation: 868 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39–02–56.11N / 84–41–00.00W
2.12.6 Threshold elevation: 873 ft
2.12.6 Touchdown zone elevation: 873 ft

AD 2.13 Declared distances

2.13.1 Designation: 18C
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate–stop distance available: 11000
2.13.5 Landing distance available: 11000

2.13.1 Designation: 36C
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 11000
2.13.5 Landing distance available: 11000

2.13.1 Designation: 18L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 36R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 09
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate−stop distance available: 11640
2.13.5 Landing distance available: 11640

2.13.1 Designation: 27
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate−stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 18R
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 36L
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 18C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 36C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 18L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 36R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 27
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 18R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 36L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.975 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 127.175 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 360.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 133.325 MHz

2.18.1 Service designation: JAKIE RNAV STAR
2.18.3 Service designation: 119.7 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: (001–180)
2.18.3 Service designation: 126.65 MHz

2.18.1 Service designation: DEP/P CLASS B
2.18.3 Service designation: 128.7 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 254.25 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 363.15 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 123.875 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 119.7 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 134.375 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135.3 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: JAKIE RNAV STAR
2.18.3 Service designation: 254.25 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 18C. Magnetic variation: 4W
2.19.2 ILS identification: SIC
2.19.5 Coordinates: 39–01–54.18N / 84–40–00.00W
2.19.6 Site elevation: 819 ft

2.19.1 ILS type: Localizer for runway 36C. Magnetic variation: 6W
2.19.2 ILS identification: CVG
2.19.5 Coordinates: 39–04–00.00N / 84–40–00.00W
2.19.6 Site elevation: 882 ft

2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 4W
2.19.2 ILS identification: URN
2.19.5 Coordinates: 39–02–46.51N / 84–39–00.00W
2.19.6 Site elevation: 873.7 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 4W
2.19.2 ILS identification: JDP
2.19.5 Coordinates: 39–02–46.94N / 84–41–55.34W
2.19.6 Site elevation: 884 ft

2.19.1 ILS type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: EEI
2.19.5 Coordinates: 39–03–31.49N / 84–38–47.95W
2.19.6 Site elevation: 892.1 ft

2.19.1 ILS type: Localizer for runway 18L. Magnetic variation: 4W
2.19.2 ILS identification: CIZ
2.19.5 Coordinates: 39–01–31.79N / 84–38–48.50W
2.19.6 Site elevation: 899 ft

2.19.1 ILS type: DME for runway 18C. Magnetic variation: 4W
2.19.2 ILS identification: SIC
2.19.5 Coordinates: 39–01–54.15N / 84–40–00.00W
2.19.6 Site elevation: 819 ft

2.19.1 ILS type: DME for runway 36C. Magnetic variation: 6W
2.19.2 ILS identification: CVG
2.19.5 Coordinates: 39–04–00.00N / 84–40–10.17W
2.19.6 Site elevation: 886 ft

2.19.1 ILS type: DME for runway 18L. Magnetic variation: 4W
2.19.2 ILS identification: CIZ

2.19.5 Coordinates: 39−01−31.58N / 84−38−45.41W
2.19.6 Site elevation: 915 ft

2.19.1 ILS type: Glide Slope for runway 18C. Magnetic variation: 4W
2.19.2 ILS identification: SIC
2.19.5 Coordinates: 39−03−42.65N / 84−40−12.14W
2.19.6 Site elevation: 868 ft

2.19.1 ILS type: Glide Slope for runway 36C. Magnetic variation: 6W
2.19.2 ILS identification: CVG
2.19.5 Coordinates: 39−02−15.48N / 84−40−12.49W
2.19.6 Site elevation: 834 ft

2.19.1 ILS type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: EEI
2.19.5 Coordinates: 39−03−30.88N / 84−38−51.18W
2.19.6 Site elevation: 905 ft

2.19.1 ILS type: Outer Marker for runway 09. Magnetic variation: 4W
2.19.2 ILS identification: URN
2.19.5 Coordinates: 39−02−44.69N / 84−46−22.67W
2.19.6 Site elevation:

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 4W
2.19.2 ILS identification: URN
2.19.5 Coordinates: 39−02−42.92N / 84−41−28.27W
2.19.6 Site elevation: 873.6 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 4W
2.19.2 ILS identification: JDP
2.19.5 Coordinates: 39−02−42.63N / 84−39−25.16W
2.19.6 Site elevation: 867 ft

2.19.1 ILS type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: EEI
2.19.5 Coordinates: 39−01−52.80N / 84−38−43.34W
2.19.6 Site elevation: 890 ft

2.19.1 ILS type: Glide Slope for runway 18L. Magnetic variation: 4W
2.19.2 ILS identification: CIZ
2.19.5 Coordinates: 39−03−10.88N / 84−38−42.98W
2.19.6 Site elevation: 881.3 ft

2.19.1 ILS type: Inner Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: EEI
2.19.5 Coordinates: 39−01−33.56N / 84−38−48.50W
2.19.6 Site elevation: 899 ft

2.19.1 ILS type: Inner Marker for runway 36C. Magnetic variation: 6W
2.19.2 ILS identification: CVG
2.19.5 Coordinates: 39−01−54.05N / 84−40−00.00W
2.19.6 Site elevation: 818 ft

2.19.1 ILS type: Outer Marker for runway 18C. Magnetic variation: 4W
2.19.2 ILS identification: SIC
2.19.5 Coordinates: 39−07−30.20N / 84−40−00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 27. Magnetic variation: 4W
2.19.2 ILS identification: JDP
2.19.5 Coordinates: 39−02−46.53N / 84−32−59.24W
2.19.6 Site elevation: 860 ft

2.19.1 ILS type: Middle Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS identification: EEI
2.19.5 Coordinates: 39−01−16.54N / 84−38−48.58W
2.19.6 Site elevation: 915 ft

2.19.1 ILS type: Middle Marker for runway 27. Magnetic variation: 4W
2.19.2 ILS identification: JDP
2.19.5 Coordinates: 39−02−46.46N / 84−38−37.56W
2.19.6 Site elevation: 890 ft

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 4W
2.19.2 ILS identification: URN
2.19.5 Coordinates: 39−02−46.92N / 84−41−27.61W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 18L. Magnetic variation: 4W
2.19.2 ILS identification: CIZ
2.19.5 Coordinates: 39−03−47.57N / 84−38−48.51W
2.19.6 Site elevation: 872 ft

2.19.1 ILS type: Middle Marker for runway 18C. Magnetic variation: 4W
2.19.2 ILS identification: SIC

2.19.5 Coordinates: 39–04–10.50N / 84–40–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 36C. Magnetic variation: 6W
2.19.2 ILS identification: CVG
2.19.5 Coordinates: 39–01–31.79N / 84–40–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 09. Magnetic variation: 4W
2.19.2 ILS identification: URN
2.19.5 Coordinates: 39–02–43.95N / 84–39–00.00W
2.19.6 Site elevation: 872 ft

2.19.1 ILS type: DME for runway 36L. Magnetic variation: 6W
2.19.2 ILS identification: VAC
2.19.5 Coordinates: 39–04–25.03N / 84–41–00.00W
2.19.6 Site elevation: 848 ft

2.19.1 ILS type: Localizer for runway 36L. Magnetic variation: 6W
2.19.2 ILS identification: VAC
2.19.5 Coordinates: 39–04–25.49N / 84–41–00.00W
2.19.6 Site elevation: 855 ft

2.19.1 ILS type: Glide Slope for runway 36L. Magnetic variation: 6W
2.19.2 ILS identification: VAC
2.19.5 Coordinates: 39–03–00.00N / 84–41–00.00W
2.19.6 Site elevation: 867 ft

2.19.1 ILS type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: CJN
2.19.5 Coordinates: 39–04–00.00N / 84–41–00.00W
2.19.6 Site elevation: 860.5 ft

2.19.1 ILS type: Localizer for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: CJN
2.19.5 Coordinates: 39–02–41.27N / 84–41–00.00W
2.19.6 Site elevation: 871 ft

2.19.1 ILS type: Inner Marker for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: CJN
2.19.5 Coordinates: 39–04–23.57N / 84–41–00.00W
2.19.6 Site elevation: 856 ft

2.19.1 ILS type: DME for runway 18R. Magnetic variation: 6W
2.19.2 ILS identification: CJN
2.19.5 Coordinates: 39–02–41.52N / 84–41–00.00W
2.19.6 Site elevation: 869 ft

2.19.1 ILS type: Inner Marker for runway 36L. Magnetic variation: 6W
2.19.2 ILS identification: VAC
2.19.5 Coordinates: 39–02–44.31N / 84–41–00.00W
2.19.6 Site elevation:

General Remarks:
NOISE SENSITIVE AREAS NORTH & SOUTH OF AIRPORT. RUNWAY ASSIGNMENTS BETWEEN 2200–0700 WILL BE PREDICATED ON NOISE ABATEMENT CONSIDERATIONS.

SUCCESSIVE OR SIMULTANEOUS DEPS FROM RUNWAYS 18L AND RUNWAY 18C ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FROM END OF RUNWAY DUE TO NOISE ABATEMENT RESTRICTIONS.

RUNWAY 09/27 WEST 4200 FT CONCRETE; EAST 750 FT CONCRETE; REMAINDER ASPHALT OVERLAY.

SUCCESSIVE OR SIMULTANEOUS DEPS FROM RUNWAY 36C & RUNWAY 36R ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FROM END OF RUNWAY DUE TO NOISE ABATEMENT RESTRICTIONS.

CVG TAXIWAYS, ALL TAXIWAYS RESTRICTED TO 15 MPH OR LESS WITH WINGSPAN 214 FT AND GREATER.

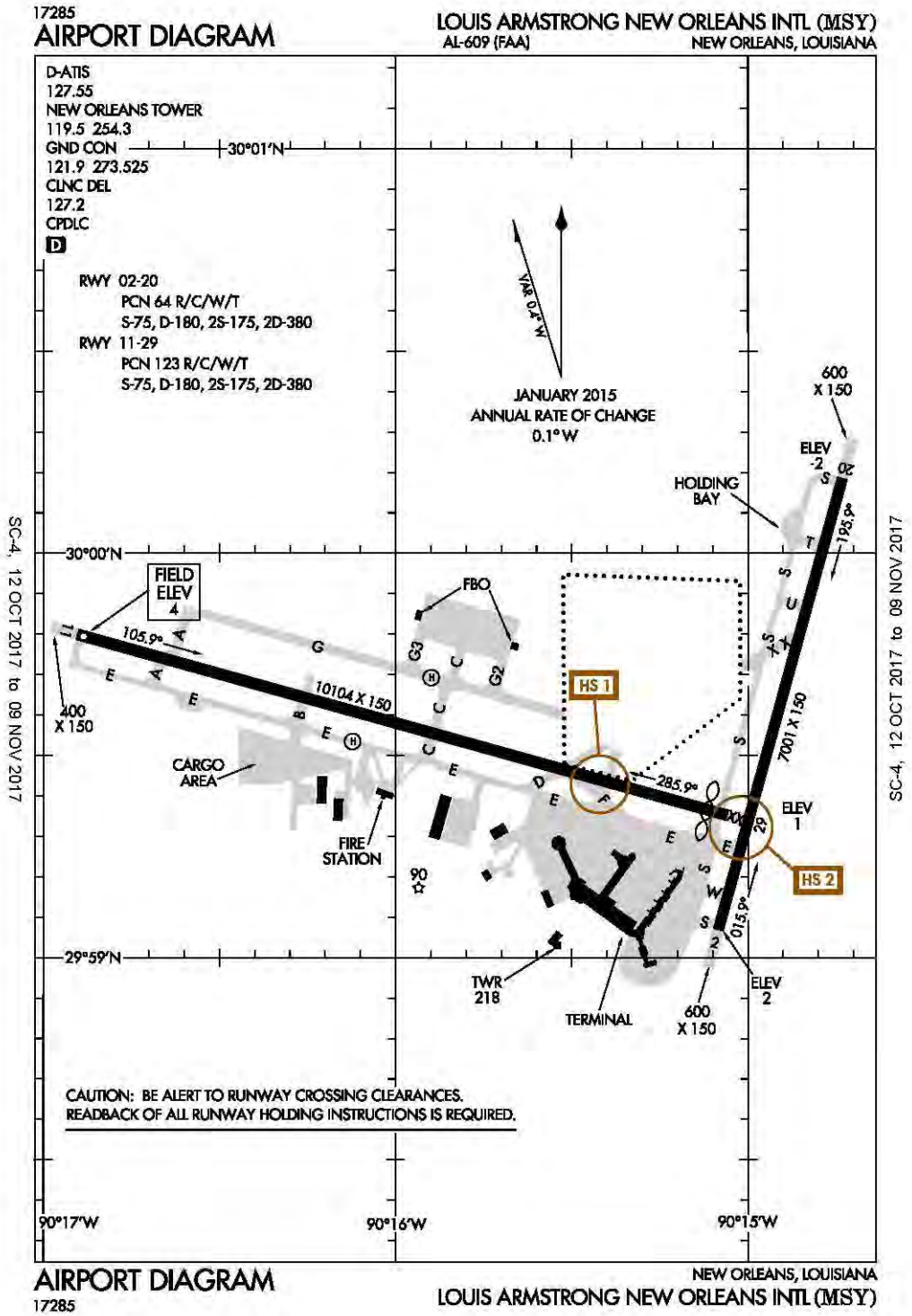
SUCCESSIVE OR SIMULTANEOUS DEPARTURES FROM RUNWAY 36L AND RUNWAY 36R ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FROM END OF RUNWAY DUE TO NOISE ABATEMENT RESTRICTIONS.

LARGE FLOCKS OF BIRDS ON AND IN THE VICINITY OF THE AIRPORT.

RAMP CONTROL EFFECTIVE 0800−0400Z. RAMP CONTROL 130.375 130.900 DHL RAMP CONTROL 129.475

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

New Orleans, Louisiana
Louis Armstrong New Orleans International
ICAO Identifier KMSY



New Orleans, LA
Louis Armstrong New Orleans Intl
ICAO Identifier KMSY

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 29−59−35.80N / 90−15−32.50W
2.2.2 From City: 10 Miles W Of New Orleans, LA
2.2.3 Elevation: 3.7 ft
2.2.5 Magnetic variation: 1W (2020)
2.2.6 Airport Contact: Kevin Dolliole
PO BOX 20007
New Orleans, LA 70141
((504) 303−7652)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 29
2.10.1.b Type of obstacle: Tree (53 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 694 ft from Centerline

2.10.1.a. Runway designation: 02
2.10.1.b Type of obstacle: Road (12 ft). Lighted
2.10.1.c Location of obstacle: 365 ft from Centerline

2.10.1.a. Runway designation: 20
2.10.1.b Type of obstacle: Road (13 ft). Lighted
2.10.1.c Location of obstacle: 289 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 02
2.12.2 True Bearing: 15
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 29−59−00.00N / 90−15−00.00W
2.12.6 Threshold elevation: 2 ft
2.12.6 Touchdown zone elevation: 2 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 195
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 30−00−10.99N / 90−14−43.84W
2.12.6 Threshold elevation: −2 ft
2.12.6 Touchdown zone elevation: −1 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 105
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29−59−47.86N / 90−16−54.22W
2.12.6 Threshold elevation: 4 ft
2.12.6 Touchdown zone elevation: 4 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 285
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29−59−21.17N / 90−15−00.00W
2.12.6 Threshold elevation: 1 ft
2.12.6 Touchdown zone elevation: 2 ft

AD 2.13 Declared distances

2.13.1 Designation: 02
2.13.2 Takeoff run available: 7001
2.13.3 Takeoff distance available: 7001
2.13.4 Accelerate−stop distance available: 7001
2.13.5 Landing distance available: 7001

2.13.1 Designation: 20
2.13.2 Takeoff run available: 7001
2.13.3 Takeoff distance available: 7001
2.13.4 Accelerate−stop distance available: 7001
2.13.5 Landing distance available: 7001

2.13.1 Designation: 11
2.13.2 Takeoff run available: 10104
2.13.3 Takeoff distance available: 10104
2.13.4 Accelerate−stop distance available: 10104
2.13.5 Landing distance available: 10104

2.13.1 Designation: 29
2.13.2 Takeoff run available: 10104
2.13.3 Takeoff distance available: 10104
2.13.4 Accelerate−stop distance available: 10104
2.13.5 Landing distance available: 9800

AD 2.14 Approach and runway lighting
2.14.1 Designation: 02
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 20
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 11
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 29
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: IC
2.18.3 Service designation: 350.35 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 125.5 MHz

2.18.1 Service designation: IC
2.18.3 Service designation: 133.15 MHz

2.18.1 Service designation: IC
2.18.3 Service designation: 290.3 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 127.55 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 127.2 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 133.15 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 254.3 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 269.2 MHz

2.18.1 Service designation: IC
2.18.3 Service designation: 284.7 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 290.3 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 350.35 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.5 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 120.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B
2.18.3 Service designation: 123.85 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 273.525 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 02. Magnetic variation: 1W
2.19.2 ILS identification: JFI
2.19.5 Coordinates: 30–00–20.51N / 90–14–40.81W
2.19.6 Site elevation: –4.2 ft

2.19.1 ILS type: Localizer for runway 20. Magnetic variation: 1W
2.19.2 ILS identification: ONW
2.19.5 Coordinates: 29–58–55.15N / 90–15–00.00W
2.19.6 Site elevation: 2.3 ft

2.19.1 ILS type: Localizer for runway 29. Magnetic variation: 1W

2.19.2 ILS identification: HOX
2.19.5 Coordinates: 29−59−50.52N / 90−17−00.00W
2.19.6 Site elevation: 4.4 ft

2.19.1 ILS type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 29−59−19.32N / 90−14−55.85W
2.19.6 Site elevation: −0.5 ft

2.19.1 ILS type: DME for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 29−59−17.21N / 90−14−55.72W
2.19.6 Site elevation: 12.4 ft

2.19.1 ILS type: DME for runway 02. Magnetic variation: 1W
2.19.2 ILS identification: JFI
2.19.5 Coordinates: 30−00−21.66N / 90−14−43.25W
2.19.6 Site elevation: 1.3 ft

2.19.1 ILS type: DME for runway 20. Magnetic variation: 1W
2.19.2 ILS identification: ONW
2.19.5 Coordinates: 30−00−21.66N / 90−14−43.25W
2.19.6 Site elevation: 1.3 ft

2.19.1 ILS type: DME for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: HOX
2.19.5 Coordinates: 29−59−17.21N / 90−14−55.72W
2.19.6 Site elevation: 12.4 ft

2.19.1 ILS type: Glide Slope for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: HOX
2.19.5 Coordinates: 29−59−27.97N / 90−15−16.79W
2.19.6 Site elevation: 0.1 ft

2.19.1 ILS type: Glide Slope for runway 02. Magnetic variation: 1W
2.19.2 ILS identification: JFI
2.19.5 Coordinates: 29−59−13.61N / 90−14−58.56W
2.19.6 Site elevation: −0.9 ft

2.19.1 ILS type: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 29−59−48.62N / 90−16−39.25W
2.19.6 Site elevation: −3.1 ft

2.19.1 ILS type: Outer Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 30−01−30.85N / 90−23−59.59W
2.19.6 Site elevation: 7.2 ft

2.19.1 ILS type: Outer Marker for runway 02. Magnetic variation: 1W
2.19.2 ILS identification: JFI
2.19.5 Coordinates: 29−54−53.36N / 90−16−26.35W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 29−59−50.26N / 90−17−00.00W
2.19.6 Site elevation: 4.4 ft

2.19.1 ILS type: Outer Marker for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: HOX
2.19.5 Coordinates: 29−58−12.35N / 90−10−27.99W
2.19.6 Site elevation: 5 ft

2.19.1 ILS type: Middle Marker for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: HOX
2.19.5 Coordinates: 29−59−15.11N / 90−14−37.70W
2.19.6 Site elevation: 1 ft

2.19.1 ILS type: Middle Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: MSY
2.19.5 Coordinates: 29−59−56.63N / 90−17−22.12W
2.19.6 Site elevation:

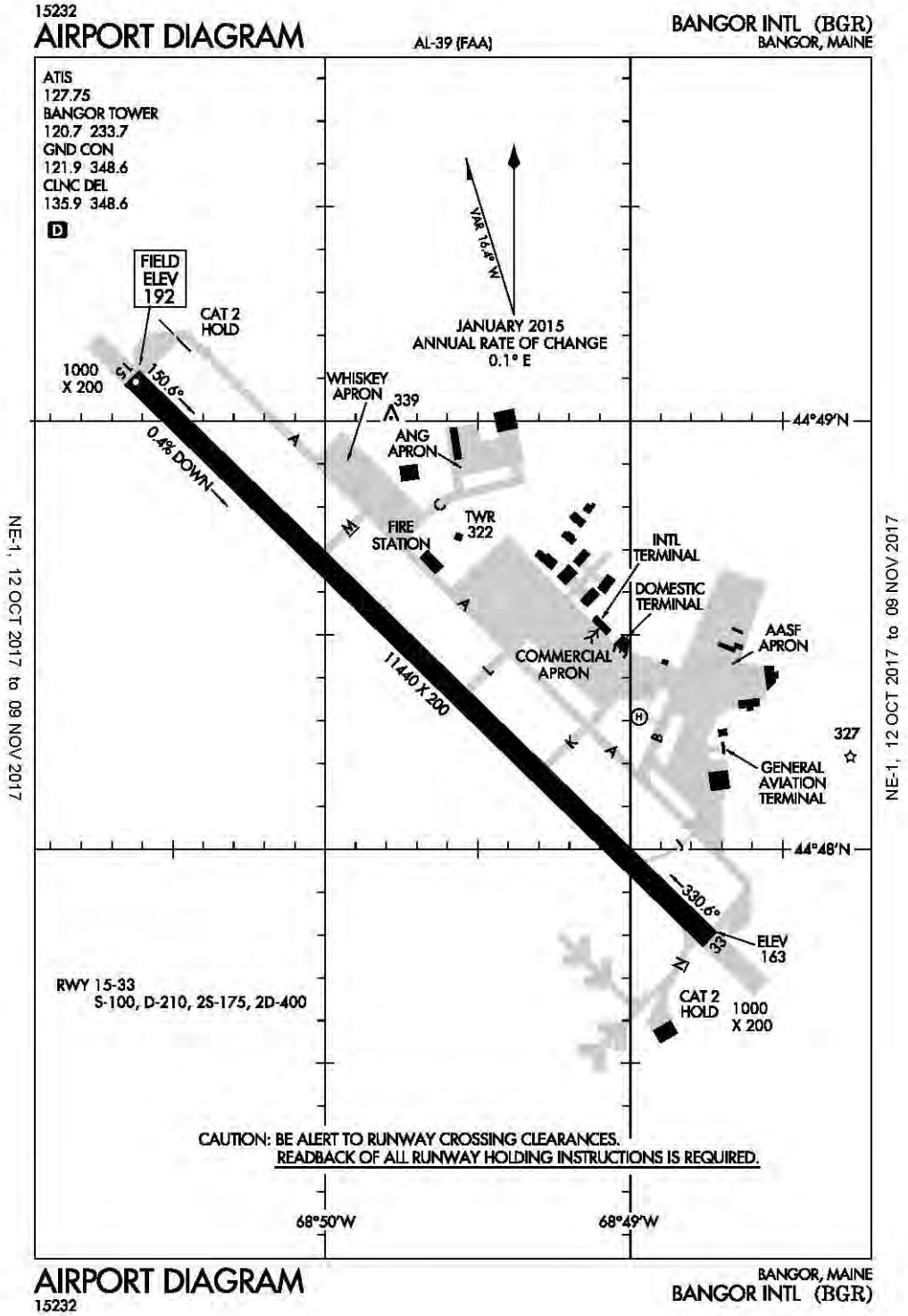
2.19.1 ILS type: Middle Marker for runway 02. Magnetic variation: 1W
2.19.2 ILS identification: JFI
2.19.5 Coordinates: 29−58−28.53N / 90−15−15.88W
2.19.6 Site elevation:

General Remarks:
180 DEGREE & LOCKED WHEEL TURNS PROHIBITED ON ASPHALT SURFACE AIRCRAFT 12500 LBS & OVER.

FLOCKS OF BIRDS ON & IN VICINITY OF AIRPORT.

RUNWAY 11 NOISE SENSITIVE FOR DEP; AVAILABLE FOR OPERATIONAL NECESSITY. ALL RUNWAYS NOISE SENSITIVE FOR ARR. ARRIVING TURBOJETS MUST MAKE 5 MILE FINAL APPROACH TO MINIMIZE NOISE.

Bangor, Maine
Bangor International
ICAO Identifier KBGR



Bangor, ME
Bangor Intl
ICAO Identifier KBGR

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 44–48–26.80N / 68–49–41.30W
2.2.2 From City: 3 Miles W Of Bangor, ME
2.2.3 Elevation: 192.1 ft
2.2.5 Magnetic variation: 16W (2020)
2.2.6 Airport Contact: Tony Caruso
BANGOR INTERNATIONAL ARPT
Bangor, ME 4401 (207–992–4600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 33
2.10.1.b Type of obstacle: Trees (76 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.5 Coordinates: 44–49–00.00N / 68–50–38.15W
2.12.6 Threshold elevation: 192 ft
2.12.6 Touchdown zone elevation: 192 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.5 Coordinates: 44–47–47.41N / 68–48–44.36W
2.12.6 Threshold elevation: 163 ft
2.12.6 Touchdown zone elevation: 163 ft

2.12.1 Designation: H1
2.12.3 Dimensions: 100 ft x 100 ft

AD 2.13 Declared distances
2.13.1 Designation: 15
2.13.2 Takeoff run available: 11440
2.13.3 Takeoff distance available: 11440
2.13.4 Accelerate–stop distance available: 11440
2.13.5 Landing distance available: 11440

AD 2.14 Approach and runway lighting
2.14.1 Designation: 15
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 33
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 239.3 MHz

2.18.1 Service designation: APCH/S DEP/S CLASS C/S
2.18.3 Service designation: 124.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C/P IC
2.18.3 Service designation: 118.925 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 233.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 127.75 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P
2.18.3 Service designation: 135.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: GND/P CD/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: NG OPS
2.18.3 Service designation: 41.2 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−47−40.37N / 68−48−34.19W
2.19.6 Site elevation: 161.7 ft

2.19.1 ILS type: Localizer for runway 33. Magnetic variation: 16W
2.19.2 ILS identification: BGR
2.19.5 Coordinates: 44−49−13.62N / 68−50−48.98W
2.19.6 Site elevation: 181.7 ft

2.19.1 ILS type: DME for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−47−42.50N / 68−48−31.81W
2.19.6 Site elevation: 166.2 ft

2.19.1 ILS type: Glide Slope for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−49−00.00N / 68−50−22.48W
2.19.6 Site elevation: 187.7 ft

2.19.1 ILS type: Glide Slope for runway 33. Magnetic variation: 16W
2.19.2 ILS identification: BGR
2.19.5 Coordinates: 44−47−53.70N / 68−48−59.71W
2.19.6 Site elevation: 148.8 ft

2.19.1 ILS type: Middle Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−49−23.69N / 68−51−00.00W
2.19.6 Site elevation: 158 ft

2.19.1 ILS type: Inner Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−49−12.06N / 68−50−46.72W
2.19.6 Site elevation: 184 ft

2.19.1 ILS type: Middle Marker for runway 33. Magnetic variation: 16W
2.19.2 ILS identification: BGR
2.19.5 Coordinates: 44−47−30.62N / 68−48−20.24W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 33. Magnetic variation: 16W
2.19.2 ILS identification: BGR
2.19.5 Coordinates: 44−43−39.19N / 68−42−46.33W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS identification: JVH
2.19.5 Coordinates: 44−52−49.62N / 68−55−59.54W
2.19.6 Site elevation: 129 ft

2.19.1 ILS type: DME for runway 33. Magnetic variation: 16W
2.19.2 ILS identification: BGR
2.19.5 Coordinates: 44−47−42.50N / 68−48−31.81W
2.19.6 Site elevation: 166.2 ft

General Remarks:
TAXIWAY J LIMITED TO AIRCRAFT 75000 LBS GROSS TAKEOFF WEIGHT.

TRANSIENT AIRCRAFT MAY BE DIVERTED TO CIVILIAN SIDE DURING NON−DUTY HRS & WEEKENDS. FEE REQUIRED; NO ANG TRANSIENT ALERT.

RESTRICTED: TAXIWAY 'J' CLOSED DURING WINTER.

TRAFFIC PATTERN: RUNWAY 33 LEFT TRAFFIC, TURBO JET TRAFFIC 2000' MSL UNLESS OTHERWISE INSTR.

MISC: RUNWAY 15−33 GROOVED.

ANG: PRIOR PERMISSION REQUIREDUIRED DSN 698–7232 (COMM 207–990–7232), 3 HR OUT CALL (HF 6761) & 30 MIN OUT CALL (311.0) REQUIRED TO ENSURE CUSTOMS/AG AVAIL & TIMELY TRANSIENT SERVICE. TRANSIENT MAINT AVAILABLE BY PRIOR PERMISSION REQUIRED. TRANSIENT AIRCRAFT MAY BE DIVERTED TO CIVIL SIDE DUR OPERATING HRS.

ANG: FEE REQUIRE. ANG NOT EQUIPMENT OR MANNED WITH AN AERIAL PORT FLIGHT 30 OR MORE PASSENGER WILL BE SENT TO CITY FOR PROCESSING. CAN HANDLE ALL AIR MOBILITY COMMAND AIRCRAFT. SERVICE AVAILABLE 24/7. CITY WILL ACCEPT ALL FLIGHTS. NO RESTRICTIONS FOR HAZARD CARGO. CALL CITY OPERATIONS AT 207–992–4623 TO COORD PARKING

ARRANGE: OPR 1230–2100Z++ MON–FRI EXCEPT HOLIDAY. LIMITED MAINT. J8. PRIOR PERMISSION REQUIRED MAY–OCT SERVICE DSN 626–1100.

CAUTION: BASH PHASE II PERIOD OCT–NOV, APR–MAY. EXPECT INCREASED BIRD ACTIVITY. CONTACT BASE OPS/COMMAND POST/SOF FOR CURRENT BIRDWATCH CONDITION.

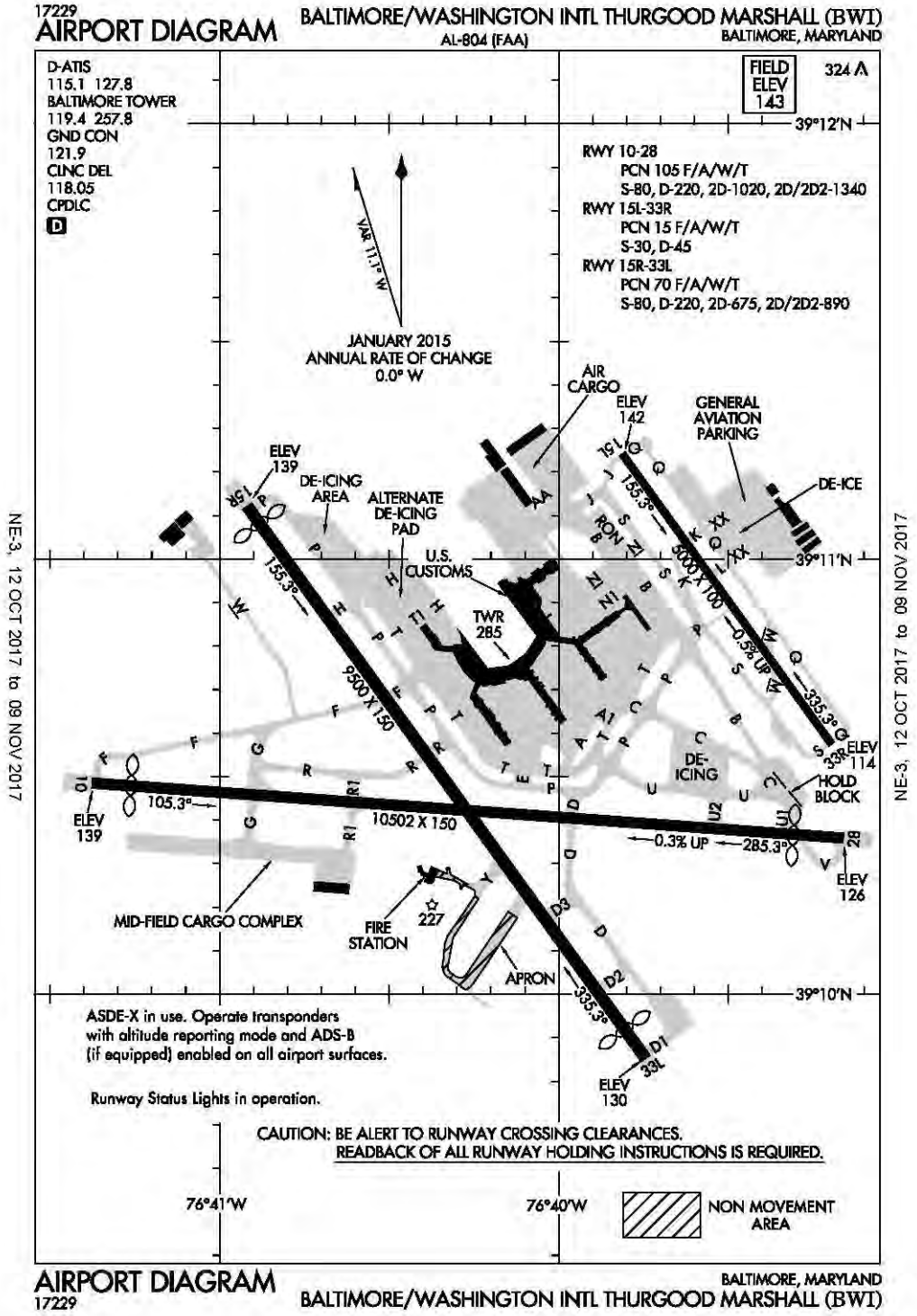
SERVICE–FLUID: REMARKS: FOREIGN MILITARY ONLY: ON BASE LOX SERVICE UNAVAILABLE.

FUEL: A++ (MIL).

MILITARY SVR–FLUID: OFF–BASE CONTRACTED LOX AVAILABLE H24–RQR 24HR NOTICE, PRIOR PERMISSION REQUIRED CONTACT C207–404–7232.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW –31C/–24F.

Baltimore, Maryland
Baltimore–Washington International Thurgood Marshall
ICAO Identifier KBWI



Baltimore, MD
Baltimore/Washington Intl Thurgood Marshal
ICAO Identifier KBWI

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39–10–32.62N / 76–40–00.00W
2.2.2 From City: 9 Miles S Of Baltimore, MD
2.2.3 Elevation: 143.2 ft
2.2.5 Magnetic variation: 11W (2000)
2.2.6 Airport Contact: John Stewart
PO BOX 8766
BWI Airport, MD 21240
(410–859–7018)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: RWY 28 De–Ice Pad Lane 1 R Standard To Aircraft With Wingspan 171 Ft Or Less, Lane 2 R Standard To Aircraft With Wingspan 135 Ft Or Less, Lane 3 Is Used By Large Aircraft Max Wingspan 215 Ft And When In Use– Lanes 2 And 4 Are Unavailable. Lanes 4, 5 & 6 Are R Standard To Aircraft Wingspan 135 Ft Or Less.
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 15L
2.10.1.b Type of obstacle: Pole (31 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 615 ft from Centerline

2.10.1.a. Runway designation: 33R
2.10.1.b Type of obstacle: Tree (39 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 585 ft from Centerline

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Tree (35 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 305 ft from Centerline

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Tree (31 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 425 ft from Centerline

2.10.1.a. Runway designation: 15R
2.10.1.b Type of obstacle: Ant (126 ft). Lighted
2.10.1.c Location of obstacle: 908 ft from Centerline

2.10.1.a. Runway designation: 33L
2.10.1.b Type of obstacle: Tower (154 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 906 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 15L
2.12.2 True Bearing: 144
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39–11–14.54N / 76–39–48.74W
2.12.6 Threshold elevation: 142 ft
2.12.6 Touchdown zone elevation: 142 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 324
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39–10–34.45N / 76–39–11.63W
2.12.6 Threshold elevation: 114 ft
2.12.6 Touchdown zone elevation: 124 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 144
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39–11–00.00N / 76–40–55.17W
2.12.6 Threshold elevation: 139 ft
2.12.6 Touchdown zone elevation: 138 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 324
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39–09–51.13N / 76–39–44.61W
2.12.6 Threshold elevation: 130 ft
2.12.6 Touchdown zone elevation: 143 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T

2.12.5 Coordinates: 39−10−29.09N / 76−41−22.63W
2.12.6 Threshold elevation: 139 ft
2.12.6 Touchdown zone elevation: 143 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T
2.12.5 Coordinates: 39−10−21.48N / 76−39−00.00W
2.12.6 Threshold elevation: 126 ft
2.12.6 Touchdown zone elevation: 143 ft
2.12.7 Slope: 0.3UP

AD 2.13 Declared distances
2.13.1 Designation: 15L
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate−stop distance available: 5000
2.13.5 Landing distance available: 5000

2.13.1 Designation: 33R
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate−stop distance available: 5000
2.13.5 Landing distance available: 5000

2.13.1 Designation: 15R
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate−stop distance available: 8600
2.13.5 Landing distance available: 8300

2.13.1 Designation: 33L
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate−stop distance available: 8800
2.13.5 Landing distance available: 8300

2.13.1 Designation: 10
2.13.2 Takeoff run available: 10502
2.13.3 Takeoff distance available: 10502
2.13.4 Accelerate−stop distance available: 10502
2.13.5 Landing distance available: 9952

2.13.1 Designation: 28
2.13.2 Takeoff run available: 10502
2.13.3 Takeoff distance available: 10502
2.13.4 Accelerate−stop distance available: 10502
2.13.5 Landing distance available: 9802

AD 2.14 Approach and runway lighting
2.14.1 Designation: 15L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 33R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 15R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 33L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 28
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.05 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.4 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P

2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 115.1 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 127.8 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 15L. Magnetic variation: 11W
2.19.2 ILS identification: UQC
2.19.5 Coordinates: 39–10–29.40N / 76–39–00.00W
2.19.6 Site elevation: 94 ft

2.19.1 ILS type: Localizer for runway 15R. Magnetic variation: 11W
2.19.2 ILS identification: FND
2.19.5 Coordinates: 39–09–39.11N / 76–39–33.48W
2.19.6 Site elevation: 116 ft

2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: BAL
2.19.5 Coordinates: 39–10–20.59N / 76–38–54.29W
2.19.6 Site elevation: 137.6 ft

2.19.1 ILS type: Localizer for runway 33R. Magnetic variation: 11W
2.19.2 ILS identification: BWI
2.19.5 Coordinates: 39–11–19.76N / 76–39–53.57W
2.19.6 Site elevation: 133 ft

2.19.1 ILS type: Localizer for runway 33L. Magnetic variation: 11W
2.19.2 ILS identification: RUX
2.19.5 Coordinates: 39–11–10.51N / 76–40–58.14W
2.19.6 Site elevation: 133 ft

2.19.1 ILS type: Localizer for runway 28. Magnetic variation: 11W
2.19.2 ILS identification: OEH
2.19.5 Coordinates: 39–10–29.82N / 76–41–35.42W
2.19.6 Site elevation: 134 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: BAL
2.19.5 Coordinates: 39–10–23.56N / 76–41–00.00W
2.19.6 Site elevation: 137.6 ft

2.19.1 ILS type: Glide Slope for runway 15R. Magnetic variation: 11W
2.19.2 ILS identification: FND
2.19.5 Coordinates: 39–10–53.60N / 76–40–48.90W
2.19.6 Site elevation: 130 ft

2.19.1 ILS type: Glide Slope for runway 33R. Magnetic variation: 11W
2.19.2 ILS identification: BWI
2.19.5 Coordinates: 39–10–40.05N / 76–39–21.19W
2.19.6 Site elevation: 110.3 ft

2.19.1 ILS type: Glide Slope for runway 15L. Magnetic variation: 11W
2.19.2 ILS identification: UQC
2.19.5 Coordinates: 39–11–00.00N / 76–39–44.24W
2.19.6 Site elevation: 138.1 ft

2.19.1 ILS type: Glide Slope for runway 28. Magnetic variation: 11W
2.19.2 ILS identification: OEH
2.19.5 Coordinates: 39–10–18.64N / 76–39–31.02W
2.19.6 Site elevation: 129.2 ft

2.19.1 ILS type: Glide Slope for runway 33L. Magnetic variation: 11W
2.19.2 ILS identification: RUX
2.19.5 Coordinates: 39–10–00.00N / 76–39–59.72W
2.19.6 Site elevation: 125 ft

2.19.1 ILS type: Outer Marker for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: BAL
2.19.5 Coordinates: 39–10–45.89N / 76–46–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 28. Magnetic variation: 11W
2.19.2 ILS identification: OEH
2.19.5 Coordinates: 39–09–56.02N / 76–31–00.00W
2.19.6 Site elevation: 39 ft

2.19.1 ILS type: Outer Marker for runway 15L. Magnet-

ic variation: 11W
2.19.2 ILS identification: UQC
2.19.5 Coordinates: 39−14−55.34N / 76−43−16.63W
2.19.6 Site elevation: 301 ft

2.19.1 ILS type: Outer Marker for runway 15R. Magnetic variation: 11W
2.19.2 ILS identification: FND
2.19.5 Coordinates: 39−14−13.45N / 76−43−52.10W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: BAL
2.19.5 Coordinates: 39−10−31.24N / 76−41−27.11W
2.19.6 Site elevation: 131 ft

2.19.1 ILS type: Middle Marker for runway 33L. Magnetic variation: 11W
2.19.2 ILS identification: RUX
2.19.5 Coordinates: 39−09−29.15N / 76−39−26.74W
2.19.6 Site elevation: 92 ft

2.19.1 ILS type: Middle Marker for runway 33R. Magnetic variation: 11W
2.19.2 ILS identification: BWI
2.19.5 Coordinates: 39−10−00.00N / 76−38−48.58W
2.19.6 Site elevation: 80 ft

2.19.1 ILS type: Outer Marker for runway 33L. Magnetic variation: 11W
2.19.2 ILS identification: RUX
2.19.5 Coordinates: 39−06−36.92N / 76−36−43.69W
2.19.6 Site elevation: 151 ft

2.19.1 ILS type: Middle Marker for runway 15R. Magnetic variation: 11W
2.19.2 ILS identification: FND
2.19.5 Coordinates: 39−11−33.15N / 76−41−19.11W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 28. Magnetic variation: 11W
2.19.2 ILS identification: OEH
2.19.5 Coordinates: 39−10−18.69N / 76−38−22.68W
2.19.6 Site elevation: 55 ft

2.19.1 ILS type: Middle Marker for runway 15L. Magnetic variation: 11W
2.19.2 ILS identification: UQC
2.19.5 Coordinates: 39−11−37.14N / 76−40−00.00W
2.19.6 Site elevation: 180 ft

2.19.1 ILS type: Middle Marker for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: BAL
2.19.5 Coordinates: 39−10−30.85N / 76−41−53.99W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 33R. Magnetic variation: 11W
2.19.2 ILS identification: BWI
2.19.5 Coordinates: 39−11−18.90N / 76−39−48.50W
2.19.6 Site elevation: 128.7 ft

2.19.1 ILS type: DME for runway 33L. Magnetic variation: 11W
2.19.2 ILS identification: RUX
2.19.5 Coordinates: 39−11−00.00N / 76−41−00.00W
2.19.6 Site elevation: 127 ft

General Remarks:
PRACTICE LANDING & APPROACH BY TURBO−POWERED AIRCRAFT PROHIBITED 2200−0600; PRACTICE LANDING & TAKE-OFF BY B−747 AIRCRAFT PROHIBITED RUNWAY 15R/33L.

CONT MOWING OPERATIONS ADJACENT ALL RUNWAYS & TAXIWAYS − APR THRU NOV.

NO APRON PARKING FOR UNSCHEDULED AIR CARRIER.

DEER & BIRDS OCCASIONALLY ON & IN THE VICINITY OF AIRPORT.

DISTRACTING LIGHTS (GOLF DRIVING RANGE) RIGHT SIDE EXTENDED CENTERLINE RUNWAY 33L FROM APPROACH END RUNWAY TO 1/4 MI FINAL.

NOISE ABATEMENT PROCEDURES IN EFFECT − RESTRICTION FOR RUNWAY 15L/33R EXCEPT FOR EMERGENCIES OR MERCY FLIGHTS CONTACT AIRPORT MANAGER FOR INFORMATION.

MAJOR CONSTRUCTION ON AIRPORT DAILY; AIRCRAFT MOVEMENT & PARKING AREAS SUBJECT TO

SHORT NOTICE CHANGE/CLOSURE. FOR CURRENT INFORMATION PHONE BWI OPERATIONS CENTER 410–859–7018.

AIRCRAFT ON VISUAL APPROACHES EXPECT TO MAINTAIN 3,000 FT UNTIL 10 DME FROM BALANCE VORTAC; DEPART AIRCRAFT SHOULD EXPECT TURNS BASED ON BALTIMORE DME.

TAXIING PROHIBITED BETWEEN CONCOURSE C & ADJACENT BUILDING STRUCTURE SW OF CONCOURSE C. ACCESS TO GATE C12 IS BY WAY OF TAXIWAY A.

RUNWAY 15R DEICE PAD, POSITION # 1, RESTRICTED TO AIRCRAFT WITH WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS. PSN'S #2 & #3 ARE RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS, POSITION #3 IS RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS; POSITION 4 RESTRICTED TO AIRCRAFT WITH WINGSPAN OF 213 FT OR LESS & LENGTH OF 229 FT 2 INCHES OR LESS.

TAXIWAY "S", SOUTH OF TAXIWAY "P", RESTRICTED TO AIRCRAFT 60,000 LBS. & LESS.

GENERAL AVIATION AIRCRAFT CONTACT UNICOM PRIOR TO ARRIVING AT GENERAL AVIATION RAMP FOR SECURITY PURPOSES.

TAXILANES 'T–1' & "H" RESTRICTED TO GROUP III AIRCRAFT WITH MAX WINGSPAN OF 118 FEET.

CONCOURSE A – ALTERNATE DEICING AREA IS RESTRICTED TO B737–800 SIZE AIRCRAFT WITH WINGLETS OR SMALLER ON SPOTS 6, 7A, AND 8A. B737–700 SIZE AIRCRAFT WITH WINGLETS OR SMALLER ARE RESTRICTED TO SPOTS 7B & 8B.

RUNWAY 28 DE–ICE PAD LANE 1 RESTRICTED TO AIRCRAFT WITH WINGSPAN 171 FT OR LESS, LANE 2 RESTRICTED TO AIRCRAFT WITH WINGSPAN 135 FT OR LESS, LANE 3 IS USED BY LARGE AIRCRAFT MAX WINGSPAN 215 FT AND WHEN IN USE– LANES 2 AND 4 ARE UNAVAILABLE. LANES 4, 5 & 6 ARE RESTRICTED TO AIRCRAFT WINGSPAN 135 FT OR LESS.

TAXIWAY T BETWEEN TAXIWAY H AND TAXIWAY E RESTRICTED TO GROUP IV AIRCRAFT WITH WINGSPAN LESS THAN 171'. TAXIWAY T BETWEEN TAXIWAY E AND TAXIWAY B RESTRICTED TO GROUP V AIRCRAFT WITH WINGSPAN LESS THAN 214'; WHEN GROUP V AIRCRAFT ARE ON TAXIWAY T, TAXIWAY A IS RESTRICTED TO MAX WINGSPANS OF 110'.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

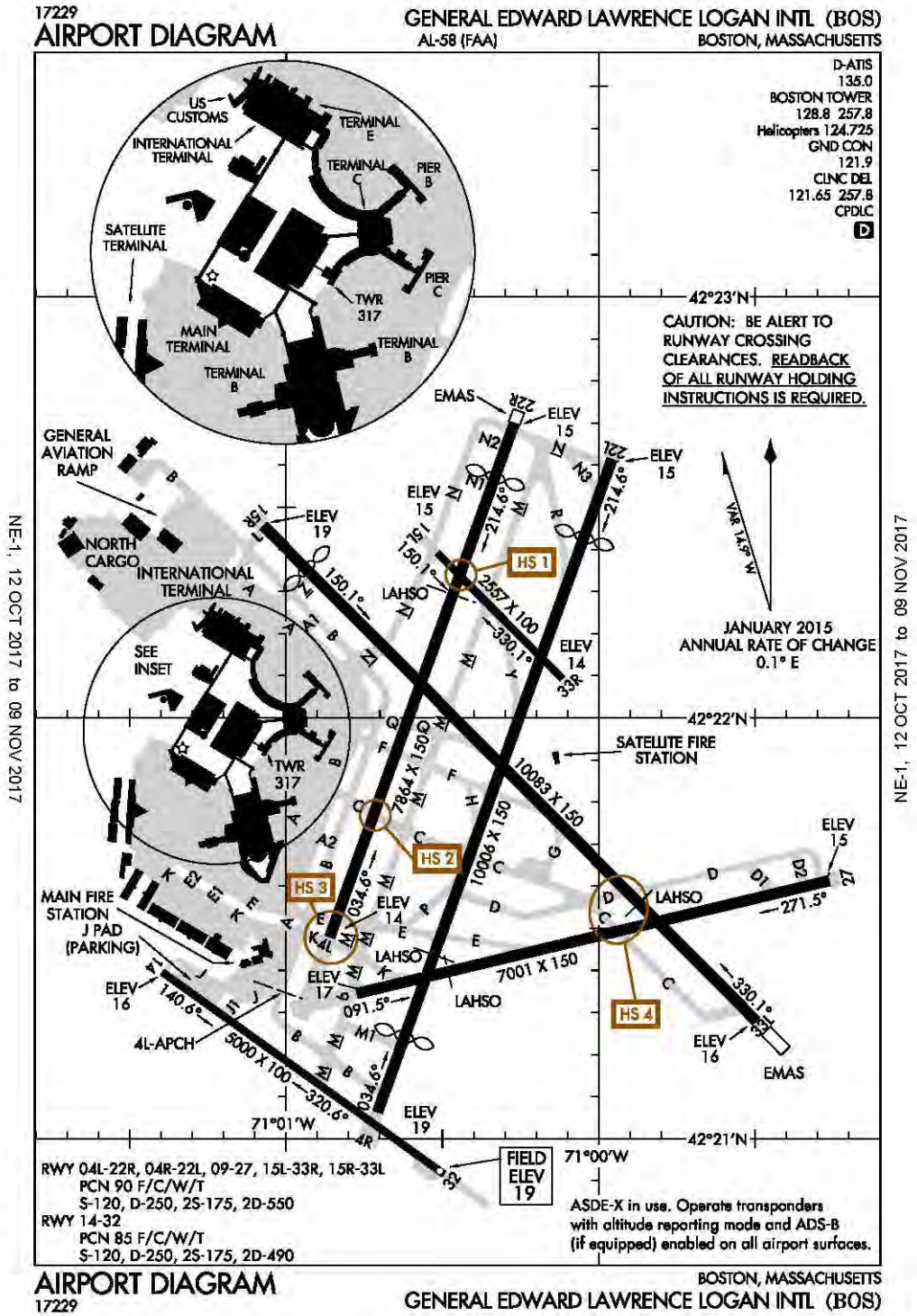
DUAL PARALLEL TAXILANES HAVE BEEN ADDED TO THE 'D'/'E' ALLEYWAY; TAXILANE 'N' AND TAXILANE 'N1'. TAXILANE 'N' IS DESIGNATED A "GROUP V" TAXILANE WITH MAX WINGSPAN OF 213 FT. TAXILANE 'N1' IS DESIGNATED A "GROUP IV" TAXILANE WITH MAX WINGSPAN OF 170 FT.

TAXIWAY 'A' IS RESTRICTED TO GROUP IV AIRCRAFT WINGSPAN 171 FT OR LESS.

RUNWAY LENGTH AVAILABLE FOR RUNWAY 28 DEPS FROM TAXIWAY U1 IS 9802 FT.

RUNWAY STATUS LIGHTS IN OPN.

Boston, Massachusetts
General Edward Lawrence Logan International
ICAO Identifier KBOS



Boston, MA
General Edward Lawrence Logan Intl
ICAO Identifier KBOS

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 42−21−46.60N / 71−00−23.00W
2.2.2 From City: 1 Miles E Of Boston, MA
2.2.3 Elevation: 19.1 ft
2.2.5 Magnetic variation: 15W (2020)
2.2.6 Airport Contact: Edward Freni
LOGAN INTERNATIONAL AIRPORT
East Boston, MA 2128 (617−567−5400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 9/1/1972

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 15R
2.10.1.b Type of obstacle: Trees (62 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 140 ft from Centerline

2.10.1.a. Runway designation: 33L
2.10.1.b Type of obstacle: Boat (160 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 04R
2.10.1.b Type of obstacle: Boat (157 ft). Lighted

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Boat (45 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 04L
2.10.1.b Type of obstacle: Boat (161 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 22R
2.10.1.b Type of obstacle: Boat (44 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 09
2.10.1.b Type of obstacle: Boat (158 ft). Lighted

2.10.1.a. Runway designation: 27
2.10.1.b Type of obstacle: Boat (45 ft). Lighted

2.10.1.a. Runway designation: 14
2.10.1.b Type of obstacle: Bldg (174 ft). Lighted
2.10.1.c Location of obstacle: 70 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 09
2.12.2 True Bearing: 77
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−20.72N / 71−00−46.42W
2.12.6 Threshold elevation: 17 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 257
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−36.78N / 70−59−15.73W
2.12.6 Threshold elevation: 15 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−28.76N / 71−00−51.62W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 14 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−41.88N / 71−00−16.25W
2.12.6 Threshold elevation: 15 ft
2.12.6 Touchdown zone elevation: 15 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−00.00N / 71−00−42.46W

2.12.6 Threshold elevation: 19 ft
2.12.6 Touchdown zone elevation: 18 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−36.84N / 70−59−57.45W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 16 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−27.37N / 71−01−00.00W
2.12.6 Threshold elevation: 19 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−16.74N / 70−59−29.71W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 16 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 125
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42−21−23.75N / 71−01−23.79W
2.12.6 Threshold elevation: 16 ft
2.12.6 Touchdown zone elevation: 19 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 305
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42−20−54.96N / 71−00−29.68W
2.12.6 Threshold elevation: 19 ft
2.12.6 Touchdown zone elevation: 19 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 2557 ft x 100 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−23.50N / 71−00−31.01W
2.12.6 Threshold elevation: 15 ft
2.12.6 Touchdown zone elevation: 16 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 2557 ft x 100 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−00.00N / 71−00−00.00W
2.12.6 Threshold elevation: 14 ft
2.12.6 Touchdown zone elevation: 16 ft

AD 2.13 Declared distances

2.13.1 Designation: 09
2.13.2 Takeoff run available: 7000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 7000
2.13.5 Landing distance available: 7000

2.13.1 Designation: 27
2.13.2 Takeoff run available: 7000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 7000
2.13.5 Landing distance available: 7000

2.13.1 Designation: 04L
2.13.2 Takeoff run available: 7861
2.13.3 Takeoff distance available: 7861
2.13.4 Accelerate−stop distance available: 7861
2.13.5 Landing distance available: 7861

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 7861
2.13.3 Takeoff distance available: 7861
2.13.4 Accelerate−stop distance available: 7861
2.13.5 Landing distance available: 7046

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 10005
2.13.3 Takeoff distance available: 10005
2.13.4 Accelerate−stop distance available: 10005
2.13.5 Landing distance available: 8851

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 10005
2.13.3 Takeoff distance available: 10005
2.13.4 Accelerate−stop distance available: 10005
2.13.5 Landing distance available: 8806

2.13.1 Designation: 15R
2.13.2 Takeoff run available: 10083
2.13.3 Takeoff distance available: 10083
2.13.4 Accelerate−stop distance available: 10083
2.13.5 Landing distance available: 9202

2.13.1 Designation: 33L
2.13.2 Takeoff run available: 10083
2.13.3 Takeoff distance available: 10083
2.13.4 Accelerate–stop distance available: 10083
2.13.5 Landing distance available: 10083

2.13.1 Designation: 14
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate–stop distance available: 5000
2.13.5 Landing distance available: 5000

2.13.1 Designation: 32
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate–stop distance available: 5000
2.13.5 Landing distance available: 5000

2.13.1 Designation: 15L
2.13.2 Takeoff run available: 2557
2.13.3 Takeoff distance available: 2557
2.13.4 Accelerate–stop distance available: 2557
2.13.5 Landing distance available: 2557

2.13.1 Designation: 33R
2.13.2 Takeoff run available: 2557
2.13.3 Takeoff distance available: 2557
2.13.4 Accelerate–stop distance available: 2557
2.13.5 Landing distance available: 2557

AD 2.14 Approach and runway lighting
2.14.1 Designation: 27
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 04L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 22R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 04R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 22L
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 15R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 33L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/S (ARR/DEP RYS 04R/22L, 09/27)
2.18.3 Service designation: 132.225 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P PRE TAXI CLNC
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 124.725 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P (ARR/DEP RYS 04R/22L 09/27)
2.18.3 Service designation: 128.8 MHz

2.18.1 Service designation: LCL/P (ARR/DEP RYS

4L/22R 15R/33L 15L/33R)
2.18.3 Service designation: 128.8 MHz

2.18.1 Service designation: GATE CTL
2.18.3 Service designation: 134.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P CD/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: LCL/P (ARR/DEP RY 14/32)
2.18.3 Service designation: 128.8 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.75 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 33L. Magnetic variation: 15W
2.19.2 ILS identification: LIP
2.19.5 Coordinates: 42−22−37.56N / 71−01−18.09W
2.19.6 Site elevation: 15.9 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 15W
2.19.2 ILS identification: DGU
2.19.5 Coordinates: 42−21−18.48N / 71−00−59.05W
2.19.6 Site elevation: 16.5 ft

2.19.1 ILS type: Localizer for runway 15R. Magnetic variation: 15W
2.19.2 ILS identification: MDC
2.19.5 Coordinates: 42−21−26.36N / 70−59−37.05W
2.19.6 Site elevation: 11.1 ft

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−22−55.97N / 70−59−48.19W
2.19.6 Site elevation: 17.6 ft

2.19.1 ILS type: Localizer for runway 22L. Magnetic variation: 15W
2.19.2 ILS identification: LQN
2.19.5 Coordinates: 42−21−00.00N / 71−00−44.28W
2.19.6 Site elevation: 14.6 ft

2.19.1 ILS type: DME for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−22−57.47N / 70−59−50.89W
2.19.6 Site elevation: 34.5 ft

2.19.1 ILS type: DME for runway 22L. Magnetic variation: 15W
2.19.2 ILS identification: LQN
2.19.5 Coordinates: 42−22−57.47N / 70−59−50.89W
2.19.6 Site elevation: 34.5 ft

2.19.1 ILS type: DME for runway 33L. Magnetic variation: 15W
2.19.2 ILS identification: LIP
2.19.5 Coordinates: 42−21−26.51N / 70−59−35.06W
2.19.6 Site elevation: 26.4 ft

2.19.1 ILS type: DME for runway 15R. Magnetic variation: 15W
2.19.2 ILS identification: MDC
2.19.5 Coordinates: 42−21−26.51N / 70−59−35.06W
2.19.6 Site elevation: 26.4 ft

2.19.1 ILS type: DME for runway 27. Magnetic variation: 15W
2.19.2 ILS identification: DGU
2.19.5 Coordinates: 42−21−15.70N / 71−00−55.78W
2.19.6 Site elevation: 30.5 ft

2.19.1 ILS type: Glide Slope for runway 22L. Magnetic variation: 15W
2.19.2 ILS identification: LQN
2.19.5 Coordinates: 42−22−17.00N / 71−00−11.99W
2.19.6 Site elevation: 11.1 ft

2.19.1 ILS type: Glide Slope for runway 15R. Magnetic variation: 15W
2.19.2 ILS identification: MDC
2.19.5 Coordinates: 42−22−14.69N / 71−00−42.42W
2.19.6 Site elevation: 11.3 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 15W
2.19.2 ILS identification: DGU
2.19.5 Coordinates: 42−21−31.30N / 70−59−28.35W
2.19.6 Site elevation: 12.3 ft

2.19.1 ILS type: Glide Slope for runway 33L. Magnetic variation: 15W
2.19.2 ILS identification: LIP
2.19.5 Coordinates: 42−21−26.64N / 70−59−34.71W

2.19.6 Site elevation: 11.3 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−21−21.82N / 71−00−24.55W
2.19.6 Site elevation: 10.1 ft

2.19.1 ILS type: Outer Marker for runway 33L. Magnetic variation: 15W
2.19.2 ILS identification: LIP
2.19.5 Coordinates: 42−18−11.14N / 70−55−18.75W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 22L. Magnetic variation: 15W
2.19.2 ILS identification: LQN
2.19.5 Coordinates: 42−27−00.00N / 70−57−47.83W
2.19.6 Site elevation: 13 ft

2.19.1 ILS type: Outer Marker for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−16−25.52N / 71−02−56.95W
2.19.6 Site elevation: 6 ft

2.19.1 ILS type: Inner Marker for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−21−00.00N / 71−00−39.93W
2.19.6 Site elevation: 16.5 ft

2.19.1 ILS type: Middle Marker for runway 33L. Magnetic variation: 15W
2.19.2 ILS identification: LIP
2.19.5 Coordinates: 42−20−58.45N / 70−59−00.00W
2.19.6 Site elevation: 20 ft

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 15W
2.19.2 ILS identification: BOS
2.19.5 Coordinates: 42−20−53.19N / 71−00−47.61W
2.19.6 Site elevation: 11.8 ft

General Remarks:
BIRDS ON & IN THE VICINITY OF AIRPORT.

NOISE SENSITIVE AREA − HELICOPTERS OPERATING WITHIN THE CONTROL ZONE ARE REQUIRED TO MAINT THE HIGHEST POSSIBLE ALTITUDE.

BETWEEN 0000−0600 LOCAL − RUNWAY 15R IS PREFERENTIAL NIGHT RUNWAY FOR TAKE-OFF & RUNWAY 33L IS PREFERENTIAL NIGHT RUNWAY FOR LANDING.

FOR NOISE ABATEMENT PROCEDURES CALL 617−561−1636 0900−1700 MON−FRI.

NO REMAINING OVERNIGHT PARKING FOR NON−TENANT CHARTER AIRCRAFT WITHOUT PRIOR MASSPORT PERMISSION.

TERMINAL E; NORTH & SOUTH CARGO ARRIVALS CONTACT MASSPORT GATE CONTROL ON FREQ 131.1 BEFORE ENTERING/DEPARTING RAMP AREA.

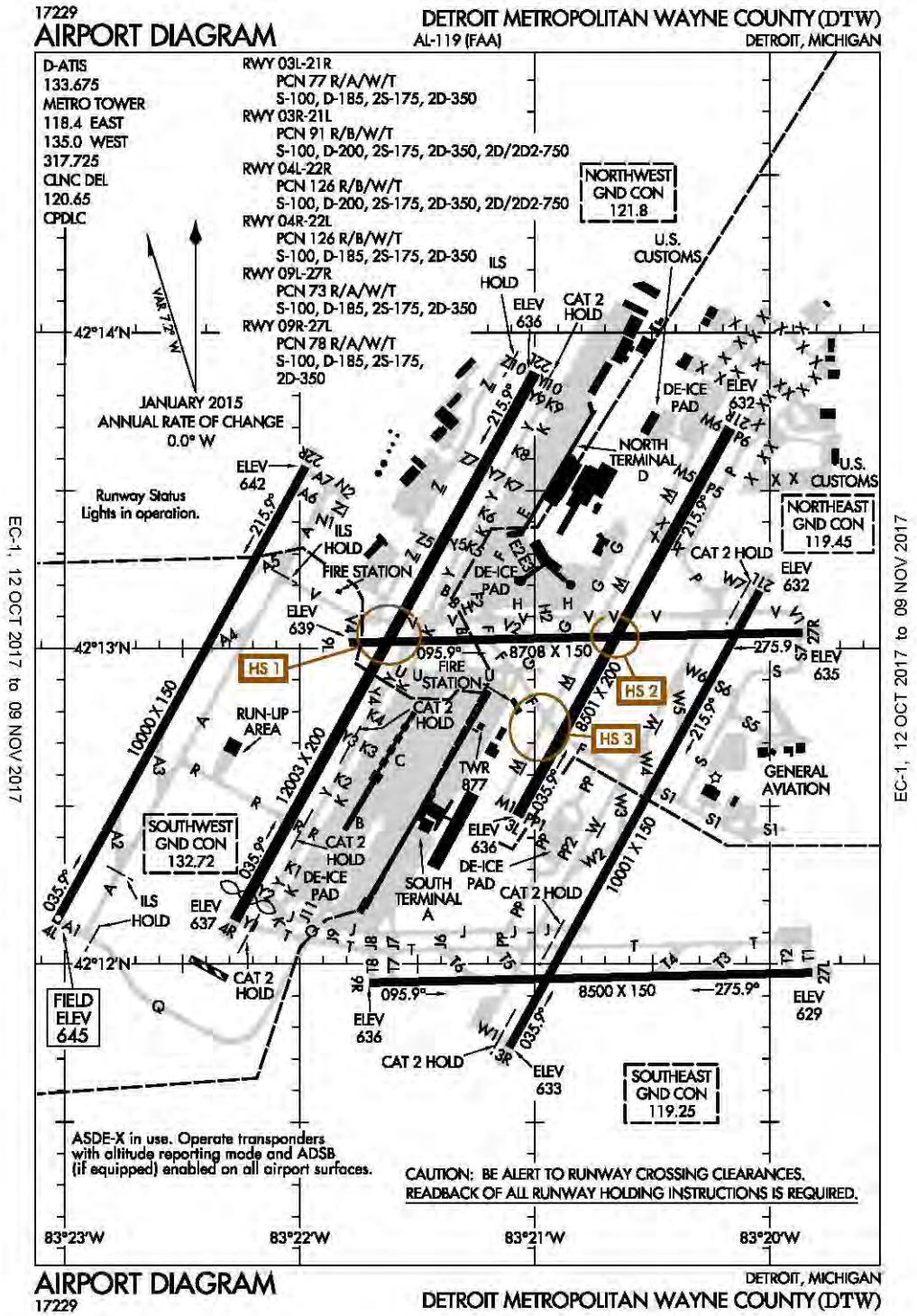
NUMEROUS CRANES ON & IN THE VICINITY OF OF AIRPORT UP TO & INCLUDING 250 FT. MSL.

RY14/32 UNIDIRECTIONAL; NO LANDINGS RUNWAY 14; NO TAKEOFFS RUNWAY 32.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PILOTS SHOULD COMPLETE ALL CALCULATIONS PRIOR TO PUSHBACK FROM GATE.

Detroit, Michigan
Detroit Metropolitan Wayne County
ICAO Identifier KDTW



Detroit, MI
Detroit Metropolitan Wayne County
ICAO Identifier KDTW

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42–12–44.70N / 83–21–12.20W
2.2.2 From City: 15 Miles S Of Detroit, MI
2.2.3 Elevation: 645.2 ft
2.2.5 Magnetic variation: 7W (2020)
2.2.6 Airport Contact: Joe Nardone
1 L C SMITH BUILDING MEZZANINE
Detroit, MI 48242 (734–942–3550)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 09L
2.10.1.b Type of obstacle: Ant (107 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 461 ft from Centerline

2.10.1.a. Runway designation: 27R
2.10.1.b Type of obstacle: Berm (7 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 373 ft from Centerline

2.10.1.a. Runway designation: 03L
2.10.1.b Type of obstacle: Pole (19 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 569 ft from Centerline

2.10.1.a. Runway designation: 21R
2.10.1.b Type of obstacle: Pole (42 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 179 ft from Centerline

2.10.1.a. Runway designation: 04R
2.10.1.b Type of obstacle: Tree (75 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 159 ft from Centerline

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Rr (27 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 597 ft from Centerline

2.10.1.a. Runway designation: 04L
2.10.1.b Type of obstacle: Tree (48 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 157 ft from Centerline

2.10.1.a. Runway designation: 22R
2.10.1.b Type of obstacle: Road (14 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 545 ft from Centerline

2.10.1.a. Runway designation: 21L
2.10.1.b Type of obstacle: Berm (19 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 529 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 04R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42–12–00.00N / 83–22–16.57W
2.12.6 Threshold elevation: 637 ft
2.12.6 Touchdown zone elevation: 638 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 209
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42–13–52.37N / 83–20–59.97W
2.12.6 Threshold elevation: 636 ft
2.12.6 Touchdown zone elevation: 637 ft

2.12.1 Designation: 03R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42–11–44.21N / 83–21–00.00W
2.12.6 Threshold elevation: 633 ft
2.12.6 Touchdown zone elevation: 633 ft

2.12.1 Designation: 21L
2.12.2 True Bearing: 209

2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−13−10.86N / 83−20−00.00W
2.12.6 Threshold elevation: 632 ft
2.12.6 Touchdown zone elevation: 632 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−00.00N / 83−21−47.41W
2.12.6 Threshold elevation: 639 ft
2.12.6 Touchdown zone elevation: 640 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−00.00N / 83−19−51.72W
2.12.6 Threshold elevation: 635 ft
2.12.6 Touchdown zone elevation: 635 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−56.46N / 83−21−42.23W
2.12.6 Threshold elevation: 636 ft
2.12.6 Touchdown zone elevation: 636 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−58.34N / 83−19−49.33W
2.12.6 Threshold elevation: 629 ft
2.12.6 Touchdown zone elevation: 630 ft

2.12.1 Designation: 03L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 8501 ft x 200 ft
2.12.4 PCN: 77 R/A/W/T
2.12.5 Coordinates: 42−12−28.21N / 83−21−00.00W
2.12.6 Threshold elevation: 636 ft
2.12.6 Touchdown zone elevation: 637 ft

2.12.1 Designation: 21R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 8501 ft x 200 ft
2.12.4 PCN: 77 R/A/W/T
2.12.5 Coordinates: 42−13−41.85N / 83−20−10.12W
2.12.6 Threshold elevation: 632 ft
2.12.6 Touchdown zone elevation: 634 ft

2.12.1 Designation: 04X
2.12.2 True Bearing: 29
2.12.3 Dimensions: 0 ft x 0 ft

2.12.1 Designation: 22X
2.12.2 True Bearing: 209
2.12.3 Dimensions: 0 ft x 0 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−12−00.00N / 83−23−00.00W
2.12.6 Threshold elevation: 645 ft
2.12.6 Touchdown zone elevation: 645 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−13−34.48N / 83−21−58.61W
2.12.6 Threshold elevation: 642 ft
2.12.6 Touchdown zone elevation: 642 ft

AD 2.13 Declared distances

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 12003
2.13.3 Takeoff distance available: 12003
2.13.4 Accelerate−stop distance available: 12003
2.13.5 Landing distance available: 11494

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 12003
2.13.3 Takeoff distance available: 12003
2.13.4 Accelerate−stop distance available: 12003
2.13.5 Landing distance available: 12003

2.13.1 Designation: 03R
2.13.2 Takeoff run available: 10001
2.13.3 Takeoff distance available: 10001
2.13.4 Accelerate−stop distance available: 10001
2.13.5 Landing distance available: 10001

2.13.1 Designation: 21L
2.13.2 Takeoff run available: 10001
2.13.3 Takeoff distance available: 10001
2.13.4 Accelerate−stop distance available: 10001
2.13.5 Landing distance available: 10001

2.13.1 Designation: 09L
2.13.2 Takeoff run available: 8708
2.13.3 Takeoff distance available: 8708
2.13.4 Accelerate–stop distance available: 8618
2.13.5 Landing distance available: 8618

2.13.1 Designation: 27R
2.13.2 Takeoff run available: 8708
2.13.3 Takeoff distance available: 8708
2.13.4 Accelerate–stop distance available: 8708
2.13.5 Landing distance available: 8708

2.13.1 Designation: 09R
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate–stop distance available: 8500
2.13.5 Landing distance available: 8500

2.13.1 Designation: 27L
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate–stop distance available: 8500
2.13.5 Landing distance available: 8500

2.13.1 Designation: 03L
2.13.2 Takeoff run available: 8501
2.13.3 Takeoff distance available: 8501
2.13.4 Accelerate–stop distance available: 8501
2.13.5 Landing distance available: 8501

2.13.1 Designation: 21R
2.13.2 Takeoff run available: 8501
2.13.3 Takeoff distance available: 8501
2.13.4 Accelerate–stop distance available: 8501
2.13.5 Landing distance available: 8501

2.13.1 Designation: 04L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 04R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.10 Remarks: Also Has SSALR.

