AIP

AERONAUTICAL INFORMATION PUBLICATION

UNITED STATES OF AMERICA

TWENTY−SIXTH EDITION DATED 16 JULY 2020

AMENDMENT 1

31 DEC 2020

CONSULT NOTAM FOR LATEST INFORMATION

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

AIP Amendment 3

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GEN 1.7 Differences From ICAO Standards, Recommended Practices and Procedures

NOTE−
See GEN 1.6 for the availability of Title 14 of the U.S. Code of Federal Regulations Parts 1−199.

ANNEX 1 − PERSONNEL LICENSING	
Chapter 1	**Definitions and General Rules Concerning Licences**
Chapter 1 Reference 1.2.5.2	The maximum validity allowed for non-FAA air traffic controllers (required to hold an FAA Second-Class airman medical certificate) is 12 months. The maximum validity allowed for FAA air traffic controllers is 24 months for those under age 40 who work at FAA terminals or centers. U.S. free balloon and glider pilots are not required to hold medical certificates but are prohibited from operating during periods of medical deficiency.
Chapter 1 Reference 1.2.5.2.2	U.S. commercial pilots engaging in single-crew commercial air transport operations carrying passengers have a 12-month validity on their medical assessments regardless of age.
Chapter 1 Reference 1.2.5.2.3	U.S. commercial pilots have a 12-month validity on their medical assessments regardless of age.
Chapter 1 Reference 1.2.5.2.4	U.S. free balloon and glider pilots are not required to hold a medical certificate but are prohibited from operating during periods of medical deficiency. Certain holders of U.S. private pilot licenses (operating domestically) are not required to hold an FAA medical certificate but must meet U.S. ("Basic Med") regulations effective May 1, 2017. "Basic Med" requires a medical education course every 24 months and medical examination every 48 months.
Chapter 1 Reference 1.2.5.2.5	U.S. private pilots required to hold an FAA Third−Class medical certificate who have passed their 50th birthday have a 24-month validity on their medical assessments. U.S. free balloon and glider pilots are not required to hold medical certificates but are prohibited from operating during periods of medical deficiency.
Chapter 1 Reference 1.2.5.2.6	The United States does not defer medical examinations.
Chapter 2	**Licences and Ratings for Pilots**
Chapter 2 Reference 2.1.9.2	The United States only allows pilots to log SIC flight experience in an aircraft that requires an SIC by type design or by an operational requirement.
Chapter 2 Reference 2.1.9.3	SIC experience (hours) may only be used towards obtaining an Airline Transport Pilot certificate with an Airplane rating. Then, only 1/3 of the SIC time may be applied, with a maximum allowable 500 hrs as SIC.
Chapter 2 Reference 2.1.10	The U.S. currently limits all part 121 operations to age 65, but has no age restriction on all other commercial air trans operations (such as part 135 operations).
Chapter 2 Reference 2.3.1.4	U.S. private pilots required to hold an FAA Third−Class medical certificate must meet the requirements of an FAA Third-Class medical certificate which are equivalent to ICAO Class 2 with exceptions specified in Chapter 6.
Chapter 2 Reference 2.4.1.4	U.S. commercial pilots must meet the requirements of an FAA Second-Class medical certificate which are equivalent to ICAO Class 1 with exceptions specified in Chapter 6.

Chapter 2 Reference 2.5.1.1	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.1.2	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.1.3.1	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.1.3.2	The United States has no 14 CFR provisions for MPL.
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Chapter 2 Reference 2.5.3.1	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.3.2	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.3.3	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.4.1	The United States has no 14 CFR provisions for MPL.
Chapter 2 Reference 2.5.4.2	The United States has no 14 CFR provisions for MPL. However, the FAA could approve a part 141 special curriculum or part 142 training curriculum for operators wanting to train persons to meet the ICAO MPL requirements.
Chapter 2 Reference 2.6.1.1.	The United States minimum age is 23.
Chapter 2 Reference 2.6.1.4	U.S. airline transport pilots must meet the requirements of an FAA First-Class medical certificate which are equivalent to ICAO Class 1 with exceptions specified in Chapter 6.
Chapter 2 Reference 2.7.1.3.1	U.S. private pilots required to hold an FAA Third−Class medical certificate who hold an airplane instrument rating are not required to comply with ICAO Class 1 hearing standards. U.S. hearing requirements for FAA First- and Third-Class medical certificates are equivalent to ICAO Class 1 with exceptions specified in Chapter 6.
Chapter 2 Reference 2.8.2.2	The United States has no 14 CFR provisions for MPL. However, the FAA could approve a part 141 special curriculum or a part 142 training curriculum for operators wanting to train persons to meet the ICAO MPL requirements.
Chapter 2 Reference 2.9.1.5	U.S. glider pilots are not required to hold a medical certificate but are prohibited from operating during periods of medical deficiency.
Chapter 2 Reference 2.10.1.5	U.S. free balloon pilots are not required to hold a medical certificate but are prohibited from operating during periods of medical deficiency.
Chapter 3	**Licences for Flight Crew Members other than Licences for Pilots**
Chapter 3 Reference 3.2.1.5	U.S. flight navigators must meet the requirements of an FAA Second-Class medical certificate which are equivalent to ICAO Class 2 with exceptions specified in Chapter 6.
Chapter 3 Reference 3.3.1.5	U.S. flight engineers must meet the requirements of an FAA Second-Class medical certificate which are equivalent to ICAO Class 2 with exceptions specified in Chapter 6.

Chapter 4	**Licences and Ratings for Personnel other than Flight Crew Members**
Chapter 4 Reference 4.2.1.3	The United States does not require 4 years of experience to qualify to take the written examination for a mechanic's airframe and powerplant license.
Chapter 4 Reference 4.2.2.4	The United States does not allow an approved maintenance organization to appoint non-licensed personnel to exercise the privileges of 4.2.2 within the U.S.
Chapter 4 Reference 4.3.2	Non-FAA air traffic controllers must meet the requirements of an FAA Second-Class medical certificate which meets the intent of ICAO Class 3 with exceptions specified in Chapter 6.
Chapter 4 Reference 4.4.1.1	The United States requires that an applicant be at least 18 years of age.
Chapter 4 Reference 4.4.1.3	Intentionally left blank.
Chapter 4 Reference 4.4.1.4	Non-FAA air traffic controllers must meet the requirements of an FAA Second-Class medical certificate which meets the intent of ICAO Class 3 with exceptions specified in Chapter 6.
Chapter 4 Reference 4.6.1.1	The United States requires the applicant shall not be less than 23 years of age.
Chapter 4 Reference 4.6.1.3.2	The United States permits the applicant to have two years of experience in the last three years.
Chapter 5	**Specifications for Personnel Licences**
Chapter 5 Reference 5.1.3	The United States only issues certificates in the English language.
Chapter 6	**Medical Provisions for Licencing:** *Please note*: References containing 6.3 refer to airline transport pilots and commercial pilots; 6.4 refer to private pilots, free balloon pilots, glider pilots, student pilots, flight engineers, and flight navigators; and 6.5 refer to air traffic controllers.
Chapter 6 Reference 6.2.3.2	The United States uses a variety of methods for testing visual acuity that meet the intent of ICAO Recommended Practice. Illumination levels are set by manufactured standards.
Chapter 6 Reference 6.3.1.2	An FAA first-class medical certificate is required when exercising the privileges of an airline transport pilot and an FAA second-class medical certificate is required when exercising the privileges of a commercial pilot, a flight engineer, or a flight navigator. The United States has no provisions for MPL.
Chapter 6 Reference 6.3.2.6	Electrocardiography is not required for airline transport pilots at first issue unless the individual is age 35 or older and not for commercial pilots, flight engineers, or flight navigators unless clinically indicated.
Chapter 6 Reference 6.3.2.6.1	Electrocardiography is required in re-examination of airline transport pilot applicants over the age of 40 every 12 months. Electrocardiography is not specifically required for commercial pilots, flight engineers, or flight navigators unless clinically indicated.
Chapter 6 Reference 6.3.2.6.2	Electrocardiography is required in re-examination of airline transport pilot applicants over the age of 40 every 12 months. Electrocardiography is not specifically required for commercial pilots, flight engineers, or flight navigators unless clinically indicated.
Chapter 6 Reference 6.3.2.9.1	Chest radiography is not specifically required unless clinically indicated.
Chapter 6 Reference 6.3.3.2 (b)	A specific requirement that a [spare] set of suitable correcting spectacles be kept readily available when exercising the privileges of the license is not established.

Chapter 6 Reference 6.3.3.2.1 (c)	A specific requirement that a set of suitable correcting spectacles be kept readily available when exercising the privileges of the license [with contact lenses] is not established.
Chapter 6 Reference 6.3.3.2.3	The demonstration of compliance with visual acuity by providing a full ophthalmic report is not required.
Chapter 6 Reference 6.3.3.4	The demonstration of compliance with the visual requirements to be made with only one pair of corrective lenses is not specifically required.
Chapter 6 Reference 6.3.3.4.1	A requirement that a second pair of near-correction spectacles be kept available when exercising the privileges of the license is not established.
Chapter 6 Reference 6.3.4.1.1	Applicants are not required to demonstrate normal hearing against a background noise that reproduces or simulates the masking properties of flight deck noise upon speech and beacon signals.
Chapter 6 Reference 6.3.4.1.2	Applicants are not required to take a practical hearing test.
Chapter 6 Reference 6.4.1.1	U.S. free balloon and glider pilots are not required to hold a medical certificate but are prohibited from operating during periods of medical deficiency.
Chapter 6 Reference 6.4.1.2	U.S. free balloon and glider pilots are not required to hold a medical certificate but are prohibited from operating during periods of medical deficiency. Certain holders of U.S. private pilot licenses (operating domestically) are not required to hold an FAA medical certificate but must meet U.S. (“Basic Med”) regulations effective May 1, 2017. “Basic Med” requires a medical education course every 24 months and medical examination every 48 months.
Chapter 6 Reference 6.4.2.6	Electrocardiography for applicants for third-class airman (private pilot) medical certification is not required at first issue unless clinically indicated.
Chapter 6 Reference 6.4.2.6.1	Routine electrocardiography for applicants for FAA third-class airman (private pilot) medical certification is not required unless clinically indicated.
Chapter 6 Reference 6.4.3.4	The demonstration of compliance with the visual requirements to be made with only one pair of corrective lenses is not specifically required.
Chapter 6 Reference 6.4.3.4.1	A requirement that a second pair of near-correction spectacles be kept available when exercising the privileges of the license is not established.
Chapter 6 Reference 6.5.2.6	Electrocardiography is required for FAA air traffic controllers at first issue but not for non-FAA ATCs unless clinically indicated.
Chapter 6 Reference 6.5.2.6.1	Electrocardiography is required for FAA ATCs but not for non-FAA ATCs unless clinically indicated.
Chapter 6 Reference 6.5.3.2 (b)	A specific requirement that a [spare] set of suitable correcting spectacles be kept readily available when exercising the privileges of the license is not established.
Chapter 6 Reference 6.5.3.2.1 (c)	A specific requirement that a set of suitable correcting spectacles be kept readily available when exercising the privileges of the license [with contact lenses] is not established.
Chapter 6 Reference 6.5.3.2.3	The demonstration of compliance with visual acuity by providing a full ophthalmic report is not required.

Chapter 6 Reference 6.5.3.4	The demonstration of compliance with the visual requirements to be made with only pair of corrective lenses is not specifically required.
Chapter 6 Reference 6.5.3.4.1	A requirement that a second pair of near-correction spectacles be kept available when exercising the privileges of the license is not established.
Chapter 6 Reference 6.5.4.1.1	Applicants are not required to demonstrate normal hearing against a background noise that reproduces or simulates an air traffic control working environment.
Chapter 6 Reference 6.5.4.1.2	Applicants are not required to take a practical hearing test.

ANNEX 2 − RULES OF THE AIR	
Chapter 1	**Definitions**
Advisory Airspace	Advisory service is provided in terminal radar areas and the outer areas associated with Class C and Class E airspace areas.
Aerodrome control tower	In the U.S., an "aerodrome control facility" is referred to as a "tower" or "airport traffic control tower"; "aerodrome control" is referred to as "airport traffic control service."
Aerodrome Traffic Zone	There are no more Control Zones (Airport Traffic Zones) or Airport Traffic Areas (ATA). In the 7110.65, PCG, Controlled Airspace covers the defined dimensions of airspace. Class D was formerly the ATA (normally a 5NM radius around the airport). The old Control Zones were extensions of the ATA to encompass (ILS) Approach Paths.
Airborne Collision Avoidance System (ACAS)	The U.S. uses "traffic alert collision avoidance system (TCAS)." TCAS is an airborne collision avoidance system based on radar beacon signals and operates independent of ground−based equipment. TCAS−I generates traffic advisories only. TCAS−II generates traffic advisories and resolution (collision avoidance) advisories in the vertical plane.
Air−ground Control Radio Station	FAA Pilot Controller Glossary defines a Flight Service Station (FSS) as an air traffic facility which provides 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, and broadcast aviation weather and aeronautical information. In Alaska, FSSs provide Airport Advisory Services.
Air−taxiing	The U.S. uses "hover taxi" for this maneuver above 100 feet above ground level (AGL) and "air taxi" below 100 feet AGL.
Area control service	The U.S. does not use the term "area control service" to indicate controlled flight in controlled areas.
Area control centre	The U.S. equivalent facility for an Area Control Centre (ACC) is an Air Route Traffic Control Center (ARTCC).
ATS route	In U.S. domestic airspace, the term "ATS route" is not used. Routes in the U.S. include VOR airways, jet routes, substitute routes, and off−airway routes. The U.S. also uses instrument departure procedures (DPs) and standard terminal arrivals (STARs).
Controlled airspace	The U.S. terms for controlled airspace have different parameters than for ICAO.
Current Flight Plan	FAA Pilot Controller Glossary (PCG) defines flight plan as "specified information relating to the intended flight of an aircraft that is filed orally or in writing with an FSS or an ATC facility." The Pilot Controller Glossary makes a specific distinction between current flight plan and filed flight plans, defining filed flight plans as "filed...without any subsequent changes or clearances." Therefore, the PCG definition of flight plan includes changes brought about by clearances or amendments
Danger area	The term "danger area" is not used within the U.S. or any of its possessions or territories.
Estimated off−block time	The U.S. uses the term "estimated departure time" for domestic operations.
Flight information centre	The U.S. does not operate flight information centers (FICs). In the U.S., the services provided by FICs are performed by air traffic control (ATC) facilities, flight service stations (FSSs), and rescue coordination centers (RCCs).
Ground Visibility	The U.S. defines Ground Visibility as: Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.
Instrument meteorological conditions	The U.S. air traffic service units use the phrase "IFR conditions."
Level	The U.S. uses "altitude" or "flight level" rather than "level" and "cruising altitude" rather than "cruising level.'' The term "level" is not used to mean "height," "altitude," or "flight level."

Movement area	In the U.S., the term “movement area” means “the runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing, hover taxiing, air−taxiing, take−off and landing of aircraft, exclusive of loading ramps and parking areas. At those airport/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.” The U.S. does not use an all−inclusive term to denote the movement area plus loading ramps and parking areas of an airport, nor does the U.S. use the term “maneuvering area’’ in any related context.
Repetitive flight plan (RPL)	The U.S. uses the term “stored flight plan” for domestic operations.
Terminal control area	In the U.S., “terminal control area” has been replaced by “Class B airspace/area.” Standard IFR services are provided to IFR aircraft operating in Class B airspace. Class B airspace CFR 14 part 71.41, exceeds TCA with more restrictive airman’s qualifications and aircraft certifications.
Total estimated elapsed time	The U.S. uses “estimated time en route” for domestic operations.
Traffic Avoidance Advice	The U.S. uses the term Traffic Advisory
Transition altitude	In U.S. domestic airspace, “transition altitude,” “layer” and “level” are not used; however, in the U.S., flight levels begin at FL 180 where the reference datum of 29.92 inches of mercury is used as the constant atmospheric pressure. Below FL 180, altitudes are based on barometric pressure readings. QNH and QFE altimeter settings are not provided in domestic U.S. airspace.
Visibility	The U.S. defines Visibility as: The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported as statute miles, hundreds of feet, or meters. The U.S. identifies the following classes of visibility: Flight Visibility, Ground Visibility, Prevailing Visibility, Runway Visibility Value, and Runway Visual Range.
Visual meteorological conditions	The U.S. air traffic service units use the phrase “VFR conditions.”
Chapter 2	**Applicability of the Rules of the Air**
2.2	See difference under “Movement area.”
2.5	Except in an emergency, no pilot of a civil aircraft may allow a person who appears to be intoxicated or who demonstrates by manner or physical indications that the individual is under the influence of drugs (except a medical patient under proper care) to be carried in that aircraft.
Chapter 3	**General Rules**
3.1.8	In addition, aircraft shall not be flown in formation flight when passengers are carried for hire.
3.2 Note	See difference under “Movement area.”
3.2.2.5.3	An aircraft that is aware that another is compelled to land shall give way to that aircraft.
3.2.2.6.1	See difference under “Movement area.”
3.2.3.2 d)	The U.S. national regulations do not require aircraft on the movement area of an airport, whose engines are running, to display lights which indicate that fact from sunset to sunrise.
3.2.5	Unless otherwise authorized or required by ATC, no person may operate an aircraft within a Class B, C, or D surface area except for the purpose of landing at, or taking off from, an airport within that area. In addition, in the case of a helicopter approaching to land, avoid the flow of fixed−wing aircraft. In addition, no person may, within a Class B, C, or D surface area operate an aircraft to, from, or on an airport having a control tower operated by the U.S. unless two−way radio communications are maintained between that aircraft and the control tower.

3.3.1.2	In the U.S., ATC flight plans are not required for VFR flight in Class C, D, or E airspace.
3.3.1.2.1 d)	Requirements pertaining to filing flight plans for flights operating across U.S. borders and for identification purposes are described in 14 CFR Part 9l (Section 91.84) and Part 99.
3.3.1.2.2	The U.S. requires that domestic flight plans be submitted at least 30 minutes before departure. For international flights, the U.S. recommends that they be transmitted so that they are received by ATC authorities in each Flight Information Region (FIR) to be entered, at least 2 hours prior to entry, unless otherwise provided in that State's requirements.
3.6.5.2.2 a)	Unless otherwise prescribed on the basis of regional air navigation agreement, in airspace where radar is not used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan.
3.6.1	Air traffic control clearances are not needed for VFR flight in U.S. Class C, D, or E airspace.
3.6.2.2	The United States requires pilots to report changes in the average true airspeed (at cruising altitude) when it varies by 5 percent or 10 knots (whichever is greater) from that filed in the flight plan. However, 14 CFR 91.703 requires pilots to abide by Annex 2 when flying over the high seas. In addition, when complying with speed adjustment assignments, the United States requires pilots to maintain an indicated airspeed within plus or minus 10 knots or 0.02 Mach number of the specified speed.
3.6.2.4	When meteorological conditions fall below the minimum specified for en route VFR flights, the pilot of the aircraft shall not continue his/her flight in such conditions, except in emergency, beyond the extent necessary to return to his/her departure point or to the nearest suitable landing point.

3.6.5.2 (Communication Failure)	Two−way Radio Communications Failure a. It is virtually impossible to provide regulations and procedures applicable to all possible situations associated with two−way radio communications failure. During two−way radio communications failure, when confronted by a situation not covered in the regulation, pilots are expected to exercise good judgment in whatever action they elect to take. Should the situation so dictate they should not be reluctant to use the emergency action contained in 14 CFR Section 91.3(b) b. Whether two−way communications failure constitutes an emergency depends on the circumstances, and in any event, it is a determination made by the pilot. 14 CFR Section 91.3(b) authorizes a pilot to deviate from any rule in Subparts A and B to the extent required to meet an emergency. c. In the event of two−way radio communications failure, ATC service will be provided on the basis that the pilot is operating in accordance with 14 CFR Section 91.185. A pilot experiencing two−way communications failure should (unless emergency authority is exercised) comply with 14 CFR Section 91.185 quoted below 1. General. Unless otherwise authorized by ATC, each pilot who has two−way radio communications failure when operating under IFR shall comply with the rules of this section.
3.6.5.2.2	In the event of two−way communications failure in the U.S., ATC service is predicated on pilot compliance with the provisions of 14 CFR Part 91 (Section 91.185). If the failure occurs in IMC, or if VFR cannot be complied with, each pilot is to continue the flight according to the following: Route a) By the route assigned in the last ATC clearance received; b) If being radar vectored, by the direct route from the point of failure to the fix, route, or airway specified in the vector clearance; c) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or d) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan. Altitude **–** At the **HIGHEST** of the following altitudes or flight levels **FOR THE ROUTE SEGMENT BEING FLOWN:** a) The altitude or flight level assigned in the last ATC clearance received; b) The minimum altitude/flight level as prescribed for IFR operations; or c) The altitude or flight level ATC has advised may be expected in a further clearance. IFR conditions **–** If the failure occurs in IFR conditions, or if subparagraph 2 above cannot be complied with, each pilot shall continue the flight according to the following: (a) Route. (1) By the route assigned in the last ATC clearance received; (2) If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance; (3) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or (4) In the absence of an assigned route of a route that ATC has advised may be expected in a further clearance by the route filed in the flight plan. (b) Altitude. At the HIGHEST of the following altitudes or flight levels FOR THE ROUTE SEGMENT BEING FLOWN: (1) The altitude or flight level assigned in the last ATC clearance received; (2) The minimum altitude (converted, if appropriate) to minimum flight level as prescribed in 14 CFR Section 91.121(c) for IFR operations; or (3) The altitude or flight level ATC has advised may be expected in a further clearance.

Basic VFR Weather Minimums

Airspace	Flight Visibility	Distance from Clouds
Class A	Not Applicable	Not Applicable
Class B	3 statute miles	Clear of Clouds
Class C	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class D	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
Class E Less than 10,000 feet MSL	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
At or above 10,000 feet MSL	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal
Class G 1,200 feet or less above the surface (regardless of MSL altitude). For aircraft other than helicopters:		
Day, except as provided in §91.155(b)	1 statute mile	Clear of clouds
Night, except as provided in §91.155(b)	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
For helicopters:		
Day	½ statute mile	Clear of clouds
Night, except as provided in §91.155(b)	1 statute mile	Clear of clouds
More than 1,200 feet above the surface but less than 10,000 feet MSL.		
Day	1 statute mile	500 feet below 1,000 feet above 2,000 feet horizontal
Night	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
More than 1,200 feet above the surface and at or above 10,000 feet MSL.	5 statute miles	1,000 feet below 1,000 feet above 1 statute mile horizontal

Chapter 4	**Visual Flight Rules**
4.1 and Table 4−1	There is no Class F airspace in the U.S. Basic VFR weather minimums are listed in the table above.
4.1 a)	Except as otherwise authorized by the appropriate air traffic control unit for special VFR flights within Class B, C, D, or E surface areas, no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less than that prescribed for the corresponding altitude and class of airspace in the table above.

4.1 b)	**Class G Airspace**: Notwithstanding the provisions of paragraph a) of this section, the following operations may be conducted in Class G airspace below 1,200 feet above the surface: 1) **Helicopter**. A helicopter may be operated clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstruction in time to avoid collision. 2) **Airplane**. When the visibility is less than 3 statute miles but not less than 1 statute mile during night hours, an airplane may be operated clear of clouds if operated in an airport traffic pattern within one−half mile of the runway.
4.1 c)	Except as provided in 4.2, no person may operate an aircraft under VFR within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport when the ceiling is less than 1,000 feet.
4.1 d)	Except as provided in 4.2, no person may take−off or land an aircraft, or enter the traffic pattern area of an airport under VFR, within the lateral boundaries of the surface area of Class B, Class C, Class D, or Class E airspace designed for an airport: 1) unless ground visibility at that airport is at least 3 statute miles; or 2) if ground visibility is not reported at that airport, unless flight visibility during landing or takeoff, or while operating in the traffic pattern is at least 3 statute miles.
4.2	In the U.S., no person may operate an aircraft beneath the ceiling under VFR within the lateral boundaries of controlled airspace designated to the surface for an airport when the ceiling is less than 1,000 feet. No person may take−off or land an aircraft (other than a helicopter) under special VFR (SVFR) unless ground visibility is at least 1 statute mile or if ground visibility is not reported, unless flight visibility is at least 1 statute mile. The U.S. restricts the ceiling to 1,000 ft. and ground visibility of 3 miles and greater.
4.2 a)	When an appropriate ATC clearance has been received, the special weather minimums in this section apply to the operation of an aircraft in a Class B, C, D, or E surface area under VFR. 1) No person may operate an aircraft in a Class B, C, D, or E surface area under VFR except clear of clouds; 2) No person may operate an aircraft (other than a helicopter) in a Class B, C, D or E surface area under VFR unless flight visibility is at least 1 statute mile; 3) No person may take−off or land an aircraft (other than a helicopter) at any airport in a Class B, C, D or E surface area under VFR: a) unless ground visibility at that airport is at least 1 statute mile; or b) if ground visibility is not reported at that airport, unless flight visibility during landing or take−off is at least 1 statute mile.
4.3	The U.S. does not prohibit VFR flight between sunset and sunrise.
4.4	In the U.S., VFR flight is not permitted within Class A airspace designated in 14 CFR Part 71 unless otherwise authorized by ATC. In the U.S., an ATC clearance is needed for VFR flight only in Class B airspace area. The U.S. limits VFR flights up to FL 180.
4.5	The U.S. limits VFR flights up to FL 180.
4.6	In addition, anywhere, an altitude allowing, if a power unit fails, an emergency landing without due hazard to persons or property on the surface.
4.7	In addition, grid tracks are not used to determine cruising altitudes in polar areas. True tracks are used to determine cruising levels above FL 230 in the area north of Alaska bounded by the true North Pole to 72°00′00″N, 141°00′00″W; to 72°00′00″N, 158°00′00″W; to 68°00′00″N, 168°58′23″W; to point of beginning. The U.S. has named this area the Anchorage Arctic CTA/FIR for national reference purposes.
4.8	In U.S. Class C and D airspace/areas, an ATC clearance is not required for VFR flights.

Chapter 5	**Instrument Flight Rules**
5.1.2	In the U.S., minimum altitudes for IFR flights are 2,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown in mountainous terrain and 1,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown in non−mountainous terrain.
5.2.2	See difference under paragraph 4.7.
5.3.1	See difference under paragraph 4.7.
Further differences which exist by virtue of the fact that the Annex contains no comparable standards for the U.S. national regulations.	1) The regulations covering the selection and use of alternate airports in respect to ceiling and visibility minima, require that: Unless otherwise authorized by the FAA Administrator, no person may include an alternate airport in an IFR flight plan unless current weather forecasts indicate that, at the estimated time of arrival at the alternate airport, the ceiling and visibility at that airport will be at or above the alternate airport weather minima.
	2) Operation under IFR in Class A, B, C, D, or E airspace malfunction reports: a) The pilot−in−command of each aircraft operated in Class A, B, C, D or E airspace under IFR shall report as soon as practical to ATC any malfunctions of navigational, approach, or communication equipment occurring in flight. b) In each report the pilot−in−command shall include: 1) aircraft identification. 2) equipment affected. 3) degree to which the capability of the pilot to operate under IFR in the ATC system is impaired; and 4) nature and extent of assistance desired from ATC.
	3) When an aircraft has been cleared to maintain ‘‘VFR conditions on top,’’ the pilot is responsible to fly at an appropriate VFR altitude, comply with VFR visibility and distance from cloud criteria, and to be vigilant so as to see and avoid other aircraft.
	4) Aircraft speed: a) Unless otherwise authorized by the FAA Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 kt (288 m.p.h.). b) Unless otherwise authorized or required by ATC, no person may operate an aircraft within Class B, C, or D surface area at an indicated airspeed of more than 200 kt (230 m.p.h.). This paragraph 4b) does not apply to operations within Class B airspace. Such operations shall comply with paragraph 4a) of this section. c) No person may operate an aircraft in the airspace underlying Class B airspace, or in a VFR corridor designated through Class B airspace, at an indicated airspeed of more than 200 kt (230 m.p.h.). d) If the minimum safe airspeed for any operation is greater than the maximum speed prescribed in this section, the aircraft may be operated at that minimum speed.

	5) Operating rules and pilot and equipment requirements for flight in Class B airspace. a) Operating rules. No person may operate an aircraft within Class B airspace except in compliance with the following rules: 1) No person may operate an aircraft within Class B airspace unless that person has received an appropriate authorization from ATC prior to operation of that aircraft in that area. 2) Unless otherwise authorized by ATC, each person operating a large turbine engine−powered airplane to or from a primary airport shall operate at or above the designated floors while within the lateral limits of the Class B airspace. 3) Any person conducting pilot training operations at an airport within Class B airspace shall comply with any procedures established by ATC for such operations in Class B airspace. b) Pilot requirements. No person may take off or land a civil aircraft at an airport within Class B airspace or operate a civil aircraft within Class B airspace unless: 1) The pilot−in−command holds at least a private pilot certificate; or 2) The aircraft is operated by a student pilot who has met the requirements (14 CFR Part 61 (Section 61.95)). c) Communications and navigation requirements. Unless otherwise authorized by ATC, no person may operate an aircraft within Class B airspace unless that aircraft is equipped with: 1) For **IFR** operations, an operable VOR or TACAN receiver, and 2) For **all** operations, an operable two−way radio capable of communications with ATC on appropriate frequencies for that Class B airspace. d) Transponder requirements. No person may operate an aircraft in Class B airspace unless the aircraft is equipped with the applicable operating transponder and automatic altitude reporting equipment.
	6) Operating rules and pilot and equipment requirements for operating in Class C airspace. a) General. For the purpose of this section, the primary airport is the airport designated in 14 CFR Part 71, for which the Class C airspace is designated. A satellite airport is any other airport within the Class C airspace. b) Deviations. An operator may deviate from any provisions of this section under the provisions of an ATC authorization issued by the ATC facility giving jurisdiction of the Class C airspace. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate. c) Arrivals and overflights. No person may operate an aircraft in Class C airspace unless two−way radio communication is established with the ATC facility having jurisdiction over the Class C airspace prior to entering that area and is thereafter maintained with the ATC facility having jurisdiction over the Class C airspace while within that area. d) Departures. No person may operate an aircraft within Class C airspace except as follows: 1) From the primary airport or satellite airport with an operating control tower, unless two−way radio communication is established and maintained with the control tower, and thereafter as instructed by ATC while operating in the Class C airspace. 2) From a satellite airport without an operating control tower, unless two−way radio communication is established as soon as practical after departing and thereafter maintained with the ATC facility having jurisdiction over the Class C airspace. e) Traffic patterns. No person may take off or land an aircraft at a satellite airport within Class C airspace except in compliance with FAA arrival and departure traffic patterns. f) Equipment requirements. Unless otherwise authorized by the ATC facility having jurisdiction over the Class C airspace, no person may operate an aircraft within Class C airspace unless that aircraft is equipped with the applicable equipment specified in 14 CFR Part 91 (Section 91.215).

	7) Except for persons operating gliders below the floor of Class A airspace, no person may operate an aircraft in Class B, C, D, or E airspace of the 48 contiguous States and the District of Columbia above 10,000 feet MSL, excluding that airspace at and below 2,500 feet AGL, unless that aircraft is equipped with an operable radar beacon transponder having at least a Mode 3/A 4096−code capability, replying to Mode 3/A interrogation with the code specified by ATC, and automatic altitude reporting equipment having a Mode C capability that automatically replies to Mode C interrogations by transmitting pressure altitude information in 100−foot increments.
	8) Compliance with ATC clearances and instructions: a) When an ATC clearance has been obtained, no pilot−in−command may deviate from that clearance, except in an emergency, unless an amended clearance is obtained. A pilot−in−command may cancel an IFR flight plan if that pilot is operating in VFR weather conditions outside of Class A airspace. If a pilot is uncertain of the meaning of an ATC clearance, the pilot shall immediately request clarification from ATC. b) Except in an emergency, no person may operate an aircraft contrary to an ATC instruction in an area in which ATC is exercised. c) Each pilot−in−command who, in an emergency, deviates from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible. d) Each pilot−in−command who is given priority by ATC in an emergency shall submit a detailed report of that emergency within 48 hours to the manager of that ATC facility, if requested by ATC. e) Unless otherwise authorized by ATC, no person operating an aircraft may operate that aircraft according to any clearance or instruction that has been issued to the pilot of another aircraft for radar ATC purposes.
Appendix 1	**Signals**
4.1.1	The flashing white signal to aircraft in flight, meaning ‘‘land at this aerodrome and proceed to apron’’ is not used in the United States. In addition, the alternating red and green signal to aircraft on the ground or in flight means exercise extreme caution.

PANS ATM Doc 4444	
There are several substantive differences between the U.S. procedures and those of ICAO, in addition to some minor variations in detail which are not considered significant. These differences are the result of initiatives and/or refinements which the U.S. has effected in the interest of improving the safety and efficiency of air traffic.	
PAN ATM Doc 4444 15th Edition	**7110.65 S**
CHAPTER 1	**DEFINITIONS**
Advisory Airspace	The U.S. does not define, it refers to Advisory Service.
Advisory Route	The U.S. does not define, it refers to Advisory Service.
Not defined in Doc 4444, AIR DEFENSE IDENTIFICATION ZONE (ADIZ)	In the U.S., AIR DEFENSE IDENTIFICATION ZONE (ADIZ) is an area of airspace over land or water in which the ready identification, location, and control of all aircraft (except for Department of Defense and law enforcement aircraft) is required in the interest of national security.
Affirm	U.S. has no phraseology using "AFFIRM". U.S. uses "AFFIRMATIVE"− "Yes". ; or "ACKNOWLEDGE; or Roger, Wilco."
Aerodrome Traffic	The U.S. does not define.
Air Traffic Advisory Service	In the U.S., "Advisory Service" is intended for IFR and VFR aircraft.
Airborne Collision Avoidance System	The U.S. uses traffic alert and collision avoidance system (TCAS).
Aircraft	U.S. uses "Aircraft" to mean the airframe, crew members, or both.
AIRMET	In the U.S., AIRMET stands for Airman's Meteorological Information which is in-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 kt or more at the surface, widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles, and extensive mountain obscurement.
Air-report	The U.S. does not normally use the term "air-report." Pilot weather reports (PIREPs), position, and operational reports are used. PIREPs include reports of strong frontal activity, squall lines, thunderstorms, light to severe icing, wind shear and turbulence (including clear air turbulence) of moderate or greater intensity, volcanic eruptions and volcanic ash clouds, and other conditions pertinent to flight safety. They may include information on ceilings, visibility, thunderstorms, icing of light degree or greater, wind shear and its effect on airspeed, or volcanic ash clouds, but do not usually include air temperature.
Air-taxiing	In the U.S., the term "hover taxi" is sometimes used to indicate the ICAO term "air-taxiing." In the U.S., air-taxiing is the preferred method for helicopter movements on airports provided ground operations/conditions permit. Additionally, in the U.S., air taxi is used to indicate certain commercial aircraft operations. For those operations, usually a special call sign is used, or the prefix "Tango" is added to the aircraft call sign.
Air Traffic Flow Management	U.S. defines as Air Traffic Control System Command Center.
Altitude	U.S. uses "Altitude" to mean indicated altitude mean sea level (MSL), flight level (FL), or both.
Approval Request	U. S. uses "APREQ."
Approved separation	U.S. uses "Approved separation" to mean separation in accordance with the applicable minima in this manual.
Area control service	The U.S. does not use the term "area control service" to indicate controlled flight in controlled areas.

ATS route	In U.S. domestic airspace, the term "ATS route" is not used. Routes in the U.S. include VOR airways, jet routes, substitute routes, off-airway routes, RNAV routes and colored airways. The U.S. also uses instrument departure procedures (DPs), and standard terminal arrivals (STARs).
Not defined in Doc 4444 CIRCLE-TO-LAND MANEUVER	CIRCLE-TO-LAND MANEUVER − In the U.S., a maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. At tower-controlled airports, this maneuver is made only after ATC authorization has been obtained and the pilot has established required visual reference to the airport.
Control zone	The U.S. uses "surface area" in place of the ICAO term "control zone." Surface area is defined as the airspace contained by the lateral boundary of the Class B, C, D or E airspace designated for an airport that begins at the surface and extends upward.
Controlled airspace	The U.S. uses the following definition of controlled airspace found in 14 CFR Section 1.1: "Controlled airspace means an airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification."
Course, bearing, azimuth, heading, and wind direction	U.S. uses "Course, bearing, azimuth, heading, and wind direction" information and it shall always be magnetic unless specifically stated otherwise.
Cruising level	The U.S. uses the term "cruising altitude."
Decision altitude	Approach with vertical guidance (VNAV).
Emergency Phase	The U.S. does not utilize classification system of emergency phases
Expedite	U.S. uses **"EXPEDITE"** by ATC when **prompt compliance** is required to avoid the development of an imminent situation. Expedite climb/descent normally indicates to a pilot that the approximate best rate of climb/descent should be used without requiring an exceptional change in aircraft handling characteristics.
Flight information centre	In the U.S., the services provided by flight information centers (FICs) are conducted by air traffic control (ATC) facilities, flight service stations (FSSs), and rescue coordination centers (RCCs).
Ground Effect	The U.S. does not define, but is referred to in "Hover Taxi."
Holding procedure	In the U.S., a hold procedure is also used during ground operations to keep aircraft within a specified area or at a specified point while awaiting further clearance from air traffic control.
Hot Spot	This is a known term , but not specifically defined in 7110.65.
Kilometres	U.S. ATS units do not accept aircraft speeds in metric terms nor do they use the term "minimum clean speed." The U.S. does use phrases such as "maintain maximum forward speed" or "maintain slowest practical speed."
Level	The U.S. uses "altitude" or "flight level" rather than "level."
May or need not	U.S. uses "May" or "need not" means a procedure is optional.
Miles	U.S. uses "Miles" to mean nautical miles unless otherwise specified, and means statute miles in conjunction with visibility.
Minute	U.S. uses "minute plus 30 seconds", except when time checks are given to the nearest quarter minute.
Movement area	In the U.S., the "movement area" is equivalent to the ICAO "maneuvering area" which does not include parking areas.
Near Parallel Runways	In the U.S., these are not defined as non-intersecting runways aligned 15 degrees or less apart
Pilot-in-Command	Designated by operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.
Plural	U.S. uses "Plural words to include the singular."
Position Symbol	The U.S. definition differs in that it refers to mode of tracking, rather than position of an aircraft or vehicle
Procedural Control	The U.S. does not define this as method to provide ATC service without data from an ATS surveillance system.
Procedural Separation	The U.S. does not define as separation used when providing "Procedural Control."
Runway Incursion	This is a well-known term in NAS, but is not defined in the 7110.65
Singular	U.S. uses "Singular words to include the plural."
Slush	In the U.S., "slush" is not used as a weather phenomenon.