2.14.1 Designation: 22L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 03R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right
2.14.10 Remarks: ALSF2 Required When RVR/Visibility Is 6000/1 Mile Or Less. SSALR Operated When RVR/Visibility Is 6000/1 Mile. Unusable Beyond 8 Degrees Left Of Course.

2.14.1 Designation: 21L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 27R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 27L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 03L
2.14.4 Visual approach slope indicator system: 4–light PAPI on right
2.14.10 Remarks: Unusable 8 Degrees Left/Right Course.

2.14.1 Designation: 21R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 04L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 22R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 317.725 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 133.675 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 124.975 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: ILS PRM
2.18.3 Service designation: 127.05 MHz

2.18.1 Service designation: ILS PRM
2.18.3 Service designation: 135.775 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 124.25 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 118.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 118.95 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 118.95 MHz

2.18.1 Service designation: CD PRE TAXI CLNC
2.18.3 Service designation: 120.65 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 124.05 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 125.15 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.525 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 126.85 MHz

2.18.1 Service designation: RDR
2.18.3 Service designation: 128.75 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 132.025 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 134.3 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 134.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: AIR–EVAC
2.18.3 Service designation: 259.6 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 363.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.4 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 132.72 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 119.25 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 119.45 MHz

2.18.1 Service designation: LCL/P DIAGRAM, DP
2.18.3 Service designation: 118.4 MHz

2.18.1 Service designation: LCL/P DIAGRAM, DP
2.18.3 Service designation: 135 MHz

2.18.1 Service designation: DEP/P CLASS B
2.18.3 Service designation: 239.275 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.125 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Outer Marker for runway 27L. Magnetic variation: 7W
2.19.2 ILS identification: EPA
2.19.5 Coordinates: 42–12–00.00N / 83–12–39.63W
2.19.6 Site elevation: 600 ft

2.19.1 ILS type: Localizer for runway 27L. Magnetic variation: 7W
2.19.2 ILS identification: EPA
2.19.5 Coordinates: 42–11–56.23N / 83–21–55.64W
2.19.6 Site elevation: 634.2 ft

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42–14–00.00N / 83–20–53.38W
2.19.6 Site elevation: 636.3 ft

2.19.1 ILS type: Outer Marker for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42–07–12.37N / 83–25–54.19W
2.19.6 Site elevation: 631 ft

2.19.1 ILS type: Localizer for runway 21L. Magnetic variation: 7W
2.19.2 ILS identification: EJR
2.19.5 Coordinates: 42–11–34.94N / 83–21–13.32W
2.19.6 Site elevation: 631.2 ft

2.19.1 ILS type: Localizer for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU
2.19.5 Coordinates: 42–13–20.38N / 83–19–55.63W
2.19.6 Site elevation: 635 ft

2.19.1 ILS type: Localizer for runway 27R. Magnetic variation: 7W
2.19.2 ILS identification: DMI
2.19.5 Coordinates: 42–13–00.00N / 83–22–00.00W
2.19.6 Site elevation: 639.1 ft

2.19.1 ILS type: Localizer for runway 22L. Magnetic variation: 7W
2.19.2 ILS identification: DWC
2.19.5 Coordinates: 42–11–59.54N / 83–22–23.06W
2.19.6 Site elevation: 636 ft

2.19.1 ILS type: DME for runway 22L. Magnetic variation: 7W
2.19.2 ILS identification: DWC
2.19.5 Coordinates: 42–13–59.69N / 83–20–50.36W
2.19.6 Site elevation: 650.1 ft

2.19.1 ILS type: DME for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42–13–59.69N / 83–20–50.36W
2.19.6 Site elevation: 650.1 ft

2.19.1 ILS type: Outer Marker for runway 21L. Magnetic variation: 7W
2.19.2 ILS identification: EJR
2.19.5 Coordinates: 42–18–00.00N / 83–16–20.34W
2.19.6 Site elevation: 604 ft

2.19.1 ILS type: Glide Slope for runway 27L. Magnetic variation: 7W
2.19.2 ILS identification: EPA
2.19.5 Coordinates: 42–11–54.66N / 83–20–00.00W
2.19.6 Site elevation: 625.9 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42–12–23.21N / 83–22–11.85W
2.19.6 Site elevation: 632 ft

2.19.1 ILS type: Glide Slope for runway 21L. Magnetic variation: 7W
2.19.2 ILS identification: EJR
2.19.5 Coordinates: 42–12–58.50N / 83–20–00.00W
2.19.6 Site elevation: 628.9 ft

2.19.1 ILS type: Glide Slope for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU

2.19.5 Coordinates: 42−11−51.13N / 83−20−54.98W
2.19.6 Site elevation: 630.1 ft

2.19.1 ILS type: Glide Slope for runway 27R. Magnetic variation: 7W
2.19.2 ILS identification: DMI
2.19.5 Coordinates: 42−12−58.36N / 83−20−00.00W
2.19.6 Site elevation: 628.9 ft

2.19.1 ILS type: Glide Slope for runway 22L. Magnetic variation: 7W
2.19.2 ILS identification: DWC
2.19.5 Coordinates: 42−13−43.86N / 83−21−12.29W
2.19.6 Site elevation: 635.6 ft

2.19.1 ILS type: Outer Marker for runway 22L. Magnetic variation: 7W
2.19.2 ILS identification: DWC
2.19.5 Coordinates: 42−18−20.74N / 83−17−40.65W
2.19.6 Site elevation: 626 ft

2.19.1 ILS type: Outer Marker for runway 27R. Magnetic variation: 7W
2.19.2 ILS identification: DMI
2.19.5 Coordinates: 42−13−12.02N / 83−12−11.92W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU
2.19.5 Coordinates: 42−06−27.60N / 83−24−57.66W
2.19.6 Site elevation: 625 ft

2.19.1 ILS type: Inner Marker for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42−12−00.00N / 83−22−19.38W
2.19.6 Site elevation: 636.7 ft

2.19.1 ILS type: Inner Marker for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU
2.19.5 Coordinates: 42−11−36.55N / 83−21−12.14W
2.19.6 Site elevation: 630 ft

2.19.1 ILS type: Middle Marker for runway 27L. Magnetic variation: 7W
2.19.2 ILS identification: EPA
2.19.5 Coordinates: 42−11−59.00N / 83−19−11.92W
2.19.6 Site elevation: 626 ft

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 7W
2.19.2 ILS identification: DTW
2.19.5 Coordinates: 42−11−44.10N / 83−22−34.50W
2.19.6 Site elevation: 642 ft

2.19.1 ILS type: Middle Marker for runway 21L. Magnetic variation: 7W
2.19.2 ILS identification: EJR
2.19.5 Coordinates: 42−13−38.34N / 83−19−46.25W
2.19.6 Site elevation: 630 ft

2.19.1 ILS type: Middle Marker for runway 22L. Magnetic variation: 7W
2.19.2 ILS identification: DWC
2.19.5 Coordinates: 42−14−21.64N / 83−20−38.75W
2.19.6 Site elevation:

2.19.1 ILS type: Localizer for runway 04L. Magnetic variation: 7W
2.19.2 ILS identification: HJT
2.19.5 Coordinates: 42−13−43.23N / 83−21−52.16W
2.19.6 Site elevation: 641.7 ft

2.19.1 ILS type: Inner Marker for runway 04L. Magnetic variation: 7W
2.19.2 ILS identification: HJT
2.19.5 Coordinates: 42−12−00.00N / 83−23−00.00W
2.19.6 Site elevation: 646 ft

2.19.1 ILS type: DME for runway 22R. Magnetic variation: 7W
2.19.2 ILS identification: JKI
2.19.5 Coordinates: 42−13−41.92N / 83−21−48.73W
2.19.6 Site elevation: 649.6 ft

2.19.1 ILS type: Glide Slope for runway 22R. Magnetic variation: 7W
2.19.2 ILS identification: JKI
2.19.5 Coordinates: 42−13−27.23N / 83−22−10.00W
2.19.6 Site elevation: 636.8 ft

2.19.1 ILS type: Localizer for runway 22R. Magnetic variation: 7W
2.19.2 ILS identification: JKI
2.19.5 Coordinates: 42−11−59.07N / 83−23−00.00W
2.19.6 Site elevation: 644.9 ft

2.19.1 ILS type: Middle Marker for runway 27R. Magnetic variation: 7W
2.19.2 ILS identification: DMI

2.19.5 Coordinates: 42–13–00.00N / 83–19–10.55W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU
2.19.5 Coordinates: 42–11–20.09N / 83–21–24.29W
2.19.6 Site elevation: 633 ft

2.19.1 ILS type: DME for runway 04L. Magnetic variation: 7W
2.19.2 ILS identification: HJT
2.19.5 Coordinates: 42–13–41.92N / 83–21–48.73W
2.19.6 Site elevation: 649.6 ft

2.19.1 ILS type: Glide Slope for runway 04L. Magnetic variation: 7W
2.19.2 ILS identification: HJT
2.19.5 Coordinates: 42–12–18.95N / 83–23–00.00W
2.19.6 Site elevation: 640.5 ft

2.19.1 ILS type: DME for runway 27L. Magnetic variation: 7W
2.19.2 ILS identification: EPA
2.19.5 Coordinates: 42–11–53.67N / 83–21–55.11W
2.19.6 Site elevation: 634.5 ft

2.19.1 ILS type: DME for runway 03R. Magnetic variation: 7W
2.19.2 ILS identification: HUU
2.19.5 Coordinates: 42–11–34.31N / 83–21–00.00W
2.19.6 Site elevation: 629.5 ft

2.19.1 ILS type: DME for runway 04X. Magnetic variation: 7W
2.19.2 ILS identification: ALA
2.19.5 Coordinates: 42–11–57.11N / 83–23–00.00W
2.19.6 Site elevation: 643 ft

2.19.1 ILS type: Glide Slope for runway 04X. Magnetic variation: 7W
2.19.2 ILS identification: ALA
2.19.5 Coordinates: 42–12–19.05N / 83–23–00.00W
2.19.6 Site elevation: 640.5 ft

2.19.1 ILS type: Localizer for runway 04X. Magnetic variation: 7W
2.19.2 ILS identification: ALA
2.19.5 Coordinates: 42–13–33.40N / 83–21–50.94W
2.19.6 Site elevation: 639 ft

2.19.1 ILS type: DME for runway 21L. Magnetic variation: 7W
2.19.2 ILS identification: EJR
2.19.5 Coordinates: 42–11–34.31N / 83–21–00.00W
2.19.6 Site elevation: 629.5 ft

2.19.1 ILS type: Localizer for runway 22X. Magnetic variation: 7W
2.19.2 ILS identification: BZB
2.19.5 Coordinates: 42–11–56.26N / 83–23–00.00W
2.19.6 Site elevation: 642 ft

2.19.1 ILS type: Glide Slope for runway 22X. Magnetic variation: 7W
2.19.2 ILS identification: BZB
2.19.5 Coordinates: 42–13–27.35N / 83–22–10.30W
2.19.6 Site elevation: 638 ft

2.19.1 ILS type: DME for runway 22X. Magnetic variation: 7W
2.19.2 ILS identification: BZB
2.19.5 Coordinates: 42–11–57.11N / 83–23–00.00W
2.19.6 Site elevation: 643 ft

2.19.1 ILS type: DME for runway 27R. Magnetic variation: 7W
2.19.2 ILS identification: DMI
2.19.5 Coordinates: 42–12–47.29N / 83–21–59.99W
2.19.6 Site elevation: 637.7 ft

General Remarks:
BRIGHTLY LIGHTED PARKING LOT 2.6 NAUTICAL MILE SW OF AIRPORT.

BE ALERT BIRDS, WATERFOWL, ON & IN THE VICINITY OF AIRPORT.

RUNWAY 21R DEPS BE ALERT FOR 'OPTICAL ILLUSION', AIRCRAFT TAXIING ON TAXIWAY 'T' MAY APPEAR AS THOUGH CROSSING RUNWAY 21R CENTERLINE.

AIRCRAFT ON TAXIWAY 'F' AND TAXIWAY 'V' DO NOT BLOCK FIRE STATION EXITS.

TAXIWAY 'G' N OF TAXIWAY 'H' IS A NON–MOVEMENT AREA.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

UNIDIRECTIONAL STOPBARS ON RUNWAY 27R WHEN BEING USED FOR TAXI BETWEEN RUNWAYS 3L AND 4R.

AIRCRAFT WITH WINGSPAN GREATER THAN 118 FT ARE RESTRICTED FROM USING TAXIWAY H BETWEEN TAXIWAY H2 AND TAXIWAY G.

AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT CANNOT USE TAXIWAY G NORTH OF TAXIWAY V EXCEPT FOR AIRCRAFT UNDER TOW TO REMAINING OVERNIGHT SPOT 2H.

RUNWAY STATUS LIGHTS ARE IN OPN.

RUNWAY VISUAL SCREEN 20 FT AGL 1150 FT S. APPROACH END RUNWAY 04R.

PRIOR PERMISSION REQUIRED FOR B747−8 OPRS DUE TO CONSTRAINTS ON RUNWAYS, TAXIWAYS AND RAMPS CONTACT AIRFIELD OPRS AT 734−942−3685.

AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT ARE RESTRICTED FROM USING TAXIWAY PAY PERIOD.

AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT ARE RESTRICTED FROM USING TAXIWAY H BETWEEN K AND H2.

AIRCRAFT WITH WINGSPAN GREATER THAN 135 FT ARE RESTRICTED FROM USING TAXIWAY G BETWEEN 27R AND TAXIWAY V.

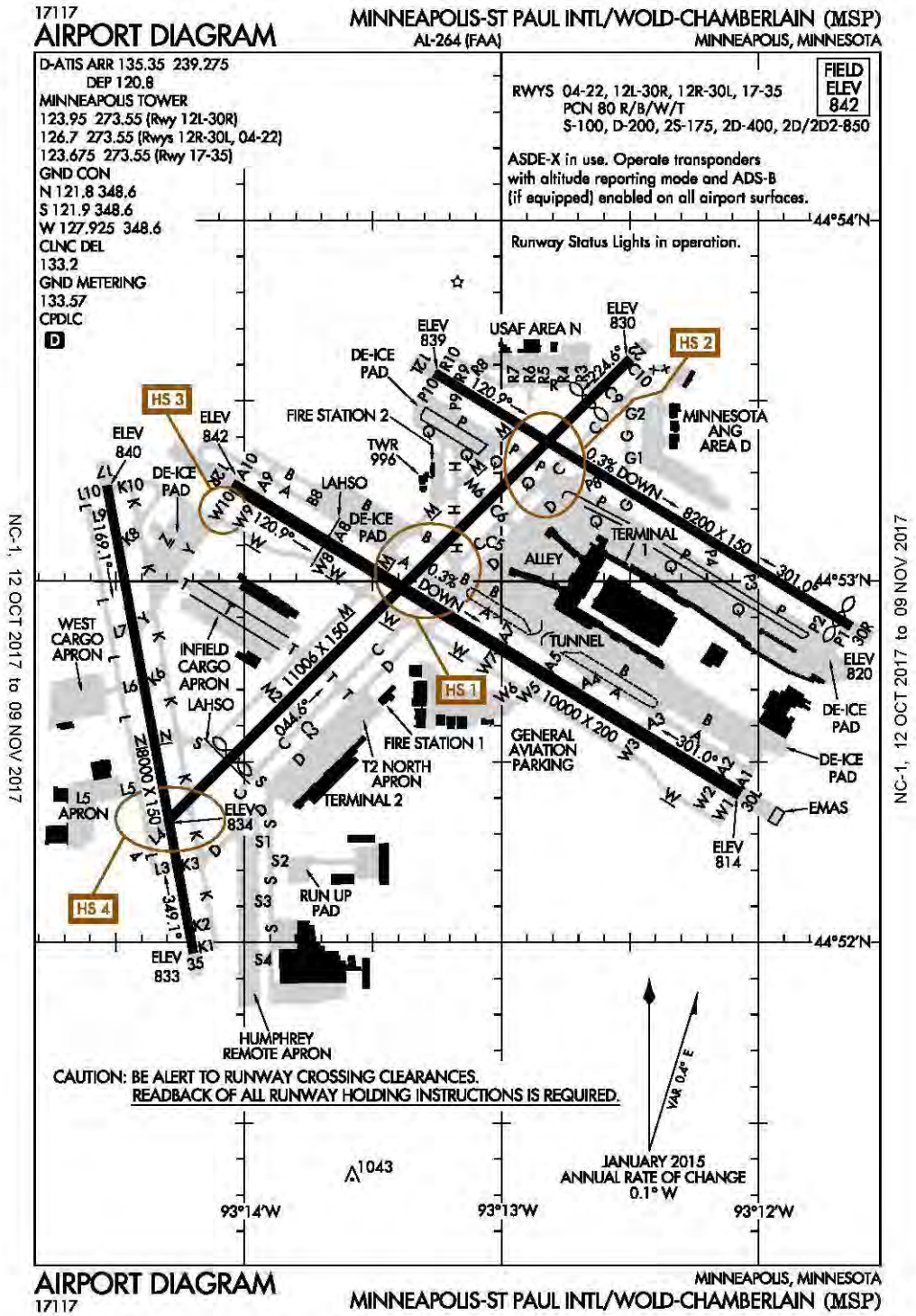
AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT ARE RESTRICTED FROM USING TAXIWAY M NORTHBOUND TO TAXIWAY V WESTBOUND.

DIVERSIONAIR CARRIERS WITHOUT A PRESENCE AT DTW SHOULD CONTACT AIRFIELD OPRS 734−942−3685 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PROVIDE COMPANY, FLIGHT OPRS, CONTACT INFORMATION, AIRCRAFT TYPE, PERSONS ONBOARD, INTERNATIONAL OR DOMESTIC, ANY GRND HANDLER AGGREEMENTS IN PLACE.

AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT CANNOT PASS EACH OTHER ON TAXIWAYS Y AND K BETWEEN TAXIWAYS U AND K6 INSUFFICIENT WINGTIP CLEARANCE.

TURNING RESTRICTION TAXIWAY B TO TAXIWAY K RESTRICTED TO AIRCRAFT WITH WINGSPAN 171 FT OR LESS.

Minneapolis, Minnesota
Minneapolis–St. Paul International (Wold–Chamberlain)
ICAO Identifier KMSP



Minneapolis, MN
Minneapolis−St Paul Intl/Wold−Chamberlain
ICAO Identifier KMSP

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 44−52−55.10N / 93−13−18.40W
2.2.2 From City: 6 Miles SW Of Minneapolis, MN
2.2.3 Elevation: 841.8 ft
2.2.5 Magnetic variation: 0E (2015)
2.2.6 Airport Contact: Phil Burke
4300 GLUMACK SUITE 3000
St Paul, MN 55111
(612−725−6464)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL,A++
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 30L
2.10.1.b Type of obstacle: Tree (36 ft). Lighted
2.10.1.c Location of obstacle: 562 ft from Centerline

2.10.1.a. Runway designation: 12L
2.10.1.b Type of obstacle: Tree (61 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 667 ft from Centerline

2.10.1.a. Runway designation: 30R
2.10.1.b Type of obstacle: Tree (13 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 272 ft from Centerline

2.10.1.a. Runway designation: 04
2.10.1.b Type of obstacle: Tree (101 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 834 ft from Centerline

2.10.1.a. Runway designation: 22
2.10.1.b Type of obstacle: Tree (66 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 636 ft from Centerline

2.10.1.a. Runway designation: 17
2.10.1.b Type of obstacle: Tree (52 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 732 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 12L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−34.63N / 93−13−15.57W
2.12.6 Threshold elevation: 839 ft
2.12.6 Touchdown zone elevation: 841 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−52.52N / 93−11−38.30W
2.12.6 Threshold elevation: 820 ft
2.12.6 Touchdown zone elevation: 822 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−16.04N / 93−14−00.00W
2.12.6 Threshold elevation: 842 ft
2.12.6 Touchdown zone elevation: 842 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−24.68N / 93−12−00.00W
2.12.6 Threshold elevation: 814 ft
2.12.6 Touchdown zone elevation: 823 ft

2.12.1 Designation: 04
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−20.16N / 93−14−17.94W
2.12.6 Threshold elevation: 834 ft
2.12.6 Touchdown zone elevation: 832 ft

2.12.1 Designation: 22

2.12.2 True Bearing: 225
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44–53–36.99N / 93–12–29.84W
2.12.6 Threshold elevation: 830 ft
2.12.6 Touchdown zone elevation: 828 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 170
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44–53–15.91N / 93–14–32.11W
2.12.6 Threshold elevation: 840 ft
2.12.6 Touchdown zone elevation: 840 ft
2.12.7 Slope: 0.1DOWN

2.12.1 Designation: 35
2.12.2 True Bearing: 350
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44–51–58.24N / 93–14–11.92W
2.12.6 Threshold elevation: 833 ft
2.12.6 Touchdown zone elevation: 834 ft
2.12.7 Slope: 0.1UP

AD 2.13 Declared distances
2.13.1 Designation: 12L
2.13.2 Takeoff run available: 8200
2.13.3 Takeoff distance available: 8200
2.13.4 Accelerate–stop distance available: 7620
2.13.5 Landing distance available: 7620

2.13.1 Designation: 30R
2.13.2 Takeoff run available: 8200
2.13.3 Takeoff distance available: 8200
2.13.4 Accelerate–stop distance available: 8200
2.13.5 Landing distance available: 8000

2.13.1 Designation: 12R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 30L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 04
2.13.2 Takeoff run available: 11006
2.13.3 Takeoff distance available: 11006
2.13.4 Accelerate–stop distance available: 11006
2.13.5 Landing distance available: 9456

2.13.1 Designation: 22
2.13.2 Takeoff run available: 11006
2.13.3 Takeoff distance available: 11006
2.13.4 Accelerate–stop distance available: 11006
2.13.5 Landing distance available: 10006

2.13.1 Designation: 17
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 35
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000
2.13.5 Landing distance available: 8000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 12L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 30R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 12R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 30L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 04
2.14.2 Approach lighting system: MALSR: 1400 feet

medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 17
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 35
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 239.275 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.95 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 126.7 MHz

2.18.1 Service designation: CD/P PRE TAXI CLNC
2.18.3 Service designation: 133.2 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 273.55 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.675 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 324.1 MHz

2.18.1 Service designation: PTD
2.18.3 Service designation: 282.675 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 120.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135.35 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND METERING
2.18.3 Service designation: 133.57 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 127.925 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 04. Magnetic variation: 0E
2.19.2 ILS identification: APL
2.19.5 Coordinates: 44−53−44.00N / 93−12−19.97W
2.19.6 Site elevation: 832.1 ft

2.19.1 ILS type: Localizer for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44−52−50.33N / 93−11−33.24W
2.19.6 Site elevation: 813 ft

2.19.1 ILS type: Outer Marker for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44−56−37.77N / 93−20−26.52W
2.19.6 Site elevation: 900 ft

2.19.1 ILS type: Localizer for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44−53−22.46N / 93−14−17.69W
2.19.6 Site elevation: 840 ft

2.19.1 ILS type: Localizer for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44–52–20.38N / 93–11–54.35W
2.19.6 Site elevation: 812.8 ft

2.19.1 ILS type: Localizer for runway 30R. Magnetic variation: 0E
2.19.2 ILS identification: INN
2.19.5 Coordinates: 44–53–40.84N / 93–13–29.92W
2.19.6 Site elevation: 843.1 ft

2.19.1 ILS type: Localizer for runway 22. Magnetic variation: 0E
2.19.2 ILS identification: SIJ
2.19.5 Coordinates: 44–52–12.79N / 93–14–28.30W
2.19.6 Site elevation: 831.4 ft

2.19.1 ILS type: DME for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44–52–26.92N / 93–12–20.55W
2.19.6 Site elevation: 825.4 ft

2.19.1 ILS type: DME for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44–52–26.92N / 93–12–20.55W
2.19.6 Site elevation: 825.4 ft

2.19.1 ILS type: Outer Marker for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44–49–32.68N / 93–05–28.78W
2.19.6 Site elevation: 880 ft

2.19.1 ILS type: Glide Slope for runway 04. Magnetic variation: 0E
2.19.2 ILS identification: APL
2.19.5 Coordinates: 44–52–40.53N / 93–13–55.93W
2.19.6 Site elevation: 826 ft

2.19.1 ILS type: Glide Slope for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44–52–27.00N / 93–12–20.21W
2.19.6 Site elevation: 812.1 ft

2.19.1 ILS type: Glide Slope for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44–53–31.12N / 93–12–56.69W
2.19.6 Site elevation: 831 ft

2.19.1 ILS type: Glide Slope for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44–53–00.00N / 93–13–53.62W
2.19.6 Site elevation: 835.1 ft

2.19.1 ILS type: Glide Slope for runway 30R. Magnetic variation: 0E
2.19.2 ILS identification: INN
2.19.5 Coordinates: 44–53–00.00N / 93–11–48.85W
2.19.6 Site elevation: 813.2 ft

2.19.1 ILS type: Outer Marker for runway 04. Magnetic variation: 0E
2.19.2 ILS identification: APL
2.19.5 Coordinates: 44–49–26.67N / 93–18–21.81W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 22. Magnetic variation: 0E
2.19.2 ILS identification: SIJ
2.19.5 Coordinates: 44–57–00.00N / 93–07–23.01W
2.19.6 Site elevation: 1021.9 ft

2.19.1 ILS type: Outer Marker for runway 30R. Magnetic variation: 0E
2.19.2 ILS identification: INN
2.19.5 Coordinates: 44–49–57.40N / 93–05–00.00W
2.19.6 Site elevation: 821 ft

2.19.1 ILS type: Outer Marker for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44–56–14.87N / 93–21–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44–52–19.44N / 93–11–52.18W
2.19.6 Site elevation: 808.1 ft

2.19.1 ILS type: Middle Marker for runway 30L. Magnetic variation: 0E
2.19.2 ILS identification: MSP
2.19.5 Coordinates: 44–52–10.08N / 93–11–30.30W
2.19.6 Site elevation: 698 ft

2.19.1 ILS type: Middle Marker for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44−53−47.98N / 93−13−46.30W
2.19.6 Site elevation: 832 ft

2.19.1 ILS type: Middle Marker for runway 04. Magnetic variation: 0E
2.19.2 ILS identification: APL
2.19.5 Coordinates: 44−52−19.77N / 93−14−18.50W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 22. Magnetic variation: 0E
2.19.2 ILS identification: SIJ
2.19.5 Coordinates: 44−53−55.58N / 93−12−00.00W
2.19.6 Site elevation: 821 ft

2.19.1 ILS type: Middle Marker for runway 30R. Magnetic variation: 0E
2.19.2 ILS identification: INN
2.19.5 Coordinates: 44−52−38.68N / 93−11−00.00W
2.19.6 Site elevation: 705 ft

2.19.1 ILS type: DME for runway 30R. Magnetic variation: 0E
2.19.2 ILS identification: INN
2.19.5 Coordinates: 44−53−00.00N / 93−11−48.87W
2.19.6 Site elevation: 824 ft

2.19.1 ILS type: Middle Marker for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44−53−29.37N / 93−14−33.50W
2.19.6 Site elevation: 819 ft

2.19.1 ILS type: DME for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44−53−00.00N / 93−11−48.87W
2.19.6 Site elevation: 824 ft
2.19.1 ILS type: Inner Marker for runway 12R. Magnetic variation: 0E
2.19.2 ILS identification: HKZ
2.19.5 Coordinates: 44−53−20.87N / 93−14−12.70W
2.19.6 Site elevation: 840 ft

2.19.1 ILS type: Inner Marker for runway 12L. Magnetic variation: 0E
2.19.2 ILS identification: PJL
2.19.5 Coordinates: 44−53−39.69N / 93−13−25.90W
2.19.6 Site elevation: 845.3 ft

2.19.1 ILS type: Localizer for runway 17. Magnetic variation: 0E
2.19.2 ILS identification: TJZ
2.19.5 Coordinates: 44−51−48.43N / 93−14−00.00W
2.19.6 Site elevation: 830.4 ft

2.19.1 ILS type: Glide Slope for runway 35. Magnetic variation: 0E
2.19.2 ILS identification: BMA
2.19.5 Coordinates: 44−52−00.00N / 93−14−20.11W
2.19.6 Site elevation: 829.9 ft

2.19.1 ILS type: Localizer for runway 35. Magnetic variation: 0E
2.19.2 ILS identification: BMA
2.19.5 Coordinates: 44−53−25.72N / 93−14−34.65W
2.19.6 Site elevation: 845.3 ft

2.19.1 ILS type: Inner Marker for runway 35. Magnetic variation: 0E
2.19.2 ILS identification: BMA
2.19.5 Coordinates: 44−51−49.91N / 93−14−00.00W
2.19.6 Site elevation: 832.6 ft

2.19.1 ILS type: DME for runway 35. Magnetic variation: 0E
2.19.2 ILS identification: BMA
2.19.5 Coordinates: 44−53−24.62N / 93−14−38.04W
2.19.6 Site elevation: 832.5 ft

2.19.1 ILS type: DME for runway 17. Magnetic variation: 0E
2.19.2 ILS identification: TJZ
2.19.5 Coordinates: 44−53−24.62N / 93−14−38.04W
2.19.6 Site elevation: 832.5 ft

General Remarks:
TRAINING FLIGHTS PROHIBITED. GA FLIGHTS MUST TERMINATE AT THE FBO OR US CUSTOMS UNLESS APPROVED BY AIRPORT MANAGER.

FOR NOISE ABATEMENT PROCEDURES CALL (612) 726−9411; NO STAGE 1 CATEGORY CIVIL AIRCRAFT; NIGHTTIME HRS ARE 2230−0600.

BIRDS ON & IN THE VICINITY OF AIRPORT.

SIGNATURE FLIGHT SUPPORT 128.95

MILITARY REMARKS: ARFC 934 AW: OPR 1300––400Z++ MON–THU, 1300–2230Z++ FRI, CLOSED WEEKEND AND HOLIDAY, CONTACT AIRFIELD MANAGEMENT FOR OPR HRS DURING UNIT TRAINING ASSEMBLY WEEKEND. TRANSMIT AIRCRAFT MUST OPR 1300–2145Z++ MON–FRI, EXCEPT HOLIDAY UNLESS DIRECTLY SUPPORTING 934 AW OR OTHER SPECIAL CIRCUMSTANCES.

MILITARY RESTRICTED: NO HAZARD CL/DIV1.1 OR 1.2 EXPLOSIVES PERMITTED. LOADING OR UNLOADING OF HAZARD CL/DIV 1.3, 1.4, 1.5 0R 1.6 MUST BE APPROVE BY AIRPORT DIRECT PRIOR TO FLIGHT.

COMPLEX GEOMETRY AT RUNWAY 04 APPROACH END. RUNWAY 04 DEPARTURES CHECK COMPASS TO VERIFY CORRECT RUNWAY HEADING.

VEHICLES PARKED ALONG SOUTH END OF TAXIWAY 'S'.

133 AW AIRFIELD MANAGEMENT – 324.1 REMARKS: (CALL LIGHTHOUSE).

COMMUNICATIONS: MINNEAPOLIS AIR RESERVE STATION JOINT COMMAND POST – 252.1 REMARKS: CALL NORTHSTAR.

934 AW AIRFIELD MANAGEMENT – PILOT TO DISPATCH 282.675 REMARKS: (CALL VIKING OPS).

REMARKS: AFRC 934 AW: CONTACT PILOT TO DISPATCH (VIKING OPS) 20 MIN PRIOR LANDING.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

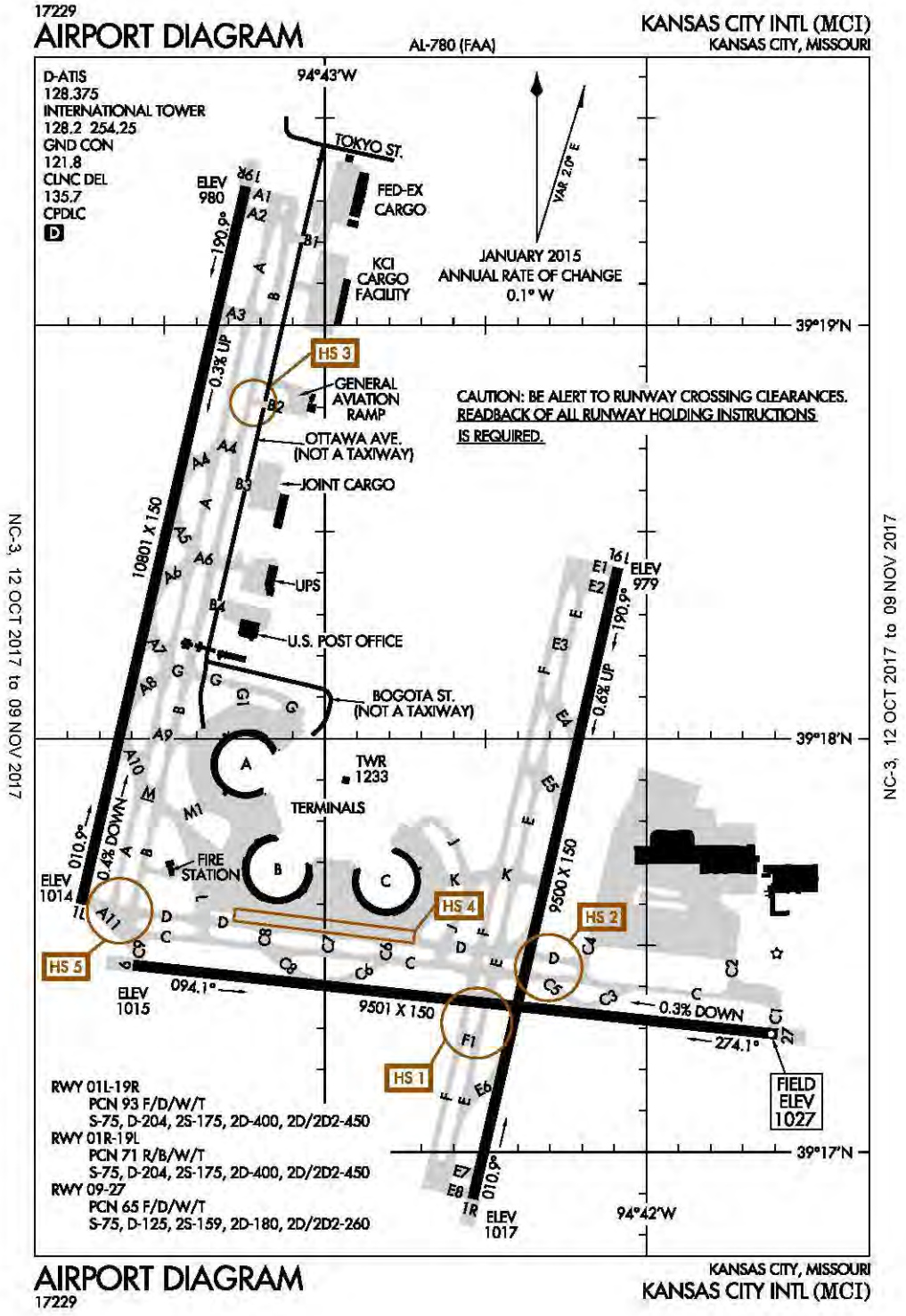
ALL UNSCHEDULED AIRCRAFT AT TERMINAL 2–HUMPHREY ARE REQUIRED TO CONTACT TERMINAL 2 GATE CONTROL ON 122.95 OR CALL 612–726–5742 PRIOR TO ARR.

ALL GROUP VI AIRCRAFT, WINGSPAN GREATER THAN 214 FEET, NEED TO CONTACT AIRSIDE OPERATIONS AT (612) 726–5111 PRIOR TO ARRIVAL TO OBTAIN (PRIOR PERMISSION REQUIRED) PRIOR PERMISSION REQUIRED.

RUNWAY STATUS LIGHTS ARE IN OPN.

ALL GA AIRCRAFT WITH LESS THAN 20 PASSENGERS THAT NEED TO CLEAR US CUSTOMS SHOULD CONTACT SIGNATURE FLIGHT SUPPORT AT 128.95 OR 612–726–5700 PRIOR TO ARR.

Kansas City, Missouri
Kansas City International
ICAO Identifier KMCI



Kansas City, MO
Kansas City Intl
ICAO Identifier KMCI

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39–17–51.40N / 94–42–50.00W
2.2.2 From City: 15 Miles NW Of Kansas City, MO
2.2.3 Elevation: 1026.9 ft
2.2.5 Magnetic variation: 2E (2015)
2.2.6 Airport Contact: Mr. Bob Johnson
P.O. BOX 20047
Kansas City, MO 64195
(816–243–5248)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 09
2.12.2 True Bearing: 96
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 65 F/D/W/T
2.12.5 Coordinates: 39–17–27.10N / 94–43–35.74W
2.12.6 Threshold elevation: 1015 ft
2.12.6 Touchdown zone elevation: 1016 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 276
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 65 F/D/W/T
2.12.5 Coordinates: 39–17–17.07N / 94–41–35.60W
2.12.6 Threshold elevation: 1027 ft
2.12.6 Touchdown zone elevation: 1027 ft
2.12.7 Slope: 0.3DOWN

2.12.1 Designation: 01L
2.12.2 True Bearing: 13
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: 93 F/D/W/T
2.12.5 Coordinates: 39–17–36.00N / 94–43–45.54W
2.12.6 Threshold elevation: 1014 ft
2.12.6 Touchdown zone elevation: 1014 ft
2.12.7 Slope: 0.4DOWN

2.12.1 Designation: 19R
2.12.2 True Bearing: 193
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: 93 F/D/W/T
2.12.5 Coordinates: 39–19–20.04N / 94–43–14.78W
2.12.6 Threshold elevation: 980 ft
2.12.6 Touchdown zone elevation: 990 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 13
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39–16–53.23N / 94–42–32.39W
2.12.6 Threshold elevation: 1017 ft
2.12.6 Touchdown zone elevation: 1017 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 193
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39–18–24.74N / 94–42–00.00W
2.12.6 Threshold elevation: 978 ft
2.12.6 Touchdown zone elevation: 995 ft

AD 2.13 Declared distances

2.13.1 Designation: 09
2.13.2 Takeoff run available: 9501
2.13.3 Takeoff distance available: 9501
2.13.4 Accelerate–stop distance available: 9501
2.13.5 Landing distance available: 9501

2.13.1 Designation: 27
2.13.2 Takeoff run available: 9501
2.13.3 Takeoff distance available: 9501
2.13.4 Accelerate–stop distance available: 9501
2.13.5 Landing distance available: 9501

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 10801
2.13.3 Takeoff distance available: 10801
2.13.4 Accelerate–stop distance available: 10801
2.13.5 Landing distance available: 10801

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 10801

2.13.3 Takeoff distance available: 10801
2.13.4 Accelerate−stop distance available: 10801
2.13.5 Landing distance available: 10801

2.13.1 Designation: 01R
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate−stop distance available: 9500
2.13.5 Landing distance available: 9500

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate−stop distance available: 9500
2.13.5 Landing distance available: 9500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 27
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 01L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 19R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 01R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 19L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: CLASS B
2.18.3 Service designation: 118.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 124.7 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 125.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.2 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 135.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 254.25 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 284.7 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 294.7 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 294.7 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 318.1 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 318.1 MHz

2.18.1 Service designation: DEP/P IC

2.18.3 Service designation: 123.95 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 118.4 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 128.375 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 120.95 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 124.7 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 19L. Magnetic variation: 2E
2.19.2 ILS identification: DYH
2.19.5 Coordinates: 39–16–43.58N / 94–42–35.25W
2.19.6 Site elevation: 1011.8 ft

2.19.1 ILS type: Localizer for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–17–23.12N / 94–43–49.35W
2.19.6 Site elevation: 1017.6 ft

2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 2E
2.19.2 ILS identification: DOT
2.19.5 Coordinates: 39–19–31.12N / 94–43–11.52W
2.19.6 Site elevation: 972.3 ft

2.19.1 ILS type: Localizer for runway 01R. Magnetic variation: 2E
2.19.2 ILS identification: PVL
2.19.5 Coordinates: 39–18–34.40N / 94–42–00.00W
2.19.6 Site elevation: 963.3 ft

2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 2E
2.19.2 ILS identification: RNI
2.19.5 Coordinates: 39–17–16.01N / 94–41–22.93W
2.19.6 Site elevation: 1020.2 ft

2.19.1 ILS type: Glide Slope for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–19–11.05N / 94–43–22.68W
2.19.6 Site elevation: 976.8 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 2E
2.19.2 ILS identification: DOT
2.19.5 Coordinates: 39–17–48.27N / 94–43–47.13W
2.19.6 Site elevation: 1002.8 ft

2.19.1 ILS type: DME for runway 19L. Magnetic variation: 2E
2.19.2 ILS identification: DYH
2.19.5 Coordinates: 39–16–43.62N / 94–42–38.55W
2.19.6 Site elevation: 1017.5 ft

2.19.1 ILS type: DME for runway 01R. Magnetic variation: 2E
2.19.2 ILS identification: PVL
2.19.5 Coordinates: 39–18–35.63N / 94–42–00.00W
2.19.6 Site elevation: 960 ft

2.19.1 ILS type: DME for runway 09. Magnetic variation: 2E
2.19.2 ILS identification: RNI
2.19.5 Coordinates: 39–17–18.90N / 94–41–21.70W
2.19.6 Site elevation: 1032.1 ft

2.19.1 ILS type: Glide Slope for runway 01R. Magnetic variation: 2E
2.19.2 ILS identification: PVL
2.19.5 Coordinates: 39–17–00.00N / 94–42–24.23W
2.19.6 Site elevation: 1010.8 ft

2.19.1 ILS type: Glide Slope for runway 19L. Magnetic variation: 2E
2.19.2 ILS identification: DYH
2.19.5 Coordinates: 39–18–13.95N / 94–42–00.00W
2.19.6 Site elevation: 977.9 ft

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 2E
2.19.2 ILS identification: RNI
2.19.5 Coordinates: 39–17–21.08N / 94–43–22.95W
2.19.6 Site elevation: 1010.7 ft

2.19.1 ILS type: Outer Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–24–51.80N / 94–41–36.10W
2.19.6 Site elevation: 893 ft

2.19.1 ILS type: Outer Marker for runway 19L. Magnetic variation: 2E
2.19.2 ILS identification: DYH

2.19.5 Coordinates: 39–23–12.92N / 94–40–37.14W
2.19.6 Site elevation: 830 ft

2.19.1 ILS type: Outer Marker for runway 01L. Magnetic variation: 2E
2.19.2 ILS identification: DOT
2.19.5 Coordinates: 39–13–15.42N / 94–44–59.60W
2.19.6 Site elevation: 958.7 ft

2.19.1 ILS type: Middle Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–19–49.26N / 94–43–00.00W
2.19.6 Site elevation: 965.1 ft

2.19.1 ILS type: Inner Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS identification: PVL
2.19.5 Coordinates: 39–16–45.10N / 94–42–34.80W
2.19.6 Site elevation: 1011.1 ft

2.19.1 ILS type: Inner Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–19–30.12N / 94–43–11.82W
2.19.6 Site elevation: 972.4 ft

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 2E
2.19.2 ILS identification: RNI
2.19.5 Coordinates: 39–17–30.00N / 94–44–10.10W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS identification: PVL
2.19.5 Coordinates: 39–16–27.63N / 94–42–39.97W
2.19.6 Site elevation: 994.9 ft

2.19.1 ILS type: Outer Marker for runway 09. Magnetic variation: 2E
2.19.2 ILS identification: RNI
2.19.5 Coordinates: 39–18–00.00N / 94–51–00.00W
2.19.6 Site elevation: 761 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 2E
2.19.2 ILS identification: UQY
2.19.5 Coordinates: 39–17–28.63N / 94–43–54.07W
2.19.6 Site elevation: 1015.3 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 2E
2.19.2 ILS identification: UQY
2.19.5 Coordinates: 39–17–15.71N / 94–41–50.27W
2.19.6 Site elevation: 1021.4 ft

2.19.1 ILS type: Middle Marker for runway 19L. Magnetic variation: 2E
2.19.2 ILS identification: DYH
2.19.5 Coordinates: 39–18–51.61N / 94–41–57.37W
2.19.6 Site elevation: 970 ft

2.19.1 ILS type: Middle Marker for runway 01L. Magnetic variation: 2E
2.19.2 ILS identification: DOT
2.19.5 Coordinates: 39–17–00.00N / 94–43–53.30W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 27. Magnetic variation: 2E
2.19.2 ILS identification: UQY
2.19.5 Coordinates: 39–17–25.67N / 94–43–54.59W
2.19.6 Site elevation: 1024.3 ft

2.19.1 ILS type: DME for runway 01L. Magnetic variation: 2E
2.19.2 ILS identification: DOT
2.19.5 Coordinates: 39–19–30.07N / 94–43–00.00W
2.19.6 Site elevation: 988.8 ft

2.19.1 ILS type: DME for runway 19R. Magnetic variation: 2E
2.19.2 ILS identification: PAJ
2.19.5 Coordinates: 39–17–25.78N / 94–43–51.96W
2.19.6 Site elevation: 1026 ft

General Remarks:
WATERFOWL ON AND IN THE VICINITY OF AIRPORT.

WINDSHEAR ALERT SYSTEM ON AIRPORT.

NOISE ABATEMENT PROCEDURES IN EFFECT 2200–0600 WITH LANDING ON RUNWAYS 01L & 19L; TAKEOFFS ON RUNWAYS 01R & 19R.

MILITARY AIRCRAFT MAY BE CHARGED RAMP/PARKING FEES.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE AT GATE 90.

PRIOR PERMISSION REQUIRED TO PARK AT AIRLINE GATES CONTACT RESPECTIVE AIRLINE.

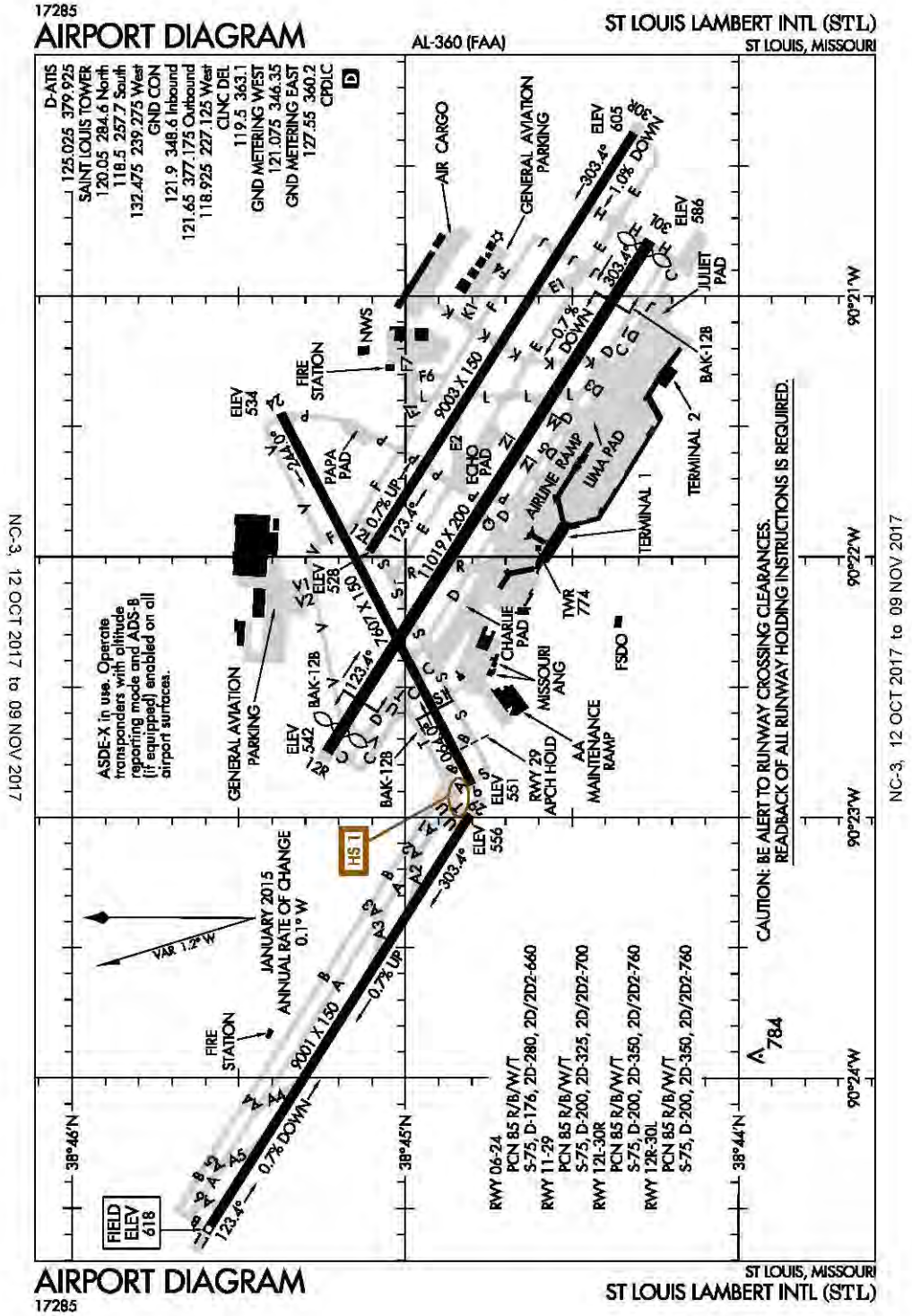
WHEN USING HIGH–SPEED EXITS C5 & C6 CONTINUE UNTIL FIRST PARALLEL TAXIWAY, THEN USE EXTREME CARE WHEN TURNING IN EXCESS OF 90 DEGREES.

NO AIRCRAFT PARKING ON POSTAL APRON.

PUSHBACK CLEARANCE REQUIRED AT GATES 43 THRU 57 IN TERMINAL B AND GATES 68 THRU 77 IN TERMINAL C, PUSHBACK FROM THESE GATES ENTERS TAXIWAY D.

DESIGN GROUP V AND VI AIRCRAFT REQUIRE AN AIRPORT ESCORT ON TAXIWAY DELTA BETWEEN TAXIWAYS JULIET AND LIMA.

St. Louis, Missouri
Lambert–St. Louis International
ICAO Identifier KSTL



St Louis, MO
Lambert−St Louis Intl
ICAO Identifier KSTL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 38−44−55.31N / 90−22−12.10W
2.2.2 From City: 10 Miles NW Of St Louis, MO
2.2.3 Elevation: 618 ft
2.2.5 Magnetic variation: 1W (2020)
2.2.6 Airport Contact: Ms. Rhonda Hamm−Niebruegge
BOX 10212
St Louis, MO 63145
(314−426−8000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 12L
2.10.1.b Type of obstacle: Bldg (54 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 30R
2.10.1.b Type of obstacle: Tower (42 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 580 ft from Centerline

2.10.1.a. Runway designation: 12R
2.10.1.b Type of obstacle: Road (30 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 30L
2.10.1.b Type of obstacle: Sign (86 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 900 ft from Centerline

2.10.1.a. Runway designation: 06
2.10.1.b Type of obstacle: Tree (31 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

2.10.1.a. Runway designation: 24
2.10.1.b Type of obstacle: Sign (18 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 450 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 63
2.12.3 Dimensions: 7607 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−48.04N / 90−22−52.43W
2.12.6 Threshold elevation: 551 ft
2.12.6 Touchdown zone elevation: 551 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 243
2.12.3 Dimensions: 7607 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−22.38N / 90−21−27.02W
2.12.6 Threshold elevation: 534 ft
2.12.6 Touchdown zone elevation: 534 ft

2.12.1 Designation: 12L
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−00.00N / 90−21−58.66W
2.12.6 Threshold elevation: 528 ft
2.12.6 Touchdown zone elevation: 541 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 30R
2.12.2 True Bearing: 302
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−18.99N / 90−20−22.51W
2.12.6 Threshold elevation: 604 ft
2.12.6 Touchdown zone elevation: 604 ft
2.12.7 Slope: 1DOWN

2.12.1 Designation: 12R
2.12.2 True Bearing: 122
2.12.3 Dimensions: 11019 ft x 200 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−14.05N / 90−22−44.97W
2.12.6 Threshold elevation: 542 ft

2.12.6 Touchdown zone elevation: 540 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 302
2.12.3 Dimensions: 11019 ft x 200 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−16.01N / 90−20−47.27W
2.12.6 Threshold elevation: 586 ft
2.12.6 Touchdown zone elevation: 583 ft

2.12.1 Designation: 30X
2.12.3 Dimensions: 0 ft x 0 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−35.83N / 90−24−35.55W
2.12.6 Threshold elevation: 618 ft
2.12.6 Touchdown zone elevation: 618 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 302
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−48.46N / 90−22−59.39W
2.12.6 Threshold elevation: 556 ft
2.12.6 Touchdown zone elevation: 580 ft

AD 2.13 Declared distances
2.13.1 Designation: 06
2.13.2 Takeoff run available: 7602
2.13.3 Takeoff distance available: 7602
2.13.4 Accelerate−stop distance available: 7352
2.13.5 Landing distance available: 7352

2.13.1 Designation: 24
2.13.2 Takeoff run available: 7602
2.13.3 Takeoff distance available: 7602
2.13.4 Accelerate−stop distance available: 7602
2.13.5 Landing distance available: 7602

2.13.1 Designation: 12L
2.13.2 Takeoff run available: 9003
2.13.3 Takeoff distance available: 9003
2.13.4 Accelerate−stop distance available: 9003
2.13.5 Landing distance available: 9003

2.13.1 Designation: 30R
2.13.2 Takeoff run available: 9003
2.13.3 Takeoff distance available: 9003
2.13.4 Accelerate−stop distance available: 9003
2.13.5 Landing distance available: 9003

2.13.1 Designation: 12R
2.13.2 Takeoff run available: 11019
2.13.3 Takeoff distance available: 11019
2.13.4 Accelerate−stop distance available: 11019
2.13.5 Landing distance available: 10552

2.13.1 Designation: 30L
2.13.2 Takeoff run available: 11019
2.13.3 Takeoff distance available: 11019
2.13.4 Accelerate−stop distance available: 11019
2.13.5 Landing distance available: 10819

2.13.1 Designation: 11
2.13.2 Takeoff run available: 9001
2.13.3 Takeoff distance available: 9001
2.13.4 Accelerate−stop distance available: 9001
2.13.5 Landing distance available: 9001

2.13.1 Designation: 29
2.13.2 Takeoff run available: 9001
2.13.3 Takeoff distance available: 9001
2.13.4 Accelerate−stop distance available: 9001
2.13.5 Landing distance available: 9001

AD 2.14 Approach and runway lighting
2.14.1 Designation: 06
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 24
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 12L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 30R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with se-

quenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 12R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 30L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 11
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 29
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 257.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 284.6 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 306.2 MHz

2.18.1 Service designation: GND CTL OUTBOUND/P
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND CTL/P
2.18.3 Service designation: 227.125 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.475 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.275 MHz

2.18.1 Service designation: GND CTL/P
2.18.3 Service designation: 118.925 MHz

2.18.1 Service designation: GND METER EAST
2.18.3 Service designation: 127.55 MHz

2.18.1 Service designation: GND CTL INBOUND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: GND CTL INBOUND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: GND METER EAST
2.18.3 Service designation: 360.2 MHz

2.18.1 Service designation: GND METER WEST
2.18.3 Service designation: 121.075 MHz

2.18.1 Service designation: GND METER WEST
2.18.3 Service designation: 346.35 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 125.025 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 379.925 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: PRM
2.18.3 Service designation: 351.9 MHz

2.18.1 Service designation: PRM
2.18.3 Service designation: 278.3 MHz

2.18.1 Service designation: CD/P

2.18.3 Service designation: 363.1 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 119.5 MHz

2.18.1 Service designation: GND CTL OUTBOUND/P
2.18.3 Service designation: 377.175 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38−44−13.67N / 90−20−11.72W
2.19.6 Site elevation: 602 ft

2.19.1 ILS type: Localizer for runway 06. Magnetic variation: 1W
2.19.2 ILS identification: JAK
2.19.5 Coordinates: 38−45−27.26N / 90−21−14.89W
2.19.6 Site elevation: 541 ft

2.19.1 ILS type: Localizer for runway 30L. Magnetic variation: 1W
2.19.2 ILS identification: BKY
2.19.5 Coordinates: 38−45−19.34N / 90−22−55.70W
2.19.6 Site elevation: 551 ft

2.19.1 ILS type: Localizer for runway 24. Magnetic variation: 1W
2.19.2 ILS identification: STL
2.19.5 Coordinates: 38−44−43.52N / 90−23−00.00W
2.19.6 Site elevation: 545 ft

2.19.1 ILS type: Localizer for runway 12R. Magnetic variation: 1W
2.19.2 ILS identification: LMR
2.19.5 Coordinates: 38−44−10.22N / 90−20−35.52W
2.19.6 Site elevation: 595 ft

2.19.1 ILS type: Localizer for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38−45−12.10N / 90−22−10.20W
2.19.6 Site elevation: 533 ft

2.19.1 ILS type: DME for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38−44−10.39N / 90−20−12.05W
2.19.6 Site elevation: 616.4 ft

2.19.1 ILS type: DME for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38−45−14.12N / 90−22−00.00W
2.19.6 Site elevation: 545.7 ft

2.19.1 ILS type: Glide Slope for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38−44−58.22N / 90−21−50.34W
2.19.6 Site elevation: 533.6 ft

2.19.1 ILS type: DME for runway 06. Magnetic variation: 1W
2.19.2 ILS identification: JAK
2.19.5 Coordinates: 38−44−39.67N / 90−23−00.00W
2.19.6 Site elevation: 556.2 ft

2.19.1 ILS type: DME for runway 24. Magnetic variation: 1W
2.19.2 ILS identification: STL
2.19.5 Coordinates: 38−44−39.67N / 90−23−00.00W
2.19.6 Site elevation: 556.2 ft

2.19.1 ILS type: Glide Slope for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38−44−21.96N / 90−20−38.02W
2.19.6 Site elevation: 592.4 ft

2.19.1 ILS type: Glide Slope for runway 30L. Magnetic variation: 1W
2.19.2 ILS identification: BKY
2.19.5 Coordinates: 38−44−28.10N / 90−21−00.00W
2.19.6 Site elevation: 563.9 ft

2.19.1 ILS type: Glide Slope for runway 06. Magnetic variation: 1W
2.19.2 ILS identification: JAK
2.19.5 Coordinates: 38−44−54.72N / 90−22−40.02W
2.19.6 Site elevation: 536.2 ft

2.19.1 ILS type: Glide Slope for runway 12R. Magnetic variation: 1W
2.19.2 ILS identification: LMR
2.19.5 Coordinates: 38−45−00.00N / 90−22−24.90W
2.19.6 Site elevation: 531.6 ft

2.19.1 ILS type: Glide Slope for runway 24. Magnetic variation: 1W
2.19.2 ILS identification: STL

2.19.5 Coordinates: 38–45–13.62N / 90–21–37.59W
2.19.6 Site elevation: 527.9 ft

2.19.1 ILS type: Outer Marker for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38–48–00.00N / 90–28–29.10W
2.19.6 Site elevation: 446 ft

2.19.1 ILS type: Outer Marker for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38–41–46.48N / 90–15–44.59W
2.19.6 Site elevation: 530 ft

2.19.1 ILS type: Outer Marker for runway 12R. Magnetic variation: 1W
2.19.2 ILS identification: LMR
2.19.5 Coordinates: 38–48–00.00N / 90–28–29.10W
2.19.6 Site elevation: 446 ft

2.19.1 ILS type: Inner Marker for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38–44–14.66N / 90–20–13.73W
2.19.6 Site elevation: 602 ft

2.19.1 ILS type: Inner Marker for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38–45–11.93N / 90–22–00.00W
2.19.6 Site elevation: 530 ft

2.19.1 ILS type: Middle Marker for runway 24. Magnetic variation: 1W
2.19.2 ILS identification: STL
2.19.5 Coordinates: 38–45–37.15N / 90–20–50.60W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 30L. Magnetic variation: 1W
2.19.2 ILS identification: BKY
2.19.5 Coordinates: 38–41–45.98N / 90–15–44.21W
2.19.6 Site elevation: 530 ft

2.19.1 ILS type: Middle Marker for runway 30L. Magnetic variation: 1W
2.19.2 ILS identification: BKY
2.19.5 Coordinates: 38–44–00.00N / 90–20–20.21W
2.19.6 Site elevation: 590 ft

2.19.1 ILS type: Outer Marker for runway 24. Magnetic variation: 1W
2.19.2 ILS identification: STL
2.19.5 Coordinates: 38–47–16.98N / 90–16–43.91W
2.19.6 Site elevation: 580 ft

2.19.1 ILS type: Middle Marker for runway 30R. Magnetic variation: 1W
2.19.2 ILS identification: SJW
2.19.5 Coordinates: 38–44–00.00N / 90–19–57.56W
2.19.6 Site elevation: 534 ft

2.19.1 ILS type: Middle Marker for runway 12R. Magnetic variation: 1W
2.19.2 ILS identification: LMR
2.19.5 Coordinates: 38–45–32.78N / 90–23–23.72W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 12L. Magnetic variation: 1W
2.19.2 ILS identification: LDZ
2.19.5 Coordinates: 38–45–21.22N / 90–22–28.71W
2.19.6 Site elevation: 545 ft

2.19.1 ILS type: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: OGZ
2.19.5 Coordinates: 38–45–26.04N / 90–24–25.38W
2.19.6 Site elevation: 598.2 ft

2.19.1 ILS type: Inner Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: OGZ
2.19.5 Coordinates: 38–45–40.35N / 90–24–44.74W
2.19.6 Site elevation: 614 ft

2.19.1 ILS type: Glide Slope for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: RQN
2.19.5 Coordinates: 38–44–49.83N / 90–23–11.86W
2.19.6 Site elevation: 556 ft

2.19.1 ILS type: Inner Marker for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: RQN
2.19.5 Coordinates: 38–44–41.36N / 90–22–44.97W
2.19.6 Site elevation: 541 ft

2.19.1 ILS type: Localizer for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: RQN

2.19.5 Coordinates: 38−45−41.35N / 90−24−46.77W
2.19.6 Site elevation: 612.7 ft

2.19.1 ILS type: DME for runway 29. Magnetic variation: 1W
2.19.2 ILS identification: RQN
2.19.5 Coordinates: 38−45−43.83N / 90−24−44.64W
2.19.6 Site elevation: 608 ft

2.19.1 ILS type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: OGZ
2.19.5 Coordinates: 38−44−38.72N / 90−22−39.63W
2.19.6 Site elevation: 544.7 ft

2.19.1 ILS type: DME for runway 11. Magnetic variation: 1W
2.19.2 ILS identification: OGZ
2.19.5 Coordinates: 38−44−36.71N / 90−22−41.69W
2.19.6 Site elevation: 548 ft

2.19.1 ILS type: DME for runway 12R. Magnetic variation: 1W
2.19.2 ILS identification: LMR
2.19.5 Coordinates: 38−44−00.00N / 90−20−39.90W
2.19.6 Site elevation: 592 ft

General Remarks:
WAIVER TO CONDUCT SIMULTANEOUS APPROACHES TO PARALLEL RUNWAYS SEPARATED BY 1,300 FT IN EFFECT.

WG TIP CLEARANCE WITH GROUND VEH NOT ADEQUATE ALONG N SIDE OF MAIN TERMINAL APRON.

MISC: MILITARY AIRCRAFT PLANNING TO ARR WHEN WX IS ANTICIPATED TO BE LESS THAN 1200'/5 MUST FILE F;T PLAN BEFORE 0900Z++.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ARRESTING GEAR: A−G ARE KEPT IN RECESSED POSITION UNTIL REQ FOR USE. TOWER MUST BE NOTIFIED AT LEAST 5 SECOND PRIOR TO ENGAGEMENT SO THAT CABLE MAY BE RAISED.

TAXIWAY D OR TAXILANE C FROM TAXIWAY S TO TAXIWAY H, B−747 OR LARGER AIRCRAFT ARE NOT AUTHORIZED TO PASS OR BE PASSED BY B−767 OR LARGER AIRCRAFT OPERATING ON THE PARALLEL TWY/TAXILANE.

TAXIWAY P, EAST OF THE PAPA PAD TO TAXIWAY F, RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 79 FT (JS−41 AND E−120), WHEN AIRCRAFT ARE PARKED ON THE PAPA PAD. THIS AREA IS RESTRICTED TO ALL OPERATIONS WHEN AIRCRAFT ARE PERFORMING ENGINE RUN−UPS IN THE PAPA PAD.

TAXIWAY V, UNDERLYING THE RUNWAY 12L FINAL APPROACH COURSE IS RESTRICTED TO AIRCRAFT SMALLER THAN A DC−9 (25 FT OR LESS), WHEN AIRCRAFT ARE LANDING ON RUNWAY 12L.

TAXIWAY E, BETWEEN TAXIWAY P AND TAXIWAY N, RESTRICTED TO B−767 OR SMALLER AIRCRAFT (WINGSPAN LESS THAN 171 FT) WHEN AIRCRAFT ARE PARKED ON THE ECHO PAD.

TAXIWAY C, EAST OF TAXIWAY D ONE TO THE APPROACH END OF RUNWAY 30L, RESTRICTED TO B−727 OR SMALLER AIRCRAFT (WINGSPAN OF 118 FT OR LESS) WHEN AIRCRAFT ARE PARKED ON THE JULIET PAD.

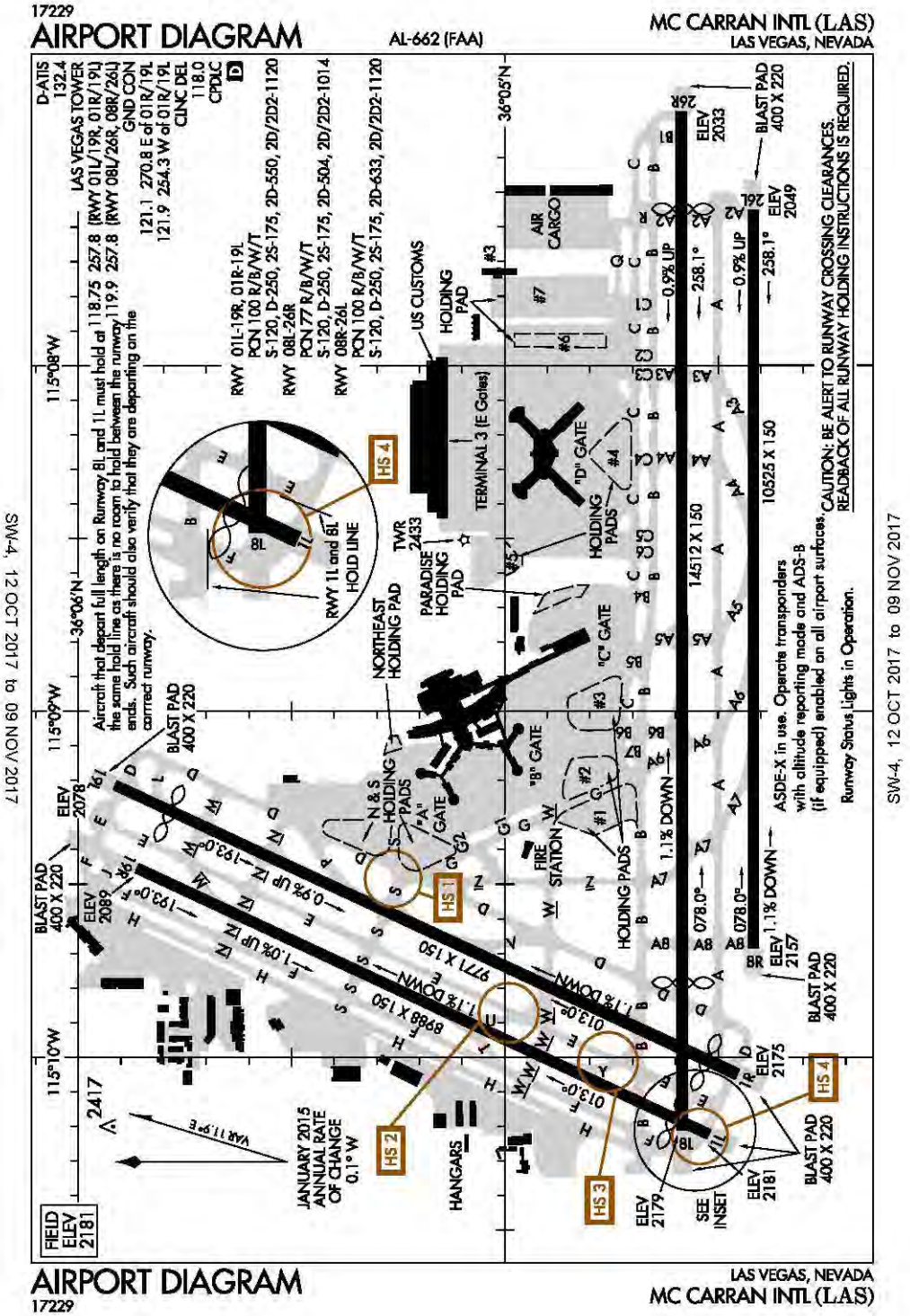
TAXILANE C, FROM TAXIWAY S TO TAXIWAY R, RESTRICTED TO B−767 OR SMALLER AIRCRAFT (156 FT AVBL) WHEN AFTER ARE PARKED IN THE CHARLIE PAD. RESTRICTION IS FOR TAXIING AIRCRAFT, LARGER AIRCRAFT MAY BE TOWED THROUGH THE AREA.

TAXILANE C FROM TAXIWAY P TO TAXIWAY L, RESTRICTED TO A B−757 300 SERIES OR SMALLER WHEN PASSING BEHIND AIRCRAFT THAT HAVE MADE THE INITIAL 10 FT PUSHBACK.

TAXIWAY A EAST OF TAXIWAY T, TAXIWAY S AND RUNWAY 06/24 SOUTH OF TAXIWAY B, NO AIRCRAFT OR VEHICLE OPERATIONS WHEN DEPARTING RUNWAY 11 OR ARRIVING RUNWAY 29.

TAXIWAY L NORTH OF RUNWAY 12L/30R, AIRCRAFT LARGER THAN A G5 TAXIING NORTHBOUND ARE PROHIBITED FROM MAKING A RIGHT TURN EASTBOUND ON TAXIWAY F.

Las Vegas, Nevada
McCarren International
ICAO Identifier KLAS



Las Vegas, NV
Mc Carran Intl
ICAO Identifier KLAS

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 36–04–48.20N / 115–09–00.00W
2.2.2 From City: 5 Miles S Of Las Vegas, NV
2.2.3 Elevation: 2181.4 ft
2.2.5 Magnetic variation: 11E (2020)
2.2.6 Airport Contact: Rosemary A. Vassiliadis
5757 WAYNE NEWTON BLVD
Las Vegas, NV 89119
(702–261–5211)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 01L
2.10.1.b Type of obstacle: Rr (48 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 19R
2.10.1.b Type of obstacle: Fence (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 150 ft from Centerline

2.10.1.a. Runway designation: 08L
2.10.1.b Type of obstacle: Hangar (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 08R
2.10.1.b Type of obstacle: Pole (53 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 540 ft from Centerline

2.10.1.a. Runway designation: 01R
2.10.1.b Type of obstacle: Rr (41 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 19L
2.10.1.b Type of obstacle: Pole (17 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 17 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 01R
2.12.2 True Bearing: 25
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36–04–27.26N / 115–10–00.00W
2.12.6 Threshold elevation: 2175 ft
2.12.6 Touchdown zone elevation: 2170 ft
2.12.7 Slope: 1.1DOWN

2.12.1 Designation: 19L
2.12.2 True Bearing: 205
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36–05–54.88N / 115–09–12.80W
2.12.6 Threshold elevation: 2078 ft
2.12.6 Touchdown zone elevation: 2112 ft
2.12.7 Slope: 0.9UP

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 14512 ft x 150 ft
2.12.4 PCN: 77 R/B/W/T
2.12.5 Coordinates: 36–04–34.92N / 115–10–12.68W
2.12.6 Threshold elevation: 2179 ft
2.12.6 Touchdown zone elevation: 2155 ft
2.12.7 Slope: 1.1DOWN

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 14512 ft x 150 ft
2.12.4 PCN: 77 R/B/W/T
2.12.5 Coordinates: 36–04–35.07N / 115–07–15.93W
2.12.6 Threshold elevation: 2033 ft
2.12.6 Touchdown zone elevation: 2067 ft
2.12.7 Slope: 1.9UP

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10525 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T

2.12.5 Coordinates: 36−04−25.06N / 115−09−41.16W
2.12.6 Threshold elevation: 2157 ft
2.12.6 Touchdown zone elevation: 2157 ft
2.12.7 Slope: 1.1DOWN

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10525 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−04−25.17N / 115−07−32.97W
2.12.6 Threshold elevation: 2048 ft
2.12.6 Touchdown zone elevation: 2069 ft
2.12.7 Slope: 0.9UP

2.12.1 Designation: 01L
2.12.2 True Bearing: 25
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−04−31.17N / 115−10−13.32W
2.12.6 Threshold elevation: 2181 ft
2.12.6 Touchdown zone elevation: 2176 ft
2.12.7 Slope: 1.1DOWN

2.12.1 Designation: 19R
2.12.2 True Bearing: 205
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−05−51.77N / 115−09−27.19W
2.12.6 Threshold elevation: 2089 ft
2.12.6 Touchdown zone elevation: 2117 ft
2.12.7 Slope: 1UP

AD 2.13 Declared distances
2.13.1 Designation: 01R
2.13.2 Takeoff run available: 9771
2.13.3 Takeoff distance available: 10168
2.13.4 Accelerate−stop distance available: 9437
2.13.5 Landing distance available: 8677

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 9771
2.13.3 Takeoff distance available: 10171
2.13.4 Accelerate−stop distance available: 9681
2.13.5 Landing distance available: 8741

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 14512
2.13.3 Takeoff distance available: 15101
2.13.4 Accelerate−stop distance available: 14101
2.13.5 Landing distance available: 11968

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 14512
2.13.3 Takeoff distance available: 15157
2.13.4 Accelerate−stop distance available: 14157
2.13.5 Landing distance available: 12757

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 10525
2.13.3 Takeoff distance available: 10525
2.13.4 Accelerate−stop distance available: 10525
2.13.5 Landing distance available: 10525

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 10525
2.13.3 Takeoff distance available: 10525
2.13.4 Accelerate−stop distance available: 10525
2.13.5 Landing distance available: 10525

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 8988
2.13.3 Takeoff distance available: 8988
2.13.4 Accelerate−stop distance available: 8988
2.13.5 Landing distance available: 8401

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 8988
2.13.3 Takeoff distance available: 9400
2.13.4 Accelerate−stop distance available: 8400
2.13.5 Landing distance available: 8400

AD 2.14 Approach and runway lighting
2.14.1 Designation: 01R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 19L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26R
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08R
2.14.4 Visual approach slope indicator system: 4−light

PAPI on left

2.14.1 Designation: 26L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 01L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 19R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 132.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.75 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 118 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: RAMP CON
2.18.3 Service designation: 124.4 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 270.8 MHz

2.18.1 Service designation: RAMP CON
2.18.3 Service designation: 129.175 MHz

2.18.1 Service designation: RAMP CON
2.18.3 Service designation: 127.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 254.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.9 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS identification: RLE
2.19.5 Coordinates: 36–04–25.05N / 115–09–53.34W
2.19.6 Site elevation: 2168.3 ft

2.19.1 ILS type: Localizer for runway 26R. Magnetic variation: 11E
2.19.2 ILS identification: LAS
2.19.5 Coordinates: 36–04–34.91N / 115–10–19.18W
2.19.6 Site elevation: 2186.5 ft

2.19.1 ILS type: Glide Slope for runway 26R. Magnetic variation: 11E
2.19.2 ILS identification: LAS
2.19.5 Coordinates: 36–04–32.08N / 115–07–46.67W
2.19.6 Site elevation: 2047.1 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 11E
2.19.2 ILS identification: RLE
2.19.5 Coordinates: 36–04–22.00N / 115–07–46.66W
2.19.6 Site elevation: 2050.9 ft

2.19.1 ILS type: Outer Marker for runway 26R. Magnetic variation: 11E
2.19.2 ILS identification: LAS
2.19.5 Coordinates: 36–04–35.71N / 115–01–16.98W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 26R. Magnetic variation: 11E
2.19.2 ILS identification: LAS
2.19.5 Coordinates: 36–04–35.10N / 115–06–44.40W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 26R. Magnetic variation: 11E
2.19.2 ILS identification: LAS
2.19.5 Coordinates: 36–04–30.52N / 115–10–19.16W
2.19.6 Site elevation: 2202.5 ft

2.19.1 ILS type: DME for runway 01L. Magnetic variation: 11E

2.19.2 ILS identification: CUA
2.19.5 Coordinates: 36−06−00.00N / 115−09−25.06W
2.19.6 Site elevation: 2086 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 11E
2.19.2 ILS identification: CUA
2.19.5 Coordinates: 36−04−49.14N / 115−10−00.00W
2.19.6 Site elevation: 2158.6 ft

2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 11E
2.19.2 ILS identification: CUA
2.19.5 Coordinates: 36−06−00.00N / 115−09−21.99W
2.19.6 Site elevation: 2079.1 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS identification: RLE
2.19.5 Coordinates: 36−04−22.25N / 115−09−53.27W
2.19.6 Site elevation: 2182.3 ft

General Remarks:
EXTENSIVE GLDR/SOARING OPERATIONS WEEKENDS & HOLS; SR−SS; LAS R187/020; ALTITUDES UP TO BUT NOT INCLG FL180. GLDRS REMAIN CLEAR OF THE TCA BUT OTHERWISE OPR WITHIN THE ENTIRE SW QUADRANT OF THE TCA VEIL.

ALL NON−STD RUNWAY OPERATIONS PRIOR PERMISSION REQUIRED FROM DEPT OF AVIATION.

TURBOJET DEPS NOT PERMITTED ON RUNWAY 01R/19L OR RUNWAY 01L/19R 2000−0800. XCPNS FOR WX OR OPERATIONAL NECESSITY.

AIRCRAFT MAY EXPERIENCE REFLECTION OF SUN FROM GLASS HOTELS LOCATED NW OF AIRPORT. REFLECTION MAY OCCUR AT VARIOUS ALTITUDES, HDGS, & DISTANCES FROM AIRPORT.

GA PARKING VERY LIMITED. FOR PARKING AVAILABILITY CONTACT EITHER FBO (702) 736−1830 OR (702) 739−1100.

RUNWAY 08L 589 FT CLEARWAY; RUNWAY 26R 645 FT CLEARWAY.

LIGHTED GOLF RANGE 1400 FT S OF RUNWAYS 01L/19R AND 01R/19L.

TIEDOWN FEE.

(E98) PLUS 64 SHELTERS & 24 SHEDS.

AIRCRAFT USING FULL LENGTH DEP ON RUNWAY 08L USE MINIMAL POWER UNTIL PASSING THE PWR−UP POINT ON RUNWAY. PWR−UP POINT IS 348 FT EAST OF BLAST PAD AND MARKED WITH SIGN AND STANDARD MARKINGS FOR BEGINNING OF RUNWAY.

LARGE NR OF BIRDS AND BATS IN THE VICINITY OF OF AIRPORT BETWEEN SS AND SR.

AIRCRAFT DEPG RUNWAY 19R USE MINIMAL POWER UNTIL PASSING THE RUNWAY THRESHOLD. RUNWAY 19R THRESHOLD HAS STANDARD RUNWAY MARKINGS AND IS 780 FT S OF THE BLAST PAD.

AIRCRAFT OPER NEAR THE INTERSECTION OF TAXIWAYS S, D, G AND THE N END OF TAXIWAY Z SHOULD BE ALERT AS THERE ARE CLOSELY ALIGNED TAXIWAY CENTERLINE AND RADIUS TURNS.

AIRCRAFT THAT DEP FULL LENGTH OF RUNWAYS 01L AND 08L MUST HOLD AT THE SAME HOLD LINE AS THERE IS NO ROOM TO HOLD BETWEEN THE RUNWAY ENDS AND SUCH AIRCRAFT SHOULD VERIFY THAT THEY ARE ON THE CORRECT RUNWAY.

GA CUSTOMS AND IMMIGRATION LOCATED WEST SIDE OF AIRFIELD BETWEEN FBO'S.

AIRCRAFT LRGR THAN B757 PRIOR PERMISSION REQUIRED FROM DEPT OF AVIATION TO USE TAXIWAY

H.

NUMEROUS HOP ON WEST SIDE OF AIRPORT.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

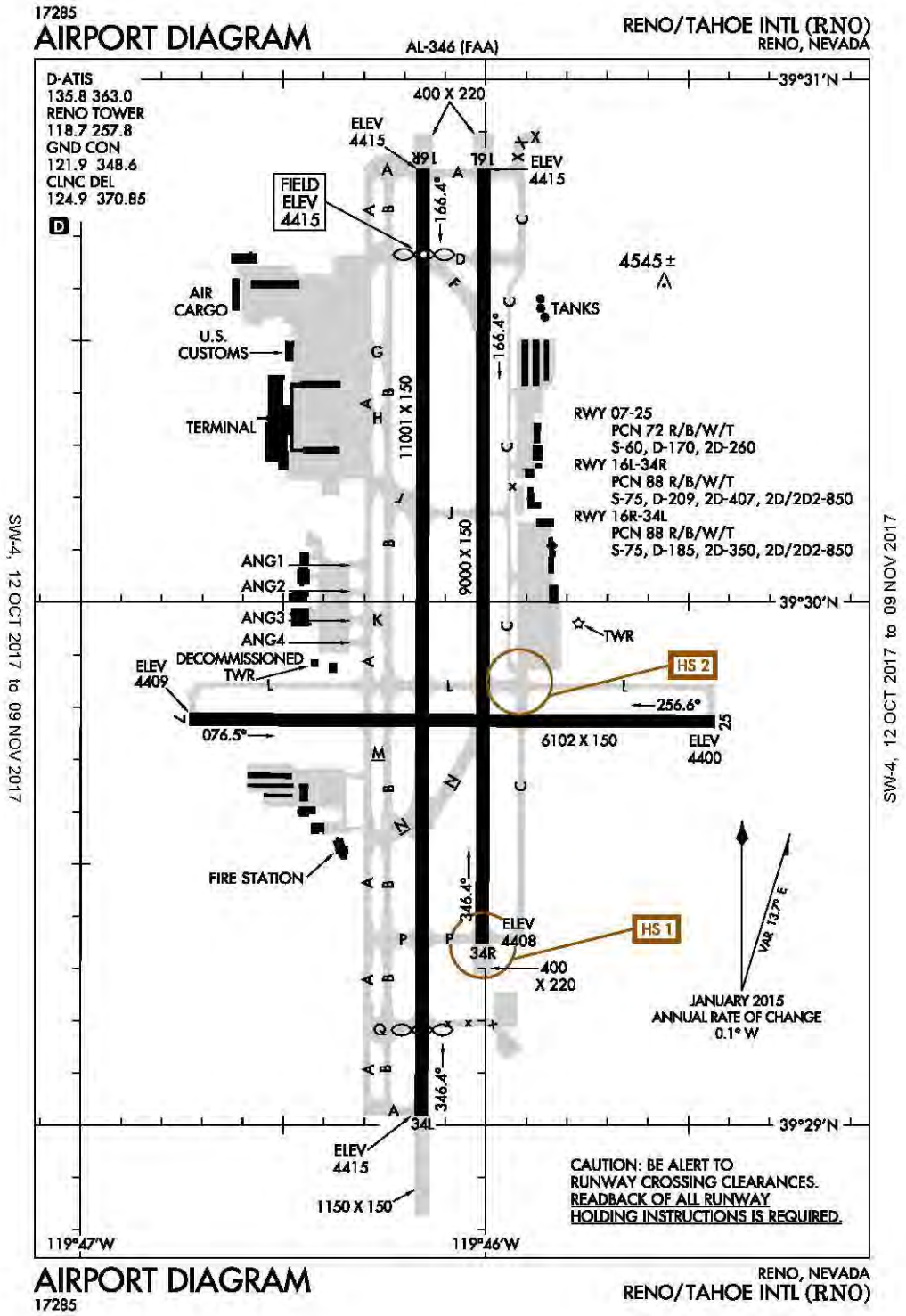
GA CBP RSVNS ARE REQUIRED TO BE SMTD A MIN OF 12 HOURS IN ADVANCE (OTHER CONDITIONS APPLY). RSVNS MUST BE MADE ONLINE AT,.MCCARRAN.COM/GACBP. QNS CAN BE DCTD TO CBP559@MCCARRAN.COM. GA AIRCRAFT USING THE WEST SIDE CUSTOMS FACILITY MUST CONTACT RAMP CONTROL 124.4.

AIRCRAFT TAX WESTBOUND ON TAXIWAY B NEAR TAXIWAY E USE CARE NOT TO ENTER THE RUNWAY ON TAXIWAY Y, AIRCRAFT TAX WESTBOUND ON TAXIWAY W NEAR TAXIWAY E USE CARE NOT TO ENTER THE RUNWAY ON TAXIWAY U.

ALL AIRCRAFT CONTACT RAMP CONTROL ON FREQ 124.4 FOR OPERATIONS AT A,B, AND C GATES, CONTACT RAMP CONTROL ON FREQ 127.9 FOR OPERATIONS AT D AND E GATES AND CARGO RAMP PRIOR TO ENTERING RAMP OR PUSHING BACK FROM GATE OR PARKING SPOT.

RUNWAY STATUS LIGHTS ARE IN OPN.

Reno, Nevada
Reno/Tahoe International
ICAO Identifier KRNO



Reno, NV
Reno/Tahoe Intl
ICAO Identifier KRNO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39–29–56.80N / 119–46–00.00W
2.2.2 From City: 3 Miles SE Of Reno, NV
2.2.3 Elevation: 4414.9 ft
2.2.5 Magnetic variation: 16E (1985)
2.2.6 Airport Contact: Marily M. Mora
P O BOX 12490
Reno, NV 89510 (775–328–6400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 34L
2.10.1.b Type of obstacle: Gnd (243 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 1500 ft from Centerline

2.10.1.a. Runway designation: 07
2.10.1.b Type of obstacle: Pole (118 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

2.10.1.a. Runway designation: 25
2.10.1.b Type of obstacle: Tree (44 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 275 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 07
2.12.2 True Bearing: 90
2.12.3 Dimensions: 6102 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 39–29–46.63N / 119–46–43.82W
2.12.6 Threshold elevation: 4409 ft
2.12.6 Touchdown zone elevation: 4409 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 270
2.12.3 Dimensions: 6102 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 39–29–46.37N / 119–45–26.00W
2.12.6 Threshold elevation: 4400 ft
2.12.6 Touchdown zone elevation: 4402 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39–30–49.83N / 119–46–00.00W
2.12.6 Threshold elevation: 4415 ft
2.12.6 Touchdown zone elevation: 4415 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39–29–20.89N / 119–46–00.00W
2.12.6 Threshold elevation: 4408 ft
2.12.6 Touchdown zone elevation: 4408 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11001 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39–30–49.84N / 119–46–00.00W
2.12.6 Threshold elevation: 4415 ft
2.12.6 Touchdown zone elevation: 4415 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11001 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 39–29–00.00N / 119–46–00.00W
2.12.6 Threshold elevation: 4414 ft
2.12.6 Touchdown zone elevation: 4410 ft

AD 2.13 Declared distances
2.13.1 Designation: 07
2.13.2 Takeoff run available: 5854
2.13.3 Takeoff distance available: 5854
2.13.4 Accelerate–stop distance available: 6102
2.13.5 Landing distance available: 5854

2.13.1 Designation: 25

2.13.2 Takeoff run available: 6102
2.13.3 Takeoff distance available: 6102
2.13.4 Accelerate−stop distance available: 6102
2.13.5 Landing distance available: 6102

AD 2.14 Approach and runway lighting
2.14.1 Designation: 07
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 25
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: PAPI Not To Be Used Beyond 2 Nm Due To Rapidly Rising Mountainous Terrain

2.14.1 Designation: 16L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Rwy 34R PAPI Unusable Beyond 6 Degrees Right Of Centerline .

2.14.1 Designation: 16R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: PAPI Not To Be Used Beyond 6 Nm Due To High Terrain.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 363 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P
2.18.3 Service designation: 370.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 124.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: ANG/OPS
2.18.3 Service designation: 280 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: ANG COMD POST/ BASEOPS
2.18.3 Service designation: 378.4 MHz
2.18.6 Remarks: Callsign − Roller Operations.

2.18.1 Service designation: ANG COMD POST/ BASEOPS
2.18.3 Service designation: 8780 MHz
2.18.6 Remarks: Callsign − Roller Operations.

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: RNO
2.19.5 Coordinates: 39−28−49.53N / 119−46−00.00W
2.19.6 Site elevation: 4419.7 ft

2.19.1 ILS type: DME for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: RNO
2.19.5 Coordinates: 39−28−48.32N / 119−46−00.00W
2.19.6 Site elevation: 4433.4 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic

variation: 16E
2.19.2 ILS identification: RNO
2.19.5 Coordinates: 39–30–28.10N / 119–46–00.00W
2.19.6 Site elevation: 4408.4 ft

2.19.1 ILS type: Outer Marker for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: RNO
2.19.5 Coordinates: 39–36–27.48N / 119–46–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: RNO
2.19.5 Coordinates: 39–31–10.35N / 119–46–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Localizer for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: AGY
2.19.5 Coordinates: 39–30–59.98N / 119–46–00.00W
2.19.6 Site elevation: 4433.1 ft

2.19.1 ILS type: DME for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: AGY
2.19.5 Coordinates: 39–31–00.00N / 119–46–12.57W
2.19.6 Site elevation: 4434.8 ft

2.19.1 ILS type: Glide Slope for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: AGY
2.19.5 Coordinates: 39–29–16.60N / 119–46–00.00W
2.19.6 Site elevation: 4403.3 ft

General Remarks:
WATERFOWL ALL QUADRANTS ALL SEASONS. CONCENTRATED NW OF RUNWAY 16R AND E OF RUNWAY 16L.

24 HRS PRIOR PERMISSION REQUIRED FOR TRANSIENT AIRCRAFT PARKING WITH WINGSPANS GREATER THAN 75'.

TAXIWAY C BETWEEN TAXIWAY L & TAXIWAY D RESTRICTED TO AIRCRAFT 60000 LBS OR LESS.

NOISE SENSITIVE AREA ALL QUADS. PILOTS OF TURBOJET AIRCRAFT USE RECOMMENDED NOISE ABATEMENT PROCS; AVAILABLE ON REQUEST.

NOISE NOTE CONT: PILOTS OF NON–TURBOJET AIRCRAFT USE BEST ABATEMENT PROCS AND SETTINGS. AVOID AS MUCH AS FEASIBLE FLYING OVER POPULATED AREAS.

MILITARY AIRCRAFT: TRANSIENT AIRCRAFT EXECUTE STRAIGHT–IN FULL STOP APPROACH. OVERHEAD PATTERN NOT AUTH FOR TRANSIENT AIRCRAFT.

MILITARY AIRCRAFT: NOISE ABATEMENT CRITICAL TERMINATE AFTERBURNER ASAP THEN CLIMB TO 6500 FT MSL ASAP.

GLIDER/SOARING OPER 30–50 MILES SOUTH OF AIRPORT DURING VFR WEATHER & MOUNTAIN WAVE WIND CONDITIONS 1100 TO SS.

PURE JET TOUCH & GO LOW APPROACH & PRACTICE INSTRUMENT APPROACHES ARE PROHIBITED; AIRCRAFT OVER 12500 LBS REQUIRE PRIOR WRITTEN APPROVAL FOR TRAINING FLIGHTS; FOR FURTHER INFORMATION CONTACT AIRPORT OPERATIONS 1–877–736–6359.

TAXIWAY C BETWEEN TAXIWAY L AND TAXIWAY D CLOSED TO AIR CARRIER AIRCRAFT.

TAXIWAY A BETWEEN NORTH TAXIWAY B AND TAXIWAY D CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 149 FT.

ALL COMMERCIAL AIRCRAFT CONTACT GROUND CONTROL FOR ADVISORIES PRIOR TO PUSH BACK ON THE TERMINAL RAMP.

INTENSIVE GLIDER ACTIVITY IN THE VICINITY OF AIRPORT AND SURROUNDING AREAS UP TO 18,000 FT.

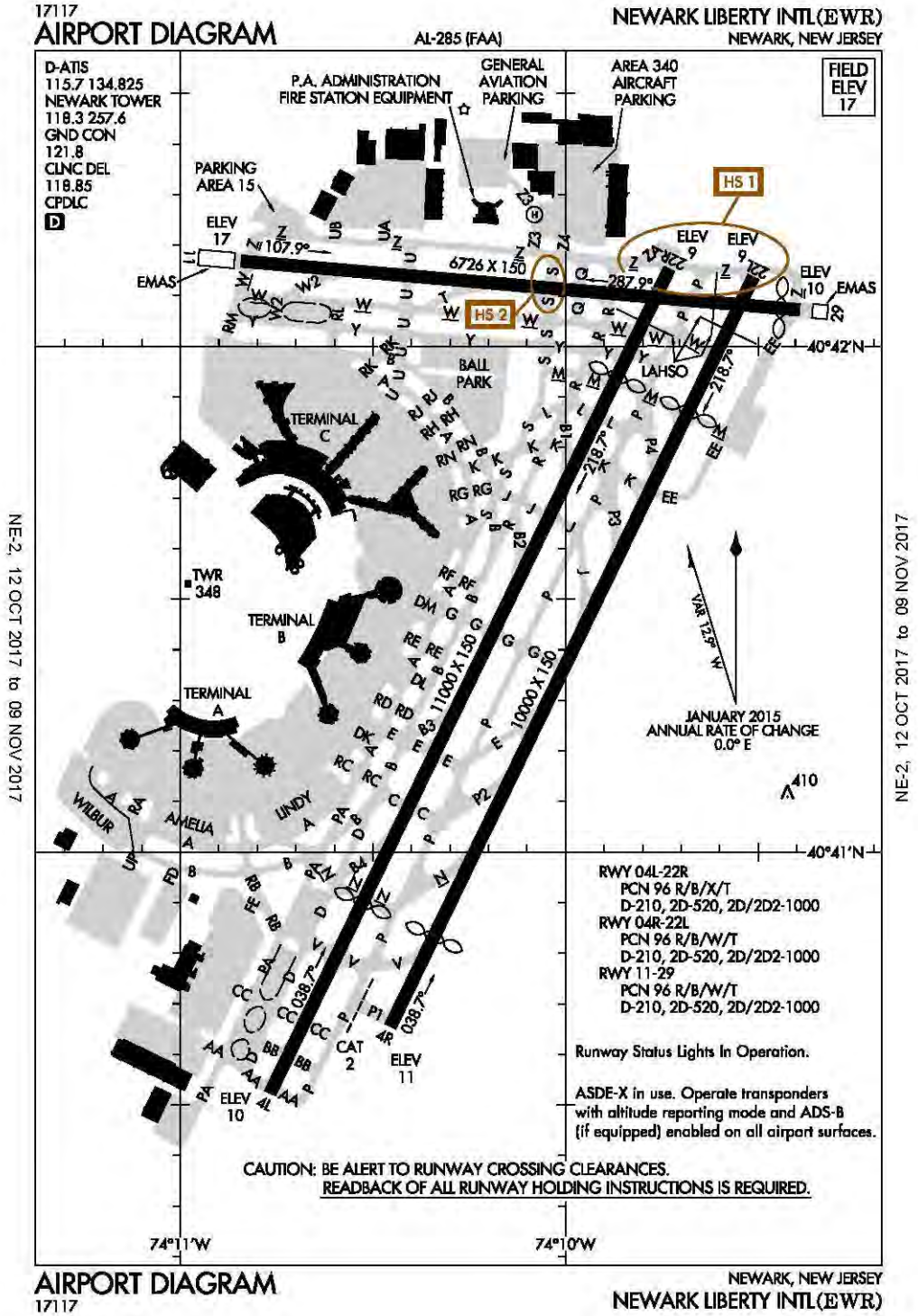
MILITARY: ANG OPERATIONS 1530−0100Z++ TUE−FRI EXCEPT HOLIDAY; DSN 830−4709.

TAXIWAY M CLOSED TO AIR CARRIER AIRCRAFT.

TAXIWAY J EAST OF RUNWAY 16L/34R CLOSED TO AIR CARRIER AIRCRAFT.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −15C.

Newark, New Jersey
Newark Liberty International
ICAO Identifier KEWR



Newark, NJ
Newark Liberty Intl
ICAO Identifier KEWR

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 40−41−32.93N / 74−10−00.00W
2.2.2 From City: 3 Miles S Of Newark, NJ
2.2.3 Elevation: 17.4 ft
2.2.5 Magnetic variation: 13W (1985)
2.2.6 Airport Contact: Diane M.Papaianni
BUILDING #1− CONRAD ROAD
Newark, NJ 7114 (973−961−6161)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 04L
2.10.1.b Type of obstacle: Tree (65 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 572 ft from Centerline

2.10.1.a. Runway designation: 11
2.10.1.b Type of obstacle: Bldg (158 ft). Lighted
2.10.1.c Location of obstacle: 1437 ft from Centerline

2.10.1.a. Runway designation: 29
2.10.1.b Type of obstacle: Sign (54 ft). Lighted
2.10.1.c Location of obstacle: 514 ft from Centerline

2.10.1.a. Runway designation: 04R
2.10.1.b Type of obstacle: Pole (28 ft). Lighted
2.10.1.c Location of obstacle: 600 ft from Centerline

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Ant (30 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 534 ft from Centerline

2.10.1.a. Runway designation: 22R
2.10.1.b Type of obstacle: Pole (28 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 477 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: H1
2.12.3 Dimensions: 54 ft x 54 ft
2.12.5 Coordinates: 40−42−15.85N / 74−10−00.00W
2.12.6 Threshold elevation: 978 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 95
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−10.10N / 74−10−50.55W
2.12.6 Threshold elevation: 17 ft
2.12.6 Touchdown zone elevation: 17 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 275
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−00.00N / 74−09−23.55W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 26
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 96 R/B/X/T
2.12.5 Coordinates: 40−40−31.37N / 74−10−46.02W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 206

2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 96 R/B/X/T
2.12.5 Coordinates: 40−42−00.00N / 74−09−43.83W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 26
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−40−39.30N / 74−10−27.28W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 11 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 206
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−00.00N / 74−09−30.73W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 11 ft

AD 2.13 Declared distances
2.13.1 Designation: 11
2.13.2 Takeoff run available: 6726
2.13.3 Takeoff distance available: 6726
2.13.4 Accelerate−stop distance available: 6726
2.13.5 Landing distance available: 6726

2.13.1 Designation: 29
2.13.2 Takeoff run available: 6726
2.13.3 Takeoff distance available: 6726
2.13.4 Accelerate−stop distance available: 6726
2.13.5 Landing distance available: 6502

2.13.1 Designation: 04L
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 11000
2.13.5 Landing distance available: 8460

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate−stop distance available: 11000
2.13.5 Landing distance available: 9560

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 8810

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 8207

AD 2.14 Approach and runway lighting
2.14.1 Designation: 11
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 29
2.14.4 Visual approach slope indicator system: 4−light PAPI on right
2.14.10 Remarks: Rwy 29 PAPI Unusable 5 Degs L Of Centerline .

2.14.1 Designation: 04L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 04R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 115.7 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 134.825 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: CD/P PRE TAXI CLNC
2.18.3 Service designation: 118.85 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 134.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 127.85 MHz

2.18.1 Service designation: LCL/P CLASS B
2.18.3 Service designation: 257.6 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: GATE HOLD
2.18.3 Service designation: 132.45 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 11. Magnetic variation: 13W
2.19.2 ILS identification: GPR
2.19.5 Coordinates: 40−42−00.00N / 74−10−00.00W
2.19.6 Site elevation: 7 ft

2.19.1 ILS type: Localizer for runway 22R. Magnetic variation: 13W
2.19.2 ILS identification: JNN
2.19.5 Coordinates: 40−40−22.39N / 74−10−51.73W
2.19.6 Site elevation: 9.1 ft

2.19.1 ILS type: Localizer for runway 04L. Magnetic variation: 13W
2.19.2 ILS identification: EWR
2.19.5 Coordinates: 40−42−18.19N / 74−09−38.11W
2.19.6 Site elevation: 8.7 ft

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 13W
2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40−42−15.94N / 74−09−25.84W
2.19.6 Site elevation: 8.1 ft

2.19.1 ILS type: Localizer for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40−40−28.95N / 74−10−33.87W
2.19.6 Site elevation: 9.4 ft

2.19.1 ILS type: Glide Slope for runway 11. Magnetic variation: 13W
2.19.2 ILS identification: GPR
2.19.5 Coordinates: 40−42−10.84N / 74−10−35.03W
2.19.6 Site elevation: 9.5 ft

2.19.1 ILS type: DME for runway 04R. Magnetic variation: 13W

2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40–41–43.55N / 74–09–41.63W
2.19.6 Site elevation: 33.5 ft

2.19.1 ILS type: DME for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40–41–43.55N / 74–09–41.63W
2.19.6 Site elevation: 33.5 ft

2.19.1 ILS type: DME for runway 04L. Magnetic variation: 13W
2.19.2 ILS identification: EWR
2.19.5 Coordinates: 40–42–15.69N / 74–09–33.74W
2.19.6 Site elevation: 34.3 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 13W
2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40–40–57.60N / 74–10–00.00W
2.19.6 Site elevation: 6 ft

2.19.1 ILS type: Glide Slope for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40–41–43.67N / 74–09–41.74W
2.19.6 Site elevation: 7.4 ft

2.19.1 ILS type: Glide Slope for runway 04L. Magnetic variation: 13W
2.19.2 ILS identification: EWR
2.19.5 Coordinates: 40–41–00.00N / 74–10–22.76W
2.19.6 Site elevation: 7.4 ft

2.19.1 ILS type: Glide Slope for runway 22R. Magnetic variation: 13W
2.19.2 ILS identification: JNN
2.19.5 Coordinates: 40–41–47.56N / 74–09–53.88W
2.19.6 Site elevation: 8 ft

2.19.1 ILS type: Outer Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40–45–55.11N / 74–07–17.20W
2.19.6 Site elevation: 28.7 ft

2.19.1 ILS type: Outer Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40–36–26.40N / 74–13–00.00W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: Outer Marker for runway 22R. Magnetic variation: 13W
2.19.2 ILS identification: JNN
2.19.5 Coordinates: 40–45–55.11N / 74–07–17.20W
2.19.6 Site elevation: 29 ft

2.19.1 ILS type: Inner Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40–40–41.48N / 74–10–23.17W
2.19.6 Site elevation: 9 ft

2.19.1 ILS type: Middle Marker for runway 04L. Magnetic variation: 13W
2.19.2 ILS identification: EWR
2.19.5 Coordinates: 40–40–21.10N / 74–10–52.50W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 04L. Magnetic variation: 13W
2.19.2 ILS identification: EWR
2.19.5 Coordinates: 40–35–37.20N / 74–13–48.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40–42–23.50N / 74–09–20.91W
2.19.6 Site elevation: 8 ft

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS identification: EZA
2.19.5 Coordinates: 40–40–26.62N / 74–10–35.32W
2.19.6 Site elevation: 11 ft

2.19.1 ILS type: DME for runway 22R. Magnetic variation: 13W
2.19.2 ILS identification: JNN
2.19.5 Coordinates: 40−42−15.69N / 74−09−33.74W
2.19.6 Site elevation: 34.3 ft

2.19.1 ILS type: Inner Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS identification: LSQ
2.19.5 Coordinates: 40−42−00.00N / 74−09−32.18W
2.19.6 Site elevation: 9.4 ft

2.19.1 ILS type: DME for runway 11. Magnetic variation: 13W
2.19.2 ILS identification: GPR
2.19.5 Coordinates: 40−42−00.00N / 74−10−00.00W
2.19.6 Site elevation: 7.2 ft

General Remarks:
FLOCKS OF BIRDS ON & IN THE VICINITY OF AIRPORT.

FOR NOISE RESTRICTIONS CALL 212−435−3779 DURING NORMAL BUSINESS HOURS.

PARA−SAIL & BANNER TOWING OPERATIONS 1000 FT & BELOW IN UPPER & LOWER NEW YORK BAYS INCLUDING ROCKAWAY INLET INDEFINITELY.

TAXIWAY Z BETWEEN TAXIWAY U & UB RESTRICTED TO NARROW BODY AIRCRAFT INDEFINITELY.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RUNWAYS 04R & 04L DEPARTURES USE UPPER ANTENNA FOR ATC COMMUNICATIONS.

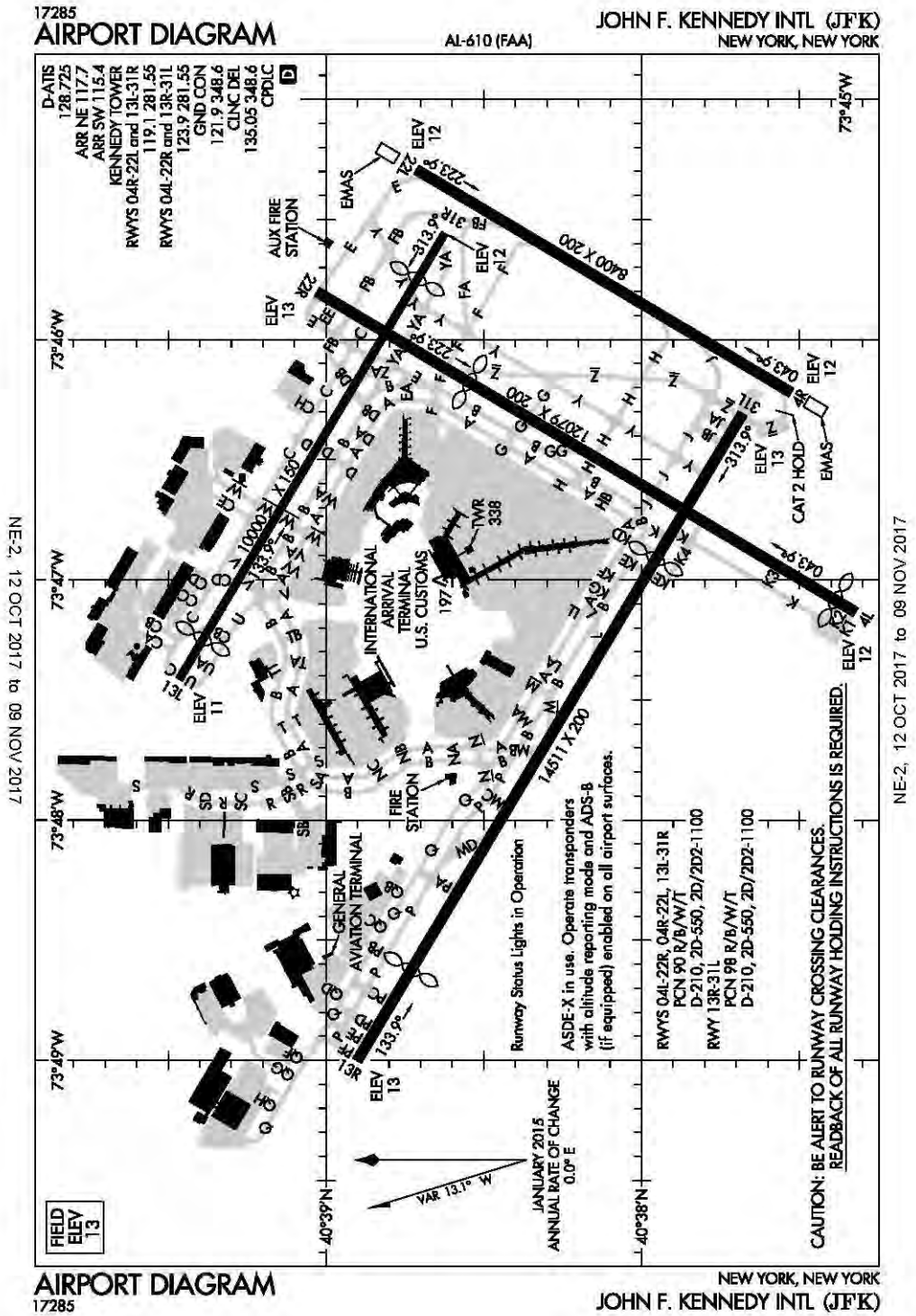
HIGH VOLUME OF LOW LEVEL HELICOPTER TRAFFIC ARRIVING AND DEPARTING HELO KEARNY HELIPORT (65NJ) LOCATED 3.5 MILES NORTHEAST OF THE AIRPORT.

RUNWAY STATUS LIGHTS IN OPR

ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 437 FT BY 178 FT IN WIDTH LOCATED AT THE DER 29.

CONTROLLER-PILOT DATA LINK COMMUNICATIONS DEPARTURE CLEARANCE SERVICE AVAILABLE.

New York, New York
John F. Kennedy International
ICAO Identifier KJFK



New York, NY
John F Kennedy Intl
ICAO Identifier KJFK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−38−23.73N / 73−46−43.30W
2.2.2 From City: 13 Miles SE Of New York, NY
2.2.3 Elevation: 12.7 ft
2.2.5 Magnetic variation: 14W (2000)
2.2.6 Airport Contact: Michael Moran
BLDG 14
Jamaica, NY 11430
((718) 244−3501)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 13L
2.10.1.b Type of obstacle: Pole (52 ft). Lighted
2.10.1.c Location of obstacle: 327 ft from Centerline

2.10.1.a. Runway designation: 31R
2.10.1.b Type of obstacle: Tree (79 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 392 ft from Centerline

2.10.1.a. Runway designation: 22L
2.10.1.b Type of obstacle: Tree (50 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 310 ft from Centerline

2.10.1.a. Runway designation: 22R
2.10.1.b Type of obstacle: Tree (70 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 37 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 31
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40−37−19.28N / 73−47−00.00W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 211
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40−39−00.00N / 73−45−47.96W
2.12.6 Threshold elevation: 13 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40−39−27.95N / 73−47−24.89W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 12 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40−38−37.40N / 73−45−33.41W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 12 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−38−54.10N / 73−49−00.00W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−37−40.78N / 73−46−18.41W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 31

2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40–37–31.53N / 73–46–13.25W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 12 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 211
2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40–38–42.85N / 73–45–17.51W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 12 ft

AD 2.13 Declared distances
2.13.1 Designation: 04L
2.13.2 Takeoff run available: 11351
2.13.3 Takeoff distance available: 11351
2.13.4 Accelerate–stop distance available: 11470
2.13.5 Landing distance available: 11010

2.13.1 Designation: 22R
2.13.2 Takeoff run available: 12079
2.13.3 Takeoff distance available: 12079
2.13.4 Accelerate–stop distance available: 11219
2.13.5 Landing distance available: 7795

2.13.1 Designation: 13L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 9093

2.13.1 Designation: 31R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 9513
2.13.5 Landing distance available: 8486

2.13.1 Designation: 13R
2.13.2 Takeoff run available: 14511
2.13.3 Takeoff distance available: 14511
2.13.4 Accelerate–stop distance available: 14511
2.13.5 Landing distance available: 12468

2.13.1 Designation: 31L
2.13.2 Takeoff run available: 14511
2.13.3 Takeoff distance available: 14511
2.13.4 Accelerate–stop distance available: 14511
2.13.5 Landing distance available: 11248

2.13.1 Designation: 04R
2.13.2 Takeoff run available: 8400
2.13.3 Takeoff distance available: 8400
2.13.4 Accelerate–stop distance available: 8400
2.13.5 Landing distance available: 8400

2.13.1 Designation: 22L
2.13.2 Takeoff run available: 8400
2.13.3 Takeoff distance available: 8400
2.13.4 Accelerate–stop distance available: 8400
2.13.5 Landing distance available: 8400

AD 2.14 Approach and runway lighting
2.14.1 Designation: 04L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 22R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Rwy 22R PAPI Unusable Beyond 8 Degrees Right Of Centerline .

2.14.1 Designation: 13L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 12–box VASI on both sides
2.14.10 Remarks: Runway 13L VASI Unusable Left Of Centerline .

2.14.1 Designation: 31R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 13R
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Runway 13R First P4L Horizontal Offset 22 Degs Left.
ry 13R Has Second P4L With Transitional Threshold Crossing Height And 3.00 Degrees Vgsi.

2.14.1 Designation: 31L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 04R
2.14.2 Approach lighting system: ALSF2: Standard 2400

feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 22L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: Runway 22L PAPI Horizontal Offset 4 Degrees To Left. Non Standard Light Spacing.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: PARCH STAR
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: ROBER STAR
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 128.725 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.9 MHz

2.18.1 Service designation: GATE HOLD
2.18.3 Service designation: 125.05 MHz

2.18.1 Service designation: CD/P PRE TAXI CLNC
2.18.3 Service designation: 135.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 281.55 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 281.55 MHz

2.18.1 Service designation: GND/P CD/P PRE TAXI CLNC
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 125.25 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 281.55 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 115.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 117.7 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Outer Marker for runway 31L. Magnetic variation: 14W
2.19.2 ILS identification: MOH
2.19.5 Coordinates: 40−35−27.30N / 73−41−00.00W
2.19.6 Site elevation: 6 ft

2.19.1 ILS type: Localizer for runway 04R. Magnetic variation: 14W
2.19.2 ILS identification: JFK
2.19.5 Coordinates: 40−38−51.57N / 73−45−10.68W
2.19.6 Site elevation: 12.7 ft

2.19.1 ILS type: Localizer for runway 13L. Magnetic variation: 14W
2.19.2 ILS identification: TLK
2.19.5 Coordinates: 40−38−30.69N / 73−45−18.57W
2.19.6 Site elevation: 14.1 ft

2.19.1 ILS type: Localizer for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40−37−27.51N / 73−46−16.39W
2.19.6 Site elevation: 10.5 ft

2.19.1 ILS type: Localizer for runway 31L. Magnetic variation: 14W
2.19.2 ILS identification: MOH

2.19.5 Coordinates: 40–38–59.65N / 73–49–12.42W
2.19.6 Site elevation: 13.7 ft

2.19.1 ILS type: Localizer for runway 04L. Magnetic variation: 14W
2.19.2 ILS identification: HIQ
2.19.5 Coordinates: 40–39–00.00N / 73–45–43.95W
2.19.6 Site elevation: 10.5 ft

2.19.1 ILS type: Outer Marker for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40–43–31.10N / 73–41–35.40W
2.19.6 Site elevation:

2.19.1 ILS type: Localizer for runway 22R. Magnetic variation: 14W
2.19.2 ILS identification: JOC
2.19.5 Coordinates: 40–37–44.50N / 73–46–43.09W
2.19.6 Site elevation: 9.2 ft

2.19.1 ILS type: Localizer for runway 31R. Magnetic variation: 14W
2.19.2 ILS identification: RTH
2.19.5 Coordinates: 40–39–30.78N / 73–47–31.09W
2.19.6 Site elevation: 11.9 ft

2.19.1 ILS type: DME for runway 31R. Magnetic variation: 14W
2.19.2 ILS identification: RTH
2.19.5 Coordinates: 40–38–33.54N / 73–45–18.24W
2.19.6 Site elevation: 31 ft

2.19.1 ILS type: DME for runway 04R. Magnetic variation: 14W
2.19.2 ILS identification: JFK
2.19.5 Coordinates: 40–38–53.29N / 73–45–13.18W
2.19.6 Site elevation: 29 ft

2.19.1 ILS type: DME for runway 13L. Magnetic variation: 14W
2.19.2 ILS identification: TLK
2.19.5 Coordinates: 40–38–33.54N / 73–45–18.24W
2.19.6 Site elevation: 31 ft

2.19.1 ILS type: DME for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40–37–43.82N / 73–46–40.58W
2.19.6 Site elevation: 24 ft

2.19.1 ILS type: DME for runway 04L. Magnetic variation: 14W
2.19.2 ILS identification: HIQ
2.19.5 Coordinates: 40–37–43.82N / 73–46–40.58W
2.19.6 Site elevation: 24 ft

2.19.1 ILS type: Glide Slope for runway 13L. Magnetic variation: 14W
2.19.2 ILS identification: TLK
2.19.5 Coordinates: 40–39–14.76N / 73–47–00.00W
2.19.6 Site elevation: 10.5 ft

2.19.1 ILS type: Glide Slope for runway 31L. Magnetic variation: 14W
2.19.2 ILS identification: MOH
2.19.5 Coordinates: 40–37–59.87N / 73–47–00.00W
2.19.6 Site elevation: 8.7 ft

2.19.1 ILS type: Glide Slope for runway 04R. Magnetic variation: 14W
2.19.2 ILS identification: JFK
2.19.5 Coordinates: 40–37–42.10N / 73–46–11.05W
2.19.6 Site elevation: 12.2 ft

2.19.1 ILS type: Glide Slope for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40–38–32.95N / 73–45–19.99W
2.19.6 Site elevation: 13.1 ft

2.19.1 ILS type: Glide Slope for runway 31R. Magnetic variation: 14W
2.19.2 ILS identification: RTH
2.19.5 Coordinates: 40–38–50.32N / 73–45–51.02W
2.19.6 Site elevation: 9.5 ft

2.19.1 ILS type: Glide Slope for runway 04L. Magnetic variation: 14W
2.19.2 ILS identification: HIQ
2.19.5 Coordinates: 40–37–31.08N / 73–46–54.91W
2.19.6 Site elevation: 9.3 ft

2.19.1 ILS type: Outer Marker for runway 13L. Magnetic variation: 14W
2.19.2 ILS identification: TLK
2.19.5 Coordinates: 40–41–40.70N / 73–52–00.00W
2.19.6 Site elevation: 126 ft

2.19.1 ILS type: Outer Marker for runway 31R. Magnetic variation: 14W
2.19.2 ILS identification: RTH

2.19.5 Coordinates: 40–35–50.70N / 73–39–26.60W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 04R. Magnetic variation: 14W
2.19.2 ILS identification: JFK
2.19.5 Coordinates: 40–37–23.90N / 73–46–19.10W
2.19.6 Site elevation: 12 ft

2.19.1 ILS type: Middle Marker for runway 31L. Magnetic variation: 14W
2.19.2 ILS identification: MOH
2.19.5 Coordinates: 40–37–39.50N / 73–46–15.80W
2.19.6 Site elevation: 12 ft

2.19.1 ILS type: Middle Marker for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40–39–12.30N / 73–44–54.50W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 04R. Magnetic variation: 14W
2.19.2 ILS identification: JFK
2.19.5 Coordinates: 40–37–00.00N / 73–46–30.60W
2.19.6 Site elevation: 12 ft

2.19.1 ILS type: Middle Marker for runway 13L. Magnetic variation: 14W
2.19.2 ILS identification: TLK
2.19.5 Coordinates: 40–39–37.10N / 73–47–44.80W
2.19.6 Site elevation: 11 ft

2.19.1 ILS type: Outer Marker for runway 04L. Magnetic variation: 14W
2.19.2 ILS identification: HIQ
2.19.5 Coordinates: 40–35–00.00N / 73–48–56.17W
2.19.6 Site elevation: 9 ft

2.19.1 ILS type: Middle Marker for runway 31R. Magnetic variation: 14W
2.19.2 ILS identification: RTH
2.19.5 Coordinates: 40–38–25.00N / 73–45–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 22R. Magnetic variation: 14W
2.19.2 ILS identification: JOC
2.19.5 Coordinates: 40–39–00.00N / 73–45–46.80W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 22L. Magnetic variation: 14W
2.19.2 ILS identification: IWY
2.19.5 Coordinates: 40–38–51.13N / 73–45–11.04W
2.19.6 Site elevation: 12 ft

2.19.1 ILS type: Glide Slope for runway 22R. Magnetic variation: 14W
2.19.2 ILS identification: JOC
2.19.5 Coordinates: 40–38–21.28N / 73–46–13.91W
2.19.6 Site elevation: 8.6 ft

2.19.1 ILS type: DME for runway 22R. Magnetic variation: 14W
2.19.2 ILS identification: JOC
2.19.5 Coordinates: 40–38–53.29N / 73–45–13.18W
2.19.6 Site elevation: 29 ft

General Remarks:
FLOCKS OF BIRDS ON & IN THE VICINITY OF AIRPORT.

RUNWAY LEAD-IN LIGHTING SYSTEM RUNWAY 13L USES 1000 FT LIGHT STATION OF THE APPROACH LIGHT SYSTEM ONLY WITH CRI VOR APPROACHES & IS ANGLED TOWARD AQUEDUCT; ALSO 5 SEQUENCE FLASHING LIGHTS FROM 1200–2000 FT & A 5 SEQUENCE FLASHING LIGHTS GROUPING APPROXIMATELY 1 MI FROM RUNWAY +1 ADJACENT FORMING APPROACH. APPROACH GATE ANGLED 35 DEGS S OF RUNWAY 13L CENTERLINE DESIGNED TO PROVIDE EARLIER IDENT OF RUNWAY ENVI.

FOR NOISE ABATEMENT RESTRICTIONS CALL 212–435–3747 DURING NORMAL BUSINESS HOURS.

PARA–SAIL & BANNER TOWING OPERATIONS 1000 FT & BELOW IN UPPER & LOWER NEW YORK BAYS INCLUDING ROCKAWAY INLET INDEFINITELY.

SPECIAL AIR TRAFFIC RULES–PART 93 HIGH DENSITY AIRPORT. PRIOR RESERVATION REQUIRED. SEE AERONAUTICAL INFORMATION MANUAL.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF

EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

CONVERGING OPERATIONS ON RUNWAYS 13R AND 22L CONDUCTED BY WAY OF ARRIVAL DISTANCE WINDOW.

METERING PROCEDURES IN EFFECT– CONTACT RAMP CONTROL PRIOR TO PUSHBACK 1200Z–1500Z DAILY/1900Z–0300Z DAILY.

AIRCRAFT OPERATIONAL & TAXIWAY RESTRICTIONS EXIST FOR A380, B747–800,B777–300ER AND A340–600, PLEASE CONTACT JFK AIRPORT OPERATIONS FOR MORE INFORMATION.

GAT HELIPAD NON–STANDARD MARKINGS & LIGHTING.

RUNWAY 13R HAS TWO (2) PAPI – P4L SYSTEMS. (RUNWAY 13R) OFFSET PAPI SUPPORTS VOR OR GPS RUNWAY 13R & PARKWAY VISUAL RUNWAY 13R.

TAXIWAY 'A' BETWEEN TAXIWAY 'NA' & TAXIWAY 'NB' ARCFT SPEED RESTRICTION OF 17KTS/20MPH MAXIMUM FOR A380, B747–800, B747–400, B777–300ER, B777–200, A340, A330 & B787.

TAXIWAY 'H' CL LIGHTS BETWEEN TERMINAL 4 RAMP AND TAXIWAY A OUT OF SERVICE.

TAXIWAY 'H' CL LIGHTS BETWEEN TAXIWAY 'A' & RUNWAY 4L/22R OUT OF SERVICE.

RUNWAY 31R HOLDING POSITION MARKINGS AT RUNWAY 4L/22R 'SE' SIDE OBSCURE.

RUNWAY 13L HOLDING POSITION MARKINGS AT RUNWAY 4L/22R 'NW' SIDE OBSCURE.

UNTIL FURTHER NOTICE TAXIWAY 'D' BETWEEN TAXIWAY 'C' AND HANGAR 7 CLOSED.

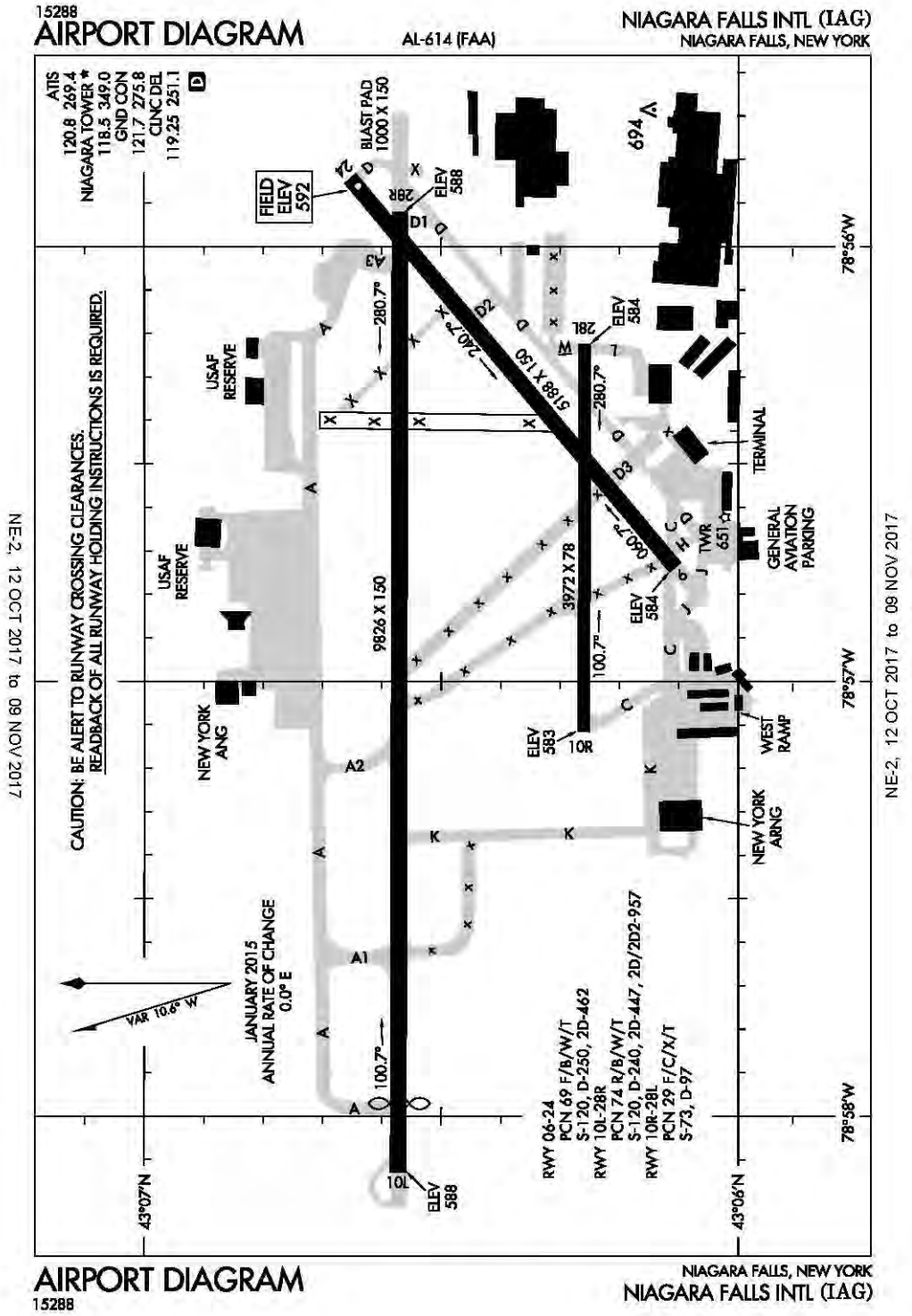
OBST BUILDING LIGHT OUT OF SERVICE 6.3 NAUTICAL MILE ESE JFK 222 FT MSL (220 FT AGL).

NON–STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 393 FT IN LENGTH BY 226 FT IN WIDTH LOCATED AT THE DER 4R.

NON–STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 405 FT IN LENGTH BY 226 FT IN WIDTH LOCATED AT THE DER 22L.

RUNWAY STATUS LIGHTS IN OPERATIONS.

Niagara Falls, New York
Niagara Falls International
ICAO Identifier KIAG



Niagara Falls, NY
Niagara Falls Intl
ICAO Identifier KIAG

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 43–06–27.21N / 78–56–45.05W
2.2.2 From City: 4 Miles E Of Niagara Falls, NY
2.2.3 Elevation: 592.3 ft
2.2.5 Magnetic variation: 10W (1985)
2.2.6 Airport Contact: Mr. Pascal Cohen
2035 NIAGARA FALLS BLVD
Niagara Falls, NY 14304
(716–855–6450)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL,A+
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 7/1/1974
2.6.4 Remarks: ARFF Index E Equipment Coverage Provided.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10R
2.10.1.b Type of obstacle: Tree (64 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 60 ft from Centerline

2.10.1.a. Runway designation: 28L
2.10.1.b Type of obstacle: Stack (59 ft). Lighted
2.10.1.c Location of obstacle: 120 ft from Centerline

2.10.1.a. Runway designation: 10L
2.10.1.b Type of obstacle: Tree (52 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 480 ft from Centerline

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Tree (37 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

2.10.1.a. Runway designation: 06
2.10.1.b Type of obstacle: Tree (46 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 290 ft from Centerline

2.10.1.a. Runway designation: 24
2.10.1.b Type of obstacle: Tree (59 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 320 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 50
2.12.3 Dimensions: 5188 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 43–06–00.00N / 78–56–44.30W
2.12.6 Threshold elevation: 584 ft
2.12.6 Touchdown zone elevation: 586 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 230
2.12.3 Dimensions: 5188 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 43–06–39.20N / 78–55–50.61W
2.12.6 Threshold elevation: 592 ft
2.12.6 Touchdown zone elevation: 592 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43–06–15.60N / 78–57–00.00W
2.12.6 Threshold elevation: 583 ft
2.12.6 Touchdown zone elevation: 584 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270

2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43−06−15.51N / 78−56−13.46W
2.12.6 Threshold elevation: 584 ft
2.12.6 Touchdown zone elevation: 585 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−06−34.35N / 78−58−00.00W
2.12.6 Threshold elevation: 588 ft
2.12.6 Touchdown zone elevation: 589 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−06−34.16N / 78−55−55.32W
2.12.6 Threshold elevation: 588 ft
2.12.6 Touchdown zone elevation: 588 ft

AD 2.13 Declared distances

2.13.1 Designation: 06
2.13.2 Takeoff run available: 5188
2.13.3 Takeoff distance available: 5188
2.13.4 Accelerate−stop distance available: 5188
2.13.5 Landing distance available: 5188

2.13.1 Designation: 24
2.13.2 Takeoff run available: 5188
2.13.3 Takeoff distance available: 5188
2.13.4 Accelerate−stop distance available: 5108
2.13.5 Landing distance available: 5108

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 3973
2.13.3 Takeoff distance available: 3973
2.13.4 Accelerate−stop distance available: 3973
2.13.5 Landing distance available: 3973

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 3973
2.13.3 Takeoff distance available: 3973
2.13.4 Accelerate−stop distance available: 3973
2.13.5 Landing distance available: 3973

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 9829
2.13.3 Takeoff distance available: 10829
2.13.4 Accelerate−stop distance available: 9829
2.13.5 Landing distance available: 9129

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 9829
2.13.3 Takeoff distance available: 10529
2.13.4 Accelerate−stop distance available: 9129
2.13.5 Landing distance available: 9129

AD 2.14 Approach and runway lighting

2.14.1 Designation: 06
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10R
2.14.4 Visual approach slope indicator system: 2−light PAPI on left

2.14.1 Designation: 28L
2.14.4 Visual approach slope indicator system: 2−light PAPI on left

2.14.1 Designation: 10L
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 119.25 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 120.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 251.1 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 269.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 275.8 MHz
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 349 MHz

2.18.1 Service designation: NG–OPNS
2.18.3 Service designation: 41 MHz

2.18.1 Service designation: 914 AW COMD POST
2.18.3 Service designation: 340.025 MHz

2.18.1 Service designation: AFR–OPS
2.18.3 Service designation: 340.24 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 10W
2.19.2 ILS identification: IAG
2.19.5 Coordinates: 43–06–34.36N / 78–58–18.81W
2.19.6 Site elevation: 585.1 ft

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 10W
2.19.2 ILS identification: IAG
2.19.5 Coordinates: 43–06–32.52N / 78–50–18.22W
2.19.6 Site elevation: 614.9 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 10W
2.19.2 ILS identification: IAG
2.19.5 Coordinates: 43–06–30.09N / 78–56–16.65W
2.19.6 Site elevation: 582.8 ft

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 10W
2.19.2 ILS identification: IAG
2.19.5 Coordinates: 43–06–33.97N / 78–55–00.00W
2.19.6 Site elevation: 587 ft

General Remarks:

EXTENSIVE AIRCRAFT ACTIVITY OPERATING IN THE VICINITY OF US/CANADIAN FALLS ALL ALTITUDES.

CAUTION: HEAVY CONCENTRATIONS OF GULLS–BLACKBIRDS–STARLINGS UP TO 5000 AGL ON & IN THE VICINITY OF AIRPORT. BASH PHASE II OPERATIONS AT KIAG MAR–MAY AND SEP–NOV.

TAXIWAY D3 RESTRICTED TO 12500 LBS OR LESS.

TAXIWAY ”E” CLOSED PERMANENTLY BETWEEN TAXIWAYS ”C” AND ”D”.

TAXIWAY ”E” CLOSED INDEFINITELY FROM RUNWAY 10L/28R TO RUNWAY 06/24.

ALL MILITARY AIRCRAFT ONLY OPERATIONS RESTRICTED DURING BIRD WATCH CONDITIONS.

MODERATE − TAKE-OFF & LANDING PERMISSION ONLY WNEN DEP/ARR ROUTE AVOIDS IDENTIFIED BIRD ACTIVITY; NO LOCAL IFR/VFR TRAFFIC PATTERN ACTIVITY. SEVERE − TAKE-OFF & LANDING PHOHIBITED WO OG/CC APPROVAL; CONTACT COMMAND POST FOR CURRENT BIRD WATCH CONDITIONS.

ALL MILITARY AIRCRAFT ONLY MINIMAL CLASSIFIED MATERIALS AVAILABLE; AIRCREWS SHOULD ARRIVE WITH APPROPRIATE AMOUNT TO COMPLETE THEIR MISSION.

BEARING STRENGTH RUNWAY 06/24: ST110 TT145 SBTT281 TDT415 TRT252.

JASU: 2(A/M32A−86) 1(AM32A−60) 1(MA−1A).

FUEL: J8, A++ (MIL).

FLUID: SP LOX.

OIL: O−148(MIL).

REMARKS: SEE FLIGHT INFORMATION PUBLICATION AP/1 SUPPLEMENTARY AIRPORT REMARK.

MISC: LOCAL MISSION AIRCRAFT HAVE PRIORITY FOR DEICING; FULL AIRCRAFT DEICING FOR C−17 AND C−5 AIRCRAFT NOT AVAILABLE.

REMARKS−CAUTION: NIGHT VISION DEVICE OPERATIONS PERIODICALLY CONDUCTED IN THE AIRPORT TRAFFIC AREA.

REMARKS − MISC: FOR CURRENT MILITARY RUNWAY CONDITION READING (RCR) CALL OR CONTACT 914 AW COMMAND POST OR 914TH AW AIRFIELD MANAGEMENT.

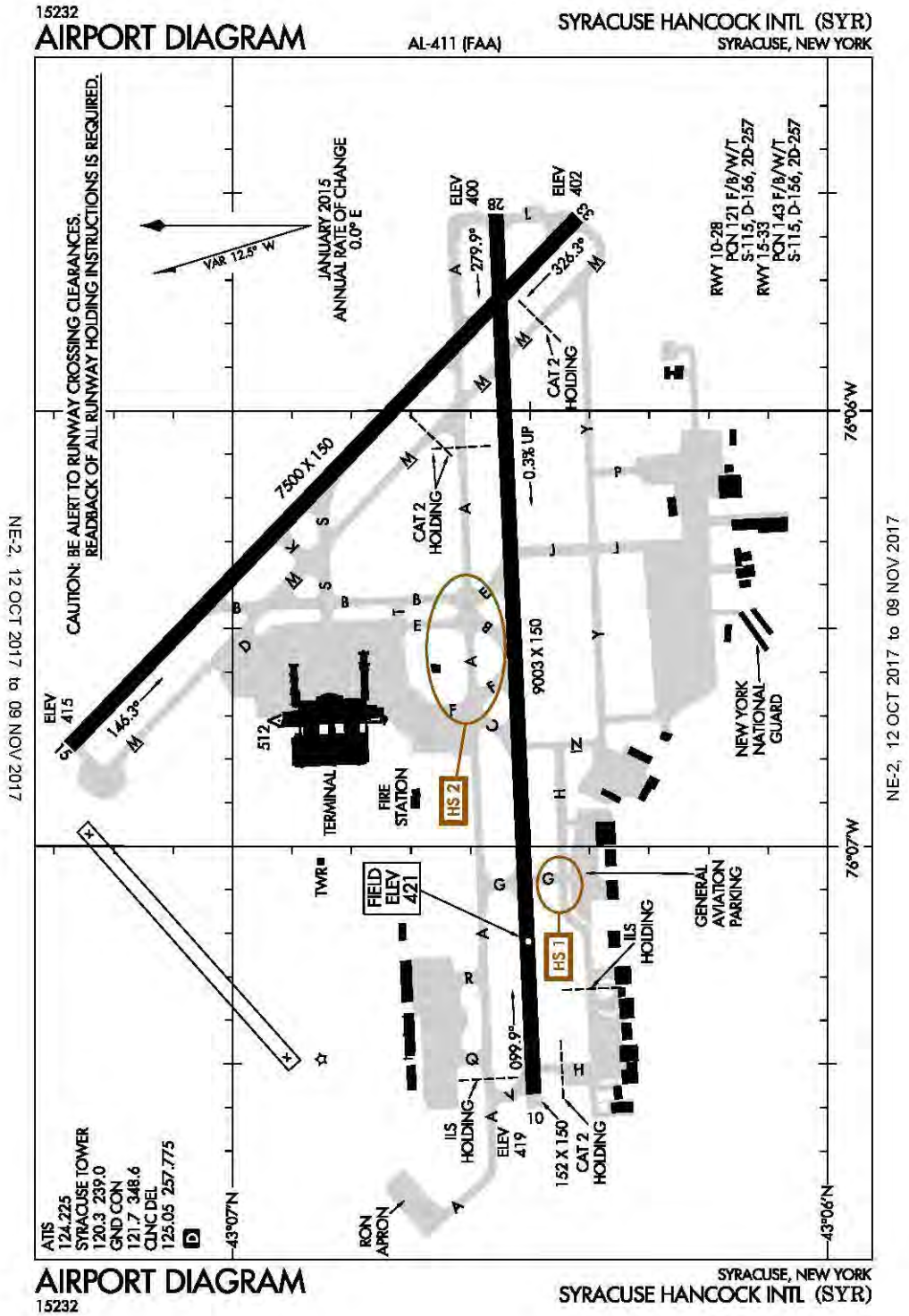
AFRC/ANG: NONSTANDARD APRON MRKS IDENTIFYING PARK ROWS & PARK LCTNS.

PRIOR PERMISSION REQUIRED CONTACT AIRFIELD MANAGEMENT DSN: 238−2176, C716−236−2176.

AIRFIELD MANAGEMENT DOES NOT ISSUE OR STORE COMSEC, FOR COMSEC STORAGE CONTACT COMMAND POST DSN 238−2150, C716−236−2150.

RUNWAY 28R 1000 FT BY 150 FT BLAST PAD.

Syracuse, New York
Syracuse Hancock International
ICAO Identifier KSYR



Syracuse, NY
Syracuse Hancock Intl
ICAO Identifier KSYR

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 43−06−40.30N / 76−06−22.70W
2.2.2 From City: 4 Miles NE Of Syracuse, NY
2.2.3 Elevation: 421.4 ft
2.2.5 Magnetic variation: 13W (2000)
2.2.6 Airport Contact: Christina R. Callahan
1000 COL EILEEN COLLINS BLVD
Syracuse, NY 13212 (315−454−3263)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Trees (64 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 686 ft from Centerline

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Trees (80 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 287 ft from Centerline

2.10.1.a. Runway designation: 15
2.10.1.b Type of obstacle: Trees (51 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 380 ft from Centerline

2.10.1.a. Runway designation: 33
2.10.1.b Type of obstacle: Tree (34 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 520 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10
2.12.2 True Bearing: 87
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43−06−29.52N / 76−07−34.15W
2.12.6 Threshold elevation: 419 ft
2.12.6 Touchdown zone elevation: 421 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 267
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43−06−33.51N / 76−05−32.91W
2.12.6 Threshold elevation: 400 ft
2.12.6 Touchdown zone elevation: 413 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43−07−16.42N / 76−06−46.20W
2.12.6 Threshold elevation: 415 ft
2.12.6 Touchdown zone elevation: 417 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43−06−25.11N / 76−05−33.28W
2.12.6 Threshold elevation: 402 ft
2.12.6 Touchdown zone elevation: 409 ft

AD 2.13 Declared distances

2.13.1 Designation: 10
2.13.2 Takeoff run available: 9003
2.13.3 Takeoff distance available: 9003
2.13.4 Accelerate−stop distance available: 9003
2.13.5 Landing distance available: 9003

2.13.1 Designation: 28
2.13.2 Takeoff run available: 9003
2.13.3 Takeoff distance available: 9003
2.13.4 Accelerate−stop distance available: 9003
2.13.5 Landing distance available: 9003

2.13.1 Designation: 15
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500

2.13.5 Landing distance available: 7500

2.13.1 Designation: 33
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate–stop distance available: 7500
2.13.5 Landing distance available: 7500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–box VASI on left

2.14.1 Designation: 28
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 15
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–box VASI on left

2.14.1 Designation: 33
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 118.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 125.05 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 126.125 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 134.275 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: AR OPS
2.18.3 Service designation: 245.3 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: IC
2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: ANG OPS
2.18.3 Service designation: 379.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 257.775 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 269.125 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 124.225 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: MRZ
2.19.5 Coordinates: 43–06–33.96N / 76–05–19.01W
2.19.6 Site elevation: 395.6 ft

2.19.1 ILS type: Localizer for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–28.94N / 76–07–51.66W
2.19.6 Site elevation: 417 ft

2.19.1 ILS type: DME for runway 10. Magnetic variation: 13W

2.19.2 ILS identification: MRZ
2.19.5 Coordinates: 43–06–31.27N / 76–05–20.92W
2.19.6 Site elevation: 390.5 ft

2.19.1 ILS type: DME for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–31.27N / 76–05–20.92W
2.19.6 Site elevation: 390.5 ft

2.19.1 ILS type: Glide Slope for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–39.47N / 76–05–46.43W
2.19.6 Site elevation: 404 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: MRZ
2.19.5 Coordinates: 43–06–26.02N / 76–07–20.15W
2.19.6 Site elevation: 423 ft

2.19.1 ILS type: Outer Marker for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–43.94N / 76–00–00.00W
2.19.6 Site elevation: 403 ft

2.19.1 ILS type: Inner Marker for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–34.10N / 76–05–18.52W
2.19.6 Site elevation: 395 ft

2.19.1 ILS type: Middle Marker for runway 28. Magnetic variation: 13W
2.19.2 ILS identification: SYR
2.19.5 Coordinates: 43–06–34.93N / 76–04–49.53W
2.19.6 Site elevation: 406 ft

2.19.1 ILS type: Middle Marker for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: MRZ
2.19.5 Coordinates: 43–06–28.04N / 76–08–11.83W
2.19.6 Site elevation:

General Remarks:
NO CHARTER OPER THRU PASSENGER TERMINAL BUILDING WITHOUT PRIOR PERMISSION.

NOISE ABATEMENT PROCEDURES IN EFFECT.

DEER/COYOTE/BIRDS ON IN THE VICINITY OF AIRPORT.

NO JET ENGINE MAINT RUNS ABOVE IDLE BETWEEN 2300–0600.

NO TRANSIENT AIRCRAFT PARKING ON MAIN TERMINAL RAMP.

DIRECT CUSTOM NOTIFICATION IS REQUIRED. HOURS OF NOTIFICATION ARE MON–SAT 0800–1700. ARRIVALS OUTSIDE OF THESE HRS MUST MAKE ARRANGEMENTS DURING REGULAR WORK HRS; CALL 315–455–2271.

FIELD CONDITION REPORTS RECORDING AVAILABLE CALL 315–455–3444.

HEAVY AIRCRAFT CONTACT AIRPORT COMMISSIONER FOR PARK AVAILABLE AT C315–455–3263. MILITARY PARK RAMP UNLIGHTED. LIMITED METRO AVAIL AT DSN 243–2185. C315–233–2185 OR CONTACT OWS DSN 576–9755/9702. ALL TRANSIENT AIRCRAFT REQ NOISE ABATEMENT BRIEFING.

COMMUNICATIONS – ANG – OPERATIONS – 139.625 379.5 REMARKS: (COBRA OPS) CONTACT ANG OPERATIONS 15 MIN PRIOR TO ARR.