Standard instrument arrival (STAR)	The U.S. uses the acronym STAR to define a standard terminal arrival.
Standard instrument departure (SID)	The U.S. uses the term departure procedure (DP) in lieu of SID.
Stand-by	U. S. uses “STAND BY” to mean the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in “stand by for clearance.” The caller should reestablish contact if a delay is lengthy. “Stand by” is not an approval or denial.
Stopway	The U.S. does not define a “stopway” as a rectangular area.
Taxiway a) *Aircraft stand taxilane* *b) Apron taxiway* *c) Rapid exit taxiway*	Ref (a), the US does not define as “portion of an apron designated as a taxiway intended to provide access to aircraft stands only.” Ref (b), the US does not define as “portion of a taxiway system located on an apron, providing taxi route across an apron.” Ref (c), the US defines as High Speed Taxiway.
Terminal control area	In the U.S., the term “terminal control area” has been replaced by “Class B airspace.” Standard IFR services should be provided to IFR aircraft operating in Class B airspace.
Time	U.S. when uses “Time” for ATC operational activities, is the hour and the minute in Coordinated Universal Time (UTC). Change to the next minute is made at the minute plus 30 seconds, except time checks are given to the nearest quarter minute.
Track	The U.S. uses the term ”course” instead of “track.”
Transition altitude, transition layer, and transition level	In U.S. domestic airspace, transition altitude, layer, and level are not used. U.S. flight levels begin at FL 180 where a barometric altimeter setting of 29.92 inches of mercury is used as the constant atmospheric pressure. Below FL 180, altitudes are based on barometric pressure readings.
Uncertainty Phase	The U.S. does not utilize emergency phase classifications.
Visibility	Definitions are different.
Visual Approach	In the U.S., aircrews may execute visual approaches when the pilot has either the airport or the preceding aircraft in sight and is instructed to follow it.
Will	U.S. uses “Will” means futurity, not a requirement for the application of a procedure.
CHAPTER 4	**GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES**
4.2	In the U.S., flight information and alerting services are provided by ATC facilities, FSSs, and RCCs.
4.3.2.1.1	Transfer of control points vary depending on numerous factors.
4.3.2.1.3	Transfer of control varies.
4.3.3.1a	The U.S. does not “release” aircraft. Handoff is used.
4.4.1	In the U.S., flight information and alerting services are provided by ATC facilities, FSSs, and RCCs.
4.13.4	Flight Progress Strips shall be retained for at least 15 days. (7110.3 3-4-4b)
4.3.2.1	Transfer of control points vary depending on numerous factors.
4.3.3.1	Transfer of control varies.
4.3.3.1a/ b	The U.S. does not “release” aircraft. Handoff is used.
4.4	In the U.S., flight information and alerting services are provided by ATC facilities, FSSs, and RCCs.
4.4.13	The U.S. uses a flight plan format different from the ICAO model discussed in Appendix 2. The U.S. ATS facilities will transmit ICAO repetitive flight plans (RPLs) even though a different format is used for stored flight plans.
4.4.2.1.1	The U.S. accepts flight plans up to 24 hours prior to Estimated Off –Block Time (EOBT).
4.5.7.5	The flight crew shall read back to the air traffic controller safety-related parts of ATC clearances.

4.6.1.5	The U.S. allows speed adjustments to be assigned in 5 knot increments.
4.6.3.2	The U.S. uses different speed control phraseologies. Specifically, Doc 4444 uses "Maximum Speed" whereas the US uses "Maximum Forward Speed". Doc 4444 uses "Minimum Clean Speed" whereas the US uses "Slowest Practical Speed."
4.6.3.6	Only minor speed reductions of 20 knots should be used on intermediate or final approach.
4.6.3.7	In the US, speed control is not to be assigned inside Final Approach Fix or 5 NM from runway end.
4.8.2	U.S. Controller phraseology differs slightly and does not include a time check.
4.8.3	ATS units are not required to advise a pilot who has canceled an IFR flight plan that IMC conditions are likely to be encountered along the route of flight; however, if a pilot informs a controller of a desire to change from **IFR** to VFR, the controller will request that the pilot contact the appropriate FSS.
4.9.1.1	U.S. Classification, terminology, and weight requirements for wake turbulence separation are different.
4.5.6.2	U.S. ATS controllers do not normally include clearance for transonic acceleration in their ATC clearances.
4.5.7.3 LEVELS Except as provided for in Chapter 6, 6.3.2 and 6.5.1.5, use of standard departure and arrival clearances, instructions included in clearances relating to levels shall consist of the items specified in Chapter 11, 11.4.2.6.2.2. 4.10.4 Provision of altimeter setting information	In U.S. domestic airspace, transition altitude, layer, and level are not used. U.S. flight levels begin at FL180 where a barometric altimeter setting of 29.92 inches of mercury is used as the constant atmospheric pressure. Below FL 180, altitudes are based on barometric pressure readings. QNH and QFE altimeter settings are not provided in domestic U.S. airspace.
4.6.3.6	Only minor speed reductions of 20 knots should be used on intermediate or final approach.
4.6.3.7	Speed control after 7KM (4NM) should not be applied.
4.9.2	In the U.S., the word "heavy" is **used in all communications** with or about heavy jet aircraft in the terminal environment. In the en route environment, "heavy" is used in all communications with or about heavy jet aircraft with a terminal facility, when the en route center is providing approach control service, when the separation from a following aircraft may become less than five miles by approved procedure, and when issuing traffic advisories.
4.10.1.1, 4.10.1.2, 4.10.4.6	Flight levels (at or above 18,000msl, except oceanic) and in feet below 18,000 ft MSL, including around airports (vs. ICAO QFE – height above field/threshold when near airports).
4.11.2.2 4.11.3 d)	Reporting the assigned speed with each frequency change by pilots is not a requirement. Controllers are required to forward this information to the next controller.
4.11.4 Transmission of ADS-C reports	The U.S. has not yet published ATS procedures for the use of Automatic Dependent Surveillance-Contract (ADS-C).

4.11 POSITION REPORTING	The U.S. has different criteria to make position reports.5-1-12. POSITION REPORTING
4.13.4	Flight Progress Strips shall be retained for at least 15 days. (7110.3 3-4-4b)
4.12.2 Contents of routine air-reports 4.12.3 Contents of special air-reports	The U.S. does not normally use the term "air-report." Pilot weather reports (PIREPs), position, and operational reports are used. PIREPs include reports of strong frontal activity, squall lines, thunderstorms, light to severe icing, wind shear and turbulence (including clear air turbulence) of moderate or greater intensity, volcanic eruptions and volcanic ash clouds, and other conditions pertinent to flight safety. They may include information on ceilings, visibility, thunderstorms, icing of light degree or greater, wind shear and its effect on airspeed, or volcanic ash clouds, but do not usually include air temperature.
4.15 DATA LINK COMMUNICATIONS INITIATION PROCEDURES	The U.S. has not yet published ATS procedures for the use of Datalink.
CHAPTER 5	**SEPARATION METHODS AND MINIMA**
5.2.1 General	In U.S. airspace, only conflict resolution (not separation) is provided between IFR and VFR operations. Separation is provided between IFR and Special VFR (SVFR) aircraft only within the lateral boundaries of Class B, C, D, or E control zones (the U.S. term is surface areas) below 10,000 feet MSL.
5.2.1.1	In U.S. Class A and B airspace, separation is provided for all aircraft. In U.S. Class C airspace, separation is provided between IFR and SVFR aircraft; conflict resolution is provided between IFR and VFR operations.
5.3.1 Vertical separation application 5.3.4 Vertical separation during climb or descent	U.S. rules allow assignment of altitude to second aircraft after first aircraft has been issued climb/descent and is observed or reports leaving that altitude. 7110.65, Para 6-6-1. APPLICATION 6-6-2. EXCEPTIONS
5.4.1.2.1.2	U.S. Lateral separation criteria and minima values differ somewhat.
5.4.2.1.5	The U.S. uses the term "course" instead of "track." "Reciprocal" courses are sometimes referred to as "opposite" courses. The wording of the definitions for U.S. *same, crossing,* or *opposite/reciprocal* courses differs from the ICAO worded definitions, but the intent appears to be the same.
5.4.2.2.1.1 c/ d	The U.S. uses 22 kt instead of 20 kt and 44 kt instead of 40 kt.
5.4.2.6.4.3.3 Conflict is resolved within a further 7 minutes.	When an ADS-C periodic or waypoint change event report is overdue by *3 minutes*, the controller shall take action to obtain an ADS-C report. If no report is received within *6 minutes* of the time the original report was due, the controller shall take action to apply another form of separation. 7110.65, Para 8-9-3. LONGITUDINAL SEPARATION
5.4.2.7.3.2 d)2).	The FAA's Advanced Technologies and Oceanic Procedures (ATOP) automation platform is designed to ensure that separation will not decrease below required minima for same track aircraft should either the reference or maneuvering aircraft turn during the ITP. This allows the controller to issue a clearance to perform an ADS−B ITP climb/descent maneuver if required separation is maintained or increased and either the reference or maneuvering aircraft has a turn in its flight plan.
5.5.2	Whenever the other aircraft concerned are within 5 minutes flying time of the holding area.
5.6 (Separation Between Departing Aircraft)	U.S. Allows 2 minute separation standard when courses diverge within 5 minutes after departure.

5.7 (Separation of Departing Aircraft from Arriving Aircraft)	U.S. Requires departing aircraft to be established on a course diverging by at least 45 degrees from the reciprocal of the final approach course.
5.8.4	The U.S. includes B757 in heavy category for wake turbulence purposes. DOC 4444 does not stipulate.
CHAPTER 6	***SEPARATION IN THE VICINITY OF AERODROMES***
6.3.2.4	U.S. aircraft on a SID assigned higher altitudes than specified in SID, may climb to higher assigned altitude.
6.3.2.5 COMMUNICATION FAILURE **8.8.3.2** COMPLETE AIRCRAFT COMMUNICATION FAILURE **15.3** AIR-GROUND COMMUNICATIONS FAILURE	In the U.S., if the communications failure occurs in IFR conditions, or if VFR cannot be complied with, each pilot shall continue the flight according to the following requirements: Route a) By the route assigned in the last ATC clearance received; b) If being radar vectored, by the direct route from the point of failure to the fix, route, or airway specified in the vector clearance; c) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or d) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan. Altitude - At the highest of the following altitudes or flight levels for the route segment being flown: a) The altitude or flight level assigned in the last ATC clearance received; b) The minimum altitude as prescribed in 14 CFR Part 91 (Section 91.121(c)) for IFR operations; or c) The altitude or flight level ATC has advised may be expected in a further clearance.
6.3.3.3	Arriving aircraft - delay of 10 minutes or more. 7110.65, Para 4-7-11 d 5
6.5.2.4	Aircraft on STAR descended to altitudes lower than specified in a STAR, may descend to assigned altitude.
6.5.3.1	The 7110.65 does not stipulate flight crew concurrence of Controller initiated Visual Approach.
6.5.3.5	U.S. requires ATC to inform following aircraft behind Heavy/B757 aircraft of manufacturer and model information.
6.5.5.2	Onward clearance time. 7110.65 PG EXPECT FURTHER CLEARANCE (TIME)- The time a pilot can expect to receive clearance beyond a clearance limit.
6.7.3.1.2	U.S. has no criteria for separate radar controllers in conducting Parallel approaches.
6.7.3.2.1 (c)	The U.S. has adopted procedures allowing RNAV equipped aircraft to conduct Independent Parallel Approaches.
6.7.3.2.9	U.S. has no parallel approach obstacle assessment surfaces (PAOAS) Criteria.
6.7.3.2.9	The U.S. has no criteria for a “45 degree track”.
6.7.3.2.10 (a)	The U.S. has no criteria for both controllers to be advised when visual separation is applied.
6.7.3.4.1 (d)	The U.S. has adopted procedures allowing RNAV equipped aircraft to conduct Dependent Parallel approaches.
6.7.3.4.1 (f)	The U.S. requires that adjacent missed approach procedures do not conflict.
6.7.3.5.3 (b)	The U.S. has no surveillance radar approach (SRA).
6.7.3.5.3 (c)	In the U.S., aircrews may execute visual approaches when the pilot has either the airport or the preceding aircraft in sight and is instructed to follow it. A contact approach is one wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport by visual reference in those conditions, may deviate from the instrument approach procedure and proceed to the destination airport by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile.

CHAPTER 7	PROCEDURES FOR AERODROME CONTROL SERVICE
7.4.1.1 START-UP TIME PROCEDURES	U.S. has no start up procedures, taxi clearance.
7.4.1.2.1 (f)	U.S. does not require time check prior to taxi.
7.6.3.2.3.2 Light signal from aerodrome control	In the U.S., for movements of other than aircraft traffic (i.e., vehicles, equipment, and personnel), steady green means cleared to cross, proceed, go; flashing green is not applicable; flashing white means return to starting point on airport; and alternating red and green means a general warning signal to exercise extreme caution.
7.6.3.2.3.3 Flashing runway or taxiway lights	U.S. controllers do not flash runway or taxiway lights to instruct aircraft to “vacate the runway and observe the tower for light signal.”
7.10.2 Clearance to land	In the U.S., landing clearance to a succeeding aircraft in a landing sequence need not be withheld if the controller observes the positions of the aircraft and determines that prescribed runway separation will exist when the aircraft crosses the landing threshold. Controllers issue traffic information to the succeeding aircraft if it has not previously been reported.
7.11.4 and 7.11.6 Reduced Runway Separation Minima Between Aircraft Using the Same Runway	U.S. category 1, 2, & 3 (SRS) aircraft weights differ. Separation standards are greater, due to increased size and weight categories.
7.12.1.1.2	U.S. does not specify separation standards on taxiways.
7.14 AUTHORIZATION OF SPECIAL VFR FLIGHTS	Special VFR operations may be conducted in the U.S. under the following weather minimums and requirements below 10,000 feet MSL within the airspace contained by the upward extension of the lateral boundaries of the controlled airspace designated to the surface for an airport. These minimums and requirements are found in 14 CFR Section 91.157. Special VFR operations may only be conducted: (1) With an ATC clearance; (2) Clear of clouds; (3) Except for helicopters, when flight visibility is at least 1 statute mile; and (4) Except for helicopters, between sunrise and sunset (or in Alaska, when the sun is 6 degrees or more below the horizon) unless: (i) The person being granted the ATC clearance meets the applicable requirements for instrument flight; and (ii) The aircraft is equipped as required in 14 CFR Sec. 91.205(d).
7.14 AUTHORIZATION OF SPECIAL VFR FLIGHTS (continued)	No person may take off or land an aircraft (other than a helicopter) under special VFR: (1) Unless ground visibility is at least 1 statute mile; or (2) If ground visibility is not reported, unless flight visibility is at least 1 statute mile.
CHAPTER 8	**ATS SURVEILLANCE SERVICES**
8.5.5.1 Verification of Level Information	U.S. validation of mode C readouts allow up to 300 feet variance from pilot reported altitudes.
8.6.5.2	The U.S. has not implemented cold temperature corrections to the radar minimum vectoring altitude.
8.7.3.2 (b)	The U.S. only allows visual observance of runway turn-off points.

8.8.4.2	The U.S. does not specify that applicable separation can be utilized during emergency situations.
8.9.3.6	U.S. specifies maximum intercept angle of 30 degrees for fixed wing aircraft vectored to final approach course.
CHAPTER 9	**FLIGHT INFORMATION SERVICE AND ALERTING SERVICE**
9.1.3.7	The U.S. does not have special procedures for the transmission of information to supersonic aircraft.
9.1.4.1.1	Class F airspace is not used in the U.S. Traffic advisories are provided in Class C airspace and, workload permitting, in Class D, Class E, and Class G airspace.
9.2.1.2	The U.S. does not use "operations normal" or 'QRU" messages. U.S. controllers are not normally familiar with the term "uncertainty phase."
CHAPTER 10	**COORDINATION**
10.1.3.1 DIVISION OF CONTROL	Except for a VFR aircraft practicing an instrument approach, an IFR approach clearance in the U.S. automatically authorizes the aircraft to execute the missed approach procedure depicted for the instrument approach being flown. No additional coordination is normally needed between the approach and en route controllers. Once an aircraft commences a missed approach, it may be radar vectored.
10.1.4.2.2	U.S. does not require ETA to be forwarded at least 15 minutes prior to ETA.
CHAPTER 11	**AIR TRAFFIC SERVICES MESSAGES**
11.1.2 Emergency messages	U.S. uses different emergency messages. 7110.10, Chapter 8. Search and Rescue (SAR) Procedures for VFR Aircraft.
11.4.2.3.6 LOGICAL ACKNOWLEDGEMENT MESSAGES (LAM)	The existing U.S. ATS automation system does not process logical acknowledgment messages (LAMs).
11.4.3.4.2 Aerodrome Conditions	U.S. does not report runway condition as 'DAMP'.
CHAPTER 12	**PHRASEOLOGIES**
12.2.7 Conditional phrases, such as "behind landing aircraft" or "after departing aircraft", shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot	US ATC does not allow conditional clearances described for example: "SAS 941, BEHIND DC9 ON SHORT FINAL, LINE UP BEHIND." *Note.− This implies the need for the aircraft receiving the conditional clearance to identify the aircraft or vehicle causing the conditional clearance.*

12.3.1 m) General to require action when convenient m) WHEN READY *(instruction)*;	U.S. does not use this phraseology. 7110.65 4-5-7. ALTITUDE INFORMATION PHRASEOLOGY CLIMB/ DESCEND AT PILOT'S DISCRETION 1. The pilot is expected to commence descent upon receipt of the clearance and to descend at the suggested rates specified in the AIM, 4-4-9, Adherence to Clearance, until reaching FL 280. At that point, the pilot is authorized to continue descent to FL 240 within the context of the term "at pilot's discretion" as described in the AIM. f. When the "pilot's discretion" portion of a climb/descent clearance is being canceled by assigning a new altitude, inform the pilot that the new altitude is an "amended altitude." EXAMPLE- "American Eighty Three, amend altitude, descend and maintain Flight Level two six zero."
12.3.1.2 *t) [after RA…pilot says] CLEAR OF CONFLICT, RETURNING TO *(assigned clearance)*;	TCAS resolution advisories in the U.S., pilots would advise "clear of conflict, returning to . . . ." *EXAMPLE-* 1. "*New York Center, United 321, TCAS climb.*" *NOTE-* 2. *When the RA has been resolved, the flight crew should advise ATC they are returning to their previously assigned clearance or subsequent amended clearance.* *EXAMPLE-* 2. "*New York Center, United 321, clear of conflict, returning to assigned altitude.*"
12.3.1.2 (n) MAINTAIN OWN SEPARATION AND VMC [FROM *(level)*] [TO *(level)*]; and (o) MAINTAIN OWN SEPARATION AND VMC ABOVE (*or* BELOW, *or* TO) *(level)*;	U.S. does not use "maintain own separation and VMC 'from,' 'above,' or 'below' . . . ," U.S. controllers say "maintain visual separation 'from' that traffic." Meteorological conditions are expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.
12.3.1.2 (z) Clearance to cancel level restriction(s) of the vertical profile of a SID during climb." **(z)** CLIMB TO *(level)* [LEVEL RESTRICTION(S) *(SID designator)* CANCELLED *(or)* LEVEL RESTRICTION(S) *(SID designator)* AT *(point)* CANCELLED];	The U.S. does not have specific phraseology examples that cover this issue. However, phraseology contained in the 7110.65 covers how to change altitudes and altitude restriction in a SID.

12.3.1.2 aa) Clearance to cancel level restriction(s) of the vertical profile of a STAR during descent. **(aa)** DESCEND TO *(level)* [LEVEL RESTRICTION(S) *(STAR designator)* CANCELLED *(or)* LEVEL RESTRICTION(S) *(STAR designator)* AT *(point)* CANCELLED].	The U.S. does not have specific phraseology examples that cover this issue. However, phraseology contained in the 7110.65 covers how to amend or cancel altitude restrictions.
12.3.1.2 (2) TO AND MAINTAIN BLOCK *(level)* TO *(level);*	U.S. uses "MAINTAIN BLOCK (altitude) THROUGH (altitude)." 7110.65, Para 4-5-7. g. ALTITUDE INFORMATION
12.3.1.5 CHANGE OF CALL SIGN	U.S. has no phraseology or approved procedure to advise aircraft to change call signs. The U.S. has procedures for a duplicate aircraft identification watch and notification to airline operators but does not publish national procedures for on-the-spot temporary changes to aircraft call signs in accordance with ICAO guidelines.
12.3.1.6 TRAFFIC INFORMATION	The U.S. requires issuance of azimuth, distance, direction, type, and altitude.
12.3.1.7 a) METEOROLOGICAL CONDITIONS	In the U.S., the criterion for a variable wind is: wind speed greater than 6 kt and direction varies by 60 degrees or more. If the wind is >1 kt but <6 kt, the wind direction may be replaced by "VRB" followed by the speed or reported as observed. "VRB" would be spoken as "wind variable at <speed>."
12.3.1.7 d/e/f METEOROLOGICAL CONDITIONS	U.S. controllers do not give wind speed, visibility, or RVR values in metric terms. RVR values are given in 100- or 200-foot increments while RW values are given in Venule increments.
12.3.1.7 j METEOROLOGICAL CONDITIONS	U.S. controllers do not use the term "CAVOK." However, the ceiling/sky condition, visibility, and obstructions to vision may be omitted if the ceiling is above 5,000 feet and the visibility is more than 5 miles.
12.3.1.7 (l) & (m) METEOROLOGICAL CONDITIONS	In the US, controllers and pilots exchange altimeter setting by reference to inches Hg. ICAO describes altimeter setting by reference to millibars, QNH or QFE. (where QNH – above mean sea level and QFE – height above aerodrome)

12.3.1.10 – AERODROME INFORMATION, RUNWAY REPORT AT *(observation time)* RUNWAY *(number) (type of precipitant)* UP TO *(depth of deposit)* MILLIMETRES. BRAKING ACTION GOOD (*or* MEDIUM TO GOOD, *or* MEDIUM, *or* MEDIUM TO POOR, *or* POOR *or* UNRELIABLE) [*and/or* BRAKING COEFFICIENT *(equipment and number)*];	U.S. use BRAKING ACTION terms "good," "fair," "poor," "nil," or combination of these terms. "Braking action fair to poor, reported by a heavy D-C Ten.". 7110.65, Para 3-3-4.
12.3.1.10(i) BRAKING ACTION REPORTED BY *(aircraft type)* AT *(time)* GOOD (*or* MEDIUM, *or* POOR);	U.S. does not issue Temperature with Braking Action. 7110.65, Para 3-3-4.
12.3.2.4 Specification of Cruise Levels, (c) Cruise climb between. *(levels)* or above *(level)*	The U.S. does not have equivalent cruise climb between levels/altitudes. However, in ICAO regions for supersonic flight 8- 8-3a(1), U.S. has adopted ICAO phraseology.
12.4.2.4.2 a) COMMENCE DESCENT NOW [TO MAINTAIN A *(number)* DEGREE GLIDE PATH]	The U.S uses only "begin descent" and does not speak to "Maintain a (number) Degree Glide Path."
12.3.2.5	U.S. has no phraseology or instruction for emergency descent:

12.3.2.8, Separation Instructions (b) ADVISE IF ABLE TO CROSS (significant point) AT (time or level)	U.S. has no phraseology for “ADVISE IF ABLE.” U.S. does have phraseology “Advise if unable...”
12.3.4.7, Taxi procedures, after landing (n), (o), & (p)	U.S. has no phraseology using “BACKTRACT.” U.S. does use BACK-TAXI (7110.65) − A term used by air traffic controllers to taxi an aircraft on the runway opposite to the traffic flow. The aircraft may be instructed to back-taxi to the beginning of the runway or at some point before reaching the runway end for the purpose of departure or to exit the runway.
12.3.4.11 TAKE-OFF CLEARANCE when take-off clearance has not been complied with c) Vacate 12.3.4.20 RUNWAY VACATING AND COMMUNICATIONS AFTER LANDING b	U.S. uses **CLEAR OF THE RUNWAY** **a.** Taxiing aircraft, which is approaching a runway, is clear of the runway when all parts of the U.S. uses aircraft are held short of the applicable runway holding position marking. **b.** A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there are no restrictions to its continued movement beyond the applicable runway holding position marking. **c.** Pilots and controllers shall exercise good judgment to ensure that adequate separation exists between all aircraft on runways and taxiways at airports with inadequate runway edge lines or holding position markings.
12.3.4.11 (e) HOLD POSITION, CANCEL TAKE−OFF I SAY AGAIN CANCEL TAKE−OFF *(reasons)*;	U.S. uses different phraseology to cancel a take off. 3-9-10. CANCELLATION OF TAKEOFF CLEARANCE PHRASEOLOGY If circumstances require, cancel a previously issued take-off clearance and, when appropriate, inform the aircraft of the reason. ***PHRASEOLOGY*** *CANCEL TAKEOFF CLEARANCE (reason)*
12.3.5.7 a) EXPEDITE CLEARANCE *(aircraft call sign)* EXPECTED DEPARTURE FROM *(place)* AT *(time)*; b) EXPEDITE CLEARANCE *(aircraft call sign)* [ESTIMATED] OVER *(place)* AT *(time)* REQUESTS *(level or route, etc.)*.	U.S. has no phraseology to expedite clearance.

12.3.2.2 INDICATION OF ROUTE AND CLEARANCE LIMIT	U.S. will issue a clearance “direct” to a point on the previously issued route. PHRASEOLOGY CLEARED DIRECT (fix). NOTE Clearances authorizing “direct” to a point on a previously issued route do not require the phrase “rest of route unchanged.” However, it must be understood where the previously cleared route is resumed. When necessary**, “rest of route unchanged”** may be used to clarify routing. 7110.65, Para 4-4-1. ROUTE USE & 4-2-5. ROUTE OR ALTITUDE AMENDMENTS 3.
12.3.5.6 HANDOVER HANDOVER *(aircraft call sign)* [SQUAWKING *(SSR code)*] POSITION *(aircraft position) (level)*.	U.S. does not use radar handover. 7110.65, Para 5-4-3. METHODS PHRASEOLOGY HANDOFF/ POINT OUT/TRAFFIC (aircraft position) (aircraft ID),or (discrete beacon code point out only) (altitude, restrictions, and other appropriate information, if applicable). c. When receiving a handoff, point out, or traffic restrictions, respond to the transferring controller as follows: PHRASEOLOGY- (Aircraft ID) (restrictions, if applicable) RADAR CONTACT, or (aircraft ID or discrete beacon code) (restrictions, if applicable) POINT OUT APPROVED, or TRAFFIC OBSERVED,
12.4.1.1 IDENTIFICATION OF AIRCRAFT f) NOT IDENTIFIED [reason], [RESUME (or CONTINUE) OWN NAVIGATION]	U.S. controllers do not say “will shortly lose identification” or “identification lost.” 7110.65, Para 5-3-7 5-3-7. IDENTIFICATION STATUS a. Inform an aircraft of radar contact when: 1. Initial radar identification in the ATC system is established. 2. Subsequent to loss of radar contact or terminating radar service, radar identification is re-established. *PHRASEOLOGY* *RADAR CONTACT (position if required).* b. Inform an aircraft when radar contact is lost. *PHRASEOLOGY* *RADAR CONTACT LOST (alternative instructions when required).*
12.4.2.1 VECTORING FOR APPROACH (b) VECTORING FOR VISUAL APPROACH RUNWAY (number) REPORT FIELD (or RUNWAY) IN SIGHT	U.S. would use “airport or runway” rather than “field.” 7-4-2. VECTORS FOR VISUAL APPROACH PHRASEOLOGY- (ACID) FLY HEADING OR TURN RIGHT/LEFT HEADING (degrees) VECTOR FOR VISUAL APPROACH TO (airport name). 7110.65, Para 5-11-2, VISUAL REFERENCE REPORT: Aircraft may be requested to report the runway, approach/runway lights, or airport in sight. Helicopters making a “point-in-space” approach may be requested to report when able to proceed to the landing area by visual reference to a prescribed surface route. *PHRASEOLOGY* *REPORT* *(runway, approach/runway lights or airport)* *IN SIGHT.* *REPORT WHEN ABLE TO PROCEED VISUALLY TO AIRPORT/HELIPORT.*
12.4.2.5 PAR APPROACH	U.S. controllers say “this will be a P-A-R/surveillance approach to runway (number) or airport/ runway (number) or airport/heliport.” U.S. controllers do not say ”approach completed.” U.S. controllers say “your missed approach procedure is (missed approach procedure)” and, if needed, ”execute missed approach.” For PAR approaches, U.S. controllers say “begin descent” and for surveillance approaches, U.S. controllers say “descend to your minimum descent altitude.” 7110.65, Para 5-12-8. APPROACH GUIDANCE TERMINATION lights in sight and requested to or advised that he/she will proceed visually, and has been instructed to proceed visually, all PAR approach procedures shall be discontinued. d. Continue to monitor final approach and frequency. Pilots shall remain on final controller’s frequency until touchdown or otherwise instructed. 5-12-9. COMMUNICATION TRANSFER PHRASEOLOGY CONTACT (terminal control function) (frequency, if required) AFTER LANDING

12.4.2.4.4 CHECKS; (a) CHECK GEAR DOWN [AND LOCKED]	U.S. uses "CHECK WHEELS DOWN". 7110.65, Par 2-1-24. WHEELS DOWN CHECK PHRASEOLOGY
12.4.3.12 TO REQUEST PRESSURE SETTING CHECK AND CONFIRMATION OF LEVEL; and 12.4.3.13 - TO REQUEST TERMINATION OF PRESSURE-ALTITUDE TRANSMISSION BECAUSE OF FAULTY OPERATION	U.S., for aircraft above FL 180, U.S. controllers would say, "confirm using two niner niner two as your altimeter setting, verify altitude" or "stop altitude squawk" "stop altitude squawk; altitude differs by (number) feet." U.S. controllers would not say "stop squawk Charlie." 7110.6, Para 5-2-22. BEACON TERMINATION Inform an aircraft when you want it to turn off its transponder.
12.3.4.13 - ENTERING AN AERODROME TRAFFIC CIRCUIT b) JOIN *[(direction of circuit)] (position in circuit) (runway number)* [SURFACE] WIND *(direction and speed) (units)* [TEMPERATURE [MINUS] *(number)*] QNH (*or* QFE) *(number) [(units)]* [TRAFFIC *(detail)*];	U.S. uses PHRASEOLOGY: ENTER LEFT/RIGHT BASE. STRAIGHT-IN. MAKE STRAIGHT-IN. STRAIGHT-IN APPROVED. RIGHT TRAFFIC. MAKE RIGHT TRAFFIC. RIGHT TRAFFIC APPROVED. CONTINUE. b. Runway in use. c. Surface wind. d. Altimeter setting. REFERENCE FAA Order 7110.65, Current Settings, Para 2-7-1. e. Any supplementary information. f. Clearance to land. g. Requests for additional position reports. Use prominent geographical fixes which can be easily recognized from the air, preferably those depicted on sectional charts. This does not preclude the use of the legs of the traffic pattern as reporting points.
12.4.3.14 TO REQUEST LEVEL CONFIRM (level)	U.S. controllers would say "verify at (altitude)" and/or "verify assigned altitude." 7110.65 Para, 5-2-17. 1. Issue the correct altimeter setting and confirm the pilot has accurately reported the altitude. PHRASEOLOGY- (Location) ALTIMETER (appropriate altimeter), VERIFY ALTITUDE.

12.4.2.5.8 MISSED APPROACH a) CONTINUE VISUALLY OR GO AROUND *[missed approach instructions]*;	US ATC does not allow conditional clearances described.
12.6.1 Alerting phraseologies	U.S. controllers would issue MEA/MVA/MOCA/MIA instead of QNH. 7110.65.
CHAPTER 13	**AUTOMATIC DEPENDENT SURVEILLANCE – CONTRACT (ADS-C) SERVICES**
13.1 GENERAL The provision of air traffic services to aircraft, based on information received from aircraft via ADS−C, is generally referred to as the provision of ADS−C services.	US ATC rules and requirements (7110.65) concerning ADS-C are not sufficiently matured and have no Doc 4444 Chapter 13 counterpart. 7110.65, Chapter 13, Decision Support Tools, Section 2, Ocean21 – Oceanic, addresses supportable functionality.
CHAPTER 14	**CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)**
14.1 GENERAL 14.1.1 The CPDLC application provides a means of communication between the controller and pilot, using data link for ATC communication.	US ATC rules and requirements (7110.65T) concerning CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC) are addressed at 7110.65T, Ch 2, Para 13-2-4. 13-2-4. CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)
CHAPTER 15	**PROCEDURES RELATED TO EMERGENICES, COMMUNICATION FAILURE AND CONTINGENCIES**
15.3.3 Air-Ground Communications Failure b) 1, 2	7110.65 defers to the AIM for what to expect an aircraft to do when loss of two-way communication has been encountered. The expectations in the AIM differ from what a pilot is expected to do in accordance with PANS-ATM 15.3.3 b) 1 and 2. The U.S. does not specify a time that an aircraft would maintain its last assigned heading, speed, or altitude. PANS-ATM uses 20 min. in a non-radar environment and 7 min. in a radar environment.

15.3.10 If the aircraft has not reported within thirty minutes after: a) the estimated time of arrival furnished by the pilot; b) the estimated time of arrival calculated by the ACC; or c) the last acknowledged expected approach time, whichever is latest, pertinent information concerning the aircraft shall be forwarded to aircraft operators, or their designated representatives, and pilots−in−command of any aircraft concerned and normal control resumed if they so desire. It is the responsibility of the aircraft operators, or their designated representatives, and pilots−in−command of aircraft to determine whether they will resume normal operations or take other action.	When neither communications nor radar contact can be established for 30 minutes (or prior, if appropriate), U.S. controllers will consider an aircraft overdue and will initiate overdue aircraft procedures including reporting to the ARTCC or FSS.

15.1.3 Unlawful interference and aircraft bomb threat	U.S. has difference updated. 5-2-13, Code Monitor Note 1. & 2. “10-2-6 HIJACKED AIRCRAFT 10-2-6. HIJACKED AIRCRAFT Hijack attempts or actual events are a matter of national security and require special handling. Policy and procedures for hijack situations are detailed in FAA Order JO 7610.4, Special Operations. FAA Order JO 7610.4 describes reporting requirements, air crew procedures, air traffic procedures and escort or interceptor procedures for hijack situations. REFERENCE FAA Order JO 7610.4, Hijacked/Suspicious Aircraft Reporting and Procedures, Chapter 7. FAA Order 7110.65, Code Monitor, Para 5-2-13.
15.4.1 Strayed VFR flights and VFR flights encountering adverse meteorological conditions *Note.— A strayed aircraft is an aircraft which has deviated significantly from its intended track or which reports that it is lost.*	U.S. does not use the terms “strayed” or “unidentified” aircraft. 7110.65, Para 10-3-1. OVERDUE AIRCRAFT
15.7.1.1 Emergency Separation	The PANS-ATM states: “If, during an emergency situation, it is not possible to ensure that the applicable horizontal separation can be maintained, emergency separation of half the applicable vertical separation minimum may be used” Pilots must be advised that emergency separation is being applied and traffic information must be given. There is no equivalent emergency separation procedure in the U.S.
15.7.3 Procedures in regard to aircraft equipped with airborne collision avoidance systems (ACAS)	The U.S. uses traffic alert and collision avoidance system (TCAS). U.S. controllers are not to issue control instructions that are contrary to the TCAS resolution advisory (RA) procedure that a crew member advises is being executed. U.S. orders speak to controller actions when advised of an aircraft responding to a resolution alert (RA).
APPENDIX 1	**INSTRUCTIONS FOR AIR-REPORTING BY VOICE COMMUNICATIONS**
AIREP Form of Air-report	U.S. uses Pilot Reports (UAs), or Urgent Pilot Reports (UUAs).
APPENDIX 2	**FLIGHT PLAN**
A2-5 Wake	ICAO aircraft wake turbulence categories (heavy, medium, light) and FAA weight classes (heavy, large, small) differ. Also, for landing aircraft, wake turbulence separation is defined differently. The U.S. makes special provisions for any aircraft landing behind a B-757 (4 miles for a large aircraft behind or 5 miles for a small aircraft behind).
A2-7 (Item 15)	U.S. ATS units do not accept cruising speeds nor filed altitudes/flight levels in metric terms. The U.S. accepts filed Mach Number expressed as M followed by 3 figures.
2.2 (Item 18)	The U.S. accepts the non-standard indicator IRMK/in filed flight plans.

APPENDIX 3	**AIR TRAFFIC SERVICES MESSAGES**
1.1.1	See Part XI, ATS Messages, 1.3. 1.3 Composition of the standard types of message. The composition of each standard type of message, expressed as a standardized sequence of fields of data, shall be as prescribed in the reference table on page A3−33. Each message shall contain all the fields prescribed.
1.6.2	See Part XII, Phraseologies, 2.8.
1.8.1 (Field Type 3), (Field Type 15), and (Field Type 18).	See Appendix 2, Flight Plan, 2.2 (Item 15) and 2.2 (Item 18).
2.1, 2.4.5, 2.5	See Part XI, ATS Messages 1.3.
APPENDIX 4	**AIR TRAFFIC INCIDENT REPORT**
Appendix 4	U.S. has their accident/incident report in FAA Notice 8020.134.
APPENDIX 5	**CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC) MESSAGE SET**
Appendix 5	U.S. has no CPDLC message set.
APPENDIX 6	**ATS INTERFACILITY DATA COMMUNICATIONS (AIDC) MESSAGES**
1. INTRODUCTION 1.1 General	7110.65; 8-2-3. AIR TRAFFIC SERVICES INTERFACILITY DATA COMMUNICATIONS (AIDC) Where interfacility data communications capability has been implemented, its use for ATC coordination should be accomplished in accordance with regional Interface Control Documents, and supported by letters of agreement between the facilities concerned.

ANNEX 3 − METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION	
PART I (Core SARPs)	
Chapter 2	**General Provisions**
2.2	The U.S. has implemented a quality management system (QMS) for the majority of the meteorological information supplied to users. WAFC Washington and MWO Kansas City (a.k.a. Aviation Weather Center) are ISO 9000. MWOs Anchorage and Honolulu and all 122 Weather Forecast Offices have a QMS that is governed under the following National Weather Service (NWS) directives: NWS Instruction 10−1601 (Verification), NWS Instruction 10−1602 (Service Evaluation), NWS Instruction 10−1606 (Service Assessment), NWS Instruction 10−1607 (Office Evaluation), and NWS Instruction 10−815 (Aviation Meteorologist Training and Competencies). No QMS is in place for the augmentation of the surface observing program.
Chapter 3	**World Area Forecast System and Meteorological Offices**
3.4.2 g)	U.S. MWOs do not supply information received concerning the accidental release of radioactive material into the atmosphere to associated ACC/FIC.
3.8.1 a) 2)	Space weather advisories are not issued for communication via satellite (SATCOM).
Chapter 4	**Meteorological Observations and Reports**
4.3.2 a)	The U.S. does not issue local routine reports or local special reports. This difference is applicable to subsequent paragraphs that relate to the provision of local routine and special reports in Annex 3. The U.S. provides METAR to departing and arriving aircraft and provides wind and altimeter information in accordance with Federal Aviation Administration (FAA) Order JO 7110.65 chapter 3, sections 9 and 10.
4.5.1 d)	This field is also used to denote a correction to the METAR/SPECI by “COR.”
4.6.2.1	The U.S. reports visibility in statute miles.
4.6.3.3	RVR values in the METAR/SPECI code forms are reported in feet.
4.6.4.1	The U.S. automated surface observing systems (ASOS, AWOS) do not generate an automated report for the occurrence of drizzle or freezing drizzle. The ASOS does allow the manual augmentation of these elements to the observations.
4.6.7	The U.S. provides atmospheric pressure in inches of mercury. METAR and SPECI contains an Altimeter Setting (A) instead of QNH, for example, A3010 for 30.10 inches of mercury. The U.S. does not provide QFE.
Chapter 5	**Aircraft observations and reports**
5.5	Urgent Pilot Reports (UUA) are used in lieu of Special Aircraft Observations, to include Hail, Low Level Wind Shear (within 2,000 ft of surface), severe icing, severe and extreme turbulence, tornado, funnel cloud or waterspout, and volcanic eruption and/or volcanic ash. In addition, Pilot Reports (UA) and UAA identify the location of the weather phenomenon by NAVAIDS. Pilot Reports are used in lieu of Special Aircraft Observations, to include moderate turbulence and moderate icing. Braking action may be included in the remarks section of the UUA/UA, but is reported to air traffic control when worse than reported.
Chapter 6	**Forecasts**
6.3.1	Landing forecasts are provided by the TAF.
6.3.3	The U.S. does not provide trend forecasts.
6.5	The U.S. provides an Area Forecast (FA) and Graphical Forecast for Aviation (GFA) in place of a GAMET. The FA is provided by MWOs Anchorage and Honolulu while the GFA is provided by WFO Kansas City. The format and content of the FA and GFA differs from the GAMET. The FA and GFA are valid from the surface up to FL450. The GFA is a web−based interactive information service.

Chapter 7	SIGMET and AIRMET Information, Aerodrome Warnings and Wind Shear Warnings
7.2	AIRMETs over the conterminous U.S. (CONUS) and Hawaii are valid for 6 hours and are issued every 6 hours on a scheduled basis. AIRMETs over Alaska are valid for 8 hours and are issued every 8 hours on a scheduled basis. The vertical domain of AIRMETs is from the surface up to FL450. The U.S. also provides a graphical version of the AIRMET (G−AIRMET) that contains 3−hourly time steps valid from 0−hour to 12−hours.
7.4.1	The U.S. does not provide wind shear warnings. The U.S. believes wind shear alerts are timelier to flight crews in landing and takeoff than wind shear warnings and thus provide a greater level of safety. In addition, the information is duplicative in nature in that wind shear warnings could be delayed while wind shear alerts are provided via automated systems that allow for immediate data link to flight crews through ATS systems.
Chapter 9	**Service for operators and flight crew members**
9.2.3 & 9.2.4	U.S. meteorological offices have no means to communicate directly to flight crews if there is a divergence in the forecast from what is provided in the flight document folder.
9.3.3	U.S. meteorological offices have no means to provide updates to flight document folders or to contact the operator.
PART II	**APPENDICES and ATTACHMENTS**
APPENDIX 2	**Technical specifications related to global systems, supporting centers and meteorological offices**
5.1.4	U.S. TCACs do not provide observed CB clouds in the tropical cyclone advisory (TCA) message. The U.S. does not provide a graphical version of the TCA.
6.1.3	Space weather advisories are not issued for communication via satellite (SATCOM).
APPENDIX 3	**Technical specifications related to meteorological observations and reports**
2.1.2	U.S. METARs and SPECIs are not issued in accordance with Table A3−2 due to national practices, which are described in FAA Order JO 7900.5 and Federal Meteorological Handbook No. 1 (FMH−1). Ranges and resolution for numerical elements included in METAR and SPECI differ from Table A3−5.
2.2	The U.S. does not use the term CAVOK in meteorological reports.
2.3	U.S. practices require SPECI for wind shift when wind direction changes by 45 degrees or more in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift. Practices do not require SPECI for increases of mean surface wind speed. Practices require SPECI for squall, where squall is defined as a strong wind characterized by a sudden onset in which the wind speed increases at least 16 knots and is sustained at least 22 knots or more for at least one minute. Practices do not require SPECI for wind direction changes based on local criteria. Practices do not require SPECI for the onset, cessation or change in intensity of: freezing fog; moderate or heavy precipitation (including showers thereof); low drifting dust, sand or snow; blowing dust, sand or snow (including snowstorm); dust storm; or sandstorm. Practice provides a SPECI when a layer of clouds or obscurations aloft is present below 1000 ft and no layer aloft was reported below 1000 ft in the preceding report. A SPECI is also reported when the ceiling (ceiling is defined in the U.S. as the lowest broken or overcast layer) decreases or increases at these markers: 3000, 1500, 1000, 500 ft or lowest published instrument approach procedures. SPECI is made when referenced weather phenomena cause changes in the visibility, ceiling, sky condition, freezing precipitation (including intensity), hail, or ice pellets.
2.3.3 c)	The U.S. does not issue SPECI for the equivalents in feet of 50, 175, 300, 550 or 600 meters. SPECI is made when the highest value from the designated RVR runway decreases to less than or if below, increases to equal or exceeds 2,400 feet during the preceding 10 minutes.
3.1.4	Practice to disseminate SPECI for improving conditions as soon as possible after the observation.
4.1.1.2	The U.S. does not provide wind representatives for specific runways but does provide a wind representative for the aerodrome.

4.1.3.1 b)	The United States provides a 2−minute average wind observation for the METAR/SPECI.
4.1.5	The wind direction may be considered variable if, during the 2−minute evaluation period, the wind speed is 6 knots or less. Also, the wind direction must be considered variable if, during the 2−minute evaluation period, it varies by 60 degrees or more when the wind speed is greater than 6 knots. Practices define wind gusts as rapid fluctuations in wind speed with a variation of 10 knots or more between peaks and lulls. Wind speed data for the most recent 10 minutes is examined and a gust, the maximum instantaneous wind speed during that 10−minute period, is reported if the definition above is met during that period.
4.2.4.4	Surface visibility is derived from an automated sensor system and is reported as prevailing visibility in the METAR and SPECI. Tower visibility is the prevailing visibility determined from the airport control tower at locations that also report surface visibility. When visibility is reported from both surface and tower, the lower value (if below 4 miles) is reported in the body of the METAR/SPECI and the other value is reported in the remarks section of the METAR/SPECI.
4.3.4b)	The U.S. does not report in METAR or SPECI marked discontinuity values when RVR passes through values of 800, 550, 300 and 175 meters.
4.3.6	The U.S. reports RVR in increments of 100 feet up to 1,000 feet, increments of 200 feet from 1,000 feet to 3,000 feet, and increments of 500 feet above 3,000 feet to 6,000 feet. The U.S. reports RVR for a single designated runway in the METAR/SPECI. RVR tendency is not reported.
4.4	The following weather elements are augmented manually at designated automated stations observation sites: FC, TS, GR, GS, and VA. At selected airports, additional present weather elements may be provided. With the exception of volcanic ash, present weather is reported when prevailing visibility is less than 7 statute miles or considered operationally significant. Volcanic ash is always reported when observed.
4.4.2.3	GR refers to all hail. All reports of hail include hailstone size diameter in the Remarks (RMK) section of the METAR/SPECI in increments of ¼ inch. When small hail less than ¼ inch in size is occurring, the hailstone size is reported in the remarks as “GR LESS THAN ¼.” Small hail will result in the issuance of a SPECI. GS is used only when snow pellets are observed.
4.4.2.8	The practice with respect to the proximity indicator VC is between 5 to 10 statute miles from point of observation.
4.4.2.10	The U.S. does not use “//” to denote the present weather is missing at an automated observing site. The U.S. uses “PWINO” in the remarks section of the METAR and SPECI to denote the present weather is unavailable.
4.5.3	Practice does not provide adjustments for runway thresholds more than 50 feet lower than aerodrome elevation. Applies to KDEN runways 7, 8, 16L, 16R, 17L, 17R, 25, 26, 34L, 34R and 35R, KCLT runway 36C, KCVG runway 36C, KDFW runways 13L and 31R, KLAS runways 25L and 25R, KMEM runways 9 and 18C, KPIT runways 10R, 28L and 32, KSTL runways 6, 12R, 24 and 29, KIND runway 5L, and KRDU runway 5L.
4.5.4	The U.S. reports only up to 3 layers at automated sites and up to 6 layers at manual sites. Cloud layer amounts are a summation of layers at or below a given level, utilizing cumulative cloud amount. In addition, at automated sites, which are unstaffed, cloud layers above 12,000 ft are not reported. At staffed automated sites, clouds above 12,000 ft may be augmented. CAVOK and NSC are not used. In addition, the U.S. does not use “///” when cloud type cannot be observed; “NCD” when no clouds are detected; or “//////” for CB or TCU when not detected by automated observing systems. In the U.S., the symbol “///”, when used in the cloud section of METAR, refers to a mountain station where the layer is below the station level. The U.S. refers to a cloud Ceiling, with the abbreviation CIG, as the lowest layer reported as broken or overcast, or the vertical visibility into an indefinite ceiling. The U.S. refers to a Variable Ceiling in the METAR and SPECI Remarks (RMK) when the ceiling layer is variable and below 3,000 feet. The range of variability (V) between the two values is included in the Remark, for example, “CIG 005V010.” The U.S. does not use “///” to denote missing vertical visibility. The U.S. uses “CHINO”, in the remarks section of the METAR, to denote that the Cloud Height Indicator system on the automated observation is unavailable. Per FMH−1, the U.S. only uses slashes (solidi) for missing precipitation totals in the METAR.

4.8	The U.S. does not provide a supplemental section for the METAR, rather, the U.S. provides a Remarks (RMK) section that contains similar information. U.S. METAR and SPECI contain Remarks that are intended for all operational decision−making. FMH−1 contains the complete description of Remarks. Practice is to not use RE and to use beginning and ending times in the remarks section for only recent precipitation and thunderstorms. Sea−surface temperature, the state of the sea and state of the runway are not provided in the METAR/SPECI code form in the Remarks section.
APPENDIX 4	**Technical specifications related to aircraft observations and reports**
3.1.3	The U.S. MWOs do not disseminate special air observations and reports.
APPENDIX 5	**Technical specifications related to forecasts**
1.1	NWS TAFS are not issued in accordance with Table A5−1 due to national practices, which are described in *National Weather Service Instruction 10−813*.
1.2	Forecast visibility increments used consist of 1/4 mile from 0 (zero) to 1 mile, 1/2 mile from 1 to 2 miles, and 1 mile above 2 miles. Note: miles are statute miles. Practice defines light winds as less than or equal to 6 knots for using VRB in TAF. Practices require forecast of non−convective low−level wind shear within 2,000 feet of the ground in the Optional Group. The NWS does not use CAVOK and NSC in the TAF. NWS practices do not include TCU in the TAF.
1.3	Change groups and amendment criteria below 1/2 statute mile (800 meters) are not used. The 100−foot (30 meter) change group and amendment criterion is not used. Practice requires TAF to be amended for a 30−degree change with an accompanying wind of 12 knots or greater; for a 10 knot wind increase only when the original was 12 knots or greater; and for a 10 knot wind gust, regardless of mean wind speed. The NWS does not use the change indicator “BECMG.” The period of time covered by a TEMPO group is normally kept to a minimum but could be up to four (4) hours. Practice does not amend TAFs for moderate or heavy precipitation.
1.4	The NWS does not use “PROB 40” in the TAF. “PROB 30” will not be used in the first nine (9) hours of every TAF’s valid period, including amendments.
APPENDIX 6	**Technical specifications related to SIGMET and AIRMET information, aerodrome warnings and wind shear warnings and alerts**
1.1	The content, order and format of U.S. SIGMETs are not in accordance with Table A6−1A due to national practices, which are described in *National Weather Service Instruction 10−811*. SIGMETs over the conterminous U.S. (CONUS), i.e., except Alaska and Hawaii, are often valid for more than one FIR. The SIGMET sequence number is not restricted to FIRs. U.S. practices are to issue SIGMET for mountain wave only when accompanied by severe turbulence. SIGMETs are issued by alphanumeric series, e.g., Kilo 1, 2, 3 etc. Within the FIRs over the CONUS and coastal waters, convective SIGMETs are issued in lieu of SIGMETs for thunderstorms. Convective SIGMETs for the CONUS are issued with the non¿standard WMO Header designator “WST” and use a lower criteria. SIGMET messages in the CONUS use VORs in place of lat/long and do not reference FIRs. The U.S. does not use flight level (FL) when describing the altitudes in SIGMETs except for those above FL180. The U.S. does not include a specific forecast position for the end of the SIGMET validity time, other than TC and VA. The U.S. does not issue a SIGMET for radioactive clouds. Within the FIRs over the CONUS and coastal waters, convective SIGMETs are issued in lieu of SIGMETs for Tropical Cyclones (TC).

2.1	The content, order and format of U.S. AIRMETs are not in accordance with Table A6−1A due to national practices, which are described in *National Weather Service Instruction 10−811*. AIRMETs in the CONUS are often valid for more than one FIR. The AIRMET sequence number is not restricted to FIRs. AIRMETs in the U.S. are issued on a routine schedule for icing, turbulence, sustained surface winds, ceiling/visibility and mountain obscuration. The U.S. does not issue AIRMETs for thunderstorms. AIRMET information is not restricted to FL100 and below and can be provided up to FL450 depending on the phenomena. The U.S. does not use FL when describing the altitudes in AIRMETs except for those above FL180.
4.2	The U.S. issues convective SIGMETs in lieu of SIGMETs for thunderstorms over the CONUS. The US does not issue AIRMETs for thunderstorms. Convective SIGMETs are issued hourly for the East, Central, and Western U.S. and thus they do not indicate the FIR. Connective SIGMETs have an outlook section.
4.2.1	U.S. practices allow for the use of term widespread (WDSPR) for more than 50 percent of the area. Convective SIGMET criteria over the CONUS are: a. A line of thunderstorms at least 60 miles long with thunderstorms affecting at least 40 percent of its length. b. An area of active thunderstorms judged to have a significant impact on the safety of aircraft operations, covering at least 40 percent of the area concerned, and exhibiting a very strong radar reflectivity intensity or a significant satellite or lightning signature. c. Embedded or severe thunderstorm(s) expected to occur for more than 30 minutes during the valid period regardless of the size of the area.
4.2.9	The U.S. criteria for heavy sandstorm and dust storm is visibility less than or equal to 1/4 SM (400 m). The U.S. criteria for moderate sandstorm and dust storm is visibility greater than 1/4 SM and less than or equal to 1/2 SM (800 m).
5.1	The U.S. issues airport warning messages similar to the ICAO format (Table A6−2, Template for aerodrome warnings) only at selected airports based on criteria per a bilateral agreement between the airport authority and the NWS Forecast Office.
6.2.1	The U.S. does not provide wind shear warnings.

ANNEX 4 − AERONAUTICAL CHARTS	
Chapter 1	**Definitions**
Air taxiway	The U.S. does not depict defined surfaces for air−taxiing of helicopters.
Final approach and take−off area (FATO)	The U.S. does not depict final approach and take−off areas (FATOs).
Prohibited area Restricted area	The U.S. will employ the terms "prohibited area" and "restricted area" substantially in accordance with the definitions established and, additionally, will use the following terms: "Alert area." Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. "Controlled firing area." Airspace wherein activities are conducted under conditions so controlled as to eliminate the hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground. "Warning area." Airspace which may contain hazards to nonparticipating aircraft in international airspace. "Maneuvering area." This term is not used by the U.S. "Military operations area (MOA)." An MOA is an airspace assignment of defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. "Movement area." Movement area is defined by the U.S. as the runways, taxiways, and other areas of an airport which are utilized for taxiing, take−off, and landing of aircraft, exclusive of loading ramp and parking areas.
Touchdown and lift−off area (TLOF)	The U.S. does not use this term.
Chapter 1.1	**Definitions**
Aerodrome reference point	Airport Reference Point is the approximate geometric center of all usable runway surfaces.
Area Minimum Altitude	Off Route Obstruction Clearance Altitude (OROCA) used.
Air Transit Route	Term "Helicopter Route" used.
Arrival Routes	Arrival routes are also identified on Standard Terminal Arrival (STAR).
Danger Area	The term "danger area" will not be used in reference to areas within the U.S. or in any of its possessions or territories.
Flight Level	Flight level is related to a reference datum of 29.92 inches of mercury.
Glide Path	Glideslope is used instead of glide path.
Helicopter Stand	Helipad is used vice helicopter stand.
Minimum obstacle clearance altitude (MOCA)	MOCA also assures acceptable navigational signal coverage within 22 NM of a VOR.
Minimum sector altitude	Minimum Sector Altitude is centered on the navigation facility upon which the procedure is predicated.
Missed approach point	Missed approach point based on acquiring the required visual reference.

Movement Area	Movement area also includes areas used by helicopters in taxiing. It does not include loading ramps or parking areas.
Obstacle	Obstacles may include terrain and objects of natural growth.
Obstacle clearance altitude (OCA) or Obstacle clearance height (OCH)	Decision Altitude and Decision Height used vice Obstacle Clearance Altitude and Obstacle Clearance Height.
Terminal arrival altitude (TAA)	Terminal Arrival Areas defined by the extension of the IAF legs and the intermediate segment course.
Touchdown zone	Touchdown zone is the first 3000 feet of the runway beginning at the threshold.
Visual approach procedure	Visual approach procedure is conducted on an IFR flight plan which authorizes the pilot to proceed visually and clear of clouds to the airport.
Chapter 1.2	**Applicability**
1.2.2	Charts vary in their conformance to ICAO Standards.
1.2.2.1	Charts vary in their conformance to ICAO Recommended Practices.
Chapter 2	**General Specifications**
2.1.7	Charts are True North oriented except as indicated.
2.1.8	Sheet size of charts varies dependent on chart type.
2.2.1	The marginal note layouts, in some cases, differ from those set forth in Appendices 1, 5, and 6.
2.3.1	Marginal note layouts vary by chart type
2.4	Symbols do not universally conform to Appendix 2.
2.4.1	Symbols do not universally conform to Appendix 2.
2.5.4	Linear dimensions are expressed in feet.
2.5.7	Conversion scales are not universally used.
2.6.2	Some charts have no linear scale.
2.9.2	Abbreviations used are from FAA Order JO JO 7340.2, not ICAO Doc 8400.
2.11	Color schemes differ by chart series.
2.12.2	Hypsometric tints differ by chart series.
2.14.1	Airspace depiction differs by chart.
2.15.4	Each aerodrome has its own magnetic variation assigned. IACC specifications require individually assigned magnetic variation values for each airport.
2.18.3.1	Julian Calendar is also used. Local times are used on select charts.
Chapter 3	**Aerodrome Obstacle Chart − ICAO Type A (Operating Limitations)**
3.1	This data is available digitally and is depicted on other individual flight products to which it is pertinent.
Chapter 4	**Aerodrome Obstacle Chart − ICAO Type B**
4.1	This data is available digitally and is depicted on other individual flight products to which it is pertinent.
Chapter 5	**Aerodrome Obstacle Chart − ICAO Type C**
5.1	This data is available digitally and is depicted on other individual flight products to which it is pertinent.

Chapter 6	**Precision Approach Terrain Chart – ICAO**
6.1	This data is available digitally and is depicted on other individual flight products to which it is pertinent.
Chapter 7	**En Route Chart – ICAO**
7.1	Simplified versions are not created.
7.6.2	Off Route Obstruction Clearance Altitude (OROCA) is shown.
7.7	Isogonic date not charted. Isogonic data always reflects the most recent 5 year epoch date
7.9.2	Danger Areas do not exist in the U.S. Warning Areas exist and are charted.
7.9.3.1.1	Coordinates are shown in degrees, minutes and hundredths of minutes. DME antenna elevation is not shown. Vertical limits of airspace are shown in tabulated data form. RNP values are not shown on routes. Coordinates of significant points are not shown. Bearings are shown to the nearest degree and distances to the nearest mile.
Chapter 8	**Area Chart – ICAO**
8.1	Area charts produced only where the amount of detail required results in congestion of information on an IFR Enroute Low Altitude chart.
8.3.1	Departure and Arrival routes are not shown.
8.6.2	Obstacles are not shown.
8.7	Magnetic Variation is not shown unless an isogonic line runs through the area.
8.8.1	Bearings and tracks are not provided as True values. IACC specifications do not accommodate nor require True values.
8.8.2	Bearings and tracks are not provided as true values.
8.9.1	Only airports shown are those with hard surface runways of 3000 feet or longer and/or with an Instrument Approach Procedure.
8.9.2	Danger Areas do not exist in the U.S. Warning Areas exist and are charted.
8.9.3	Off Route Obstruction Clearance Altitude (OROCA) is shown.
8.9.4.1.1	Coordinates are shown in degrees, minutes and hundredths of minutes. DME antenna elevation is not shown. Vertical limits of airspace are shown in tabulated data form. Terminal routings are not shown. Coordinates of significant points are not shown. Bearings are shown to the nearest degree and distances to the nearest mile. Minimum vectoring altitudes are not shown.
Chapter 9	**Standard Departure Chart – Instrument (SID) – ICAO**
9.2	Charts are provided only when a procedure has been established.
9.3.2	Charts are not generally drawn to scale.
9.3.3	Scale bar is not shown.
9.4.2	Parallels and meridians are not shown.
9.4.3	Graduation marks are not shown.
9.5	Procedure route is identified in accordance with FAA Order 8260.46
9.6.1	Culture and topography are not shown.
9.6.2	Contour relief is not shown. Obstacles are listed textually.
9.7	Magnetic variation is not shown.
9.8.1	Bearings and tracks are not provided as True values. IACC specifications do not accommodate nor require True values.
9.8.2	Bearings and tracks are not provided as True values.
9.9.2	Danger Areas do not exist in the U.S. Warning Areas exist and are charted.
9.9.3.1	Minimum Sector Altitude is not shown.
9.9.3.2	Area minimum altitudes are not shown.

9.9.4.1.1	Coordinates for NAVAIDs and Significant Points are shown in degrees, minutes and hundredths of minutes. Bearings are shown to the nearest degree and distances to the nearest mile. DME antenna elevation is not shown. Obstacles are depicted textually with position and height, and without regard for penetration of OIS. Minimum vectoring altitudes are not shown.
Chapter 10	**Standard Arrival Chart − Instrument (STAR) − ICAO**
10.2	Charts are provided only when a procedure has been established.
10.3.2	Charts are not generally drawn to scale.
10.3.3	Scale bar is not shown.
10.4.2	Parallels and meridians are not shown.
10.4.3	Graduation marks are not shown.
10.5	Procedure route is identified in accordance with FAA Order JO 7100.9
10.6.1	Culture and topography are not shown.
10.6.2	Contour relief is not shown. Obstacles are listed textually.
10.7	Magnetic variation is not shown.
10.8.1 10.8.2	Bearings and tracks are not provided as True values.
10.9.1.1	Airports are shown by symbol vice pattern.
10.9.2	Danger areas are not shown. Vertical limits are not shown.
10.9.3.1	Minimum Sector Altitude is not shown.
10.9.3.2	Area minimum altitudes are not shown.
10.9.4.1.1	Bearings are shown to the nearest degree and distances to the nearest mile. Coordinates for NAVAIDs and Significant Points are shown in degrees, minutes and hundredths of minutes. DME antenna elevation is not shown. Minimum vectoring altitudes are not shown.
Chapter 11	**Instrument Approach Chart − ICAO**
11.3.3	Scale is not shown.
11.3.3.1	Distance circle is not shown.
11.3.3.2	Distance between components and between last component and runway shown.
11.4	Sheet size is 8.25 inches by 5.375 inches
11.5.2	Graduation marks are not shown.
11.7.1	Culture information is not shown. Shaded hydrographic features are shown, but not labeled.
11.7.2	Terrain charting criteria does not include approach gradient steeper than optimal due to terrain.
11.7.3	Terrain is not charted if Std 11.7.2 is not met.
11.8.1	Magnetic variation is shown only in areas of compass instability and on charts North of 67 degrees of latitude.
11.10.1.1	Only airports specifically requested for charting are shown.
11.10.1.2	Only airports specifically requested for charting are shown.
11.10.2.2	Obstacles that are the determining factor for an OCA/OCH are not necessarily shown.
11.10.2.7	Absence of obstacle free zones are not shown.
11.10.3	Danger Areas do not exist in the U.S. Warning Areas exist and are charted.
11.10.4.3	Geographic final approach fix coordinates are not shown.
11.10.5	Minimum Safe Altitudes vice Minimum Sector Altitudes. Terminal Arrival Areas vice Terminal Arrival Altitude.
11.10.6.1	Arrowed dotted line is used for MA track. Arrowed dashed line used for Visual track. Times required for the procedure are not shown.

11.10.6.2	Distance to airport from final approach NAVAID is not shown.
11.10.6.3	Missed approach segment is shown by arrowed, dotted line. Arrowed, dashed line is used for visual segments. Times required for the procedure are not shown. Distance between components is shown vice a distance scale.
11.10.6.4	Parentheses are not shown.
11.10.6.5	Ground profile and shaded altitude blocks are not shown.
11.10.7.1	Procedure landing minima are shown vice aerodrome operating minima.
11.10.7.2	Decision Altitude/Height (DA/H) shown vice OCA/H.
11.10.8.2	Altitude/height table is not shown.
11.10.8.3	Altitude/height table is not shown.
11.10.8.4	Rate of descent table is not shown on individual plates, but a combined climb/descent table is available digitally or with printed procedure publication.
11.10.8.5	Descent gradient not shown, threshold crossing height shown in feet, vertical descent angle shown to hundredths of a degree.
11.10.8.6	Threshold crossing height shown in feet. Descent angle shown to the nearest hundredth of a degree.
11.10.8.8	Cautionary note is dependent on multiple criteria.
Chapter 12	**Visual Approach Chart – ICAO**
12.2	Chart provided only when visual approach procedure has been established.
12.3.3	Charts are shown at scale of 1:250,000, IAPs at 1:500,000 or smaller.
12.4	Sheet size is 8.25 inches by 5.375 inches.
12.5.2	Graduation marks are not shown
12.8	Magnetic variation is shown only in areas of compass instability and on charts North of 67 degrees of latitude.
12.9.3	Grid meridian is not shown.
12.10.2.3	Height of obstacle above Mean Sea Level is shown.
12.10.2.3.1	Datum height not shown. Parentheses are not shown.
12.10.3	Danger areas do not exist in the U.S. Warning areas exist and are charted. Vertical limits are not shown.
12.10.4	Control zones and Traffic zones are not shown.
12.10.5.3	VASI, MEHT, and angle of displacement are not shown.
Chapter 13	**Aerodrome/Heliport Chart – ICAO**
13.1	Helicopter movement is supported only with the location of helipads.
13.3.2	Latitude and longitude graticules are shown vice linear scale.
13.6.1	Latitude and longitude graticules are shown vice geographical coordinates. Airport elevations and runway end elevations are shown. Runway length and width are shown in feet. Clearways are not shown. Taxiways and identification only are shown. Standard taxi routes are not shown. Boundaries of air traffic service are not shown. RVR observation sites are not shown. Approach and runway lighting are not shown. VASI systems are not shown. VOR checkpoint and frequency are not shown.
13.6.2 Elevated helidecks, etc.	Helicopter pads only are shown. Touchdown and liftoff areas are not shown. Final approach and takeoff areas are not shown. Safety areas are not shown. Clearways are not shown. Visual aids are not shown. Declared distances are not shown.
Chapter 14	**Aerodrome Ground Movement Chart – ICAO**
14.1	Chart is not produced.
Chapter 15	

15.1	Chart is not produced.
Chapter 16	**World Aeronautical Chart – ICAO 1:1 000 000**
16.3.1	Linear scales are shown in the following order: nautical miles, statute miles, kilometers.
16.4.3	Charts are folded in eleven vertical panels and one horizontal fold.
16.5.1	Standard parallels are for each 8 degrees and are shown 1 degree and 20 minutes in from the Northern and Southern edges of the chart. Charts are not produced above 80 degrees latitude.
16.5.2	Distance between parallels is 1 degree. Above 56 degrees North, latitude graduation marks are shown only on every even degree of longitude. Distance between longitude meridians is 1 degree. Above 64 degrees North, meridian graduation marks are shown every 5 minutes.
16.5.3.1	Lengths of interval marks are as follow: 1 minute − .045 inches; 5 minutes − .065 inches; 10 minutes − .10 inches on both sides.
16.6	Chart numbering is indicated on Title Panel chart index.
16.7.2.2	Tunnels, if possible, are shown wherever they exist.
16.7.3.2	Roads are not shown within outlined populated areas.
16.7.9.2	Coordinates shown to the nearest minute.
16.7.10.1	Notes will read ‘Relief data incomplete’ or ‘Limits of reliable relief information.’
16.7.12.1	Wooded areas are not shown.
16.7.13	Date of topographic information is not shown.
16.8.2	Date of isogonic information is shown in the chart legend.
16.9.2.2	Other than hard surface runways are shown by symbol.
16.9.3.1	Obstacles greater than 500 feet are shown.
16.9.4	Danger Areas do not exist in the U.S. Alert Areas, Military Operating Areas and Warning Areas are also shown.
16.9.7.1	Only aeronautical ground lights that operate continuously are shown.
16.9.7.2	Only marine lights that operate year round, with a range of at least 10 NM, and are omnidirectional are shown.
Chapter 17	**Aeronautical Chart – ICAO 1:500 000**
17.3.1	Linear scales are shown in the following order: nautical miles, statute miles, kilometers.
17.4.3	Charts are folded in eleven vertical panels and one horizontal fold.
17.4.4	Relationship of chart to WAC series is not shown.
17.5.4.1	The 10 minute interval mark is .10 inches on both sides of the graticule line.
17.6.1.1	Relationship of chart to WAC series is not shown.
17.7.2.2	Tunnels, if possible, are shown wherever they exist. Prominent tunnels are shown pictorially.
17.7.3.1	Roads are shown for radar and visual value and for distinct configurations that provide visual checkpoint value.
17.7.9.2	Coordinates are shown to the nearest minute.
17.7.10.1	Notes will read ‘Relief data incomplete’ or ‘Limits of reliable relief information.’
17.7.12.1	Wooded areas are not shown.
17.7.13	Date of topographic information is not shown.
17.8.2	Date of isogonic information is shown in the chart legend.
17.9.2.2	Other than hard surface runways are shown by symbol.
17.9.3.1	Obstacles greater than 200 feet are shown, except in built up areas where only those greater than 300 feet are shown.

17.9.4	Danger areas do not exist in the U.S. Alert Areas, Military Operations Areas, and Warning Areas are also shown.
17.9.7.1	Only aeronautical ground lights that operate continuously are shown.
17.9.7.2	Only marine lights that operate year round, with a range of at least 10 NM, and are omnidirectional are shown.
Chapter 18	**Aeronautical Navigation Chart — ICAO Small Scale**
18.1	Chart is not produced.
Chapter 19	**Plotting Chart – ICAO**
19.1	Chart is not produced.
Chapter 20	**Electronic Aeronautical Chart Display — ICAO**
20.1	Charts provided digitally to operators. Digital charts mimic paper products described above and may not be modified.
Chapter 21	**ATC Surveillance Minimum Altitude Chart — ICAO**
21.1	Minimum Vectoring Altitude charts are available in electronic format only.
Appendix 6	**Aeronautical Data Quality Requirements**
Table 5. Bearing used for the formation of an en route and of a terminal fix	Whole degree resolution in charting of bearing used for formation of an en route and terminal fix.
Table 5. Bearing used for the formation of an instrument approach fix	Whole degree resolution in charting of bearing used for formation of an instrument approach procedure fix.
Table 6. (Length/ distance/ dimension Distance used for the formation of an en route fix	Whole NM resolution in charting of distance used for formation of an en route fix.
Table 6. (Length/ distance/ dimension Distance used for formation of an terminal and instrument approach procedure fix	Whole NM resolution in charting of distance used for formation of an Arrival or Departure fix.

ANNEX 5 − UNITS OF MEASUREMENT TO BE USED IN AIR−GROUND COMMUNICATIONS	
Chapter 3	**Standard application of units of measurement**
3.2.2 Table 3−3 Table 3−4	Table 3−4 Ref 1.12, runway length and Ref 1.13 runway visual range, unit of measure is in feet. Table 3−4 Ref 1.16, visibility unit of measure is statute miles (SM). Table 3−4 Ref 3.2, altimeter setting, unit of measure is reported as inches of mercury. Table 3−4, Ref 3.3, atmospheric pressure, unit of measure is in inches of mercury.
Attachment B	**Guidance on the application of System of Units (SI)**
5.4.2	Specifications differ from Attachment B, Style and usage, Para 5.4 Numbers. Comma is not acceptable as a decimal marker. Comma is used to separate digits in groups of three.

ANNEX 6 − OPERATION OF AIRCRAFT	
Part I	
Chapter 3	**General**
Chapter 3 Reference 3.3.6	The U.S. Flight Quality Assurance Program is a voluntary program.
Chapter 4	**Flight Operations**
Chapter 4 Reference 4.2.2.3	U.S. regulations exempt a single pilot in a 9-or-less seating configuration operation from having a maintenance manual. Rather, U.S. regulations (CFR 135.411) require a single pilot to comply with the maintenance requirements in CFR 91 and 43 in lieu of a maintenance manual or program.
Chapter 4 Reference 4.3.2	For multiengine, aeroplanes, commuter and on-demand operators are required to maintain fuel and oil records as part of the load manifest for 30 days rather than 3 months. For single engine aeroplanes, commuter and on-demand operators are not required to maintain fuel and oil records.
Chapter 4 Reference 4.3.4.1.2	The FAA treats takeoff alternates differently. Take off alternate: for airplanes with 3 or more engines SP/59/4.1 states that the take-off alternate aerodrome must be located within the following flight time distance from the aerodrome of departure: two hours of flight time at an all-engine operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass. FAR 121.617 states 2 hours at normal cruising speed with one engine inoperative.
Chapter 4 Reference 4.3.8.2	The U.S. requires descent within four minutes to 14,000 ft not 13,000 ft, in the event of loss of pressurization. For commuter and on-demand operations, the descent altitude is 15,000 ft.
Chapter 4 Reference 4.9.2	The U.S. allows turbo-jets that are certificated for single pilot operations.
Chapter 5	**Aeroplane performance operating limitations**
Chapter 5 Reference 5.2.8.1	The United States does not have specific regulations that require the loss of Runway length be considered due to alignment of the airplane prior to takeoff. However, the United States does within its aircraft certification regulations require aircraft performance be determined by using the point on the runway where takeoff is started when computing takeoff distance. This same criteria is used when computing runway available for accelerate/stop distance. Accounting for runway loss due to alignment is done within each air carrier¿s approved operations manual.
Chapter 5 Reference 5.4.1	The U.S. does not require turbine engine reliability to have a power loss rate of less than 1 per 100,000 engine hours, a radio altimeter, two attitude indicators, airborne weather radar, a certified navigation system to identify aerodromes as forced landing areas, or an engine fire warning system.
Chapter 5 Reference 5.4.2	The U.S. does not require an automatic trend monitoring system on aeroplanes certificated after 1 January 2005.
Chapter 6	**Aeroplane instruments, equipment and flight documents**
Chapter 6 Reference 6.17.2	The U.S. does not require an ELT unless operated over water or remote areas.
Chapter 6 Reference 6.17.3	The U.S. does not require an ELT unless operated over water or remote areas.
Chapter 6 Reference 6.17.4	The U.S. does not require an ELT unless operated over water or remote areas.
Chapter 6 Reference 6.17.5	The U.S. does not require an ELT unless operated over water or remote areas.
Chapter 6 Reference 6.19.2	The U.S. does not require pressure altitude information with a resolution of 25 feet or better.