RESTRICTED: TAXIWAY J AND P SOUTH OF TAXIWAY Y CLOSED TO CIVIL OPERATIONS.

CAUTION: TAXIWAY J AND P SOUTH OF TAXIWAY Y AND ANG RAMP HAVE UNCTL VEH AND EQUIPMENT TRAFFIC.

ANG: OPR 1100–2000Z++ WEEKEND EXCEPT HOLIDAY. PRIOR PERMISSION REQUIRED TRANSMIT

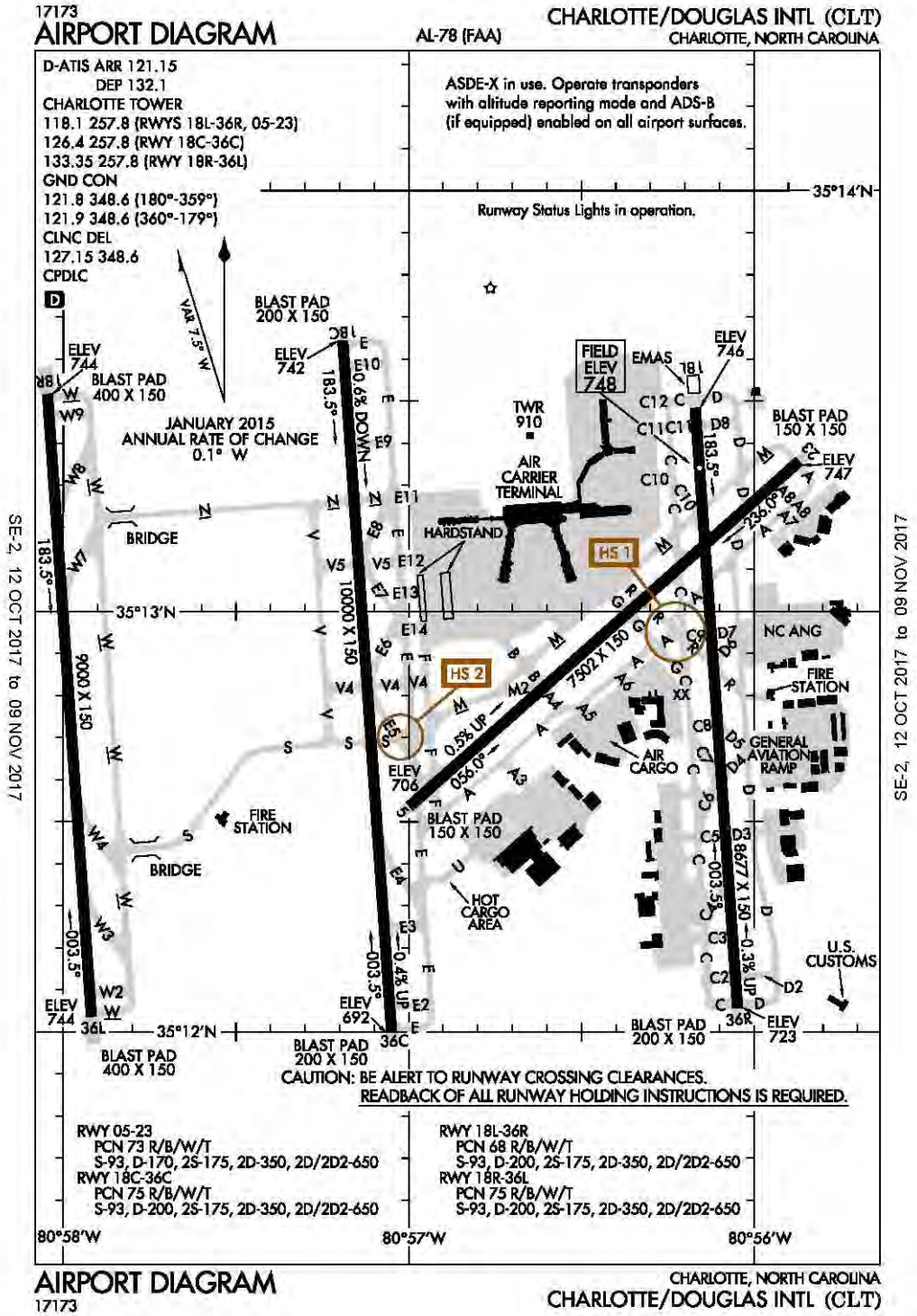
AIRCRAFT OFFICIAL BUSINESS ONLY. AIRFIELD MANAGER DSN 243–2208, AFTER DUTY HR CONTACT C315–530–2520. PRIOR PERMISSION REQUIRED FOR ALL TRANSIENT AIRCRAFT DUE LIMITED TRANSMIT SERVICE. NOTIFY AIRFIELD MANAGER OF ESTIMATED TIME OF ARRIVAL DELAY OVER 30 MIN OR MSN CANCEL IS REQUIRE.

ANG: HEAVY AIRCRAFT CONTACT AIRPORT COMMISSIONER FOR PARK AVAILABLE AT C315–455–3666. MILITARY PARK RAMP UNLIGHTED. ALL TRANSIENT AIRCRAFT REQUIRE NS ABATEMENT BRIEFING.

UAS OPERATE WITHIN THE CONFINES OF THE SYRACUSE CLASS C, TIMES VARY.

UAS OPERATIONS IN SYRACUSE APPROACH/DEP AIRSPACE WILL BE CONTROLLED BY SYR ATC AT ALL TIMES.

Charlotte, North Carolina
Charlotte/Douglas International
ICAO Identifier KCLT



Charlotte, NC
Charlotte/Douglas Intl
ICAO Identifier KCLT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 35–12–49.50N / 80–56–56.60W
2.2.2 From City: 4 Miles W Of Charlotte, NC
2.2.3 Elevation: 747.9 ft
2.2.5 Magnetic variation: 7W (2000)
2.2.6 Airport Contact: Brent Cagle
PO BOX 19066
Charlotte, NC 28219
(704–359–4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 05
2.10.1.b Type of obstacle: Trees (38 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

2.10.1.a. Runway designation: 18C
2.10.1.b Type of obstacle: Road (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 425 ft from Centerline

2.10.1.a. Runway designation: 18L
2.10.1.b Type of obstacle: Rr (19 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 05
2.12.2 True Bearing: 48
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35–12–32.23N / 80–56–59.80W
2.12.6 Threshold elevation: 706 ft
2.12.6 Touchdown zone elevation: 716 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 23
2.12.2 True Bearing: 228
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35–13–21.42N / 80–55–52.12W
2.12.6 Threshold elevation: 747 ft
2.12.6 Touchdown zone elevation: 747 ft
2.12.7 Slope: 0.5UP

2.12.1 Designation: 18C
2.12.2 True Bearing: 176
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 75 R/B/W/T
2.12.5 Coordinates: 35–13–38.63N / 80–57–11.41W
2.12.6 Threshold elevation: 742 ft
2.12.6 Touchdown zone elevation: 742 ft
2.12.7 Slope: 0.6DOWN

2.12.1 Designation: 36C
2.12.2 True Bearing: 356
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 75 R/B/W/T
2.12.5 Coordinates: 35–11–59.97N / 80–57–00.00W
2.12.6 Threshold elevation: 692 ft
2.12.6 Touchdown zone elevation: 707 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 18L
2.12.2 True Bearing: 176
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35–13–29.05N / 80–56–10.17W
2.12.6 Threshold elevation: 746 ft
2.12.6 Touchdown zone elevation: 748 ft
2.12.7 Slope: 0.2DOWN

2.12.1 Designation: 36R
2.12.2 True Bearing: 356
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35–12–00.00N / 80–56–00.00W
2.12.6 Threshold elevation: 723 ft
2.12.6 Touchdown zone elevation: 727 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: 18R

2.12.2 True Bearing: 176
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 75 R/B/W/T
2.12.5 Coordinates: 35−13−31.02N / 80−58−00.00W
2.12.6 Threshold elevation: 744 ft
2.12.6 Touchdown zone elevation: 744 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 356
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 75 R/B/W/T
2.12.5 Coordinates: 35−12−00.00N / 80−57−55.07W
2.12.6 Threshold elevation: 744 ft
2.12.6 Touchdown zone elevation: 744 ft

AD 2.13 Declared distances
2.13.1 Designation: 05
2.13.2 Takeoff run available: 7502
2.13.3 Takeoff distance available: 7502
2.13.4 Accelerate−stop distance available: 7092
2.13.5 Landing distance available: 7092

2.13.1 Designation: 23
2.13.2 Takeoff run available: 7502
2.13.3 Takeoff distance available: 7502
2.13.4 Accelerate−stop distance available: 7502
2.13.5 Landing distance available: 7502

2.13.1 Designation: 18C
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 36C
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate−stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 18L
2.13.2 Takeoff run available: 8676
2.13.3 Takeoff distance available: 8676
2.13.4 Accelerate−stop distance available: 8676
2.13.5 Landing distance available: 8676

2.13.1 Designation: 36R
2.13.2 Takeoff run available: 8676
2.13.3 Takeoff distance available: 8676
2.13.4 Accelerate−stop distance available: 8390
2.13.5 Landing distance available: 8390

2.13.1 Designation: 18R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 36L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 05
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 23
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 18C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 36C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 18L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 36R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 18R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 36L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: JONZE RNAV STAR
2.18.3 Service designation: 135.6 MHz

2.18.1 Service designation: KWEEN RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: PARQR RNAV STAR
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: MLLET RNAV STAR
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: BANKR RNAV STAR
2.18.3 Service designation: 377.15 MHz

2.18.1 Service designation: JONZE RNAV STAR
2.18.3 Service designation: 377.15 MHz

2.18.1 Service designation: KWEEN RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: STOCR RNAV STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: KABEE RNAV STAR
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: STOCR RNAV STAR
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: FILPZ RNAV STAR
2.18.3 Service designation: 135.6 MHz

2.18.1 Service designation: UNARM STAR
2.18.3 Service designation: 377.15 MHz

2.18.1 Service designation: UNARM STAR
2.18.3 Service designation: 135.6 MHz

2.18.1 Service designation: BTSEY STAR
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: LIINN STAR
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: FILPZ RNAV STAR
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: PARQR RNAV STAR
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: ALCP
2.18.3 Service designation: 292.25 MHz

2.18.1 Service designation: ICONS RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: BEAVY RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: ICONS RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 128.325 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: KABEE RNAV STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 128.325 MHz

2.18.1 Service designation: WEAZL RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: JOJJO RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: KRITR RNAV SID

2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: JOJJO RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: KRITR RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: WEAZL RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 133.35 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: BANKR RNAV STAR
2.18.3 Service designation: 135.6 MHz

2.18.1 Service designation: BEAVY RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: ICONS RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: KWEEN RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: BEAVY RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 127.15 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: GND/P CD/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: FILPZ RNAV STAR
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: MLLET RNAV STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: KERMIT SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: KERMIT SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: LCL/P (RY 18C−36C)
2.18.3 Service designation: 126.4 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 121.15 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 132.1 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LIINN STAR
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: MAJIC STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: MAJIC STAR
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: BOBCAT SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: BOBZY RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: BOBCAT SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: BOBZY RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: CHARLOTTE SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: HORNET SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: HORNET SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: HORNET SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: HORNET SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: PANTHER SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: RASLN STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: KERMIT SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: CHPTR STAR
2.18.3 Service designation: 135.6 MHz

2.18.1 Service designation: CHPTR STAR
2.18.3 Service designation: 377.15 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: CHSLY STAR
2.18.3 Service designation: 282.325 MHz

2.18.1 Service designation: BARMY RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: ESTRR RNAV SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: LIILS RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: KILNS RNAV SID
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: BARMY RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: KILNS RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: LILLS RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: CHSLY RNAV STAR
2.18.3 Service designation: 126.15 MHz

2.18.1 Service designation: ESTRR RNAV SID
2.18.3 Service designation: 257.2 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 134.75 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS B IC
2.18.3 Service designation: 128.325 MHz

2.18.1 Service designation: HUGO SID
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 120.5 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 128.325 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: KNIGHTS SID
2.18.3 Service designation: 120.05 MHz

2.18.1 Service designation: BEAVY RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: ICONS RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: KWEEN RNAV SID
2.18.3 Service designation: 307.8 MHz

2.18.1 Service designation: KERMIT SID
2.18.3 Service designation: 124 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 23. Magnetic variation: 7W
2.19.2 ILS identification: APU
2.19.5 Coordinates: 35−12−23.38N / 80−57−11.99W
2.19.6 Site elevation: 704 ft

2.19.1 ILS type: Localizer for runway 18L. Magnetic variation: 7W
2.19.2 ILS identification: VKQ
2.19.5 Coordinates: 35−11−50.60N / 80−56−00.00W
2.19.6 Site elevation: 719.2 ft

2.19.1 ILS type: Localizer for runway 18C. Magnetic variation: 7W
2.19.2 ILS identification: PEP
2.19.5 Coordinates: 35−11−48.60N / 80−57−00.00W
2.19.6 Site elevation: 683.3 ft

2.19.1 ILS type: Localizer for runway 36C. Magnetic variation: 7W
2.19.2 ILS identification: DQG
2.19.5 Coordinates: 35−13−53.95N / 80−57−12.73W
2.19.6 Site elevation: 749.4 ft

2.19.1 ILS type: Localizer for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35−13−33.70N / 80−56−10.57W
2.19.6 Site elevation: 741.2 ft

2.19.1 ILS type: Localizer for runway 05. Magnetic variation: 7W
2.19.2 ILS identification: CLT
2.19.5 Coordinates: 35−13−26.34N / 80−55−45.36W
2.19.6 Site elevation: 738.2 ft

2.19.1 ILS type: DME for runway 23. Magnetic variation: 7W

2.19.2 ILS identification: APU
2.19.5 Coordinates: 35–12–21.28N / 80–57–10.05W
2.19.6 Site elevation: 699.4 ft

2.19.1 ILS type: Glide Slope for runway 18C. Magnetic variation: 7W
2.19.2 ILS identification: PEP
2.19.5 Coordinates: 35–13–26.91N / 80–57–15.24W
2.19.6 Site elevation: 731.4 ft

2.19.1 ILS type: Glide Slope for runway 36C. Magnetic variation: 7W
2.19.2 ILS identification: DQG
2.19.5 Coordinates: 35–12–00.00N / 80–57–00.00W
2.19.6 Site elevation: 691.1 ft

2.19.1 ILS type: DME for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35–13–33.11N / 80–56–00.00W
2.19.6 Site elevation: 752.3 ft

2.19.1 ILS type: Glide Slope for runway 05. Magnetic variation: 7W
2.19.2 ILS identification: CLT
2.19.5 Coordinates: 35–12–43.05N / 80–56–52.18W
2.19.6 Site elevation: 695.1 ft

2.19.1 ILS type: Glide Slope for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35–12–14.00N / 80–55–58.89W
2.19.6 Site elevation: 717.3 ft

2.19.1 ILS type: Glide Slope for runway 23. Magnetic variation: 7W
2.19.2 ILS identification: APU
2.19.5 Coordinates: 35–13–12.15N / 80–56–00.00W
2.19.6 Site elevation: 737.7 ft

2.19.1 ILS type: Glide Slope for runway 18L. Magnetic variation: 7W
2.19.2 ILS identification: VKQ
2.19.5 Coordinates: 35–13–19.26N / 80–56–00.00W
2.19.6 Site elevation: 743.5 ft

2.19.1 ILS type: Outer Marker for runway 36C. Magnetic variation: 7W
2.19.2 ILS identification: DQG
2.19.5 Coordinates: 35–05–43.52N / 80–56–26.77W
2.19.6 Site elevation: 593 ft

2.19.1 ILS type: Outer Marker for runway 05. Magnetic variation: 7W
2.19.2 ILS identification: CLT
2.19.5 Coordinates: 35–09–29.30N / 81–01–14.12W
2.19.6 Site elevation: 691 ft

2.19.1 ILS type: Outer Marker for runway 18L. Magnetic variation: 7W
2.19.2 ILS identification: VKQ
2.19.5 Coordinates: 35–20–19.08N / 80–56–41.44W
2.19.6 Site elevation: 717 ft

2.19.1 ILS type: Outer Marker for runway 18C. Magnetic variation: 7W
2.19.2 ILS identification: PEP
2.19.5 Coordinates: 35–20–12.02N / 80–57–48.14W
2.19.6 Site elevation: 737 ft

2.19.1 ILS type: Inner Marker for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35–11–54.22N / 80–56–00.00W
2.19.6 Site elevation: 710 ft

2.19.1 ILS type: Inner Marker for runway 36C. Magnetic variation: 7W
2.19.2 ILS identification: DQG
2.19.5 Coordinates: 35–11–48.73N / 80–57–00.00W
2.19.6 Site elevation: 682.9 ft

2.19.1 ILS type: Middle Marker for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35–11–40.26N / 80–56–00.00W
2.19.6 Site elevation: 700 ft

2.19.1 ILS type: Outer Marker for runway 36R. Magnetic variation: 7W
2.19.2 ILS identification: BQC
2.19.5 Coordinates: 35–05–26.62N / 80–55–33.97W
2.19.6 Site elevation: 616 ft

2.19.1 ILS type: Middle Marker for runway 18C. Magnetic variation: 7W
2.19.2 ILS identification: PEP
2.19.5 Coordinates: 35–14–00.00N / 80–57–13.65W
2.19.6 Site elevation: 703 ft

2.19.1 ILS type: Middle Marker for runway 05. Magnetic variation: 7W
2.19.2 ILS identification: CLT

2.19.5 Coordinates: 35–12–10.91N / 80–57–29.16W
2.19.6 Site elevation: 732 ft

2.19.1 ILS type: Middle Marker for runway 18L. Magnetic variation: 7W
2.19.2 ILS identification: VKQ
2.19.5 Coordinates: 35–14–00.00N / 80–56–14.34W
2.19.6 Site elevation: 739 ft

2.19.1 ILS type: Middle Marker for runway 36C. Magnetic variation: 7W
2.19.2 ILS identification: DQG
2.19.5 Coordinates: 35–11–34.90N / 80–57–00.00W
2.19.6 Site elevation: 679 ft

2.19.1 ILS type: DME for runway 36L. Magnetic variation: 7W
2.19.2 ILS identification: XUU
2.19.5 Coordinates: 35–13–19.83N / 80–58–00.00W
2.19.6 Site elevation: 738.9 ft

2.19.1 ILS type: Glide Slope for runway 36L. Magnetic variation: 7W
2.19.2 ILS identification: XUU
2.19.5 Coordinates: 35–12–12.98N / 80–58–00.00W
2.19.6 Site elevation: 732.3 ft

2.19.1 ILS type: Localizer for runway 36L. Magnetic variation: 7W
2.19.2 ILS identification: XUU
2.19.5 Coordinates: 35–13–41.40N / 80–58–00.00W
2.19.6 Site elevation: 737.3 ft

2.19.1 ILS type: Inner Marker for runway 36L. Magnetic variation: 7W
2.19.2 ILS identification: XUU
2.19.5 Coordinates: 35–11–54.43N / 80–57–54.40W
2.19.6 Site elevation: 738.8 ft

2.19.1 ILS type: DME for runway 18R. Magnetic variation: 7W
2.19.2 ILS identification: RGS
2.19.5 Coordinates: 35–12–13.26N / 80–58–00.00W
2.19.6 Site elevation: 743.8 ft

2.19.1 ILS type: Glide Slope for runway 18R. Magnetic variation: 7W
2.19.2 ILS identification: RGS
2.19.5 Coordinates: 35–13–20.10N / 80–58–00.00W
2.19.6 Site elevation: 733.9 ft

2.19.1 ILS type: Localizer for runway 18R. Magnetic variation: 7W
2.19.2 ILS identification: RGS
2.19.5 Coordinates: 35–11–51.84N / 80–57–54.17W
2.19.6 Site elevation: 738.1 ft

2.19.1 ILS type: Inner Marker for runway 18R. Magnetic variation: 7W
2.19.2 ILS identification: RGS
2.19.5 Coordinates: 35–13–38.81N / 80–58–00.00W
2.19.6 Site elevation: 738.6 ft

2.19.1 ILS type: DME for runway 18C. Magnetic variation: 7W
2.19.2 ILS identification: PEP
2.19.5 Coordinates: 35–11–50.24N / 80–56–58.64W
2.19.6 Site elevation: 684.4 ft

2.19.1 ILS type: DME for runway 18L. Magnetic variation: 7W
2.19.2 ILS identification: VKQ
2.19.5 Coordinates: 35–11–50.25N / 80–56–00.00W
2.19.6 Site elevation: 710 ft

General Remarks:
RUNWAY SURFACE CONDITION INFORMATION DURING DUTY HRS PHONE ANG OPERATIONS V583–9177/9144 OR AIRBORNE 292.2.

NOISE ABATEMENT PROCEDURE IN EFFECT 2300–0700; LAND ON RUNWAY 05 TAKE-OFF RUNWAY 23.

BE ALERT FOR FLOCKS OF MIGRATORY BIRDS ON & IN THE VICINITY OF AIRPORT.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ANG: CONTACT NEWSREEL 292.25 30 MIN PRIOR LANDING. AMOPS/COMD POST – 292.25 (CALL NEWSREEL).

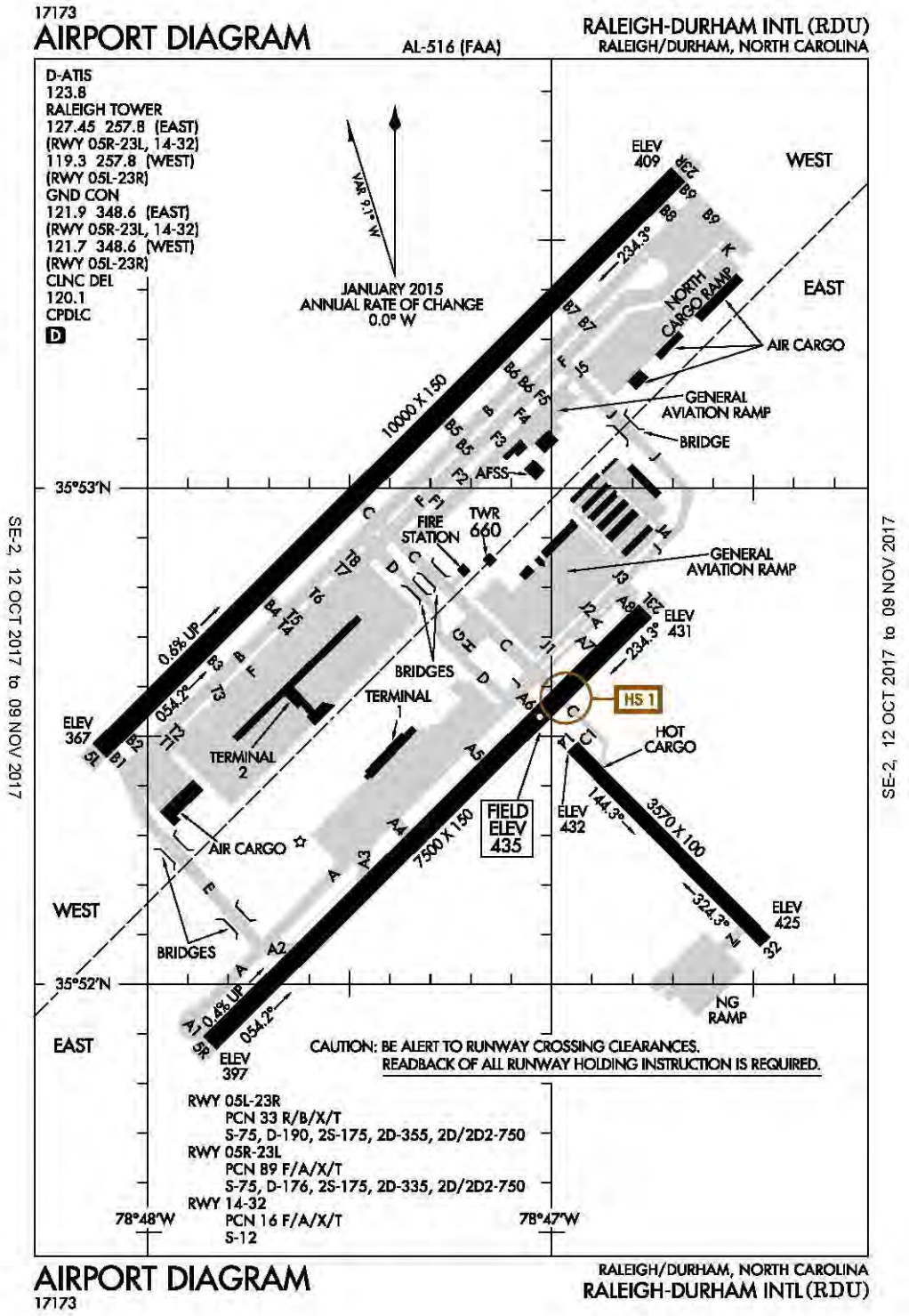
SUCCESSIVE OR SIMULTANEOUS DEPARTURES FROM RUNWAY 18L AND RUNWAY 18C ARE APPROVED

WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 4 MILES FROM END OF RUNWAY.

RUNWAY STATUS LIGHTS IN OPR.

TAXIWAY C4 WHEN TAXIING AIRCRAFT WITH COCKPIT TO MAIN GEAR DISTANCE GREATER THAN 90 FT, PILOT MUST PERFORM JUDGEMENTAL OVERSTEERING INSTEAD OF COCKPIT OVER CENTERLINE STEERING.

Raleigh–Durham, North Carolina
Raleigh–Durham International
ICAO Identifier KRDU



Raleigh/Durham, NC
Raleigh–Durham Intl
ICAO Identifier KRDU

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 35–52–39.50N / 78–47–14.90W
2.2.2 From City: 9 Miles NW Of Raleigh/Durham, NC
2.2.3 Elevation: 435 ft
2.2.5 Magnetic variation: 9W (2020)
2.2.6 Airport Contact: Michael Landguth
1000 TRADE DRIVE
Rdu Airport, NC 27623
((919) 840–7701)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 32
2.10.1.b Type of obstacle: Trees (120 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 1 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35–52–28.02N / 78–48–00.00W
2.12.6 Threshold elevation: 367 ft
2.12.6 Touchdown zone elevation: 384 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35–53–37.76N / 78–46–40.92W
2.12.6 Threshold elevation: 409 ft
2.12.6 Touchdown zone elevation: 409 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35–51–52.67N / 78–47–50.42W
2.12.6 Threshold elevation: 397 ft
2.12.6 Touchdown zone elevation: 420 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35–52–44.98N / 78–46–45.82W
2.12.6 Threshold elevation: 431 ft
2.12.6 Touchdown zone elevation: 435 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35–52–30.11N / 78–46–57.64W
2.12.6 Threshold elevation: 432 ft
2.12.6 Touchdown zone elevation: 432 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35–52–00.00N / 78–46–27.05W
2.12.6 Threshold elevation: 425 ft
2.12.6 Touchdown zone elevation: 429 ft

AD 2.13 Declared distances

2.13.1 Designation: 05L
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 23R
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 05R
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate–stop distance available: 7500

2.13.5 Landing distance available: 7500

2.13.1 Designation: 23L
2.13.2 Takeoff run available: 7500
2.13.3 Takeoff distance available: 7500
2.13.4 Accelerate−stop distance available: 7500
2.13.5 Landing distance available: 7500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 05L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 23R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 05R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 23L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: BLOGS STAR
2.18.3 Service designation: 124.95 MHz

2.18.1 Service designation: KAROO STAR
2.18.3 Service designation: 124.95 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.3 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 120.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: FINAL CTL
2.18.3 Service designation: 124.8 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 124.95 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 125.3 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 127.45 MHz

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 128.3 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 132.35 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 132.35 MHz

2.18.1 Service designation: RDR
2.18.3 Service designation: 134.3 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 256.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 307.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: FINAL CTL
2.18.3 Service designation: 395 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 353.675 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 353.675 MHz

2.18.1 Service designation: FINAL
2.18.3 Service designation: 385.425 MHz

2.18.1 Service designation: BLOGS STAR
2.18.3 Service designation: 318.2 MHz

2.18.1 Service designation: DEPARTURE
2.18.3 Service designation: 353.675 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 318.2 MHz

2.18.1 Service designation: KAROO STAR
2.18.3 Service designation: 318.2 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 123.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: MALNR RNAV STAR
2.18.3 Service designation: 128.3 MHz

2.18.1 Service designation: MALNR RNAV STAR
2.18.3 Service designation: 307.9 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 05L. Magnetic variation: 7W
2.19.2 ILS identification: GKK
2.19.5 Coordinates: 35–53–48.07N / 78–46–28.19W
2.19.6 Site elevation: 408.8 ft

2.19.1 ILS type: Localizer for runway 05R. Magnetic variation: 7W
2.19.2 ILS identification: RDU
2.19.5 Coordinates: 35–52–52.09N / 78–46–37.05W
2.19.6 Site elevation: 400 ft

2.19.1 ILS type: Localizer for runway 23L. Magnetic variation: 7W
2.19.2 ILS identification: LEI
2.19.5 Coordinates: 35–51–45.63N / 78–47–59.10W
2.19.6 Site elevation: 357.5 ft

2.19.1 ILS type: Localizer for runway 23R. Magnetic variation: 9W
2.19.2 ILS identification: DMP
2.19.5 Coordinates: 35–52–20.84N / 78–48–15.93W
2.19.6 Site elevation: 358.8 ft

2.19.1 ILS type: DME for runway 05L. Magnetic variation: 7W
2.19.2 ILS identification: GKK
2.19.5 Coordinates: 35–53–47.52N / 78–46–27.57W
2.19.6 Site elevation: 410.9 ft

2.19.1 ILS type: DME for runway 23R. Magnetic variation: 9W
2.19.2 ILS identification: DMP
2.19.5 Coordinates: 35–52–19.51N / 78–48–13.82W
2.19.6 Site elevation: 370.4 ft

2.19.1 ILS type: Glide Slope for runway 05L. Magnetic variation: 7W
2.19.2 ILS identification: GKK
2.19.5 Coordinates: 35–52–37.80N / 78–48–00.00W
2.19.6 Site elevation: 365.6 ft

2.19.1 ILS type: Outer Marker for runway 23L. Magnetic variation: 7W
2.19.2 ILS identification: LEI
2.19.5 Coordinates: 35–55–38.51N / 78–43–19.67W
2.19.6 Site elevation: 500 ft

2.19.1 ILS type: Glide Slope for runway 23L. Magnetic variation: 7W
2.19.2 ILS identification: LEI
2.19.5 Coordinates: 35–52–36.26N / 78–46–52.29W
2.19.6 Site elevation: 430.2 ft

2.19.1 ILS type: Glide Slope for runway 05R. Magnetic variation: 7W
2.19.2 ILS identification: RDU
2.19.5 Coordinates: 35–51–57.02N / 78–47–38.17W
2.19.6 Site elevation: 400.1 ft

2.19.1 ILS type: Glide Slope for runway 23R. Magnetic variation: 9W
2.19.2 ILS identification: DMP
2.19.5 Coordinates: 35–53–32.48N / 78–46–54.35W

2.19.6 Site elevation: 396.3 ft

2.19.1 ILS type: Inner Marker for runway 23R. Magnetic variation: 9W
2.19.2 ILS identification: DMP
2.19.5 Coordinates: 35−53−43.88N / 78−46−33.36W
2.19.6 Site elevation: 402 ft

2.19.1 ILS type: Middle Marker for runway 05R. Magnetic variation: 7W
2.19.2 ILS identification: RDU
2.19.5 Coordinates: 35−51−26.40N / 78−48−22.84W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 23L. Magnetic variation: 7W
2.19.2 ILS identification: LEI
2.19.5 Coordinates: 35−53−00.00N / 78−46−24.99W
2.19.6 Site elevation: 376 ft

2.19.1 ILS type: Outer Marker for runway 05R. Magnetic variation: 7W
2.19.2 ILS identification: RDU
2.19.5 Coordinates: 35−47−48.98N / 78−52−58.70W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 23R. Magnetic variation: 9W
2.19.2 ILS identification: DMP
2.19.5 Coordinates: 35−53−54.73N / 78−46−19.97W
2.19.6 Site elevation: 410 ft

2.19.1 ILS type: Middle Marker for runway 05L. Magnetic variation: 7W
2.19.2 ILS identification: GKK
2.19.5 Coordinates: 35−52−00.00N / 78−48−41.35W
2.19.6 Site elevation: 334 ft

General Remarks:
NO JET ENGINE MAINTENANCE RUNS BETWEEN 0000−0600.

NATIONAL GUARD PRIOR PERMISSION REQUIRED FOR LANDING CONTACT V582−9181 C(919)664−9181. NATIONAL GUARD 24 HR PRIOR PERMISSION REQUIRED FOR JET AIRCRAFT & TRANSMIT MILITARY AIRCRAFT − 919−840−7510.

NO APPROVAL REQUIRED FOR PUSHBACK AT TERMINAL GATES UNLESS AIRCRAFT REQUIRES USE OF TAXIWAY. CONTACT ATC PRIOR TO PUSHING ONTO TAXIWAY.

RESTRICTED: PRIOR PERMISSION REQUIRED FOR ALL MILITARY AIRCRAFT F/W − R/W & UNSCHEDULED CHARTER FLIGHTS WITH 30 OR MORE PASSENGERS. 24 HR PRIOR NOTICE REQUIRE FOR MILITARY PRACTICE APPROACH. CONTACT AIRPORT OPERATIONS 919−840−7510 OR RDU APPROACH CONTROL C919−380−3125. 24 HR PRIOR PERMISSION REQUIRED FOR ALL F/W AND R/W MILITARY AIRCRAFT GOING TO ARRANGE RAMP. POC DSN 582−9000, EXTENSION 16200, C919−804−5300, EXTENSION 16200. OSACOM FLIGHT DET DSN 582−9000, EXTENSION 16202, C919−804−5300, EXTENSION 16202.

AIRPORT CLOSED TO AIRSHIPS.

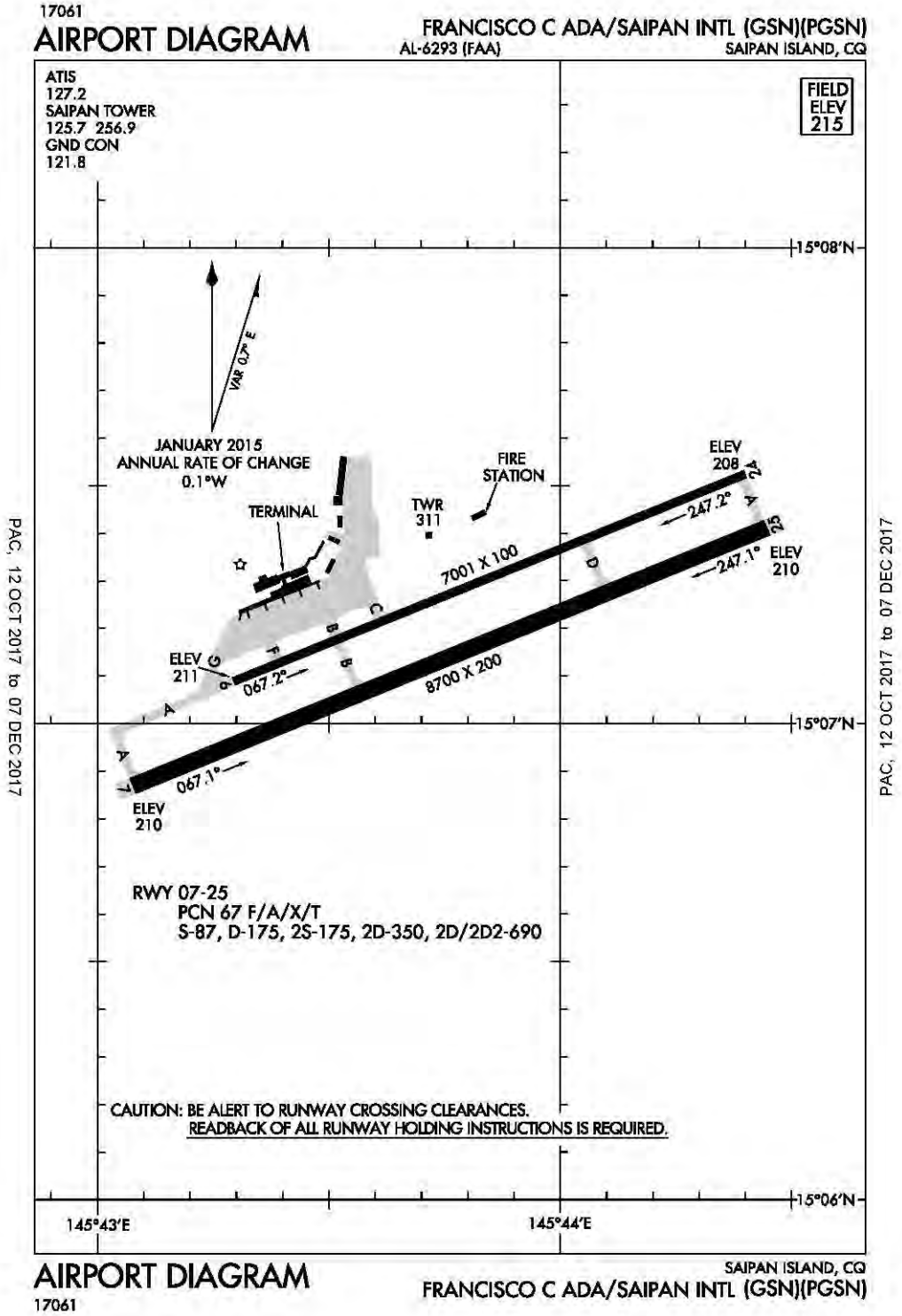
TAXIWAY E BEHIND SOUTH CARGO 4 & TAXIWAY J BEHIND CORPORATE HANGARS NOT VISIBLE FROM ATCT.

CRAN 75 FT AGL.76 NAUTICAL MILE FROM APPROACH END RUNWAY 05R.

ARRANGE: LIMITED PARK. ARRANGE OPERATIONS DSN 582−9000, EXTENSION 16200, C919−804−5300 EXTENSION 16200, DSN 582−9000,X16200, C919−804−5300,X16200 CONTACT FORECAST BASE 10 MIN PRIOR LANDING. RAMP CLOSED TO ALL F/W EXCEPT ARMY & MILITARY TRANSPORT WITH PRIOR PERMISSION REQUIRED, FACILITY HRS 1300−2130Z++ MON−FRI EXCEPT HOLIDAY. MAKE APPT FOR AFTER DUTY HRS. NO FUEL EXCARNG FERRY AIRCRAFT. OSACOM FLIGHT DET DSN 582−9248, C919−664−6248.

TAXIWAY F1 IS CLOSED UNTIL FURTHER NOTICE.

North Mariana Islands, Saipan Island
Francisco C. Ada/Saipan International
ICAO Identifier PGSN



Saipan Island, CQ
Francisco C. Ada/Saipan Intl
ICAO Identifier PGSN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 15−07−12.92N / 145−43−47.94E
2.2.2 From City: 4 Miles SW Of Saipan Island, Mp
2.2.3 Elevation: 215.1 ft
2.2.5 Magnetic variation: 2E (1985)
2.2.6 Airport Contact: Maryann Q. Lizama
PO BOX 501055
Saipan, MP 96950
((670) 237−6500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 1/1/1978
2.6.4 Remarks: Closed To Unscheduled Aircraft 0 Operations With More Than 30 Passenger Seats Except Prior Permission Required Call Or Write Airport Manager 670−237−6500/670−285−1512(Cell); P.O. Box 501055 Saipan Mp 96950.

AD 2.12 Runway physical characteristics

2.12.1 Designation: 07
2.12.2 True Bearing: 68
2.12.3 Dimensions: 8700 ft x 200 ft
2.12.4 PCN: 67 F/A/X/T
2.12.5 Coordinates: 15−06−52.11N / 145−43−00.00E
2.12.6 Threshold elevation: 210 ft
2.12.6 Touchdown zone elevation: 215 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 248
2.12.3 Dimensions: 8700 ft x 200 ft
2.12.4 PCN: 67 F/A/X/T
2.12.5 Coordinates: 15−07−24.70N / 145−44−26.79E
2.12.6 Threshold elevation: 210 ft
2.12.6 Touchdown zone elevation: 210 ft

2.12.1 Designation: 06
2.12.2 True Bearing: 68
2.12.3 Dimensions: 7001 ft x 100 ft
2.12.5 Coordinates: 15−07−00.00N / 145−43−17.64E
2.12.6 Threshold elevation: 211 ft
2.12.6 Touchdown zone elevation: 211 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 248
2.12.3 Dimensions: 7001 ft x 100 ft
2.12.5 Coordinates: 15−07−31.57N / 145−44−23.86E
2.12.6 Threshold elevation: 208 ft
2.12.6 Touchdown zone elevation: 208 ft

AD 2.14 Approach and runway lighting

2.14.1 Designation: 07
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: PVASI on left
2.14.10 Remarks: Restricted To 2.5nm & 5 Degrees Left & Right Of Runway Centerline Due To Intensity.

2.14.1 Designation: 25
2.14.4 Visual approach slope indicator system: PVASI on left
2.14.10 Remarks: Restricted Beyond 2.5 Nm Due To Intensity.
vasi Upwind Threshold Crossing Height 105 Ft Glide Angle 3.25; Downwind Threshold Crossing Height 60 Ft Glide Angle 3.00. Threshold Crossing Height 105 Ft Applies To VASI 6 High Angle.

2.14.1 Designation: 06
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway

alignment indicator lights
2.14.4 Visual approach slope indicator system: PVASI on left

2.14.1 Designation: 24
2.14.4 Visual approach slope indicator system: PVASI on left

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 07. Magnetic variation: 2E
2.19.2 ILS identification: GSN
2.19.5 Coordinates: 15–07–28.47N / 145–44–36.29E
2.19.6 Site elevation: 207 ft

2.19.1 ILS type: DME for runway 07. Magnetic variation: 2E
2.19.2 ILS identification: GSN
2.19.5 Coordinates: 15–07–30.49N / 145–44–34.11E
2.19.6 Site elevation: 220 ft

2.19.1 ILS type: Glide Slope for runway 07. Magnetic variation: 2E
2.19.2 ILS identification: GSN
2.19.5 Coordinates: 15–06–58.69N / 145–43–13.05E
2.19.6 Site elevation: 207.6 ft

2.19.1 ILS type: Middle Marker for runway 07. Magnetic variation: 2E
2.19.2 ILS identification: GSN
2.19.5 Coordinates: 15–06–41.60N / 145–42–38.10E
2.19.6 Site elevation: 86 ft

General Remarks:

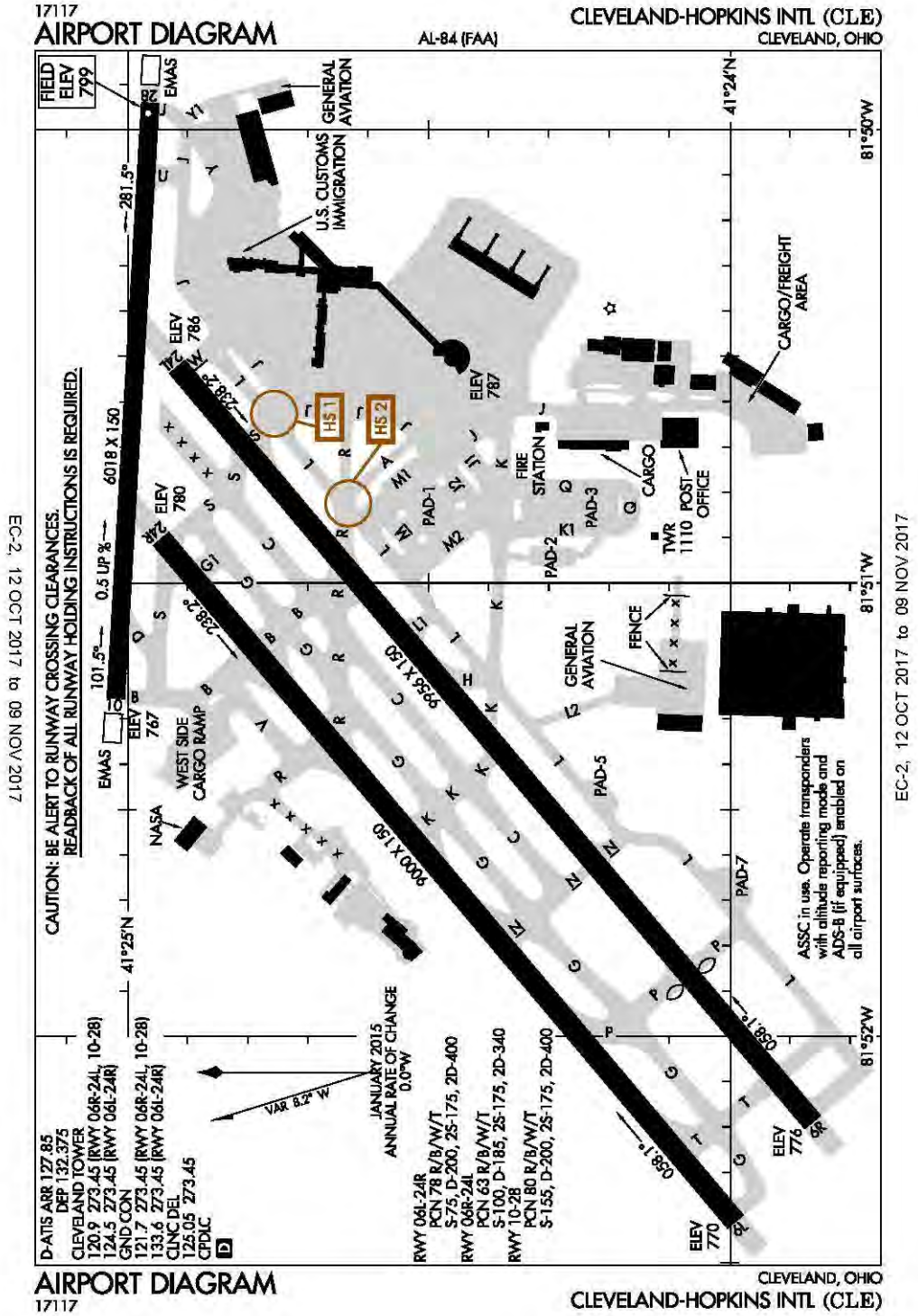
IMMIGRATION & CUSTOMS AVAILABLE DURING SCHEDULED OPERATIONS. OTHER TIMES PRIOR ARRANGEMENTS MUST BE MADE WITH CBP PORT DIRECTOR CALL (670)288–0025/26.

FOR AIRPORT SECURITY CALL (670) 237–6529.

RUNWAY 06–24 OPEN FOR TAXIING ONLY (NOT AVAILABLE FOR LANDING AND TAKE–OFF).

PRIOR PERMISSION REQUIRED FROM EXECUTIVE DIRECTOR COMMONWEALTH PORTS AUTHORITY SAIPAN CALL (670) 237–6500 MON–FRI 0730–1630 OTHER TIMES CALL (670) 237–6535.

Cleveland, Ohio
Cleveland–Hopkins International
ICAO Identifier KCLE



Cleveland, OH
Cleveland–Hopkins Intl
ICAO Identifier KCLE

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 41–24–33.90N / 81–51–16.90W
2.2.2 From City: 9 Miles SW Of Cleveland, OH
2.2.3 Elevation: 799.4 ft
2.2.5 Magnetic variation: 7W (1990)
2.2.6 Airport Contact: Fred Szabo
P.O.B. 81009, 5300 RIVERSIDE DR
Cleveland, OH 44181 (216–265–6000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 06L
2.10.1.b Type of obstacle: Trees (97 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 847 ft from Centerline

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Tree (51 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 490 ft from Centerline

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Pole (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 392 ft from Centerline

2.10.1.a. Runway designation: 06R
2.10.1.b Type of obstacle: Trees (80 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 370 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10
2.12.2 True Bearing: 93
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41–25–00.00N / 81–51–15.28W
2.12.6 Threshold elevation: 767 ft
2.12.6 Touchdown zone elevation: 783 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 273
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41–24–57.82N / 81–49–56.44W
2.12.6 Threshold elevation: 799 ft
2.12.6 Touchdown zone elevation: 799 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9956 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41–23–51.85N / 81–52–11.38W
2.12.6 Threshold elevation: 776 ft
2.12.6 Touchdown zone elevation: 776 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9956 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41–24–55.14N / 81–50–31.37W
2.12.6 Threshold elevation: 786 ft
2.12.6 Touchdown zone elevation: 786 ft

2.12.1 Designation: 06L
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41–23–59.53N / 81–52–24.55W
2.12.6 Threshold elevation: 770 ft
2.12.6 Touchdown zone elevation: 772 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41–24–56.75N / 81–50–54.15W
2.12.6 Threshold elevation: 780 ft
2.12.6 Touchdown zone elevation: 780 ft

2.12.1 Designation: 06X
2.12.3 Dimensions: 0 ft x 0 ft

2.12.1 Designation: 24X
2.12.3 Dimensions: 0 ft x 0 ft

AD 2.13 Declared distances
2.13.1 Designation: 10
2.13.2 Takeoff run available: 6017
2.13.3 Takeoff distance available: 6017
2.13.4 Accelerate−stop distance available: 6017
2.13.5 Landing distance available: 6017

2.13.1 Designation: 28
2.13.2 Takeoff run available: 6017
2.13.3 Takeoff distance available: 6017
2.13.4 Accelerate−stop distance available: 6017
2.13.5 Landing distance available: 6017

2.13.1 Designation: 06R
2.13.2 Takeoff run available: 9956
2.13.3 Takeoff distance available: 9956
2.13.4 Accelerate−stop distance available: 9956
2.13.5 Landing distance available: 8030

2.13.1 Designation: 24L
2.13.2 Takeoff run available: 9956
2.13.3 Takeoff distance available: 9956
2.13.4 Accelerate−stop distance available: 9956
2.13.5 Landing distance available: 9956

2.13.1 Designation: 06L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 24R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 06R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 06L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 24R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LDA PRM RY 06L/24R
2.18.3 Service designation: 118.975 MHz

2.18.1 Service designation: LDA PRM RY 06R/24L
2.18.3 Service designation: 135.875 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 133.6 MHz

2.18.1 Service designation: LC/P
2.18.3 Service designation: 124.5 MHz

2.18.1 Service designation: APCH/P IC
2.18.3 Service designation: 354.025 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 346.325 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 126.55 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 124 MHz

2.18.1 Service designation: RAMP CONTROL
2.18.3 Service designation: 129.17 MHz

2.18.1 Service designation: LCL/P GND/P CD/P
2.18.3 Service designation: 273.45 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 127.85 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 132.375 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 118.15 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 128.25 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: LCL/S
2.18.3 Service designation: 135.225 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 126.35 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 125.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 28. Magnetic variation: 7W
2.19.2 ILS identification: PXP
2.19.5 Coordinates: 41–25–00.00N / 81–51–21.25W
2.19.6 Site elevation: 756.2 ft

2.19.1 ILS type: Localizer for runway 24L. Magnetic variation: 7W
2.19.2 ILS identification: HPI
2.19.5 Coordinates: 41–23–45.43N / 81–52–21.52W
2.19.6 Site elevation: 771.9 ft

2.19.1 ILS type: Localizer for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41–25–00.00N / 81–50–15.51W
2.19.6 Site elevation: 785.7 ft

2.19.1 ILS type: DME for runway 24L. Magnetic variation: 7W
2.19.2 ILS identification: HPI
2.19.5 Coordinates: 41–23–44.34N / 81–52–18.08W
2.19.6 Site elevation: 778.9 ft

2.19.1 ILS type: Glide Slope for runway 24L. Magnetic variation: 7W
2.19.2 ILS identification: HPI
2.19.5 Coordinates: 41–24–51.95N / 81–50–45.31W
2.19.6 Site elevation: 782.2 ft

2.19.1 ILS type: Glide Slope for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41–24–13.72N / 81–51–45.28W
2.19.6 Site elevation: 766 ft

2.19.1 ILS type: Glide Slope for runway 28. Magnetic variation: 7W
2.19.2 ILS identification: PXP
2.19.5 Coordinates: 41–25–00.00N / 81–50–00.00W
2.19.6 Site elevation: 786 ft

2.19.1 ILS type: Outer Marker for runway 28. Magnetic variation: 7W
2.19.2 ILS identification: PXP
2.19.5 Coordinates: 41–24–34.70N / 81–42–32.40W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41–20–19.06N / 81–57–51.96W
2.19.6 Site elevation: 800 ft

2.19.1 ILS type: Outer Marker for runway 24L. Magnetic variation: 7W
2.19.2 ILS identification: HPI

2.19.5 Coordinates: 41−28−00.00N / 81−43−35.83W
2.19.6 Site elevation: 736 ft

2.19.1 ILS type: Inner Marker for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41−23−57.23N / 81−52−00.00W
2.19.6 Site elevation: 760 ft

2.19.1 ILS type: Middle Marker for runway 28. Magnetic variation: 7W
2.19.2 ILS identification: PXP
2.19.5 Coordinates: 41−24−55.88N / 81−49−10.69W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41−23−44.19N / 81−52−23.50W
2.19.6 Site elevation: 768 ft

2.19.1 ILS type: Middle Marker for runway 24L. Magnetic variation: 7W
2.19.2 ILS identification: HPI
2.19.5 Coordinates: 41−25−22.70N / 81−49−43.90W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 06L. Magnetic variation: 7W
2.19.2 ILS identification: LIZ
2.19.5 Coordinates: 41−25−11.94N / 81−50−35.68W
2.19.6 Site elevation: 783.3 ft

2.19.1 ILS type: Glide Slope for runway 06L. Magnetic variation: 7W
2.19.2 ILS identification: LIZ
2.19.5 Coordinates: 41−24−00.00N / 81−52−17.52W
2.19.6 Site elevation: 764.3 ft

2.19.1 ILS type: Localizer for runway 06L. Magnetic variation: 7W
2.19.2 ILS identification: LIZ
2.19.5 Coordinates: 41−25−10.19N / 81−50−32.90W
2.19.6 Site elevation: 778.7 ft

2.19.1 ILS type: DME for runway 24R. Magnetic variation: 7W
2.19.2 ILS identification: PVY
2.19.5 Coordinates: 41−25−11.94N / 81−50−35.68W
2.19.6 Site elevation: 783.3 ft

2.19.1 ILS type: Glide Slope for runway 24R. Magnetic variation: 7W
2.19.2 ILS identification: PVY
2.19.5 Coordinates: 41−24−53.01N / 81−51−00.00W
2.19.6 Site elevation: 768.4 ft

2.19.1 ILS type: Localizer for runway 24R. Magnetic variation: 7W
2.19.2 ILS identification: PVY
2.19.5 Coordinates: 41−23−53.08N / 81−52−34.75W
2.19.6 Site elevation: 760.5 ft

2.19.1 ILS type: Inner Marker for runway 06L. Magnetic variation: 7W
2.19.2 ILS identification: LIZ
2.19.5 Coordinates: 41−23−53.94N / 81−52−33.40W
2.19.6 Site elevation: 761.3 ft

2.19.1 ILS type: Inner Marker for runway 24R. Magnetic variation: 7W
2.19.2 ILS identification: PVY
2.19.5 Coordinates: 41−25−00.00N / 81−50−47.31W
2.19.6 Site elevation: 778.7 ft

2.19.1 ILS type: DME for runway 24X. Magnetic variation: 7W
2.19.2 ILS identification: FVZ
2.19.5 Coordinates: 41−25−00.00N / 81−50−00.00W
2.19.6 Site elevation: 786 ft

2.19.1 ILS type: Glide Slope for runway 24X. Magnetic variation: 7W
2.19.2 ILS identification: FVZ
2.19.5 Coordinates: 41−24−51.95N / 81−50−45.31W
2.19.6 Site elevation: 782 ft

2.19.1 ILS type: Localizer for runway 24X. Magnetic variation: 7W
2.19.2 ILS identification: FVZ
2.19.5 Coordinates: 41−23−42.96N / 81−52−14.07W
2.19.6 Site elevation: 770.5 ft

2.19.1 ILS type: DME for runway 06X. Magnetic variation: 7W
2.19.2 ILS identification: EYU
2.19.5 Coordinates: 41−25−00.00N / 81−50−00.00W
2.19.6 Site elevation: 800.8 ft

2.19.1 ILS type: Glide Slope for runway 06X. Magnetic variation: 7W
2.19.2 ILS identification: EYU

2.19.5 Coordinates: 41–24–13.65N / 81–51–45.21W
2.19.6 Site elevation: 765.5 ft

2.19.1 ILS type: Localizer for runway 06X. Magnetic variation: 7W
2.19.2 ILS identification: EYU
2.19.5 Coordinates: 41–25–00.00N / 81–50–00.00W
2.19.6 Site elevation: 785.5 ft

2.19.1 ILS type: DME for runway 06R. Magnetic variation: 7W
2.19.2 ILS identification: CLE
2.19.5 Coordinates: 41–25–00.00N / 81–50–11.10W
2.19.6 Site elevation: 794.2 ft

2.19.1 ILS type: DME for runway 28. Magnetic variation: 7W
2.19.2 ILS identification: PXP
2.19.5 Coordinates: 41–24–58.72N / 81–51–23.84W
2.19.6 Site elevation: 766.2 ft

General Remarks:
DEER & BIRDS INCLUDING WATERFOWL ON & IN THE VICINITY OF AIRPORT.

ADVISE CUSTOMS AVAILABLE MON–SUN 0800–1800; ALL REQ FOR SERVICE MUST BE MADE WITH THE U.S. CUSTOMS SERVICE OFFICE LOCATED AT GATE A–14 CALL (216) 267–3600 DURING LISTED HRS.

NASA GLENN RESEARCH CENTER; NASA RAMP PRIOR PERMISSION REQUIRED CALL 216–433–2020; 0800–1730 MON–FRI. CONTACT NASA OPERATIONS ON FREQ 122.925 WITHIN 50 NAUTICAL MILE.

PAD 2 RESTRICTED TO GROUP II AIRCRAFT, LESS THAN 79 FT WINGSPAN.

ALL APPROACHES ARE OVER NOISE SENSITIVE AREAS. AIRPORT LATE NIGHT NOISE ABATEMENT PROCEDURES ARE IN EFFECT 2300–0600. ADDITIONAL NOISE ABATEMENT PROCEDURES ARE IN EFFECT CALL AIRPORT MANAGER NORMAL BUSINESS HRS AT 216–265–6090.

THE FOLLOWING TAXIWAYS ARE CLOSED ANNUALLY FR 15 OCT THRU 15 APR TO SUPPORT DEICING OPERATIONS AT CLE: TAXIWAY M; TAXIWAY M1 BETWEEN TAXIWAY L & TAXIWAY J1; TAXIWAY M2 BETWEEN TAXIWAY L & TAXIWAY J1; TAXIWAY J2 BETWEEN TAXIWAY A & TAXIWAY K.

RAMP AREA CONCOURSE D BETWEEN GATES D1, D28 CLOSED EXCEPT AIRCRAFT WINGSPAN LESS THAN 86 FT.

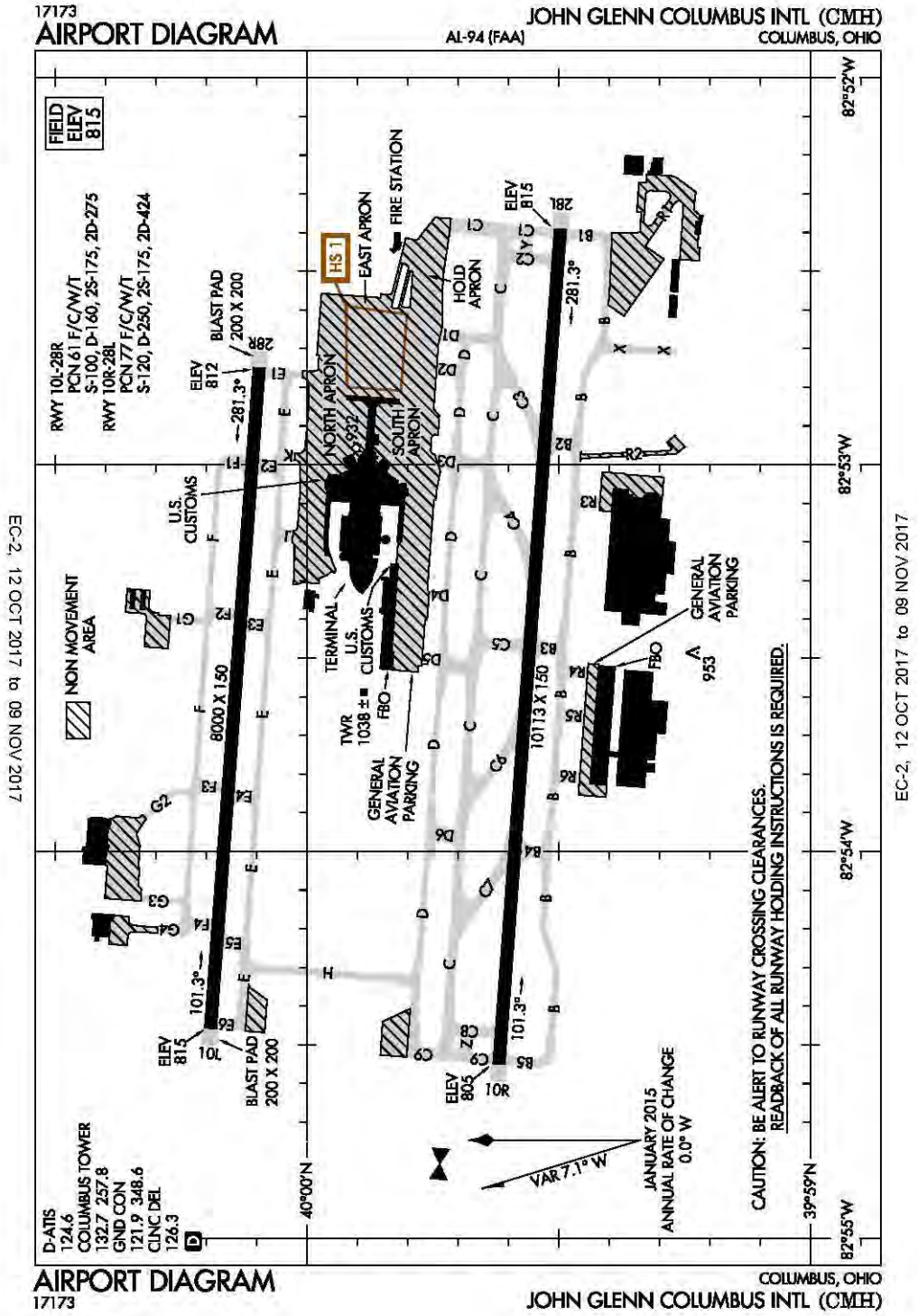
CONCOURSE C RAMP TAXILANE BETWEEN SPOT 2 AND SPOT 5 CLOSED TO AIRCRAFT WITH WINGSPAN 118 FT AND GREATER.

PAD 3 BAYS 1–5 CLOSED TO AIRCRAFT WITH WINGSPAN OVER 134 FT.

PAD 3 BAY 6 CLOSED TO AIRCRAFT WITH WINGSPAN OVER 94 FT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Columbus, Ohio
Port Columbus International
ICAO Identifier KCMH



Columbus, OH
Port Columbus Intl
ICAO Identifier KCMH

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39–59–49.00N / 82–53–31.80W
2.2.2 From City: 6 Miles E Of Columbus, OH
2.2.3 Elevation: 815 ft
2.2.5 Magnetic variation: 7W (2015)
2.2.6 Airport Contact: Elaine Roberts, A.A.E.
COLUMBUS RGNL ARPT AUTH
Columbus, OH 43219 (614–239–4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10L
2.12.2 True Bearing: 94
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 40–00–11.53N / 82–54–27.49W
2.12.6 Threshold elevation: 815 ft
2.12.6 Touchdown zone elevation: 815 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 274
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 40–00–00.00N / 82–52–44.97W
2.12.6 Threshold elevation: 812 ft
2.12.6 Touchdown zone elevation: 813 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10113 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39–59–37.14N / 82–54–33.04W
2.12.6 Threshold elevation: 805 ft
2.12.6 Touchdown zone elevation: 809 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10113 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39–59–29.81N / 82–52–23.46W
2.12.6 Threshold elevation: 815 ft
2.12.6 Touchdown zone elevation: 815 ft

AD 2.13 Declared distances

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate–stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 10113
2.13.3 Takeoff distance available: 10113
2.13.4 Accelerate–stop distance available: 10113
2.13.5 Landing distance available: 10113

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 10113
2.13.3 Takeoff distance available: 10113
2.13.4 Accelerate–stop distance available: 10113
2.13.5 Landing distance available: 10113

AD 2.14 Approach and runway lighting

2.14.1 Designation: 10L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 10R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/S
2.18.3 Service designation: 118.2 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 119.65 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 126.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.7 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: APCH/S
2.18.3 Service designation: 353.9 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 338.225 MHz

2.18.1 Service designation: APCH/P DEP/P IC
2.18.3 Service designation: 371.975 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 317.775 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 134 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 125.95 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 134 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 118 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 324.5 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 353.7 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 132.3 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 124.6 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: RADAR
2.18.3 Service designation: 294.7 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 279.6 MHz

2.18.1 Service designation: CLASS C
2.18.3 Service designation: 317.775 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 129.95 MHz

2.18.1 Service designation: AS ASIGNED
2.18.3 Service designation: 134.45 MHz

2.18.1 Service designation: FINAL
2.18.3 Service designation: 327.05 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 7W
2.19.2 ILS identification: CMH
2.19.5 Coordinates: 39–59–37.88N / 82–54–46.09W
2.19.6 Site elevation: 805.9 ft

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 7W
2.19.2 ILS identification: ONB
2.19.5 Coordinates: 40–00–12.27N / 82–54–40.56W
2.19.6 Site elevation: 811.6 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 7W
2.19.2 ILS identification: CBP
2.19.5 Coordinates: 40–00–00.00N / 82–52–32.03W
2.19.6 Site elevation: 799.4 ft

2.19.1 ILS type: Localizer for runway 10R. Magnetic variation: 7W
2.19.2 ILS identification: AQI
2.19.5 Coordinates: 39–59–29.07N / 82–52–10.41W
2.19.6 Site elevation: 814.2 ft

2.19.1 ILS type: DME for runway 28L. Magnetic variation: 7W
2.19.2 ILS identification: CMH
2.19.5 Coordinates: 39–59–33.74N / 82–54–45.93W
2.19.6 Site elevation: 815.1 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 7W
2.19.2 ILS identification: CMH
2.19.5 Coordinates: 39–59–26.50N / 82–52–36.66W
2.19.6 Site elevation: 810.7 ft

2.19.1 ILS type: DME for runway 10L. Magnetic variation: 7W
2.19.2 ILS identification: CBP
2.19.5 Coordinates: 40–00–00.00N / 82–54–41.03W
2.19.6 Site elevation: 822.3 ft

2.19.1 ILS type: Outer Marker for runway 10L. Magnetic variation: 7W
2.19.2 ILS identification: CBP
2.19.5 Coordinates: 40–00–36.46N / 83–01–44.26W
2.19.6 Site elevation:

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 7W
2.19.2 ILS identification: CBP
2.19.5 Coordinates: 40–00–14.28N / 82–54–14.87W
2.19.6 Site elevation: 809.9 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 7W
2.19.2 ILS identification: ONB
2.19.5 Coordinates: 40–00–00.00N / 82–52–56.99W
2.19.6 Site elevation: 808.4 ft

2.19.1 ILS type: Glide Slope for runway 10R. Magnetic variation: 7W
2.19.2 ILS identification: AQI
2.19.5 Coordinates: 39–59–32.38N / 82–54–20.61W
2.19.6 Site elevation: 802.5 ft

2.19.1 ILS type: Outer Marker for runway 10R. Magnetic variation: 7W
2.19.2 ILS identification: AQI
2.19.5 Coordinates: 40–00–00.00N / 83–01–45.46W
2.19.6 Site elevation: 747.4 ft

2.19.1 ILS type: Outer Marker for runway 28L. Magnetic variation: 7W
2.19.2 ILS identification: CMH
2.19.5 Coordinates: 39–59–10.24N / 82–45–15.66W
2.19.6 Site elevation: 1067.1 ft

2.19.1 ILS type: Middle Marker for runway 10L. Magnetic variation: 7W
2.19.2 ILS identification: CBP
2.19.5 Coordinates: 40–00–12.93N / 82–54–52.25W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 7W
2.19.2 ILS identification: ONB
2.19.5 Coordinates: 39–59–46.26N / 82–46–18.93W
2.19.6 Site elevation: 1040 ft

2.19.1 ILS type: Middle Marker for runway 10R. Magnetic variation: 7W
2.19.2 ILS identification: AQI
2.19.5 Coordinates: 39–59–46.12N / 82–55–00.00W
2.19.6 Site elevation: 812 ft

2.19.1 ILS type: Middle Marker for runway 28L. Magnetic variation: 7W
2.19.2 ILS identification: CMH
2.19.5 Coordinates: 39–59–34.84N / 82–51–48.16W
2.19.6 Site elevation: 787 ft

2.19.1 ILS type: DME for runway 28R. Magnetic variation: 7W
2.19.2 ILS identification: ONB
2.19.5 Coordinates: 40−00−00.00N / 82−54−41.03W
2.19.6 Site elevation: 822.3 ft

2.19.1 ILS type: DME for runway 10R. Magnetic variation: 7W
2.19.2 ILS identification: AQI
2.19.5 Coordinates: 39−59−33.74N / 82−54−45.93W
2.19.6 Site elevation: 815.1 ft

General Remarks:
MODEL AIRCRAFT TRAFFIC WITHIN A 1 NAUTICAL MILE RADIUS OF A POINT 8 NAUTICAL MILE ON A 010 DEGREE BEARING FROM THE AIRPORT; SURFACE − 5000 FT AGL; SR−SS DAILY.

BIRDS IN THE VICINITY OF AIRPORT.

TAXIWAY D−5 PAVEMENT (NORTH OF TAXIWAY D) IS RESTRICTED TO AIRCRAFT WITH WINGSPAN LESS THAN 79 FT.

BE ALERT: RUNWAY 10L/28R RESTRICTIONS ON STAGE I & II TURBOJET AIRCRAFT 2200−0800 & ON STAGE III TURBOJET AIRCRAFT 2200−0700. PRACTICE APPROACHES FOR HIGH NOISE LEVEL TYPE AIRCRAFT INCLUDING NON−STAGE III MILITARY JET AIRCRAFT SHALL NOT BE APPROVED UNLESS RUNWAY 10R/28L IS IN USE & THE APPROACH TERMINATES IN A FULL STOP TAXI−BACK OPN.

ALL SURFACES AROUND TERMINAL; NORTH OF TAXIWAY 'D' & SOUTH OF TAXIWAY 'E' ARE NON−MOVEMENT AREAS.

NOISE BARRIER LOCATED AT SE SIDE OF AIRFIELD RESTRICTED TO AIRCRAFT WITH WINGSPAN LESS THAN 79 FT.

PERSONNEL AND EQUIPMENT WORKING ADJACENT ALL RUNWAYS AND TAXIWAYS.

TO REQUEST LANDING RIGHTS CONTACT US CUSTOMS BETWEEN 1230−0300Z, MON−FRI AT 614−497−1865.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE.

TAXIWAY F1 RESTRICTED TO AIRCRAFT WITH WINGSPAN LESS THAN 120 FT.

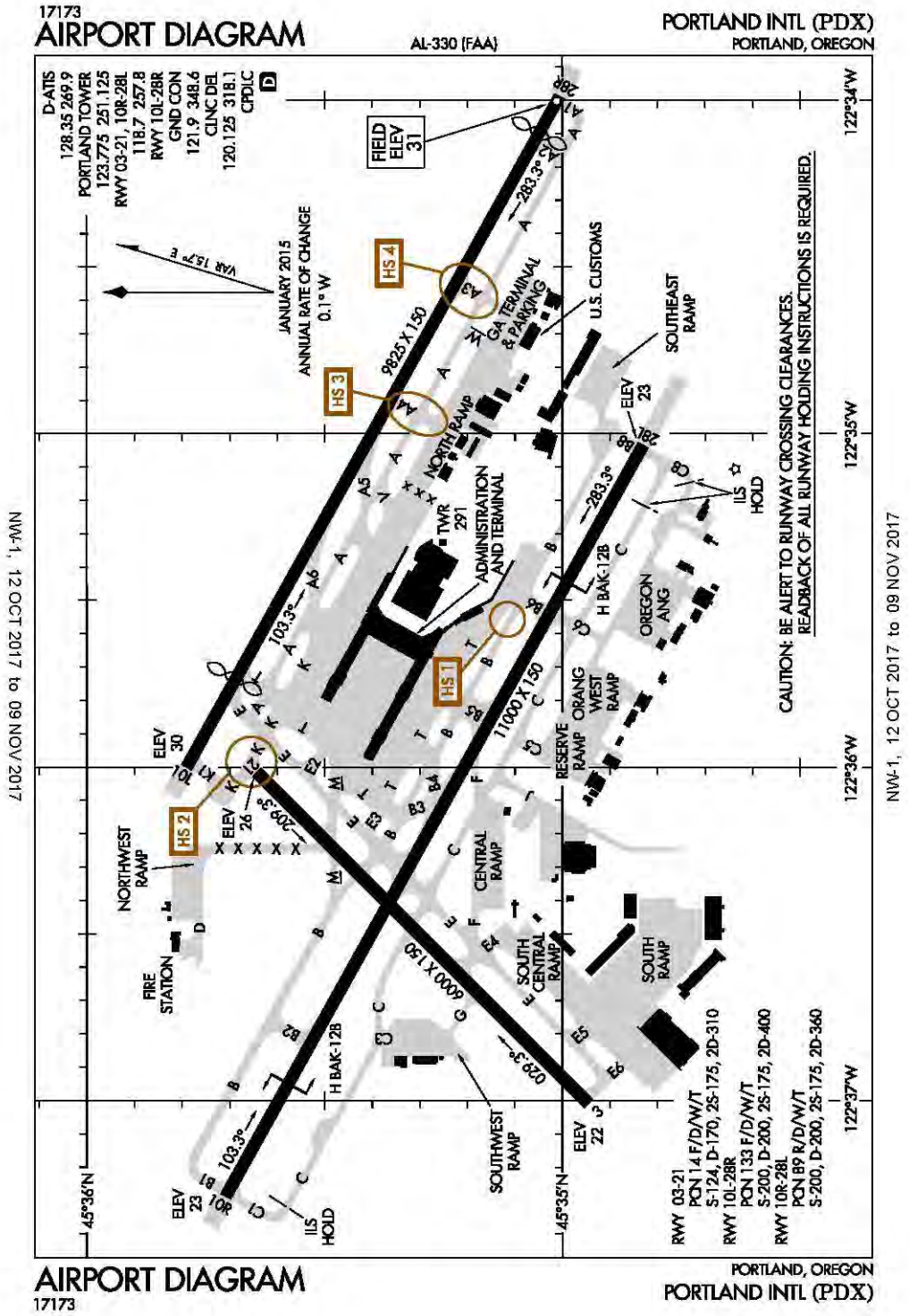
TAXIWAYS R2, R3, R4, R5 AND R6 RESTRICTED TO WINGSPAN LESS THAN 118 FT.

TAXIWAY R1 RESTRICTED TO AIRCRAFT WITH WINGSPAN LESS THAN 79 FT.

TAXILANE CONCOURSE A BETWEEN TAXIWAY D3 AND TAXIWAY D4 CLOSED TO AIRCRAFT WINGSPAN MORE THAN 130 FT.

TAXILANE CONCOURSE C BETWEEN TAXIWAY J AND TAXIWAY K CLOSED TO AIRCRAFT WINGSPAN MORE THAN 135 FT.

Portland, Oregon
Portland International
ICAO Identifier KPDX



Portland, OR
Portland Intl
ICAO Identifier KPDX

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 45−35−19.35N / 122−35−48.73W
2.2.2 From City: 4 Miles NE Of Portland, OR
2.2.3 Elevation: 30.8 ft
2.2.5 Magnetic variation: 16E (2010)
2.2.6 Airport Contact: Daren Griffin
7200 NE AIRPORT WAY
Portland, OR 97218
(503−415−6195)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Road (32 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 408 ft from Centerline

2.10.1.a. Runway designation: 21
2.10.1.b Type of obstacle: Road (19 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 14 F/D/W/T
2.12.5 Coordinates: 45−34−56.73N / 122−37−00.00W
2.12.6 Threshold elevation: 22 ft
2.12.6 Touchdown zone elevation: 23 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 14 F/D/W/T
2.12.5 Coordinates: 45−35−38.61N / 122−36−00.00W
2.12.6 Threshold elevation: 26 ft
2.12.6 Touchdown zone elevation: 26 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 119
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−35−42.53N / 122−37−17.30W
2.12.6 Threshold elevation: 23 ft
2.12.6 Touchdown zone elevation: 24 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 299
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−34−49.85N / 122−35−00.00W
2.12.6 Threshold elevation: 23 ft
2.12.6 Touchdown zone elevation: 23 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−47.45N / 122−36−00.00W
2.12.6 Threshold elevation: 30 ft
2.12.6 Touchdown zone elevation: 30 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−00.00N / 122−33−59.26W
2.12.6 Threshold elevation: 31 ft
2.12.6 Touchdown zone elevation: 31 ft

AD 2.13 Declared distances

2.13.1 Designation: 03
2.13.2 Takeoff run available: 6000
2.13.3 Takeoff distance available: 6000
2.13.4 Accelerate−stop distance available: 6000
2.13.5 Landing distance available: 6000

2.13.1 Designation: 21
2.13.2 Takeoff run available: 6000
2.13.3 Takeoff distance available: 6000
2.13.4 Accelerate−stop distance available: 6000
2.13.5 Landing distance available: 6000

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate–stop distance available: 11000
2.13.5 Landing distance available: 11000

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 11000
2.13.3 Takeoff distance available: 11000
2.13.4 Accelerate–stop distance available: 11000
2.13.5 Landing distance available: 11000

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 9825
2.13.3 Takeoff distance available: 9825
2.13.4 Accelerate–stop distance available: 9825
2.13.5 Landing distance available: 8535

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 9825
2.13.3 Takeoff distance available: 9825
2.13.4 Accelerate–stop distance available: 9825
2.13.5 Landing distance available: 9290

AD 2.14 Approach and runway lighting
2.14.1 Designation: 03
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Pdx Rwy 03 PAPI Unusable Bynd 4 Degrees Left And Right Of Rcl And Beyond 5 Nm Unusable

2.14.1 Designation: 21
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 10R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 28L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: Possible Rwy 28L Glideslope Fluctuation Prior To Addum When Weather Is Greater Than 800/2.

2.14.1 Designation: 10L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: ANG COMD POST/ GUARD COMD POST
2.18.3 Service designation: 288.9 MHz

2.18.1 Service designation: PORTLAND GUARD OPS
2.18.3 Service designation: 281.2 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 269.9 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 128.35 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/S
2.18.3 Service designation: 132.275 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 120.125 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz
2.18.6 Remarks: Pdx Monitors 121.5 For Mcminnville (Mmv).

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: AFR OPNS
2.18.3 Service designation: 138.45 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: AFR OPNS
2.18.3 Service designation: 252.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.7 MHz

2.18.1 Service designation: ANG OPNS
2.18.3 Service designation: 280.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 318.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 123.775 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 251.125 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GPO
2.19.5 Coordinates: 45−34−49.75N / 122−37−10.47W
2.19.6 Site elevation: 11.4 ft

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 16E
2.19.2 ILS identification: IAP
2.19.5 Coordinates: 45−35−52.30N / 122−36−12.47W
2.19.6 Site elevation: 25.6 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 16E
2.19.2 ILS identification: VDG
2.19.5 Coordinates: 45−34−55.53N / 122−33−46.85W
2.19.6 Site elevation: 29 ft

2.19.1 ILS type: Localizer for runway 10R. Magnetic variation: 16E
2.19.2 ILS identification: PDX
2.19.5 Coordinates: 45−34−43.53N / 122−34−45.82W
2.19.6 Site elevation: 20 ft

2.19.1 ILS type: DME for runway 10R. Magnetic variation: 16E
2.19.2 ILS identification: PDX
2.19.5 Coordinates: 45−34−46.74N / 122−34−45.23W
2.19.6 Site elevation: 36 ft

2.19.1 ILS type: DME for runway 10L. Magnetic variation: 16E
2.19.2 ILS identification: VDG
2.19.5 Coordinates: 45−35−47.95N / 122−36−13.55W
2.19.6 Site elevation: 25.5 ft

2.19.1 ILS type: DME for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GPO
2.19.5 Coordinates: 45−34−47.97N / 122−37−00.00W
2.19.6 Site elevation: 31 ft

2.19.1 ILS type: DME for runway 28R. Magnetic variation: 16E
2.19.2 ILS identification: IAP
2.19.5 Coordinates: 45−35−47.95N / 122−36−13.55W
2.19.6 Site elevation: 25.5 ft

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 16E
2.19.2 ILS identification: VDG
2.19.5 Coordinates: 45−35−39.76N / 122−35−30.17W
2.19.6 Site elevation: 31 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 16E
2.19.2 ILS identification: IAP
2.19.5 Coordinates: 45−35−10.93N / 122−34−16.40W
2.19.6 Site elevation: 30.1 ft

2.19.1 ILS type: Glide Slope for runway 10R. Magnetic variation: 16E
2.19.2 ILS identification: PDX
2.19.5 Coordinates: 45−35−33.90N / 122−37−00.00W
2.19.6 Site elevation: 16 ft

2.19.1 ILS type: Inner Marker for runway 10R. Magnetic variation: 16E
2.19.2 ILS identification: PDX
2.19.5 Coordinates: 45−35−46.71N / 122−37−28.03W
2.19.6 Site elevation: 17 ft

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 16E
2.19.2 ILS identification: IAP
2.19.5 Coordinates: 45−34−44.97N / 122−33−19.90W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 16E
2.19.2 ILS identification: IAP
2.19.5 Coordinates: 45–32–28.06N / 122–27–44.78W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 10R. Magnetic variation: 16E
2.19.2 ILS identification: PDX
2.19.5 Coordinates: 45–35–58.13N / 122–37–57.39W
2.19.6 Site elevation: 25 ft

2.19.1 ILS type: DME for runway 28L. Magnetic variation: 16E
2.19.2 ILS identification: JMJ
2.19.5 Coordinates: 45–34–46.74N / 122–34–45.23W
2.19.6 Site elevation: 36 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 16E
2.19.2 ILS identification: JMJ
2.19.5 Coordinates: 45–34–52.63N / 122–35–16.71W
2.19.6 Site elevation: 19.9 ft

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 16E
2.19.2 ILS identification: JMJ
2.19.5 Coordinates: 45–35–50.52N / 122–37–37.81W
2.19.6 Site elevation: 24.8 ft

General Remarks:
AIRPORT CLOSED TO NON–POWERED AIRCRAFT EXCEPT IN EMERGENCY.

TAXIWAY T BETWEEN EXITS B5 & B6 CLOSED TO AIRCRAFT WITH WINGSPAN OF 118 FT AND GREATER.

MIGRATORY & WINTERING FLOCKS OF LARGE WATERFOWL ON & IN THE VICINITY OF AIRPORT. HEAVY SEAGULL ACTIVITY SEP THRU APR; EXPECT HIGH NUMBER OF BIRDS YEAR AROUND; CHECK LOCAL ADVISORIES.

NOISE ABATEMENT PROCEDURES IN EFFECT; CALL NOISE OFFICE AT 503–460–4100. RUNWAY 28L ARRIVALS ARE NOISE SENSITIVE, EXPECT APPROACH TO 28R WITH TRANSITION TO 28L.

180 DEGREE TURNS BY AIRCRAFT WEIGHING IN EXCESS OF 12500 LBS PROHIBITED ON RUNWAY 10L/28R, RUNWAY 03/21 AND ALL TAXIWAYS.

UNCONTROLLED TRAFFIC AT PEARSON FIELD VANCOUVER AIRMET 3 NAUTICAL MILE W OF RUNWAY 10L THRESHOLD ON EXTENDED CENTERLINE.

(E143–20) LOCALIZER ONLY.RWY 21.

(E94) WSFO/WSO/FW/RFC.

AREA OF TAXIWAY T BETWEEN M AND E3 NOT VISIBLE FROM TOWER.

AIRCRAFT AUTHORIZED TO UTILIZE THE NORTHWEST RAMP WILL BE TOWED TO/FROM THIS RAMP.

AT THE WEST END ARM/DEARM AREA ON TAXIWAY C NO AIRCRAFT OF ANY TYPE MAY TAXI PAST THE ARM/DEARM AREA WHILE IT IS BEING USED.

BEARING STRENGTH: RUNWAY 03–21 ST 175, RUNWAY 10L–28R ST175, RUNWAY 10R–28L ST175.

JASU – 4(A/M32A–86) (MC–11) 1(MA–1A).

FUEL – A (AIR BP – ATLANTIC AVIATION SERVICES. C503–331–4220) J8(MIL) (NC–100LL, A)

FLUID – LHOXRB.

OIL – O–128–133–148(MIL).

MISC: FLIGHT NOTIFICATION SERVICE, ADVISE CUSTOMS, AVAILABLE.

ANG: PRIOR PERMISSION REQUIRED/OFFICIAL BUSINESS ONLY. BASE OPERATIONS OPR 1500−2300Z++ MON−FRI EXCEPT HOLIDAY.; DSN 638−4390, C503−335−4390. CONTACT BASE OPERATIONS 15 MIN PRIOR TO LANDING AND AFTER DEP ON 281.2. TRANSIENT QUARTERS NOT AVAILABLE. CAUTION: OBST LIGHTING IS NOT NVD COMPATIBLE. NVD NOT AUTHORIZED WHILE AIRBORNE IN VICINITY OF AIRFIELD.

TAXIWAY V CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135 FT. AIRCRAFT WITH WINGSPAN GREATER THAN 91 FT PROHIBITED FROM TURNING WESTBOUND ONTO TAXIWAY A FROM TAXIWAY V UNLESS UNDER TOW.

ANG: SEE FLIGHT INFORMATION PUBLICATION AP/1 FOR SUPPLEMENTARY AIRPORT INFORMATION. HAZARDOUS BIRD CONDITION EXIST. PHASE 1 MAY−OCT, PHASE II NOV−APR. CURRENT BIRD WATCH CONDITIONS ARE NOT REPORTED ON AUTOMATIC TERMINAL INFORMATION SERVICE.

TAXIWAY W CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 118 FEET. TAXIWAY K TO THE NORTH RAMP CLOSED TO THROUGH TRAFFIC.

NONSTANDARD YELLOW PARK SPOT DESIGNATORS AND EQUIPMENT TOOL BOX LOCATION PAINTED ON RAMP. PLEASE CONTACT BASE OPERATIONS OR REQ FOLLOW ME IF NOT FAMILIAR WITH PANGB PARK PROCEDURES.

TAXIWAY C3 CLOSED TO AIRCRAFT WITH WINGSPAN EQUAL TO OR GREATER THAN 79 FT.

PDX HAS FACILITY CONSTRAINTS THAT LIMIT ITS ABILITY TO ACCOMMODATE DIVERTED FLIGHTS AND MAINTAIN THE AIRPORTS SAFE OPERATION DURING IRREG OPERATIONS. AIRCRAFT OPERATORS SHOULD CTCT THE ON−DUTY AIRPORT OPERATIONS SUPERVISOR (AOS) FOR AIRSIDE AT (503)460−4134 TO COORDINATE DIVERTED FLIGHTS EXCEPT IN THE CASE OF A DECLARED IN−FLIGHT EMERGENCY.

ACFTT WITH WINGSPAN GREATER THAN 118 FEET ARE PROHIBITED FROM TURNING EASTBOUND ON TAXIWAY C FROM SOUTHWESTBOUND ON TAXIWAY F UNLESS UNDER TOW.

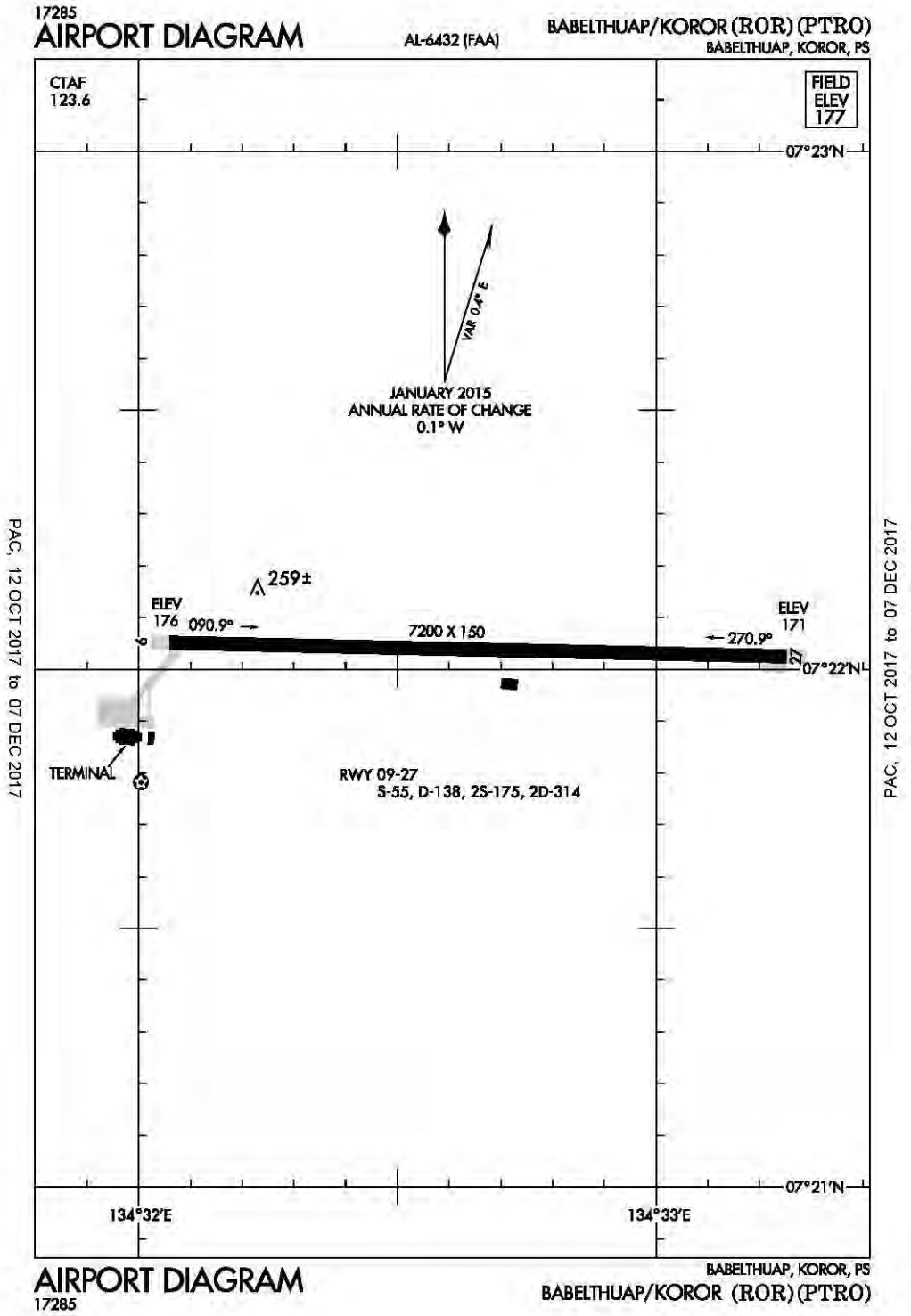
TAXIWAY A3 BETWEEN TAXIWAY A AND THE NE RAMP CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135 FEET UNLESS UNDER TOW.

TAXIWAY E3 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 198.

TAXIWAY T BETWEEN TAXIWAY E3 AND TAXIWAY B5 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 198.

TAXIWAY C BETWEEN TAXIWAY C6 AND TAXIWAY C8 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 180.

Babelthuap Island
Babelthuap/Koror
ICAO Identifier PTRO



Babelthuap Island, PW
Babelthuap/Koror
ICAO Identifier PTRO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 07−22−00.00N / 134−32−39.30E
2.2.2 From City: 4 Miles NE Of Babelthuap Island, Pw
2.2.3 Elevation: 176.5 ft
2.2.5 Magnetic variation: 1E (1990)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours
2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities
2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: 115,A1
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services
2.6.1 Aerodrome category for firefighting: None

AD 2.10 Aerodrome obstacles
2.10.1.a. Runway designation: 27
2.10.1.b Type of obstacle: Trees (11 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 75 ft from Centerline

AD 2.12 Runway physical characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 91
2.12.3 Dimensions: 7200 ft x 150 ft
2.12.5 Coordinates: 07−22−00.00N / 134−32−00.00E
2.12.6 Threshold elevation: 176 ft
2.12.6 Touchdown zone elevation: 176 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 271
2.12.3 Dimensions: 7200 ft x 150 ft
2.12.5 Coordinates: 07−22−00.00N / 134−33−15.12E
2.12.6 Threshold elevation: 171 ft
2.12.6 Touchdown zone elevation: 176 ft

AD 2.14 Approach and runway lighting
2.14.1 Designation: 09
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.1 Designation: 27
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

General Remarks:
ALL UNSCHEDULED FLIGHTS MUST FILE A FLIGHT PLAN AT LEAST 7 DAYS PRIOR TO ARRIVAL AND ALL FLIGHTS MUST CONTACT KOROR COMMUNICATIONS ON 123.6 AT LEAST 20 MINUTES PRIOR TO ARRIVAL.

AIRCRAFT RESCUE AND FIRE FIGHTING AVAILABLE 2 HRS PRIOR TO SCHEDULE AIRCRAFT ARR AND UNTIL 1 HR AFTER DEP.

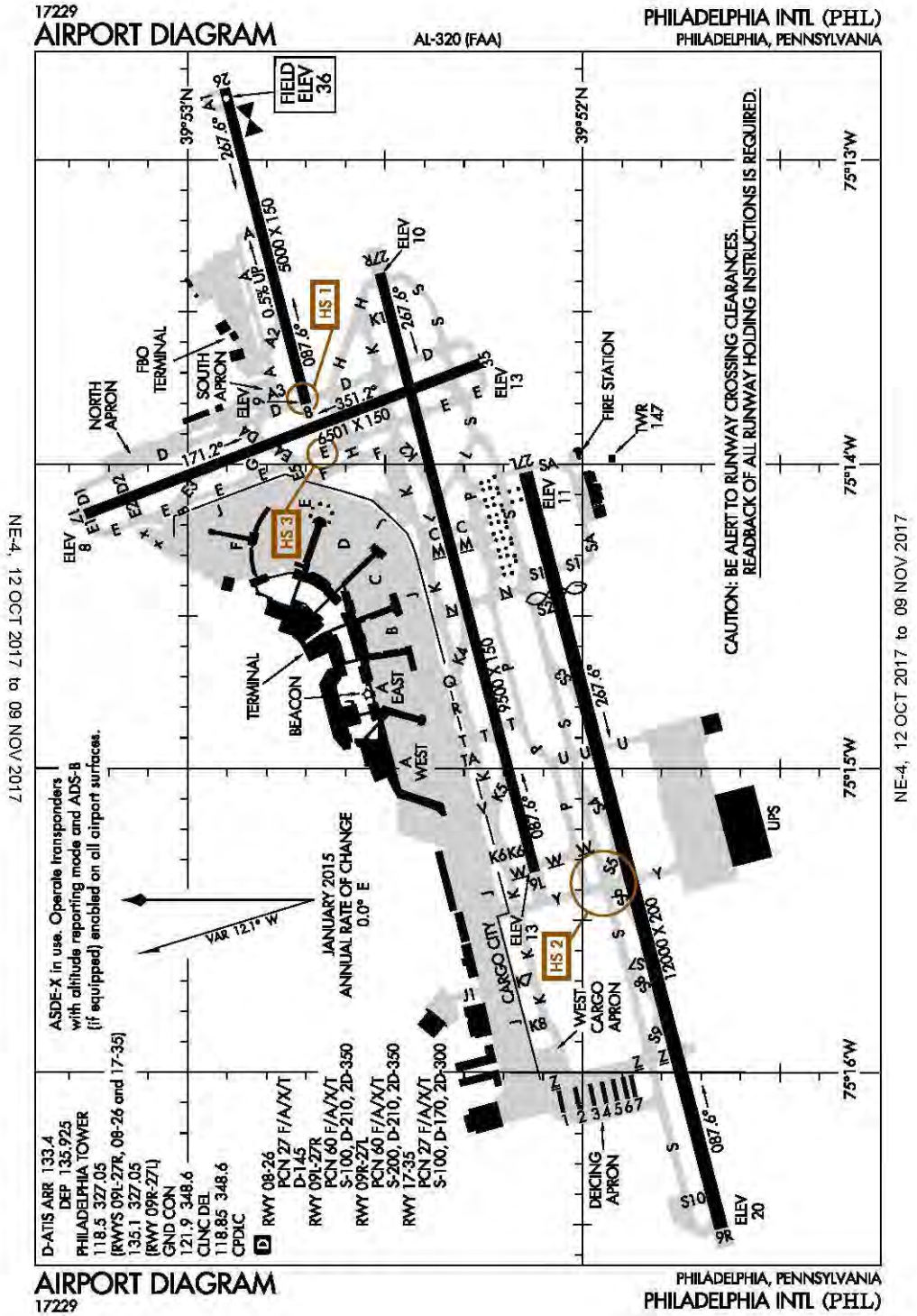
BE ALERT TO LARGE NUMBER OF BIRDS ON RUNWAY AT NIGHT.

ALL AIRCRAFT EXCEEDING 100000 LBS GROSS WEIGHT TAXI TO THR TURN AROUND BEFORE TAXING TO APRON. AIRCRAFT UNDER 100000 LBS GROSS WEIGHT MAY MAKE A TURN AROUND WHERE FEASIBLE.

ENTRY PERMIT REQUIRED CALL 011−680−488−2498 FAX 011−680−488−4385; LANDING PERMIT REQUIRED MUST GIVE SEVEN DAYS NOTICE CALL 011−680−488−2111 FAX 011−680−488−3207.

(E94) WX STATION 5 MI FROM AIRPORT.

Philadelphia, Pennsylvania
Philadelphia International
ICAO Identifier KPHL



Philadelphia, PA
Philadelphia Intl
ICAO Identifier KPHL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39−52−19.50N / 75−14−26.38W
2.2.2 From City: 5 Miles SW Of Philadelphia, PA
2.2.3 Elevation: 36.1 ft
2.2.5 Magnetic variation: 10W (1980)
2.2.6 Airport Contact: Rochelle Cameron
DIV OF AVIATION TERMINAL E
Philadelphia, PA 19153 (215−937−6914)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 17
2.10.1.b Type of obstacle: Tree (45 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 394 ft from Centerline

2.10.1.a. Runway designation: 35
2.10.1.b Type of obstacle: Boat (189 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 09R
2.10.1.b Type of obstacle: Tree (30 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 436 ft from Centerline

2.10.1.a. Runway designation: 27L
2.10.1.b Type of obstacle: Boat (189 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 27R
2.10.1.b Type of obstacle: Boat (189 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

2.10.1.a. Runway designation: 08
2.10.1.b Type of obstacle: Bldg (185 ft). Lighted
2.10.1.c Location of obstacle: 158 ft from Centerline

2.10.1.a. Runway designation: 26
2.10.1.b Type of obstacle: Trees (39 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 416 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 17
2.12.2 True Bearing: 159
2.12.3 Dimensions: 6501 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−53−15.57N / 75−14−00.00W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 339
2.12.3 Dimensions: 6501 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−15.57N / 75−13−40.13W
2.12.6 Threshold elevation: 13 ft
2.12.6 Touchdown zone elevation: 14 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 75
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−00.00N / 75−15−20.38W
2.12.6 Threshold elevation: 13 ft
2.12.6 Touchdown zone elevation: 13 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 255
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−30.79N / 75−13−22.43W
2.12.6 Threshold elevation: 10 ft
2.12.6 Touchdown zone elevation: 10 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 75
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−51−38.92N / 75−16−30.70W

2.12.6 Threshold elevation: 20 ft
2.12.6 Touchdown zone elevation: 21 ft
2.12.7 Slope: 0.1DOWN

2.12.1 Designation: 27L
2.12.2 True Bearing: 255
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39–52–00.00N / 75–14–00.00W
2.12.6 Threshold elevation: 11 ft
2.12.6 Touchdown zone elevation: 10 ft
2.12.7 Slope: 0.1UP

2.12.1 Designation: 08
2.12.2 True Bearing: 75
2.12.3 Dimensions: 5000 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39–52–42.02N / 75–13–48.04W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 20 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 256
2.12.3 Dimensions: 5000 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39–52–54.38N / 75–12–45.94W
2.12.6 Threshold elevation: 36 ft
2.12.6 Touchdown zone elevation: 36 ft

AD 2.13 Declared distances

2.13.1 Designation: 17
2.13.2 Takeoff run available: 6501
2.13.3 Takeoff distance available: 6501
2.13.4 Accelerate–stop distance available: 6501
2.13.5 Landing distance available: 6501

2.13.1 Designation: 35
2.13.2 Takeoff run available: 6501
2.13.3 Takeoff distance available: 6501
2.13.4 Accelerate–stop distance available: 6501
2.13.5 Landing distance available: 6501

2.13.1 Designation: 09L
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate–stop distance available: 9500
2.13.5 Landing distance available: 9500

2.13.1 Designation: 27R
2.13.2 Takeoff run available: 9500
2.13.3 Takeoff distance available: 9500
2.13.4 Accelerate–stop distance available: 9500
2.13.5 Landing distance available: 8864

2.13.1 Designation: 09R
2.13.2 Takeoff run available: 10506
2.13.3 Takeoff distance available: 10506
2.13.4 Accelerate–stop distance available: 10506
2.13.5 Landing distance available: 10506

2.13.1 Designation: 27L
2.13.2 Takeoff run available: 10506
2.13.3 Takeoff distance available: 10506
2.13.4 Accelerate–stop distance available: 10331
2.13.5 Landing distance available: 10331

2.13.1 Designation: 08
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate–stop distance available: 5000
2.13.5 Landing distance available: 5000

2.13.1 Designation: 26
2.13.2 Takeoff run available: 5000
2.13.3 Takeoff distance available: 5000
2.13.4 Accelerate–stop distance available: 5000
2.13.5 Landing distance available: 5000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 17
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 35
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 09L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 27R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 09R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with se-

quenced flashers, category II or III configuration

2.14.1 Designation: 27L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right
2.14.10 Remarks: Runway 26 PAPI Unusable Beyond 8 Degs Right Of Centerline .

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 327.05 MHz

2.18.1 Service designation: ILS PRM MONITOR/P
2.18.3 Service designation: 123.6 MHz

2.18.1 Service designation: PHL ONE DP
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: BUNTS 1 STAR
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: SPUDS 3 STAR
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: BUNTS 1 STAR
2.18.3 Service designation: 272.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 118.35 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 118.85 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/S
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P AT OR BELOW 5000 FT.
2.18.3 Service designation: 123.8 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: FINAL APCH
2.18.3 Service designation: 125.4 MHz

2.18.1 Service designation: APCH/P AT OR BELOW 5000 FT.
2.18.3 Service designation: 126.85 MHz

2.18.1 Service designation: APCH/P AT OR BELOW 5000 FT.
2.18.3 Service designation: 127.35 MHz

2.18.1 Service designation: APCH/P ABOVE 5,000
2.18.3 Service designation: 272.575 MHz

2.18.1 Service designation: APCH/P ABOVE 5000 FT.
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: APCH/P AT OR BLO 5000 FT.
2.18.3 Service designation: 263.125 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 269.25 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 269.25 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 269.25 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 273.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 273.575 MHz

2.18.1 Service designation: APCH/P ABOVE 5000 FT
2.18.3 Service designation: 273.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 291.7 MHz

2.18.1 Service designation: APCH/P AT OR BLO 5000 FT.
2.18.3 Service designation: 291.7 MHz

2.18.1 Service designation: 5500 & BLO
2.18.3 Service designation: 123.8 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: 5500 & BLO
2.18.3 Service designation: 291.7 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 119.75 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 269.25 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 133.875 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 128.4 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 323.1 MHz

2.18.1 Service designation: CD/P GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: CEDAR LAKE 8 ARR
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: ILS PRM LCL/P
2.18.3 Service designation: 135.1 MHz

2.18.1 Service designation: ILS PRM MONITOR/P
2.18.3 Service designation: 120.425 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135.925 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 133.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 327.05 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.5 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135.1 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 123.8 MHz

2.18.1 Service designation: APCH/P DEP/P IC
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 126.85 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 127.35 MHz

2.18.1 Service designation: APCH/P AT & BLO 5,000
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 124.35 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 263.125 MHz

2.18.1 Service designation: APCH/P DEP/P IC
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 317.55 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 319.15 MHz

2.18.1 Service designation: RADAR
2.18.3 Service designation: 126.6 MHz

2.18.1 Service designation: APCH/P CLASS B 8,000−6,000
2.18.3 Service designation: 133.875 MHz

2.18.1 Service designation: CLASS B 6,000−8,000
2.18.3 Service designation: 133.875 MHz

2.18.1 Service designation: SPUDS 3 STAR
2.18.3 Service designation: 272.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 272.575 MHz

2.18.1 Service designation: CLASS B
2.18.3 Service designation: 272.575 MHz

2.18.1 Service designation: PHL ONE DP
2.18.3 Service designation: 124.35 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 09L. Magnetic variation: 10W
2.19.2 ILS identification: VII
2.19.5 Coordinates: 39−52−33.39N / 75−13−00.00W
2.19.6 Site elevation: 7.4 ft

2.19.1 ILS type: Localizer for runway 27L. Magnetic variation: 10W
2.19.2 ILS identification: GLC
2.19.5 Coordinates: 39−51−36.27N / 75−16−43.95W
2.19.6 Site elevation: 6.6 ft

2.19.1 ILS type: Localizer for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39−52−11.15N / 75−13−49.18W
2.19.6 Site elevation: 9 ft

2.19.1 ILS type: Localizer for runway 17. Magnetic variation: 10W
2.19.2 ILS identification: MYY
2.19.5 Coordinates: 39−52−00.00N / 75−13−35.55W
2.19.6 Site elevation: 11.7 ft

2.19.1 ILS type: Localizer for runway 27R. Magnetic variation: 10W
2.19.2 ILS identification: PDP
2.19.5 Coordinates: 39−52−00.00N / 75−15−32.93W
2.19.6 Site elevation: 8.8 ft

2.19.1 ILS type: DME for runway 09L. Magnetic variation: 10W
2.19.2 ILS identification: VII
2.19.5 Coordinates: 39−52−35.47N / 75−13−11.51W
2.19.6 Site elevation: 19.4 ft

2.19.1 ILS type: Glide Slope for runway 09L. Magnetic variation: 10W
2.19.2 ILS identification: VII
2.19.5 Coordinates: 39−52−00.00N / 75−15−00.00W
2.19.6 Site elevation: 8.5 ft

2.19.1 ILS type: DME for runway 27R. Magnetic variation: 10W
2.19.2 ILS identification: PDP
2.19.5 Coordinates: 39−52−35.47N / 75−13−11.51W
2.19.6 Site elevation: 19.4 ft

2.19.1 ILS type: DME for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39−52−00.00N / 75−13−47.04W
2.19.6 Site elevation: 6.5 ft

2.19.1 ILS type: DME for runway 27L. Magnetic varia-

tion: 10W
2.19.2 ILS identification: GLC
2.19.5 Coordinates: 39–52–00.00N / 75–13–47.04W
2.19.6 Site elevation: 6.5 ft

2.19.1 ILS type: Outer Marker for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39–50–29.30N / 75–22–57.40W
2.19.6 Site elevation:

2.19.1 ILS type: Glide Slope for runway 27R. Magnetic variation: 10W
2.19.2 ILS identification: PDP
2.19.5 Coordinates: 39–52–24.05N / 75–13–35.82W
2.19.6 Site elevation: 7.1 ft

2.19.1 ILS type: Glide Slope for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39–51–37.82N / 75–16–15.73W
2.19.6 Site elevation: 13.5 ft

2.19.1 ILS type: Glide Slope for runway 17. Magnetic variation: 10W
2.19.2 ILS identification: MYY
2.19.5 Coordinates: 39–53–00.00N / 75–14–00.00W
2.19.6 Site elevation: 5.6 ft

2.19.1 ILS type: Glide Slope for runway 27L. Magnetic variation: 10W
2.19.2 ILS identification: GLC
2.19.5 Coordinates: 39–51–57.28N / 75–14–37.73W
2.19.6 Site elevation: 8.4 ft

2.19.1 ILS type: Outer Marker for runway 09L. Magnetic variation: 10W
2.19.2 ILS identification: VII
2.19.5 Coordinates: 39–50–29.30N / 75–22–57.40W
2.19.6 Site elevation: 47 ft

2.19.1 ILS type: Outer Marker for runway 27R. Magnetic variation: 10W
2.19.2 ILS identification: PDP
2.19.5 Coordinates: 39–54–00.00N / 75–05–41.51W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 17. Magnetic variation: 10W
2.19.2 ILS identification: MYY
2.19.5 Coordinates: 39–58–30.97N / 75–16–44.21W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 09L. Magnetic variation: 10W
2.19.2 ILS identification: VII
2.19.5 Coordinates: 39–52–00.00N / 75–15–55.00W
2.19.6 Site elevation: 9 ft

2.19.1 ILS type: Inner Marker for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39–51–36.74N / 75–16–41.58W
2.19.6 Site elevation: 10 ft

2.19.1 ILS type: Middle Marker for runway 27L. Magnetic variation: 10W
2.19.2 ILS identification: GLC
2.19.5 Coordinates: 39–52–12.91N / 75–13–40.55W
2.19.6 Site elevation: 21 ft

2.19.1 ILS type: Middle Marker for runway 09R. Magnetic variation: 12W
2.19.2 ILS identification: PHL
2.19.5 Coordinates: 39–51–31.82N / 75–17–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 27R. Magnetic variation: 10W
2.19.2 ILS identification: PDP
2.19.5 Coordinates: 39–52–38.00N / 75–12–46.40W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 17. Magnetic variation: 10W
2.19.2 ILS identification: MYY
2.19.5 Coordinates: 39–53–43.20N / 75–14–27.10W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 26. Magnetic variation: 10W
2.19.2 ILS identification: LLH
2.19.5 Coordinates: 39–52–42.22N / 75–13–32.38W
2.19.6 Site elevation: 19.1 ft

2.19.1 ILS type: Glide Slope for runway 26. Magnetic variation: 10W
2.19.2 ILS identification: LLH
2.19.5 Coordinates: 39–52–49.37N / 75–12–58.35W
2.19.6 Site elevation: 21.7 ft

2.19.1 ILS type: Localizer for runway 26. Magnetic vari-

ation: 10W
2.19.2 ILS identification: LLH
2.19.5 Coordinates: 39−52−42.38N / 75−13−31.83W
2.19.6 Site elevation: 5.5 ft

2.19.1 ILS type: DME for runway 17. Magnetic variation: 10W
2.19.2 ILS identification: MYY
2.19.5 Coordinates: 39−52−00.00N / 75−13−39.56W
2.19.6 Site elevation: 10.8 ft

General Remarks:
BIRDS ON & IN THE VICINITY OF AIRPORT.

RUNWAYS 27L, 27R & 35 SHIP CHANNEL (DELAWARE RIVER) MAX HEIGHT OF SHIPS 189 FT. RUNWAY 26 SHIP CHANNEL (SCHUYLKILL) MAX HEIGHT OF SHIPS 149 FT.

AIRPORT IS LOCATED IN A NOISE SENSITIVE AREA. AIRPORT NOISE ABATEMENT TAKEOFF PROCEDURES ARE TO BE USED.

TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM EQUIPPED ACFT−TCAS ALERT MAY BE CAUSED BY TRANSPONDER EQUIPPED SHIPS LOCATED PHL NAVAL BASE 3 NAUTICAL MILE E.

UNLIGHTED STACK 288 FT MSL (271 FT AGL) 2.3 NAUTICAL MILE SW OF AIRPORT.

RUNWAY 09R ROLLOUT RUNWAY VISUAL RANGE USED FOR RUNWAY 09L MIDPOINT RUNWAY VISUAL RANGE.

ALL ENGINE RUNUPS REQUIRE PRIOR PERMISSION REQUIRED FROM DUTY OPERATIONS OFFICER AT 937−6914/6800; RUNUPS 20 MIN MAXIMUM.

ALL AIRCRAFT TRAVELING ON TAXIWAY J MUST USE MINIMUM POWER WHEN TURNING SOUTH DUE TO JETBLAST CONCERNS.

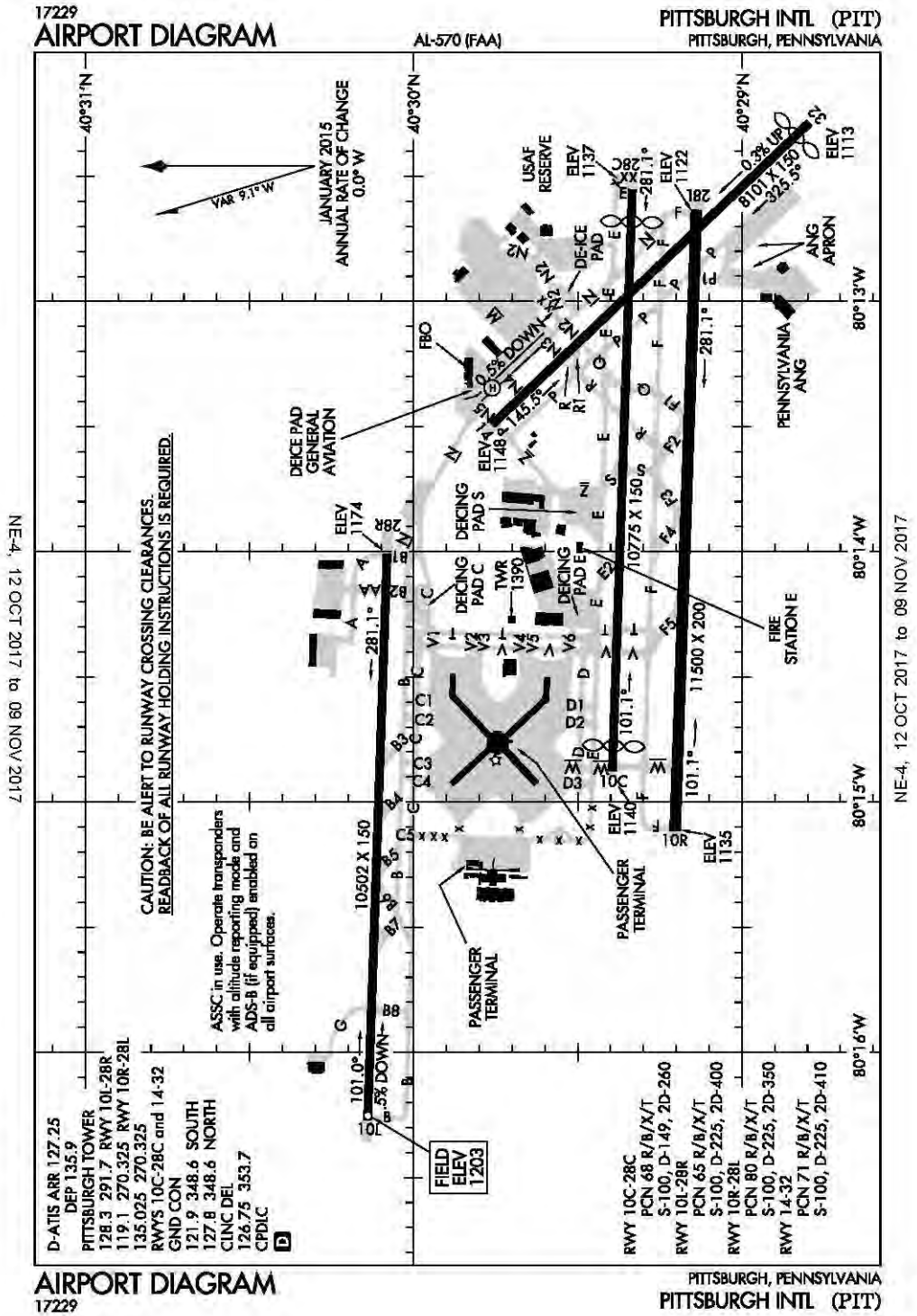
TAXIWAY J BETWEEN TAXIWAYS K3 AND Q RESTRICTED TO AIRCRAFT WITH WINGSPANS 171 FT AND LESS.

ONLY NOSE−IN PARKING PERMITTED ON NORTH REMOTE APRONS. PRIOR PERMISSION REQUIRED FROM AIRPORT OPERATIONS FOR ALL AIRCRAFT PARKING ON NORTH REMOTE APRONS; CONTACT 215−937−6914/6800.

POSSIBLE UNMARKED SHIP OBSTRUCTION TRANSITING EAST OR WESTBOUND ALONG THE DELAWARE RIVER REACHING HEIGHTS OF 189’ − BE ALERT WHEN APPROACHING PHL RUNWAY 35 AND WHENEVER CIRCLING OR VISUALLY APPROACHING ALL OTHER RUNWAYS.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Pittsburgh, Pennsylvania
Pittsburgh International
ICAO Identifier KPIT



Pittsburgh, PA
Pittsburgh Intl
ICAO Identifier KPIT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 40−29−29.10N / 80−13−57.70W
2.2.2 From City: 12 Miles NW Of Pittsburgh, PA
2.2.3 Elevation: 1202.9 ft
2.2.5 Magnetic variation: 8W (1995)
2.2.6 Airport Contact: Christina A. Cassotis
PO BOX 12370, SUITE 4000
Pittsburgh, PA 15231
((412) 472−3509)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10R
2.10.1.b Type of obstacle: Trees (179 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 169 ft from Centerline

2.10.1.a. Runway designation: 28L
2.10.1.b Type of obstacle: Trees (17 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 520 ft from Centerline

2.10.1.a. Runway designation: 10L
2.10.1.b Type of obstacle: Trees (60 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 685 ft from Centerline

2.10.1.a. Runway designation: 28R
2.10.1.b Type of obstacle: Tree (121 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 909 ft from Centerline

2.10.1.a. Runway designation: 14
2.10.1.b Type of obstacle: Pole (24 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 513 ft from Centerline

2.10.1.a. Runway designation: 32
2.10.1.b Type of obstacle: Trees (30 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 526 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10C
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−23.70N / 80−14−52.55W
2.12.6 Threshold elevation: 1140 ft
2.12.6 Touchdown zone elevation: 1141 ft

2.12.1 Designation: 28C
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−20.04N / 80−12−33.18W
2.12.6 Threshold elevation: 1137 ft
2.12.6 Touchdown zone elevation: 1134 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 136
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−29−45.65N / 80−13−29.52W
2.12.6 Threshold elevation: 1148 ft
2.12.6 Touchdown zone elevation: 1148 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 32
2.12.2 True Bearing: 316
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−28−47.69N / 80−12−17.22W
2.12.6 Threshold elevation: 1113 ft
2.12.6 Touchdown zone elevation: 1124 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: 10L
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40−30−00.00N / 80−16−16.27W
2.12.6 Threshold elevation: 1203 ft

2.12.6 Touchdown zone elevation: 1203 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 28R
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40–30–00.00N / 80–14–00.00W
2.12.6 Threshold elevation: 1174 ft
2.12.6 Touchdown zone elevation: 1174 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 92
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40–29–12.22N / 80–15–00.00W
2.12.6 Threshold elevation: 1135 ft
2.12.6 Touchdown zone elevation: 1135 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 272
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40–29–00.00N / 80–12–38.12W
2.12.6 Threshold elevation: 1122 ft
2.12.6 Touchdown zone elevation: 1125 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: H1
2.12.3 Dimensions: 60 ft x 60 ft

AD 2.13 Declared distances
2.13.1 Designation: 10C
2.13.2 Takeoff run available: 10774
2.13.3 Takeoff distance available: 10774
2.13.4 Accelerate–stop distance available: 10172
2.13.5 Landing distance available: 9707

2.13.1 Designation: 28C
2.13.2 Takeoff run available: 10774
2.13.3 Takeoff distance available: 10774
2.13.4 Accelerate–stop distance available: 10309
2.13.5 Landing distance available: 9707

2.13.1 Designation: 14
2.13.2 Takeoff run available: 8101
2.13.3 Takeoff distance available: 8101
2.13.4 Accelerate–stop distance available: 7366
2.13.5 Landing distance available: 7366

2.13.1 Designation: 32
2.13.2 Takeoff run available: 8101
2.13.3 Takeoff distance available: 8101
2.13.4 Accelerate–stop distance available: 7801
2.13.5 Landing distance available: 7466

2.13.1 Designation: 10L
2.13.2 Takeoff run available: 10502
2.13.3 Takeoff distance available: 10502
2.13.4 Accelerate–stop distance available: 10502
2.13.5 Landing distance available: 10502

2.13.1 Designation: 28R
2.13.2 Takeoff run available: 10502
2.13.3 Takeoff distance available: 10502
2.13.4 Accelerate–stop distance available: 10102
2.13.5 Landing distance available: 10102

2.13.1 Designation: 10R
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11492
2.13.5 Landing distance available: 11492

2.13.1 Designation: 28L
2.13.2 Takeoff run available: 11500
2.13.3 Takeoff distance available: 11500
2.13.4 Accelerate–stop distance available: 11500
2.13.5 Landing distance available: 11500

AD 2.14 Approach and runway lighting
2.14.1 Designation: 10C
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 28C
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 14
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 32
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 10L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with se-

quenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left
2.14.10 Remarks: ALSF2/SSALR Is A Dual Mode System & Controlled By ATCt & Remote Monitored.

2.14.1 Designation: 28R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 135.9 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 127.25 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 133.7 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 119.1 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 119.35 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 121.25 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P CLASS B IC
2.18.3 Service designation: 123.95 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 124.15 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 124.75 MHz

2.18.1 Service designation: CD/P PRE TAXI CLNC
2.18.3 Service designation: 126.75 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 127.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135.025 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 270.325 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CP
2.18.3 Service designation: 252.1 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 291.7 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 338.2 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 353.7 MHz

2.18.1 Service designation: OPS
2.18.3 Service designation: 36.35 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 360.8 MHz

2.18.1 Service designation: APCH/P CLASS B
2.18.3 Service designation: 279.625 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 285.575 MHz

2.18.1 Service designation: DEP/S
2.18.3 Service designation: 125.275 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 336.2 MHz

2.18.1 Service designation: ANG–OPS
2.18.3 Service designation: 311 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 32. Magnetic variation: 8W
2.19.2 ILS identification: TQW
2.19.5 Coordinates: 40–29–50.41N / 80–13–35.46W
2.19.6 Site elevation: 1139.1 ft

2.19.1 ILS type: Localizer for runway 10R. Magnetic variation: 8W
2.19.2 ILS identification: GUT
2.19.5 Coordinates: 40–29–00.00N / 80–12–34.12W
2.19.6 Site elevation: 1116.6 ft

2.19.1 ILS type: Localizer for runway 28L. Magnetic variation: 8W
2.19.2 ILS identification: PFS
2.19.5 Coordinates: 40–29–12.64N / 80–15–23.03W
2.19.6 Site elevation: 1141.2 ft

2.19.1 ILS type: Localizer for runway 10L. Magnetic variation: 8W
2.19.2 ILS identification: LXB
2.19.5 Coordinates: 40–30–00.00N / 80–13–47.14W
2.19.6 Site elevation: 1160.8 ft

2.19.1 ILS type: Localizer for runway 28R. Magnetic variation: 8W
2.19.2 ILS identification: HFE
2.19.5 Coordinates: 40–30–00.00N / 80–16–31.33W
2.19.6 Site elevation: 1214.2 ft

2.19.1 ILS type: Glide Slope for runway 32. Magnetic variation: 8W
2.19.2 ILS identification: TQW
2.19.5 Coordinates: 40–28–52.66N / 80–12–29.14W
2.19.6 Site elevation: 1112.2 ft

2.19.1 ILS type: Glide Slope for runway 10R. Magnetic variation: 8W
2.19.2 ILS identification: GUT
2.19.5 Coordinates: 40–29–15.35N / 80–14–53.78W
2.19.6 Site elevation: 1129.2 ft

2.19.1 ILS type: Glide Slope for runway 28R. Magnetic variation: 8W
2.19.2 ILS identification: HFE
2.19.5 Coordinates: 40–30–00.00N / 80–14–14.63W
2.19.6 Site elevation: 1170.6 ft

2.19.1 ILS type: Glide Slope for runway 10L. Magnetic variation: 8W
2.19.2 ILS identification: LXB
2.19.5 Coordinates: 40–30–11.92N / 80–15–59.90W
2.19.6 Site elevation: 1195 ft

2.19.1 ILS type: Glide Slope for runway 28L. Magnetic variation: 8W
2.19.2 ILS identification: PFS
2.19.5 Coordinates: 40–29–00.00N / 80–12–51.27W
2.19.6 Site elevation: 1120.3 ft

2.19.1 ILS type: Outer Marker for runway 28R. Magnetic variation: 8W
2.19.2 ILS identification: HFE
2.19.5 Coordinates: 40–29–58.85N / 80–07–00.00W
2.19.6 Site elevation: 938 ft

2.19.1 ILS type: Outer Marker for runway 10L. Magnetic variation: 8W
2.19.2 ILS identification: LXB
2.19.5 Coordinates: 40–30–17.54N / 80–21–59.03W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 10R. Magnetic variation: 8W
2.19.2 ILS identification: GUT
2.19.5 Coordinates: 40–29–14.90N / 80–22–13.90W
2.19.6 Site elevation: 1081 ft

2.19.1 ILS type: Outer Marker for runway 32. Magnetic variation: 8W
2.19.2 ILS identification: TQW
2.19.5 Coordinates: 40–25–53.20N / 80–08–44.60W
2.19.6 Site elevation: 1180 ft

2.19.1 ILS type: Inner Marker for runway 10L. Magnetic variation: 8W
2.19.2 ILS identification: LXB

2.19.5 Coordinates: 40–30–00.00N / 80–16–27.00W
2.19.6 Site elevation: 1175.5 ft

2.19.1 ILS type: Middle Marker for runway 28L. Magnetic variation: 8W
2.19.2 ILS identification: PFS
2.19.5 Coordinates: 40–29–00.00N / 80–12–00.00W
2.19.6 Site elevation: 1069 ft

2.19.1 ILS type: Outer Marker for runway 28L. Magnetic variation: 8W
2.19.2 ILS identification: PFS
2.19.5 Coordinates: 40–29–00.00N / 80–06–00.00W
2.19.6 Site elevation: 1043 ft

2.19.1 ILS type: Middle Marker for runway 28R. Magnetic variation: 8W
2.19.2 ILS identification: HFE
2.19.5 Coordinates: 40–30–00.00N / 80–13–26.81W
2.19.6 Site elevation: 1164 ft

2.19.1 ILS type: Middle Marker for runway 10L. Magnetic variation: 8W
2.19.2 ILS identification: LXB
2.19.5 Coordinates: 40–30–00.00N / 80–16–48.80W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 32. Magnetic variation: 8W
2.19.2 ILS identification: TQW
2.19.5 Coordinates: 40–28–25.30N / 80–11–49.10W
2.19.6 Site elevation: 1100 ft

2.19.1 ILS type: Middle Marker for runway 10R. Magnetic variation: 8W
2.19.2 ILS identification: GUT
2.19.5 Coordinates: 40–29–13.15N / 80–15–42.43W
2.19.6 Site elevation: 1155 ft

2.19.1 ILS type: Inner Marker for runway 10R. Magnetic variation: 8W
2.19.2 ILS identification: GUT
2.19.5 Coordinates: 40–29–12.54N / 80–15–18.88W
2.19.6 Site elevation: 1144.8 ft

2.19.1 ILS type: DME for runway 32. Magnetic variation: 8W
2.19.2 ILS identification: TQW
2.19.5 Coordinates: 40–29–48.85N / 80–13–37.58W
2.19.6 Site elevation: 1134 ft

General Remarks:
DEER & BIRDS ON & IN THE VICINITY OF AIRPORT.

ALL JETS DEPARTING RUNWAY 28R MUST BE ALIGNED WITHIN RUNWAY PRIOR TO APPLYING TAKE-OFF POWER.

AIRCRAFT USING TAXIWAY 'N' PROHIBITED TO STOP ON OVERPASS AREA DUE TO POSSIBLE EMERGENCY EVACUATION HAZARD.

ANG AIRCRAFT MUST CONTACT TANKER 303.0/FTR OPERATIONS 293.7 BEFORE CROSSING RUNWAY 28L TO OBTAIN CLEARANCE TO ENTER.

TERMINAL TAXILANES E OF CONCOURSES A & B RESTRD TO GROUP 3 AIRCRAFT & SMALLER.

TERMINAL APRON CONTROL FREQS ARE 130.77 FOR NORTH APRON; 131.37 FOR SOUTH APRON.

ATCT IS AUTHORIZED TO HAVE AIRCRAFT LINE–UP & WAIT ON RUNWAYS 28L AT TAXIWAY 'P' DURING HRS OF DARKNESS. THE SPECIFIC RUNWAY SHALL BE USED ONLY FOR DEPARTURES & THE INTERSECTION MUST BE VISIBLE FROM ATCT.

SERVICE–JASU: (ANG) (A/M32A–86) (AM 32–95; (AFRC – 2(A/M32–86 (AM32–95).

SERVICE–FLUID: LPOX L/H NIT.

SERVICE–OIL: O–156.

SERVICE–TRAN ALERT: NO PRIORITY BASIS.

AFRC: CALL PITT COMMAND POST PRIOR TO ENTRY TO S RAMP, MAIN RAMP.

ANG: OPR 1130–2030Z++ MON–FRI EXCEPT HOLIDAY (CLOSED EVERY OTH MON).

ANG: OPR 1130–2030Z++MON–FRI EXCEPT HOLIDAY. CLOSED EVERY OTHER MON. OFFICIAL BUSINESS ONLY. PRIOR PERMISSION REQUIRED 48 HR PRIOR NOTICE REQUIRE. CALL DSN 294–7374/7260, C412–776–7374/7260.

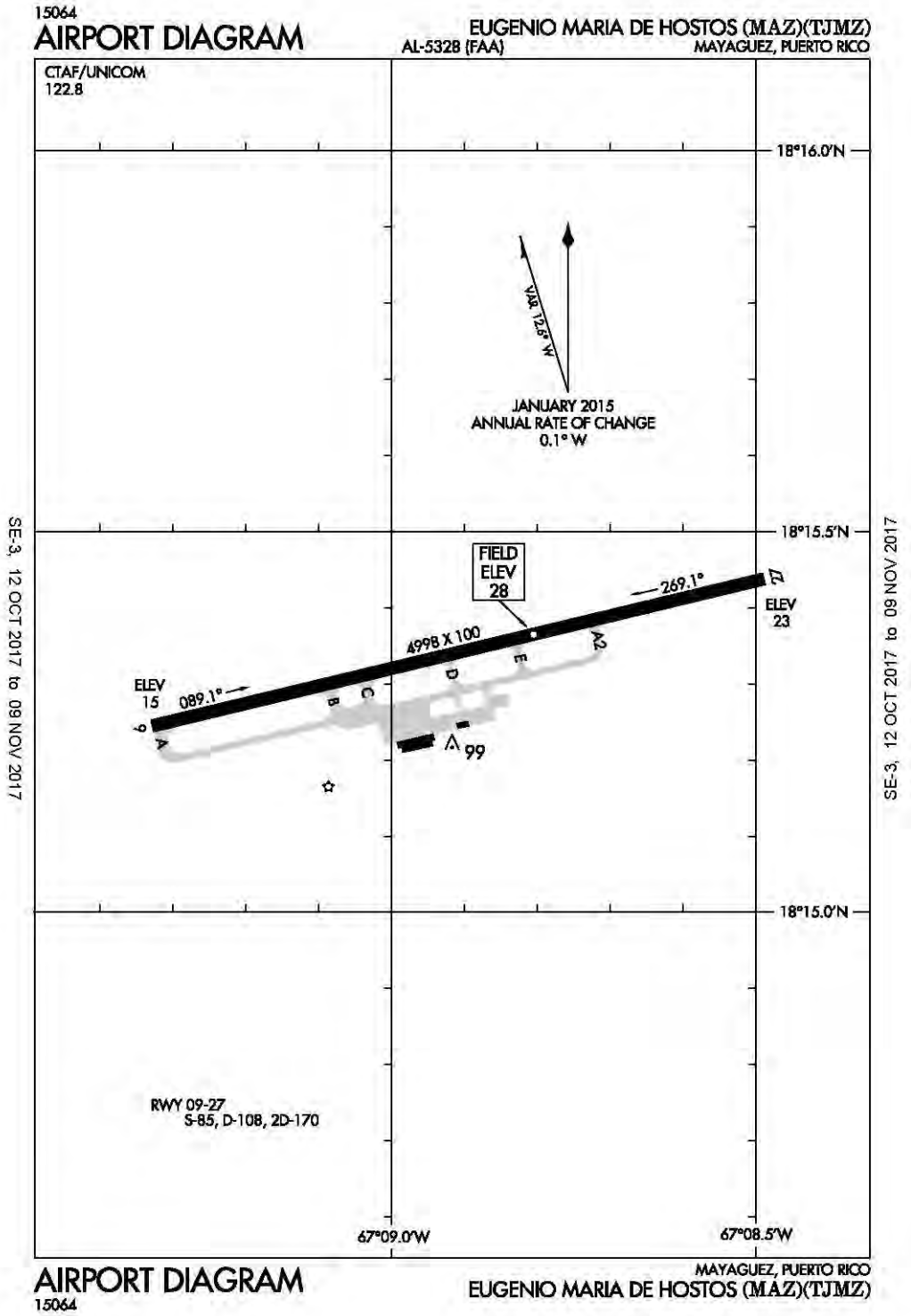
AFRC: MIN 48HR PRIOR NOTICE REQUIRE FOR C5, C141 DUE TO LIMITED PARKING, LIGHT, AND SERVICE. NO TRANSIENT SERVICE. TRANSIENT AIRCRAFT CALL FBO AVIATION CENTER C412–472–6700. NORMAL DUTY HR 1330–0400Z++ EXCEPT HOLIDAY. UNIT TRAINING ASSEMBLY 1300–2100Z++ SAT. AND SUN.

TAXIWAY G INTERSECTION AT RUNWAY 10L/28R RIGHT TURN NOT AUTHORIZED.

FUEL: A++ PROVIDED BY ANG AND AFRC.(MIL).

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Mayaguez, Puerto Rico
Eugenio Maria De Hostos
ICAO Identifier TJMZ



Mayaguez, PR
Eugenio Maria De Hostos
ICAO Identifier TJMZ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18–15–20.50N / 67–08–54.50W
2.2.2 From City: 3 Miles N Of Mayaguez, PR
2.2.3 Elevation: 27.7 ft
2.2.5 Magnetic variation: 10W (1985)
2.2.6 Airport Contact: Edgar Sierra
BOX 710
Mayaguez, PR 709 (787–832–3390)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, MON–FRI Days, 0730–1600 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: None
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: None

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 09
2.10.1.b Type of obstacle: Tree (57 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 80 ft from Centerline

2.10.1.a. Runway designation: 27
2.10.1.b Type of obstacle: Trees (40 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 150 ft from Centerline

General Remarks:
1200’ TOWER /1207’ MSL/ 9 NAUTICAL MILE NNW.

BIRDS ON AND IN THE VICINITY OF AIRPORT.

AD 2.12 Runway physical characteristics

2.12.1 Designation: 09
2.12.2 True Bearing: 76
2.12.3 Dimensions: 4998 ft x 100 ft
2.12.5 Coordinates: 18–15–14.68N / 67–09–19.73W
2.12.6 Threshold elevation: 15 ft
2.12.6 Touchdown zone elevation: 28 ft

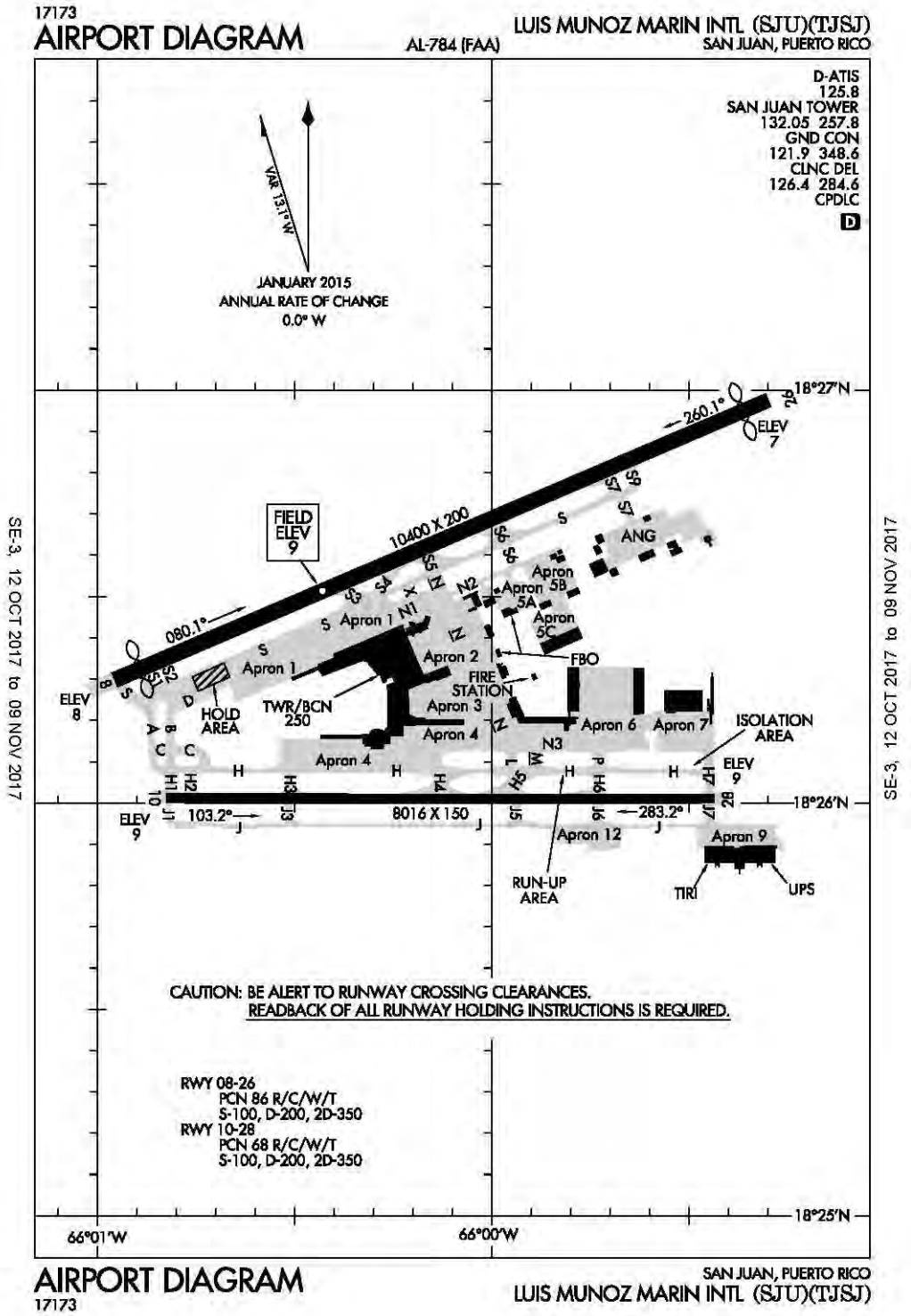
2.12.1 Designation: 27
2.12.2 True Bearing: 256
2.12.3 Dimensions: 4998 ft x 100 ft
2.12.5 Coordinates: 18–15–26.25N / 67–08–29.30W
2.12.6 Threshold elevation: 23 ft
2.12.6 Touchdown zone elevation: 28 ft

AD 2.14 Approach and runway lighting

2.14.1 Designation: 09
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

2.14.1 Designation: 27
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

San Juan, Puerto Rico
Luis Munoz Marin International
ICAO Identifier TJSJ



San Juan, PR
Luis Munoz Marin Intl
ICAO Identifier TJSJ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−26−21.84N / 66−00−00.00W
2.2.2 From City: 3 Miles SE Of San Juan, PR
2.2.3 Elevation: 9.4 ft
2.2.5 Magnetic variation: 11W (1985)
2.2.6 Airport Contact: Mr. Agustin Arellano
P. O. BOX 38085
San Juan, PR 937
((787) 289−7240)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: 100,115,A+,A++
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I D certified on 5/1/2005

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Tree (50 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Trees (24 ft). Not Lighted or Marked

2.10.1.a. Runway designation: 08
2.10.1.b Type of obstacle: Tree (59 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

2.10.1.a. Runway designation: 26
2.10.1.b Type of obstacle: Tree (72 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 800 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 67
2.12.3 Dimensions: 10400 ft x 200 ft
2.12.4 PCN: 86 R/C/W/T
2.12.5 Coordinates: 18−26−17.97N / 66−00−57.32W
2.12.6 Threshold elevation: 8 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 247
2.12.3 Dimensions: 10400 ft x 200 ft
2.12.4 PCN: 86 R/C/W/T
2.12.5 Coordinates: 18−26−58.27N / 65−59−17.89W
2.12.6 Threshold elevation: 7 ft
2.12.6 Touchdown zone elevation: 7 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−00.00N / 66−00−49.42W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 9 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−00.00N / 65−59−26.16W
2.12.6 Threshold elevation: 9 ft
2.12.6 Touchdown zone elevation: 9 ft

AD 2.13 Declared distances

2.13.1 Designation: 08
2.13.2 Takeoff run available: 9784
2.13.3 Takeoff distance available: 10400
2.13.4 Accelerate−stop distance available: 9784
2.13.5 Landing distance available: 9384

2.13.1 Designation: 26
2.13.2 Takeoff run available: 8128
2.13.3 Takeoff distance available: 10400
2.13.4 Accelerate−stop distance available: 9600
2.13.5 Landing distance available: 9600

2.13.1 Designation: 10
2.13.2 Takeoff run available: 8016
2.13.3 Takeoff distance available: 8016
2.13.4 Accelerate−stop distance available: 8016
2.13.5 Landing distance available: 8016

2.13.1 Designation: 28
2.13.2 Takeoff run available: 8016
2.13.3 Takeoff distance available: 8016
2.13.4 Accelerate−stop distance available: 8016
2.13.5 Landing distance available: 8016

AD 2.14 Approach and runway lighting

2.14.1 Designation: 08
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 10
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 125.8 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 119.4 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 120.9 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: CD PRE TAXI CLNC
2.18.3 Service designation: 126.4 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 269.2 MHz

2.18.1 Service designation: CD
2.18.3 Service designation: 284.6 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 290.2 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.05 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: CLA
2.19.5 Coordinates: 18−26−00.00N / 65−59−15.53W
2.19.6 Site elevation: 9 ft

2.19.1 ILS type: Localizer for runway 08. Magnetic variation: 11W

2.19.2 ILS identification: SJU
2.19.5 Coordinates: 18−26−59.78N / 65−59−14.14W
2.19.6 Site elevation: 5.9 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: CLA
2.19.5 Coordinates: 18−25−57.56N / 66−00−39.05W
2.19.6 Site elevation: 4.4 ft

2.19.1 ILS type: Glide Slope for runway 08. Magnetic variation: 11W
2.19.2 ILS identification: SJU
2.19.5 Coordinates: 18−26−27.04N / 66−00−45.58W
2.19.6 Site elevation: 4 ft

2.19.1 ILS type: Outer Marker for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: CLA
2.19.5 Coordinates: 18−26−00.00N / 66−05−00.00W
2.19.6 Site elevation: 6 ft

2.19.1 ILS type: Middle Marker for runway 08. Magnetic variation: 11W
2.19.2 ILS identification: SJU
2.19.5 Coordinates: 18−26−00.00N / 66−01−24.60W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: CLA
2.19.5 Coordinates: 18−26−00.00N / 66−01−15.39W
2.19.6 Site elevation: 1 ft

2.19.1 ILS type: Outer Marker for runway 08. Magnetic variation: 11W
2.19.2 ILS identification: SJU
2.19.5 Coordinates: 18−24−31.82N / 66−05−21.83W
2.19.6 Site elevation: 67.1 ft

2.19.1 ILS type: DME for runway 10. Magnetic variation: 11W
2.19.2 ILS identification: CLA
2.19.5 Coordinates: 18−26−00.00N / 65−59−15.70W
2.19.6 Site elevation: 6.1 ft

General Remarks:
APRON 12 AVAILABLE FOR GA AIRCRAFT ONLY.