Chapter 6 Reference 6.19.3	The U.S. does not require pressure altitude information with a resolution of 25 feet or better.
Chapter 6 Reference 6.4.1	The U.S. does not require a time piece.
Chapter 6 Reference 6.4.2	The United States does not require aeroplanes on VFR flights, when operated as controlled flights, to be equipped in accordance with the requirements for aeroplanes operated under instrument flight rules.
Chapter 6 Reference 6.5.1	Seaplanes are not required to have equipment for making the sound signals prescribed in the International Regulations for Preventing Collision at Sea. Seaplanes are not required to be equipped with sea anchor.
Chapter 6 Reference 6.5.3.1	The United States defines extended over water operations for aircraft other than helicopters as an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline.
Chapter 6 Reference 6.12	The United States does not require equipment to measure cosmic radiation.
Chapter 6 Reference 6.15.6	The U.S. does not require ground prox systems for piston powered airplanes.
Chapter 6 Reference 6.20.2	The U.S. does not require pressure altitude information with a resolution of 25 feet or better.
Chapter 6 Reference 6.20.3	The U.S. does not require pressure altitude information with a resolution of 25 feet or better.
Chapter 6 Reference 6.21	The United States does not require crewmembers on flight deck duty to communicate through boom or throat microphones below the transition level/altitude.
Chapter 6 Reference 6.23	The U.S. requires an autopilot for IFR passenger operations, not for VFR or cargo operations. A) The U.S. does not require a boom microphone. B) The U.S. requires charts be available and used.
Chapter 8	**Aeroplane Maintenance**
Chapter 8 Reference 8.1.3	The person signing the maintenance release must have a CFR 65 certificate.
Chapter 8 Reference 8.4.2	The United States requires that records of work be retained until the work is repeated, superseded by other work or for one year after the work is performed, but does not require the records be retained after the unit has been permanently withdrawn from service.
Chapter 8 Reference 8.7.1.1	Left Intentionally Blank
Chapter 9	**Aeroplane flight crew**
Chapter 9 Reference 9.4.2.1	The U.S. does not have currency requirements for cruise relief pilots.
Chapter 9 Reference 9.4.2.2	The U.S. does not have currency requirements for cruise relief pilots.
Chapter 9 Reference 9.4.3.2	The United States requires air carrier pilots “before beginning a flight become familiar with all available information concerning the flight.” It does not require the pilot to demonstrate this knowledge.
Chapter 9 Reference 9.4.3.5	The U.S. does not restrict operators from using a pilot as a pilot-in-command on a route where the pilot has not, within the preceding 12 months, made at least one trip between the terminal points of that route as a pilot member of the flight crew, or as an observer on the flight deck except for special areas and airports. A list of U.S. Special airports may be found at the following link: http://fsims.faa.gov/PICDetail.aspx?docId=AD20682A64001B6686257B71005E5B74

Chapter 9 Reference 9.4.3.6	The U.S. does not have an area/route 12 month currency requirement for pilots in command, except for special areas and airports.
Chapter 9 Reference 9.4.4.1	For PICs, the U.S. requires 1 proficiency checks per 12 months and either proficiency check or an approved simulator training course, for SICs, the U.S. requires 1 proficiency check each 24 months and another proficiency check or an approved simulator training course every 12 months.
PART II	
Section II	**General Aviation Operations**
Chapter 2 Reference 2.2.3.4.3	In addition to the Standard prescribed in Annex 6, Part II, 4.6.4, the U.S. prohibits a pilot from taking of a US registered large or turbine-powered multi-engine general aviation aeroplane if there is frost, snow, or ice adhering to critical systems, components, and surfaces of the aircraft.
Chapter 2 Reference 2.4.2.6.1	The United States does not require break-in point markings.
Chapter 2 Reference 2.4.2.6.2	The United States does not require break-in point markings.
Chapter 2 Reference 2.4.4.1	The United States does not require all seaplanes on all flights to be equipped with one life jacket or equivalent individual floatation device for each person on board; equipment for making the sound signals prescribed in the International Regulations for Preventing Collisions at Sea; and anchor or a sea anchor (drogue).
Chapter 2 Reference 2.4.5	Airplanes operated over land areas designated as areas in which search and rescue would be especially difficult are not required to be equipped with signaling devices or life-saving equipment. The United States does not designate areas in which search and rescue would be especially difficult, and therefore does not require such additional equipment.
Chapter 2 Reference 2.4.8	Airplanes operated under visual flight rules at night are not required to be equipped with c) to f) a) a turn and slip indicator; b) an altitude indicator (artificial horizon); c) a heading indicator (directional gyroscope); d) a means of indicating whether the supply of power to the gyroscopic instruments is adequate; 3) a sensitive pressure altimeter; f) a means of indicating the outside air temperature; g) a timepiece with a sweep second hand; h) an airspeed indicating system with a means of preventing malfunctioning due to condensation or icing; i) a rate-of-climb and descent indicator; j) a landing light; k) illumination for flight instruments and equipment; l) lights in passenger compartments; and m) a flashlight (electric torch) for each crew member station.
Chapter 2 Reference 2.4.11.4	Ground proximity warning systems are not required on general aviation aircraft, including turbine-engine airplanes with a take-off mass greater than 5700 kg or capable of carrying more than nine passengers.
Chapter 2 Reference 2.5.1.1	Except when operating under controlled flight, airplanes operated at night are not required to have radio communications equipment capable of conducting two-way communications. United States requirements for radio communications equipment are based upon the type of airspace in which the operation occurs, and not on the time of the day.
Chapter 2 Reference 2.5.1.2	When more than one radio communications equipment unit is required, the United States has no provision that each unit be independent of any other.
Chapter 2 Reference 2.5.1.4	Except when operating under controlled flight, airplanes on extended flights over water or on flights over underdeveloped land are not required to have radio communications equipment capable of conducting two-way communications.
Chapter 2 Reference 2.5.2.1	The United States has no provisions concerning requirement aircraft navigation instruments enabling a flight to proceed in accordance with a flight plan, prescribed RNP types, or the air traffic services provided. The United States does not specify a minimum distance between landmark references used by flight operating under visual flight rules.

Chapter 2 Reference 2.5.2.9	Though the FAA does not have RVSM operational reporting requirements, it does have a quality assurance requirement in 14 CFR appendix G Sections 2,3, and 4. In addition, RVSM operational deviation may be noted by FAA ATC and reported the FAA Office of Aviation Safety for disposition as deem appropriate.
Chapter 2 Reference 2.5.2.12	Airplanes are not required to have navigation equipment to ensure that in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to proceed in accordance with Annex 6, Part II, 2.2.1. to 7.2.3.
Chapter 2 Reference 2.6.2.2.	The FAA established Title 14 Code of Federal Regulations section 43.10, which speaks to the disposition of parts, removed from type-certificated products. After April 15, 2002, each person who removes a life-limited part from a type certificated product must ensure that the part is controlled using: a record keeping system; tag or record attached to part; non-permanent marking; permanent marking; or segregation.
Chapter 2 Reference 2.7.2.2	Only pilot operating aircraft with TCAS under 14 CFR parts 91 (subpart K), 121, and 135 are required to having on the use of TCAS.
Section III	**Large and Turbojet Aeroplanes**
Chapter 3 Reference 3.6.1.1.2	The United States does not base requirements for flight data recorders on aircraft mass, but on passenger and engine configuration.
PART III	
Section II	**International Commercial Air Transport**
Chapter 2 Reference 2.2.3.1	Intentionally left blank.
Chapter 2 Reference 2.2.4.2	Intentionally left blank
Chapter 2 Reference 2.2.9.1	Helicopter operators are not required to maintain fuel and oil records showing that the requirements of 2.3.6 have been met.
Chapter 2 Reference 2.2.9.2	Helicopter operators are not required to keep fuel and oil records for three months, though there is a requirement that load manifests be retained for 30 days.
Chapter 2 Reference 2.2.12	Intentionally left blank
Chapter 2 Reference 2.3.2	The pilot-in-command is not required to ensure that all persons on board are aware of the location and general manner of use of the principal emergency equipment carried for collective use.
Chapter 2 Reference 2.3.2	The United States requires that flight preparation forms must be retained for 30 days, not three months.
Chapter 2 Reference 2.3.3.2	The United States does not require that the operations manual describe the contents and use of the operational flight plan, but does require establishing procedures for locating each flight.
Chapter 2 Reference 2.3.6.2.	Intentionally left blank
Chapter 2 Reference 2.3.6.3	The fuel requirements for commuter and on demand operations are expressed in terms of flight time and do not include a specific altitude requirement.
Chapter 2 Reference 2.3.6.3.1	The United States does not require IFR helicopter operations to maintain a specific altitude above a destination.
Chapter 2 Reference 2.3.6.3.2	Fuel reserves for IFR helicopter operations is 30 minutes at normal cruise speed beyond the alternate heliport.
Chapter 2 Reference 2.3.6.3.3	The U.S. has no provisions addressing when a suitable alternate is unavailable. If the destination weather so requires, an alternate must be specified and 30 minute fuel reserved must be carried.
Chapter 2 Reference 2.3.6.4	The operations manual does not include procedures for loss of pressurization and other contingencies.
Chapter 2 Reference 2.3.8.1	The United States does not require oxygen at all times for passengers experiencing cabin pressure altitudes above 13,000 ft (620hPa). Oxygen for all passengers is not required until 15,000 ft (4,572m).
Chapter 2 Reference 2.3.8.2	The United States does not require oxygen at all times for passengers experiencing cabin pressure altitudes above 13,000 ft (620hPa). Oxygen for all passengers is not required until 15,000 ft (4,572m).

Chapter 2 Reference 2.4	The pilot-in-command is not specifically required, prior to commencing a flight, to be satisfied that any load carried is safely secured.
Chapter 2 Reference 2.4.1.3	The United States does not utilize a 1,000 ft minimum for non-precision approaches
Chapter 2 Reference 2.6.2.2	The United States allows for meteorological conditions at the estimated time of arrival and for one hour after the estimated time of arrival, not two hours.
Chapter 2 Reference 2.6.3.2	The United States allows the continuation of an approach regardless of the reported weather.
Chapter 2 Reference 2.8.3.1	The United States does not require that a specific altitude above the alternate be maintained.
Chapter 2 Reference 2.8.3.2	The United States does not require that a specific altitude above the alternate be maintained.
Chapter 2 Reference 2.8.4	The U.S. does not require that the procedures for loss of pressurization, where applicable, or failure of one power-unit while en route, be part of the required fuel and oil computations.
Chapter 2 Reference 2.10	The U.S. requirement for use of breathing oxygen by flight crew members applies only to altitudes above 14000 ft (4,267m).
Chapter 2 Reference 2.11	During an emergency, the pilot-in-command is not required to ensure that all persons on board the aircraft are instructed in emergency procedures.
Chapter 2 Reference 2.14	The pilot-in-command is not specifically required to discontinue a flight beyond the nearest suitable aerodrome when flight crew member's capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness, and lack of oxygen.
Chapter 3 Reference 3.1.1	US does not specify or restrict helicopter operations based on performance, class or category. (See definition of performance class in Annex 6, Part III, Section 1).
Chapter 3 Reference 3.2.1	The United States does not specify or restrict helicopter operations based on performance class or category (see definition of Performance Class in Annex 6, Part III, Section 1)
Chapter 3 Reference 3.2.7	US does not require the helicopter weight limitations found I n3.2.7 a), c), and d).
Chapter 4 Reference 4.1.2	US does not require carriage of a copy of the air operator's certificate.
Chapter 4 Reference 4.1.4.1	The United States does not require break-in points.
Chapter 4 Reference 4.1.4.2	The United States does not require break-in points.
Chapter 4 Reference 4.2.2	a) first aid equipment is not required on helicopters b) Us has no provisions that fire extinguishers, when discharge, will not cause dangerous contamination of the air within the helicopter c) (3) US has no provisions for a safety harness device to prevent interference with flight controls should a pilot become incapacitated.
Chapter 4 Reference 4.2.4.1	The US does not require marking of break-in points.
Chapter 4 Reference 4.2.4.2	The U.S. does not require marking of break-in points.
Chapter 4 Reference 4.3.2.3	Life-saving rafts are not required on helicopters operating on flights over water.
Chapter 4 Reference 4.4	Helicopters operated over land areas designated as areas in which search and rescue would be especially difficult are not required to be equipped with signaling devices or life-saving equipment. The U.S. does not designate areas in which search and rescue would be especially difficult and therefore does not require such additional equipment.
Chapter 4 Reference 4.4.2	Helicopters flown over water in passenger operations are not required to be certified for ditching but only to be equipped with flotation devices.
Chapter 4 Reference 4.5.2.1	B) and C) Life saving rafts and pyrotechnic devices are only required for extended over-water operations. That is in respect to helicopters in operations over water with a horizontal distance of more than 50 NM from the nearest shore line and more than 50 NM form an off-shore heliport structure.
Chapter 4 Reference 4.6	The U.S. does not require helicopters to carry a specific document attesting noise certification. However, the helicopter's type certificate is the de facto document that the helicopter complied with the noise certification requirements at the time it received FAA type certification.

Chapter 4 Reference 4.6	Helicopters operated over land areas designated as areas in which search and rescue would be especially difficult are not required to be equipped with signaling devices or life-saving equipment. The U.S. does not designate areas in which search and rescue would be especially difficult and therefore does not require additional equipment.
Chapter 4 Reference 4.9.1	The U.S. requires transponders only in certain airspace.
Chapter 4 Reference 4.11	The U.S. does not require helicopters to carry a specific document attesting noise certification. However, the helicopter's type certificate is the de facto document that the helicopter complied with the noise certification requirements at the time it received FAA type certification.
Chapter 4 Reference 4.13	The U.S. requires transponders only in certain airspace.
Chapter 4 Reference 4.14	The U.S. does not require crew members flight deck duty to communicate through boom or throat microphone.
Chapter 5 Reference 5.1.1	Except when operating under controlled flight, helicopters are not required to have radio communications for night operators.
Chapter 5 Reference 5.1.2	The U.S. does not require that the radio communications equipment specified in 5.1.1 be independent of the other or others to the extent that failure in my any one will not result in failure of any other.
Chapter 5 Reference 5.1.4	Except when operating under controlled flight, helicopters on extended flights over water or on flights over underdeveloped land are not required to have radio communications equipment.
Chapter 5 Reference 5.2.1	The U.S. has no provision that visual landmarks used in VFR be located at least every 60 NM (110km).
Chapter 5 Reference 5.2.1	The United does not require a helicopter to be provided with navigation equipment in accordance with RNP types for navigation with the United States. However, the United States does provide information and operations specifications for IFR operating requirements when U.S. operators and aircraft conduct operations in the European Airspace Designated for Basic Area Navigation (RNP-5 and 10).
Chapter 6 Reference 6.1.1	All United States helicopters used in commercial air transport are certified as commuter or on demand operations. Maintenance on United States commuter and on demand helicopters may be performed by either an approved maintenance organization, a certified mechanic, or by persons under the supervisions of a certified mechanic.
Chapter 6 Reference 6.2.2	The U.S. requires that records of work must be retained until the work is repeated, superseded by other work, or for one year after the work is performed.
Chapter 6 Reference 6.3.1	The U.S. does not require an operator's maintenance training program to include training in knowledge and skills related to human performance.
Chapter 6 Reference 6.4.2	The U.S. requires that records of work be retained until the work is repeated, superseded by other work for one year after the work is performed, but does not require the records be retained after the until has been permanently withdrawn from service.
Chapter 6 Reference 6.8.2	The U.S. requires that records of work must be retained until the work is repeated, superseded by other work, or for one year after the work is performed.
Chapter 7 Reference 7.4.2.2	Helicopter pilots are not required to demonstrate to the operator an adequate knowledge of the specific areas described in 7.4.3.2
Chapter 7 Reference 7.5	The U.S. practice is to require a spare set of correcting lenses only when a flight crew member's defective visual acuity necessitates a limitation on the pilot's medical certificate.
Chapter 9 Reference 9.5	The U.S. does not require that an operator keep a list of the emergency and survival equipment carried on board any of their helicopters engaged in international air navigation.
Chapter 11 Reference 11.1	A checklist containing procedures to be followed in searching for a suspected bomb is not required to be aboard the aircraft. The U.S. requires that crew members be trained in dealing with explosives that may be on board an aircraft, but this does not necessarily include training on how to search for an explosive.
Chapter 11 Reference 11.2.1	The U.S. does not require an operator to establish and maintain a training program that enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful interference.
Chapter 11 Reference 11.2.2	The U.S. does not require an operator to establish and maintain a training program that enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful interference.

Chapter 11 Reference 11.3	The pilot-in-command is not required to submit, without delay, a report of an act of unlawful interference to the designated local authority.
Section III	**International General Aviation**
	Intentionally left blank

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

ANNEX 8 − AIRWORTHINESS OF AIRCRAFT	
PART II Procedures for Certification and Continued Airworthiness	
Chapter 1	**Type Certification**
1.2.5	ICAO requires that the design of an aircraft under ICAO Annex 8, Parts IIIB, IVB, and V use alternative fire extinguishing agents to halon in the lavatories, engines, and auxiliary power units. The United States does not have a similar requirement.
PART III Aeroplanes	
Part IIIA	
Chapter 4	**Design and Construction**
4.1.6 (b), 4.1.6 (g), 4.1.6 (h), 4.1.6 (i)	The United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Chapter 8	**Instruments and Equipment**
8.4.1	ICAO requires that airplanes operating on the movement area of an airport shall have airplane lights of such intensity, color, fields of coverage and other characteristics to furnish personnel on the ground with as much time as possible for interpretation and for subsequent maneuver necessary to avoid a collision. The FAA has no such requirement.
8.4.2 (b)	This provision addresses the lights' affect on outside observers in reference to "harmful dazzle." The U.S. regulations do not address the affect of aircraft lights on outside observers. However, visibility to other pilots and the lights' affect on the flight crew is addressed.
Chapter 9	**Operating Limitations and Information**
9.3.5	The United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Chapter 11	**Security**
11.2, 11.3, 11.4	With the exception of the door required by 11.3, the United States does not have similar requirements. The FAA has begun work in an effort to amend the U.S. regulations with the purpose of eventually meeting the intent of these provisions.
Part IIIB	**Large Aeroplane Certification**
Chapter 3	**Structure**
3.8.2	The corresponding FAA requirement does not specify the use of failsafe principles; however, the FAA does advise the use of failsafe principles.
Chapter 4	**Design and Construction**
4.1.6	On November 28, 2008, the FAA adopted new regulations that meet the intent of these provisions. However, Part IIIB applies to airplanes with a date of application of March 2, 2004 or later, but the U.S. requirements apply to airplanes with a date of application of November 28, 2008 or later.
D.2 (g)	Paragraph D.2.g.1 of the ICAO standard requires a fire suppression system for each cargo compartment accessible to a crewmember in a passenger−carrying airplane. U.S. requirements permit manual fire fighting in an accessible cargo compartment by a crewmember or members for an all−passenger−carrying airplane or a passenger−cargo combination carrying airplane. Additionally, the FAA does not have specific requirements to consider the effects of explosions or incendiary devices.
D.2 (h)	The United States does have provisions to protect against possible instances of cabin depressurization. However, the FAA does not have specific requirements to consider the effects of explosions or incendiary devices.

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

PART V Small Aeroplanes	
Chapter 8	**Crashworthiness and Cabin Safety**
8.5 (e)	The FAA provides requirements for emergency lighting systems in 14CFR 23.812. These requirements do not address the impact of the fuel spillage on emergency lighting systems. Only commuter category airplanes are required to install emergency lighting systems.

ANNEX 9 − FACILITATION	
*The list of differences include Guam, Puerto Rico, and the U.S. Virgin Islands. The status of implementation of Annex 9 in Guam with respect to public health quarantine is not covered in the list of differences.	
Chapter 2	**Entry and Departure of Aircraft**
2.3	Written crew baggage declaration is required in certain circumstances, and a special Embarkation/Disembarkation Card is required for most alien crew members.
2.4	A General Declaration for all inbound and for outbound flights with commercial cargo are required. However, the General Declaration outbound flights with commercial cargo shall not be required if the declaratory statement is made on the air cargo manifest. No declaration is required for outbound flights without commercial cargo if Customs clearance is obtained by telephone.
Remarks	19 CFR 122
2.4.1	Each crew member must be listed showing surname, given name, and middle initial.
2.4.4	The signing or stamping of the General Declaration protects the carrier by serving as proof of clearance.
2.5	The crew list is required by statute.
2.7	There is a statutory requirement for the Cargo Manifest.
2.8	In order to combat illicit drug smuggling, the U.S. requires the additional following information: the shipper’s and the consignee’s name and address, the type of air waybills, weight, and number of house air waybills. The manifest submitted in electronic form may become legally acceptable in the future. However, until the compliance rate for the automated manifest is acceptable, the U.S. must be able to require the written form of the manifest.
Remarks	19 CFR 122.48
2.9	Nature of goods information is required.
2.10	Stores list required in all cases but may be recorded on General Declaration in lieu of a separate list.
2.17	A cargo manifest is required except for merchandise, baggage and stores arriving from and departing for a foreign country on the same through flight. “All articles on board which must be licensed by the Secretary of State shall be listed on the cargo manifest.” “Company mail shall be listed on the cargo manifest.”
2.18	Traveling general declaration and manifest, crew purchases and stores list as well as a permit to proceed are required under various conditions when aircraft arrive in the U.S. from a foreign area with cargo shown on the manifest to be traveling to other airports in the U.S. or to foreign areas.
2.21	There is a statutory requirement that such changes can only be made prior to or at the time of formal entry of the aircraft.
2.25	The U.S. does not support the use of insecticides in aircraft with passengers present. Pesticides registered for such use should not be inhaled. In effect, the passenger safety issue has precluded the use of such insecticides in the presence of passengers since 1979.
2.35	Advance notice is required of the number of citizens and aliens on board (non−scheduled flights only).
2.40	A copy of the contract for remuneration or hire is required to be a part of the application in the case of non−common carrier operations.
2.41	Single inspection is accorded certain aircraft not by size of aircraft but rather by type of operation. Loads (cargo) of an agricultural nature require inspection by a plant or animal quarantine inspector.
2.41c	Fees are charged for services provided in connection with the arrival of private aircraft (nonscheduled aircraft).
Chapter 3	**Entry and Departure of Persons and Their Baggage**
3.3	Medical reports are required in some cases.

Remarks	8 CFR 212.7 and INA 234
3.4	Documents such as visas with certain security devices serve as identity documents.
3.4.1	The U.S. has not standardized the personal identification data included in all national passports to conform with the recommendation in Doc 9303.
3.5.6	U.S. passport fees exceed the cost of the operation.
3.5.7	U.S. allows separate passports for minor dependents under the age of 16 entering the U.S. with a parent or legal guardian.
3.7	The U.S. has a pilot program that allows nationals of certain countries which meet certain criteria to seek admission to the U.S. without a visa for up to 90 days as a visitor for pleasure or business.
Remarks	22 CFR 41.112(d) INA 212(d)(4), INA 238, 8 CFR 214.2(c) INA 217
	The law permits visa waivers for aliens from contiguous countries and adjacent islands or in emergency cases. Visas are also waived for admissible aliens arriving on a carrier which is signatory to an agreement assuring immediate transit of its passengers provided they have a travel document or documents establishing identity, nationality, and ability to enter some country other than the U.S.
3.8	The U.S. charges a fee for visas.
3.8.3	Duration of stay is determined at port of entry.
Remarks	INA 217
3.8.4	A visitor to the U.S. cannot enter without documentation.
Remarks	INA 212(a) (26)
3.8.5	Under U.S. law, the duration of stay is determined by the Immigration Authorities at the port of entry and thus cannot be shown on the visa at the time of issuance.
3.10	Embarkation/Disembarkation Card does not conform to Appendix 4 in some particulars.
3.10.1	The operator is responsible for passengers' presentation of completed embarkation/disembarkation cards.
Remarks	8 CFR 299.3
3.10.2	Embarkation/Disembarkation cards may be purchased from the U.S. Government, Superintendent of Documents.
Remarks	8 CFR 299.3
3.14.2	The U.S. fully supports the electronic Advance Passenger Information (API) systems. However, the WCO/IATA Guideline is too restrictive and does not conform to the advancements in the PAXLIST EDIFACT international standard.
3.15	U.S. Federal Inspection Services' officials see individuals more than once.
3.16	Written baggage declarations by crew members are required in some instances.
3.17.1	The U.S. uses a multiple channel system rather than the dual channel clearance system.
3.23, 3.23.1	Statute requires a valid visa and passport of all foreign crew members.
3.24, 3.24.1, 3.25, 3.25.1, 3.25.2, 3.25.3	Crew members, except those eligible under Visa Waiver Pilot Program guidelines, are required to have valid passports and valid visas to enter the U.S.
Remarks	INA 212(a) (26), INA 252 and 253, 8 CFR 214.1(a), 8 CFR 252.1(c)
3.26, 3.27, 3.28, 3.29	Passports and visas are required for crew and non−U.S. nationals to enter the U.S.
3.33	Does not apply to landing card.
3.35	Law requires that the alien shall be returned to the place whence he/she came. Interpretation of this provision requires that he/she be returned to the place where he/she began his/her journey and not only to the point where he/she boarded the last−used carrier.
3.35.1	Law requires that certain aliens be deported from the U.S. at the expense of the transportation line which brought them to the U.S.
3.36	Statute provides for a fine if a passenger is not in possession of proper documents.

3.39.3	NOTE: The U.S. considers security for individuals in airline custody to be the carrier's responsibility.
3.40.2	Annex 9 recommends that fines and penalties be mitigated if an alien with a document deficiency is eventually admitted to the country of destination.
3.43	Operator can be held responsible for some detention costs.
Chapter 4	**Entry and Departure of Cargo and Other Articles**
4.20	The Goods Declaration as defined by the Kyoto Convention serves as the fundamental Customs document rather than the commercial invoice.
4.40	Aircraft equipment and parts, certified for use in civil aircraft, may be entered duty−free by any nation entitled to most−favored nation tariff treatment. Security equipment and parts, unless certified for use in the aircraft, are not included.
4.41	Customs currently penalizes the exporting carrier for late filing of Shipper's Export Declarations (SEDs) and inaccuracies on bills of lading with respect to the SEDs.
4.42	Regulations require entry of such items, most of which are dutiable by law.
4.44	Certain items in this category are dutiable by law.
4.48	Carriers are required to submit new documentation to explain the circumstances under which cargo manifest is not unladen. No penalty is imposed if the carrier properly reports this condition.
4.50	The procedures for adding, deleting, or correcting manifest items require filing a separate document.
4.55	The U.S. requires a transportation in−bond entry or a special manifest bonded movement for this type of movement.
Chapter 5	**Traffic Passing Through the Territory of a Contracting State**
5.1	Such traffic must be inspected at airports where passengers are required to disembark from the aircraft and no suitable sterile area is available.
5.2	Passports and visas are waived for admissible aliens arriving on a carrier which is signatory to an agreement assuring immediate transit of its passengers provided they have a travel document or documents establishing identity, nationality, and ability to enter some country other than the U.S.
5.3	Such traffic must be inspected at airports where no suitable sterile area is available.
5.4	Passports and visas are waived for admissible aliens arriving on a carrier which is signatory to an agreement assuring immediate transit of its passengers provided they have a travel document or documents establishing identity, nationality, and ability to enter some country other than the U.S.
5.4.1	Passengers will not be required to obtain and present visas if they will be departing from the U.S. within 8 hours of arrival or on the first flight thereafter departing for their destination.
5.8	Examination of transit traffic is required by law. Transit passengers without visas are allowed one stopover between the port of arrival and their foreign destination.
5.9	Passports and visas are required generally for transit passengers who are remaining in the U.S. beyond 8 hours or beyond the first available flight to their foreign destinations.
Chapter 6	**International Airports − Facilities and Services for Traffic**
6.3.1	Procedures involving scheduling committees raise a number of anti−trust problems under U.S. law.
6.33	Sterile physical facilities shall be provided, and in−transit passengers within those areas shall be subject to immigration inspection at any time.
Remarks	OI 214.2(c)
6.34	The U.S. inspects crew and passengers in transit.
6.36	The U.S. inspects crew and passengers in transit.

6.56	Operators of aircraft are statutorily required to pay overtime charges for federal inspections conducted outside normal scheduled hours of operation. This requirement places aircraft operators in a less favorable position than operators of highway vehicles and ferries who are statutorily exempt from such charges.
Chapter 8	**Other Facilitation Provisions**
8.1	Separate bonds are required.
8.3.2	Visas are issued by the Department of State and are not issued at ports of entry.

ANNEX 10 − AERONAUTICAL TELECOMMUNICATIONS	
ANNEX 10 − VOLUME 1 − RADIO NAVIGATION AIDS	
PART I	
Chapter 3	**Specifications for Radio Navigation Aids**
3.1.2.1.1	Remote control and monitoring is implemented at all ILS installations for CAT II and III. Most, but not all, CAT I installations are monitored. A−CAT II and III; C− CAT I
3.1.4.1, 3.1.4.2	The United States does not require such equipage for aircraft. Interference from FM broadcast signals will not adversely affect aircraft navigation and communications systems in the United States airspace
3.3.4.2	The US minimum VOR signal strength is -120 dBW/m2. The ICAO requirement is - 107 dBW/m2.
3.3.8.1, 3.3.8.2	The United States does not require such equipage for aircraft. Interference from FM broadcast signals will not adversely affect aircraft navigation and communications systems in the United States airspace.
3.5.4.1.5.1	The US minimum DME signal strength is −91.5 dBW/m2 above 18,000 ft and −86.0 dBW/m2 below 18,000 ft. The ICAO requirement is −83 dBW/m2.
3.7.3.4.4.3	Current satellite contract calls for −150dBW under the conditions specified in 3.7.3.4.4.3. Difference is greater signal power than called for in Annex 10.
3.7.3.5.3	Currently, the service volume of GBAS in FAA Order 6050.32B is 23 NM up to 10,000 feet.
Volume I, Attachment C, Par. 2.6.2.1, Para 2.6.2.1.2	The US frequency protections for ILS localizers are 3 dB more stringent than the ICAO protections (i.e. 23 dB vs. 20 dB for co−channel, −4 dB vs. −7 dB for interim 1st adjacent channels, −31 dB vs. −34 dB for final 1st adjacent channels, −43 dB vs. −46 dB for 2nd adjacent channels, and −47 dB vs. −50 dB for 3rd adjacent channels).
Volume I, Attachment C, Par. 2.6.2.2.1	The U.S. frequency protections for ILS Glide Slopes are 3 dB more stringent than the ICAO protections (i.e., 23 dB vs. 20 dB for co−channel; −17 dB vs. −20 dB for 1st adjacent channel; and −37 dB vs. −40 dB for 2nd adjacent channel).
Volume I, Attachment C, Par. 3.4.6.1 a), b), c); Para 3.4.6.2 a), b), c)	The US frequency protections for co−channel, 1st and 2nd adjacent channels for VOR are 3 dB more stringent than the ICAO protections (i.e. 23 dB vs. 20 dB for co−channel, −4 dB vs. −7 dB for interim 1st adjacent channels, −31 dB vs. −34 dB for final 1st adjacent channels, −43 dB vs. −46 dB for 2nd adjacent channels).
Volume I, Attachment C, Par. 3.4.6.1 d); Par 3.4.6.2 d)	The US does not provide any VOR frequency protection for 3rd adjacent channels. The ICAO protection provides −50 dB for 3rd adjacent channels.
Volume I, Attachment C, Par.7.1.8.1, Table C−4; Par 7.18.2 a)	The US frequency protections for co−channel and 1st adjacent channels for DME are 3 dB more stringent than the ICAO protections (i.e. 11 dB vs. 8 dB for co−channel, −39 dB vs. −42 dB for 1st adjacent channels). The US frequency protection for 2nd adjacent channels for DME is 28 dB more stringent than the ICAO protection (i.e. − 47 dB vs. − 75 dB).
Volume I, Appendix B−112, 3.6.7.2.3.5	A solution has been implemented in the US which does not require protection level bounding for rare anomalous ionospheric storms under extreme conditions. The solution requires denial of the approach service when anomalous ionosphere conditions could cause potentially large residual errors and allows operations when estimated residual errors would be below a threshold. The resulting errors under the threshold were found to be acceptable using specific safety assessments and criteria for this equipment.
3.6.8.2.2.5 and 3.6.8.2.2.6 of Appendix B	Currently, the D/U standard for co−channel rejection is the same as the ICAO standard of 26 dB. However, D/U standard for the second adjacent channel rejection is 46 dB, which is 3 dB less than the ICAO standard. In addition, no third adjacent channel rejection standard exists in Order 6050.32B.

ANNEX 10 − VOLUME II − COMMUNICATION PROCEDURES INCLUDING THOSE WITH PANS STATUS	
Chapter 3	**General Procedures for the International Aeronautical Telecommunication Service**
3.2.2, 3.2.3	US regulations do not have any specific procedures for closing down international aeronautical stations. All international aeronautical stations in the U.S. operate continuously (24 hours a day and seven days a week)
Chapter 5	**Aeronautical Mobile Service − Voice Communications**
5.1.5	US regulations do not require pilots to wait 10 seconds before making a second call. US regulations only require “a few seconds” instead of “10 seconds.”
5.2.1.4.1.1	The United States directs that, for air carriers and other civil aircraft having FAA authorized call signs, the call sign should be followed by the flight number in group form; and for air carriers of foreign registry, the flight number should be stated in group form, or using separate digits if that is the format used by the pilot.
5.2.1.4.1.1	The United States issues surface wind using the word “wind” followed by the separate digits of the indicated wind direction to the nearest 10−degree multiple, the word “at” and the separate digits of the indicated velocity in knots, to include any gusts.
5.2.1.4.1.3	The United States issues the separate digits of a frequency, inserting the word “point” where the decimal point occurs.
5.2.2.7.1.2	US regulations do not specifically require pilots to send a message twice preceded with the phrase “TRANSMITTING BLIND”. US regulations provides general procedures which allow pilots to make blind transmissions in case of emergency.
5.2.2.7.1.3.2	US regulations do not specifically require pilots to make a blind transmission preceded by “TRANSMITTING BLIND DUE TO RECEIVER FAILURE” with respect to the continuation of the flight of the aircraft. US regulations provide general procedures which allow pilots to make appropriate blind transmissions.
5.2.2.7.2.1, 5.2.2.7.2.2, 5.2.2.7.2.3	US regulations do not specifically require aeronautical stations to get assistance from other aircraft in case of communications failure. US regulations require aeronautical stations to use “all appropriate means” available to re−establish communications with aircraft.
5.2.2.7.2.4	US regulations do not provide this specific standard. US regulations require aeronautical stations to use “all appropriate means” available to re−establish communications with aircraft.
5.2.2.7.3.1	US regulations do not specifically require pilots to make a blind transmission preceded by “TRANSMITTING BLIND DUE TO RECEIVER FAILURE”. US regulations provide general procedures which allow pilots to make appropriate blind transmissions.
ANNEX 10 − VOLUME III − COMMUNICATION SYSTEMS	
PART I − DIGITAL DATA COMMUNICATION SYSTEMS	
Chapter 1	Definitions
ATN Directory Services	The FAA has not implemented the DIR as part of the AMHS Extended Service. The Basic Service AMHS has been implemented. ATN standard is only recorded in the NCP until the FAA Order can be amended.
ATN Security Services	The ATN Security Service can be implemented as part of the AMHS Extended Service. ATN standard is only recorded in the NCP until the FAA Order can be amended.
Authentication	This is a part of ATN Security Services of the ATN DIR/AMHS Extended Service that has not been implemented. ATN standard is only recorded in the NCP until the FAA Order can be amended.

Security Management	This is a part of ATN Security Services capability of the ATN DIR/AMHS Extended Service that has not been implemented. ATN standard is only recorded in the NCP until the FAA Order can be amended.
Chapter 3	**Aeronautical Telecommunication Network**
3.2.1	The Ground−to−Ground ATN service based on OSI has been implemented (AMHS) but not Air−to−Ground. The CPDLC has been postponed by the FAA. AOC is not Air Traffic related service. ATN standard is only recorded in the NCP until the FAA Order can be amended.
3.2.2	ATN Ground−to−Ground service does not support sections a) 4) APC, c), e), f) and g). ATN standard is only recorded in the NCP until the FAA Order can be amended.
3.3.1	FAA ATN service does not support a) ATS to aircraft and c) AOC. The CPDLC has been postponed by the FAA. AOC is not Air Traffic related service. ATN standard is only recorded in the NCP until the FAA Order can be amended.
3.4.1.4	The FAA ATN only supports AMHS (ground service). ATN standard is only recorded in the NCP until the FAA Order can be amended.
ANNEX 10 − VOLUME IV − SURVEILLANCE AND COLLISION AVOIDANCE SYSTEMS	
Chapter 3	**Surveillance Systems**
3.1.1.7.13	SPI required to be transmitted for 18 +/− 1 second. US regulations are more stringent than ICAO.
3.1.2.6.5.2	In the request to downlink, Annex 10 assigns bits 0 to 7, many of them are reserved. The FAA Order 6365.1A implements this requirement assigning bits 0 and 1 and the bits 2 through 15 are not assigned.
3.1.2.10.4.3.3	Annex 10 requires "If antenna selection is based on signal level, it shall be carried out at all signal levels between MTL and −21 dBm." The RTCA MOPS for Mode S transponders, DO−181c, does not specify the range of signal levels over which the antenna selection must correctly be accomplished. FAA Order 6365.1A paragraph 5.5.1 addresses the issue of antenna selection. However, the TSO standard conferred upon manufacturers does not require implementation.
3.1.2.11.3	The US National Standard for the Mode S Beacon System, FAA Order 6365.1A, paragraph 6.3 requires – When the interrogator transmitter is not transmitting an interrogation, its output does not exceed −5 dBm effective radiated power at any frequency. This requirement exceeds the ICAO SARPs frequency of interest 960 to 1215 MHz.
Chapter 4	**Airborne Collision Avoidance System**
4.1	US documentation contains the following definition for TA: Information given to the pilot pertaining to the position of another aircraft in the immediate vicinity. The information contains no suggested maneuver. The ICAO SARPs considers this a potential threat. The TAs are issued to show all nearby traffic. TCAS does not determine by a test or analysis that some of these aircraft may be a potential threat. Information given to the pilot pertaining to the position of another aircraft in the immediate vicinity. The information contains no suggested maneuver.
4.2.3.3	The TSO−C118 (RTCA DO−197) implements this requirement. However, requirement of limiting Mode S power to the level of Mode A/C (paragraph 4.2.3.4) is not implemented.
4.3.1.1.1	Specifies a nominal cycle of 1 second
4.3.2.1.2	The US specifies a false track probability of less than 1.2% for Mode A/C and less than 0.1% for Mode S.
4.3.5.3.2	No changes planned to the current U.S. guidance. Per Advisory Circular (AC) 120−55C, Change 1, Section 11 (MAINTENANCE), para c., TCAS Software Updates: "when necessary, operators should ensure that appropriate TCAS software updates are incorporated. The latest version of software for TCAS II is version 7.1. To ensure compatibility with international standards, the FAA encourages the installation of this software as practical. Software version 6.04A, version 7.0 and version 7.1 are all approved for operations in U.S. airspace."