ANG: BASE OPERATIONS 1130−2200Z TUE−FRI, CLOSED MON, WEEKEND, AND HOLIDAY.

TAXIWAY J BETWEEN J1 AND J5 (NOT INCLUDING J5) CLOSED TO AIRCRAFT WITH GREATER THAN 118 FT WINGSPAN.

TAXIWAY S BETWEEN TAXIWAY S2 AND TAXIWAY S5 CLOSED LIGHTED AND BARRICADED.

ENGINE RUNUPS PROHIBITED ON GATES AREA.

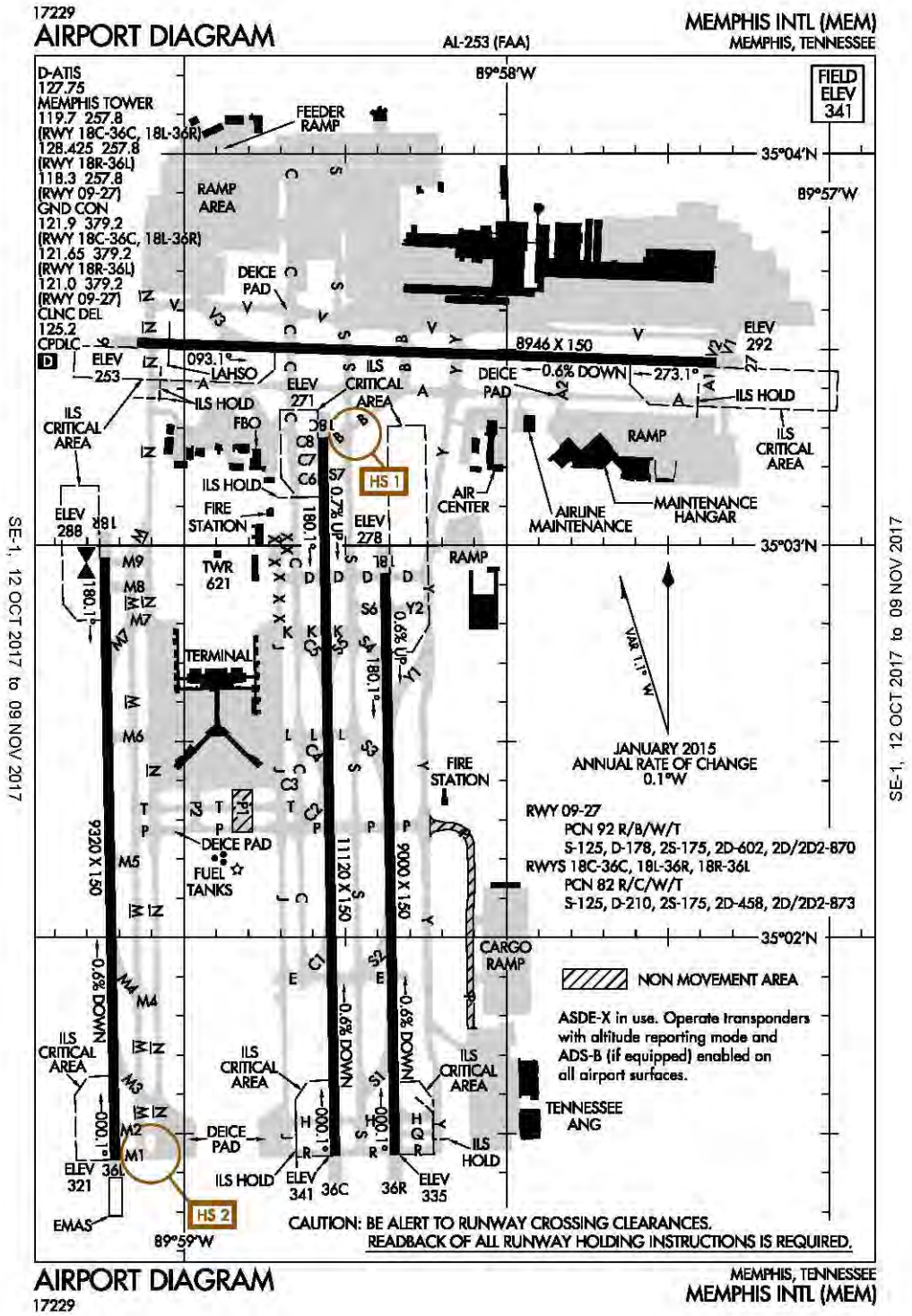
AIRCRAFT 180 TURNS ON TAXIWAYS REQUIRES OPERATIONS COORDINATIONS.

FBO/GROUND HANDLER MUST SUBMIT 72 HRS PRIOR PERMISSION REQUIRED FOR ALL MILITARY AIRCRAFT TO: CCO@AEROSTARAIRPORTS.COM OR BY PHONE TO: 787−253−0979

ALL PRIVATE AND CORPORATE AIRCRAFT MUST CONTACT AIRPORT OPERATIONS, BEFORE ARRIVAL, FOR FBOS & GROUND HANDLING INFORMATION AT 787−253−0979.

TAXIWAY N IS UNDER CONSTRUCTION. PLEASE, CONTACT AIRPORT OPERATIONS AT 787−253−0979 FOR FURTHER DETAILS AND RESTRICTIONS.

Memphis, Tennessee
Memphis International
ICAO Identifier KMEM



Memphis, TN
Memphis Intl
ICAO Identifier KMEM

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 35–02–32.70N / 89–58–36.00W
2.2.2 From City: 3 Miles S Of Memphis, TN
2.2.3 Elevation: 340.9 ft
2.2.5 Magnetic variation: 1W (2020)
2.2.6 Airport Contact: Scott A Brockman
2491 WINCHESTER RD.
Memphis, TN 38116
(901–922–8000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL,A++,A+
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/21/1973
2.6.4 Remarks: Index D ARFF Equipment Available 24 Hours Per Day, 7 Days Per Week.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 36L
2.10.1.b Type of obstacle: Road (24 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 622 ft from Centerline

2.10.1.a. Runway designation: 09
2.10.1.b Type of obstacle: Pole (27 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 611 ft from Centerline

2.10.1.a. Runway designation: 27
2.10.1.b Type of obstacle: Pole (51 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 669 ft from Centerline

2.10.1.a. Runway designation: 36R
2.10.1.b Type of obstacle: Trees (71 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 686 ft from Centerline

2.10.1.a. Runway designation: 18C
2.10.1.b Type of obstacle: Pole (64 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 802 ft from Centerline

2.10.1.a. Runway designation: 36C
2.10.1.b Type of obstacle: Tree (35 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 753 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35–02–58.16N / 89–59–14.79W
2.12.6 Threshold elevation: 288 ft
2.12.6 Touchdown zone elevation: 295 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35–01–25.98N / 89–59–12.81W
2.12.6 Threshold elevation: 321 ft
2.12.6 Touchdown zone elevation: 321 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35–02–55.74N / 89–58–22.63W
2.12.6 Threshold elevation: 278 ft
2.12.6 Touchdown zone elevation: 301 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35–01–26.74N / 89–58–20.75W
2.12.6 Threshold elevation: 335 ft
2.12.6 Touchdown zone elevation: 335 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 179
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35–03–16.54N / 89–58–34.21W
2.12.6 Threshold elevation: 271 ft

2.12.6 Touchdown zone elevation: 290 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 359
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−01−26.58N / 89−58−31.90W
2.12.6 Threshold elevation: 341 ft
2.12.6 Touchdown zone elevation: 341 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 92
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−03−31.04N / 89−59−00.00W
2.12.6 Threshold elevation: 253 ft
2.12.6 Touchdown zone elevation: 259 ft
2.12.7 Slope: 0.1UP

2.12.1 Designation: 27
2.12.2 True Bearing: 272
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−03−28.01N / 89−57−21.08W
2.12.6 Threshold elevation: 292 ft
2.12.6 Touchdown zone elevation: 292 ft
2.12.7 Slope: 0.6DOWN

AD 2.13 Declared distances
2.13.1 Designation: 18R
2.13.2 Takeoff run available: 9320
2.13.3 Takeoff distance available: 9320
2.13.4 Accelerate−stop distance available: 9320
2.13.5 Landing distance available: 9320

2.13.1 Designation: 36L
2.13.2 Takeoff run available: 9320
2.13.3 Takeoff distance available: 9320
2.13.4 Accelerate−stop distance available: 9320
2.13.5 Landing distance available: 9320

2.13.1 Designation: 18L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 36R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 18C
2.13.2 Takeoff run available: 11120
2.13.3 Takeoff distance available: 11120
2.13.4 Accelerate−stop distance available: 11120
2.13.5 Landing distance available: 11120

2.13.1 Designation: 36C
2.13.2 Takeoff run available: 11120
2.13.3 Takeoff distance available: 11120
2.13.4 Accelerate−stop distance available: 10715
2.13.5 Landing distance available: 10715

2.13.1 Designation: 09
2.13.2 Takeoff run available: 8946
2.13.3 Takeoff distance available: 8946
2.13.4 Accelerate−stop distance available: 8946
2.13.5 Landing distance available: 8946

2.13.1 Designation: 27
2.13.2 Takeoff run available: 8946
2.13.3 Takeoff distance available: 8946
2.13.4 Accelerate−stop distance available: 8946
2.13.5 Landing distance available: 8946

AD 2.14 Approach and runway lighting
2.14.1 Designation: 18R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 36L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 18L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 36R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light

PAPI on right
2.14.10 Remarks: ALSF2 Unmonitored.

2.14.1 Designation: 18C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 36C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 27
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 125.2 MHz

2.18.1 Service designation: ANG CP
2.18.3 Service designation: 138.1 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.7 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 128.425 MHz

2.18.1 Service designation: ANG CP
2.18.3 Service designation: 353.45 MHz

2.18.1 Service designation: SATELLITE
2.18.3 Service designation: 134.2 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 127.75 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 379.2 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 18R. Magnetic variation: 1E
2.19.2 ILS identification: OOI
2.19.5 Coordinates: 35–01–17.37N / 89–59–12.63W
2.19.6 Site elevation: 320 ft

2.19.1 ILS type: Localizer for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 35–03–00.00N / 89–59–15.01W
2.19.6 Site elevation: 275.9 ft

2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 1E
2.19.2 ILS identification: MEM
2.19.5 Coordinates: 35–03–27.64N / 89–57–00.00W
2.19.6 Site elevation: 297 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 1E
2.19.2 ILS identification: JIM
2.19.5 Coordinates: 35–03–31.39N / 89–59–20.99W
2.19.6 Site elevation: 251.1 ft

2.19.1 ILS type: Localizer for runway 18L. Magnetic variation: 1E
2.19.2 ILS identification: EXS
2.19.5 Coordinates: 35–01–16.71N / 89–58–20.53W
2.19.6 Site elevation: 315.1 ft

2.19.1 ILS type: Localizer for runway 36R. Magnetic variation: 1W
2.19.2 ILS identification: MYO
2.19.5 Coordinates: 35−03−00.00N / 89−58−22.84W
2.19.6 Site elevation: 278.9 ft

2.19.1 ILS type: Localizer for runway 18C. Magnetic variation: 1E
2.19.2 ILS identification: SDU
2.19.5 Coordinates: 35−01−10.23N / 89−58−31.56W
2.19.6 Site elevation: 346 ft

2.19.1 ILS type: Localizer for runway 36C. Magnetic variation: 1W
2.19.2 ILS identification: TSE
2.19.5 Coordinates: 35−03−22.50N / 89−58−34.34W
2.19.6 Site elevation: 261 ft

2.19.1 ILS type: DME for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 35−03−00.00N / 89−59−17.33W
2.19.6 Site elevation: 275.9 ft

2.19.1 ILS type: DME for runway 18L. Magnetic variation: 1E
2.19.2 ILS identification: EXS
2.19.5 Coordinates: 35−01−16.86N / 89−58−19.30W
2.19.6 Site elevation: 382.3 ft

2.19.1 ILS type: Glide Slope for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 35−01−38.77N / 89−59−17.90W
2.19.6 Site elevation: 307.2 ft

2.19.1 ILS type: DME for runway 36R. Magnetic variation: 1W
2.19.2 ILS identification: MYO
2.19.5 Coordinates: 35−03−00.00N / 89−58−19.67W
2.19.6 Site elevation: 281.1 ft

2.19.1 ILS type: Glide Slope for runway 36C. Magnetic variation: 1W
2.19.2 ILS identification: TSE
2.19.5 Coordinates: 35−01−38.08N / 89−58−36.94W
2.19.6 Site elevation: 330 ft

2.19.1 ILS type: Glide Slope for runway 36R. Magnetic variation: 1W
2.19.2 ILS identification: MYO
2.19.5 Coordinates: 35−01−37.99N / 89−58−16.18W
2.19.6 Site elevation: 324.4 ft

2.19.1 ILS type: Glide Slope for runway 18C. Magnetic variation: 1E
2.19.2 ILS identification: SDU
2.19.5 Coordinates: 35−03−00.00N / 89−58−37.51W
2.19.6 Site elevation: 273 ft

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 1E
2.19.2 ILS identification: MEM
2.19.5 Coordinates: 35−03−27.21N / 89−58−56.22W
2.19.6 Site elevation: 253 ft

2.19.1 ILS type: Glide Slope for runway 18L. Magnetic variation: 1E
2.19.2 ILS identification: EXS
2.19.5 Coordinates: 35−02−46.77N / 89−58−17.63W
2.19.6 Site elevation: 278.6 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 1E
2.19.2 ILS identification: JIM
2.19.5 Coordinates: 35−03−24.48N / 89−57−36.25W
2.19.6 Site elevation: 277.3 ft

2.19.1 ILS type: Glide Slope for runway 18R. Magnetic variation: 1E
2.19.2 ILS identification: OOI
2.19.5 Coordinates: 35−02−48.70N / 89−59−18.49W
2.19.6 Site elevation: 285 ft

2.19.1 ILS type: Outer Marker for runway 27. Magnetic variation: 1E
2.19.2 ILS identification: JIM
2.19.5 Coordinates: 35−03−21.52N / 89−51−53.89W
2.19.6 Site elevation: 326 ft

2.19.1 ILS type: Outer Marker for runway 09. Magnetic variation: 1E
2.19.2 ILS identification: MEM
2.19.5 Coordinates: 35−03−42.16N / 90−04−17.75W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 36R. Magnetic variation: 1W
2.19.2 ILS identification: MYO
2.19.5 Coordinates: 35−01−18.39N / 89−58−20.58W
2.19.6 Site elevation: 324 ft

2.19.1 ILS type: Inner Marker for runway 36C. Magnetic variation: 1W
2.19.2 ILS identification: TSE
2.19.5 Coordinates: 35–01–17.65N / 89–58–31.71W
2.19.6 Site elevation: 318 ft

2.19.1 ILS type: Inner Marker for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 35–01–17.41N / 89–59–12.63W
2.19.6 Site elevation: 325 ft

2.19.1 ILS type: Middle Marker for runway 18R. Magnetic variation: 1E
2.19.2 ILS identification: OOI
2.19.5 Coordinates: 35–03–24.11N / 89–59–15.34W
2.19.6 Site elevation: 251 ft

2.19.1 ILS type: Middle Marker for runway 36R. Magnetic variation: 1W
2.19.2 ILS identification: MYO
2.19.5 Coordinates: 35–01–00.00N / 89–58–20.21W
2.19.6 Site elevation: 305 ft

2.19.1 ILS type: Outer Marker for runway 18C. Magnetic variation: 1E
2.19.2 ILS identification: SDU
2.19.5 Coordinates: 35–07–45.23N / 89–58–37.90W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 18C. Magnetic variation: 1E
2.19.2 ILS identification: SDU
2.19.5 Coordinates: 35–03–51.13N / 89–58–34.92W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 18R. Magnetic variation: 1E
2.19.2 ILS identification: OOI
2.19.5 Coordinates: 35–07–44.20N / 89–59–23.09W
2.19.6 Site elevation: 306 ft

2.19.1 ILS type: Outer Marker for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 34–57–13.77N / 89–59–00.00W
2.19.6 Site elevation: 320 ft

2.19.1 ILS type: Middle Marker for runway 36L. Magnetic variation: 1W
2.19.2 ILS identification: OHN
2.19.5 Coordinates: 35–00–55.71N / 89–59–12.14W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 36C. Magnetic variation: 1W
2.19.2 ILS identification: TSE
2.19.5 Coordinates: 35–01–00.00N / 89–58–31.42W
2.19.6 Site elevation: 326 ft

2.19.1 ILS type: DME for runway 36C. Magnetic variation: 1W
2.19.2 ILS identification: TSE
2.19.5 Coordinates: 35–03–22.23N / 89–58–37.26W
2.19.6 Site elevation: 253 ft

2.19.1 ILS type: Middle Marker for runway 27. Magnetic variation: 1E
2.19.2 ILS identification: JIM
2.19.5 Coordinates: 35–03–27.13N / 89–56–49.73W
2.19.6 Site elevation: 304 ft

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 1E
2.19.2 ILS identification: MEM
2.19.5 Coordinates: 35–03–32.06N / 89–59–45.42W
2.19.6 Site elevation:

General Remarks:
ALL TRANSIENT AIRCRAFT REQUIRE –FOLLOW ME– ASSIST ENTERING ANG RAMP. USE OF ANG RAMP REQUIRES PRIOR PERMISSION REQUIRED V966–8131 –FOR OFFICIAL BUSINESS ONLY–.

HELICOPTER OPERATIONS PROHIBITED TO/FROM TERMINAL BUILDING.

LARGE FLOCKS OF BIRDS IN THE VICINITY OF AIRPORT.

TAXIWAY N NORTH OF TAXIWAY V, TAXIWAY C NORTH OF TAXIWAY V AND TAXIWAY S NORTH OF TAXIWAY V DESIGNATED AS NON–MOVEMENT AREAS.

LARGE & HEAVY EASTBOUND AIRCRAFT ON TAXIWAY V FOR RUNWAY 27 HOLD SHORT AT MINIMUM

THRUST AREA SIGN.

PRIOR PERMISSION REQUIRED FOR TAXI CLEARANCE ON TAXIWAY ’N’ NORTH OF TAXIWAY ’V’, TAXIWAY ’S’ NORTH TAXIWAY ’V’, AND TAXIWAY ’C’ NORTH OF TAXIWAY ’V’ CONTACT FEDEX RAMP ATCT ON FREQ 131.5.

IF POSSIBLE ALL AIRCRAFT CONDUCT GROUND OPERATIONS WITH TRANSPONDERS ON.

TAXIWAY V BETWEEN SPOT 7W AND APPROACH END RUNWAY 27 RESTRICTED TO AIRCRAFT WITH WINGSPANS OF 171 FT 6 INCHES OR LESS.

TAXIWAY V BETWEEN TAXIWAY S TAXIWAY Y RESTRICTED TO AIRCRAFT WITH TAIL HEIGHTS LESS THAN 65 FT 10 INCHES.

ANG–PRIOR PERMISSION REQUIRED DSN 726–7131/7505, C901–291–7131/7505. OPER 1245–2215Z MON – FRI AND CLOSED ALTITUDE MON & HOLIDAY DUE TO ALTERNATE WORK SCHEDULE. TRANSIENT AIRCRAFT MAINT NOT AVAILABLE. REFUEL SERVICE FOR OTHER THAN C17 AIRCRAFT REQUIRE QUALIFIED CREW CHIEF OR CREWMEMBERS. NON–C17 AIRCRAFT SUPPORT PROVIDED BY CONTRACT FBO ON FIELD. SECURITY AVAILABLE 24 HRS, DSN 726–7101, C901–291–7101. COMMAND POST DSN 726–7148/7311/7312, C901–291–7148/7311/7312. OPR 1230–0430Z++ MON–FRI, CLOSED ALTERNATE MON AND HOLIDAY DUE TO ALTERNATE WORK SCHEDULE. AIRFIELD MANAGER DOES NOT ISSUE OR STORE COMSEC FOR TRANSIENT CRES. TEMPORARY STOR OF CLASSIFIED MATERIALS UP TO TOP SECRET AT COMMAND POST.

CONTACT RAMP CONTROL ON 121.8 FOR ENTRY ON TO ANG RAMP. ANG FREQS 138.95 353.45. AFTER HRS CONTACT COMMAND POST AT DSN 726–7148, C901–291–7311/7312 OR SECURITY FORCES AT DSN 726–7101, C901–291–7101/7133.

READ BACK ALL HOLD SHORT INSTRUCTIONS REQURED.

AIRCRAFT WITH WINGSPANS GREATER THAN 171 FT 6” RESTRICTED FROM TAXI ON TAXIWAY ’N’ BETWEEN TAXIWAY ’M7’ & TAXIWAY ’T’. NOR ON TAXIWAY ’J’ NORTH OF TAXIWAY ’C3’.

BASH PHASE II MAR–APR AND OCT–NOV; CURRENT BIRD WATCH CONDITION ARE NOT RPT ON AUTOMATIC TERMINAL INFORMATION SERVICE.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRIOR PERMISSION REQUIRED FOR TAXI CLEARANCE FROM CARGO RAMP PARKING ON FREQUENCY 121.9.

COMMUNICATIONS–ANG COMMAND POST: RADIO CALL– ”GRACELAND OPS”.

TAXIWAY P1 IS DESIGNATED AS A NON–MOVEMENT AREA.

NOISE ABATEMENT PROCEDURES IN EFFECT. SUCCESSIVE AND/OR SIMULTANEOUS DEPARTURES APPROVED ON RUNWAY 36L–18R AND RUNWAY 36C–18C OR RUNWAY 36L–18R AND RUNWAY 36R–18L WITH COURSE DIVERGENCE NO LATER THAN 2.27 NAUTICAL MILE FROM RUNWAY END.

ANG: PRIOR PERMISSION REQUIRED 24 HR PRIOR NOTICE REQUIRE, LIMITED TO OFFICIAL BUSINESS ONLY.

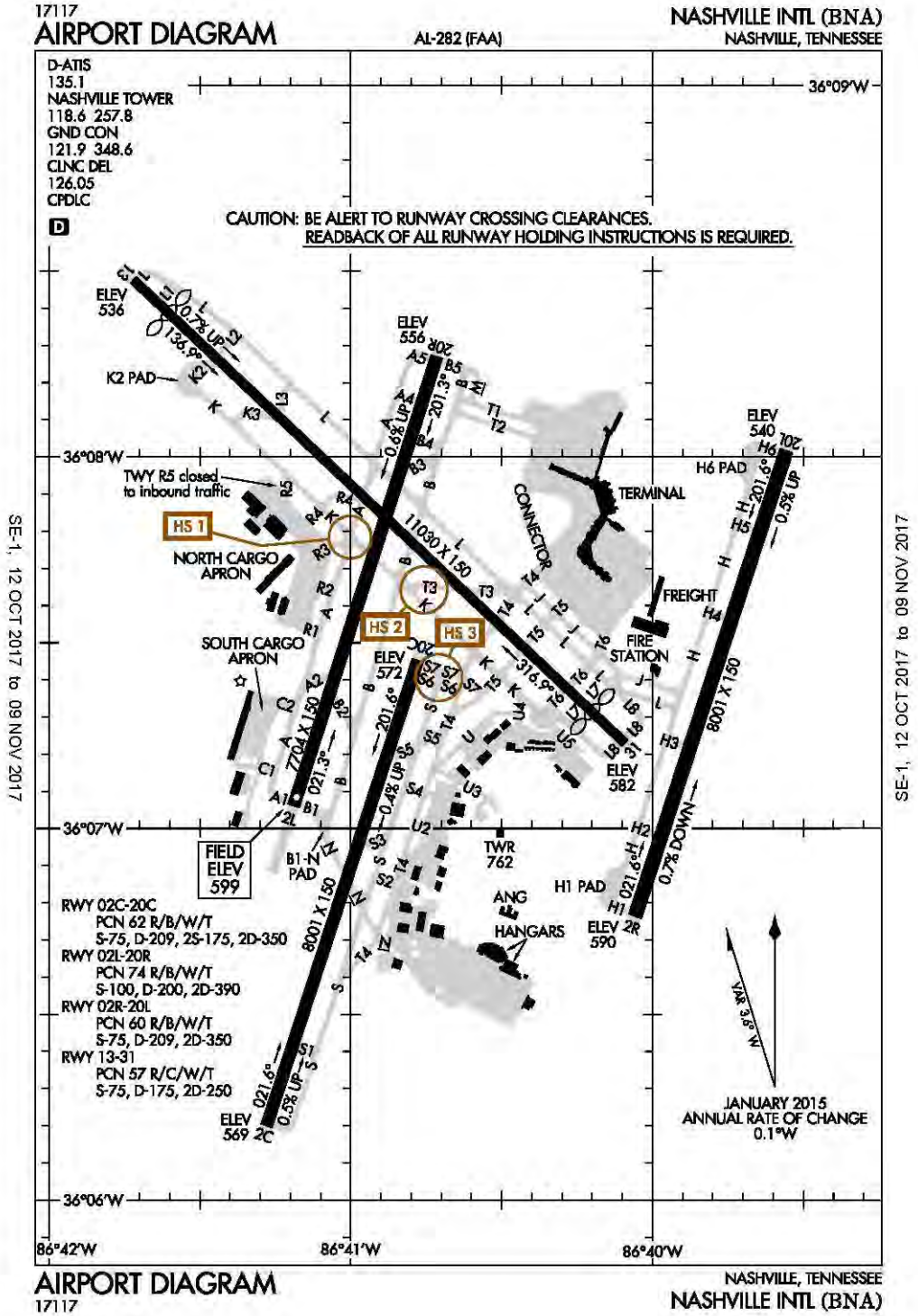
AIRCRAFT WITH WINGSPANS GREATER THAN 118 FEET RESTRICTED FROM TAXIING ON TAXIWAY J NORTH OF TAXIWAY C3.

ANG–ATIS INFORMATION REPORTS BIRD ACT CONTINUOUS 24-HOUR SERVICE IN AREA

CAUTION–RAMP LIGHTING – ”ALL BALLPARK” LIGHTS ARE INOPERABLE UNTIL FURTHER NOTICE; LIMITED VISIBILITY IN HOURS OF DARKNESS. TEMPORARY LIGHTING IS IN PLACE.

A 110–45 AIRCRAFT WITH WINGSPANS GREATER THAN 118 FEET RESTRICTED FROM TAXIING ON TAXIWAY J NORTH OF TAXIWAY C3.

Nashville, Tennessee
Nashville International
ICAO Identifier KBNA



Nashville, TN
Nashville Intl
ICAO Identifier KBNA

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 36–07–28.10N / 86–40–41.40W
2.2.2 From City: 5 Miles SE Of Nashville, TN
2.2.3 Elevation: 599 ft
2.2.5 Magnetic variation: 3W (2010)
2.2.6 Airport Contact: Rob Wigington
ONE TERMINAL DR. SUITE 501
Nashville, TN 37214 (615–275–1703)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 13
2.10.1.b Type of obstacle: Trees. Not Lighted or Marked
2.10.1.a. Runway designation: 31
2.10.1.b Type of obstacle: Tree. Not Lighted or Marked

AD 2.12 Runway physical characteristics

2.12.1 Designation: 13
2.12.2 True Bearing: 133
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 57 R/C/W/T
2.12.5 Coordinates: 36–08–28.60N / 86–41–43.28W
2.12.6 Threshold elevation: 536 ft
2.12.6 Touchdown zone elevation: 566 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 313
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 57 R/C/W/T
2.12.5 Coordinates: 36–07–13.78N / 86–40–00.00W
2.12.6 Threshold elevation: 582 ft
2.12.6 Touchdown zone elevation: 578 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 18
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 36–07–00.00N / 86–41–11.31W
2.12.6 Threshold elevation: 599 ft
2.12.6 Touchdown zone elevation: 599 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 198
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 36–08–16.23N / 86–40–42.84W
2.12.6 Threshold elevation: 556 ft
2.12.6 Touchdown zone elevation: 578 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 60 R/B/W/T
2.12.5 Coordinates: 36–06–45.77N / 86–40–00.00W
2.12.6 Threshold elevation: 590 ft
2.12.6 Touchdown zone elevation: 590 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 60 R/B/W/T
2.12.5 Coordinates: 36–08–00.00N / 86–39–33.40W
2.12.6 Threshold elevation: 540 ft
2.12.6 Touchdown zone elevation: 550 ft

2.12.1 Designation: 02C
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 62 R/B/W/T
2.12.5 Coordinates: 36–06–11.99N / 86–41–16.66W
2.12.6 Threshold elevation: 569 ft
2.12.6 Touchdown zone elevation: 587 ft

2.12.1 Designation: 20C
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 62 R/B/W/T
2.12.5 Coordinates: 36–07–27.24N / 86–40–46.55W
2.12.6 Threshold elevation: 572 ft
2.12.6 Touchdown zone elevation: 588 ft

AD 2.13 Declared distances

2.13.1 Designation: 13
2.13.2 Takeoff run available: 10288

2.13.3 Takeoff distance available: 11029
2.13.4 Accelerate−stop distance available: 10288
2.13.5 Landing distance available: 9487

2.13.1 Designation: 31
2.13.2 Takeoff run available: 10228
2.13.3 Takeoff distance available: 11029
2.13.4 Accelerate−stop distance available: 10228
2.13.5 Landing distance available: 9487

2.13.1 Designation: 02L
2.13.2 Takeoff run available: 7702
2.13.3 Takeoff distance available: 7702
2.13.4 Accelerate−stop distance available: 7702
2.13.5 Landing distance available: 7702

2.13.1 Designation: 20R
2.13.2 Takeoff run available: 7702
2.13.3 Takeoff distance available: 7702
2.13.4 Accelerate−stop distance available: 7702
2.13.5 Landing distance available: 7702

2.13.1 Designation: 02R
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 20L
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 02C
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

2.13.1 Designation: 20C
2.13.2 Takeoff run available: 8000
2.13.3 Takeoff distance available: 8000
2.13.4 Accelerate−stop distance available: 8000
2.13.5 Landing distance available: 8000

AD 2.14 Approach and runway lighting
2.14.1 Designation: 13
2.14.4 Visual approach slope indicator system: 6−box VASI on left

2.14.1 Designation: 02L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 20R
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 02R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 20L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 02C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 20C
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 360.7 MHz

2.18.1 Service designation: APCH/P
2.18.3 Service designation: 372 MHz

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 372 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 118.4 MHz

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 119.35 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 118.4 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 360.7 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135.1 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.6 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 126.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: ALCP
2.18.3 Service designation: 314.4 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 02C. Magnetic variation: 3W
2.19.2 ILS identification: EZN
2.19.5 Coordinates: 36–07–31.97N / 86–40–44.66W
2.19.6 Site elevation: 574 ft

2.19.1 ILS type: Localizer for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36–08–25.77N / 86–40–39.09W
2.19.6 Site elevation: 545.3 ft

2.19.1 ILS type: Localizer for runway 20L. Magnetic variation: 3W
2.19.2 ILS identification: SSX
2.19.5 Coordinates: 36–06–30.03N / 86–40–00.00W
2.19.6 Site elevation: 613.3 ft

2.19.1 ILS type: Localizer for runway 31. Magnetic variation: 3W
2.19.2 ILS identification: PNO
2.19.5 Coordinates: 36–08–30.65N / 86–41–45.97W
2.19.6 Site elevation: 540 ft

2.19.1 ILS type: Localizer for runway 02R. Magnetic variation: 3W
2.19.2 ILS identification: UQU
2.19.5 Coordinates: 36–08–10.54N / 86–39–29.58W
2.19.6 Site elevation: 531 ft

2.19.1 ILS type: Localizer for runway 20R. Magnetic variation: 3W
2.19.2 ILS identification: VIY
2.19.5 Coordinates: 36–06–49.68N / 86–41–16.79W
2.19.6 Site elevation: 587.1 ft

2.19.1 ILS type: DME for runway 02R. Magnetic variation: 3W
2.19.2 ILS identification: UQU
2.19.5 Coordinates: 36–08–00.00N / 86–39–35.78W
2.19.6 Site elevation: 536.9 ft

2.19.1 ILS type: DME for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36–08–26.84N / 86–40–42.36W
2.19.6 Site elevation: 554.3 ft

2.19.1 ILS type: DME for runway 20L. Magnetic variation: 3W
2.19.2 ILS identification: SSX
2.19.5 Coordinates: 36–06–30.96N / 86–40–12.89W
2.19.6 Site elevation: 621.2 ft

2.19.1 ILS type: Outer Marker for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36–01–51.60N / 86–43–18.44W
2.19.6 Site elevation: 985 ft

2.19.1 ILS type: Glide Slope for runway 20R. Magnetic variation: 3W
2.19.2 ILS identification: VIY
2.19.5 Coordinates: 36–08–00.00N / 86–40–42.76W
2.19.6 Site elevation: 554.8 ft

2.19.1 ILS type: Glide Slope for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36–07–12.95N / 86–41–00.00W
2.19.6 Site elevation: 590 ft

2.19.1 ILS type: Glide Slope for runway 20L. Magnetic

variation: 3W
2.19.2 ILS identification: SSX
2.19.5 Coordinates: 36−07−50.03N / 86−39−33.11W
2.19.6 Site elevation: 534.3 ft

2.19.1 ILS type: Glide Slope for runway 02C. Magnetic variation: 3W
2.19.2 ILS identification: EZN
2.19.5 Coordinates: 36−06−22.64N / 86−41−16.89W
2.19.6 Site elevation: 570.5 ft

2.19.1 ILS type: Glide Slope for runway 31. Magnetic variation: 3W
2.19.2 ILS identification: PNO
2.19.5 Coordinates: 36−07−28.27N / 86−40−18.60W
2.19.6 Site elevation: 566 ft

2.19.1 ILS type: Glide Slope for runway 02R. Magnetic variation: 3W
2.19.2 ILS identification: UQU
2.19.5 Coordinates: 36−06−56.01N / 86−39−54.79W
2.19.6 Site elevation: 576.7 ft

2.19.1 ILS type: Outer Marker for runway 20R. Magnetic variation: 3W
2.19.2 ILS identification: VIY
2.19.5 Coordinates: 36−12−13.70N / 86−39−00.00W
2.19.6 Site elevation: 433 ft

2.19.1 ILS type: Outer Marker for runway 31. Magnetic variation: 3W
2.19.2 ILS identification: PNO
2.19.5 Coordinates: 36−03−16.09N / 86−34−51.59W
2.19.6 Site elevation: 520 ft

2.19.1 ILS type: Inner Marker for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36−06−54.83N / 86−41−14.77W
2.19.6 Site elevation: 594.6 ft

2.19.1 ILS type: Inner Marker for runway 02R. Magnetic variation: 3W
2.19.2 ILS identification: UQU
2.19.5 Coordinates: 36−06−37.69N / 86−40−00.00W
2.19.6 Site elevation: 569 ft

2.19.1 ILS type: Middle Marker for runway 20L. Magnetic variation: 3W
2.19.2 ILS identification: SSX
2.19.5 Coordinates: 36−08−25.51N / 86−39−23.69W
2.19.6 Site elevation: 610 ft

2.19.1 ILS type: Middle Marker for runway 02L. Magnetic variation: 3W
2.19.2 ILS identification: BNA
2.19.5 Coordinates: 36−06−35.04N / 86−41−22.51W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 02R. Magnetic variation: 3W
2.19.2 ILS identification: UQU
2.19.5 Coordinates: 36−06−19.86N / 86−40−13.85W
2.19.6 Site elevation: 607 ft

2.19.1 ILS type: Middle Marker for runway 31. Magnetic variation: 3W
2.19.2 ILS identification: PNO
2.19.5 Coordinates: 36−06−57.26N / 86−39−44.59W
2.19.6 Site elevation: 547 ft

General Remarks:
READ BACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE.

PILOTS COMPLY WITH ALL HOLD SHORT INSTRUCTIONS PARTICULARLY AT TAXIWAY K & RUNWAY 20C APPROACH; TAXIWAY L8 & RUNWAY 31 APPROACH; TAXIWAY L AT RUNWAY 13 APPROACH; AND TAXIWAY H AT RUNWAY 31 APPROACH.

ALL TURBOJET RUNWAYS HAVE NOISE ABATEMENT PROCEDURES. MILITARY FIGHTER/ATTACK/TRAINER TURBOJETS USE RUNWAY 13/31 FOR ARRIVAL & DEPARTURE.

LIGHTED JET BLAST FENCE 598 MSL 1100 FT SE OF RUNWAY 31 THRESHOLD.

LIGHTED JET BLAST FENCE 568 FT MSL 1167 FT NW RUNWAY 13 THRESHOLD.

NO UNAUTHORIZED 180 DEGREE TURNS FOR AIRCRAFT OVER 12500 LBS ON ASPHALT SURFACES.

NO FLIGHT OVER MAIN TERMINAL BUILDING IS PERMITTED.

BIRD ACTIVITY ON & IN THE VICINITY OF AIRPORT.

DO NOT CONFUSE 150 FT WIDE TAXIWAY S FOR RUNWAY 20C.

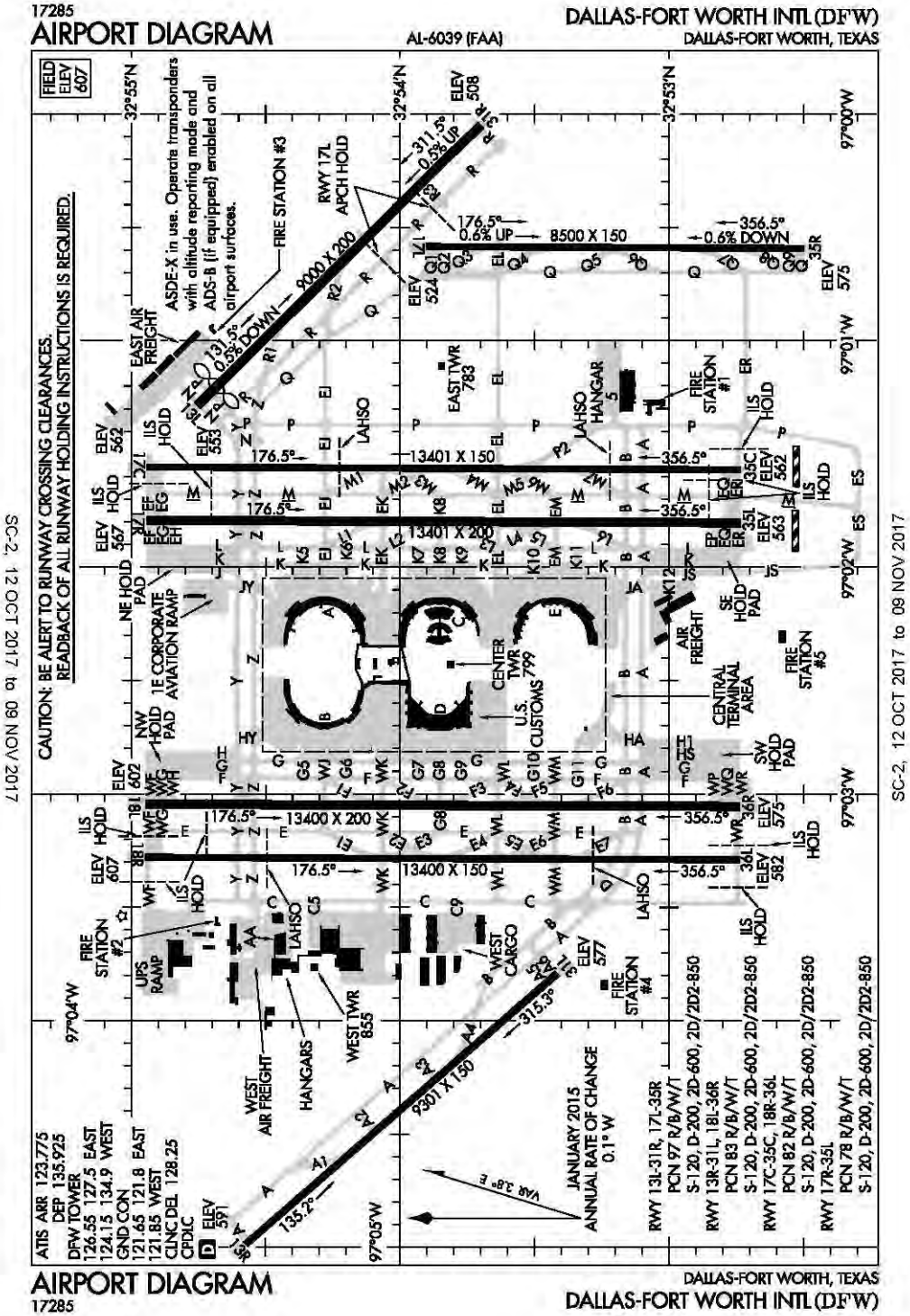
'C' CONCOURSE TAXILANES ARE; INNER TAXILANE FOR OUTBOUND TRAFFIC & OUTER TAXILANE FOR INBOUND TRAFFIC.

ANG: CALL SIGN MUSIC CITY OPERATIONS.

TAXIWAY K4 HAS BEEN REMOVED DURING CONSTRUCTION.

ARRANGE – PRIOR PERMISSION REQUIRED CONTACT 615–367–5567.

Dallas, Texas
Dallas–Fort Worth International
ICAO Identifier KDFW



Dallas–Fort Worth, TX
Dallas/Fort Worth Intl
ICAO Identifier KDFW

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 32–53–50.03N / 97–02–15.70W
2.2.2 From City: 12 Miles NW Of Dallas–Fort Worth, TX
2.2.3 Elevation: 607 ft
2.2.5 Magnetic variation: 4E (2015)
2.2.6 Airport Contact: Sean Donohue
PO BOX 619428
Dallas–Ft Worth, TX 75261
(972–973–3112)
2.2.7 Traffic: IFR/VFR
2.2.8 Remarks: And Dallas Co.

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 7/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 17L
2.10.1.b Type of obstacle: Ant (150 ft). Lighted
2.10.1.c Location of obstacle: 798 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 17C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13401 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 32–54–56.55N / 97–01–33.49W
2.12.6 Threshold elevation: 562 ft
2.12.6 Touchdown zone elevation: 562 ft

2.12.1 Designation: 35C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13401 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 32–52–43.96N / 97–01–34.22W
2.12.6 Threshold elevation: 562 ft
2.12.6 Touchdown zone elevation: 562 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 9000 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 32–54–45.20N / 97–01–17.32W
2.12.6 Threshold elevation: 553 ft
2.12.6 Touchdown zone elevation: 553 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 9000 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 32–53–41.93N / 97–00–00.00W
2.12.6 Threshold elevation: 508 ft
2.12.6 Touchdown zone elevation: 523 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 139
2.12.3 Dimensions: 9301 ft x 150 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32–54–34.47N / 97–04–59.28W
2.12.6 Threshold elevation: 591 ft
2.12.6 Touchdown zone elevation: 591 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 9301 ft x 150 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32–53–24.97N / 97–03–47.79W
2.12.6 Threshold elevation: 577 ft
2.12.6 Touchdown zone elevation: 581 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T

2.12.5 Coordinates: 32−54−56.88N / 97−03−00.00W
2.12.6 Threshold elevation: 602 ft
2.12.6 Touchdown zone elevation: 602 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32−52−44.30N / 97−03−00.00W
2.12.6 Threshold elevation: 575 ft
2.12.6 Touchdown zone elevation: 580 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 32−54−56.93N / 97−03−16.71W
2.12.6 Threshold elevation: 607 ft
2.12.6 Touchdown zone elevation: 607 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 32−52−44.35N / 97−03−17.40W
2.12.6 Threshold elevation: 582 ft
2.12.6 Touchdown zone elevation: 588 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 32−53−53.95N / 97−00−35.20W
2.12.6 Threshold elevation: 524 ft
2.12.6 Touchdown zone elevation: 545 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 32−52−29.85N / 97−00−35.67W
2.12.6 Threshold elevation: 575 ft
2.12.6 Touchdown zone elevation: 575 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 32−54−56.60N / 97−01−47.58W
2.12.6 Threshold elevation: 566 ft
2.12.6 Touchdown zone elevation: 566 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 32−52−44.02N / 97−01−48.29W
2.12.6 Threshold elevation: 563 ft
2.12.6 Touchdown zone elevation: 564 ft

AD 2.13 Declared distances

2.13.1 Designation: 17C
2.13.2 Takeoff run available: 13401
2.13.3 Takeoff distance available: 13401
2.13.4 Accelerate−stop distance available: 13401
2.13.5 Landing distance available: 13401

2.13.1 Designation: 35C
2.13.2 Takeoff run available: 13401
2.13.3 Takeoff distance available: 13401
2.13.4 Accelerate−stop distance available: 13401
2.13.5 Landing distance available: 13401

2.13.1 Designation: 13L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 8375

2.13.1 Designation: 31R
2.13.2 Takeoff run available: 8375
2.13.3 Takeoff distance available: 8375
2.13.4 Accelerate−stop distance available: 8375
2.13.5 Landing distance available: 8375

2.13.1 Designation: 13R
2.13.2 Takeoff run available: 9301
2.13.3 Takeoff distance available: 9301

2.13.4 Accelerate–stop distance available: 9301
2.13.5 Landing distance available: 9301

2.13.1 Designation: 31L
2.13.2 Takeoff run available: 9301
2.13.3 Takeoff distance available: 9301
2.13.4 Accelerate–stop distance available: 9301
2.13.5 Landing distance available: 9301

2.13.1 Designation: 18L
2.13.2 Takeoff run available: 13400
2.13.3 Takeoff distance available: 13400
2.13.4 Accelerate–stop distance available: 13400
2.13.5 Landing distance available: 13400

2.13.1 Designation: 36R
2.13.2 Takeoff run available: 13400
2.13.3 Takeoff distance available: 13400
2.13.4 Accelerate–stop distance available: 13400
2.13.5 Landing distance available: 13400

2.13.1 Designation: 18R
2.13.2 Takeoff run available: 13400
2.13.3 Takeoff distance available: 13400
2.13.4 Accelerate–stop distance available: 13400
2.13.5 Landing distance available: 13400

2.13.1 Designation: 36L
2.13.2 Takeoff run available: 13400
2.13.3 Takeoff distance available: 13400
2.13.4 Accelerate–stop distance available: 13400
2.13.5 Landing distance available: 13400

2.13.1 Designation: 17L
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate–stop distance available: 8500
2.13.5 Landing distance available: 8500

2.13.1 Designation: 35R
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate–stop distance available: 8500
2.13.5 Landing distance available: 8500

2.13.1 Designation: 17R
2.13.2 Takeoff run available: 13401
2.13.3 Takeoff distance available: 13401
2.13.4 Accelerate–stop distance available: 13401
2.13.5 Landing distance available: 13401

2.13.1 Designation: 35L
2.13.2 Takeoff run available: 13401
2.13.3 Takeoff distance available: 13401
2.13.4 Accelerate–stop distance available: 13401
2.13.5 Landing distance available: 13401

AD 2.14 Approach and runway lighting

2.14.1 Designation: 17C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 35C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: PAPI Unusable Beyond 7 Degrees Right Of Centerline .

2.14.1 Designation: 13L
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 31R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 13R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 31L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 18L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 36R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 18R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 36L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 17L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 17R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: CLASS B NE
2.18.3 Service designation: 282.275 MHz

2.18.1 Service designation: CLASS B NW
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 121.65 MHz

2.18.1 Service designation: GND/P IC
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.85 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 124.15 MHz

2.18.1 Service designation: CLASS B NE
2.18.3 Service designation: 124.3 MHz

2.18.1 Service designation: CLASS B SE
2.18.3 Service designation: 125.2 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 126.55 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 127.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 128.25 MHz

2.18.1 Service designation: LCL/P IC
2.18.3 Service designation: 134.9 MHz

2.18.1 Service designation: CLASS B SW
2.18.3 Service designation: 135.975 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: CLASS B NW
2.18.3 Service designation: 306.95 MHz

2.18.1 Service designation: CLASS B SE
2.18.3 Service designation: 343.65 MHz

2.18.1 Service designation: CLASS B SW
2.18.3 Service designation: 379.9 MHz

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 123.775 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D–ATIS
2.18.3 Service designation: 135.925 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 36R. Magnetic variation: 4E
2.19.2 ILS identification: FJN
2.19.5 Coordinates: 32–55–00.00N / 97–03–00.00W
2.19.6 Site elevation: 595 ft

2.19.1 ILS type: Localizer for runway 31R. Magnetic variation: 4E
2.19.2 ILS identification: RRA
2.19.5 Coordinates: 32–54–52.67N / 97–01–26.10W
2.19.6 Site elevation: 552 ft

2.19.1 ILS type: Localizer for runway 17R. Magnetic variation: 4E
2.19.2 ILS identification: JHZ
2.19.5 Coordinates: 32–52–33.24N / 97–01–48.35W
2.19.6 Site elevation: 558.1 ft

2.19.1 ILS type: Localizer for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32–52–33.93N / 97–03–17.46W
2.19.6 Site elevation: 580 ft

2.19.1 ILS type: Localizer for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32–55–00.00N / 97–01–33.45W
2.19.6 Site elevation: 558 ft

2.19.1 ILS type: Localizer for runway 35L. Magnetic variation: 4E
2.19.2 ILS identification: UWX
2.19.5 Coordinates: 32–55–00.00N / 97–01–47.52W
2.19.6 Site elevation: 567 ft

2.19.1 ILS type: Localizer for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32–52–33.15N / 97–01–34.28W
2.19.6 Site elevation: 562.7 ft

2.19.1 ILS type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: LWN
2.19.5 Coordinates: 32–53–17.46N / 97–03–40.07W
2.19.6 Site elevation: 576.7 ft

2.19.1 ILS type: Localizer for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32–52–19.44N / 97–00–35.73W

2.19.6 Site elevation: 583.9 ft

2.19.1 ILS type: Localizer for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32−54−00.00N / 97−00−35.15W
2.19.6 Site elevation: 519 ft

2.19.1 ILS type: Localizer for runway 18L. Magnetic variation: 4E
2.19.2 ILS identification: CIX
2.19.5 Coordinates: 32−52−33.61N / 97−03−00.00W
2.19.6 Site elevation: 570 ft

2.19.1 ILS type: Localizer for runway 36L. Magnetic variation: 4E
2.19.2 ILS identification: BXN
2.19.5 Coordinates: 32−55−00.00N / 97−03−16.69W
2.19.6 Site elevation: 601.3 ft

2.19.1 ILS type: DME for runway 31R. Magnetic variation: 4E
2.19.2 ILS identification: RRA
2.19.5 Coordinates: 32−54−50.71N / 97−01−27.86W
2.19.6 Site elevation: 548 ft

2.19.1 ILS type: DME for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32−52−34.09N / 97−03−12.60W
2.19.6 Site elevation: 584 ft

2.19.1 ILS type: DME for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32−52−34.13N / 97−01−39.65W
2.19.6 Site elevation: 575.1 ft

2.19.1 ILS type: DME for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32−52−18.74N / 97−00−40.18W
2.19.6 Site elevation: 577.3 ft

2.19.1 ILS type: DME for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32−52−18.74N / 97−00−40.18W
2.19.6 Site elevation: 577.3 ft

2.19.1 ILS type: Glide Slope for runway 31R. Magnetic variation: 4E
2.19.2 ILS identification: RRA
2.19.5 Coordinates: 32−53−51.74N / 97−00−00.00W
2.19.6 Site elevation: 513 ft

2.19.1 ILS type: Glide Slope for runway 17R. Magnetic variation: 4E
2.19.2 ILS identification: JHZ
2.19.5 Coordinates: 32−54−45.82N / 97−01−43.06W
2.19.6 Site elevation: 561.3 ft

2.19.1 ILS type: Glide Slope for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32−54−45.47N / 97−03−21.57W
2.19.6 Site elevation: 599.6 ft

2.19.1 ILS type: DME for runway 36L. Magnetic variation: 4E
2.19.2 ILS identification: BXN
2.19.5 Coordinates: 32−52−34.09N / 97−03−12.60W
2.19.6 Site elevation: 584 ft

2.19.1 ILS type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: LWN
2.19.5 Coordinates: 32−53−16.07N / 97−03−42.77W
2.19.6 Site elevation: 589.5 ft

2.19.1 ILS type: DME for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32−52−34.13N / 97−01−39.65W
2.19.6 Site elevation: 575.1 ft

2.19.1 ILS type: Outer Marker for runway 13R. Magnetic variation: 4E

2.19.2 ILS identification: LWN
2.19.5 Coordinates: 32–58–20.35N / 97–08–45.76W
2.19.6 Site elevation: 605 ft

2.19.1 ILS type: Glide Slope for runway 18L. Magnetic variation: 4E
2.19.2 ILS identification: CIX
2.19.5 Coordinates: 32–54–45.22N / 97–03–00.00W
2.19.6 Site elevation: 594 ft

2.19.1 ILS type: Glide Slope for runway 36L. Magnetic variation: 4E
2.19.2 ILS identification: BXN
2.19.5 Coordinates: 32–52–54.41N / 97–03–22.04W
2.19.6 Site elevation: 579.8 ft

2.19.1 ILS type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: LWN
2.19.5 Coordinates: 32–54–24.13N / 97–04–54.08W
2.19.6 Site elevation: 587.5 ft

2.19.1 ILS type: Glide Slope for runway 35L. Magnetic variation: 4E
2.19.2 ILS identification: UWX
2.19.5 Coordinates: 32–52–54.98N / 97–01–43.53W
2.19.6 Site elevation: 558.7 ft

2.19.1 ILS type: Glide Slope for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32–52–54.33N / 97–01–29.47W
2.19.6 Site elevation: 556.9 ft

2.19.1 ILS type: Glide Slope for runway 36R. Magnetic variation: 4E
2.19.2 ILS identification: FJN
2.19.5 Coordinates: 32–52–54.85N / 97–03–00.00W
2.19.6 Site elevation: 577 ft

2.19.1 ILS type: Glide Slope for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32–53–45.23N / 97–00–31.14W
2.19.6 Site elevation: 526.1 ft

2.19.1 ILS type: Glide Slope for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32–52–43.44N / 97–00–30.90W
2.19.6 Site elevation: 559 ft

2.19.1 ILS type: Glide Slope for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32–54–45.64N / 97–01–28.77W
2.19.6 Site elevation: 555.8 ft

2.19.1 ILS type: Outer Marker for runway 36L. Magnetic variation: 4E
2.19.2 ILS identification: BXN
2.19.5 Coordinates: 32–47–34.94N / 97–03–00.00W
2.19.6 Site elevation: 523 ft

2.19.1 ILS type: Outer Marker for runway 18L. Magnetic variation: 4E
2.19.2 ILS identification: CIX
2.19.5 Coordinates: 32–59–42.30N / 97–02–58.02W
2.19.6 Site elevation: 571 ft

2.19.1 ILS type: Outer Marker for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32–48–20.28N / 97–00–26.58W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32–58–00.00N / 97–00–26.70W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 17R. Magnetic variation: 4E
2.19.2 ILS identification: JHZ
2.19.5 Coordinates: 32–59–44.75N / 97–01–46.52W
2.19.6 Site elevation: 525 ft

2.19.1 ILS type: Outer Marker for runway 31R. Magnetic variation: 4E
2.19.2 ILS identification: RRA
2.19.5 Coordinates: 32−49−51.37N / 96−55−27.13W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 36R. Magnetic variation: 4E
2.19.2 ILS identification: FJN
2.19.5 Coordinates: 32−47−34.94N / 97−03−00.00W
2.19.6 Site elevation: 523 ft

2.19.1 ILS type: Outer Marker for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32−48−00.00N / 97−01−38.86W
2.19.6 Site elevation: 480 ft

2.19.1 ILS type: Outer Marker for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32−59−42.30N / 97−02−58.02W
2.19.6 Site elevation: 571 ft

2.19.1 ILS type: Middle Marker for runway 31R. Magnetic variation: 4E
2.19.2 ILS identification: RRA
2.19.5 Coordinates: 32−53−20.76N / 96−59−38.13W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32−55−00.00N / 97−01−33.46W
2.19.6 Site elevation: 562 ft

2.19.1 ILS type: Inner Marker for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32−54−00.00N / 97−00−35.26W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32−52−22.61N / 97−00−35.71W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32−55−00.00N / 97−03−16.69W
2.19.6 Site elevation: 604 ft

2.19.1 ILS type: Middle Marker for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32−55−00.00N / 97−01−33.35W
2.19.6 Site elevation: 561 ft

2.19.1 ILS type: Outer Marker for runway 35L. Magnetic variation: 4E
2.19.2 ILS identification: UWX
2.19.5 Coordinates: 32−48−00.00N / 97−01−38.86W
2.19.6 Site elevation: 499 ft

2.19.1 ILS type: Middle Marker for runway 35L. Magnetic variation: 4E
2.19.2 ILS identification: UWX
2.19.5 Coordinates: 32−52−17.25N / 97−01−48.43W
2.19.6 Site elevation: 554 ft

2.19.1 ILS type: Middle Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: LWN
2.19.5 Coordinates: 32−54−55.16N / 97−05−20.58W
2.19.6 Site elevation: 610 ft

2.19.1 ILS type: Outer Marker for runway 17C. Magnetic variation: 4E
2.19.2 ILS identification: FLQ
2.19.5 Coordinates: 32−59−44.75N / 97−01−46.52W
2.19.6 Site elevation: 525 ft

2.19.1 ILS type: Middle Marker for runway 36L. Magnetic variation: 4E
2.19.2 ILS identification: BXN
2.19.5 Coordinates: 32−52−15.86N / 97−03−17.54W

2.19.6 Site elevation: 542 ft

2.19.1 ILS type: Middle Marker for runway 18L. Magnetic variation: 4E
2.19.2 ILS identification: CIX
2.19.5 Coordinates: 32–55–00.00N / 97–03–00.00W
2.19.6 Site elevation: 600 ft

2.19.1 ILS type: Middle Marker for runway 17L. Magnetic variation: 4E
2.19.2 ILS identification: PPZ
2.19.5 Coordinates: 32–54–24.15N / 97–00–35.04W
2.19.6 Site elevation: 0 ft

2.19.1 ILS type: Middle Marker for runway 35R. Magnetic variation: 4E
2.19.2 ILS identification: AJQ
2.19.5 Coordinates: 32–52–00.00N / 97–00–35.82W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 36R. Magnetic variation: 4E
2.19.2 ILS identification: FJN
2.19.5 Coordinates: 32–52–17.10N / 97–03–00.00W
2.19.6 Site elevation: 560 ft

2.19.1 ILS type: Middle Marker for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32–52–16.34N / 97–01–34.37W
2.19.6 Site elevation: 559 ft

2.19.1 ILS type: Middle Marker for runway 18R. Magnetic variation: 4E
2.19.2 ILS identification: VYN
2.19.5 Coordinates: 32–55–00.00N / 97–03–16.70W
2.19.6 Site elevation: 600 ft

2.19.1 ILS type: Middle Marker for runway 17R. Magnetic variation: 4E
2.19.2 ILS identification: JHZ
2.19.5 Coordinates: 32–55–26.68N / 97–01–47.42W
2.19.6 Site elevation: 561 ft

2.19.1 ILS type: DME for runway 18L. Magnetic variation: 4E
2.19.2 ILS identification: CIX
2.19.5 Coordinates: 32–55–00.00N / 97–03–00.00W
2.19.6 Site elevation: 594 ft

2.19.1 ILS type: DME for runway 36R. Magnetic variation: 4E
2.19.2 ILS identification: FJN
2.19.5 Coordinates: 32–55–00.00N / 97–03–00.00W
2.19.6 Site elevation: 594 ft

2.19.1 ILS type: DME for runway 17R. Magnetic variation: 4E
2.19.2 ILS identification: JHZ
2.19.5 Coordinates: 32–52–33.67N / 97–01–53.66W
2.19.6 Site elevation: 550 ft

2.19.1 ILS type: DME for runway 35L. Magnetic variation: 4E
2.19.2 ILS identification: UWX
2.19.5 Coordinates: 32–52–33.67N / 97–01–53.66W
2.19.6 Site elevation: 550 ft

2.19.1 ILS type: Inner Marker for runway 35C. Magnetic variation: 4E
2.19.2 ILS identification: PKQ
2.19.5 Coordinates: 32–52–35.30N / 97–01–34.26W
2.19.6 Site elevation: 875 ft

General Remarks:
BIRDS ON & IN THE VICINITY OF AIRPORT.

PRIOR PERMISSION REQUIRED FROM THE PRIMARY TENANT AIRLINES TO OPERATE WITHIN THE CENTRAL TERMINAL AREA. PROPER MINIMUM OBJECT FREE AREA DISTANCES MAY NOT BE MAINTAINED FOR RAMP/APRON TAXILANES.

PRIOR PERMISSION REQUIRED FROM AIRPORT OPERATIONS FOR GENERAL AVIATION AIRCRAFT TO

PROCEED TO AIRLINE TERMINAL GATE EXCEPT GENERAL AVIATION FACILITY.

STANDARD SAWED GROOVING 160 FT WIDE FULL LENGTH RUNWAYS 13L/31R; 18L/36R & 17R/35L. STANDARD GROOVING 130 FT WIDE FULL LENGTH RUNWAYS 17L/35R; 18R/36L; 13R/31L & 17C/35C.

AIRPORT UNDER CONSTRUCTION; PERSONNEL AND EQUIPMENT WORKING IN MOVEMENT AREAS.

TAKE-OFF DISTANCE FOR RUNWAY 17R FROM TAXIWAY EMERGENCY GEAR IS 13082 FT & FROM TAXIWAY EH IS 12816 FT.

LAND & HOLD SHORT SIGNS ON RUNWAY 17C AT TAXIWAY 'B' 10,460 FT S OF RUNWAY 17C THRESHOLD; RUNWAY 18R AT TAXIWAY 'B' 10,100 FT S OF RUNWAY 18R THRESHOLD; RUNWAY 35C AT TAXIWAY 'EJ' 9050 FT N OF RUNWAY 35C THRESHOLD; RUNWAY 36L AT TAXIWAY 'Z' 10,650 FT N OF RUNWAY 36L THRESHOLD; LIGHTED & MARKED WITH IN−PAVEMENT PULSATING WHITE LIGHTS.

TAKE-OFF DISTANCE FOR RUNWAY 36R FROM TAXIWAY WAYPOINT IS 12,815 FT; FROM TAXIWAY WQ IS 13,082 FT.

TAKE-OFF DISTANCE FOR RUNWAY 17L FROM TAXIWAY Q2 IS 8196 FT.

TAXIWAYS MAY REQUIRE JUDGMENTAL OVERSTEERING FOR LARGE AIRCRAFT.

TAKE-OFF DISTANCE FOR RUNWAY 35R FROM TAXIWAY Q9 IS 8196 FT.

TAKE-OFF DISTANCE FOR RUNWAY 35L FROM TAXIWAY EQ IS 13084 FT & FROM TAXIWAY EN ROUTE PENETRATION IS 12811 FT.

APRON ENTRANCE/EXIT POINTS 22, 24, 105, & 107 CLOSED TO AIRCRAFT WITH WINGSPAN 125 FT AND GREATER.

TAXIWAY EDGE REFLECTORS ALONG ALL TAXIWAYS.

TERMINAL B APRON TAXILANE BETWEEN APRON ENTRANCE/EXIT POINT TAXILANES 107 & 115 CLOSED TO AIRCRAFT WITH WINGSPAN 118 FT AND GREATER.

TAKE-OFF DISTANCE FOR RUNWAY 18L FROM TAXIWAY WG IS 13,082; FROM TAXIWAY WH IS 12,815.

PRIOR PERMISSION REQUIRED GA OPERATIONS 0000−0500; CALL AIRPORT OPERATIONS 972−973−3112.

APRON ENTRANCE/EXIT POINT 124 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 213 FT.

TAXIWAY A5 CLOSED TO AIRCRAFT WITH WINGSPAN 171 FT AND GREATER.

TAKE-OFF DISTANCE FOR RUNWAY 17C FROM TAXIWAY EMERGENCY GEAR IS 13,082 FT.

TAKE-OFF DISTANCE FOR RUNWAY 18R FROM TAXIWAY WG IS 13,082 FT.

APRON ENTRANCE/EXIT POINTS 9, 32, 33, 34, 35, 36, 37, 38, & 53 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135 FT.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRIOR PERMISSION REQUIRED AIRCRAFT WITH WINGSPAN 215 FT OR GREATER (GROUP VI) CALL AIRPORT OPERATIONS 972−973−3112 FOR FOLLOW−ME SERVICES WHILE TAXIING TO & FROM RAMP & RUNWAYS.

RUNWAY VISUAL SCREEN 20 FT AGL 1180 FT S APPROACH END RUNWAY 35C.

RUNWAY VISUAL SCREEN 22 FT AGL 1179 FT S APPROACH END RUNWAY 35L.

AIRCRAFT USING TERMINAL E GATES MUST OBTAIN APPROVAL FROM DFW RAMP 131.0 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK 0430 LOCAL –0130 LOCAL DURING TIME CHANGE ONLY.

B747–8 AND A380 OPERATIONS ONLY AUTHORIZED ON RUNWAYS 18R/36L AND 18L/36R, CONTACT AIRPORT OPERATIONS FOR ADDNL INFORMATION.

AIRCRAFT AT EAST AIR FREIGHT MUST CONTACT DFW TOWER AT 127.5 PRIOR TO TAXI OUT.

APRON ENTRANCE/EXIT POINTS 5, 7, 42, 44, 49, 51, 52, AND 122 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 118'.

APRON ENTRANCE/EXIT POINTS 1 AND 2 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 89' EXCEPT PRIOR PERMISSION REQUIRED.

APRON ENTRANCE/EXIT POINTS 3 AND 4 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 118' EXCEPT PRIOR PERMISSION REQUIRED.

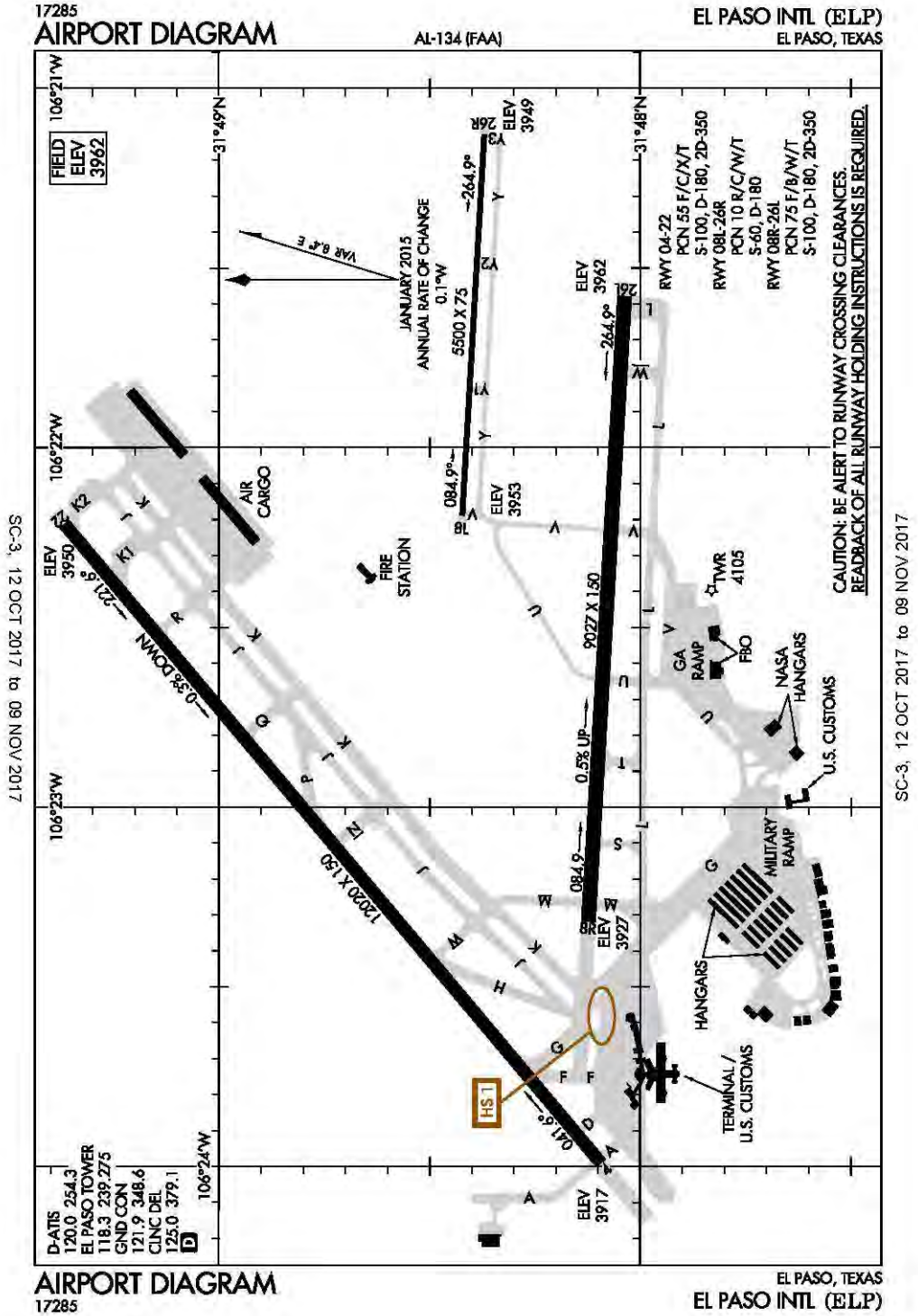
APRON ENTRANCE/EXIT POINTS 31 AND 39 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 167'.

APRON ENTRANCE/EXIT POINT 48 CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 195'. UNLESS OTHERWISE SPECIFIED, ALL APRON ENTRANCE/EXIT POINTS CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 214' EXCEPT PRIOR PERMISSION REQUIRED.

RUNWAY STATUS LIGHTS ARE IN AN OPR TEST ON RUNWAY 17R/35L, RUNWAY 17C/35C, RUNWAY 18L/36R AND MUST BE COMPLIED WITH. RUNWAY STATUS LIGHT ARRAYS MAY BE OFFLINE INTERMITTENTLY THROUGHOUT THE TEST PHASE. RUNWAY STATUS LIGHTS ARE RED IN–PAVEMENT LIGHTS THAT SERVE AS WARNING LIGHTS ON RUNWAYS AND TAXIWAYS INDICATING THAT IT IS UNSAFE TO ENTER, CROSS, OR BEGIN TAKE-OFF ON A RUNWAY. NOTE: RUNWAY STATUS LIGHTS INDICATE RUNWAY STATUS ONLY. THEY DO NOT INDICATE CLEARANCE. PILOTS AND VEHICLE OPRS MUST STILL RECEIVE A CLEARANCE FROM AIR TRAFFIC CONTROL BEFORE PROCEEDING. FOR ADDITIONAL INFORMATION VISIT: HTTP://WWW.FAA.GOV/AIRTRAFFIC/TECHNOLOGY/RWSL.

AIRCRAFT USING TERMINAL D GATES D6–17 MUST OBTAIN APPROVAL FROM DFW RAMP TOWER 129.95 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK 0600L–2200L. USE EXTREME CARE AT OTHER TIMES.

El Paso, Texas
El Paso International
ICAO Identifier KELP



El Paso, TX
El Paso Intl
ICAO Identifier KELP

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 31–48–26.40N / 106–22–34.90W
2.2.2 From City: 4 Miles NE Of El Paso, TX
2.2.3 Elevation: 3961.7 ft
2.2.5 Magnetic variation: 8E (2015)
2.2.6 Airport Contact: Monica Lombrana
6701 CONVAIR RD
El Paso, TX 79925
(915–212–0333)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,B+,100LL
2.4.4 De–icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 04
2.12.2 True Bearing: 50
2.12.3 Dimensions: 12020 ft x 150 ft
2.12.4 PCN: 55 F/C/X/T
2.12.5 Coordinates: 31–48–00.00N / 106–23–59.46W
2.12.6 Threshold elevation: 3917 ft
2.12.6 Touchdown zone elevation: 3923 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 230
2.12.3 Dimensions: 12020 ft x 150 ft
2.12.4 PCN: 55 F/C/X/T
2.12.5 Coordinates: 31–49–22.01N / 106–22–12.78W
2.12.6 Threshold elevation: 3950 ft
2.12.6 Touchdown zone elevation: 3950 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 9027 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31–48–00.00N / 106–23–19.15W
2.12.6 Threshold elevation: 3927 ft
2.12.6 Touchdown zone elevation: 3940 ft
2.12.7 Slope: 0.3UP

2.12.1 Designation: 26L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 9027 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31–48–00.00N / 106–21–34.74W
2.12.6 Threshold elevation: 3962 ft
2.12.6 Touchdown zone elevation: 3962 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 93
2.12.3 Dimensions: 5500 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31–48–25.33N / 106–22–11.37W
2.12.6 Threshold elevation: 3952 ft
2.12.6 Touchdown zone elevation: 3952 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 5500 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31–48–22.18N / 106–21–00.00W
2.12.6 Threshold elevation: 3949 ft
2.12.6 Touchdown zone elevation: 3949 ft

AD 2.13 Declared distances

2.13.1 Designation: 04
2.13.2 Takeoff run available: 12020
2.13.3 Takeoff distance available: 12020
2.13.4 Accelerate–stop distance available: 12020
2.13.5 Landing distance available: 12020

2.13.1 Designation: 22
2.13.2 Takeoff run available: 12020

2.13.3 Takeoff distance available: 12020
2.13.4 Accelerate−stop distance available: 12449
2.13.5 Landing distance available: 12020

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 9025
2.13.3 Takeoff distance available: 9025
2.13.4 Accelerate−stop distance available: 9025
2.13.5 Landing distance available: 9025

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 9025
2.13.3 Takeoff distance available: 9025
2.13.4 Accelerate−stop distance available: 9025
2.13.5 Landing distance available: 9025

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 5493
2.13.3 Takeoff distance available: 5493
2.13.4 Accelerate−stop distance available: 5493
2.13.5 Landing distance available: 5493

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 5493
2.13.3 Takeoff distance available: 5493
2.13.4 Accelerate−stop distance available: 5493
2.13.5 Landing distance available: 5493

AD 2.14 Approach and runway lighting

2.14.1 Designation: 04
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 22
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 08R
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 26L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 120 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 254.3 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 119.15 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 124.25 MHz

2.18.1 Service designation: DEP/P CLASS C
2.18.3 Service designation: 119.15 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 298.85 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: UTILITY
2.18.3 Service designation: 121.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: CD/P PTC
2.18.3 Service designation: 125 MHz

2.18.1 Service designation: EMERG

2.18.3 Service designation: 243 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 263 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 353.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 379.1 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.275 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 04. Magnetic variation: 8E
2.19.2 ILS identification: ETF
2.19.5 Coordinates: 31–49–28.44N / 106–22–00.00W
2.19.6 Site elevation: 3950.5 ft

2.19.1 ILS type: Localizer for runway 22. Magnetic variation: 8E
2.19.2 ILS identification: ELP
2.19.5 Coordinates: 31–47–55.92N / 106–24–12.90W
2.19.6 Site elevation: 3910.9 ft

2.19.1 ILS type: DME for runway 04. Magnetic variation: 8E
2.19.2 ILS identification: ETF
2.19.5 Coordinates: 31–47–58.72N / 106–24–13.52W
2.19.6 Site elevation: 3926.8 ft

2.19.1 ILS type: DME for runway 22. Magnetic variation: 8E
2.19.2 ILS identification: ELP
2.19.5 Coordinates: 31–47–58.72N / 106–24–13.52W
2.19.6 Site elevation: 3926.8 ft

2.19.1 ILS type: Glide Slope for runway 22. Magnetic variation: 8E
2.19.2 ILS identification: ELP
2.19.5 Coordinates: 31–49–17.28N / 106–22–26.59W
2.19.6 Site elevation: 3940.3 ft

2.19.1 ILS type: Middle Marker for runway 22. Magnetic variation: 8E
2.19.2 ILS identification: ELP
2.19.5 Coordinates: 31–49–33.88N / 106–21–56.93W
2.19.6 Site elevation: 3947 ft

2.19.1 ILS type: Outer Marker for runway 22. Magnetic variation: 8E
2.19.2 ILS identification: ELP
2.19.5 Coordinates: 31–51–37.03N / 106–19–00.00W
2.19.6 Site elevation: 3993.1 ft

General Remarks:

24 HR PRIOR PERMISSION REQUIRED CLASS A EXPLOSIVES CONTACT 915–212–0333.

CAUTION: BIGGS AAF 2NM NW RUNWAY 21 CAN BE MISTAKEN FOR ELP RUNWAY 22.

NORTH BOUND TRAFFIC PROHIBITED ON TAXIWAY F SOUTH OF APPROACH END RUNWAY 08R.

TAXIWAY A FROM 700 FT NORTH OF RUNWAY 04 TO THE SOUTH; TAXIWAY J NE OF TAXIWAY K1; TAXIWAY K NE OF TAXIWAY K1 BETWEEN TAXIWAY J & NORTH CARGO RAMP; TAXIWAYS U & V SOUTH OF TAXIWAY L; & TAXIWAY K2 NOT VISIBLE FROM ATCT.

HOLDING POSITION MARKINGS FOR RUNWAY 8R APPROACH AND RUNWAY 4/22 ARE IN CLOSE PROXIMITY TO THE TERMINAL APRON; REVIEW AIRPORT DIAGRAM PRIOR TO PUSHBACK FROM THE GATE.

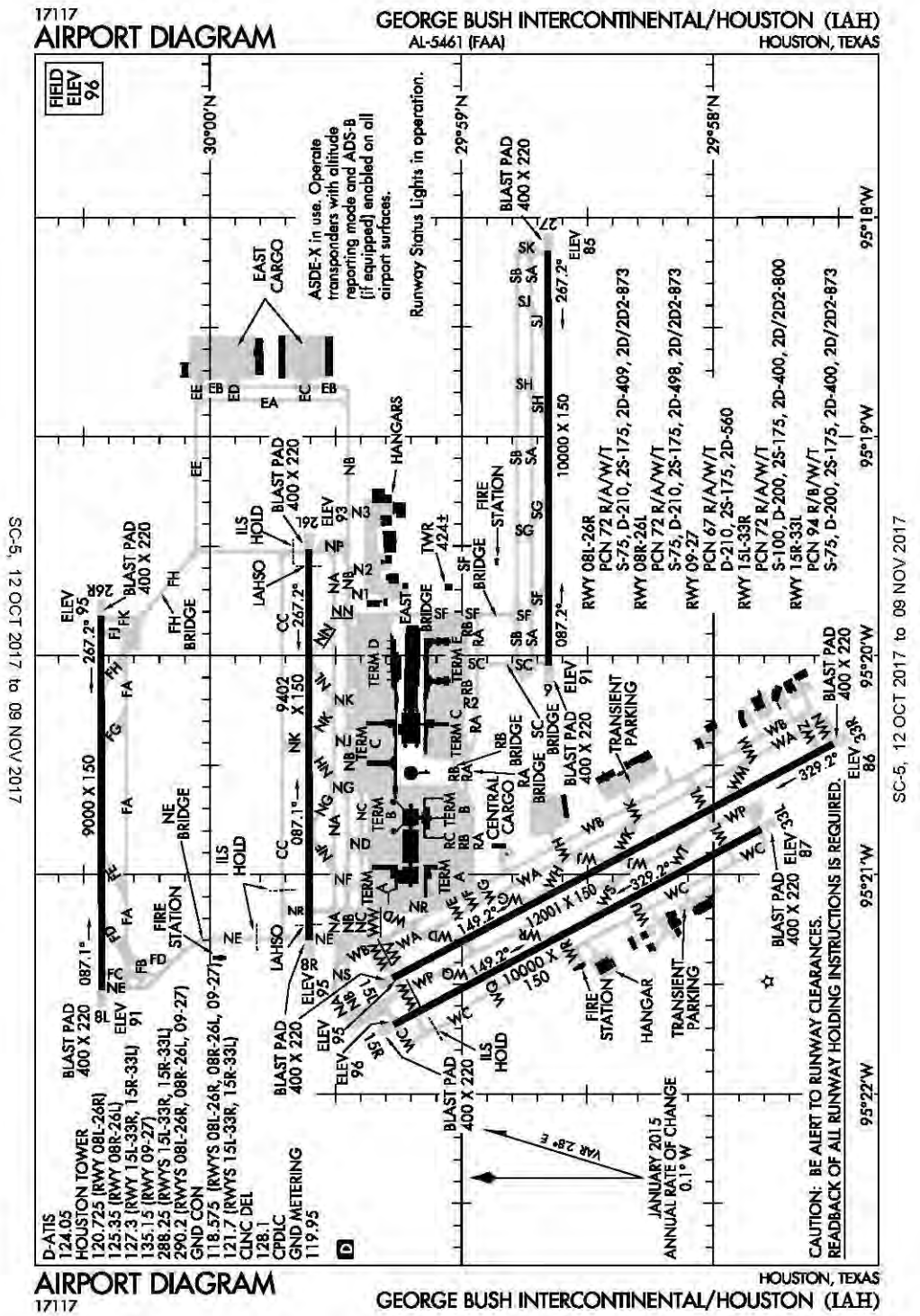
MILITARY USERS SHOULD REVIEW NOISE ABATEMENT PROCEDURES LISTED FOR BIGGS AAF.

NOISE ABATEMENT PROCEDURES IN EFFECT, CONTACT ATCT FOR DETAILS.

ENGINE POWER IS RESTRICTED TO IDLE POWER ON ONE ENGINE AT A TIME FOR MAX 5 MIN ON ANY TERMINAL OR PARKING APRONS, CROSS−BLEED STARTS OR OTHER PRE DEP ACTIVITY ON MOVEMENT AREAS ONLY, MAINT OR OTHER REQUIREMENT NEEDING LONGER OR HIGHER POWER CONTACT TOWER FOR DIRECTIONS TO DESIGNATED RUNUP AREAS.

COMPASS ROSE CLOSED INDEFINITELY.

Houston, Texas
George Bush Intercontinental/Houston
ICAO Identifier KIAH



Houston, TX
George Bush Intercontinental/Houston
ICAO Identifier KIAH

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 29−59−00.00N / 95−20−29.20W
2.2.2 From City: 15 Miles N Of Houston, TX
2.2.3 Elevation: 96.4 ft
2.2.5 Magnetic variation: 3E (2015)
2.2.6 Airport Contact: Theodore Kitchens
PO BOX 60106
Houston, TX 77205
(281−230−3100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway physical characteristics

2.12.1 Designation: 15L
2.12.2 True Bearing: 152
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−16.40N / 95−21−28.33W
2.12.6 Threshold elevation: 95 ft
2.12.6 Touchdown zone elevation: 95 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 332
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−57−31.55N / 95−20−24.19W
2.12.6 Threshold elevation: 86 ft
2.12.6 Touchdown zone elevation: 88 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 152
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29−59−16.11N / 95−21−41.04W
2.12.6 Threshold elevation: 96 ft
2.12.6 Touchdown zone elevation: 96 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 332
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29−57−48.75N / 95−20−47.58W
2.12.6 Threshold elevation: 87 ft
2.12.6 Touchdown zone elevation: 90 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−36.30N / 95−21−17.87W
2.12.6 Threshold elevation: 95 ft
2.12.6 Touchdown zone elevation: 96 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−36.38N / 95−19−30.96W
2.12.6 Threshold elevation: 93 ft
2.12.6 Touchdown zone elevation: 95 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29−58−39.34N / 95−20−00.00W
2.12.6 Threshold elevation: 91 ft
2.12.6 Touchdown zone elevation: 91 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29−58−39.41N / 95−18−00.00W
2.12.6 Threshold elevation: 85 ft
2.12.6 Touchdown zone elevation: 87 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30−00−25.78N / 95−21−31.65W
2.12.6 Threshold elevation: 91 ft
2.12.6 Touchdown zone elevation: 95 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30–00–25.86N / 95–19–49.29W
2.12.6 Threshold elevation: 95 ft
2.12.6 Touchdown zone elevation: 96 ft

AD 2.13 Declared distances

2.13.1 Designation: 15L
2.13.2 Takeoff run available: 12001
2.13.3 Takeoff distance available: 12001
2.13.4 Accelerate–stop distance available: 12001
2.13.5 Landing distance available: 12001

2.13.1 Designation: 33R
2.13.2 Takeoff run available: 12001
2.13.3 Takeoff distance available: 12001
2.13.4 Accelerate–stop distance available: 12001
2.13.5 Landing distance available: 12001

2.13.1 Designation: 15R
2.13.2 Takeoff run available: 9999
2.13.3 Takeoff distance available: 9999
2.13.4 Accelerate–stop distance available: 9999
2.13.5 Landing distance available: 9999

2.13.1 Designation: 33L
2.13.2 Takeoff run available: 9999
2.13.3 Takeoff distance available: 9999
2.13.4 Accelerate–stop distance available: 9999
2.13.5 Landing distance available: 9999

2.13.1 Designation: 08R
2.13.2 Takeoff run available: 9402
2.13.3 Takeoff distance available: 9402
2.13.4 Accelerate–stop distance available: 9402
2.13.5 Landing distance available: 9402

2.13.1 Designation: 26L
2.13.2 Takeoff run available: 9402
2.13.3 Takeoff distance available: 9402
2.13.4 Accelerate–stop distance available: 9402
2.13.5 Landing distance available: 9402

2.13.1 Designation: 09
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 27
2.13.2 Takeoff run available: 10000
2.13.3 Takeoff distance available: 10000
2.13.4 Accelerate–stop distance available: 10000
2.13.5 Landing distance available: 10000

2.13.1 Designation: 08L
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 26R
2.13.2 Takeoff run available: 9000
2.13.3 Takeoff distance available: 9000
2.13.4 Accelerate–stop distance available: 9000
2.13.5 Landing distance available: 9000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 15L
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 33R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights

2.14.1 Designation: 15R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 33L
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 08R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 26L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light

PAPI on right

2.14.1 Designation: 09
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 27
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 08L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

2.14.1 Designation: 26R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.725 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 135.15 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 290.2 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 127.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 288.25 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 124.05 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 128.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 118.575 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: GND METERING
2.18.3 Service designation: 119.95 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 09. Magnetic variation: 3E
2.19.2 ILS identification: UYO
2.19.5 Coordinates: 29−58−39.41N / 95−17−57.58W
2.19.6 Site elevation: 81.6 ft

2.19.1 ILS type: Localizer for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29−59−36.28N / 95−21−31.28W
2.19.6 Site elevation: 92.9 ft

2.19.1 ILS type: Localizer for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29−58−39.32N / 95−20−15.34W
2.19.6 Site elevation: 88.1 ft

2.19.1 ILS type: Localizer for runway 33R. Magnetic variation: 3E
2.19.2 ILS identification: CDG
2.19.5 Coordinates: 29−59−31.62N / 95−21−37.64W
2.19.6 Site elevation: 92.5 ft

2.19.1 ILS type: Localizer for runway 08R. Magnetic variation: 3E
2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29−59−36.39N / 95−19−19.57W
2.19.6 Site elevation: 90.2 ft

2.19.1 ILS type: DME for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29−59−38.92N / 95−21−31.31W
2.19.6 Site elevation: 92.9 ft

2.19.1 ILS type: DME for runway 08R. Magnetic variation: 3E

2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29–59–38.92N / 95–21–31.31W
2.19.6 Site elevation: 92.9 ft

2.19.1 ILS type: DME for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29–58–35.38N / 95–20–13.58W
2.19.6 Site elevation: 88.2 ft

2.19.1 ILS type: DME for runway 09. Magnetic variation: 3E
2.19.2 ILS identification: UYO
2.19.5 Coordinates: 29–58–35.38N / 95–20–13.58W
2.19.6 Site elevation: 88.2 ft

2.19.1 ILS type: Glide Slope for runway 33R. Magnetic variation: 3E
2.19.2 ILS identification: CDG
2.19.5 Coordinates: 29–57–38.81N / 95–20–33.46W
2.19.6 Site elevation: 80.7 ft

2.19.1 ILS type: Glide Slope for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29–59–39.54N / 95–19–42.81W
2.19.6 Site elevation: 87.4 ft

2.19.1 ILS type: Glide Slope for runway 09. Magnetic variation: 3E
2.19.2 ILS identification: UYO
2.19.5 Coordinates: 29–58–35.39N / 95–19–50.68W
2.19.6 Site elevation: 86 ft

2.19.1 ILS type: Glide Slope for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29–58–35.44N / 95–18–20.86W
2.19.6 Site elevation: 81 ft

2.19.1 ILS type: Glide Slope for runway 08R. Magnetic variation: 3E
2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29–59–40.32N / 95–21–00.00W
2.19.6 Site elevation: 89.4 ft

2.19.1 ILS type: Outer Marker for runway 08R. Magnetic variation: 3E
2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29–59–36.55N / 95–28–20.43W
2.19.6 Site elevation: 117 ft

2.19.1 ILS type: Outer Marker for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29–58–41.04N / 95–13–20.44W
2.19.6 Site elevation: 80 ft

2.19.1 ILS type: Outer Marker for runway 09. Magnetic variation: 3E
2.19.2 ILS identification: UYO
2.19.5 Coordinates: 29–58–44.10N / 95–26–00.00W
2.19.6 Site elevation: 105 ft

2.19.1 ILS type: Outer Marker for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29–59–36.04N / 95–12–54.15W
2.19.6 Site elevation: 75 ft

2.19.1 ILS type: Outer Marker for runway 33R. Magnetic variation: 3E
2.19.2 ILS identification: CDG
2.19.5 Coordinates: 29–53–33.65N / 95–17–56.01W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 08R. Magnetic variation: 3E
2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29–59–36.29N / 95–21–29.37W
2.19.6 Site elevation: 94 ft

2.19.1 ILS type: Inner Marker for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29–58–39.41N / 95–17–59.17W
2.19.6 Site elevation: 81.7 ft

2.19.1 ILS type: Inner Marker for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29–59–36.38N / 95–19–20.60W
2.19.6 Site elevation: 89.8 ft

2.19.1 ILS type: Glide Slope for runway 15R. Magnetic variation: 3E
2.19.2 ILS identification: LKM
2.19.5 Coordinates: 29–59–00.00N / 95–21–39.03W
2.19.6 Site elevation: 90.5 ft

2.19.1 ILS type: Localizer for runway 15R. Magnetic variation: 3E
2.19.2 ILS identification: LKM

2.19.5 Coordinates: 29–57–39.37N / 95–20–41.85W
2.19.6 Site elevation: 83.4 ft

2.19.1 ILS type: Middle Marker for runway 08R. Magnetic variation: 3E
2.19.2 ILS identification: IAH
2.19.5 Coordinates: 29–59–36.24N / 95–21–51.93W
2.19.6 Site elevation: 94 ft

2.19.1 ILS type: Middle Marker for runway 27. Magnetic variation: 3E
2.19.2 ILS identification: GHI
2.19.5 Coordinates: 29–58–39.42N / 95–17–37.46W
2.19.6 Site elevation: 83 ft

2.19.1 ILS type: Middle Marker for runway 09. Magnetic variation: 3E
2.19.2 ILS identification: UYO
2.19.5 Coordinates: 29–58–39.36N / 95–20–32.49W
2.19.6 Site elevation: 92 ft

2.19.1 ILS type: Middle Marker for runway 26L. Magnetic variation: 3E
2.19.2 ILS identification: JYV
2.19.5 Coordinates: 29–59–36.42N / 95–18–57.72W
2.19.6 Site elevation: 91 ft

2.19.1 ILS type: Middle Marker for runway 33R. Magnetic variation: 3E
2.19.2 ILS identification: CDG
2.19.5 Coordinates: 29–57–00.00N / 95–20–00.00W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 08L. Magnetic variation: 3E
2.19.2 ILS identification: BZU
2.19.5 Coordinates: 30–00–29.73N / 95–19–36.90W
2.19.6 Site elevation: 90.8 ft

2.19.1 ILS type: Glide Slope for runway 08L. Magnetic variation: 3E
2.19.2 ILS identification: BZU
2.19.5 Coordinates: 30–00–29.75N / 95–21–18.69W
2.19.6 Site elevation: 86.6 ft

2.19.1 ILS type: Localizer for runway 08L. Magnetic variation: 3E
2.19.2 ILS identification: BZU
2.19.5 Coordinates: 30–00–25.87N / 95–19–36.97W
2.19.6 Site elevation: 95.1 ft

2.19.1 ILS type: Inner Marker for runway 08L. Magnetic variation: 3E
2.19.2 ILS identification: BZU
2.19.5 Coordinates: 30–00–25.77N / 95–21–40.86W
2.19.6 Site elevation: 91.6 ft

2.19.1 ILS type: DME for runway 26R. Magnetic variation: 3E
2.19.2 ILS identification: OND
2.19.5 Coordinates: 30–00–21.91N / 95–21–44.04W
2.19.6 Site elevation: 88 ft

2.19.1 ILS type: Glide Slope for runway 26R. Magnetic variation: 3E
2.19.2 ILS identification: OND
2.19.5 Coordinates: 30–00–29.81N / 95–20–00.00W
2.19.6 Site elevation: 90.3 ft

2.19.1 ILS type: Localizer for runway 26R. Magnetic variation: 3E
2.19.2 ILS identification: OND
2.19.5 Coordinates: 30–00–25.77N / 95–21–43.96W
2.19.6 Site elevation: 91.4 ft

2.19.1 ILS type: Inner Marker for runway 26R. Magnetic variation: 3E
2.19.2 ILS identification: OND
2.19.5 Coordinates: 30–00–25.87N / 95–19–40.42W
2.19.6 Site elevation: 95.3 ft

General Remarks:
BIRDS ON & IN VICINITY OF AIRPORT.

TXLN 'RA', 'RB', 'RC', 'R2', AND TAXIWAY 'SC' NORTH OF TAXIWAY 'SB' ARE DESIGNATED NON–MOVEMENT AREAS OPERD BY UAL RAMP CONTROL.

9 FT AGL UNMARKED SECURITY FENCE ADJACENT TO FBO & CORPORATE BASE OPERATOR RAMPS AND NONMOVEMENT AREA TAXILANES.

TAXIWAY 'NR' CLOSED TO AIRCRAFT WITH WINGSPANS GREATER THAN 125 FT BETWEEN TAXIWAY 'WD' & TAXIWAY 'WB'.

TAXIWAY 'SF' BETWEEN TAXIWAY 'NB' AND TXLN 'RA' IS DESIGNATED NON–MOVEMENT AREA.

DUAL TAXIWAY OPERATIONS TAXIWAY NK BETWEEN TAXIWAY NB & NORTH RAMP; WEST CENTERLINE RESTRICTED TO AIRCRAFT MAX WINGSPANS 125 FT & EAST CENTERLINE MAX WINGSPANS 214 FT.

THE FOLLOWING MOVEMENT AREAS ARE NOT VISIBLE FROM THE ATCT: PORTIONS OF TAXIWAYS 'WA' & 'WB' FROM TAXIWAY 'WH' TO THE APPROACH END RUNWAY 33R; TAXIWAYS 'WA' & 'WB' FROM TAXIWAY 'WD' NORTH FOR 400 FT; TAXIWAY 'WD' FROM TAXIWAY 'WA' TO TAXIWAY 'NR'; TAXIWAY 'NR'; TAXIWAY 'WL' FROM RUNWAY 15L TO TAXIWAY 'WB' & TAXIWAY 'WM'.

NORTH RAMP NORTH & SOUTH TAXI LANES CLOSED TO AIRCRAFT WITH WINGSPANS GREATER THAN 125 FT.

RUNWAY 15L/33R MAGNETIC ANOMALIES MAY AFFECT COMPASS HEADING FOR TAKE-OFF.

TAXIWAYS AIRMET & WESTBOUND MAGNETIC ANOMALIES MAY AFFECT COMPASS HEADING.

NORTH RAMP TAXILANE BETWEEN TAXIWAYS NF & NR RESTRICTED TO AIRCRAFT WITH WINGSPAN 125 FT & BELOW.

TAXIWAY WC WEST OF RUNWAY 15R/33L RESTRICTED TO AIRCRAFT WITH 118 FT WINGSPAN AND BELOW.

ASDE–X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS–B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

NOISE SENSITIVE AREA N, E AND W OF AIRPORT.

TXLN RC CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135 FT.

RUNWAY STATUS LIGHTS ARE IN OPN.

TAXIWAY WJ CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R & TAXIWAY AIRMET; BARRICADED & LIGHTED.

TAXIWAY WEAK CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R &TWY WESTBOUND; BARRICADED & LIGHTED.

TAXIWAY WZ CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R & TAXIWAY WESTBOUND; BARRICADED & LIGHTED.

TAXIWAY WM CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R AND TAXIWAY WESTBOUND; BARRICADED & LIGHTED.

TAXIWAY WH CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R AND TAXIWAY WESTBOUND; BARRICADED AND LIGHTED.

TAXIWAY AIRMET CLOSED INDEFINITELY BETWEEN TAXIWAYS WILL & WN; BARRICADED AND LIGHTED.

TAXIWAY AIRMET CLOSED INDEFINITELY BETWEEN TAXIWAYS WG & WILL; BARRICADED AND LIGHTED.

TAXIWAY WG CLOSED INDEFINITELY BETWEEN RUNWAY 15L/33R AND TAXIWAY AIRMET.

TAXIWAY WILL LIGHTS BETWEEN RUNWAY 15L/33R AND TAXIWAY WESTBOUND OUT OF SERVICE

INDEFINITELY.

TAXIWAY SEVERE WEATHER FORECAST RUN UP PAD FOR RUNWAY 15L CLOSED TO AIRCRAFT WITH WINGSPAN 135 FT & OVER.

RUNWAY 09/27 CLOSED TO AIRCRAFT WITH WINGSPAN 215 FT & ABOVE.

TAXIWAY STANDARD FORM BETWEEN RUNWAY 09/27 UP TO AND INCLUDING THE EAST BRIDGE CLOSED TO AIRCRAFT WITH WINGSPAN 215 FT & OVER.

TAXIWAY NR BETWEEN TAXIWAY NO CHANGE AND TAXIWAY SEVERE WEATHER FORECAST CLOSED TO AIRCRAFT WINGSPAN MORE THAN 214 FT.

TAXIWAY SEVERE WEATHER FORECAST BETWEEN TAXIWAY NR AND TAXIWAY WESTBOUND CLOSED TO AIRCRAFT WINGSPAN MORE THAN 214 FT.

TAXIWAY NR BETWEEN SEVERE WEATHER FORECAST AND TAXIWAY WESTBOUND DESIGNATED NON−MOVEMENT AREA.

TAXIWAY NK BETWEEN TAXIWAY NB AND TERMINAL D RAMP SIMULTANEOUS AIRCRAFT OPERATIONS PROHIBITED WHEN MIDDLE TAXILANE IN USE.

PILOTS/CREWS SHOULD BE AWARE OF DEP TURNS ON COURSE IN EXCESS OF 180 DGRS. PILOT READ−BACK OF DIRECTION OF TURNS IS HIGHLY ENCOURAGED.

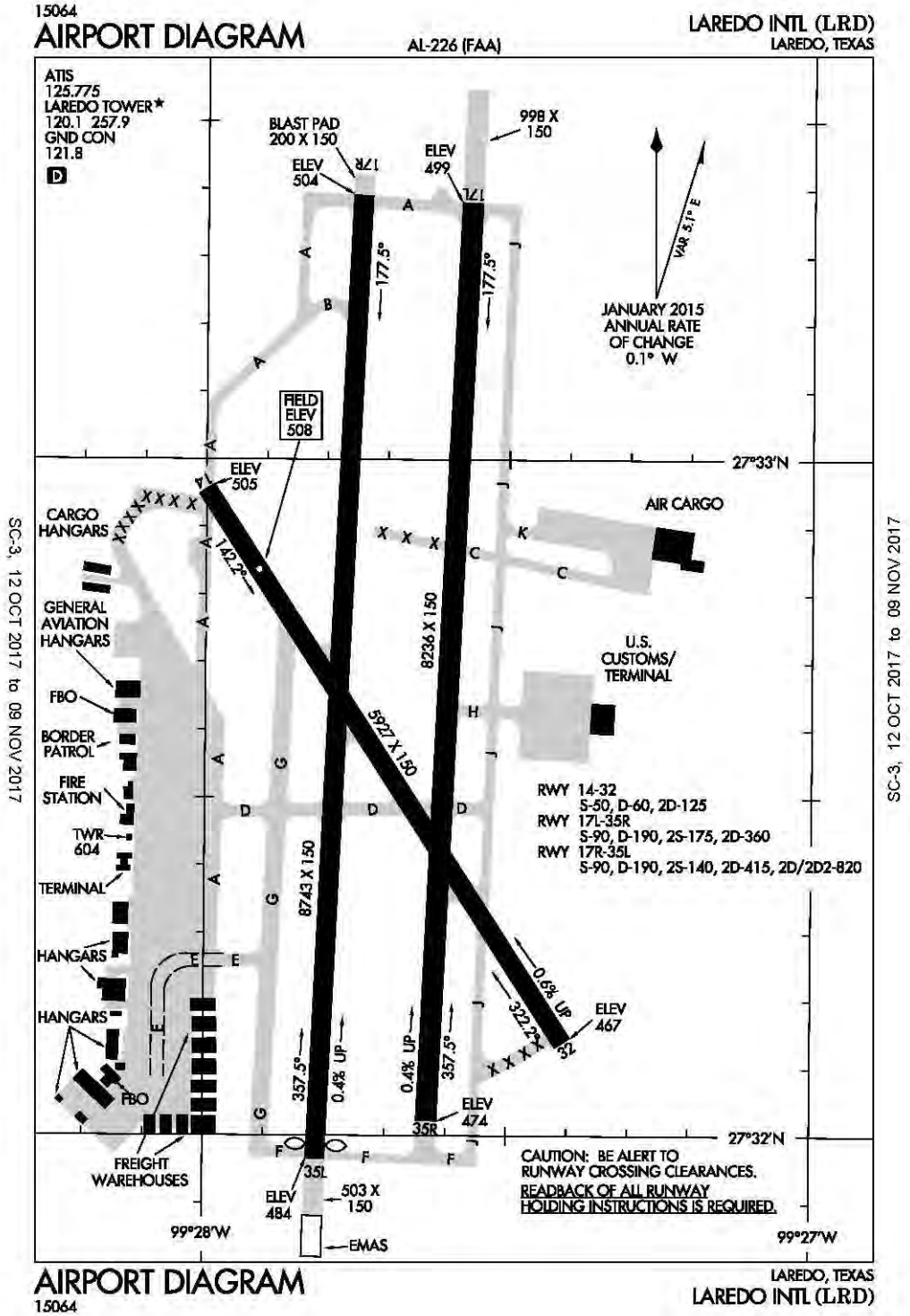
APRON TAXILANE RA BETWEEN TAXIWAY STRATOCUMULUS AND TAXILANE R2 IRREGULAR SURFACE STEEL PLATE OVER CL LIGHT.

TAXIWAY STRATOCUMULUS BETWEEN TAXILANE RA AND TAXILANE RB STEEL PLATE OVER CL LIGHT FIXTURE.

HELICOPTER HOVER/TAXI RESTRICTED TO HARD SURFACE MOVEMENT AREAS ONLY.

GBAS APPROACH SERVICE VOLUME 20NM FR THRESHOLD, ALL GLS APPROACHES.

Laredo, Texas
Laredo International
ICAO Identifier KLRD



Laredo, TX
Laredo Intl
ICAO Identifier KLRD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 27−32−39.10N / 99−27−41.70W
2.2.2 From City: 3 Miles NE Of Laredo, TX
2.2.3 Elevation: 508 ft
2.2.5 Magnetic variation: 8E (1985)
2.2.6 Airport Contact: Mario I. Maldonado
5210 BOB BULLOCK LOOP
Laredo, TX 78041
(956−795−2000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 7/1/1975

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 32
2.10.1.b Type of obstacle: Road (12 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 14
2.12.2 True Bearing: 147
2.12.3 Dimensions: 5927 ft x 150 ft
2.12.5 Coordinates: 27−32−58.02N / 99−28−00.00W
2.12.6 Threshold elevation: 505 ft
2.12.6 Touchdown zone elevation: 508 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 327
2.12.3 Dimensions: 5927 ft x 150 ft
2.12.5 Coordinates: 27−32−00.00N / 99−27−24.67W
2.12.6 Threshold elevation: 467 ft
2.12.6 Touchdown zone elevation: 494 ft
2.12.7 Slope: 0.6UP

2.12.1 Designation: 17R
2.12.2 True Bearing: 183
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.5 Coordinates: 27−33−23.37N / 99−27−44.71W
2.12.6 Threshold elevation: 504 ft
2.12.6 Touchdown zone elevation: 504 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.5 Coordinates: 27−31−56.88N / 99−27−49.04W
2.12.6 Threshold elevation: 484 ft
2.12.6 Touchdown zone elevation: 497 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 17L
2.12.2 True Bearing: 183
2.12.3 Dimensions: 8236 ft x 150 ft
2.12.5 Coordinates: 27−33−22.93N / 99−27−33.60W
2.12.6 Threshold elevation: 499 ft
2.12.6 Touchdown zone elevation: 499 ft
2.12.7 Slope: 0.2DOWN

2.12.1 Designation: 35R
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8236 ft x 150 ft
2.12.5 Coordinates: 27−32−00.00N / 99−27−37.69W
2.12.6 Threshold elevation: 474 ft
2.12.6 Touchdown zone elevation: 487 ft
2.12.7 Slope: 0.4UP

AD 2.13 Declared distances

2.13.1 Designation: 14
2.13.2 Takeoff run available: 5927
2.13.3 Takeoff distance available: 5927
2.13.4 Accelerate−stop distance available: 5927
2.13.5 Landing distance available: 5927

2.13.1 Designation: 32
2.13.2 Takeoff run available: 5927
2.13.3 Takeoff distance available: 5927
2.13.4 Accelerate−stop distance available: 5927
2.13.5 Landing distance available: 5927

2.13.1 Designation: 17R
2.13.2 Takeoff run available: 8743
2.13.3 Takeoff distance available: 8743
2.13.4 Accelerate−stop distance available: 8743
2.13.5 Landing distance available: 8743

2.13.1 Designation: 35L
2.13.2 Takeoff run available: 8743
2.13.3 Takeoff distance available: 8743
2.13.4 Accelerate−stop distance available: 8743
2.13.5 Landing distance available: 8623

2.13.1 Designation: 17L
2.13.2 Takeoff run available: 8236
2.13.3 Takeoff distance available: 8236
2.13.4 Accelerate−stop distance available: 8236
2.13.5 Landing distance available: 8236

2.13.1 Designation: 35R
2.13.2 Takeoff run available: 8236
2.13.3 Takeoff distance available: 8236
2.13.4 Accelerate−stop distance available: 8236
2.13.5 Landing distance available: 8236

AD 2.14 Approach and runway lighting

2.14.1 Designation: 14
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 17R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 35L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 17L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 125.775 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: LRD
2.19.5 Coordinates: 27−31−51.74N / 99−27−49.30W
2.19.6 Site elevation: 477 ft

2.19.1 ILS type: Glide Slope for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: LRD
2.19.5 Coordinates: 27−33−12.50N / 99−27−40.70W
2.19.6 Site elevation: 497 ft

2.19.1 ILS type: Outer Marker for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: LRD
2.19.5 Coordinates: 27−38−32.52N / 99−27−29.32W

2.19.6 Site elevation: 675 ft

2.19.1 ILS type: Middle Marker for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: LRD
2.19.5 Coordinates: 27−33−41.55N / 99−27−43.80W
2.19.6 Site elevation: 484 ft

2.19.1 ILS type: DME for runway 17R. Magnetic variation: 8E
2.19.2 ILS identification: LRD
2.19.5 Coordinates: 27−31−50.88N / 99−27−46.67W
2.19.6 Site elevation: 477 ft

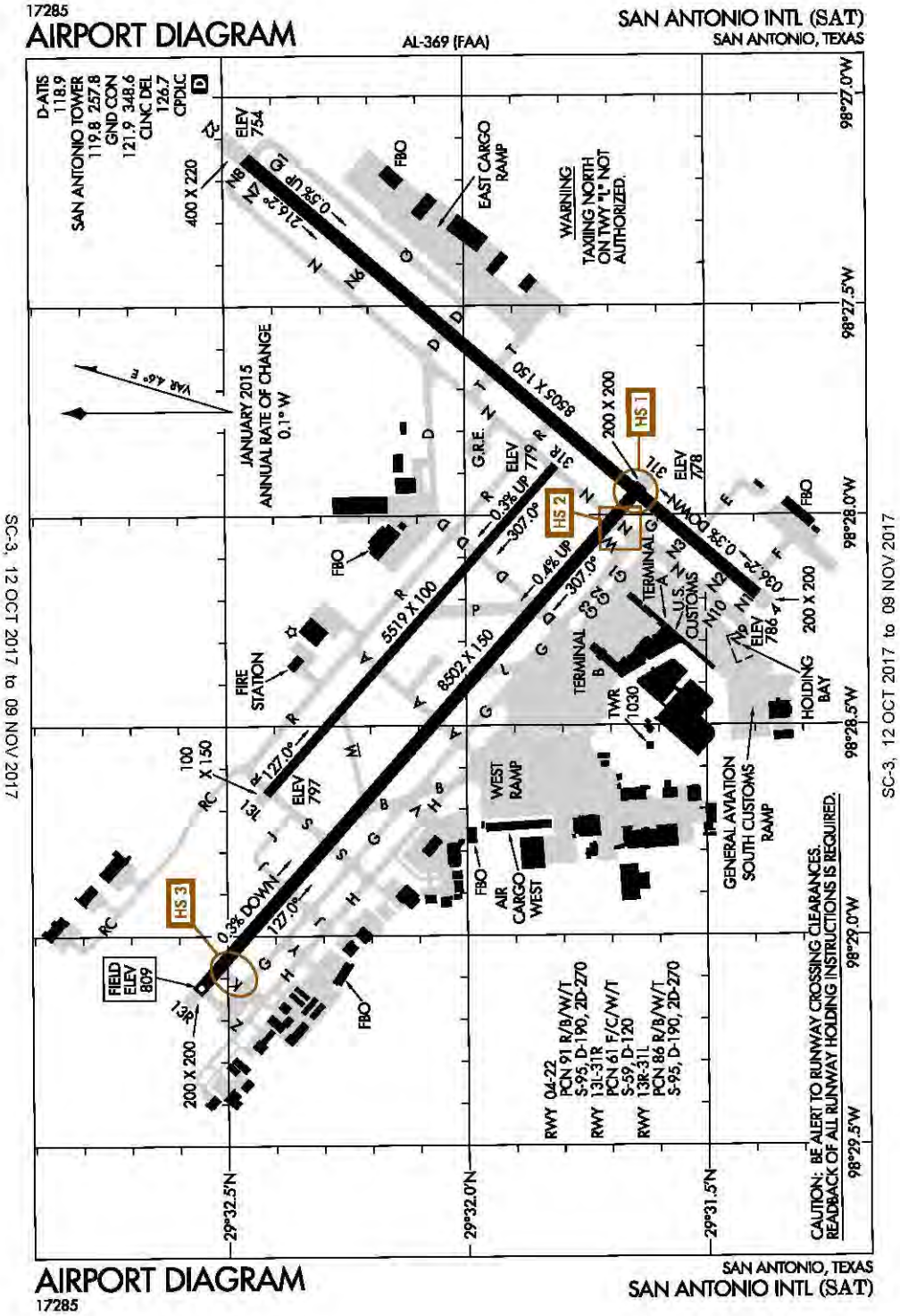
General Remarks:
RUNWAY 14/32 RESTRICTED TO AIRCRAFT LESS THAN 60,000 LBS DTW.

TAXIWAY C CLOSED BETWEEN RUNWAY 17L/35R & RUNWAY 17R INDEFINITELY.

FEDERAL INSPECTION STATION IS LOCATED ON THE WEST GENERAL AVIATION/CARGO APRON.

TAXIWAY LIMA CLOSED INDEFINITELY.

San Antonio, Texas
San Antonio International
ICAO Identifier KSAT



San Antonio, TX
San Antonio Intl
ICAO Identifier KSAT

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 29−32−00.00N / 98−28−00.00W
2.2.2 From City: 7 Miles N Of San Antonio, TX
2.2.3 Elevation: 809.1 ft
2.2.5 Magnetic variation: 4E (2020)
2.2.6 Airport Contact: Russ Handy
9800 AIRPORT BLVD
San Antonio, TX 78216
(210−207−3450)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 04
2.10.1.b Type of obstacle: Pole (46 ft). Lighted
2.10.1.c Location of obstacle: 225 ft from Centerline

2.10.1.a. Runway designation: 31L
2.10.1.b Type of obstacle: Bldg (79 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 300 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 13L
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−32−25.07N / 98−28−39.71W
2.12.6 Threshold elevation: 797 ft
2.12.6 Touchdown zone elevation: 797 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 312
2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−31−48.78N / 98−27−53.02W
2.12.6 Threshold elevation: 779 ft
2.12.6 Touchdown zone elevation: 788 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−32−33.89N / 98−29−00.00W
2.12.6 Threshold elevation: 809 ft
2.12.6 Touchdown zone elevation: 809 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−31−38.00N / 98−27−55.99W
2.12.6 Threshold elevation: 778 ft
2.12.6 Touchdown zone elevation: 790 ft

2.12.1 Designation: 04
2.12.2 True Bearing: 41
2.12.3 Dimensions: 8505 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 29−31−23.64N / 98−28−11.66W
2.12.6 Threshold elevation: 786 ft
2.12.6 Touchdown zone elevation: 786 ft
2.12.7 Slope: 0.5UP

2.12.1 Designation: 22
2.12.2 True Bearing: 221
2.12.3 Dimensions: 8505 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 29−32−27.39N / 98−27−00.00W
2.12.6 Threshold elevation: 754 ft
2.12.6 Touchdown zone elevation: 770 ft

2.12.7 Slope: 0.3DOWN

AD 2.13 Declared distances

2.13.1 Designation: 13L
2.13.2 Takeoff run available: 5519
2.13.3 Takeoff distance available: 5519
2.13.4 Accelerate–stop distance available: 5519
2.13.5 Landing distance available: 5519

2.13.1 Designation: 31R
2.13.2 Takeoff run available: 5519
2.13.3 Takeoff distance available: 5519
2.13.4 Accelerate–stop distance available: 5519
2.13.5 Landing distance available: 5519

2.13.1 Designation: 13R
2.13.2 Takeoff run available: 8502
2.13.3 Takeoff distance available: 8502
2.13.4 Accelerate–stop distance available: 8502
2.13.5 Landing distance available: 8502

2.13.1 Designation: 31L
2.13.2 Takeoff run available: 8502
2.13.3 Takeoff distance available: 8502
2.13.4 Accelerate–stop distance available: 8502
2.13.5 Landing distance available: 8502

2.13.1 Designation: 04
2.13.2 Takeoff run available: 8505
2.13.3 Takeoff distance available: 8505
2.13.4 Accelerate–stop distance available: 8505
2.13.5 Landing distance available: 8505

2.13.1 Designation: 22
2.13.2 Takeoff run available: 8505
2.13.3 Takeoff distance available: 8505
2.13.4 Accelerate–stop distance available: 8505
2.13.5 Landing distance available: 8505

AD 2.14 Approach and runway lighting

2.14.1 Designation: 13L
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

2.14.1 Designation: 31R
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

2.14.1 Designation: 13R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

2.14.1 Designation: 31L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

2.14.1 Designation: 04
2.14.2 Approach lighting system: MALS: 1400 feet medium intensity approach lighting system
2.14.4 Visual approach slope indicator system: 4–light PA-PI on right

2.14.1 Designation: 22
2.14.4 Visual approach slope indicator system: 4–light PA-PI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 118.05 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.8 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 120.3 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 121.2 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 124.45 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 126.7 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 127.1 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 128.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 251.125 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 317.5 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 318.1 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 353.5 MHz

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 285.45 MHz

2.18.1 Service designation: ALAMO
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: ALAMO
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: ALISS
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: ALISS
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: LEJON
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: LEJON
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: MILET
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: ALAMO
2.18.3 Service designation: 127.1 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 335.625 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 127.1 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 118.9 MHz

2.18.4 Hours of operation: 24

2.18.1 Service designation: AS ASGND
2.18.3 Service designation: 239.025 MHz

2.18.1 Service designation: THX
2.18.3 Service designation: 127.1 MHz

2.18.1 Service designation: THX
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: ALIS
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: MILET
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: THX
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: ALAMO
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: LEJON
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: LEJON
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: MILET
2.18.3 Service designation: 125.1 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 125.7 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 127.1 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: THX
2.18.3 Service designation: 269.1 MHz

2.18.1 Service designation: LEJON
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: SETZR
2.18.3 Service designation: 290.225 MHz

2.18.1 Service designation: BOWIE
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: MILET
2.18.3 Service designation: 307 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 31L. Magnetic variation: 4E
2.19.2 ILS identification: IZR
2.19.5 Coordinates: 29–32–42.30N / 98–29–18.78W
2.19.6 Site elevation: 810.4 ft

2.19.1 ILS type: Localizer for runway 04. Magnetic variation: 4E
2.19.2 ILS identification: SAT
2.19.5 Coordinates: 29–32–35.07N / 98–27–00.00W
2.19.6 Site elevation: 748 ft

2.19.1 ILS type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29–31–31.31N / 98–27–47.38W
2.19.6 Site elevation: 770.9 ft

2.19.1 ILS type: DME for runway 31L. Magnetic varia-

tion: 4E
2.19.2 ILS identification: IZR
2.19.5 Coordinates: 29−31−29.11N / 98−27−49.94W
2.19.6 Site elevation: 791 ft

2.19.1 ILS type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29−31−29.11N / 98−27−49.94W
2.19.6 Site elevation: 791 ft

2.19.1 ILS type: Glide Slope for runway 04. Magnetic variation: 4E
2.19.2 ILS identification: SAT
2.19.5 Coordinates: 29−31−30.20N / 98−27−58.06W
2.19.6 Site elevation: 775 ft

2.19.1 ILS type: Glide Slope for runway 31L. Magnetic variation: 4E
2.19.2 ILS identification: IZR
2.19.5 Coordinates: 29−31−47.90N / 98−28−00.00W
2.19.6 Site elevation: 777.6 ft

2.19.1 ILS type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29−32−28.99N / 98−28−54.82W
2.19.6 Site elevation: 801.4 ft

2.19.1 ILS type: Outer Marker for runway 04. Magnetic variation: 4E
2.19.2 ILS identification: SAT
2.19.5 Coordinates: 29−28−28.61N / 98−31−00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 31L. Magnetic variation: 4E
2.19.2 ILS identification: IZR
2.19.5 Coordinates: 29−28−00.00N / 98−23−19.32W
2.19.6 Site elevation: 692 ft

2.19.1 ILS type: Inner Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29−32−38.99N / 98−29−14.51W
2.19.6 Site elevation: 803 ft

2.19.1 ILS type: Middle Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29−32−55.58N / 98−29−35.87W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 04. Magnetic variation: 4E
2.19.2 ILS identification: SAT
2.19.5 Coordinates: 29−31−00.00N / 98−28−35.26W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS identification: ANT
2.19.5 Coordinates: 29−36−27.45N / 98−34−10.92W
2.19.6 Site elevation: 960 ft

2.19.1 ILS type: Middle Marker for runway 31L. Magnetic variation: 4E
2.19.2 ILS identification: IZR
2.19.5 Coordinates: 29−31−20.34N / 98−27−33.19W
2.19.6 Site elevation: 761 ft

2.19.1 ILS type: DME for runway 04. Magnetic variation: 4E
2.19.2 ILS identification: SAT
2.19.5 Coordinates: 29−32−33.08N / 98−26−58.86W
2.19.6 Site elevation: 757.2 ft

General Remarks:
TAXIWAY L CLOSED NORTHBOUND.

NUMEROUS FLOCKS OF BIRDS IN THE VICINITY OF AIRPORT.

GLIDER/SOARING OPERATIONS APPROXIMATELY 17 MILES NW OF AIRPORT DURING VFR.

TAXIWAY D NON–MOVEMENT AREA FROM TAXIWAY N TO 500 FT W OF TAXIWAY N.

NOISE SENSITIVE AREAS EXIST ON ALL SIDES OF AIRPORT, AT PILOTS DISCRETION CLIMB AS QUICKLY AND QUIETLY AS SAFELY POSSIBLE ON DEPARTURE AND USE CONSIDERATION WHEN FLYING OVER POPULATED AREAS BY MINIMIZING FLIGHT AND HIGH POWER SETTINGS. MILITARY AIRCRAFT: DEPARTING AND ARRIVING AIRCRAFT WILL USE MINIMUM POWER SETTINGS CONSISTENT WITH AIRCRAFT FLIGHT MANUALS, AFTERBURNER TAKEOFF IS PROHIBITED UNLESS REQUIRED FOR SAFETY OF FLIGHT. ENGINE–UPS ARE PERMITTED BETWEEN 0600–2300.

AIRCRAFT TAXIING ON RUNWAY 04 NE BOUND LOOK FOR HOLD SHORT TO RUNWAY 31L.

AIRCRAFT TAXIING ON TAXIWAY N SW BOUND LOOK FOR HOLD SHORT TO RUNWAY 31R.

WORK IN PROGRESS SCHEDULED MAINTENANCE ON & ALONG TAXIWAYS AND RAMPS AREAS AT VARIOUS TIMES.

GROUND RUN–UP ENCLOSURE AVAILABLE 24 HRS.

TERMINAL GATES A1, A5, A6, A7 & A8 USE ONLY WITH PRIOR PERMISSION REQUIRED CALL OPERATIONS 210–413–4928.

RUNWAY 13L/31R NOT AVAILABLE FOR PART 121 AIR CARRIER OPERATIONS.

THE FOLLOWING TAXIWAYS ARE NOT AVAILABLE FOR AIRCRAFT 59,000 LBS OR OVER: TAXIWAY A & TAXIWAY J NORTH OF RUNWAY 13R–31L, TAXIWAY M & TAXIWAY P, TAXIWAY H NORTHWEST OF TAXIWAY Z AND TAXIWAY E EAST OF RUNWAY 04/22.

TAXIWAY Z CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 118 FT.

C130 AND C141 TYPE AIRCRAFT SHALL PARK ON WEST RAMP TO CLEAR CUSTOMS.

INNER RAMP TAXILANE EAST OF TERMINAL A IS CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135’ EXCEPT FOR AIRCRAFT CROSSING THE INNER RAMP TO GATES A1 TO A5.

PRIOR PERMISSION REQUIRED WITH AIRPORT OPERATIONS FOR AIRCRAFT POWERING BACK FROM TERMINAL GATES.

TAXIWAYS L & B CLOSED TO AIRCRAFT WITH WINGSPANS GREATER THAN 118 FT EXITING RUNWAY 31L.

A BARRICADED PAVEMENT ELEVATION CHANGE EXISTS ALONG THE EASTERN SIDE OF THE WEST RAMP.

FREQUENT RUBBER ACCUMULATION NW 2500 RUNWAY 13R/31L.

AIRCRAFT AT TERMINAL A & B ADVISE GROUND CONTROL PRIOR TO PUSH.

COMPASS DEVIATION MAY OCCUR AT THE NW PORTION OF TAXIWAY R DUE TO REBAR RE–ENFORCED CONCRETE BRIDGE LOCATED UNDER THE TAXIWAY.

TAXIWAY R WEST OF TAXIWAY D CLOSED TO AIRCRAFT OVER 270,000 LBS.

ALL INTERNATIONAL GA CLEAR U.S CUSTOMS AT SOUTH CUSTOMS RAMP, CALL U.S. CUSTOMS 210−821−6965 UPON ARRIVAL.

INNER TAXILANE NORTH OF TEMINAL A AND B IS CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 135'.

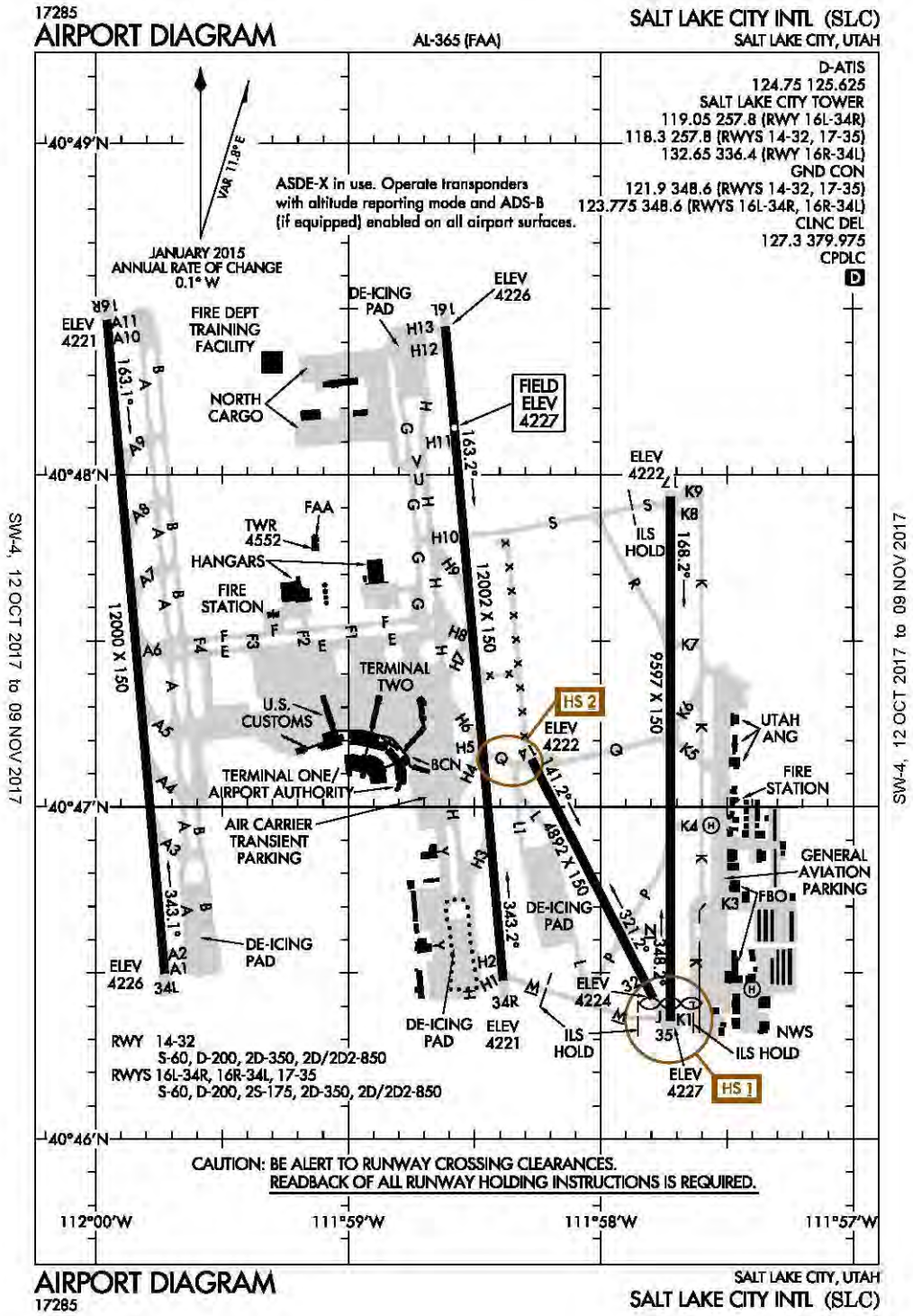
AERODROME ALL SURFACE WORK IN PROGRESS CONSTRUCTION FOR CURRENT INFORMATION CONTACT OPERATIONS. 210−413−4928.

AIRPORT RESTRICTED TO AIRCRAFT WITH WINGSPAN GREATER THAN 171', PRIOR PERMISSION REQUIRED WITH 24HR OPERATIONS 210−413−4928 REQUIRED FOR AUTH.

TAXIWAY R BETWEEN APPROACH END RUNWAY 13L AND TAXIWAY D CLOSED TO AIRCRAFT WINGSPAN MORE THAN 135FT. TAXIWAY S BETWEEN APPROACH END RUNWAY 13L AND RUNWAY 13R/31L CLOSED TO AIRCRAFT WINGSPAN MORE THAN 135FT.

APRON EAST CARGO RAMP INTERSECTION OF RUNWAY 04/22 AND TAXIWAY DELTA AIRCRAFT ARE REQ TO APPLY THE MINIMUM THRUST WHEN CROSSING THE RUNWAY TO AVOID DAMAGE DUE TO JET BLAST.

Salt Lake City, Utah
Salt Lake City International
ICAO Identifier KSLC



Salt Lake City, UT
Salt Lake City Intl
ICAO Identifier KSLC

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 40−47−18.20N / 111−58−39.98W
2.2.2 From City: 3 Miles W Of Salt Lake City, UT
2.2.3 Elevation: 4227.4 ft
2.2.5 Magnetic variation: 11E (2020)
2.2.6 Airport Contact: Maureen Riley
P.O. BOX 145550
Salt Lake City, UT 84114
((801) 575−2408)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100LL
2.4.4 De−icing facilities: Taxiway L De−Ice Pad 131.975
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 35
2.10.1.b Type of obstacle: Ant (24 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 250 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 16L
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.5 Coordinates: 40−48−26.80N / 111−58−36.97W
2.12.6 Threshold elevation: 4226 ft
2.12.6 Touchdown zone elevation: 4227 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.5 Coordinates: 40−46−28.68N / 111−58−23.25W
2.12.6 Threshold elevation: 4221 ft
2.12.6 Touchdown zone elevation: 4222 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.5 Coordinates: 40−48−27.99N / 111−59−57.42W
2.12.6 Threshold elevation: 4221 ft
2.12.6 Touchdown zone elevation: 4223 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.5 Coordinates: 40−46−29.90N / 111−59−43.69W
2.12.6 Threshold elevation: 4226 ft
2.12.6 Touchdown zone elevation: 4226 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 153
2.12.3 Dimensions: 4892 ft x 150 ft
2.12.5 Coordinates: 40−47−00.00N / 111−58−16.45W
2.12.6 Threshold elevation: 4222 ft
2.12.6 Touchdown zone elevation: 4222 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 333
2.12.3 Dimensions: 4892 ft x 150 ft
2.12.5 Coordinates: 40−46−25.51N / 111−57−47.58W
2.12.6 Threshold elevation: 4224 ft
2.12.6 Touchdown zone elevation: 4224 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9597 ft x 150 ft
2.12.5 Coordinates: 40−47−56.10N / 111−57−43.46W
2.12.6 Threshold elevation: 4222 ft
2.12.6 Touchdown zone elevation: 4219 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 360
2.12.3 Dimensions: 9597 ft x 150 ft
2.12.5 Coordinates: 40−46−21.29N / 111−57−43.44W
2.12.6 Threshold elevation: 4227 ft
2.12.6 Touchdown zone elevation: 4224 ft

2.12.1 Designation: HB
2.12.3 Dimensions: 60 ft x 60 ft
2.12.5 Coordinates: 40−46−27.08N / 111−57−24.06W
2.12.6 Threshold elevation: 4220 ft
2.12.1 Designation: HF
2.12.3 Dimensions: 60 ft x 60 ft

AD 2.13 Declared distances

2.13.1 Designation: 16L

2.13.2 Takeoff run available: 12002
2.13.3 Takeoff distance available: 12002
2.13.4 Accelerate–stop distance available: 12002
2.13.5 Landing distance available: 12002

2.13.1 Designation: 34R
2.13.2 Takeoff run available: 12002
2.13.3 Takeoff distance available: 12002
2.13.4 Accelerate–stop distance available: 12002
2.13.5 Landing distance available: 12002

2.13.1 Designation: 16R
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 34L
2.13.2 Takeoff run available: 12000
2.13.3 Takeoff distance available: 12000
2.13.4 Accelerate–stop distance available: 12000
2.13.5 Landing distance available: 12000

2.13.1 Designation: 14
2.13.2 Takeoff run available: 4892
2.13.3 Takeoff distance available: 4892
2.13.4 Accelerate–stop distance available: 4892
2.13.5 Landing distance available: 4892

2.13.1 Designation: 32
2.13.2 Takeoff run available: 4892
2.13.3 Takeoff distance available: 4892
2.13.4 Accelerate–stop distance available: 4892
2.13.5 Landing distance available: 4892

2.13.1 Designation: 17
2.13.2 Takeoff run available: 9597
2.13.3 Takeoff distance available: 9597
2.13.4 Accelerate–stop distance available: 9597
2.13.5 Landing distance available: 9597

2.13.1 Designation: 35
2.13.2 Takeoff run available: 9597
2.13.3 Takeoff distance available: 9597
2.13.4 Accelerate–stop distance available: 9597
2.13.5 Landing distance available: 9273

AD 2.14 Approach and runway lighting

2.14.1 Designation: 16L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 34R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 16R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 34L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 14
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 32
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 17
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on right

2.14.1 Designation: 35
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: CD/P
2.18.3 Service designation: 379.975 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 125.625 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 124.75 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: GND/P
2.18.3 Service designation: 123.775 MHz

2.18.1 Service designation: ANG COMD POST
2.18.3 Service designation: 303 MHz

2.18.1 Service designation: ANG COMD POST
2.18.3 Service designation: 311 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.05 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: CD/P PRE−TAXI CLNC PRE−DEP CLNC
2.18.3 Service designation: 127.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 132.65 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.8 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 336.4 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 16L. Magnetic variation: 11E
2.19.2 ILS identification: MOY
2.19.5 Coordinates: 40−46−18.49N / 111−58−22.06W
2.19.6 Site elevation: 4223.5 ft

2.19.1 ILS type: Localizer for runway 34L. Magnetic variation: 11E
2.19.2 ILS identification: UUH
2.19.5 Coordinates: 40−48−37.96N / 111−59−58.58W
2.19.6 Site elevation: 4217.3 ft

2.19.1 ILS type: Localizer for runway 17. Magnetic variation: 11E
2.19.2 ILS identification: BNT
2.19.5 Coordinates: 40−46−10.06N / 111−57−43.44W
2.19.6 Site elevation: 4224.9 ft

2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 11E
2.19.2 ILS identification: UAT
2.19.5 Coordinates: 40−46−19.93N / 111−59−42.52W
2.19.6 Site elevation: 4224.6 ft

2.19.1 ILS type: Localizer for runway 35. Magnetic variation: 11E
2.19.2 ILS identification: UTJ
2.19.5 Coordinates: 40−47−00.00N / 111−57−51.55W
2.19.6 Site elevation: 4217 ft

2.19.1 ILS type: Localizer for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40−48−37.67N / 111−58−38.21W
2.19.6 Site elevation: 4221.6 ft

2.19.1 ILS type: DME for runway 16L. Magnetic variation: 11E
2.19.2 ILS identification: MOY
2.19.5 Coordinates: 40−46−18.71N / 111−58−18.11W
2.19.6 Site elevation: 4236 ft

2.19.1 ILS type: DME for runway 34L. Magnetic variation: 11E
2.19.2 ILS identification: UUH
2.19.5 Coordinates: 40−46−19.61N / 111−59−46.36W
2.19.6 Site elevation: 4232 ft

2.19.1 ILS type: Glide Slope for runway 16L. Magnetic variation: 11E
2.19.2 ILS identification: MOY
2.19.5 Coordinates: 40−48−17.07N / 111−58−30.61W
2.19.6 Site elevation: 4222.1 ft

2.19.1 ILS type: Glide Slope for runway 34L. Magnetic variation: 11E
2.19.2 ILS identification: UUH
2.19.5 Coordinates: 40–46–39.89N / 111–59–50.26W
2.19.6 Site elevation: 4219.7 ft

2.19.1 ILS type: DME for runway 17. Magnetic variation: 11E
2.19.2 ILS identification: BNT
2.19.5 Coordinates: 40–46–10.06N / 111–57–46.86W
2.19.6 Site elevation: 4238 ft

2.19.1 ILS type: DME for runway 16R. Magnetic variation: 11E
2.19.2 ILS identification: UAT
2.19.5 Coordinates: 40–46–19.61N / 111–59–46.36W
2.19.6 Site elevation: 4232 ft

2.19.1 ILS type: DME for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40–46–18.71N / 111–58–18.11W
2.19.6 Site elevation: 4236 ft

2.19.1 ILS type: Glide Slope for runway 17. Magnetic variation: 11E
2.19.2 ILS identification: BNT
2.19.5 Coordinates: 40–47–45.73N / 111–57–49.95W
2.19.6 Site elevation: 4220.6 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic variation: 11E
2.19.2 ILS identification: UAT
2.19.5 Coordinates: 40–48–17.29N / 112–00–00.00W
2.19.6 Site elevation: 4215.9 ft

2.19.1 ILS type: Glide Slope for runway 35. Magnetic variation: 11E
2.19.2 ILS identification: UTJ
2.19.5 Coordinates: 40–46–35.14N / 111–57–48.63W
2.19.6 Site elevation: 4219.7 ft

2.19.1 ILS type: Glide Slope for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40–46–39.32N / 111–58–19.28W
2.19.6 Site elevation: 4217 ft

2.19.1 ILS type: Inner Marker for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40–46–20.33N / 111–58–22.29W
2.19.6 Site elevation: 4222 ft

2.19.1 ILS type: Inner Marker for runway 16R. Magnetic variation: 11E
2.19.2 ILS identification: UAT
2.19.5 Coordinates: 40–48–37.20N / 111–59–58.20W
2.19.6 Site elevation: 4218 ft

2.19.1 ILS type: Middle Marker for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40–46–00.00N / 111–58–18.28W
2.19.6 Site elevation: 4221 ft

2.19.1 ILS type: Middle Marker for runway 16R. Magnetic variation: 11E
2.19.2 ILS identification: UAT
2.19.5 Coordinates: 40–48–56.30N / 112–00–00.00W
2.19.6 Site elevation: 4215 ft

2.19.1 ILS type: Outer Marker for runway 35. Magnetic variation: 11E
2.19.2 ILS identification: UTJ
2.19.5 Coordinates: 40–40–52.21N / 111–57–46.57W
2.19.6 Site elevation: 4310 ft

2.19.1 ILS type: Outer Marker for runway 34R. Magnetic variation: 11E
2.19.2 ILS identification: SLC
2.19.5 Coordinates: 40–40–52.21N / 111–57–46.57W
2.19.6 Site elevation: 4310 ft

2.19.1 ILS type: Inner Marker for runway 16L. Magnetic variation: 11E
2.19.2 ILS identification: MOY
2.19.5 Coordinates: 40–48–35.70N / 111–58–38.00W
2.19.6 Site elevation: 4223 ft

2.19.1 ILS type: Middle Marker for runway 17. Magnetic variation: 11E
2.19.2 ILS identification: BNT
2.19.5 Coordinates: 40–48–23.40N / 111–57–43.40W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 16L. Magnetic variation: 11E
2.19.2 ILS identification: MOY
2.19.5 Coordinates: 40–48–55.10N / 111–58–40.28W
2.19.6 Site elevation: 4217 ft

2.19.1 ILS type: DME for runway 35. Magnetic variation: 11E
2.19.2 ILS identification: UTJ
2.19.5 Coordinates: 40−46−10.06N / 111−57−46.86W
2.19.6 Site elevation: 4238 ft

2.19.1 ILS type: Inner Marker for runway 34L. Magnetic variation: 11E
2.19.2 ILS identification: UUH
2.19.5 Coordinates: 40−46−21.42N / 111−59−42.69W
2.19.6 Site elevation: 4320 ft

General Remarks:

FLOCK OF BIRDS ON AND IN VICINITY OF AIRPORT.

HELIPADS B AND F LOCATED ON GENERAL AVIATION APRONS.

SURFACE MOVEMENT GUIDANCE CONTROL SYSTEM & LOW VISIBILITY TAXI PROCEDURES.

DUE TO TRAFFIC VOLUME, LOCAL DEPARTURE AND ARR OPERATIONS ARE DISCOURAGED AND DELAYS CAN BE EXPECTED BETWEEN 1000−1200 AND 2000−2300.

SPECIAL VFR IS NOT RECOMMEND AT THE AIRPORT, IF REQUIRED, EXPECT DELAYS.

ANG RAMP − OPR 1430−2230Z++ MON−THU. CLOSED FRI−SUN AND HOLIDAY. OFFICIAL BUSINESS ONLY. PRIOR PERMISSION REQUIRED 48 HR ALL AIRCRAFT, VALID 1 HR +/− ESTIMATED TIME OF ARRIVAL. TRANSIENT PRK/SVC EXTREMELY LIMITED. BASE OPERATIONS DSN 245−2274, C801−245−2274. MILITARY ALTITUDE HILL AFB (KHIF) 25 NAUTICAL MILE N. ALL AIRCRAFT CONTACT UTAH CONTROL (COMD POST) 20 MIN OUT WITH ESTIMATED TIME OF ARRIVAL AND REQ.

ANG RAMP − ALL AIRCRAFT CONTACT UTAH CONTROL WITH LANDING & DEP TIMES. COMMAND POST DSN: 245−2416/2417; C801−245−2416/2417. PHASE II WILDLIFE ACT DURING MIGRATION/MORNING/EVENING HRS FR OCT−APR. CONTACT UTAH CONTROL FOR CURRENT BIRD−WATCH CONDITION.

SEE FLIGHT INFORMATION PUBLICATION AP/1 SUPPLEMENTARY AIRPORT INFORMATION.

COMMUNICATIONS−ANG COMMAND POST: CALL UTAH CONTROL.

USE CAUTION FOR EXTENSIVE PARAGLIDING OPERATIONS IN THE VICINITY OF POINT OF THE MOUNTAIN.

SEE CURRENT NOTAMS FOR DATES AND ADDITIONAL INFORMATION.

ANG SERVICE−FUEL: A++.

TAXIWAY Y RESTRICTED TO WINGSPANS LESS THAN 171 FT BETWEEN TAXIWAY H3 AND H4.

RUNWAY 16L RUNUP AREA CLOSED PERMANENTLY.

USE MINIMUM THRUST IN CONSTRUCTION AREAS.

CONTACT GROUND ON 123.775 BEFORE TAXIING OUT OF NORTH CARGO.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

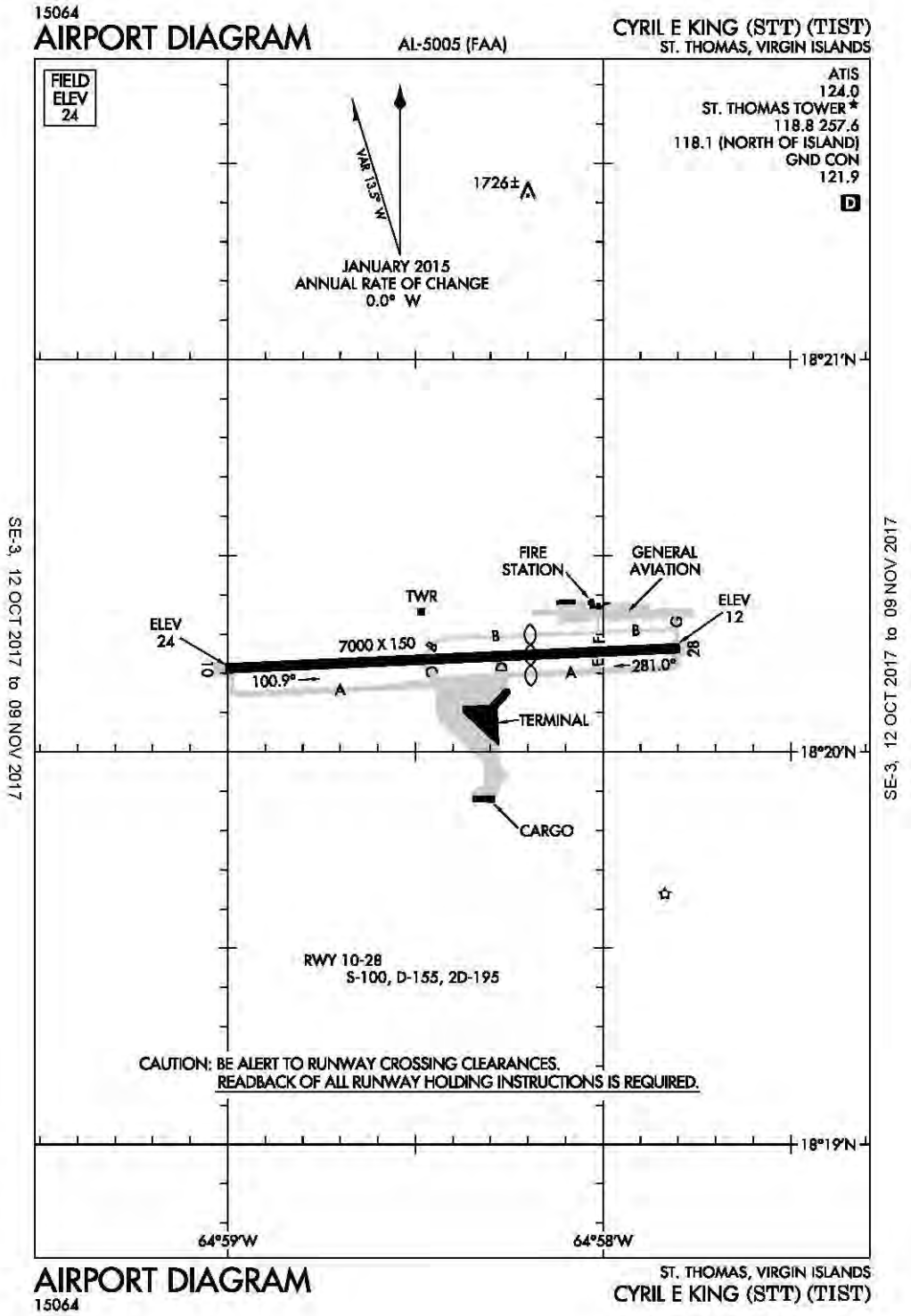
RUNWAY 34L DE−ICE PAD 128.975

RUNWAY 34R DE−ICE PAD 129.975

TAXIWAY L DE−ICE PAD 131.975

RUNWAY 16L DE–ICE PAD 131.975.