4.3.5.3.3	No changes planned to the current U.S. guidance. Per Advisory Circular (AC) 120−55C, Change 1, Section 11 (MAINTENANCE), para c., TCAS Software Updates: “when necessary, operators should ensure that appropriate TCAS software updates are incorporated. The latest version of software for TCAS II is version 7.1. To ensure compatibility with international standards, the FAA encourages the installation of this software as practical. Software version 6.04A, version 7.0 and version 7.1 are all approved for operations in U.S. airspace.”
4.3.8.4.2.2.1.3	US documentation contains an additional requirement After an RA has been terminated: by TCAS, it is still required to be reported by the Mode S transponder for 18±1 seconds.
4.3.8.4.2.3.2.3	The US uses “don’t descend” vs. “do not pass below” and “Don’t climb” vs. ”do not pass above”
4.3.8.4.2.3.2.5	Limited to TCAS with horizontal on−board resolution equipment
4.3.8.4.2.3.2.7	Limited to TCAS with horizontal on−board resolution equipment
4.3.8.4.2.3.4.5	The US specifies a different bit coding scheme. The US has implemented the AID code. The bit pattern documented in the RTCA document is in the bit order as received from the control head. The Annex 10 SARPs show the bit order of the RF transmission.
4.3.9.3.1	The US specifies 10 ft or less.
ACAS	The US uses the term Traffic Alert and Collision Avoidance System (TCAS). The difference of terminology does not impact interoperability of the systems.
ANNEX 10 − VOLUME V − AERONAUTICAL RADIO FREQUENCY SPECTRUM UTILIZATION	
Chapter 2	**Distress frequencies**
2.1.1	After June 21, 1995, the US does not allow any new installations of 121.5 MHz emergency locator transmitters (ELT) in aircraft. However, the US does not have a mandatory requirement of both 121.5 MHz and 406 MHz ELT’s in all aircraft.
Chapter 4	Utilization of frequencies above 30 MHz
4.1.2.2	The minimum frequency separation of 8.33 KHz has not been adopted in the US. The U.S. continues to use the channel separation of 25 KHz
4.1.2.3	Mandatory carriage of 8.33 KHz equipment has not been established in the US. The U.S. continues to use the channel separation of 25 KHz
4.1.2.4	FAA has not issued a mandatory carriage of VDL Mode 3 and VDL Mode 4.
4.1.2.4.1	FAA has not issued a mandatory carriage of VDL Mode 3.
4.1.3.1.6	The US does not require aircraft flying within the US airspace to meet one of the characteristics dealing with the FM interference immunity performance. The U.S. Aviation Rulemaking Committee made a decision not to adopt the FM interference immunity performance standards in the U.S. The U.S. continues to use its own FM immunity standards to avoid FM interference in aircraft.
4.1.4.1	The US does not provide the 20 dB desired−to−undesired signal protection for VHF frequency assignments. The US provides 14 dB.
4.1.4.2	The US does not require aircraft flying within the US airspace to meet one of the characteristics dealing with the FM interference immunity performance. The U.S. Aviation Rulemaking Committee made a decision not to adopt the FM interference immunity performance standards in the U.S. The U.S. continues to use its own FM immunity standards to avoid FM interference in aircraft.
4.1.6.2 List A	Assignable frequencies in 25 KHz steps in the US are 121.550 − 123.075 MHz instead of 121.550 – 123.050 MHz, and 123.125 – 136.975 MHz instead of 123.150 – 136.975 MHz.
4.2.3	The US does not follow the VOR assignment priority as defined in Section 4.2.3. Due to severe frequency congestion in the U.S., the ICAO frequency assignment priority order would result in inefficient use of the radio spectrum.

ANNEX 11 − AIR TRAFFIC SERVICES	
Chapter 1	**Definitions**
Accepting Unit	The term "receiving facility" is used.
Advisory Airspace	Advisory service is provided in terminal radar service areas and the outer area associated with class C airspace areas as well as Class E airspace.
Advisory Route	Advisory service is provided in terminal radar service areas and the outer area associated with class C airspace areas as well as Class E airspace.
ACAS– Airborne Collision Avoidance System	Traffic Alert and Collision Avoidance System (TCAS) – An airborne collision avoidance system based on radar beacon signals which operates independent of ground−based equipment. 14 CFR 1.1 further defines and breaks down TCAS into TCAS 1 – provides traffic advisories 2 – provides traffic advisories and resolution advisories in the vertical plane and 3 – provides traffic advisories and resolution advisories in the vertical and horizontal planes.
AIRMET	FAA Pilot Controller Glossary defines (in part) AIRMET as "In−flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment instrumentation or pilot qualifications...." The ICAO definition of AIRMET narrows the purpose of the advisory to "low−level aircraft operations", where the FAA has a more broad definition to encompass "all aircraft and ... aircraft having limited capability..." Also, ICAO uses the term "forecast ... for the flight information region" where the FAA uses "area forecast". Difference in character (terminology) for area forecast. FAA uses AIRMETS for broader purpose.
Air traffic control unit	The U.S. uses the term "air traffic control facility". (i.e. En Route, Terminal, or Flight Service)
Air traffic services reporting office	FAA Pilot Control Glossary defines (in part) Flight Service Stations (FSS) as "air traffic facilities which provide pilot briefing, en route communications and VFR search and rescue services, assist lost aircraft in emergency situations, relay ATC clearances, originate notices to airmen, broadcast aviation weather and NAS information, receive and process IFR flight plans...." FSS's are available to receive any reports concerning air traffic services as well as accept and file flight plans.
Air traffic services unit	The U.S. uses "Air Route Traffic Control Center".
Airway	A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids.
Alert Phase	Alert – a notification to a position that there is an aircraft−to−aircraft or aircraft−to−airspace conflict as detected by automated problem detection.
Altitude	Height above ground level (AGL), mean sea level (MSL) or indicate altitude.
Apron Management Service	Ground control or ramp control provide the same service. There is no formal definition in the Pilot Controller Glossary.
Area Control Centre	The U.S. uses the terms "Traffic Control Center", "Radar Approach Control Facility", and "Tower" to define a facility that provides air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.
Area Control Service	Air Traffic Control − A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

Controlled flight	The US uses the term “IFR Clearance”.
Control Zone	The US uses the term “Surface Area”. Surface area is airspace contained by the lateral boundary of the Class B, C, D, or E airspace designated for an airport that begins at the surface and extends upward.
Cruising Level	Cruising Altitude – an altitude or flight level maintained during en route level flight. This is a constant altitude and should not be confused with a cruise clearance.
Downstream Clearance	Same as air traffic control clearance. Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.
Flight Information Centre	In the US, flight information service and alerting service are often provided by flight service stations.
Level	The term “altitude” is used.
Maneuvering Area	Any locality either on land, water, or structures, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo.
Meteorological office	No PCG definition. However FSSs perform this duty.
Movement Area	The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.
Pilot−in−command	The person who has final authority for the operation and safety of the flight has been designated as pilot in command before or during the flight and hold the appropriate category, class and type rating for the flight.
Traffic avoidance advice	US uses the term “Safety Alert”
Traffic information	US uses the term “Traffic Advisory”
Waypoint	A predetermined geographical position used for route/instrument approach definition, progress reports, published VFR routes, visual reporting points or points for transitioning and/or circumnavigating controlled and/or special use airspace, that is defined relative to a VORTAC station or in terms of latitude/longitude coordinates.
Chapter 2	**General**
2.3.2	Annex 11, paragraph 2.3.2 directs the flight information service to accomplish objective d) of para 2.2, “to provide advice and information for the safe and efficient conduct of flight.” Details on procedures to accomplish this objective are contained in FAA Order JO 7210.3, Part 4, Flight Service Stations. Specific procedures for accomplishing this objective are contained in FAA Order JO 7110.10, Flight Services. Also, the FAA Pilot Controller Glossary defines a Flight Service Station (FSS) as an air traffic facility which provides 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, and broadcast aviation weather and aeronautical information. In Alaska, FSSs provide Airport Advisory Services.
2.5.2.2.1	FAA uses the generic term “controlled airspace” and “surface areas”
2.5.2.2.1.1	FAA also provides this service in Class E.
2.6	The Class F airspace is not used in the designation of U.S. airspace.
2.6.1	The U.S. has chosen not to use Class F airspace.

2.10.3.2.2	Class E−5 700/1200−foot airspace areas are used for transitioning aircraft to/from the terminal or en route environment.
2.10.3.3	En Route Domestic Airspace Areas consist of Class E airspace that extends upward from a specified altitude to provide controlled airspace in those areas where there is a requirement to provide IFR en route ATC services but the Federal airway structure is inadequate. En Route Domestic Airspace Areas may be designated to serve en route operations when there is a requirement to provide ATC service but the desired routing does not qualify for airway designation. Offshore/Control Airspace Areas are locations designated in international airspace (between the U.S. 12−mile territorial limit and the CTA/FIR boundary, and within areas of domestic radio navigational signal or ATC radar coverage) wherein domestic ATC procedures may be used for separation purposes.
2.10.5.1	A Class D airspace area shall be of sufficient size to: 1. Allow for safe and efficient handling of operations. 2. Contain IFR arrival operations while between the surface and 1,000 feet above the surface, and IFR departure operations while between the surface and 1,000 feet above the surface, and IFR departure operations while between the surface and the base of adjacent controlled airspace.
2.10.5.2	A Class D airspace area shall be of sufficient size to: 1. Allow for safe and efficient handling of operations. 2. Contain IFR arrival operations while between the surface and 1,000 feet above the surface, and IFR departure operations while between the surface and the base of adjacent controlled airspace. Size and shape may vary to provide for 1 and 2. The emphasis is that a Class D area shall be sized to contain the intended operations.
2.10.5.3	Refer to Surface Areas
2.25.5	No time is issued prior to taxi for take−off. Time checks are given to the nearest quarter minute.
2.27.5	Process is described in the FAA Safety Management System Manual and the FAA Order 1100.161.
Chapter 3	**Air Traffic Control Service**
3.2	Air Route Traffic Control Facilities (ARTCC) are used instead of Area Control Service, and Terminal Control Facilities instead of Approach Control Service.
3.6.2.4	The U.S does not specify notification of 2−way communication. The accepting unit shall not alter the clearance of an aircraft that has not yet reached the transfer of control point without the prior approval of the transferring unit.
3.7.3.1	Air crews are not required to read back clearances, only to acknowledge receipt of clearances.
3.7.3.1.1	Air crews are not required to read back clearances, only to acknowledge receipt of clearances.
3.7.4.3	4−3−8. COORDINATION WITH RECEIVING FACILITY Coordinate with the receiving facility before the departure of an aircraft if the departure point is less than 15 minutes flying time from the transferring facility's boundary unless an automatic transfer of of data between automated systems will occur, in which case the flying time requirement may be reduced to 5 minutes or replaced with a mileage from the boundary parameter when mutually agreeable to both facilities.
3.7.4.4	4−4−5. CLASS G AIRSPACE Include routes through Class G airspace only when requested by the pilot. NOTE−1. Flight plans filed for random RNAV routes through Class G airspace are considered a request by the pilot. 2. Flight plans containing MTR segments in/through Class G airspace are considered a request by the pilot. Air Traffic Control Clearance means an authorization by air traffic control within controlled airspace.
Chapter 4	**Flight Information Service**
4.2.2	No Class F airspace. Collision Hazard information is provided between known traffic to aircraft in Class G airspace.

Chapter 6	**Air Traffic Services Requirements for Communications**
6.1.1.4 6.2.2.3.8	The US uses a 45 day retention period.
6.2.3.6	The US has a 45 day or longer retention period, with some exceptions. US en route facilities using system analysis recording tapes as their radar retention media shall retain radar data for 15 days. Facilities using a teletype emulator or console printout must be retained for 30 days unless they are related to an accident or incident. A facility using a console typewriter printout take−up device may retain the printout on the spool for 15 days after the last date on the spool. If a request is received to retain data information following an accident or incident, the printout of the relative data will suffice and the tape/disc may then be returned to service through the normal established rotational program.
6.3.1.3	The US has a 45 day or longer retention period except that those facilities utilizing an analog voice recorder system shall retain voice recordings for 15 days.
6.4.1.2	The US retains surveillance data recordings for 45 days or longer when they are pertinent to an accident or incident investigation, except that en route facilities using system analysis recording tapes as their radar retention media (regardless of the type of voice recorder system being used) shall retain voice recordings for 15 days and those facilities using an analog voice recorder system shall retain voice recordings for 15 days. FAA's Air Traffic Control System Command Center shall retain voice recordings for 15 days.
Chapter 7	**Air Traffic Services Requirements for Information**
7.1.5	The term "communication station" is not used but the flight information is passed.
7.6	Temporary Flight Restrictions (TFRs) are the mechanism that would be implemented in such cases.
Appendix 2	**Principles Governing the Establishment and Identification of Significant Points**
3.1	In US, per FAA Order 8260.19D, there are some points not to be named. Fixes used for navigation not to be named include Visual Descent Points (VDPs), radar fixes used on ASR and/or PAR procedures, RNAV missed approach point at threshold, and an ATD fix located between the MAP and the landing area marking the visual segment descent point on COPTER RNAV PinS approach annotated "PROCEED VISUALLY." Additionally, there are some non-pronounceable points allowed. Order 8260.19 states "Except as noted below, each name must consist of a 5-letter pronounceable word. These non-pronounceable exceptions include; Stepdown fixes between FAF and MAP, Missed Approach Points (MAP), Computer Navigation Fixes (CNFs), and VFR Waypoints.
Appendix 4	**ATS Airspace Classifications**
	Speed restrictions of 250 knots do not apply to aircraft operating beyond 12 NM from the coast line within the U.S. Flight Information Region, in offshore Class E airspace below 10,000 feet MSL. Paragraph (a) of § 91.117 of Title 14 of the Code of Federal Regulations (CFR) provides that "Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots." Within domestic airspace, a pilot operating at or above 10,000 MSL on an assigned speed adjustment greater than 250 knots is expected to comply with § 91.117(a) when cleared below 10,000 feet MSL without notifying Air Traffic Control (ATC). The Federal Aviation Administration has proceeded from an operational perspective that the speed restrictions of § 91.117(a) do not apply to U.S.-registered aircraft, via § 91.703(a)(3), when operating outside the United States (and not within another country's territorial airspace).

Appendix 6	**Fatigue Risk Management System (FRMS) Requirements**
1biii	Minimum duration of a relief period is not specified.
3	FAA does not have *specific* processes for deviations or variations from prescriptive fatigue management regulations.

ANNEX 12 − SEARCH AND RESCUE
There are no reportable differences between U.S. regulations and the Standards and Recommended Practices contained in this Annex.

ANNEX 13 − AIRCRAFT ACCIDENT INVESTIGATION	
Chapter 5	**Investigation**
5.12	The full exchange of information is vital to effective accident investigation and prevention. The U.S. supports, in principle, measures that are intended to facilitate the development and sharing of information. The laws of the U.S. require the determination and public reporting of the facts, circumstances, and probable cause of every civil aviation accident. This requirement does not confine the public disclosure of such information to an accident investigation. However, the laws of the U.S. do provide some protection against public dissemination of certain information of a medical or private nature. Also, U.S. law prohibits the disclosure of cockpit voice recordings to the public and limits the disclosure of cockpit voice recording transcript to that specific information which is deemed pertinent and relevant by the investigative authority. However, U.S. Courts can order the disclosure of the foregoing information for other than accident investigation purposes. The standard for determining access to this information does not consider the adverse domestic or international effects on investigations that might result from such access.
5.25 h)	Investigative procedures observed by the U.S. allow full participation in all progress and investigation planning meetings; however, deliberations related to analysis, findings, probable causes, and safety recommendations are restricted to the investigative authority and its staff. However, participation in these areas is extended through timely written submissions, as specified in paragraph 5.25 i).
5.26 b)	The U.S. supports, in principle, the privacy of the State conducting the investigation regarding the progress and the findings of that investigation. However, the laws of the U.S. facilitate the public disclosure of information held by U.S. government agencies and U.S. commercial business. The standard for determining public access to information requested from a U.S. government agency or a commercial business does not consider or require the expressed consent of the State conducting the investigation.
Chapter 6	**Reporting**
6.13	The U.S. supports the principle of not circulating, publishing, or providing access to a draft report or any part thereof unless such a report or document has already been published or released by the State which conducted the investigation. However, the laws of the U.S. facilitate the public disclosure of information held by government agencies and commercial business. The U.S. government may not be able to restrict public access to a draft report or any part thereof on behalf of the State conducting the investigation. The standard for determining public access to information requested from a U.S. government agency or a commercial business does not consider or require the expressed consent of the State conducting an investigation.

ANNEX 14 − AERODROMES	
VOLUME 1 − AERODROME DESIGN AND OPERATIONS	
Chapter 1	**General**
1.2.1	Airports in the U.S. are for the most part owned and operated by local governments and quasi−government organizations formed to operate transportation facilities. The Federal Government provides air traffic control, operates and maintains NAVAIDs, provides financial assistance for airport development, certificates major airports, and issues standards and guidance for airport planning, design, and operational safety. There is general conformance with the Standards and Recommended Practices of Annex 14, Volume I. At airports with scheduled passenger service using aircraft having more than nine seats, compliance with standards is enforced through regulation and certification. At other airports, compliance is achieved through the agreements with individual airports under which Federal development funds were granted; or, through voluntary actions.
1.3.1 1.3.2 1.3.3 1.3.4	In the U.S., the Airport Reference Code is a two−component indicator relating the standards used in the airport's design to a combination of dimensional and operating characteristics of the largest aircraft expected to use the airport. The first element, Aircraft Approach Category, corresponds to the ICAO PANS−OPS approach speed groupings. The second, Airplane Design Group, corresponds to the wingspan groupings of code element 2 of the Annex 14, Aerodrome Reference Code. See below:

TBL GEN 1.7−1

Airport Reference Code (ARC)

Aircraft Approach Category	Approximate Annex 14 Code Number
A	1
B	2
C	3
D	4
E	−
Airplane Design Group	**Corresponding Annex 14 Code Letter**
I	A
II	B
III	C
IV	D
V	E
VI	F (proposed)

EXAMPLE: AIRPORT DESIGNED FOR B747−400 ARC D−V.

Chapter 2	Aerodrome Data
2.2.1	The airport reference point is recomputed when the ultimate planned development of the airport is changed.
2.9.6 2.9.7	Minimum friction values have not been established to indicate that runways are ''slippery when wet.'' However, U.S. guidance recommends that pavements be maintained to the same levels indicated in the ICAO Airport Services Manual.
2.11.3	If inoperative fire fighting apparatus cannot be replaced immediately, a NOTAM must be issued. If the apparatus is not restored to service within 48 hours, operations shall be limited to those compatible with the lower index corresponding to operative apparatus.
2.12 e)	Where the original VASI is still installed, the threshold crossing height is reported as the center of the on−course signal, not the top of the red signal from the downwind bar.

Chapter 3	Physical Characteristics
3.1.2*	The crosswind component is based on the ARC: 10.5 kt for AI and BI; 13 kt for AII and BII; 16 kt for AIII, BIII and CI through DIII; 20 kts for AIV through DVI.
3.1.9*	Runway widths (in meters) used in design are shown in the table below:

Width of Runway in Meters

Aircraft Approach Category	Airplane Design Group					
	I	II	III	IV	V	VI
A	18[1]	23[1]	––	––	45	60
B	18[1]	23[1]	––	––	45	60
C	30	30	30[2]	45	45	60
D	30	30	30[2]	45	45	60

[1]The width of a precision (lower than $^{3}/_{4}$ statute mile approach visibility minimums) runway is 23 meters for a runway which is to accommodate only small (less than 5,700 kg) airplanes and 30 meters for runways accommodating larger airplanes.

[2]For airplanes with a maximum certificated take−off mass greater than 68,000 kg, the standard runway width is 45 meters.

3.1.12*	Longitudinal runway slopes of up to 1.5 percent are permitted for aircraft approach categories C and D except for the first and last quarter of the runway where the maximum slope is 0.8 percent.
3.1.18*	Minimum and maximum transverse runway slopes are based on aircraft approach categories as follows: For categories A and B: 1.0 − 2.0 percent C and D: 1.0 − 1.5 percent
3.2.2	The U.S. does not require that the minimum combined runway and shoulder widths equal 60 meters. The widths of shoulders are determined independently.
3.2.3*	The transverse slope on the innermost portion of the shoulder can be as high as 5 percent.
3.3.3 3.3.4* 3.3.5*	A strip width of 120 meters is used for code 3 and 4 runways for precision, nonprecision, and non−instrumented operations. For code 1 and 2 precision runways, the width is 120 meters. For non−precision/visual runways, widths vary from 37.5 meters up to 120 meters.
3.3.9*	Airports used exclusively by small aircraft (U.S. Airplane Design Group I) may be graded to distances as little as 18 meters from the runway centerline.
3.3.14*	The maximum transverse slope of the graded portion of the strip can be 3 percent for aircraft approach categories C and D and 5 percent for aircraft approach categories A and B.
3.3.15*	The U.S. does not have standards for the maximum transverse grade on portions of the runway strip falling beyond the area that is normally graded.
3.3.17*	Runways designed for use by smaller aircraft under non−instrument conditions may be graded to distances as little as 18 meters from the runway centerline (U.S. Airplane Design Groups I and II).
3.4.2*	For certain code 1 runways, the runway end safety areas may be only 72 meters.
3.7.1* 3.7.2*	The U.S. does not provide Standards or Recommended Practices for radio altimeter operating areas.
3.8.3*	The U.S. specifies a 6 meter clearance for Design Group VI airplanes.
3.8.4*	The taxiway width for Design Group VI airplanes is 30 meters.
3.8.5*	The U.S. also permits designing taxiway turns and intersections using the judgmental oversteering method.

3.8.7*	Minimum separations between runway and taxiway centerlines, and minimum separations between taxiways and taxilanes and between taxiway/taxilanes and fixed/moveable objects are shown in the tables that follow. Generally, U.S. separations are larger for non−instrumented runways, and smaller for instrumented runways, than the Annex. Values are also provided for aircraft with wingspans up to 80 meters.

Minimum Separations Between Runway Centerline and Parallel Taxiway/Taxilane Centerline

Operation	Aircraft Approach Category	Airplane Design Group						
		I[1]	I	II	III	IV	V	VI
Visual runways and runways with not lower than 3/4-statute mile (1,200 meters) approach visibility minimums	A and B	150 feet 45 meters	225 feet 67.5 meters	240 feet 72 meters	300 feet 90 meters	400 feet 120 meters	––	––
Runways with lower than 3/4-statute mile (1,200 meters) approach visibility minimums	A and B	200 feet 60 meters	250 feet 75 meters	300 feet 90 meters	350 feet 105 meters	400 feet 120 meters	––	––
Visual runways and runways with not lower than 3/4-statute mile (1,200 meters) approach visibility minimums	C and D	––	300 feet 90 meters	300 feet 90 meters	400 feet 120 meters	400 feet 120 meters	400[2] feet 120[2] meters	600 feet 180 meters
Runways with lower than 3/4-statute mile (1,200 meters) approach visibility minimums	C and D	––	400 feet 120 meters	400 feet 120 meters	400 feet 120 meters	400 feet 120 meters	400[2] feet 120[2] meters	600 feet 180 meters

[1]These dimensional standards pertain to facilities for small airplanes exclusively.

[2]Corrections are made for altitude: 120 meters separation for airports at or below 410 meters; 135 meters for altitudes between 410 meters and 2,000 meters; and, 150 meters for altitudes above 2,000 meters.

Minimum Taxiway and Taxilane Separations:

	Airplane Design Group					
	I	II	III	IV	V	VI
Taxiway centerline to parallel taxiway/ taxilane centerline	69 feet 21 meters	105 feet 32 meters	152 feet 46.5 meters	215 feet 65.5 meters	267 feet 81 meters	324 feet 99 meters
Fixed or movable object	44.5 feet 13.5 meters	65.5 feet 20 meters	93 feet 28.5 meters	129.5 feet 39.5 meters	160 feet 48 meters	193 feet 59 meters
Taxilane centerline to parallel taxilane centerline	64 feet 19.5 meters	97 feet 29.5 meters	140 feet 42.5 meters	198 feet 60 meters	245 feet 74.5 meters	298 feet 91 meters
Fixed or movable object	39.5 feet 12 meters	57.5 feet 17.5 meters	81 feet 24.5 meters	112.5 feet 34 meters	138 feet 42 meters	167 feet 51 meters

3.8.10*	Line−of−sight standards for taxiways are not provided in U.S. practice, but there is a requirement that the sight distance along a runway from an intersecting taxiway must be sufficient to allow a taxiing aircraft to safely enter or cross the runway.
3.8.11*	Transverse slopes of taxiways are based on aircraft approach categories. For categories C and D, slopes are 1.0−1.5 percent; for A and B, 1.0−2.0 percent.
3.11.5	The runway centerline to taxi−holding position separation for code 1 is 38 meters for non−precision operations and 53 meters for precision. Code 3 and 4 precision operations require a separation of 75 meters, except for “wide bodies,” which require 85 meters.

Dimensions and Slopes for Protective Areas and Surfaces

	Precision Approach	Non−precision Instrument Approach			Visual Runway	
	All runways	All runways[a]	Runways other than utility[b]	Utility runways[d]	Runways other than utility	Utility runways
Width of inner edge	305 meters	305 meters	152 meters	152 meters	152 meters	76 meters[c]
Divergency (each side)	15 percent	15 percent	15 percent	15 percent	10 percent	10 percent
Final width	4,877 meters	1,219 meters	1,067 meters[c]	610 meters	475 meters[c]	381 meters[c]
Length	15,240 meters	3,048 meters[c]	3,048 meters[c]	1,524 meters[c]	1,524 meters[c]	1,524 meters[c]
Slope: inner 3,049 meters	2 percent	2.94 percent[c]	2.94 percent[c]	5 percent[c]	5 percent[c]	5 percent[c]
Slope: beyond 3,048 meters	2.5 percent[c]					

[a]With visibility minimum as low as 1.2 km; [b]with visibility minimum greater than 1.2 km; [c]criteria less demanding than Annex 14 Table 4−1 dimensions and slopes. [d]Utility runways are intended to serve propeller−driven aircraft having a maximum take−off mass of 5,570 kg.

Chapter 4	**Obstacle Restriction and Removal**
4.1	Obstacle limitation surfaces similar to those described in 4.1−4.20 are found in 14 CFR Part 77.
4.1.21	A balked landing surface is not used.
4.1.25	The U.S. does not establish take−off climb obstacle limitation areas and surface, *per se*, but does specify protective surfaces for each end of the runway based on the type of approach procedures available or planned. The dimensions and slopes for these surfaces and areas are listed in the table above.
4.2	The dimensions and slopes of U.S. approach areas and surfaces are set forth in the above table. Aviation regulations do not prohibit construction of fixed objects above the surfaces described in these sections.
4.2.1	Primary surface is also used as a civil airport imaginary surface. Primary surface is a surface longitudinally centered on a runway. U.S. uses the width of the primary surface of a runway as prescribed in 14 CFR Part 77.25 for the most precise approach existing or planned for either end of that runway.
4.2.8	The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach existing or planned for that runway end.
4.2.9	Approach surfaces are applied to each end of each runway based upon the type of approach available or planned for that runway end.
4.2.10, 4.2.11	Any proposed construction of or alteration to an existing structure is normally considered to be physically shielded by one or more existing permanent structure(s), natural terrain, or topographic feature(s) of equal or greater height if the structure under consideration is located within the lateral dimensions of any runway approach surface but would not exceed an overall height above the established airport elevation greater than that of the outer extremity of the approach surface, and located within, but would not penetrate, the shadow plane(s) of the shielding structure(s).
4.2.12	The basic principle in applying shielding guidelines is whether the location and height of the structures are such that aircraft, when operating with due regard for the shielding structure, would not collide with that structure.
4.2.16	The size of each imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach existing or planned for that runway end.
4.2.17	Approach surfaces are applied to each end of each runway based upon the type of approach available or planned for that runway end.

Chapter 5	Visual Aids for Navigation
5.2.1.7*	The U.S. does not require unpaved taxiways to be marked.
5.2.2.2*	The U.S. does not require a runway designator marking for unpaved runways.
5.2.2.4	Zeros are not used to precede single−digit runway markings. An optional configuration of the numeral 1 is available to designate a runway 1 and to prevent confusion with the runway centerline.
5.2.4.2* 5.2.4.3*	Threshold markings are not required, but sometimes provided, for non−instrument runways that do not serve international operations.
5.2.4.5	The current U.S. standard for threshold designation is eight stripes, except that more than eight stripes may be used on runways wider than 45 meters. After 1 January 2008, the U.S. standard will comply with Annex 14.
5.2.4.6	The width and spacing of threshold stripes will comply with Annex 14 after 1 January 2008.
5.2.4.10	When a threshold is temporarily displaced, there is no requirement that runway or taxiway edge markings, prior to the displaced threshold, be obscured. These markings are removed only if the area is unsuitable for the movement of aircraft.
5.2.5.2 5.2.5.3*	Aiming point markings are required on precision instrument runways and code 3 and 4 runways used by jet aircraft.
5.2.5.4	The aiming point marking commences 306 meters from the threshold at all runways.
5.2.6.3	The U.S. pattern for touchdown zone markings, when installed on both runway ends, is only applicable to runways longer than 4,990 feet. On shorter runways, the three pair of markings closest to the runway midpoint are eliminated.
5.2.6.4	The U.S. standard places the aiming point marking 306 meters from the threshold where it replaces one of the pair of three stripe threshold markings. The 306 meters location is used regardless of runway length.
5.2.6.5*	Touchdown zone markings are not required at a non−precision approach runway, though they may be provided.
5.2.7.4*	Runway side stripe markings on a non−instrument runway may have an over−all width of 0.3 meter.
5.2.8.3	Taxiway centerline markings are never installed longitudinally on a runway even if the runway is part of a standard taxi route.
5.2.9.5*	The term ‘‘ILS’’ is used instead of CAT I, CAT II, CAT III.
5.2.11.4 5.2.11.5* 5.2.11.6*	Check−point markings are provided, but the circle is 3 meters in diameter, and the directional line may be of varying width and length. The color is the yellow used for taxiway markings.
5.2.12	Standards for aircraft stand markings are not provided.
5.2.13.1*	Apron safety lines are not required although many airports have installed them.
5.2.14.1	The U.S. does not have standards for holding position markings on roadways that cross runways. Local traffic control practices are used.
5.3.1.1 5.3.1.2*	The U.S. does not have regulations to prevent the establishment of non−aviation ground lights that might interfere with airport operations.
5.3.1.3 5.3.1.4	New approach lighting installations will meet the frangibility requirements. Some existing non−frangible systems may not be replaced before 1 January 2005.
5.3.2.1* 5.3.2.2* 5.3.2.3*	There is no requirement for an airport to have emergency runway lighting available if it does not have a secondary power source. Some airports do have these systems, and there is an FAA specification for these lights.
5.3.3.1 5.3.3.3	Only airports served by aircraft having more than 30 seats are required to have a beacon, though they are available at many others.
5.3.3.6	Although the present U.S. standard for beacons calls for 24−30 flashes per minute, some older beacons may have flash rates as low as 12 flashes per minute.
5.3.3.8	Coded identification beacons are not required and are not commonly installed. Typically, airport beacons conforming to 5.3.3.6 are installed at locations served by aircraft having more than 30 seats.

5.3.4.1	While the U.S. has installed an approach light system conforming to the specifications in 5.3.4.10 through 5.3.4.19, it also provides for a lower cost system consisting of medium intensity approach lighting and sequenced flashing lights (MALSF) at some locations.
5.3.4.2	In addition to the system described in 5.3.4.1, a system consisting of omnidirectional strobe lights (ODALS) located at 90 meters intervals extending out to 450 meters from the runway threshold is used at some locations.
5.3.4.10 through 5.3.4.19	The U.S. standard for a precision approach category I lighting system is a medium intensity approach lighting system with runway alignment indicator lights (MALSR). This system consists of 3 meters barrettes at 60 meters intervals out to 420 meters from the threshold and sequenced flashing lights at 60 meters intervals from 480 meters to 900 meters. A crossbar 20 meters in length is provided 300 meters from the threshold. The total length of this system is dependent upon the ILS glide path angle. For angles 2.75° and higher, the length is 720 meters.
5.3.4.16 5.3.4.31	The capacitor discharge lights can be switched on or off when the steady−burning lights of the approach lighting system are operating. However, they cannot be operated when the other lights are not in operation.
5.3.4.20	The U.S. standard for a precision approach category II and III lighting system has a total length dependent upon the ILS glide path angle. For angles 2.75° and higher, the length is 720 meters.
5.3.5.1 5.3.5.3 5.3.5.4	Visual approach slope indicator systems are not required for all runways used by turbojets except runways involved with land and hold short operations that do not have an electronic glideslope system.
5.3.5.2	In addition to PAPI and APAPI systems, VASI and AVASI type systems remain in service at U.S. airports with commercial service. Smaller general aviation airports may have various other approach slope indicators including tri−color and pulsating visual approach slope indicators.
5.3.5.27	The U.S. standard for PAPI allows for the distance between the edge of the runway and the first light unit to be reduced to 9 meters for code 1 runways used by nonjet aircraft.
5.3.5.42	The PAPI obstacle protection surface used is as follows: The surface begins 90 meters in front of the PAPI system (toward the threshold) and proceeds outward into the approach zone at an angle 1 degree less than the aiming angle of the third light unit from the runway. The surface flares 10 degrees on either side of the extended runway centerline and extends 4 statute miles from its point of origin.
5.3.8.4	The U.S. permits the use of omnidirectional runway threshold identification lights.
5.3.13.2	The U.S. does not require the lateral spacing of touchdown zone lights to be equal to that of touchdown zone marking when runways are less that 45 meters wide. The lateral distance between the markings is 22 meters when installed on runways with a width of 45 meters or greater. The distance is proportionately smaller for narrower runways. The lateral distance between touchdown zone lights is nominally 22 meters but may be reduced to 20 meters to avoid construction problems.
5.3.14	The U.S. has no provision for stopway lights.
5.3.15.1 5.3.15.2*	Taxiway centerline lights are required only below 183 meters RVR on designated taxi routes. However, they are generally recommended whenever a taxiing problem exists.
5.3.15.3 8.2.3	Taxiway centerline lights are not provided on runways forming part of a standard taxi route even for low visibility operations. Under these conditions, the taxi path is coincident with the runway centerline, and the runway lights are illuminated.
5.3.15.5	Taxiway centerline lights on exit taxiways presently are green. However, the new U.S. standard which is scheduled to be published by 1 January 98 will comply with the alternating green/yellow standard of Annex 14.
5.3.15.7*	The U.S. permits an offset of up to 60 cm.
5.3.16.2 8.2.3	Taxiway edge lights are not provided on runways forming part of a standard taxi route.

5.3.17.1 5.3.17.2* 5.3.17.3 5.3.17.4* 5.3.17.5*	Stop bars are required only for runway visual range conditions less than a value of 183 meters at taxiway/runway intersections where the taxiway is lighted during low visibility operations. Once installed, controlled stop bars are operated at RVR conditions less than a value of 350 meters.
5.3.17.6	Elevated stop bar lights are normally installed longitudinally in line with taxiway edge lights. Where edge lights are not installed, the stop bar lights are installed not more than 3 meters from the taxiway edge.
5.3.17.9	The beamspread of elevated stop bar lights differs from the inpavement lights. The inner isocandela curve for the elevated lights is ± 7 horizontal and ± 4 vertical.
5.3.17.12	The U.S. standard for stop bars, which are switchable in groups, does not require the taxiway centerline lights beyond the stop bars to be extinguished when the stop bars are illuminated. The taxiway centerline lights which extend beyond selectively switchable stop bars are grouped into two segments of approximately 45 meters each. A sensor at the end of the first segment re−illuminates the stop bar and extinguishes the first segment of centerline lights. A sensor at the end of the second segment extinguishes that segment of centerline lights.
5.3.18.1*	Taxiway intersection lights are also used at other hold locations on taxiways such as low visibility holding points.
5.3.18.2	Taxiway intersection lights are collocated with the taxiway intersection marking. The marking is located at the following distances from the centerline of the intersecting taxiway: Airplane Design Group — Distance I — 13.5 meters II — 20 meters III — 28.5 meters IV — 39 meters V — 48.5 meters VI — 59 meters
5.3.19.1 5.3.19.2*	Runway guard lights are required only for runway visual range conditions less than a value of 350 meters.
5.3.19.4 5.3.19.5	Runway guard lights are placed at the same distance from the runway centerline as the aircraft holding distance, or within a few feet of this location.
5.3.19.12	The new U.S. standard for in−pavement runway guard lights complies with Annex 14. However, there may be some existing systems that do not flash alternately.
5.3.20.4*	The U.S. does not set aviation standards for flood lighting aprons.
5.3.21	The U.S. does not provide standards for visual docking guidance systems. U.S. manufacturers of these devices generally adhere to ICAO SARPS.
5.3.23.1	The U.S. does not have a requirement for providing roadholding position lights during RVR conditions less than a value of 350 meters.
5.4.1.2	Signs are often installed a few centimeters taller than specified in Annex 14, Volume 1, Table 5−4.
5.4.1.5	Sign inscriptions are slightly larger, and margins around the sign slightly smaller, than indicated in Annex 14, Volume 1, Appendix 4.
5.4.1.6	The sign luminance requirements are not as high as specified in Appendix 4. The U.S. does not specify a nighttime color requirement in terms of chromaticity.
5.4.2.2 5.4.2.4 5.4.2.9 5.4.2.14 5.4.2.16	All signs used to denote precision approach holding positions have the legend ''ILS.''
5.4.2.6	U.S. practice uses the NO ENTRY sign to prohibit entry by aircraft only.
5.4.2.8 5.4.2.10	The second mandatory instruction sign is usually not installed unless added guidance is necessary.