Charlotte Amalie St. Thomas, Virgin Islands
Cyril E King
ICAO Identifier TIST



Charlotte Amalie, VI
Cyril E King
ICAO Identifier TIST

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−20−14.30N / 64−58−24.00W
2.2.2 From City: 2 Miles W Of Charlotte Amalie, VI
2.2.3 Elevation: 23.6 ft
2.2.5 Magnetic variation: 13W (2000)
2.2.6 Airport Contact: Vacant
CYRIL E. KING AIRPORT
St Thomas, VI 802
(340−774−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 0700−2300 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Minor

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973
2.6.4 Remarks: Closed To Unscheduled Aircraft 0 Operations With More Than 30 Passenger Seats Except 24 Hrs Prior Permission Required Call Airport Manager 340−774−5100.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 10
2.10.1.b Type of obstacle: Pole. Not Lighted or Marked

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Pole (28 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 400 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10
2.12.2 True Bearing: 87
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.5 Coordinates: 18−20−12.72N / 64−59−00.00W
2.12.6 Threshold elevation: 24 ft
2.12.6 Touchdown zone elevation: 24 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 267
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.5 Coordinates: 18−20−15.81N / 64−57−47.74W
2.12.6 Threshold elevation: 12 ft
2.12.6 Touchdown zone elevation: 16 ft

AD 2.13 Declared distances

2.13.1 Designation: 10
2.13.2 Takeoff run available: 7000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 7000
2.13.5 Landing distance available: 7000

2.13.1 Designation: 28
2.13.2 Takeoff run available: 7000
2.13.3 Takeoff distance available: 7000
2.13.4 Accelerate−stop distance available: 6000
2.13.5 Landing distance available: 3700

AD 2.14 Approach and runway lighting

2.14.1 Designation: 10
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.1 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.8 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 124 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 257.6 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: TMN
2.19.5 Coordinates: 18−20−16.17N / 64−57−39.21W
2.19.6 Site elevation: 16 ft

2.19.1 ILS type: DME for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: TMN
2.19.5 Coordinates: 18−20−18.77N / 64−57−39.48W
2.19.6 Site elevation: 22.6 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: TMN
2.19.5 Coordinates: 18−20−10.75N / 64−58−48.29W
2.19.6 Site elevation: 15.1 ft

General Remarks:

AIRCRAFT THAT BACK TAXI FOR DEP ON RUNWAY 28 SHALL MAKE THEIR 180 DEGREE TURN COUNTERCLOCKWISE.

NOISE SENSITIVE AREA: AVOID OVERFLIGHTS OF WATER ISLAND LOCATED 2 MI SE OF AIRPORT.

PILOTS MAY ENCOUNTER FALSE ILLUSORY INDICATIONS DURING NIGHT VISUAL APPROACHES TO RUNWAY 10 WHEN USING VISUAL CUES FOR VERTICAL GUIDANCE; RECOMMEND USE OF THE ILS GS & FREQUENT CROSS REFERENCE WITH THE AIRCRAFT ALTIMETER TO MAINT THE PROPER APPROACH PROFILE.

LIGHTS ON HILL 4 NAUTICAL MILE SE OF AIRPORT MAY BE MISTAKEN FOR RUNWAY 10/28 WHEN MAKING A VISUAL APPROACH FROM THE SOUTH.

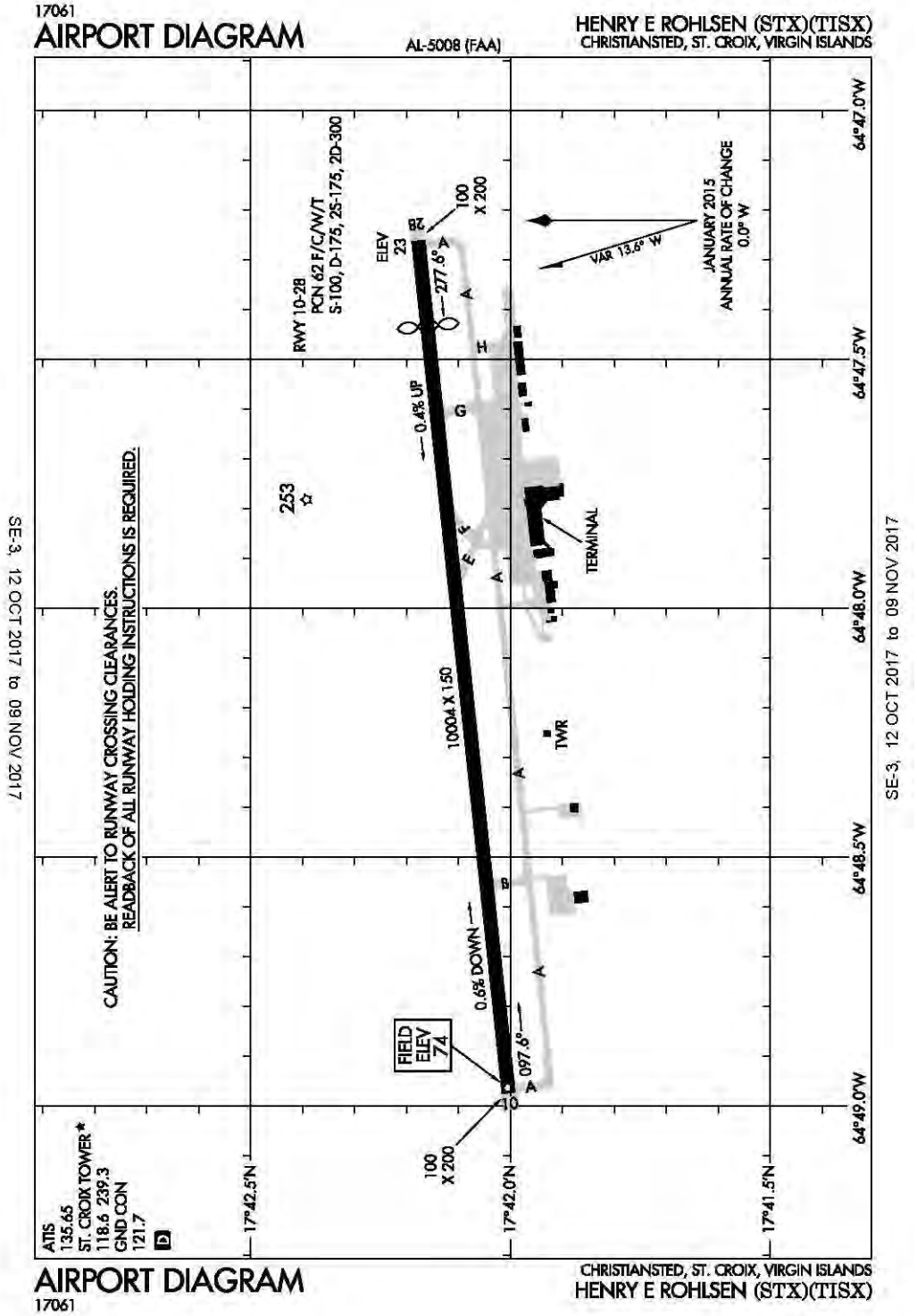
RUNWAY 10 DEPS MAINTAIN RUNWAY HEADING UNTIL REACHING DEP END OF RUNWAY BEFORE TURNING ON COURSE OR ASSIGNED HEADING UNLESS OTHERWISE AUTHORIZED BY ATCT.

AIRCRAFT RESCUE AND FIRE FIGHTING UNAVAILABLE 2300−0630.

PILOTS CONTACT GROUND CONTROL PRIOR TO PUSHBACK.

OBSTRUCTION SAILBOAT MAST 100FT WEST OF APPROACH END OF RUNWAY 10 50FT AGL.

Christiansted St. Croix
Henry E Rohlsen
ICAO Identifier TISX



Christiansted, VI
Henry E Rohlsen
ICAO Identifier TISX

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 17−42−00.00N / 64−48−00.00W
2.2.2 From City: 6 Miles SW Of Christiansted, VI
2.2.3 Elevation: 74.1 ft
2.2.5 Magnetic variation: 13W (2000)
2.2.6 Airport Contact: Arnold Golden (Acting)
P.O. BOX 1134
St Croix, VI 821
(340−778−1012)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, 0500−2300 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A1+,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973
2.6.4 Remarks: Closed To Unscheduled Aircraft 0 Operations With More Than 30 Passenger Seats Except 24 Hrs Prior Permission Required Contact Airport Manager 340−778−1012 Or 340−778−1033(Fax). ARFF Service Unavailable 2300−0500.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 28
2.10.1.b Type of obstacle: Bldg (217 ft). Marked
2.10.1.c Location of obstacle: 800 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 10
2.12.2 True Bearing: 84
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−00.00N / 64−48−58.45W
2.12.6 Threshold elevation: 74 ft
2.12.6 Touchdown zone elevation: 74 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 264
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−10.62N / 64−47−15.54W
2.12.6 Threshold elevation: 22 ft
2.12.6 Touchdown zone elevation: 40 ft

AD 2.13 Declared distances

2.13.1 Designation: 10
2.13.2 Takeoff run available: 10004
2.13.3 Takeoff distance available: 10004
2.13.4 Accelerate−stop distance available: 9000
2.13.5 Landing distance available: 9000

2.13.1 Designation: 28
2.13.2 Takeoff run available: 10004
2.13.3 Takeoff distance available: 10004
2.13.4 Accelerate−stop distance available: 10004
2.13.5 Landing distance available: 9000

AD 2.14 Approach and runway lighting

2.14.1 Designation: 10
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 28
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.6 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 135.65 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: STX
2.19.5 Coordinates: 17−42−11.36N / 64−47−00.00W
2.19.6 Site elevation: 26.4 ft

2.19.1 ILS type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: STX
2.19.5 Coordinates: 17−41−58.77N / 64−48−45.50W
2.19.6 Site elevation: 63.5 ft

2.19.1 ILS type: Outer Marker for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: STX
2.19.5 Coordinates: 17−41−30.92N / 64−53−00.00W
2.19.6 Site elevation: 40 ft

2.19.1 ILS type: Middle Marker for runway 10. Magnetic variation: 13W
2.19.2 ILS identification: STX
2.19.5 Coordinates: 17−41−59.40N / 64−49−00.00W
2.19.6 Site elevation:

General Remarks:

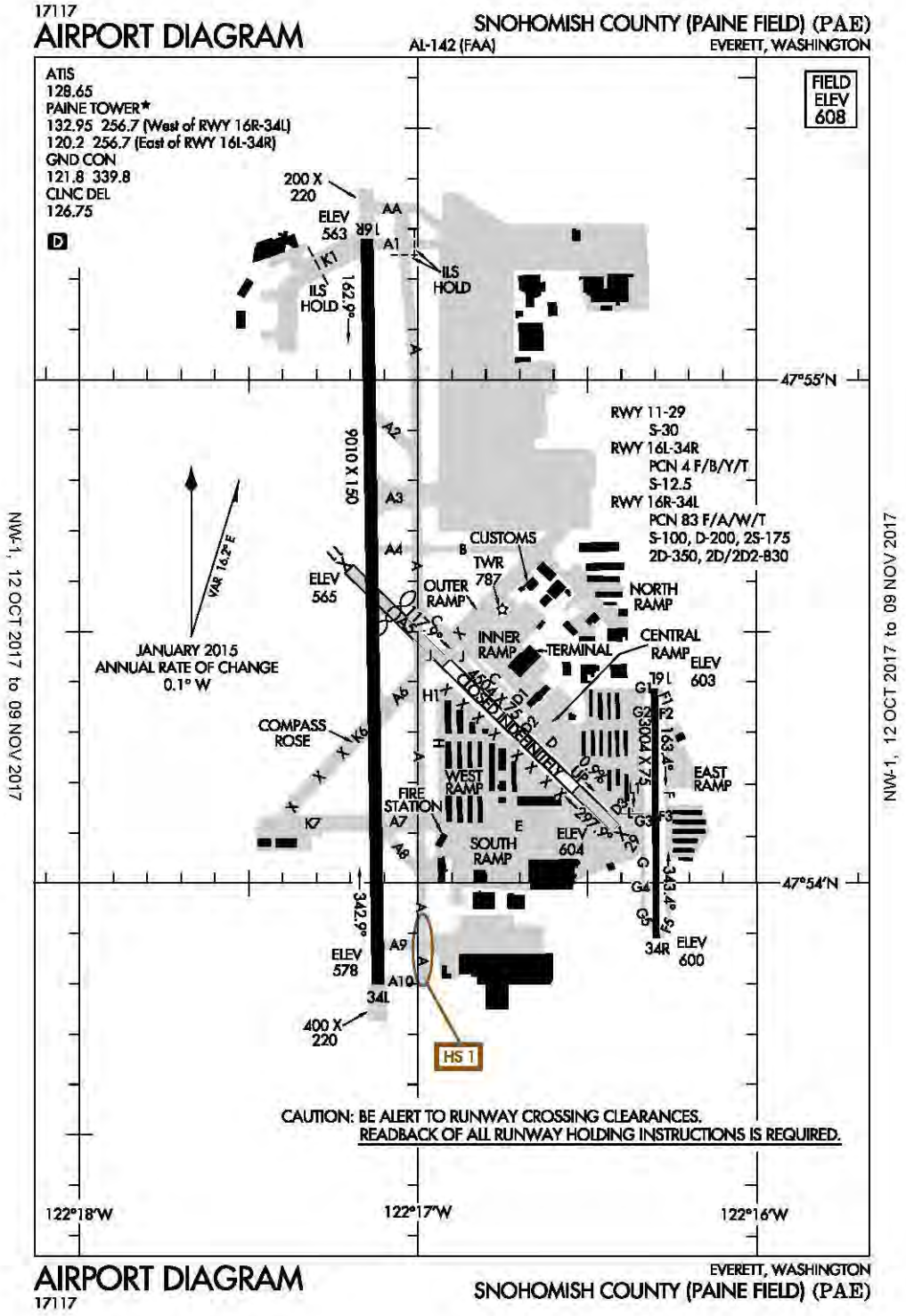
APPROACH TO RUNWAY 28 SOMETIMES OBSCURED BY SMOKE FROM LANDFILL LOCATED E OF AIRPORT.

RUNWAY 10 AND 28 100’ X 200’ BLAST PAD.

BIRDS & WILDLIFE ON & IN THE VICINITY OF AIRPORT.

TAXI INTO POSITION AND HOLD PROCEDURES NO LONGER IN EFFECT.

Everett, Washington
Snohomish County (Paine Field)
ICAO Identifier KPAE



Everett, WA
Snohomish County (Paine Fld)
ICAO Identifier KPAE

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 47−54−25.20N / 122−16−53.70W
2.2.2 From City: 6 Miles SW Of Everett, WA
2.2.3 Elevation: 607.5 ft
2.2.5 Magnetic variation: 17E (2010)
2.2.6 Airport Contact: Arif Ghouse
3220 100TH ST SW
Everett, WA 98204
((425) 388−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 − 2.3.11: MAY−OCT Months, ALL Days, 0700−2100 Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index Iv A certified on 11/1/1974
2.6.4 Remarks: Airport Closed To Aircraft 0 Operations With More Than 30 Passenger Seats 2100−0700 Except Prior Permission Required Contact Airport Operations 425−388−5110/5480. For Addl ARFF Capability Contact Airport Operations 425−388−5110.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 16L
2.10.1.b Type of obstacle: Pole (9 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 100 ft from Centerline

2.10.1.a. Runway designation: 34R
2.10.1.b Type of obstacle: Pole (25 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 125 ft from Centerline

2.10.1.a. Runway designation: 34L
2.10.1.b Type of obstacle: Trees (125 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 930 ft from Centerline

2.10.1.a. Runway designation: 11
2.10.1.b Type of obstacle: Trees (9 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 100 ft from Centerline

2.10.1.a. Runway designation: 29
2.10.1.b Type of obstacle: Trees (46 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 0 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 11
2.12.2 True Bearing: 134
2.12.3 Dimensions: 4504 ft x 75 ft
2.12.5 Coordinates: 47−54−37.48N / 122−17−12.35W
2.12.6 Threshold elevation: 565 ft
2.12.6 Touchdown zone elevation: 608 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 314
2.12.3 Dimensions: 4504 ft x 75 ft
2.12.5 Coordinates: 47−54−00.00N / 122−16−24.91W
2.12.6 Threshold elevation: 604 ft
2.12.6 Touchdown zone elevation: 608 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T
2.12.5 Coordinates: 47−55−16.81N / 122−17−00.00W
2.12.6 Threshold elevation: 563 ft
2.12.6 Touchdown zone elevation: 570 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T

2.12.5 Coordinates: 47−53−47.90N / 122−17−00.00W
2.12.6 Threshold elevation: 578 ft
2.12.6 Touchdown zone elevation: 584 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−54−23.13N / 122−16−18.09W
2.12.6 Threshold elevation: 603 ft
2.12.6 Touchdown zone elevation: 607 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 360
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−53−53.49N / 122−16−17.77W
2.12.6 Threshold elevation: 600 ft
2.12.6 Touchdown zone elevation: 607 ft

AD 2.13 Declared distances

2.13.1 Designation: 16R
2.13.2 Takeoff run available: 9010
2.13.3 Takeoff distance available: 9010
2.13.4 Accelerate−stop distance available: 9010
2.13.5 Landing distance available: 9010

2.13.1 Designation: 34L
2.13.2 Takeoff run available: 9010
2.13.3 Takeoff distance available: 9010
2.13.4 Accelerate−stop distance available: 9010
2.13.5 Landing distance available: 9010

2.13.1 Designation: 16L
2.13.2 Takeoff run available: 3004
2.13.3 Takeoff distance available: 3004
2.13.4 Accelerate−stop distance available: 3004
2.13.5 Landing distance available: 3004

2.13.1 Designation: 34R
2.13.2 Takeoff run available: 3004
2.13.3 Takeoff distance available: 3004
2.13.4 Accelerate−stop distance available: 3004
2.13.5 Landing distance available: 3004

AD 2.14 Approach and runway lighting

2.14.1 Designation: 11
2.14.4 Visual approach slope indicator system: 2−box VASI on left

2.14.1 Designation: 29
2.14.4 Visual approach slope indicator system: 2−box VASI on right

2.14.1 Designation: 16R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PA-PI on right

2.14.1 Designation: 34L
2.14.4 Visual approach slope indicator system: 4−light PA-PI on left

AD 2.18 Air traffic services communication facilities

2.18.1 Service designation: LCL/P(ACFT ARR E OF CNTRLN OR DEP RY 16L/34R)
2.18.3 Service designation: 120.2 MHz

2.18.1 Service designation: LCL/P(ACFT ARR W OF CNTRLN OR DEP RY 16R/34L)
2.18.3 Service designation: 132.95 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 126.75 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 256.7 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 339.8 MHz

2.18.1 Service designation: AR−OPNS
2.18.3 Service designation: 34.1 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 128.65 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 17E
2.19.2 ILS identification: PAE
2.19.5 Coordinates: 47–53–34.03N / 122–17–00.00W
2.19.6 Site elevation: 569.6 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic variation: 17E
2.19.2 ILS identification: PAE
2.19.5 Coordinates: 47–55–00.00N / 122–17–13.62W
2.19.6 Site elevation: 566.6 ft

2.19.1 ILS type: Outer Marker for runway 16R. Magnetic variation: 17E
2.19.2 ILS identification: PAE
2.19.5 Coordinates: 48–03–10.00N / 122–17–19.50W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 16R. Magnetic variation: 17E
2.19.2 ILS identification: PAE
2.19.5 Coordinates: 47–55–53.80N / 122–17–00.00W
2.19.6 Site elevation:

General Remarks:

RUNWAY 16L–34R CLOSED BETWEEN 0500–1500Z–; LARGE AIRCRAFT FLY W PATTERN OVER WATER; SMALL AIRCRAFT FLY E PATTERN OVER AIRPORT.

NOISE SENSITIVE AIRPORT; FOR NOISE ABATEMENT PROCEDURES & TRAFFIC PROCEDURES CALL AIRPORT OPERATIONS 425–388–5125.

IT IS REQUESTED THAT PILOTS ADHERE TO THE FOLLOWING NOISE ABATEMENT PROCEDURES UNLESS OTHERWISE INSTRUCTED BY ATCT, ITINERANT ARRIVAL AND LOW APPROACH OF SMALL AIRCRAFT OVER 250 HORSEPOWER AUTHORIZED ON RUNWAYS 16L AND 34R.

BE ALERT TO CONVERGE TRAFFIC ON BASE TO FINAL LEGS RUNWAYS 16R/34L 2100–0700.

AVOID OVERFLIGHT OF BOEING RAMP – NE CORNER OF AIRPORT DUE TO JET BLAST.

TRAINING FLIGHTS DISCOURAGED AFTER 2200. RUNWAY 16R–34L TOUCH AND GO LANDING PROHIBITED MON–FRI FORM 0700–0900.

AVOID INTERSECTION DEPS FROM RUNWAYS 16L/34R

FLOCKS OF LARGE & SMALL BIRDS IN THE VICINITY OF AIRPORT.

ITINERANT DEP OF SMALL AIRCRAFT OVER 250 HORSEPOWER ON RUNWAY 34R.

TAXIWAY A–2 RESTRICTED TO 30,000 LBS.

AREAS NOT VISIBLE FROM ATCT INCLUDE E EDGE OF S 1200 FT OF TAXIWAY A, TAXIWAY E FROM SE CORNER OF WEST HANGARS TO TAXIWAY A, MID SECTION OF TAXIWAY C1, TAXIWAY H FROM NW EDGE OF WEST HANGARS TO TAXIWAY E, NE EDGE OF INNER INNER RAMP.

RUNWAYS 16L/34R LIMITED TO HELIPORT 8,000 LBS OR LESS.

TAXIWAY W CLOSED INDEFINITE.

TAXIWAY INTENSE D1, AND D2 CLOSED INDEFINITELY.

FOR NOISE ABATEMENT FROM 0500–1500Z++ IF AIRCRAFT PERFORMANCE/WIND ALLOWS, USE RUNWAY

16R FOR ARRIVALS AND RUNWAY 34L FOR DEPARTURES.

TAXIWAY ECHO LIMITED TO AIRCRAFT WITH A WINGSPAN OF 156 FT AND LESS. AIRCRAFT OVER A WINGSPAN OF 156 FT, TUG OPERATIONS ONLY.

TAXIWAY K6 CLOSED WEST OF COMPASS ROSE.

TAXIWAY C BETWEEN INNER RAMP AND CENTRAL RAMP RESTRICTED TO WINGSPAN OF 68’ OR LESS. TAXIWAY D BETWEEN D1 AND TAXIWAY GOLF RESTRICTED TO WINGSPAN OF 49’ OR LESS. TWYY A4, A5, K7 & B RESTRICTED TO WINGSPAN OF 118’ OR LESS. TAXILANE H RESTRICTED TO WINGSPAN OF 49’ OR LESS.

PAE HAS FACILITY CONSTRAINTS THAT LIMIT ITS ABILITY TO ACCOMMODATE DIVERTED FLIGHTS AND MAINTAIN THE ARPTS SAFE OPERATION DURING IRREGULAR OPERATIONS. AIRCRAFT OPERATORS SHOULD CTCT THE ON−DUTY AIRPORT OPERATIONS PERSONNEL (425−610−8411) TO COORDINATE DIVERTED FLIGHTS EXCEPT IN THE CASE OF A DECLARED IN−FLIGHT EMERGENCY.

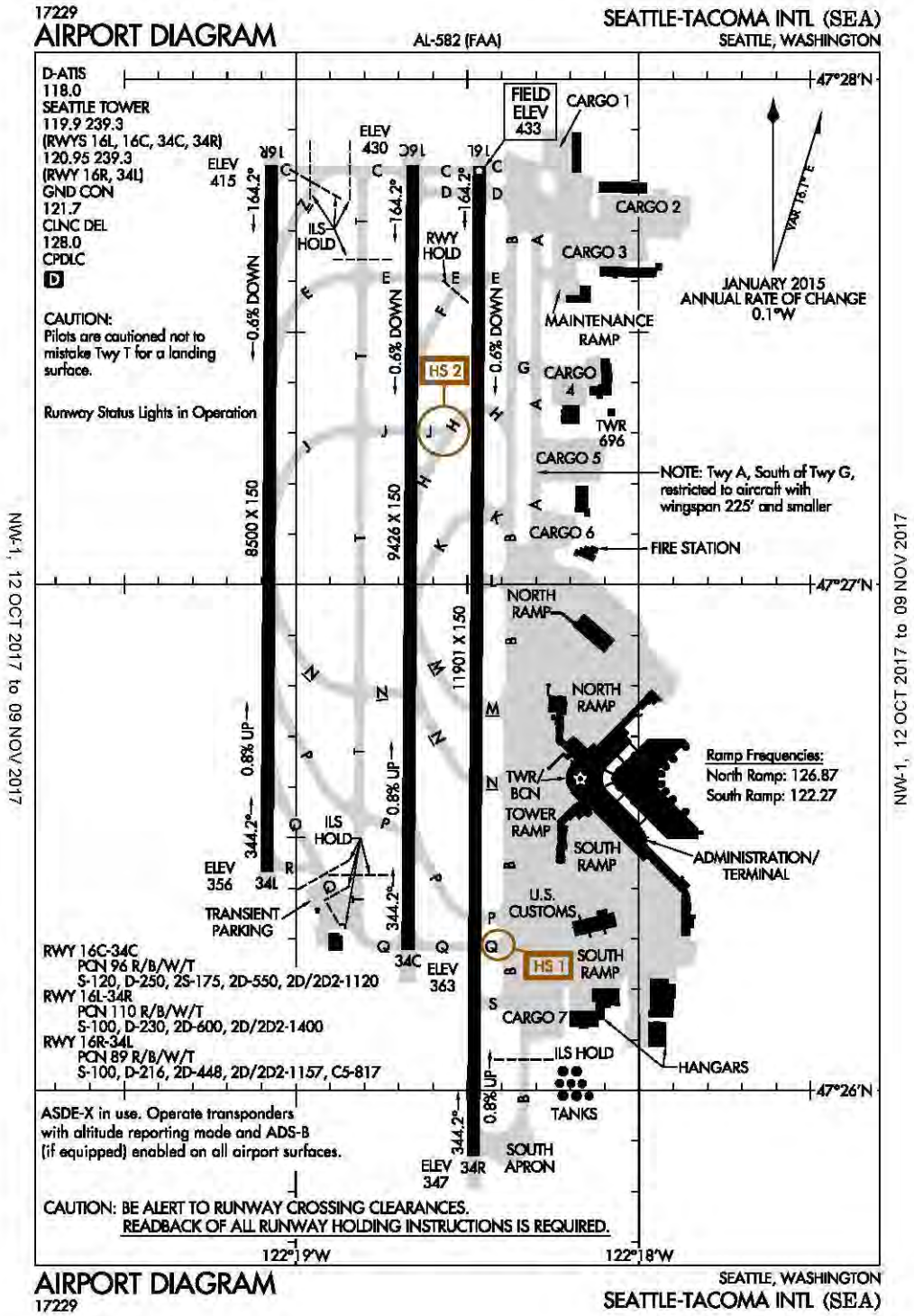
PRIOR PERMISSION REQUIREDUIRED FOR ACCESS ON BOEING RAMP. CONTACT BOEING FLIGHT DISPATCH 206−544−5900 FOR APPROVAL. PRIOR TO TAXI ONTO BOEING RAMP CONTACT BOEING RADIO TOWER 123.475 OR CALL 425−342−5900.

TAXIWAY K1 CLOSED TO AIRCRAFT UNDER 30,000 LBS.

TRANSIENT HELICOPTERS EXPECT LANDING/TAKEOFF ON TAXIWAY B

AIRFIELD CONDITIONS NOT MONITORED AFTER BUSINESS HOURS OF 8AM−5PM LOCAL MON−FRI.

Seattle, Washington
Seattle–Tacoma International
ICAO Identifier KSEA



Seattle, WA
Seattle−Tacoma Intl
ICAO Identifier KSEA

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 47−26−59.60N / 122−18−42.40W
2.2.2 From City: 10 Miles S Of Seattle, WA
2.2.3 Elevation: 432.5 ft
2.2.5 Magnetic variation: 16E (2020)
2.2.6 Airport Contact: Lance Lyttle
BOX 68727
Seattle, WA 98168
((206) 787−5229)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,A1,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: No
2.4.6 Repair facilities: None

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I E certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 34C
2.10.1.b Type of obstacle: Tree (131 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 700 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 16R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−27−49.81N / 122−19−00.00W
2.12.6 Threshold elevation: 415 ft
2.12.6 Touchdown zone elevation: 415 ft
2.12.7 Slope: 0.7DOWN

2.12.1 Designation: 34L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−26−25.92N / 122−19−00.00W
2.12.6 Threshold elevation: 356 ft
2.12.6 Touchdown zone elevation: 379 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47−27−49.66N / 122−18−27.90W
2.12.6 Threshold elevation: 432 ft
2.12.6 Touchdown zone elevation: 432 ft
2.12.7 Slope: 0.7DOWN

2.12.1 Designation: 34R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47−25−52.22N / 122−18−28.94W
2.12.6 Threshold elevation: 347 ft
2.12.6 Touchdown zone elevation: 372 ft
2.12.7 Slope: 0.7UP

2.12.1 Designation: 16C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47−27−49.71N / 122−18−39.55W
2.12.6 Threshold elevation: 430 ft
2.12.6 Touchdown zone elevation: 430 ft
2.12.7 Slope: 0.7DOWN

2.12.1 Designation: 34C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47−26−16.69N / 122−18−40.36W
2.12.6 Threshold elevation: 363 ft
2.12.6 Touchdown zone elevation: 387 ft
2.12.7 Slope: 0.7UP

AD 2.13 Declared distances

2.13.1 Designation: 16R
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate−stop distance available: 8500
2.13.5 Landing distance available: 8500

2.13.1 Designation: 34L
2.13.2 Takeoff run available: 8500
2.13.3 Takeoff distance available: 8500
2.13.4 Accelerate−stop distance available: 8500

2.13.5 Landing distance available: 8500

2.13.1 Designation: 16L
2.13.2 Takeoff run available: 11901
2.13.3 Takeoff distance available: 11901
2.13.4 Accelerate−stop distance available: 11901
2.13.5 Landing distance available: 11901

2.13.1 Designation: 34R
2.13.2 Takeoff run available: 11901
2.13.3 Takeoff distance available: 11901
2.13.4 Accelerate−stop distance available: 11901
2.13.5 Landing distance available: 11901

2.13.1 Designation: 16C
2.13.2 Takeoff run available: 9426
2.13.3 Takeoff distance available: 9426
2.13.4 Accelerate−stop distance available: 9426
2.13.5 Landing distance available: 9426

2.13.1 Designation: 34C
2.13.2 Takeoff run available: 9426
2.13.3 Takeoff distance available: 9426
2.13.4 Accelerate−stop distance available: 9426
2.13.5 Landing distance available: 9426

AD 2.14 Approach and runway lighting
2.14.1 Designation: 16R
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 34L
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 16L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 16C
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 34C
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 239.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GATE CTL
2.18.3 Service designation: 126.25 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 120.95 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 128 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 119.9 MHz

2.18.1 Service designation: GND CON
2.18.3 Service designation: 121.7 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 118 MHz
2.18.4 Hours of operation: 24

AD 2.19 Radio navigation and landing aids

2.19.1 ILS type: Localizer for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−25−42.27N / 122−18−29.03W
2.19.6 Site elevation: 318.1 ft

2.19.1 ILS type: Localizer for runway 34C. Magnetic variation: 16E
2.19.2 ILS identification: TUC
2.19.5 Coordinates: 47−27−54.35N / 122−18−39.51W
2.19.6 Site elevation: 422 ft

2.19.1 ILS type: Localizer for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−26−00.00N / 122−18−40.45W
2.19.6 Site elevation: 351 ft

2.19.1 ILS type: Localizer for runway 34R. Magnetic variation: 16E
2.19.2 ILS identification: SEA
2.19.5 Coordinates: 47−27−54.27N / 122−18−27.86W
2.19.6 Site elevation: 428.3 ft

2.19.1 ILS type: DME for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−26−00.00N / 122−18−39.51W
2.19.6 Site elevation: 359 ft

2.19.1 ILS type: DME for runway 34R. Magnetic variation: 16E
2.19.2 ILS identification: SEA
2.19.5 Coordinates: 47−26−00.00N / 122−18−22.68W
2.19.6 Site elevation: 369.4 ft

2.19.1 ILS type: DME for runway 34C. Magnetic variation: 16E
2.19.2 ILS identification: TUC
2.19.5 Coordinates: 47−26−00.00N / 122−18−39.51W
2.19.6 Site elevation: 359 ft

2.19.1 ILS type: Glide Slope for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−27−38.69N / 122−18−45.46W
2.19.6 Site elevation: 417.7 ft

2.19.1 ILS type: Glide Slope for runway 34R. Magnetic variation: 16E
2.19.2 ILS identification: SEA
2.19.5 Coordinates: 47−26−00.00N / 122−18−23.03W
2.19.6 Site elevation: 355.2 ft

2.19.1 ILS type: Glide Slope for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−27−38.94N / 122−18−33.82W
2.19.6 Site elevation: 425.3 ft

2.19.1 ILS type: Glide Slope for runway 34C. Magnetic variation: 16E
2.19.2 ILS identification: TUC
2.19.5 Coordinates: 47−26−25.60N / 122−18−46.17W
2.19.6 Site elevation: 366.9 ft

2.19.1 ILS type: Outer Marker for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−31−56.59N / 122−18−25.04W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−27−58.58N / 122−18−39.29W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 34C. Magnetic variation: 16E
2.19.2 ILS identification: TUC
2.19.5 Coordinates: 47−25−49.76N / 122−18−42.14W
2.19.6 Site elevation: 289 ft

2.19.1 ILS type: Middle Marker for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−28−20.04N / 122−18−39.69W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−31−56.60N / 122−18−25.00W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 34R. Magnetic variation: 16E
2.19.2 ILS identification: SEA
2.19.5 Coordinates: 47−25−18.10N / 122−18−29.30W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 16C. Magnetic variation: 16E
2.19.2 ILS identification: SZI
2.19.5 Coordinates: 47−28−20.04N / 122−18−39.69W
2.19.6 Site elevation:

2.19.1 ILS type: DME for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−26−00.00N / 122−18−22.68W
2.19.6 Site elevation: 369.4 ft

2.19.1 ILS type: Inner Marker for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: CJL
2.19.5 Coordinates: 47−27−58.22N / 122−19−00.00W
2.19.6 Site elevation: 378.5 ft

2.19.1 ILS type: Localizer for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: BEJ
2.19.5 Coordinates: 47−27−59.78N / 122−19−00.00W
2.19.6 Site elevation: 370.9 ft

2.19.1 ILS type: Glide Slope for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: BEJ
2.19.5 Coordinates: 47−26−34.93N / 122−18−59.99W
2.19.6 Site elevation: 358.6 ft

2.19.1 ILS type: DME for runway 34L. Magnetic variation: 16E
2.19.2 ILS identification: BEJ
2.19.5 Coordinates: 47−26−15.62N / 122−18−59.94W
2.19.6 Site elevation: 364.3 ft

2.19.1 ILS type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: CJL
2.19.5 Coordinates: 47−26−15.92N / 122−19−00.00W
2.19.6 Site elevation: 343.8 ft

2.19.1 ILS type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: CJL
2.19.5 Coordinates: 47−27−38.46N / 122−19−00.00W
2.19.6 Site elevation: 405.5 ft

2.19.1 ILS type: DME for runway 16R. Magnetic variation: 16E
2.19.2 ILS identification: CJL
2.19.5 Coordinates: 47−26−15.62N / 122−18−59.94W
2.19.6 Site elevation: 364.3 ft

2.19.1 ILS type: Inner Marker for runway 16L. Magnetic variation: 16E
2.19.2 ILS identification: SNQ
2.19.5 Coordinates: 47−27−57.65N / 122−18−27.84W
2.19.6 Site elevation:

General Remarks:
BIRD FLOCKS WITHIN AIRPORT VICINITY − CHECK LOCAL ADVISORYS.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVAILABLE.

BETWEEN THE HRS OF 2200−0700 THE USE OF EXTENDED REVERSE THRUST IS DISCOURAGED BEYOND WHAT IS NECCESSARY FOR OPERATIONAL OR SAFETY REASONS. NOISE ABATEMENT PROCEDURES IN EFFECT BETWEEN 2200−0600. FOR FURTHER INFORMATION CONTACT SEA NOISE ABATEMENT OFFICE AT 206−787−7496.

HELICOPTERS LANDING & DEPARTING AVOID OVERFLYING FUEL FARM LOCATED AT THE SE CORNER OF THE AIRPORT.

(E110) CONTINUOUS POWER AIRPORT.

(E94) WSO/WSFO.

TAXIWAY A SOUTH OF TAXIWAY G RESTRICTED TO AIRCRAFT WITH WINGSPAN 225 FT AND SMALLER. DO NOT MISTAKE TAXIWAY T FOR LANDING SURFACE.

ACCESS TO AIR CARGO 4 PARKING AND CARGO AREAS RESTRICTED TO AIRCRAFT WITH WINGSPANS OF 170 FT OR LESS.

TAXIWAY FOR CORPORATE HANGAR RAMP LIMITED TO AIRCRAFT WITH 104 FT OR LESS WINGSPAN FOR TAXI OPERATIONS. GA CUSTOMS PARKING IS VERY LIMITED.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRIOR PERMISSION REQUIRED FOR ALL GENERAL AVIATION PARKING AND SERVICES, CONTACT 206−433−5481.

TAXILANE W RESTRICTED TO WINGSPAN OF 135 FT OR LESS NORTH OF TAXIWAY N AND 167 FT OR LESS SOUTH TO TELETYPEWRITER EXCHANGE SERVICE N. SEATTLE RAMP TOWER PROVIDES ADVSY CONTROL ONLY.

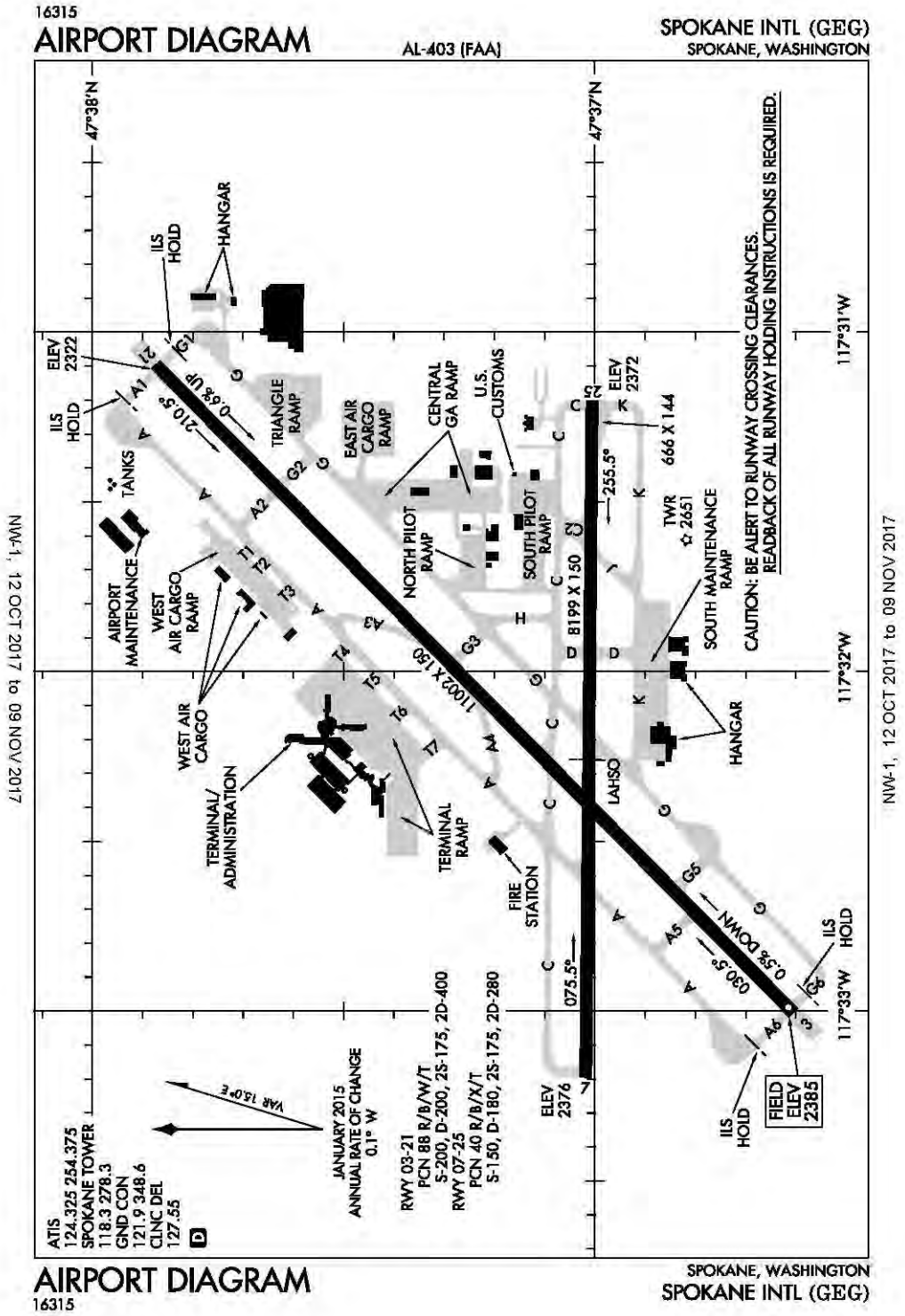
GA LANDING FEES PAYABLE BY MAJOR CREDIT CARDS ONLY.

TAXILANE AROUND N SATELLITE RESTRICTED TO AIRCRAFT WITH WINGSPANS OF 135 FT OR LESS.

RUNWAY STATUS LIGHTS ARE IN OPN.

AIRCRAFT WITH WINGSPANS OF 171 FT. OR MORE PARKED AT PASSENGER GATES OR CARGO 7 MUST PROVIDE 30 MIN PRIOR PERMISSION REQUIRED PRIOR TO PUSHBACK TO SEATTLE RAMP TOWER WHEN VISIBILITY LESS THAN 2400 RUNWAY VISUAL RANGE.

Spokane, Washington
Spokane International
ICAO Identifier KGEG



Spokane, WA
Spokane Intl
ICAO Identifier KGEG

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 47−37−00.00N / 117−32−00.00W
2.2.2 From City: 5 Miles SW Of Spokane, WA
2.2.3 Elevation: 2385 ft
2.2.5 Magnetic variation: 18E (2000)
2.2.6 Airport Contact: Lawrence J Krauter
9000 W AIRPORT DR.
Spokane, WA 99224
((509) 455−6418)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I B certified on 5/1/1973

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 21
2.10.1.b Type of obstacle: Gnd (9 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 500 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 07
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47−37−00.00N / 117−33−11.76W
2.12.6 Threshold elevation: 2376 ft
2.12.6 Touchdown zone elevation: 2376 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47−37−00.00N / 117−31−12.10W
2.12.6 Threshold elevation: 2372 ft
2.12.6 Touchdown zone elevation: 2372 ft

2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47−36−36.29N / 117−33−00.00W
2.12.6 Threshold elevation: 2385 ft
2.12.6 Touchdown zone elevation: 2385 ft
2.12.7 Slope: 0.5DOWN

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47−37−52.38N / 117−31−00.00W
2.12.6 Threshold elevation: 2322 ft
2.12.6 Touchdown zone elevation: 2346 ft
2.12.7 Slope: 0.6UP

AD 2.13 Declared distances

2.13.1 Designation: 07
2.13.2 Takeoff run available: 8199
2.13.3 Takeoff distance available: 8199
2.13.4 Accelerate−stop distance available: 8199
2.13.5 Landing distance available: 8199

2.13.1 Designation: 25
2.13.2 Takeoff run available: 8199
2.13.3 Takeoff distance available: 8199
2.13.4 Accelerate−stop distance available: 8199
2.13.5 Landing distance available: 8199

2.13.1 Designation: 03
2.13.2 Takeoff run available: 11002
2.13.3 Takeoff distance available: 11002
2.13.4 Accelerate−stop distance available: 11002
2.13.5 Landing distance available: 11002

2.13.1 Designation: 21
2.13.2 Takeoff run available: 11002
2.13.3 Takeoff distance available: 11002
2.13.4 Accelerate−stop distance available: 11002
2.13.5 Landing distance available: 11002

AD 2.14 Approach and runway lighting

2.14.1 Designation: 07
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 25

2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 03
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left

2.14.1 Designation: 21
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4–light PAPI on left
2.14.10 Remarks: ALSF 2 May Be Operated As SSALR During Favorable Wx Conditions.

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: LCL/P
2.18.3 Service designation: 278.3 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 118.3 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.9 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 123.75 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 124.325 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: CD/P
2.18.3 Service designation: 127.55 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 133.35 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: ATIS
2.18.3 Service designation: 254.375 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 263 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 282.25 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 348.6 MHz

2.18.1 Service designation: APCH/S DEP/S
2.18.3 Service designation: 372.9 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 03. Magnetic variation: 16E
2.19.2 ILS identification: OLJ
2.19.5 Coordinates: 47–37–59.68N / 117–30–54.77W
2.19.6 Site elevation: 2315.7 ft

2.19.1 ILS type: Localizer for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG
2.19.5 Coordinates: 47–36–29.20N / 117–33–10.95W
2.19.6 Site elevation: 2380.1 ft

2.19.1 ILS type: DME for runway 03. Magnetic variation: 16E
2.19.2 ILS identification: OLJ
2.19.5 Coordinates: 47–36–32.05N / 117–33–15.10W
2.19.6 Site elevation: 2380.2 ft

2.19.1 ILS type: Glide Slope for runway 03. Magnetic variation: 16E
2.19.2 ILS identification: OLJ
2.19.5 Coordinates: 47–36–47.56N / 117–32–51.88W
2.19.6 Site elevation: 2372 ft

2.19.1 ILS type: Glide Slope for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG
2.19.5 Coordinates: 47–37–48.96N / 117–31–19.45W
2.19.6 Site elevation: 2324.3 ft

2.19.1 ILS type: Outer Marker for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG

2.19.5 Coordinates: 47−40−37.34N / 117−27−00.00W
2.19.6 Site elevation:

2.19.1 ILS type: Inner Marker for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG
2.19.5 Coordinates: 47−38−00.00N / 117−30−49.60W
2.19.6 Site elevation: 96 ft

2.19.1 ILS type: Middle Marker for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG
2.19.5 Coordinates: 47−38−16.92N / 117−30−28.82W
2.19.6 Site elevation: 2233 ft

2.19.1 ILS type: Middle Marker for runway 03. Magnetic variation: 16E
2.19.2 ILS identification: OLJ
2.19.5 Coordinates: 47−36−29.40N / 117−33−10.64W
2.19.6 Site elevation: 2378 ft

2.19.1 ILS type: Inner Marker for runway 03. Magnetic variation: 16E
2.19.2 ILS identification: OLJ
2.19.5 Coordinates: 47−36−30.06N / 117−33−00.00W
2.19.6 Site elevation: 2380.5 ft

2.19.1 ILS type: DME for runway 21. Magnetic variation: 16E
2.19.2 ILS identification: GEG
2.19.5 Coordinates: 47−36−32.05N / 117−33−15.10W
2.19.6 Site elevation: 2380.2 ft

General Remarks:

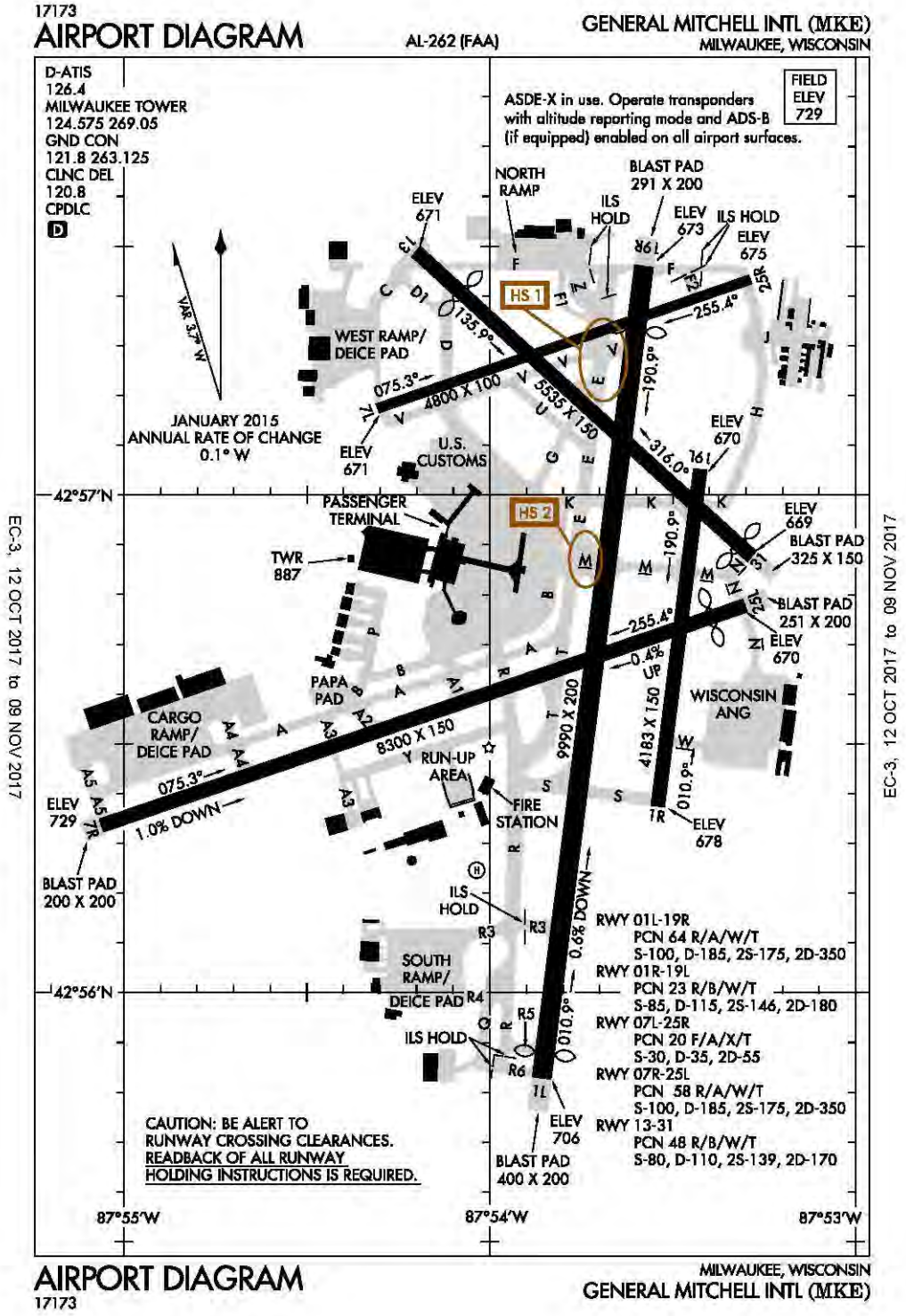
BE ALERT TO TURBULENCE OVER SMOKE STACKS 1 MILE EAST OF AIRPORT.

WATERFOWL & BIRDS ON & IN THE VICINITY OF AIRPORT.

TAXIWAY K UNLIGHTED ON RAMP SIDE ALONG MAINTENANCE RAMP AND IS UNAVAILABLE BELOW 1200 RUNWAY VISUAL RANGE UNLESS UNDER ESCORT BY ”FOLLOW ME”.

PORTIONS OF TAXIWAY K NOT VISIBLE FROM ATCT.

Milwaukee, Wisconsin
General Mitchell International
ICAO Identifier KMKE



Milwaukee, WI
General Mitchell Intl
ICAO Identifier KMKE

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 42−56−49.00N / 87−53−49.40W
2.2.2 From City: 5 Miles S Of Milwaukee, WI
2.2.3 Elevation: 728.5 ft
2.2.5 Magnetic variation: 4W (2020)
2.2.6 Airport Contact: Ismael Bonilla
5300 S HOWELL AVE
Milwaukee, WI 53207
(414−747−5300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Operational hours

2.3.1 – 2.3.11: ALL Months, ALL Days, ALL Hours

AD 2.4 Handling services and facilities

2.4.1 Cargo handling facilities: No
2.4.2 Fuel types: A,100LL
2.4.4 De−icing facilities: None
2.4.5 Hangar space: Yes
2.4.6 Repair facilities: Major

AD 2.6 Rescue and firefighting services

2.6.1 Aerodrome category for firefighting: ARFF Index I C certified on 5/1/1973
2.6.4 Remarks: ARFF Index D Equip Available Upon Request.

AD 2.10 Aerodrome obstacles

2.10.1.a. Runway designation: 19L
2.10.1.b Type of obstacle: Tree (125 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 463 ft from Centerline

2.10.1.a. Runway designation: 01L
2.10.1.b Type of obstacle: Tree (82 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 985 ft from Centerline

2.10.1.a. Runway designation: 19R
2.10.1.b Type of obstacle: Fence (6 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 404 ft from Centerline

2.10.1.a. Runway designation: 07R
2.10.1.b Type of obstacle: Tree (80 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 305 ft from Centerline

2.10.1.a. Runway designation: 25L
2.10.1.b Type of obstacle: Pole (41 ft). Lighted
2.10.1.c Location of obstacle: 464 ft from Centerline

2.10.1.a. Runway designation: 07L
2.10.1.b Type of obstacle: Tree (44 ft). Not Lighted or Marked
2.10.1.c Location of obstacle: 187 ft from Centerline

2.10.1.a. Runway designation: 25R
2.10.1.b Type of obstacle: Pole (77 ft). Lighted
2.10.1.c Location of obstacle: 195 ft from Centerline

2.10.1.a. Runway designation: 13
2.10.1.b Type of obstacle: Pole (33 ft). Lighted
2.10.1.c Location of obstacle: 69 ft from Centerline

2.10.1.a. Runway designation: 31
2.10.1.b Type of obstacle: Rr (42 ft). Lighted
2.10.1.c Location of obstacle: 295 ft from Centerline

AD 2.12 Runway physical characteristics

2.12.1 Designation: 13
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5535 ft x 150 ft
2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42−57−29.26N / 87−54−12.27W
2.12.6 Threshold elevation: 671 ft
2.12.6 Touchdown zone elevation: 670 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 312
2.12.3 Dimensions: 5535 ft x 150 ft
2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42−56−52.51N / 87−53−17.18W
2.12.6 Threshold elevation: 669 ft
2.12.6 Touchdown zone elevation: 670 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 72
2.12.3 Dimensions: 4800 ft x 100 ft
2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42−57−00.00N / 87−54−19.14W
2.12.6 Threshold elevation: 671 ft
2.12.6 Touchdown zone elevation: 672 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 252
2.12.3 Dimensions: 4800 ft x 100 ft

2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42−57−24.81N / 87−53−17.87W
2.12.6 Threshold elevation: 674 ft
2.12.6 Touchdown zone elevation: 674 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 72
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42−56−20.67N / 87−55−00.00W
2.12.6 Threshold elevation: 728 ft
2.12.6 Touchdown zone elevation: 728 ft
2.12.7 Slope: 1DOWN

2.12.1 Designation: 25L
2.12.2 True Bearing: 252
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42−56−46.47N / 87−53−18.00W
2.12.6 Threshold elevation: 670 ft
2.12.6 Touchdown zone elevation: 683 ft
2.12.7 Slope: 0.4UP

2.12.1 Designation: 01R
2.12.2 True Bearing: 7
2.12.3 Dimensions: 4183 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42−56−21.77N / 87−53−32.50W
2.12.6 Threshold elevation: 678 ft
2.12.6 Touchdown zone elevation: 678 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 187
2.12.3 Dimensions: 4183 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42−57−00.00N / 87−53−25.49W
2.12.6 Threshold elevation: 670 ft
2.12.6 Touchdown zone elevation: 674 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 7
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42−55−49.80N / 87−53−51.51W
2.12.6 Threshold elevation: 706 ft
2.12.6 Touchdown zone elevation: 704 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 187
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42−57−27.70N / 87−53−34.77W
2.12.6 Threshold elevation: 673 ft
2.12.6 Touchdown zone elevation: 672 ft

AD 2.13 Declared distances

2.13.1 Designation: 13
2.13.2 Takeoff run available: 5538
2.13.3 Takeoff distance available: 5538
2.13.4 Accelerate−stop distance available: 5538
2.13.5 Landing distance available: 4797

2.13.1 Designation: 31
2.13.2 Takeoff run available: 5538
2.13.3 Takeoff distance available: 5538
2.13.4 Accelerate−stop distance available: 5538
2.13.5 Landing distance available: 5334

2.13.1 Designation: 07L
2.13.2 Takeoff run available: 4800
2.13.3 Takeoff distance available: 4800
2.13.4 Accelerate−stop distance available: 4800
2.13.5 Landing distance available: 4800

2.13.1 Designation: 25R
2.13.2 Takeoff run available: 4800
2.13.3 Takeoff distance available: 4800
2.13.4 Accelerate−stop distance available: 4800
2.13.5 Landing distance available: 4800

2.13.1 Designation: 07R
2.13.2 Takeoff run available: 8300
2.13.3 Takeoff distance available: 8300
2.13.4 Accelerate−stop distance available: 8012
2.13.5 Landing distance available: 8012

2.13.1 Designation: 25L
2.13.2 Takeoff run available: 8300
2.13.3 Takeoff distance available: 8300
2.13.4 Accelerate−stop distance available: 8300
2.13.5 Landing distance available: 7868

2.13.1 Designation: 01R
2.13.2 Takeoff run available: 4183
2.13.3 Takeoff distance available: 4183
2.13.4 Accelerate−stop distance available: 4183
2.13.5 Landing distance available: 4183

2.13.1 Designation: 19L
2.13.2 Takeoff run available: 4183
2.13.3 Takeoff distance available: 4183
2.13.4 Accelerate−stop distance available: 4183

2.13.5 Landing distance available: 4183

2.13.1 Designation: 01L
2.13.2 Takeoff run available: 9990
2.13.3 Takeoff distance available: 9990
2.13.4 Accelerate−stop distance available: 9380
2.13.5 Landing distance available: 9080

2.13.1 Designation: 19R
2.13.2 Takeoff run available: 9990
2.13.3 Takeoff distance available: 9990
2.13.4 Accelerate−stop distance available: 9990
2.13.5 Landing distance available: 9205

AD 2.14 Approach and runway lighting
2.14.1 Designation: 13
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 31
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 07L
2.14.4 Visual approach slope indicator system: 4−box VASI on left

2.14.1 Designation: 25R
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 07R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 25L
2.14.4 Visual approach slope indicator system: 4−light PAPI on left

2.14.1 Designation: 01L
2.14.2 Approach lighting system: ALSF2: Standard 2400 feet high intensity approach lighting system with sequenced flashers, category II or III configuration
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

2.14.1 Designation: 19R
2.14.2 Approach lighting system: MALSR: 1400 feet medium intensity approach lighting system with runway alignment indicator lights
2.14.4 Visual approach slope indicator system: 4−light PAPI on right

AD 2.18 Air traffic services communication facilities
2.18.1 Service designation: APCH/P CLASS C
2.18.3 Service designation: 118 MHz

2.18.1 Service designation: CD/P
2.18.3 Service designation: 120.8 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 121.5 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 121.8 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 125.35 MHz

2.18.1 Service designation: APCH/P CLASS C IC
2.18.3 Service designation: 126.5 MHz

2.18.1 Service designation: AS ASSIGNED
2.18.3 Service designation: 127.85 MHz

2.18.1 Service designation: OPNS
2.18.3 Service designation: 139.5 MHz

2.18.1 Service designation: EMERG
2.18.3 Service designation: 243 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 269.05 MHz

2.18.1 Service designation: LCL/P
2.18.3 Service designation: 124.575 MHz

2.18.1 Service designation: OPNS
2.18.3 Service designation: 311 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 127 MHz

2.18.1 Service designation: APCH/P DEP/P
2.18.3 Service designation: 263.075 MHz

2.18.1 Service designation: D−ATIS
2.18.3 Service designation: 126.4 MHz
2.18.4 Hours of operation: 24

2.18.1 Service designation: APCH/P DEP/P CLASS C IC
2.18.3 Service designation: 307 MHz

2.18.1 Service designation: APCH/P DEP/P CLASS C
2.18.3 Service designation: 317.725 MHz

2.18.1 Service designation: DEP/P
2.18.3 Service designation: 135.875 MHz

2.18.1 Service designation: GND/P
2.18.3 Service designation: 263.125 MHz

2.18.1 Service designation: 128ARW (ANG) CMD POST
2.18.3 Service designation: 321 MHz

2.18.1 Service designation: UPSET CTL
2.18.3 Service designation: 6761 MHz

2.18.1 Service designation: MAINT OPS (MOCC)
2.18.3 Service designation: 379.85 MHz

AD 2.19 Radio navigation and landing aids
2.19.1 ILS type: Localizer for runway 07R. Magnetic variation: 2W
2.19.2 ILS identification: GMF
2.19.5 Coordinates: 42−56−49.09N / 87−53−00.00W
2.19.6 Site elevation: 668.3 ft

2.19.1 ILS type: Localizer for runway 01L. Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−57−49.96N / 87−53−30.97W
2.19.6 Site elevation: 712.9 ft

2.19.1 ILS type: Localizer for runway 25L. Magnetic variation: 2W
2.19.2 ILS identification: PXY
2.19.5 Coordinates: 42−56−16.07N / 87−55−22.78W
2.19.6 Site elevation: 727.9 ft

2.19.1 ILS type: Localizer for runway 19R. Magnetic variation: 2W
2.19.2 ILS identification: BLY
2.19.5 Coordinates: 42−55−38.30N / 87−53−53.48W
2.19.6 Site elevation: 709 ft

2.19.1 ILS type: DME for runway 07R. Magnetic variation: 2W
2.19.2 ILS identification: GMF
2.19.5 Coordinates: 42−56−18.51N / 87−55−23.66W
2.19.6 Site elevation: 729.8 ft

2.19.1 ILS type: DME for runway 25L. Magnetic variation: 2W
2.19.2 ILS identification: PXY
2.19.5 Coordinates: 42−56−18.51N / 87−55−23.66W
2.19.6 Site elevation: 729.8 ft

2.19.1 ILS type: Glide Slope for runway 07R. Magnetic variation: 2W
2.19.2 ILS identification: GMF
2.19.5 Coordinates: 42−56−20.49N / 87−54−47.12W
2.19.6 Site elevation: 707.3 ft

2.19.1 ILS type: Glide Slope for runway 01L. Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−56−00.00N / 87−53−43.05W
2.19.6 Site elevation: 691.2 ft

2.19.1 ILS type: Glide Slope for runway 19R. Magnetic variation: 2W
2.19.2 ILS identification: BLY
2.19.5 Coordinates: 42−57−00.00N / 87−53−32.52W
2.19.6 Site elevation: 666.3 ft

2.19.1 ILS type: Outer Marker for runway 19R. Magnetic variation: 2W
2.19.2 ILS identification: BLY
2.19.5 Coordinates: 43−03−36.06N / 87−52−36.26W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 01L. Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−50−22.60N / 87−54−46.83W
2.19.6 Site elevation: 678 ft

2.19.1 ILS type: Inner Marker for runway 01L. Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−55−44.66N / 87−53−52.40W
2.19.6 Site elevation: 705.8 ft

2.19.1 ILS type: Middle Marker for runway 19R. Magnetic variation: 2W
2.19.2 ILS identification: BLY
2.19.5 Coordinates: 42−57−46.59N / 87−53−31.53W
2.19.6 Site elevation:

2.19.1 ILS type: Outer Marker for runway 07R.
Magnetic variation: 2W
2.19.2 ILS identification: GMF
2.19.5 Coordinates: 42−54−32.56N / 88−02−27.51W
2.19.6 Site elevation:

2.19.1 ILS type: Middle Marker for runway 07R.
Magnetic variation: 2W
2.19.2 ILS identification: GMF
2.19.5 Coordinates: 42−56−12.13N / 87−55−35.49W
2.19.6 Site elevation: 744 ft

2.19.1 ILS type: Middle Marker for runway 01L.
Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−55−26.50N / 87−53−55.50W
2.19.6 Site elevation: 701.2 ft

2.19.1 ILS type: DME for runway 01L. Magnetic variation: 4W
2.19.2 ILS identification: MKE
2.19.5 Coordinates: 42−57−50.94N / 87−53−27.45W
2.19.6 Site elevation: 715.2 ft

General Remarks:
RUNWAY 07L/25R CLOSED TO ALL JET AIRCRAFT.

TAXIWAY A CLOSED FROM TAXIWAY R TO TAXIWAY E AND TAXIWAY E CLOSED FROM TAXIWAY T TO TAXIWAY M AND TAXIWAY T NORTH OF RUNWAY 07R−25L CLOSED TO AIRCRAFT WITH TAIL HEIGHT GREATER THAN 54.5 FT DURING CAT II AND CAT III OPERATIONS.

RUNWAY 13/31 CLOSED JET AIRCRAFT, UNLESS PERMISSION FROM TOWER OR AIRPORT MANAGER 414−747−5325.

TRAINING FLIGHTS INVOLVING SUCCESSIVE USE OF ANY RUNWAY PROHIBITED 2200−0600.

RUNWAYS 13/31 & 01R/19L & 07L/25R CLOSED EXCEPT LIGHT WEIGHT SINGLE ENGINE AIRCRAFT 0400−1200Z DAILY.

BIRDS ON & IN THE VICINITY OF AIRPORT.

PREFERRED USAGE BY AIRCRAFT BETWEEN 2200−0600 IS TAKE-OFF RUNWAY 19R & LANDING RUNWAY 01L.

ALL APPROACHES ARE OVER NOISE SENSITIVE AREAS; ALL TURBOJET AIRCRAFT SHOULD REFRAIN FROM CONDUCTING MULTI VFR TRAFFIC PATTERN APPROACHES & DEPS WITHOUT PRIOR APPROVAL FROM AIRPORT MANAGER CALL C414−747−5325.

ANG: PRIOR PERMISSION REQUIRED ALL AIRCRAFT, 48HR PRIOR NOTICE, CONTACT AIRFIELD OPERATIONS DSN 580−8241, C414−944−8241. 128 ARW IS A FULLY OPERATIONAL KC−135R BASE WITH HRS OF OPERATION MON−FRI 1200Z−1930Z++ TUE−FRI, CLOSED HOLIDAY, SAT−SUN EXCEPT UNIT TMG, CALL FOR AVAILABLE.

ANG: ANY MDS'S (OTHER THAN KC−135) IS LIMITED TO STANDARD TRANSIENT MARSHALLING AND PARKING. NO TECHNICAL DATA AVAILABLE FOR TRANSIENT MAINTENANCE. FUEL AND AGE EQUIPMENT SUPPORT AVAILABLE FOR SELF−SERVICE. THERE ARE NO ADDITIONAL CONFIGURATION ITEMS SUPPORTED SUCH AS LANTIRN PODS, EDM PODS, ETC.

ANG: END OF RUNWAY FACILITIES, AIRCRAFT SHELTERS/REVETMENTS, AND ALERT FACILITIES ARE NOT AVAILABLE. AIRFIELD/AIRCRAFT PARKING CONCERNS INCLUDE: LIMITED STATIC GROUNDING POINTS AND NO AIRCRAFT TIE DOWN POINTS.

ANG: NO FLEET SERVICE/HOT CARGO PARKING AVAILABLE. CONTACT UPSET CTRL 20 MIN PRIOR TO ARR TO RECEIVE CURRENT BIRD WATCH CONDITION AND PARKING INFORMATION.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

AIRCRAFT WITH WINGSPAN GREATER THAN 175 FT CANNOT PASS SIMULTANEOUSLY ON TAXIWAY 'E' & TAXIWAY 'Z'.

TAXIWAY B CLOSED BETWEEN TAXIWAY R AND TAXIWAY A1 TO AIRCRAFT WITH WINGSPAN GREATER THAN OR EQUAL TO 118 FT WITHOUT PERMISSION FROM AIRPORT DIRECTOR AT 414–747–5325.

TAXIWAYS D1, F2, H, J, F1, P AND F (EAST OF RUNWAY 19R) AND TAXIWAY K (EAST OF RUNWAY 19L) CLOSED TO AIRCRAFT WTIH WINGSPAN GREATER THAN 78 FT.

TAXIWAY F (WEST OF TAXIWAY Z) CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN OR EQUAL TO 118 FT UNLESS PERMISSION FROM AIRPORT DIRECTOR AT 414–747–5325.

RUNWAY 19R TAKE-OFF DISTANCE AVAILABLE 8,750 FT FROM INTERSECTION TAXIWAY V.

TAXIWAY V BETWEEN TAXIWAY D AND RUNWAY 7L/25R CLOSED TO AIRCRAFT WITH WINGSPAN GREATER THAN 170 FT WHEN RUNWAY 7L/25R IN USE.

TAXIWAY B BETWEEN TAXIWAY V AND TAXIWAY R CLOSED TO AFFECT WITH WINGSPAN GREATER THAN 170 FT.

HOLDING BAY AT RUNWAY 19R WHEN IN USE, TAXIWAY Z ADJACENT TO BAY IS LIMITED TO AIRCRAFT WITH WINGSPAN UP TO 170 FT.

RUNWAY 07L/25R NO AIRCRAFT 65,000 LBS OR GREATER ALLOWED TO TAXI BETWEEN TAXIWAY D & RUNWAY 13/31 AND EAST OF RUNWAY 19R.

RUNWAY 01R–19L AVAILABLE TO AIR CARRIERS FOR TAXI ONLY.

TAXIWAY S & TAXIWAY T BETWEEN TAXIWAY R & RUNWAY 07R/25L AND RUNWAY 07R/25L BETWEEN RUNWAY 1R/19L & TAXIWAY R CLOSED DURING CAT II & III OPERATIONS.

HOLDING BAY AT RUNWAY 01L CLOSED EXCEPT AIRCRAFT WITH WINGSPAN LESS THAN 118 FT.

ANG: NONSTANDARD MRK ON PARK APRON FOR WINGTIP CLEARANCE; SEE AIRFIELD MANAGEMENT FOR DETAILED MAP.

RUNWAY 7L/25R NOT AVAILABLE FOR SCHEDULED AIR CARRIER OPERATIONS INVOLVING AIRCRAFT DESIGNED FOR 10 OR MORE PASSENGER SEATS & UNSCHEDULED AIR CARRIER OPERATIONS INVOLVING AIRCRAFT DESIGNED FOR 31 OR MORE SEATS.

TAXIWAY A CLOSED BETWEEN TAXIWAY A4 AND TAXIWAY A5 TO AIRCRAFT WITH WINGSPAN GREATER THAN OR EQUAL TO 214' UNLESS PERMISSION FROM AIRPORT MANAGER 414–747–5325

ALL AIRCRAFT PUSHBACKS FROM GATES C20, C21, C22, C23, D39 D41 D43, D45, D48, D51, D53, D54, D55, E65, E66, & E67 REQUIRE CLEARANCE FROM GROUND CONTROL. PUSHBACKS FROM ALL OTHER GATES ARE AT RAMP/ PILOT DISCRETION; CONTACT GROUND CONTROL WHEN READY TO TAXI.

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