5.4.2.15	Signs for holding aircraft and vehicles from entering areas where they would infringe on obstacle limitation surfaces or interfere with NAVAIDs are inscribed with the ***designator of the approach***, followed by the letters ‘‘*APCH*’’; *for example, “15−APCH.”*
5.4.3.13 5.4.3.15	U.S. practice is to install signs about 3 to 5 meters closer to the taxiway/runway (See Annex 14, Table 5−4).
5.4.3.16	The U.S. does not have standards for the location of runway exit signs.
5.4.3.24	A yellow border is used on all location signs, regardless of whether they are stand−alone or collocated with other signs.
5.4.3.26	U.S. practice is to use Pattern A on runway vacated signs, except that Pattern B is used to indicate that an ILS critical area has been cleared.
5.4.3.30*	The U.S. does not have standards for signs used to indicate a series of taxi−holding positions on the same taxiway.
5.4.4.4*	The inscription, ‘‘VOR Check Course,’’ is placed on the sign in addition to the VOR and DME data.
5.4.5.1*	The U.S. does not have requirements for airport identification signs, though they are usually installed.
5.4.6.1*	Standards are not provided for signs used to identify aircraft stands.
5.4.7.2	The distance from the edge of road to the road−holding position sign conforms to local highway practice.
5.5.2.2* 5.5.7.1*	Boundary markers may be used to denote the edges of an unpaved runway.
5.5.3	There is no provision for stopway edge markers.
Chapter 6	**Visual Aids for Denoting Obstacles**
6.1	Recommended practices for marking and lighting obstacles are found in FAA Advisory Circular 70/7460−1J, Obstruction Marking and Lighting.
6.1.3	Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61m) above ground level or exceeds any obstruction standard contained in 14 CFR Part 77, should normally be marked and/or lighted.
6.2.1	This chapter provides recommended guidelines to make certain structures conspicuous to pilots during daylight hours. One way of achieving this conspicuity is by painting and/or marking these structures. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.
6.2.3*	The maximum dimension of the rectangles in a checkered pattern is 6 meters on a side.
6.2.7	Markers should be displayed in conspicuous positions on or adjacent to the structure so as to retain the general definition of the structure. They should be recognizable in clear air from a distance of at least 4,000 feet (1219m) and in all directions from which aircraft are likely to approach. Markers should be distinctively shaped, i.e., spherical or cylindrical, so they are not mistaken for items that are used to convey other information. They should be replaced when faded or otherwise deteriorated.
6.2.11	Flag markers should be displayed around, on top, or along the highest edge of the obstruction. When flags are used to mark extensive or closely grouped obstructions, they should be displayed approximately 50 feet (15m) apart. The flag stakes should be of such strength and height that they will support the flags above all surrounding ground, structures, and/or objects of natural growth.
6.2.12	Each side of the flag marker should be at least 2 feet (0.6m) in length. Standard does not specifically address mobile objects.
6.2.14	Color patterns. Flags should be colored as follows: solid, orange and white, and checkerboard. Standard does not specifically address mobile objects.

6.3.1	Obstruction lighting may be displayed on structures as follows: aviation red obstruction lights; medium intensity flashing white obstruction lights, high intensity flashing white obstruction lights, dual lighting, obstruction lights during construction, obstruction lights in urban areas, and temporary construction equipment lighting.
6.3.11	The height of the structure AGL determines the number of light levels. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.
6.3.13	When a structure lighted by a high intensity flashing light system is topped with an antenna or similar appurtenance exceeding 40 feet (12m) in height, a medium intensity flashing white light (L−865) should be placed within 40 feet (12m) from the tip of the appurtenance. This light should operate 24 hours a day and flash simultaneously with the rest of the lighting system.
6.3.14	The number of light units recommended depends on the diameter of the structure at the top.
6.3.16	Lights should be installed on the highest point at each end. At intermediate levels, lights should be displayed for each 150 feet (46m) or fraction thereof. The vertical position of these lights should be equidistant between the top lights and the ground level as the shape and type of obstruction will permit. One such light should be displayed at each outside corner on each level with the remaining lights evenly spaced between the corner lights.
6.3.17	Lights should be installed on the highest point at each end. At intermediate levels, lights should be displayed for each 150 feet (46m) or fraction thereof. The vertical position of these lights should be equidistant between the top lights and the ground level as the shape and type of obstruction will permit. One such light should be displayed at each outside corner on each level with the remaining lights evenly spaced between the corner lights.
6.3.18	Lights should be installed on the highest point at each end. At intermediate levels, lights should be displayed for each 150 feet (46m) or fraction thereof. The vertical position of these lights should be equidistant between the top lights and the ground level as the shape and type of obstruction will permit. One such light should be displayed at each outside corner on each level with the remaining lights evenly spaced between the corner lights.
6.3.19, 6.3.20	One or more light units is needed to obtain the desired horizontal coverage. The number of light units recommended per level (except for the supporting structures of catenary wires and buildings) depends upon the average outside diameter of the specific structure, and the horizontal beam width of the light fixture. The light units should be installed in a manner to ensure an unobstructed view of the system by a pilot approaching from any direction. The number of lights recommended is the minimum. The U.S. does not utilize Type A or Type B obstacle lights. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.
6.3.21* 6.3.22*	The effective intensity, for daylight−luminance background, of Type A high−intensity obstacle lights is 270,000 cd ± 25 percent. The effective intensity, for daylight−luminance background, of Type B high−intensity obstacle lights is 140,000 cd ± 25 percent.
6.3.22	The height of the structure AGL determines the number of light levels. The light levels may be adjusted slightly, but not to exceed 10 feet (3m) when necessary to accommodate guy wires and personnel who replace or repair light fixtures. If an adjacent object shields any light, horizontal placement of the lights should be adjusted or additional lights should be mounted on that object to retain or contribute to the definition of the obstruction. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.

6.3.23, 6.3.24, 6.3.27, 6.3.29	Red obstruction lights are used to increase conspicuity during nighttime. The red obstruction lighting system is composed of flashing omnidirectional beacons (L−864) and/or steady burning (L−810) lights. When one or more levels is comprised of flashing beacon lighting, the lights should flash simultaneously. The U.S. does not utilize Type A, B, C, or D obstacle lights. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in
6.3.28	When objects within a group of obstructions are approximately the same overall height above the surface and are located a maximum of 150 feet (46m) apart, the group of obstructions may be considered an extensive obstruction. Install light units on the same horizontal plane at the highest portion or edge of prominent obstructions. Light units should be placed to ensure that the light is visible to a pilot approaching from any direction.
6.3.30, 6.3.31, 6.3.32	The medium intensity flashing white light system is normally composed of flashing omni−directional lights. Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. The U.S. does not utilize Type A, B, or C obstacle lights. Medium intensity flashing white (L−865) obstruction lights may provide conspicuity both day and night. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of structures and overall layout of design.
6.3.35	Use high intensity flashing white obstruction lights during daytime with automatically selected reduced intensities for twilight and nighttime operations. When high intensity white lights are operated 24 hours a day, other methods of marking and lighting may be omitted. The U.S. does not utilize Type A obstacle lights. Lighting with high intensity (L−856) flashing white obstruction lights provides the highest degree of conspicuity both day and night. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.
Chapter 7	**Visual Aids for Denoting Restricted Use Areas**
7.1.2*	A ‘‘closed’’ marking is not used with partially closed runways. See 5.2.4.10, above.
7.1.4	Crosses with shapes similar to figure 7.1, illustration b) are used to indicate closed runways and taxiways. The cross for denoting a closed runway is yellow.
7.1.5	In the U.S. when a runway is permanently closed, only the threshold marking, runway designation marking, and touchdown zone marking need be obliterated. Permanently closed taxiways need not have the markings obliterated.
7.1.7	The U.S. does not require unserviceability lights across the entrance to a closed runway or taxiway when it is intersected by a night−use runway or taxiway.
7.4.4	Flashing yellow lights are used as unserviceability lights. The intensity is such as to be adequate to delineate a hazardous area.
Chapter 8	**Equipment and Installations**
8.1.5* 8.1.6* 8.1.7 8.1.8	A secondary power supply for non−precision instrument and non−instrument approach runways is not required, nor is it required for all precision approach runways. The U.S. does not provide secondary power specifically for take−off operations below 550 meters RVR.
8.2.1	There is no requirement in the U.S. to interleave lights as described in the Aerodrome Design Manual, Part 5.
8.2.3	See 5.3.15.3 and 5.3.16.2
8.7.2* 8.7.3 8.7.4*	Glide slope facilities and certain other installations located within the runway strip, or which penetrate obstacle limitation surfaces, may not be frangibly mounted.

8.9.7*	A surface movement surveillance system is recommended for operations from 350 meters RVR down to 183 meters. Below 183 meters RVR, a surface movement radar or alternative technology is generally required.
Chapter 9	**Emergency and Other Services**
9.1.1	Emergency plans such as those specified in this section are required only at airports serving scheduled air carriers using aircraft having more than 30 seats. These airports are certificated under 14 CFR Part 139. In practice, other airports also prepare emergency plans.
9.1.12	Full−scale airport emergency exercises are conducted at intervals, not to exceed three years, at airports with scheduled passenger service using aircraft with more than 30 seats.
9.2.1	Rescue and fire fighting equipment and services such as those specified in this section are required only at airports serving scheduled air carriers in aircraft having more than 30 seats. Such airports generally equate to ICAO categories 4 through 9. Other airports have varying degrees of services and equipment.
9.2.3*	There is no plan to eliminate, after 1 January 2005, the current practice of permitting a reduction of one category in the index when the largest aircraft has fewer than an average of five scheduled departures a day.
9.2.4 9.2.5	The level of protection at U.S. airports is derived from the length of the largest aircraft serving the airport similar to the Annex's procedure, except that maximum fuselage width is not used. U.S. indices A−E are close equivalents of the Annex's categories 5−9. The U.S. does not have an equivalent to category 10.

Fire Extinguishing Agents and Equipment

Index	Aircraft length		Total minimum quantities of extinguishing agents			
	More than	Not more than	Dry chemical	Water for protein foam	Minimum trucks	Discharge rate[1]
A		27 meters	225 kg	0	1	See below
B	27 meters	38 meters	225 kg	5,700 L	1	See below
C	38 meters	48 meters	225 kg	5,700 L	2	See below
D	48 meters	60 meters	225 kg	5,700 L	3	See below
E	60 meters		225 kg	11,400 L	3	See below

[1]Truck size	Discharge rate
1,900 L but less than 7,600	at least 1,900 L per minute but not more than 3,800 L per minute
7,600 L or greater	at least 2,280 L per minute but not more than 4,560 L per minute

9.2.10	The required firefighting equipment and agents by index are shown in the table above. The substitution equivalencies between complementary agents and foam meeting performance level A are also used for protein and fluoroprotein foam. Equivalencies for foam meeting performance level B are used only for aqueous film forming foams.
9.2.18*	There is no specific requirement to provide rescue equipment as distinguished from firefighting equipment.
9.2.19*	At least one apparatus must arrive and apply foam within 3 minutes with all other required vehicles arriving within 4 minutes. Response time is measured from the alarm at the equipment's customary assigned post to the commencement of the application of foam at the mid−point of the farthest runway.
9.2.29*	For ICAO category 6 (U.S. index B), the U.S. allows one vehicle.
9.4.4	At the present time, there is no requirement to perform tests using a continuous friction measuring device with self−wetting features. Some U.S. airports own these devices, while others use less formal methods to monitor build−up of rubber deposits and the deterioration of friction characteristics.
9.4.15	The standard grade for temporary ramps is 15 feet longitudinal per 1 inch of height (0.56 percent slope) maximum, regardless of overlay depth.
9.4.19	There is no U.S. standard for declaring a light unserviceable if it is out of alignment or if its intensity is less than 50 percent of its specified value.

*Indicates ICAO Recommended Practice

ANNEX 14 − AERODROMES	
VOLUME II − HELIPORTS	
Chapter 1	**Definitions**
Declared distances	The U.S. does not use declared distances (take−off distance available, rejected take−off distance available, or landing distance available) in designing heliports.
Final approach and take−off area (FATO)	The U.S. ‘‘take−off and landing area’’ is comparable to the ICAO FATO, and the U.S. ‘‘FATO’’ is more comparable to the ICAO TLOF. The U.S. definition for the FATO stops with ‘‘the take−off manoeuvre is commenced.’’ This difference in definition reflects a variation in concept. The rejected take−off distance is an operational computation and is not required as part of the design.
Helicopter stand	The U.S. does not use the term “helicopter stand.” Instead, the U.S. considers paved or unpaved aprons, helipads, and helidecks, all as helicopter parking areas; i.e., helicopter stands.
Safety area	The U.S. considers the safety area to be part of the take−off and landing area which surrounds the FATO and does not call for or define a separate safety area.
Touchdown and lift−off area (TLOF)	The U.S. differs in the definition by considering helipads and helidecks to be FATO. The U.S. does not define the load bearing area on which the helicopter may touch down or lift−off as a TLOF.
Chapter 2	**Heliport Data**
2.1 d)	The U.S. does not measure or report a safety area as a separate feature of a heliport.
2.2	The U.S. does not ‘‘declare’’ distances for heliports.
Chapter 3	**Physical Characteristics**
3.1.2	The U.S. does not distinguish between single−engine and multi−engine helicopters for the purposes of heliport design standards. Neither does the U.S. design or classify heliports on the basis of helicopter performance. The U.S. FATO dimensions are at least equal to the rotor diameter of the design single rotor helicopter and the area must be capable of providing ground effect. The U.S. does not have alternative design standards for water FATOs, elevated heliports, or helidecks.
3.1.3	The U.S. has a single gradient standard; i.e., 5 percent, except in fueling areas where the limit is 2 percent, which is applicable for all portions of heliports.
3.1.6 3.1.7* 3.1.8*	The U.S. does not require or provide criteria for clearways in its design standards. It does encourage ownership and clearing of the land underlying the innermost portion of the approach out to where the approach surface is 10.5 meters above the level of the take−off surface.
3.1.14 to 3.1.21	Safety areas are considered part of the take−off and landing area (or primary surface) in U.S. heliport design. The take−off and landing area of the U.S. design criteria, based on 2 rotor diameters, provides for the ICAO safety area; however, the surface does not have to be continuous with the FATO or be load bearing.
3.1.22	Taxiway widths are twice the undercarriage width of the design helicopter.
3.1.23	The U.S. requires 1.25 rotor diameters plus 2 meters of separation between helicopter ground taxiways.
3.1.24	The U.S. gradient standard for taxiways is a maximum of 5 percent.
3.1.32*	The U.S. sets no gradient standards for air taxiways.
3.1.33	The U.S. requires 1.5 rotor diameters of separation between hover or air taxiways.
3.1.34	The U.S. standards for air taxiways and air transit routes are combined as the standards for hover taxiways noted in paragraphs 3.1.23, 3.1.24 and 3.1.33.
3.1.35	The U.S. sets no maximum turning angle or minimum radius of turn on hover taxiways.
3.1.36	The U.S. gradient standard for aprons is a maximum of 5 percent except in fueling areas where it is 2 percent.
3.1.37	The U.S. criterion for object clearances is 1/3 rotor diameter or 3 meters, whichever is greater.
3.1.38	The U.S. standard for helipads (comparable to helicopter stands) is 1.5 times the undercarriage length or width, whichever is greater.

3.1.39	The U.S. standard for separation between FATO center and the centerline of the runway is 120 meters.
3.2.2	The U.S. does not apply either a performance related or an alternative design standard for elevated heliport facilities.
3.2.5 to 3.2.10	The U.S. does not use safety areas in its heliport design.
3.3 3.4	In the U.S., shipboard and relocatable off−shore helicopter ‘‘helideck’’ facilities are under the purview of the U.S. Coast Guard and utilize the International Maritime Organization (IMO) code. Fixed off−shore helideck facilities are under the purview of the Department of Interior based on their document 351DM2. Coastal water helideck facilities are under the purview of the individual affected States.
Chapter 4	**Obstacle Restriction and Removal**
4.1.1	The U.S. approach surface starts at the edge of the take−off and landing area.
4.1.2 a)	The U.S. approach surface width adjacent to the heliport take−off and landing area is a minimum of 2 rotor diameters.
4.1.2 b) 2)	The U.S. precision instrument approach surface flares from a width of 2 rotor diameters to a width of 1,800 meters at the 7,500 meters outer end. The U.S. does not use a note similar to the one that follows 4.1.4, as it does not differentiate between helicopter requirements on the basis of operational performance.
4.1.5	The outer limit of the U.S. transitional surfaces adjacent to the take−off and landing area is 76 meters from the centerline of the VFR approach/departure surfaces. The transitional surface width decreases to zero at a point 1,220 meters from the take−off and landing area. It does not terminate at an inner horizontal surface or at a predetermined height.
4.1.6	The U.S. transitional surfaces have a fixed width, 76 meters less the width of the take−off and landing area, from the approach centerline for visual operations and an outwardly flaring width to 450 meters for precision instrument operations. The U.S. does not use an inner horizontal surface nor terminate the transitional surfaces at a fixed/predetermined height.
4.1.7 b)	Since the U.S. includes the safety area in the take−off and landing area, the comparable elevation is at the elevation of the FATO.
4.1.9 through 4.1.20	The U.S. does not use the inner horizontal surface, the conical surface, or take−off climb surface described in these paragraphs or the note following paragraph 4.1.20 for heliport design.
4.1.21 through 4.1.25	The U.S. does not have alternative criteria for floating or fixed−in−place helidecks.
4.2	The U.S. has no requirement for a note similar to the one following the heading ‘‘Obstacle limitation requirements.’’
4.2.1	The U.S. criteria does not require a take−off climb surface or a conical obstacle limitation surface to establish a precision instrument approach procedure.
4.2.2	The U.S. criteria does not require a take−off climb surface or a conical obstacle limitation surface to establish a non−precision instrument approach procedure.
4.2.3	The U.S. criteria does not require a take−off climb obstacle limitation surface to establish a non−instrument approach procedure.
4.2.4*	The U.S. has no requirement for protective surfaces such as an inner horizontal surface or a conical surface.
4.2.5	The U.S. does not have tables for heliport design comparable to the ICAO Tables 4−1 to 4−4.
4.2.6	The U.S. subscribes to the intent of this paragraph to limit object heights in the heliport protective surfaces but uses fewer surfaces with different dimensions for those surfaces.
4.2.7*	The U.S. subscribes to the intent of this paragraph but uses different dimensional surfaces.
4.2.8	The U.S. criterion requires that a heliport have at least one approach and departure route and encourages multiple approaches separated by arcs of 90 to 180 degrees.
4.2.9*	The U.S. has no requirement that a heliport’s approach surfaces provide 95 percent usability.

4.2.10	Since the U.S. does not differentiate between surface level and elevated heliports, the comments to paragraphs 4.2.1 through 4.2.5 above apply.
4.2.11	The U.S. has no requirement for a take−off climb surface. It does require at least one approach/departure surface and encourages that there be as many approaches as is practical separated by arcs of 90 to 180 degrees.
4.2.12 through 4.2.22	Since the U.S. does not have alternative design criteria for helidecks or shipboard heliports, there are no comparable U.S. protective surface requirements.
Tables 4−1, 4−2, 4−3, 4−4	The U.S. does not have tables comparable to the ICAO Tables 4−1 to 4−4.
Chapter 5	**Visual Aids**
5.2.1	The U.S. does not have criteria for markings to be used in defining winching areas.
5.2.3.3	The U.S. maximum mass markings are specified in 1,000 pound units rather than tonnes or kilograms.
5.2.4.3	The U.S. criterion requires FATO markers but is not specific on the number or spacing between markers.
5.2.4.4	The U.S. criteria for FATO markers is not dimensionally specific.
5.2.6	The U.S. does not require, or have criteria for, marking an aiming point.
5.2.7.1	The U.S. does not require specific criteria for marking floating or off−shore fixed−in−place helicopter or helideck facilities.
5.2.8	The U.S. does not require marking the touchdown area.
5.2.9	The U.S. does not have criteria for heliport name markings.
5.2.10	The U.S. does not have a requirement to mark helideck obstacle−free sectors.
5.2.12.2	The U.S. criterion places the air taxiway markers along the edges of the routes rather than on the centerline.
5.2.12.3	The U.S. criterion for air taxiway markers does not specify the viewing area or height to width ratio.
5.3.2.3	The U.S. heliport beacon flashes white−green−yellow colors rather than a series of timed flashes.
5.3.2.5*	The U.S. criteria is not specific on the light intensity of the flash.
5.3.3.3	The U.S. criterion specifies a 300 meters approach light system configuration. The light bars are spaced at 30 meters intervals. The first two bars of the configuration are single lights, the next two bars are two lights, then two bars with three lights, then two bars with four lights, and finally two bars with five lights.
5.3.3.4	The U.S. approach light system uses aimed PAR−56 lights.
5.3.3.6	The U.S. heliport approach light system does not contain flashing lights.
5.3.5.2 a)	The U.S. requires an odd number of lights, but not less than three lights per side.
5.3.5.2 b)	The U.S. requires a minimum of eight lights for a circular FATO and does not specify the distance between lights.
5.3.5.4*	The U.S. criteria does not specify light distribution.
5.3.6	The U.S. does not have specific criteria for aiming point lights.
5.3.8	The U.S. does not have standards for winching area lighting.
Chapter 6	**Heliport Services**
6.1*	The U.S. requirements for rescue and fire fighting services at certificated heliports are found in 14 CFR Part 139. Criteria for other heliports are established by the National Fire Protection Association (NFPA) pamphlets 403 or 418, or in regulations of local fire departments.

*Indicates ICAO Recommended Practice

ANNEX 15 − AERONAUTICAL INFORMATION SERVICES	
Chapter 1	**General**
1.2.2.2	The U.S. utilizes Geoid−03 which is a component of the North American Vertical Datum of 1988 (NAVD 88).
1.1 ASHTAM	The U.S. doesn't have a series of NOTAM called ASHTAM, although notification procedures are written on handling of Volcanic Ash activity.
1.1 Danger area	"Danger area" is not used in reference to areas within the U.S. or in any of its possessions or territories.
1.1 Maneuvering area	Any locality either on land, water, or structures, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo.
1.1 Movement area	The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover−taxiing, air−taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.
1.1 Pre−flight Information Bulletin (PIB)	The US does not use the term PIB. However, current NOTAM information is gathered and available through different sources.
1.1 SNOWTAM	The US presents the information in a different manner via a NOTAM.
Chapter 3	**Aeronautical Information Management**
3.6.1	Current quality management system applies only to the National Flight Data Center.
Chapter 5	**Aeronautical Information Products and Services**
5.2.2	The FAA does not use PIBs, but does provide pertinent NOTAM information in plain language form every 28 days in a document called the Notices to Airmen Publication (NTAP).
5.2.5.1. f)	The US does not produce an Aircraft Parking / Docking Chart.
5.3.3.4.1	The United States does not publish the horizontal extent of obstacles.
Chapter 6	**Aeronautical Information Updates**
6.3.2.1	The U.S. does not routinely issue "trigger NOTAMs" referencing published material when an AIP amendment is issued.
6.3.2.3	The U.S. does not provide a NOTAM for accidental release of radioactive material, toxic chemicals, or volcanic ash deposition.

ANNEX 16 − ENVIRONMENTAL PROTECTION	
VOLUME I − AIRCRAFT NOISE	
Reference: Part 36 of Title 14 of the United States Code of Federal Regulations	
Chapter 1	
1.7	Each person who applies for a type certificate for an airplane covered by 14 CFR Part 36, irrespective of the date of application for the type certificate, must show compliance with Part 36.
Chapter 2	
2.1.1	For type design change applications made after 14 August 1989, if an airplane is a Stage 3 airplane prior to a change in type design, it must remain a Stage 3 airplane after the change in type design regardless of whether Stage 3 compliance was required before the change in type design.
2.3.1 a)	Sideline noise is measured along a line 450 meters from and parallel to the extended runway centerline for two− and three−engine aircraft; for four−engine aircraft, the sideline distance is 0.35 NM.
2.4.2	Noise level limits for Stage 2 derivative aircraft depend upon whether the engine by−pass ratio is less than two. If it is, the Stage 2 limits apply. Otherwise, the limits are the Stage 3 limits plus 3 dB or the Stage 2 value, whichever is lower.
2.4.2.2 b)	Take−off noise limits for three−engine, Stage 2 derivative airplanes with a by−pass ratio equal to or greater than 2 are 107 EPNdB for maximum weights of 385,000 kg (850,000 lb) or more, reduced by 4 dB per halving of the weight down to 92 EPNdB for maximum weights of 28,700 kg (63,177 lb) or less. Aircraft with a by−pass ratio less than 2 only need meet the Stage 2 limits.
2.5.1	Trade−off sum of excesses not greater than 3 EPNdB and no excess greater than 2 EPNdB.
2.6.1.1	For airplanes that do not have turbo−jet engines with a by−pass ratio of 2 or more, the following apply: a) four−engine airplanes − 214 meters (700 feet); b) all other airplanes − 305 meters (1,000 feet). For all airplanes that have turbo−jet engines with a by−pass ratio of 2 or more, the following apply: a) four−engine airplanes − 210 meters (689 feet); b) three−engine airplanes − 260 meters (853 feet); c) airplanes with fewer than three engines − 305 meters (1,000 feet). The power may not be reduced below that which will provide level flight for an engine inoperative or that will maintain a climb gradient of at least 4 percent, whichever is greater.
Chapter 3	
3.1.1	For type design change applications made after 14 August 1989, if an airplane is a Stage 3 airplane prior to a change in type design, it must remain a Stage 3 airplane after the change in type design regardless of whether Stage 3 compliance was required before the change in type design.
3.3.1 a) 2)	The U.S. has no equivalent provision in 14 CFR Part 36.
3.3.2.2	A minimum of two microphones symmetrically positioned about the test flight track must be used to define the maximum sideline noise. This maximum noise may be assumed to occur where the aircraft reaches 305 meters (1,000 feet). 14 CFR Part 36 does not require symmetrical measurements to be made at each and every point for propeller−driven airplane sideline noise determination.
3.6.2.1 c)	Under 14 CFR Part 36, during each test take−off, simultaneous measurements should be made at the sideline noise measuring stations on each side of the runway and also at the take−off noise measuring station. If test site conditions make it impractical to simultaneously measure take−off and sideline noise, and if each of the other sideline measurement requirements is met, independent measurements may be made of the sideline noise under simulated flight path techniques. If the reference flight path includes a power cutback before the maximum possible sideline noise level is developed, the reduced sideline noise level, which is the maximum value developed by the simulated flight path technique, must be the certificated sideline noise value.

3.6.2.1 d)	14 CFR Part 36 specifies the day speeds and the acoustic reference speed to be the minimum approved value of V_2 +10 kt, or the all−engines operating speed at 35 feet (for turbine−engine powered airplanes) or 50 feet (for reciprocating−engine powered airplanes), whichever speed is greater as determined under the regulations constituting the type certification basis of the airplane. The test must be conducted at the test day speeds ±3 kt.
3.7.4	If a take−off test series is conducted at weights other than the maximum take−off weight for which noise certification is requested: a) at least one take−off test must be at or above that maximum weight; b) each take−off test weight must be within +5 or −10 percent of the maximum weight. If an approach test series is conducted at weights other than the maximum landing weight for which certification is requested: a) at least one approach test must be conducted at or above that maximum weight; b) each test weight must exceed 90 percent of the maximum landing weight. Total EPNL adjustment for variations in approach flight path from the reference flight path and for any difference between test engine thrust or power and reference engine thrust or power must not exceed 2 EPNdB.
Chapter 5	
5.1.1	Applies to all large transport category aircraft (as they do to all subsonic turbo−jet aircraft regardless of category). Commuter category aircraft, propeller−driven airplanes below 8,640 kg (19,000 lb) are subject to 14 CFR Part 36, Appendix F or to Appendix G, depending upon the date of completion of the noise certification tests.
Chapter 6	
6.1.1	Applies to new, all propeller−driven airplane types below 19,000 lb (8,640 kg.) in the normal, commuter, utility, acrobatic, transport, or restricted categories for which the noise certification tests are completed before 22 December 1988.
Chapter 8	
General	14 CFR Part 36 (Section 36.1 (h)) defines Stage 1 and Stage 2 noise levels and Stage 1 and Stage 2 helicopters. These definitions parallel those used in 14 CFR Part 36 for turbo−jets and are used primarily to simplify the acoustical change provisions in Section 36.11. 14 CFR Part 36 (Section 36.805(c)) provides for certain derived versions of helicopters for which there are no civil prototypes to be certificated above the noise level limits.
8.1.1 a)	Applicable to new helicopter types for which application for an original type certificate was made on or after 6 March 1988.
8.1.1 b)	Applicable only to “acoustical changes” for which application for an amended or supplemental type certificate was made on or after 6 March 1988.
8.4	14 CFR Part 36 Appendix H specifies a slightly different rate of allowable maximum noise levels as a function of helicopter mass. The difference can lead to a difference in the calculated maximum noise limits of 0.1 EPNdB under certain roundoff condition.
8.6.3.1 b)	Does not include the V_{NE} speeds.
8.7	14 CFR Part 36 Appendix H does not permit certain negative corrections. Annex 16 has no equivalent provision.
8.7.4	EPNL correction must be less than 2.0 EPNdB for any combination of lateral deviation, height, approach angle and, in the case of flyover, thrust or power. Corrections to the measured data are required if the tests were conducted below the reference weight. Corrections to the measured data are required if the tests were conducted at other than reference engine power.
8.7.5	The rotor speed must be maintained within one percent of the normal operating RPM during the take−off procedure.
8.7.8	The helicopter shall fly within ±10° from the zenith for approach and take−off, but within ±5° from the zenith for horizontal flyover.

Chapter 10	
General	Exception from acoustical change rule given for aircraft with flight time prior to 1 January 1955 and land configured aircraft reconfigured with floats or skis.
10.1.1	Applies to new, amended, or supplemental type certificates for propeller−driven airplanes not exceeding 8,640 kg (19,000 lb) for which noise certification tests have not been completed before 22 December 1988.
10.4	The maximum noise level is a constant 73 dBA up to 600 kg (1,320 lb). Above that weight, the limit increases at the rate of 1 dBA/75kg (1 dBA/165 lb) up to 85 dBA at 1,500 kg (3,300 lb) after which it is constant up to and including 8,640 kg (19,000 lb).
10.5.2, second phase, d)	For variable−pitch propellers, the definition of engine power is different in the second segment of the reference path. Maximum continuous installed power instead of maximum power is used.
Chapter 11	
11.1	14 CFR Part 36 Appendix J was effective 11 September 1992 and applies to those helicopters for which application for a type certificate was made on or after 6 March 1986.
11.4	14 CFR Part 36 Appendix J specifies a slightly different rate of allowable maximum noise levels as a function of helicopter mass. The difference can lead to a difference in the calculated maximum noise limits of 0.1 EPNdB under certain roundoff condition.
11.6	14 CFR Part 36 Appendix J prescribes a ±15 meter limitation on the allowed vertical deviation about the reference flight path. Annex 16 has no equivalent provision.
PART V	
General	No comparable provision exists in U.S. Federal Regulations. Any local airport proprietor may propose noise abatement operating procedures to the FAA which reviews them for safety and appropriateness.
Appendix 1	
General	Sections 3, 8, and 9 of Appendix 1 which contain the technical specifications for equipment, measurement and analysis and data correction for Chapter 2 aircraft and their derivatives differ in many important aspects from the corresponding requirements in Appendix 2 which has been updated several times. 14 CFR Part 36 updates have generally paralleled those of Appendix 2 of Annex 16. These updated requirements are applicable in the U.S. to both Stage 2 and Stage 3 aircraft and their derivatives.
2.2.1	A minimum of two microphones symmetrically positioned about the test flight track must be used to define the maximum sideline noise. This maximum noise may be assumed to occur where the aircraft reaches 305 meters (1,000 feet), except for four−engine, Stage 2 aircraft for which 439 meters (1,440 feet) may be used.
2.2.2	No obstructions in the cone defined by the axis normal to the ground and the half−angle 80° from the axis.
2.2.3 c)	Relative humidity and ambient temperature over the sound path between the aircraft and 10 meters above the ground at the noise measuring site is such that the sound attenuation in the 8 kHz one−third octave band is not greater than 12 dB/100 meters and the relative humidity is between 20 and 95 percent. However, if the dew point and dry bulb temperature used for obtaining relative humidity are measured with a device which is accurate to within one−half a degree Celsius, the sound attenuation rate shall not exceed 14 dB/100 meters in the 8 kHz one−third octave band.
2.2.3 d)	Test site average wind not above 12 kt and average cross−wind component not above 7 kt.
2.3.4	The aircraft position along the flight path is related to the recorded noise 10 dB downpoints.
2.3.5	At least one take−off test must be a maximum take−off weight and the test weight must be within +5 or −10 percent of maximum certificated take−off weight.
Appendix 2	
2.2.1	A minimum of two symmetrically placed microphones must be used to define the maximum sideline noise at the point where the aircraft reaches 305 meters.

2.2.2	When a multiple layering calculation is required, the atmosphere between the airplane and the ground shall be divided into layers. These layers are not required to be of equal depth, and the maximum layer depth must be 100 meters.
2.2.2 b)	14 CFR Part 36 specifies that the lower limit of the temperature test window is 36 degrees Fahrenheit (2.2 degrees Celsius). Annex 16 provides 10 degrees Celsius as the lower limit for the temperature test window. 14 CFR Part 36 does not specify that the airport facility used to obtain meteorological condition measurements be within 2,000 meters of the measurement site.
2.2.2 c)	14 CFR Part 36 imposes a limit of 14 dB/100 meters in the 8 kHz one−third octave band when the temperature and dew point are measured with a device which is accurate to within one−half a degree Celsius.
2.2.3	14 CFR Part 36 requires that the limitations on the temperature and relative humidity test window must apply over the whole noise propagation path between a point 10 meters above the ground and the helicopter. Annex 16 specifies that the limitations on the temperature and relative humidity test window apply only at a point 10 meters above the ground. 14 CFR Part 36 requires that corrections for sound attenuation must be based on the average of temperature and relative humidity readings at 10 meters and the helicopter. Annex 16 implies that the corrections for sound absorption are based on the temperature and relative humidity measured at 10 meters only.
3.2.6	No equivalent requirement.
3.4.5	For each detector/integrator the response to a sudden onset or interruption of a constant sinusoidal signal at the respective one−third octave band center frequency must be measured at sampling times 0.5, 1.0, 1.5, and 2.0 seconds after the onset or interruption. The rising responses must be the following amounts before the steady−state level: 0.5 seconds: 4.0 ± 1.0 dB 1.0 seconds: 1.75 ± 0.75 dB 1.5 seconds: 1.0 ± 0.5 dB 2.0 seconds: 0.6 ± 0.5 dB
3.4.5 (Note 1)	No equivalent provision in 14 CFR Part 36.
3.5.2	No equivalent requirement.
5.4	14 CFR Part 36 requires that the difference between airspeed and groundspeed shall not exceed 10 kt between the 10 dB down time period.
8.4.2	14 CFR Part 36 specifies a value of −10 in the adjustment for duration correction. Annex 16 specifies a value of −7.5.
9.1.2, 9.1.3	14 CFR Part 36 always requires use of the integrated procedure if the corrected take−off or approach noise level is within 1.0 dB of the applicable noise limit.
Appendix 6	
4.4.1	The microphone performance, not its dimensions, is specified. The microphone must be mounted 1.2 meters (4 feet) above ground level. A windscreen must be employed when the wind speed is in excess of 9 km/h (5 kt).
5.2.2 a)	Reference conditions are different. Noise data outside the applicable range must be corrected to 77 degrees F and 70 percent humidity.
5.2.2 c)	There is no equivalent provision in 14 CFR Part 36. Fixed−pitch propeller−driven airplanes have a special provision. If the propeller is fixed−pitch and the test power is not within 5 percent of reference power, a helical tip Mach number correction is required.

ANNEX 16 − ENVIRONMENTAL PROTECTION	
VOLUME II − AIRCRAFT ENGINE EMISSIONS	
Chapter 1	
	The U.S. currently has regulations prohibiting intentional fuel venting from turbojet, turbofan and turboprop aircraft, but we do not now have a regulation preventing the intentional fuel venting from helicopter engines.

ANNEX 17 − SECURITY − SAFEGUARDING INTERNATIONAL CIVIL AVIATION AGAINST ACTS OF UNLAWFUL INTERFERENCE
There are no reportable differences between U.S. regulations and the Standards and Recommended Practices contained in this Annex.

ANNEX 18 − THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR
Adopted by the ICAO Council 6/26/81
Effective Date: 1/1/83
Applicability Date: 1/1/84
(Note: Differences are to be filed with ICAO by 6/1/83).

Chapter 1	**General**
1.2.2.2	The U.S. utilizes Geoid−03 which is a component of the North American Vertical Datum of 1988 (NAVD 88).
1.1 ASHTAM	The U.S. doesn't have a series of NOTAM called ASHTAM, although notification procedures are written on handling of Volcanic Ash activity.
1.1 Danger area	"Danger area" is not used in reference to areas within the U.S. or in any of its possessions or territories.
1.1 Maneuvering area	Any locality either on land, water, or structures, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo.
1.1 Movement area	The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover−taxiing, air−taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.
1.1 Pre−flight Information Bulletin (PIB)	The US does not use the term PIB. However, current NOTAM information is gathered and available through different sources.
1.1 SNOWTAM	The US presents the information in a different manner via a NOTAM.
Chapter 3	**Aeronautical Information Management**
3.6.1	Current quality management system applies only to the National Flight Data Center.
Chapter 5	**Aeronautical Information Products and Services**
5.2.2	The FAA does not use PIBs, but does provide pertinent NOTAM information in plain language form every 28 days in a document called the Notices to Airmen Publication (NTAP).
5.2.5.1. f)	The US does not produce an Aircraft Parking / Docking Chart.
5.3.3.4.1	The United States does not publish the horizontal extent of obstacles.
Chapter 6	**Aeronautical Information Updates**
6.3.2.1	The U.S. does not routinely issue "trigger NOTAMs" referencing published material when an AIP amendment is issued.
6.3.2.3	The U.S. does not provide a NOTAM for accidental release of radioactive material, toxic chemicals, or volcanic ash deposition.

ANNEX 19 − SAFETY MANAGEMENT	
Chapter 3	**State Safety Management Responsibilities**
3.3.2.3	The U.S. has not established criteria for international general aviation operators of large or turbojet aeroplanes to implement an SMS.

PANS − OPS − 8168/611	
VOLUME 1	
PART III	
Table III−1−1 and Table III−1−2	Max speeds for visual maneuvering (Circling)" must not be applied to circling procedures in the U.S. Comply with the airspeeds and circling restrictions in ENR 1.5, paragraphs 11.1 and 11.6, in order to remain within obstacle protection areas.

PART IV	
1.2.1	The airspeeds contained in ENR 1.5 shall be used in U.S. **CONTROLLED AIRSPACE**.

PAN − ABC − DOC 8400
Differences between abbreviations used in U.S. AIP, International NOTAMs Class I and Class II, and Notices to Airmen Publication and ICAO PANS − ABC are listed in GEN 2.2**.** For other U.S. listings of abbreviations (contractions) for general use, air traffic control, and National Weather Service (NWS), which differ in some respects, see U.S. publication Contractions Handbook (FAA Order JO 7340.2). In addition, various U.S. publications contain abbreviations of terms used therein, particularly those unique to that publication.

INTST	intensity
IRU	Inertial Reference Unit
J	
J−bar	jet runway barrier
K	
KHZ	kilohertz
L	
L	left (used only to designate rwys; e.g., rwy 12L)
ICAO:	L − left/runway identification/locator
LAT	latitude
LB	pounds (weight)
LCTD	located
LDA	localizer type directional aid
ICAO:	LDA − landing distance available LLZ − localizer
LGTD	lighted
LMM	compass locator at ILS middle marker
LNDG	landing
ICAO:	LDG − landing
LOC	localizer
ICAO:	LOC−localizer or locally or location or located
LOM	compass locator at ILS outer marker
LONG	longitude
LRCO	limited remote communications outlet
M	
MAA	maximum authorized altitude
MAG	magnetic
MAINT	maintain, maintenance
ICAO:	MNTN − maintain; MAINT − maintenance
MALS	medium intensity approach light system
MALSR	medium intensity approach light system with runway alignment indicator lights
MAP	missed approach point
ICAO:	MAP − aeronautical maps and charts
MAX	maximum
MCA	minimum crossing altitude
MDA	minimum descent altitude
MEA	minimum en route IFR altitude
MHZ	megahertz
MIN	minimum or minute
MIRL	medium intensity runway edge lights
MM	middle marker ILS
MOCA	minimum obstruction clearance altitude

MRA	minimum reception altitude
MSA	minimum safe altitude
MSL	mean sea level
MUNI	municipal
N	
N	north
NA	not authorized
NATL	national
NAVAID	navigational aid
NDB	nondirectional radio beacon
NM	nautical mile(s)
NOPT	no procedure turn required
NR	number
O	
OBSTN	obstruction
OCA	Oceanic Control Area
ODALS	omnidirectional approach lighting system
OM	outer marker ILS
OPER	operate
OPN	operation
ICAO:	OPR − operator/operate/operative/ operating/operational
ORIG	original
OTS	out of service
OVRN	overrun
P	
PAR	precision approach radar
PAT	pattern
PBCS	Performance−Based Communication and Surveillance
PCN	pavement classification number
PERMLY	permanently
POB	persons on board
PPR	prior permission required
PROC	procedure
Q	
QUAD	quadrant
R	
R	right (used only to designate rwys; e.g., rwy 19R)
ICAO:	R − received (acknowledgement of receipt)/red/restricted area (followed by identification)/right (runway identification)

RADAR	radio detection and ranging
RAPCON	Radar Approach Control facility (USAF, USN and USMC)
RATCF	Radar Air Traffic Control Facility (USN and USMC)
RCAG	remote communications air/ground
RCLS	runway centerline lights system
ICAO:	RCL − runway centerline
RCO	remote communications outlet
RCV	receive
RCVG	receiving
REIL	runway end identifier lights
REQ	request
RNAV	area navigation
RRP	runway reference point
REL	runway entrance lights
RLLS	Runway Lead−in Light System
RSTRD	restricted
RTS	returned to service
RVR	runway visual range
RVRM	runway visual range midpoint
RVRR	runway visual range rollout
RVRT	runway visual range touchdown
RWSL	runway status light
RWY	runway
ICAO:	RWY−runway
S	
S	runway weight bearing capacity for aircraft with single−wheel type landing gear
S	south
ICAO:	S − south/south latitude
SDF	simplified directional facility
SEC	second
SFC	surface
SFL	sequenced flashing lights
SI	straight−in approach
ICAO:	STA − straight−in approach
SM	statute mile(s)
SR	sunrise
SS	sunset
ICAO:	SS − sandstorm
SSALF	simplified short approach lighting system with sequenced flashers
SSALR	simplified short approach lighting system with runway alignment indicator lights
SSALS	simplified short approach lighting system
STOL	short take−off and landing runway
ICAO:	STOL − short takeoff and landing
SVC	service
ICAO:	SVC − service message
T	
T	true (after a bearing)
ICAO:	T − temperature
TAC	terminal area chart
TACAN	UHF navigational facility − omnidirectioal course and distance information
ICAO:	TACAN − VHF tactical navigational aid
TAS	true air speed
ICAO:	TMA − TERMINAL CONTROL AREA
TCH	threshold crossing height
TFC	traffic
THL	takeoff hold lights
THR	threshold
THRU	through
ICAO:	THRU − through/I am connecting you to another switchboard
TKOF	take−off
TEMPRLY	temporarily
TMPRY	temporary/temporarily
ICAO:	TEMPO − Temporary/temporarily
TPA	traffic pattern altitude
TRACON	terminal radar approach control
TRML	terminal
TRSA	terminal radar service area
TSNT	transient
TWR	tower
TWY	taxiway
U	
UAS	Unmanned Aircraft System
UAVBL	unavailable
UHF	ultra high frequency
UNLGTD	unlighted

UNMON	unmonitored
UNSKED	unscheduled
UNUSBL	unusable
ICAO:	U/S − unserviceable
V	
VASI	visual approach slope indicator
VCNTY	vicinity
VDP	visual descent point
VFR	visual flight rules
VHF	very high frequency
VOR	VHF omni−directional radio range
VORTAC	Combined VOR and TACAN system (collocated)
VOT	a VOR Receiver testing facility
VSBY	visibility
ICAO:	VIS − visibility
W	
W	west
WEA	weather
ICAO:	WX − weather
WKDAY	weekday
WKEND	weekend
WPT	waypoint
WS	Weather Service
WT	weight
Z	
Z	Coordinated Universal Time
ICAO:	UTC − Coordinated Universal Time

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
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

COUNTRY	CITY
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 that 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, and broadcast aviation weather and aeronautical information. In Alaska, designated FSSs also 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 a preflight briefing to international locations with which the U.S. International NOTAM office exchanges information.

PHRASEOLOGY−
FREDERICK UNICOM CESSNA EIGHT ZERO ONE TANGO FOXTROT 10 MILES SOUTHEAST DESCENDING THROUGH (altitude) LANDING FREDERICK, REQUEST WIND AND RUNWAY INFORMATION FREDERICK.

FREDERICK TRAFFIC CESSNA EIGHT ZERO ONE TANGO FOXTROT ENTERING DOWNWIND/BASE/FINAL (as appropriate) FOR RUNWAY ONE NINER FULL STOP/TOUCH−AND−GO FREDERICK.

FREDERICK TRAFFIC CESSNA EIGHT ZERO ONE TANGO FOXTROT CLEAR OF RUNWAY ONE NINER FREDERICK.

b) Outbound

PHRASEOLOGY−
FREDERICK UNICOM CESSNA EIGHT ZERO ONE TANGO FOXTROT (location on airport) TAXIING TO RUNWAY ONE NINE, REQUEST WIND AND TRAFFIC INFORMATION FREDERICK.

FREDERICK TRAFFIC CESSNA EIGHT ZERO ONE TANGO FOXTROT DEPARTING RUNWAY ONE NINE. “REMAINING IN THE PATTERN” OR “DEPARTING THE PATTERN TO THE (direction) (as appropriate)” FREDERICK.

9.3 IFR Approaches/Ground Vehicle Operations

9.3.1 IFR Approaches. When operating in accordance with an IFR clearance and ATC approves a change to the advisory frequency, make an expeditious change to the CTAF and employ the recommended traffic advisory procedures.

9.3.2 Ground Vehicle Operation. Airport ground vehicles equipped with radios should monitor the CTAF frequency when operating on the airport movement area and remain clear of runways/taxiways being used by aircraft. Radio transmissions from ground vehicles should be confined to safety−related matters.

9.3.3 Radio Control of Airport Lighting Systems. Whenever possible, the CTAF will be used to control airport lighting systems at airports without operating control towers. This eliminates the need for pilots to change frequencies to turn the lights on and allows a continuous listening watch on a single frequency. The CTAF is published on the instrument approach chart and in other appropriate aeronautical information publications.

TBL GEN 3.3−20
Summary of Recommended Communication Procedures

			COMMUNICATION/BROADCAST PROCEDURES		
	Facility at Airport	**Frequency Use**	**Outbound**	**Inbound**	**Practice Instrument Approach**
1.	UNICOM (No Tower or FSS)	Communicate with UNICOM station on published CTAF frequency (122.7; 122.8; 122.725; 122.975; or 123.0). If unable to contact UNICOM station, use self-announce procedures on CTAF.	Before taxiing and before taxiing onto the runway for departure.	10 miles out; entering downwind, base, and final; leaving the runway.	
2.	No Tower, FSS, or UNICOM	Self-announce on MULTICOM frequency 122.9.	Before taxiing and before taxiing onto the runway for departure.	10 miles out; entering downwind, base, and final; leaving the runway.	Departing final approach fix (name) or on final approach segment inbound.
3.	No Tower in operation, FSS open (Alaska only)	Communicate with FSS on CTAF frequency.	Before taxiing and before taxiing onto the runway for departure.	10 miles out; entering downwind, base, and final; leaving the runway.	Approach completed/ terminated.
4.	FSS closed (No Tower)	Self-announce on CTAF.	Before taxiing and before taxiing onto the runway for departure.	10 miles out; entering downwind, base, and final; leaving the runway.	
5.	Tower or FSS not in operation	Self-announce on CTAF.	Before taxiing and before taxiing onto the runway for departure.	10 miles out; entering downwind, base, and final; leaving the runway.	
6.	Designated CTAF Area (Alaska Only)	Self-announce on CTAF designated on chart or Chart Supplement Alaska.	Before taxiing and before taxiing on the runway for departure until leaving designated area.	When entering designated CTAF area.	

GEN 3.4 Communication Service

1. Responsible Authority

1.1 The authority responsible for the administration of communications services in the U.S. is the Federal Aviation Administration, Communication, Navigation, Surveillance, and Infrastructure.

Postal Address:
Federal Aviation Administration
Communications, Navigation, Surveillance, and Infrastructure (ARN−1)
400 7th Street, SW
Washington, D.C. 20590
AFTN Address: KDCAYAYX
Commercial Telegraphic Address:
ACIVAIR Washington DC
Telex: 892−562

2. Area of Responsibility

2.1 Communications services are available on a continuous basis without charge to the user. The Air Traffic Services Division is responsible for the establishment of the operational requirements of the U.S. communications system. Responsibility for the day to day operation of these services resides with the local air traffic facility. Enquiries or complaints regarding any communications services or facilities should be referred to the relevant air traffic facility or to the Federal Aviation Administration, Air Traffic Operations Services, as appropriate.

3. Types of Services

3.1 Radio Navigation Service

3.1.1 Various types of air navigation aids are in use today, each serving a special purpose. These aids have varied owners and operators, namely: the Federal Aviation Administration, the military services, private organizations; and individual states and foreign governments. The Federal Aviation Administration has the statutory authority to establish, operate, and maintain air navigation facilities and to prescribe standards for the operation of any of these aids which are used by both civil and military aircraft for instrument flight in federally controlled airspace. These aids are tabulated in the Chart Supplement U.S. by State.

3.1.2 Pilots should be aware of the possibility of momentary erroneous indications on cockpit displays when the primary signal generator for a ground−based navigational transmitter (for example, a glideslope, VOR, or nondirectional beacon) is inoperative. Pilots should disregard any navigation indication, regardless of its apparent validity, if the particular transmitter was identified by NOTAM or otherwise as unusable or inoperative.

3.1.3 The following types of radio navigation aids are provided in the U.S.:

3.1.3.1 VHF Direction−Finding (VHF−DF).

3.1.3.2 LF Non−Directional Beacon (NDB).

3.1.3.3 VHF Omni−Directional Radio Range (VOR).

3.1.3.4 Distance Measuring Equipment (DME).

3.1.3.5 Tactical Air Navigation (TACAN).

3.1.3.6 Instrument Landing System (ILS).

3.1.3.7 Final Approach Simplified Directional Facility (SDF).

3.1.3.8 Precision Approach Radar (PAR) at certain military aerodromes.

3.1.3.9 Global Positioning System (GPS).

3.1.4 NAVAID Service Volumes

3.1.4.1 The FAA publishes Standard Service Volumes (SSVs) for most NAVAIDs. The SSV is a three−dimensional volume within which the FAA ensures that a signal can be received with adequate signal strength and course quality, and is free from interference from other NAVAIDs on similar frequencies (e.g., co−channel or adjacent−channel interference). However, the SSV signal protection does not include potential blockage from terrain or obstructions. The SSV is principally intended for off−route navigation, such as proceeding direct to or from a VOR when not on a published instrument procedure or route. Navigation on published instrument procedures (e.g., approaches or departures) or routes (e.g., Victor routes) may use NAVAIDs outside of the SSV, when Extended Service Volume (ESV) is approved, since adequate signal strength, course quality, and freedom from interference are verified by the FAA prior to the publishing of the instrument procedure or route.

NOTE−
A conical area directly above the NAVAID is generally not usable for navigation.

3.1.4.2 A NAVAID will have service volume restrictions if it does not conform to signal strength and course quality standards throughout the published SSV. Service volume restrictions are first published in Notices to Airmen (NOTAMs) and then with the alphabetical listing of the NAVAIDs in the Chart Supplement. Service volume restrictions do not generally apply to published instrument procedures or routes unless published in NOTAMs for the affected instrument procedure or route.

3.1.4.3 VOR/DME/TACAN Standard Service Volumes (SSV).

a) The three original SSVs are shown in FIG GEN 3.4−1 and are designated with three classes of NAVAIDs: Terminal (T), Low (L), and High (H). The usable distance of the NAVAID depends on the altitude Above the Transmitter Height (ATH) for each class. The lower edge of the usable distance when below 1,000 feet ATH is shown in FIG GEN 3.4−2 for Terminal NAVAIDs and in FIG GEN 3.4−3 for Low and High NAVAIDs.

FIG GEN 3.4−1
Original Standard Service Volumes

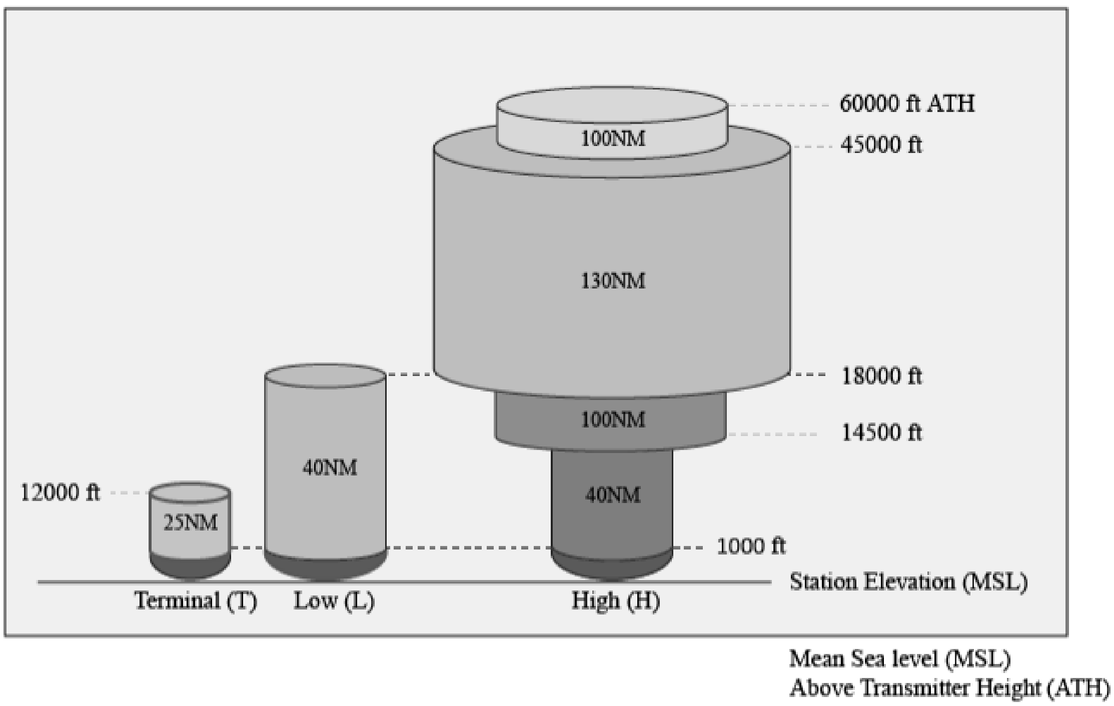


FIG GEN 3.4−2
Lower Edge of the Terminal Service Volume (in altitude ATH)

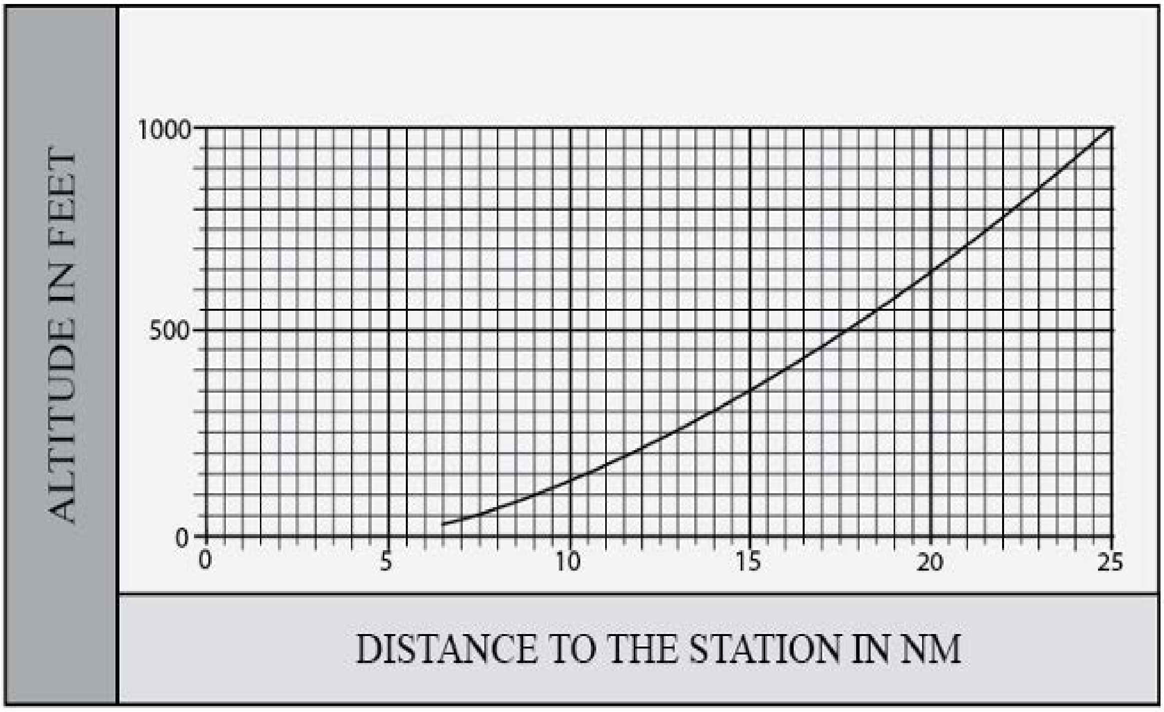
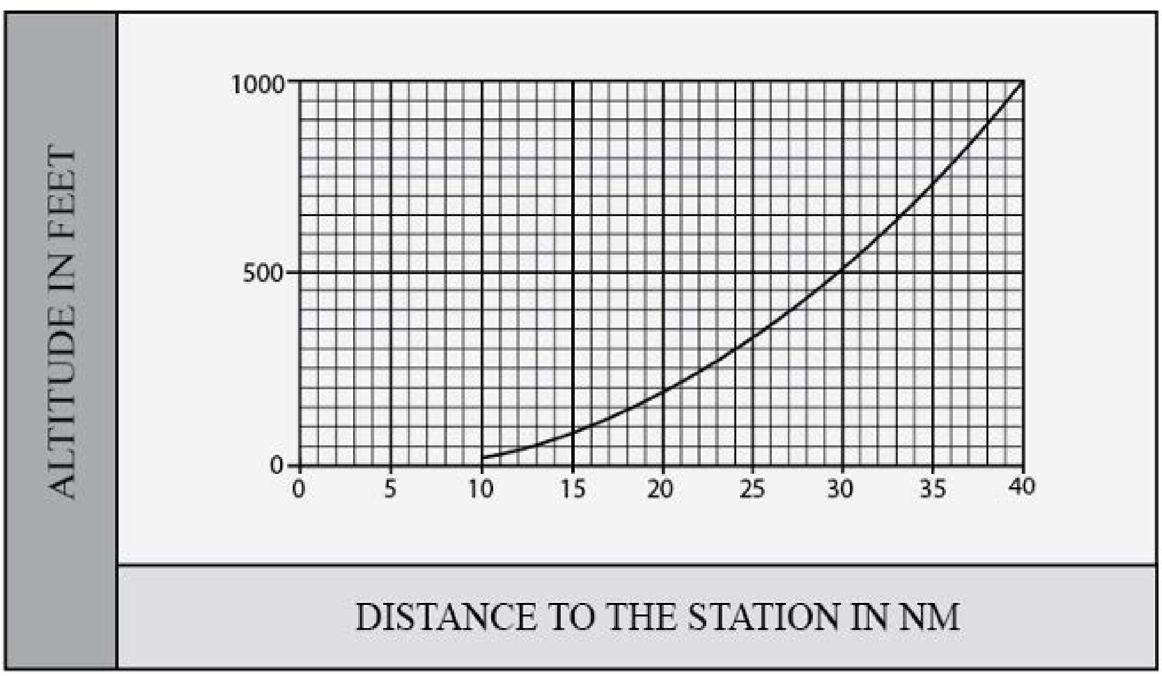
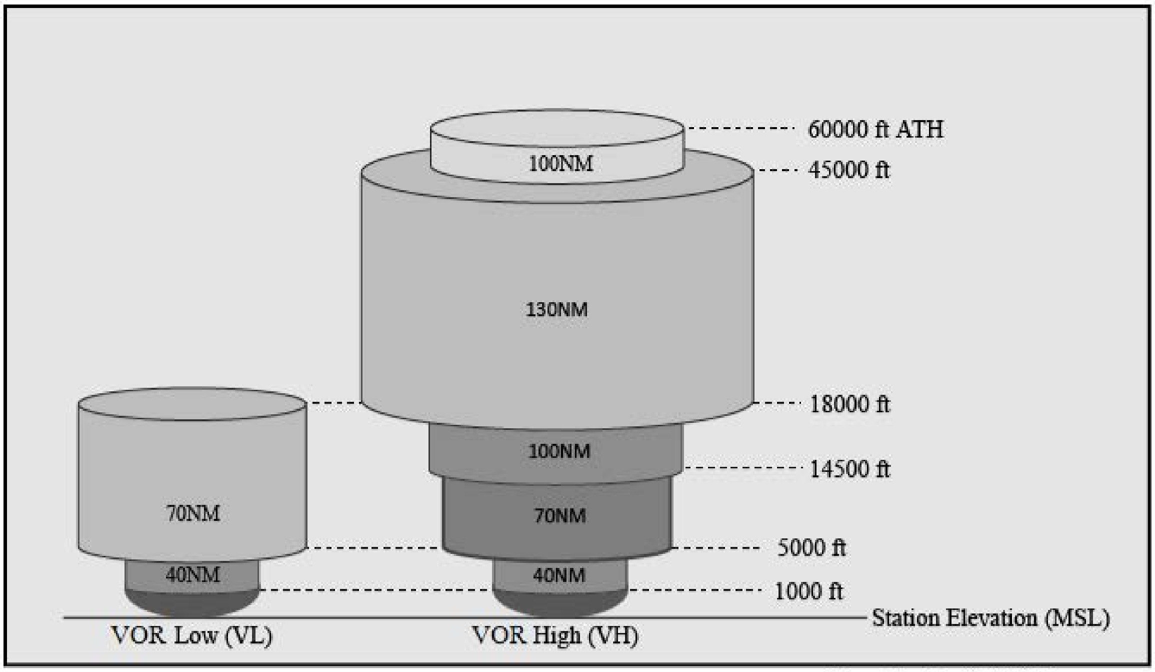


FIG GEN 3.4−3
Lower Edge of Low and High Service Volumes (in altitude ATH)



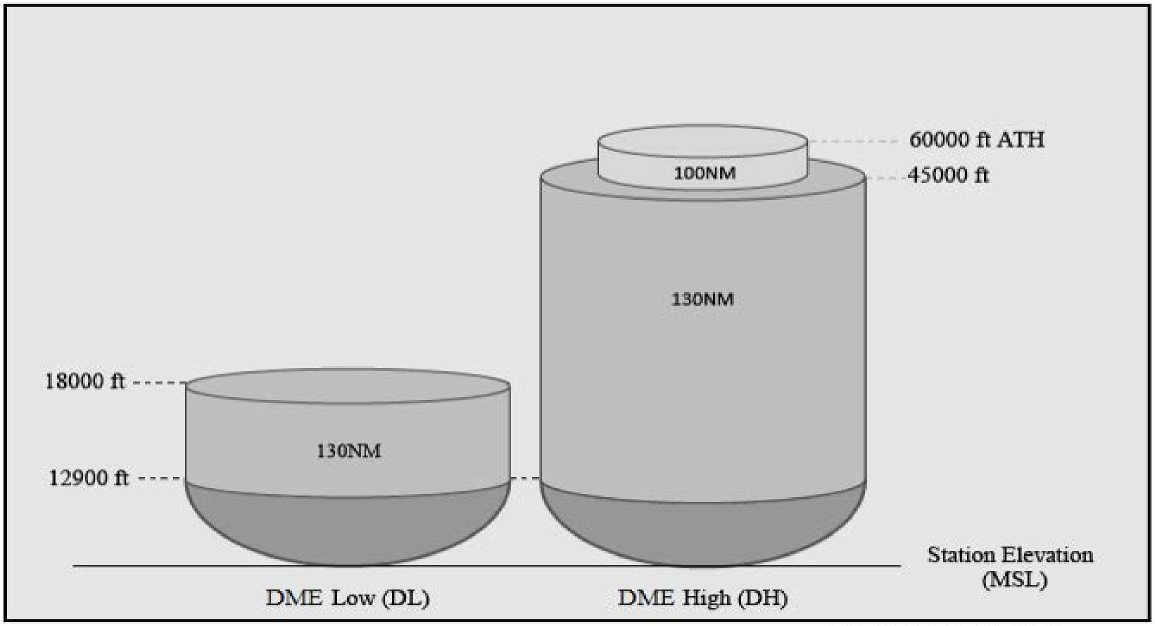
b) With the progression of navigation capabilities to Performance Based Navigation (PBN), additional capabilities for off−route navigation are necessary. For example, the VOR MON (See ENR 4.1, paragraph 2.6) requires the use of VORs at 5,000 feet AGL, which is beyond the original SSV ranges. Additionally, PBN procedures using DME require extended ranges. As a result, the FAA created four additional SSVs. Two of the new SSVs are associated with VORs: VOR Low (VL) and VOR High (VH), as shown in FIG GEN 3.4−4. The other two new SSVs are associated with DME: DME Low (DL) and DME High (DH), as shown in FIG GEN 3.4−5. The SSV at altitudes below 1,000 feet for the VL and VH are the same as FIG GEN 3.4−3. The SSVs at altitudes below 12,900 feet for the DL and DH SSVs correspond to a conservative estimate of the DME radio line of sight (RLOS) coverage at each altitude (not including possible terrain blockage).

FIG GEN 3.4−4
New VOR Service Volumes



Mean Sea level (MSL)
Above Transmitter Height (ATH)

FIG GEN 3.4−5
New DME Service Volumes



Mean Sea level (MSL)
Above Transmitter Height (ATH)

NOTE−

1. *In the past, NAVAIDs at one location typically all had the same SSV. For example, a VORTAC typically had a High (H) SSV for the VOR, the TACAN azimuth, and the TACAN DME, or a Low (L) or Terminal (T) SSV for all three. A VOR/DME typically had a High (H), Low (L), or Terminal (T) for both the VOR and the DME. A common SSV may no longer be the case at all locations. A VOR/DME, for example, could have an SSV of VL for the VOR and DH for the DME, or other combinations.*

2. *The TACAN azimuth will only be classified as T, L, or H.*

c) TBL GEN 3.4−1 is a tabular summary of the VOR, DME, and TACAN NAVAID SSVs, not including altitudes below 1,000 feet ATH for VOR and TACAN Azimuth, and not including ranges for altitudes below 12,900 feet for TACAN and DME.

TBL GEN 3.4−1
VOR/DME/TACAN Standard Service Volumes

SSV Designator	Altitude and Range Boundaries
T (Terminal)	From 1,000 feet ATH up to and including 12,000 feet ATH at radial distances out to 25 NM.
L (Low Altitude)	From 1,000 feet ATH up to and including 18,000 feet ATH at radial distances out to 40 NM.
H (High Altitude)	From 1,000 feet ATH up to and including 14,500 feet ATH at radial distances out to 40 NM. From 14,500 ATH up to and including 60,000 feet at radial distances out to 100 NM. From 18,000 feet ATH up to and including 45,000 feet ATH at radial distances out to 130 NM.
VL (VOR Low)	From 1,000 feet ATH up to but not including 5,000 feet ATH at radial distances out to 40 NM. From 5,000 feet ATH up to but not including 18,000 feet ATH at radial distances out to 70 NM.
VH (VOR High)	From 1,000 feet ATH up to but not including 5,000 feet ATH at radial distances out to 40 NM. From 5,000 feet ATH up to but not including 14,500 feet ATH at radial distances out to 70 NM. From 14,500 ATH up to and including 60,000 feet at radial distances out to 100 NM. From 18,000 feet ATH up to and including 45,000 feet ATH at radial distances out to 130 NM.
DL (DME Low)	For altitudes up to 12,900 feet ATH at a radial distance corresponding to the LOS to the NAVAID. From 12,900 feet ATH up to but not including 18,000 feet ATH at radial distances out to 130 NM
DH (DME High)	For altitudes up to 12,900 feet ATH at a radial distance corresponding to the LOS to the NAVAID. From 12,900 ATH up to and including 60,000 feet at radial distances out to 100 NM. From 12,900 feet ATH up to and including 45,000 feet ATH at radial distances out to 130 NM.

3.1.4.4 Nondirectional Radio Beacon (NDB) SSVs. NDBs are classified according to their intended use. The ranges of NDB service volumes are shown in TBL GEN 3.4−2. The distance (radius) is the same at all altitudes for each class**.**

TBL GEN 3.4−2
NDB Service Volumes

Class	Distance (Radius) (NM)
Compass Locator	15
MH	25
H	50*
HH	75
**Service ranges of individual facilities may be less than 50 nautical miles (NM). Restrictions to service volumes are first published as a Notice to Airmen and then with the alphabetical listing of the NAVAID in the Chart Supplement U.S.*	

3.1.5 NAVAIDs with Voice

3.1.5.1 Voice equipped en route radio navigational aids are under the operational control of either a Flight Service Station (FSS) or an approach control facility. Facilities with two−way voice communication available are indicated in the Chart Supplement U.S. and aeronautical charts.

3.1.5.2 Unless otherwise noted on the chart, all radio navigation aids operate continuously except during shutdowns for maintenance. Hours of operation of facilities not operating continuously are annotated on charts and in the Chart Supplement U.S.

3.2 Mobile Service

3.2.1 The aeronautical stations (Airport Traffic Control Towers, Air Route Traffic Control Centers, and Flight Service Stations) maintain a continuous watch on their assigned frequencies during the published hours of service unless otherwise notified. An aircraft should normally communicate with the air−ground control radio station which exercises control in the area in which it is flying. Aircraft should maintain continuous watch on the appropriate frequency of the control station and should not abandon watch, except in an emergency, without informing the control radio station.

3.2.2 Flight Service Stations (FSSs) are allocated frequencies for different functions. For Airport Advisory Service, the pilot should contact the FSS on 123.6 MHz. Individually assigned FSS frequencies are listed in the Chart Supplement U.S. under the FSS entry. If you are in doubt as to what frequency to use to contact an FSS, transmit on 122.1 MHz and advise the FSS of the frequency on which you are receiving.

3.3 Fixed Service

3.3.1 Messages to be transmitted over the Aeronautical Fixed Service are accepted only if they satisfy the requirements of:

3.3.1.1 ICAO Annex 10, Vol. II, Chapter 3, paragraph 3.3.

3.3.1.2 Are prepared in the form specified in Annex 10.

3.3.1.3 The text of an individual message does not exceed 200 groups.

3.3.2 General aircraft operating messages, Class B traffic, including reservation messages pertaining to flights scheduled to depart within 72 hours, must not be acceptable for transmission over U.S. government operated telecommunications circuits except in those cases where it has been determined by the U.S. that adequate non−government facilities are not available.

3.4 Broadcast Service

3.4.1 The following meteorological broadcasts are available for the use of aircraft in flight:

3.4.1.1 Sub−Area Meteorological Broadcast (Volmet).

3.4.1.2 VHF RTF Meteorological Broadcasts.

3.4.2 Full details of broadcast service are given in GEN 3.5, Meteorological Services.

3.4.3 All broadcast services to aircraft are provided in the English language only.

4. Aeronautical Fixed Services

4.1 General

4.1.1 All U.S. ATC facilities have the ability to communicate with all other ATS facilities via either telephone or other domestic telecommunications systems. Circuit diagrams depicting these connections are not available for this publication due to the number of ATS facilities available in the U.S.

4.2 The Domestic Telecommunications Network

4.2.1 The U.S. Domestic telecommunications network is an automated system operating through the National Airspace Data Interchange Network (NADIN) in Atlanta, GA, and Salt Lake City, UT. All Flight Service Stations (FSS) and Air Route Traffic Control Centers (ARTCC) connect through the NATCOM. All FSS and ARTCC facilities have both transmit and receive capabilities.

4.2.2 Airport Air Traffic Control Towers (ATCT) and Approach Control (A/C) Facilities do not connect with this system. Messages originating from or destined to these facilities are relayed through the associated FSS. Associated FSSs for these facilities are listed in the Chart Supplement U.S.

4.2.3 Airport administrative offices, airport managers or airport administrative officials do not normally connect with the domestic telecommunications network. Urgent messages destined to these facilities must be forwarded to the associated FSS for relay or the message must be sent through commercial telegraphic systems.

4.3 The International Message Network (Aeronautical Fixed Telecommunications Network−AFTN)

4.3.1 AFTN messages originating from outside the U.S. domestic telecommunications system must be prepared in accordance with ICAO procedures. All incoming messages are received by NADIN and relayed to the addressed facility through automated procedures. The automated system will interpret the international address group and automatically forward the message via the domestic system to the addressee. For example, a message addressed KIKKYFYX will be accepted by AFTN and relayed to IKK (Kankakee FSS). The Kankakee FSS will manually relay this message to the intended recipient when necessary. Intended recipients are to be addressed in the first line of the message text.

4.3.2 All international flight plans entering the U.S. system must adhere to ICAO format. These flight plans are to be forwarded, via AFTN, to each affected, U.S. controlled, Flight Information Region (FIR) or Air Route Traffic Control Center (ARTCC) outside the continental U.S. (e.g., Miami FIR, San Juan, P.R. ARTCC) or the first FIR/ARTCC for flights entering the continental U.S. (e.g., New York FIR/ARTCC). If the flight plan content is acceptable, it is entered into the ARTCC system and is forwarded, automatically, via ARTCC computer, to all subsequently affected domestic ARTCCs. Flight plans which cannot be processed are rejected at the point of entry into the U.S. system and the originator is queried. Format adherence, once the flight plan is in the ARTCC system, is assured since each of the ARTCCs are automated facilities. Each subsequent ARTCC computer, however, will process incoming flight plans according to the requested routing. Flight plans can be rejected by any ARTCC due to errors in routing. Rejected flight plans, regardless of reason or point of rejection, are held in suspense until the needed clarification is received by the ARTCC facility.

4.4 Radio Communications Phraseology and Techniques

4.4.1 General

4.4.1.1 Radio communications are a critical link in the ATC system. The link can be a strong bond between pilot and controller − or it can be broken with surprising speed and disastrous results. Discussion herein provides basic procedures for new pilots and also highlights safe operating concepts for all pilots.

4.4.1.2 The single, most important thought in pilot−controller communications is understanding. It is essential, therefore, that pilots acknowledge each radio communication with ATC by using the appropriate aircraft call sign. Brevity is important, and contacts should be kept as brief as possible, but the controller must know what you want to do before he/she can properly carry out his/her control duties. And you, the pilot, must know exactly what he/she wants you to do. Since concise phraseology may not always be adequate, use whatever words are necessary to get your message across. Pilots are to maintain vigilance in monitoring air traffic control radio communications frequencies for potential traffic conflicts with their aircraft especially when operating on an active runway and/or when conducting a final approach to landing.

4.4.1.3 All pilots will find the Pilot/Controller Glossary very helpful in learning what certain words or phrases mean. Good phraseology enhances safety and is the mark of a professional pilot. Jargon, chatter and "CB" slang have no place in ATC communications. The Pilot/Controller Glossary is the same glossary used in the ATC controller's handbook. We recommend that it be studied and reviewed from time to time to sharpen your communication skills.

4.4.2 Radio Technique

4.4.2.1 Listen before you transmit. Many times you can get the information you want through ATIS or by monitoring the frequency. Except for a few situations where some frequency overlap occurs, if you hear someone else talking, the keying of your transmitter will be futile and you will probably jam their receivers causing them to repeat their call. If you have just changed frequency, pause for your receiver to tune, listen, and make sure the frequency is clear.

4.4.2.2 Think before keying your transmitter. Know what you want to say and if it is lengthy; e.g., a flight plan or IFR position report, jot it down. (But do not lock your head in the cockpit.)

4.4.2.3 The microphone should be very close to your lips and after pressing the mike button, a slight pause may be necessary to be sure the first word is transmitted. Speak in a normal conversational tone.

4.4.2.4 When you release the button, wait a few seconds before calling again. The controller or FSS specialist may be jotting down your number, looking for your flight plan, transmitting on a different frequency, or selecting his/her transmitter to your frequency.

4.4.2.5 Be alert to the sounds or lack of sounds in your receiver. Check your volume, recheck your frequency, and make sure that your microphone is not stuck in the transmit position. Frequency blockage can, and has, occurred for extended periods of time due to unintentional transmitter operation. This type of interference is commonly referred to as a "stuck mike,'' and controllers may refer to it in this manner when attempting to assign an alternate frequency. If the assigned frequency is completely blocked by this type of interference, use the procedures described in paragraph 12., Two−Way Radio Communications Failure.

4.4.2.6 Be sure that you are within the performance range of your radio equipment and the ground station equipment. Remote radio sites do not always transmit and receive on all of a facilities' available frequencies, particularly with regard to VOR sites where you can hear but not reach a ground station's receiver. Remember that higher altitude increases the range of VHF "line of sight" communications.

4.4.3 Aircraft Call Signs

4.4.3.1 Improper use of call signs can result in pilots executing a clearance intended for another aircraft. Call signs should never be abbreviated on an initial contact or at any time when other aircraft call signs have similar numbers/sounds or identical letters/numbers, (e.g., Cessna 6132F, Cessna 1622F, Baron 123F, Cherokee 7732F, etc.).

EXAMPLE−
As an example, assume that a controller issues an approach clearance to an aircraft at the bottom of a holding stack and an aircraft with a similar call sign (at the top of the stack) acknowledges the clearance with the last two or three numbers of his/her call sign. If the aircraft at the bottom of the stack did not hear the clearance and intervene, flight safety would be affected, and there would be no reason for either the controller or pilot to suspect that anything is wrong. This kind of "human factors" error can strike swiftly and is extremely difficult to rectify.

4.4.3.2 Pilots, therefore, must be certain that aircraft identification is complete and clearly identified before taking action on an ATC clearance. ATC specialists will not abbreviate call signs of air carrier or other civil aircraft having authorized call signs. ATC specialists may initiate abbreviated call signs of other aircraft by using the prefix and the last three digits/letters of the aircraft identification after communications are established. The pilot may use the abbreviated call sign in subsequent contacts with the ATC specialist. When aware of similar/identical call signs, ATC specialists will take action to minimize errors by emphasizing certain numbers/letters, by repeating the entire call sign, repeating the prefix, or by asking pilots to use a different call sign temporarily. Pilots should use the phrase "Verify clearance for (your complete call sign)" if doubt exists concerning proper identity.

4.4.3.3 Civil aircraft pilots should state the aircraft type, model or manufacturer's name followed by the digits/letters of the registration number. When the aircraft manufacturer's name or model is stated, the prefix "N" is dropped.

EXAMPLE−
"Bonanza Six Five Five Golf," "Douglas One One Zero," "Breezy Six One Three Romeo Experimental" (Omit "Experimental" after initial contact).

4.4.3.4 Air taxi or other commercial operators not having FAA authorized call signs should prefix their normal identification with the phonetic word "Tango."

EXAMPLE−
"Tango Aztec Two Four Six Four Alpha."

4.4.3.5 Air carriers and commuter air carriers having FAA authorized call signs should identify themselves by stating the complete call sign (using group form for the numbers) and the word "super" or "heavy" if appropriate.

EXAMPLE−
"United Twenty−five, Midwest Commuter Seven Eleven."

4.4.3.6 Military aircraft use a variety of systems including serial numbers, word call signs and combinations of letters/numbers.

EXAMPLE−
"Army Copter 48931" "Air Force 61782" "REACH 31792" "Pat 157" "AirEvac 17652" "Navy Golf Alpha Kilo 21" "Marine 4 Charlie 36"

4.4.3.7 Air Ambulance Flights. Because of the priority afforded air ambulance flights in the ATC system, extreme discretion is necessary when using the term "MEDEVAC." It is only intended for those missions of an urgent medical nature and to be utilized only for that portion of the flight requiring priority handling. It is important for ATC to be aware of a flight's MEDEVAC status, and it is the pilot's responsibility to ensure that this information is provided to ATC.

a) To receive priority handling from ATC, the pilot must verbally identify the flight in radio transmissions by stating "MEDEVAC" followed by the FAA authorized call sign (ICAO 3LD, US Special, or local) or the aircraft civil "N" registration numbers/letters.

EXAMPLE−
If the aircraft identification of the flight indicates DAL51, the pilot states "MEDEVAC Delta Fifty One".

If the aircraft identification of the flight indicates MDSTR1, the pilot states "MEDEVAC Medstar One".

If the aircraft identification of the flight indicates N123G or LN123G, the pilot states "MEDEVAC One Two Three Golf".

b) If requested by the pilot, ATC will provide additional assistance (e.g., landline notifications) to expedite ground handling of patients, vital organs, or urgently needed medical materials. When possible make these requests to ATC via methods other than through ATC radio frequencies.

c) MEDEVAC flights may include:

1) Civilian air ambulance flights responding to medical emergencies (e.g., first call to an accident scene, carrying patients, organ donors, organs, or other urgently needed lifesaving medical material).

2) Air carrier and air taxi flights responding to medical emergencies. The nature of these medical emergency flights usually concerns the transportation of urgently needed lifesaving medical materials or vital organs, but can include inflight medical emergencies. It is imperative that the company/pilot determine, by the nature/urgency of the specific medical cargo, if priority ATC assistance is required.

d) When filing a flight plan, pilots may include "L" for "MEDEVAC" with the aircraft registration letters/digits and/or include "MEDEVAC" in Item 11 (Remarks) of the flight plan or Item 18 (Other Information) of an international flight plan. However, ATC will only use these flight plan entries for informational purposes or as a visual indicator. ATC will only provide priority handling when the pilot verbally identifies the "MEDEVAC" status of the flight as described above (in subparagraph 4.4.3.7a).

NOTE−
Civilian air ambulance aircraft operating VFR and without a filed flight plan are eligible for priority handling in accordance with subparagraph c.1 above.

REFERENCE−
AIP, ENR 1.10, Flight Planning (Restriction, Limitation or Advisory Information)

e) ATC will also provide priority handling requested. These aircraft may file "HOSP" or "AIR EVAC" in either Item 11 (Remarks) of the flight plan or Item 18 of an international flight plan. For aircraft identification in radio transmissions, civilian pilots will use normal call signs when filing "HOSP" and military pilots will use the "EVAC" call sign.

4.4.3.8 Student Pilots Radio Identification. The FAA desires to help the student pilot in acquiring sufficient practical experience in the environment in which he/she will be required to operate. To receive additional assistance while operating in areas of concentrated air traffic, a student pilot need only identify himself/herself as a student pilot during his/her initial call to an FAA radio facility. For instance, "Dayton Tower, Fleetwing One Two Three Four, Student Pilot." This special identification will alert FAA air traffic control personnel and enable them to provide the student pilot with such extra assistance and consideration as he/she may need. It is recommended that student pilots identify themselves as such, on initial contact with each clearance delivery prior to taxiing, ground control, tower, approach and departure control frequency, or FSS contact.

4.4.4 Description of Interchange or Leased Aircraft

4.4.4.1 Controllers issue traffic information based on familiarity with airline equipment and color/markings. When an air carrier dispatches a flight using another company's equipment and the pilot does not advise the terminal ATC facility, the possible confusion in aircraft identification can compromise safety.

4.4.4.2 Pilots flying an "interchange" or "leased" aircraft not bearing the colors/markings of the company operating the aircraft should inform the terminal ATC facility on first contact the name of the operating company and trip number, followed by the company name as displayed on the aircraft, and aircraft type.

EXAMPLE−
AIR CAL 311, United (Interchange/Lease), Boeing 727.

4.4.5 Ground Station Call Signs

4.4.5.1 Pilots, when calling a ground station, should begin with the name of the facility being called followed by the type of the facility being called, as indicated in the following examples.

TBL GEN 3.4−3
Calling a Ground Station

Facility	Call Sign
Airport UNICOM	"Shannon UNICOM"
FAA Flight Service Station	"Chicago Radio"
Airport Traffic Control Tower	"Augusta Tower"

Clearance Delivery Position (IFR)	"Dallas Clearance Delivery"
Ground Control Position in Tower	"Miami Ground"
Radar or Nonradar Approach Control Position	"Oklahoma City Approach"
Radar Departure Control Position	"St. Louis Departure"
FAA Air Route Traffic Control Center	"Washington Center"

4.5 Radio Communications Phraseology

4.5.1 Phonetic Alphabet

4.5.1.1 The International Civil Aviation Organization (ICAO) phonetic alphabet is used by FAA personnel when communications conditions are such that the information cannot be readily received without their use. Air traffic control facilities may also request pilots to use phonetic letter equivalents when aircraft with similar sounding identifications are receiving communications on the same frequency. Pilots should use the phonetic alphabet when identifying their aircraft during initial contact with air traffic control facilities. Additionally, use the phonetic equivalents for single letters and to spell out groups of letters or difficult words during adverse communications conditions.

TBL GEN 3.4−4

Character	Morse Code	Telephony	Phonic (Pronunciation)
A	• —	Alfa	(AL−FAH)
B	— • • •	Bravo	(BRAH−VOH)
C	— • — •	Charlie	(CHAR−LEE) or (SHAR−LEE)
D	— • •	Delta	(DELL−TAH)
E	•	Echo	(ECK−OH)
F	• • — •	Foxtrot	(FOKS−TROT)
G	— — •	Golf	(GOLF)
H	• • • •	Hotel	(HOH−TEL)
I	• •	India	(IN−DEE−AH)
J	• — — —	Juliett	(JEW−LEE−ETT)
K	— • —	Kilo	(KEY−LOH)
L	• — • •	Lima	(LEE−MAH)
M	— —	Mike	(MIKE)
N	— •	November	(NO−VEM−BER)
O	— — —	Oscar	(OSS−CAH)
P	• — — •	Papa	(PAH−PAH)
Q	— — • —	Quebec	(KEH−BECK)
R	• — •	Romeo	(ROW−ME−OH)
S	• • •	Sierra	(SEE−AIR−RAH)
T	—	Tango	(TANG−GO)
U	• • —	Uniform	(YOU−NEE−FORM) or (OO−NEE−FORM)
V	• • • —	Victor	(VIK−TAH)
W	• — —	Whiskey	(WISS−KEY)
X	— • • —	Xray	(ECKS−RAY)
Y	— • — —	Yankee	(YANG−KEY)
Z	— — • •	Zulu	(ZOO−LOO)
1	• — — — —	One	(WUN)
2	• • — — —	Two	(TOO)
3	• • • — —	Three	(TREE)
4	• • • • —	Four	(FOW−ER)
5	• • • • •	Five	(FIFE)
6	— • • • •	Six	(SIX)
7	— — • • •	Seven	(SEV−EN)
Character	**Morse Code**	**Telephony**	**Phonic (Pronunciation)**
8	— — — • •	Eight	(AIT)
9	— — — — •	Nine	(NIN−ER)
0	— — — — —	Zero	(ZEE−RO)

4.5.2 Figures

4.5.2.1 Figures indicating hundreds and thousands in round numbers, as for ceiling heights, and upper wind levels up to 9,900, must be spoken in accordance with the following:

EXAMPLE−
1. *500 . . . . five hundred*

2. *4,500 . . . . . . four thousand five hundred*

4.5.2.2 Numbers above 9,900 must be spoken by separating the digits preceding the word "thousand."

EXAMPLE−
1. *10,000 . . . . . one zero thousand*

2. *13,500 . . . . . one three thousand five hundred*

4.5.2.3 Transmit airway or jet route numbers as follows:

EXAMPLE−
1. *V12 . . . . Victor Twelve*

2. *J533 . . . . J Five Thirty− Three*

4.5.2.4 All other numbers must be transmitted by pronouncing each digit.

EXAMPLE−
10 . . . . one zero

4.5.2.5 When a radio frequency contains a decimal point, the decimal point is spoken as "Point."

EXAMPLE−
122.1 . . . . one two two point one

NOTE−
ICAO procedures require the decimal point be spoken as "decimal." The FAA will honor such usage by military aircraft and all other aircraft required to use ICAO procedures.

4.5.3 Altitudes and Flight Levels

4.5.3.1 Up to but not including 18,000 feet MSL, by stating the separate digits of the thousands, plus the hundreds.

EXAMPLE−
1. *12,000 . . . . . one two thousand*
2. *12,500 . . . . . one two thousand five hundred*

4.5.3.2 At and above 18,000' MSL (FL 180) by stating the words "flight level" followed by the separated digits of the flight level.

EXAMPLE−
1. *190 . . . . Flight Level One Niner Zero*
2. *275 . . . . Flight Level Two Seven Five*

4.5.4 Directions

4.5.4.1 The three digits of a magnetic course, bearing, heading or wind direction, should always be magnetic. The word "true" must be added when it applies.

EXAMPLE−
1. *(Magnetic course) 005 . . . . . . zero zero five*
2. *(True course) 050 . . . . zero five zero true*
3. *(Magnetic bearing) 360 . . . . . three six zero*
4. *(Magnetic heading) 100 . . . . . heading one zero zero*
5. *(Wind direction) 220 . . . . wind two two zero*

4.5.5 Speeds

4.5.5.1 The separate digits of the speed are to be followed by the word "KNOTS" except that controllers may omit the word "KNOTS" when using speed adjustment procedures (e.g., "REDUCE/INCREASE SPEED TO TWO FIVE ZERO").

EXAMPLE−
1. *(Speed) 250 . . . . two five zero knots*
2. *(Speed) 190 . . . . one niner zero knots*

4.5.5.2 The separate digits of the Mach number are to be preceded by the word "Mach."

EXAMPLE−
1. *(Mach number) 1.5 . . . . Mach one point five*
2. *(Mach number) 0.64 . . . . Mach point six four*
3. *(Mach number) 0.7 . . . . Mach point seven*

4.5.6 Time

4.5.6.1 FAA uses Coordinated Universal Time (UTC) for all operations. The word "local" or the time zone equivalent must be used to denote local when local time is given during radio and telephone communications. The term "ZULU" may be used to denote UTC.

EXAMPLE−
0920 UTC . . . . zero niner two zero,
zero one two zero pacific or local,
or one twenty AM

4.5.6.2 To convert from Standard Time to UTC:

TBL GEN 3.4−5
Standard Time to Coordinated Universal Time

Eastern Standard Time	Add 5 hours
Central Standard Time	Add 6 hours
Mountain Standard Time	Add 7 hours
Pacific Standard Time	Add 8 hours
Alaska Standard Time	Add 9 hours
Hawaii Standard Time	Add 10 hours

NOTE−
For daylight time, subtract 1 hour.

4.5.6.3 A reference may be made to local daylight or standard time utilizing the 24−hour clock system. The hour is indicated by the first two figures and the minutes by the last two figures.

EXAMPLE−
1. *0000 . . . . zero zero zero zero*
2. *0920 . . . . zero niner two zero*

4.5.6.4 Time may be stated in minutes only (two figures) in radio telephone communications when no misunderstanding is likely to occur.

4.5.6.5 Current time in use at a station is stated in the nearest quarter minute in order that pilots may use this information for time checks. Fractions of a quarter minute or more, but less than eight seconds more, are stated as the preceding quarter minute; fractions of a quarter minute of eight seconds or more are stated as the succeeding quarter minute.

EXAMPLE−
1. *0929:05 . . . . time, zero niner two niner*

2. *0929:10 . . . . time, zero niner two niner and one−quarter*

4.5.7 Communications with Tower when Aircraft Transmitter/Receiver or Both are Inoperative

4.5.7.1 Arriving Aircraft

a) Receiver Inoperative. If you have reason to believe your receiver is inoperative, remain outside or above Class D airspace until the direction and flow of traffic has been determined; then, advise the tower of your type aircraft, position, altitude, intention to land, and request that you be controlled with light signals. When you are approximately 3 to 5 miles from the airport, advise the tower of your position and join the airport traffic pattern. From this point on, watch the tower for light signals. Thereafter, if a complete pattern is made, transmit your position when downwind and/or turning base leg.

b) Transmitter Inoperative. Remain outside or above Class D airspace until the direction and flow of traffic has been determined, then join the airport traffic pattern. Monitor the primary local control frequency as depicted on sectional charts for landing or traffic information, and look for a light signal which may be addressed to your aircraft. During hours of daylight, acknowledge tower transmissions or light signals by rocking your wings. At night, acknowledge by blinking the landing or navigational lights.

NOTE−
To acknowledge tower transmissions during daylight hours, hovering helicopters will turn in the direction of the controlling facility and flash the landing light. While in flight, helicopters should show their acknowledgment of receiving a transmission by making shallow banks in opposite directions. At night, helicopters will acknowledge receipt of transmissions by flashing either the landing or the search light.

c) Transmitter and Receiver Inoperative. Remain outside or above Class D airspace until the direction and flow of traffic has been determined, then join the airport traffic pattern and maintain visual contact with tower to receive light signals.

4.5.7.2 Departing Aircraft. If you experience radio failure prior to leaving the parking area, make every effort to have the equipment repaired. If you are unable to have the malfunction repaired, call the tower by telephone and request authorization to depart without two−way radio communications. If tower authorization is granted, you will be given departure information and requested to monitor the tower frequency or watch for light signals, as appropriate. During daylight hours, acknowledge tower transmissions or light signals by moving the ailerons or rudder. At night, acknowledge by blinking the landing or navigation lights. If radio malfunction occurs after departing the parking area, watch the tower for light signals or monitor tower frequency.

4.5.8 Contact Procedures

4.5.8.1 Initial Contact

a) The terms "initial contact" or "initial call up" mean the first radio call you make to a given facility, or the first call to a different controller/FSS specialist within a facility. Use the following format:

1) Name of facility being called.

2) Your full aircraft identification as filed in the flight plan or as discussed under aircraft call signs.

3) When operating on an airport surface, state your position.

4) The type of message to follow or your request if it is short; and

5) The word "Over," if required.

EXAMPLE−
1. *"New York Radio, Mooney Three One One Echo."*

2. *"Columbia Ground, Cessna Three One Six Zero Foxtrot, south ramp, I−F−R Memphis."*

3. *"Miami Center, Baron Five Six Three Hotel, request VFR traffic advisories."*

b) Many FSSs are equipped with remote communications outlets and can transmit on the same frequency at more than one location. The frequencies available at specific locations are indicated on charts above FSS communications boxes. To enable the specialist to utilize the correct transmitter, advise the location and frequency on which you expect a reply.

EXAMPLE−
St. Louis FSS can transmit on frequency 122.3 at either Farmington, MO, or Decatur, IL. If you are in the vicinity of Decatur, your callup should be "Saint Louis radio, Piper Six Niner Six Yankee, receiving Decatur One Two Two Point Three."

c) If radio reception is reasonably assured, inclusion of your request, your position or altitude, the phrase "Have numbers" or "Information Charlie received" (for ATIS) in the initial contact helps decrease radio frequency congestion. Use discretion and do not overload the controller with information he/she does not need. When you do not get a response from the ground station, recheck your radios or use another transmitter and keep the next contact short.

EXAMPLE−
"Atlanta Center, Duke Four One Romeo, request VFR traffic advisories, Twenty Northwest Rome, Seven Thousand Five Hundred, over."

4.5.9 Initial Contact when your Transmitting and Receiving Frequencies are Different

4.5.9.1 If you are attempting to establish contact with a ground station and you are receiving on a different frequency than that transmitted, indicate the VOR name or the frequency on which you expect a reply. Most FSSs and control facilities can transmit on several VOR stations in the area. Use the appropriate FSS call sign as indicated on charts.

EXAMPLE−
New York FSS transmits on the Kennedy, Deer Park and Calverton VORTACs. If you are in the Calverton area, your callup should be "New York Radio, Cessna Three One Six Zero Foxtrot, receiving Riverhead VOR, over."

4.5.9.2 If the chart indicates FSS frequencies above the VORTAC or in FSS communications boxes, transmit or receive on those frequencies nearest your location.

4.5.9.3 When unable to establish contact and you wish to call any ground station, use the phrase "any radio (tower) (station), give Cessna Three One Six Zero Foxtrot a call on (frequency) or (VOR)." If an emergency exists or you need assistance, so state.

4.5.10 Subsequent Contacts and Responses to Call Up from a Ground Facility. Use the same format as used for initial contact except you should state your message or request with the call up in one transmission. The ground station name and the word "Over" may be omitted if the message requires an obvious reply and there is no possibility for misunderstandings. You should acknowledge all callups or clearances unless the controller of FSS specialist advises otherwise. There are some occasions when the controller must issue time−critical instructions to other aircraft and he/she may be in a position to observe your response, either visually or on radar. If the situation demands your response, take appropriate action or immediately advise the facility of any problem. Acknowledge with your aircraft identification, either at the beginning or at the end of your transmission, and one of the words "Wilco, Roger, Affirmative, Negative" or other appropriate remarks; e.g., "Piper Two One Four Lima, Roger." If you have been receiving services such as VFR traffic advisories and you are leaving the area or changing frequencies, advise the ATC facility and terminate contact.

4.6 Acknowledgement of Frequency Changes

4.6.1 When advised by ATC to change frequencies, acknowledge the instruction. If you select the new frequency without an acknowledgement, the controller's workload is increased because he/she has no way of knowing whether you received the instruction or have had radio communications failure.

4.6.2 At times, a controller/specialist may be working a sector with multiple frequency assignments. In order to eliminate unnecessary verbiage and to free the controller/specialist for higher priority transmissions, the controller/specialist may request the pilot "(Identification), change to my frequency 123.4." This phrase should alert the pilot that he/she is only changing frequencies, not controller/specialist, and that initial call−up phraseology may be abbreviated.

EXAMPLE−
"United Two Twenty−two on One Two Three Point Four" or "One Two Three Point Four, United Two Twenty−two."

4.6.3 Compliance with Frequency Changes. When instructed by ATC to change frequencies, select the new frequency as soon as possible unless instructed to make the change at a specific time, fix, or altitude. A delay in making the change could result in an untimely receipt of important information. If you are instructed to make the frequency change at a specific time, fix, or altitude, monitor the frequency you are on until reaching the specified time, fix, or altitudes unless instructed otherwise by ATC.

5. Communications for VFR Flights

5.1 FSSs and Supplemental Weather Service Locations (SWSLs) are allocated frequencies for different functions; for example, in Alaska, certain FSSs provide Local Airport Advisory on 123.6 MHz or other frequencies which can be found in the Chart Supplement U.S. If you are in doubt as to what frequency to use, 122.2 MHz is assigned to the majority of FSSs as a common en route simplex frequency.

NOTE−
In order to expedite communications, state the frequency being used and the aircraft location during initial call−up.

EXAMPLE−
Dayton radio, November One Two Three Four Five on one two two point two, over Springfield V−O−R, over.

5.2 Certain VOR voice channels are being utilized for recorded broadcasts; for example, ATIS. These services and appropriate frequencies are listed in the Chart Supplement U.S. On VFR flights, pilots are urged to monitor these frequencies. When in contact with a control facility, notify the controller if you plan to leave the frequency to monitor these broadcasts.

6. Over−water Flights Radio Procedure

6.1 Pilots should remember that there is a need to continuously guard the VHF emergency frequency 121.5 MHz when on long over−water flights, except when communications on other VHF channels, equipment limitations, or cockpit duties prevent simultaneous guarding of two channels. Guarding of 121.5 MHz is particularly critical when operating in proximity to flight information region (FIR) boundaries; for example, operations on Route R220 between Anchorage and Tokyo, since it serves to facilitate communications with regard to aircraft which may experience in−flight emergencies, communications, or navigational difficulties. (Reference ICAO Annex 10, Vol II Paras. 5.2.2.1.1.1 and 5.2.2.1.1.2.)

7. Radio Communications and Navigation Facilities

7.1 A complete listing of air traffic radio communications facilities and frequencies and radio navigation facilities and frequencies is contained in the Chart Supplement U.S. Similar information for the Pacific and Alaskan areas is contained in the Pacific and Alaskan Supplements (See GEN 3.2, Aeronautical Charts).

8. U.S. Aeronautical Telecommunications Services

8.1 The following services are available for aircraft engaged in international or overseas flight.

8.2 The aeronautical voice communication stations listed are available to and utilized by the U.S. Federal Aviation Administration Air Traffic Control Centers for air traffic control purposes.

8.3 The frequencies in use will depend upon the time of day or night and conditions which affect radio wave propagation. Voice communications handled on a single channel simplex basis (i.e., with the aircraft and the ground station using the same frequency for transmission and reception) unless otherwise noted in remarks.

8.4 The stations will remain on continuous watch for aircraft within their communications areas and, when practicable, will transfer this watch to another station when the aircraft reaches the limit of the communications area.

8.5 Stations listed below which are designated "FAA" are operated by the U.S. Federal Aviation Administration. Stations designated "ARINC" are operated by Aeronautical Radio, Incorporated, 2551 Riva Road, Annapolis, MD 21401. Contact the Aviation Voice Services Support Section at 410−266−4430, E:Mail AGOPS@arinc.com or cable HDQXGXA. (See TBL GEN 3.4−6.)

8.6 All users of the North Atlantic HF MWARA services should consult International NOTAMS and ICAO Regional Supplementary Procedures, Document 7030, for current procedures concerning the operational use of the North Atlantic HF families. At present, procedures for the distribution of HF communications traffic in the North Atlantic are:

8.6.1 All aircraft registered in the hemisphere west of 30W should use family alpha on the southern routes and family bravo on the central and northern routes. (Southern routes are those which enter the New York, San Juan and Santa Maria FIRs. The central and northern routes comprise all others).

8.6.2 All aircraft registered in the hemisphere east of 30W should use family alpha on the southern routes and family charlie on the central and northern routes.

8.6.3 All aircraft should use family alpha on the southern route and family delta on the central and northern routes while outside the organized track system (OTS).

8.6.4 Aircraft registered in Australia will use families designated to aircraft registered east of 30W.

8.7 Aircraft operating in the Anchorage Arctic CTA/FIR beyond line of sight range of remote control VHF air/ground facilities operated from the Anchorage ACC, must maintain communications with Cambridge Bay radio and a listening or SELCAL watch on HF frequencies of the North Atlantic D (NAT D) network (2971 kHz, 4675 kHz, 8891 kHz and 11279 kHz). Additionally, and in view of reported marginal reception of the Honolulu Pacific Volmet broadcasts in that and adjacent Canadian airspace, Cambridge Bay radio can provide Anchorage and Fairbanks surface observations and terminal forecasts to flight crews on request.

TBL GEN 3.4−6

Station and Operating Agency	Radio Call	Transmitting Frequencies	Remarks
HONOLULU (FAA)	Honolulu Radio	122.6 122.2 #121.5 MHz	#Emergency. Frequency 122.1 also available for receiving only.
	Volmet	2863 6679 8828 13282 kHz	Broadcasts at H+00−05 and H+30−35; Aerodrome Forecasts, Honolulu, Hilo, Agana, Honolulu. SIGMET. Hourly Report, Honolulu, Hilo, Kahului, Agana, Honolulu.
			Broadcasts at H+05−10 and H+35−40; Hourly Reports, San Francisco, Los Angeles, Seattle, Portland, Sacramento, Ontario, Las Vegas. SIGMET. Aerodrome Forecasts, San Francisco, Seattle, Los Angeles.
			Broadcasts at H+25−30 and H+55−60; Hourly Reports, Anchorage, Elmendorf, Fairbanks, Cold Bay, King Salmon, Vancouver. SIGMET. Aerodrome Forecasts, Anchorage, Fairbanks, Cold Bay, Vancouver.
MIAMI (FAA)	Miami Radio	126.7 118.4 126.9 122.2 122.4 122.75 123.65 127.9 MHz	Local and Short Range.
		#121.5 MHz	#Emergency.
NEW YORK (FAA)	New York Radio (Volmet)	3485* 6604 10051 13270* kHz	*3485 Volmet broadcasts from 1 hour after sunset to 1 hour before sunrise.
			*13270 Volmet broadcasts from 1 hour before sunrise to 1 hour after sunset.
			Broadcasts at H+00−05; Aerodrome Forecasts, Detroit, Chicago, Cleveland. Hourly Reports, Detroit, Chicago, Cleveland, Niagara Falls, Milwaukee, Indianapolis.
			Broadcasts at H+05−10; SIGMET, (Oceanic−New York). Aerodrome Forecasts, Bangor, Pittsburgh, Charlotte. Hourly Reports, Bangor, Pittsburgh, Windsor Locks, St. Louis, Charlotte, Minneapolis.
			Broadcasts at H+10−15; Aerodrome Forecasts, New York, Newark, Boston. Hourly reports, New York, Newark, Boston, Baltimore, Philadelphia, Washington.
			Broadcasts at H+15−20; SIGMET (Oceanic−Miami/San Juan). Aerodrome Forecasts, Bermuda, Miami, Atlanta. Hourly Reports, Bermuda, Miami, Nassau, Freeport, Tampa, West Palm Beach, Atlanta.
			Broadcasts at H+30−35; Aerodrome Forecasts, Niagara Falls, Milwaukee, Indianapolis. Hourly Reports Detroit, Chicago, Cleveland, Niagara Falls, Milwaukee, Indianapolis.
			Broadcasts at H+35−40; SIGMET (Oceanic−New York). Aerodrome Forecasts, Windsor Locks, St. Louis. Hourly Reports, Bangor, Pittsburgh, Windsor Locks, St. Louis, Charlotte, Minneapolis.
			Broadcasts at H+40−45; Aerodrome Forecasts, Baltimore, Philadelphia, Washington. Hourly Reports, New York, Newark, Boston, Baltimore, Philadelphia, Washington.
			Broadcasts at H+45−50; SIGMET (Oceanic−Miami/San Juan). Aerodrome Forecasts, Nassau, Freeport. Hourly Reports, Bermuda, Miami, Nassau, Freeport, Tampa, West Palm Beach, Atlanta.

Station and Operating Agency	Radio Call	Transmitting Frequencies	Remarks
NEW YORK (ARINC)	New York	3016 5598 8906 13306 17946 21964 kHz	North Atlantic Family A Network.
		2962 6628 8825 11309 13354 17952 kHz	North Atlantic Family E Network.
		2887 3455 5550 6577 8846 11396 kHz	Caribbean Family A Network.
		5520 6586 8918 11330 13297 17907 kHz	Caribbean Family B Network.
		3494 6640 8933 11342 13330 17925 kHz	Long Distance Operations Control (LDOC) Service (phone−patch). Communications are limited to operational control matters only. Public correspondence (personal messages) to/from crew or passengers cannot be accepted. **Note:** New York ARINC can also provide HF communications over South America on these LDOC frequencies through their remote site located in Santa Cruz, Boliva.
		129.90 MHz	Extended range VHF. Coverage area includes Canadian Maritime Provinces, and oceanic routes to Bermuda and the Caribbean, from Boston, New York and Washington areas to approximately 250 nautical miles from the east coast.
		130.7 MHz	Extended range VHF. Full period service is provided within most of the Gulf of Mexico. Also on routes between Miami and San Juan to a distance of approximately 250 nautical miles from the Florida coast and within approximately 250 nautical miles of San Juan. **Note:** New York ARINC also provides VHF communications over the Northern two−thirds of Mexico on 130.7 MHz for 14 CFR Section 121.99 compliance.
			Note: Due to the distances involved, signal levels received by aircraft communicating with New York ARINC in the Gulf of Mexico on frequency 130.700 MHz will be weaker than normally encountered in VHF communications. Most aircraft usually have the squelch setup to communicate where signal levels are much higher and to totally eliminate background noise for the flight crew. In order to increase the range and maximize the coverage area, aircraft are asked to utilize the following squelch settings on their VHF radios while monitoring or communicating with New York ARINC. On aircraft with an OPEN/CLOSE squelch switch, the squelch should be set to the OPEN position while communicating or after being SELCAL'ed. Aircraft with an adjustable system should first set their squelch to fully open position and then adjust to where the noise is reduced or just closed. This will allow the weakest signals to be heard. Utilizing this procedure will increase the background noise heard by the flight crew but will allow communications at a much greater range.

Station and Operating Agency	Radio Call	Transmitting Frequencies	Remarks
		436623* 631−244−2492	Aircraft operating within the New York Oceanic FIR.
			***Note:** This satellite Voice Air/Ground calling number is available to call ARINC and will be recognized and converted by all Ground Earth Station (GES) service providers to the appropriate Public Service Telephone Network (PTSN) or direct dial number for this communications center.
SAN FRANCISCO (ARINC)	San Francisco	3413 3452 5574 6673 8843 10057 13354 kHz	Central East Pacific One Network.
		2869 5547 11282 13288 21964 kHz	Central East Pacific Two Network.
		2998 4666 6532 8903 11384 13300 17904 21985 kHz	Central West Pacific Network.
		3467 5643 8867 13261 17904 kHz	South Pacific Network.
		2932 5628 5667 6655 8915 8951 10048 11330 13273 13339 17946 21925 kHz	North Pacific Network
		3494 6640 11342 13348 17925 21964 kHz	Long Distance Operations Control (LDOC) Service (phone−patch). Communications are limited to operational control matters only. Public correspondence (personal messages) to/from crew or passengers cannot be accepted. **Note:** San Francisco ARINC can also provide HF communications along the polar routes on these LDOC frequencies through their remote site located at Barrow, Alaska.
		131.95 MHz	Extended range VHF. Coverage area includes area surrounding the Hawaiian Islands and along the tracks from HNL to the mainland. Coverage extends out approximately 250 NM from Hawaii and from the West coast.
		129.40 MHz	For en route communications for aircraft operating on Seattle/Anchorage/Routes.
		436625* 925−371−3920	Aircraft operating within the Oakland and Anchorage Oceanic FIRs.
			***Note:** This satellite Voice Air/Ground calling number is available to call ARINC and will be recognized and converted by all Ground Earth Station (GES) service providers to the appropriate Public Service Telephone Network (PTSN) or direct dial number for this communications center.
OAKLAND (FAA)	Oakland Radio	122.5 122.2 #121.5 MHz	#Emergency.
SAN JUAN P.R. (FAA)	San Juan Radio	#121.5 122.2 126.7 123.65 #243.0 255.4 114.0 113.5 108.2 108.6 109.0 110.6 MHz	Unscheduled broadcasts H+00, H+15, H+30 and H+45 as appropriate, for Weather and Military Activity Advisories, on 110.6, 109.0, 108.6, 108.2, 113.5, and 114.0 MHz. #Emergency. For frequencies 114.0, 113.5, 108.2 and 109.0 MHz use 122.1 MHz for transmissions to San Juan Radio. For frequency 108.6 use 123.6 MHz.

9. Selective Calling System (SELCAL) Facilities Available

9.1 The SELCAL is a communication system which permits the selective calling of individual aircraft over radio−telephone channels from the ground station to properly equipped aircraft, so as to eliminate the need for the flight crew to constantly monitor the frequency in use.

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Location	Operator	HF	VHF
New York	ARINC	X	X
San Francisco	ARINC	X	X

10. Special North Atlantic, Caribbean, and Pacific Area Communications

10.1 VHF air−to−air frequencies enable aircraft engaged on flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.

10.2 Frequencies have been designated as follows:

TBL GEN 3.4−8

Area	Frequency
North Atlantic	123.45 MHz
Caribbean	123.45 MHz
Pacific	123.45 MHz

11. Distress and Urgency Communications

11.1 A pilot who encounters a distress or urgency condition can obtain assistance simply by contacting the air traffic facility or other agency in whose area of responsibility the aircraft is operating, stating the nature of the difficulty, pilot's intentions, and assistance desired. Distress and urgency communications procedures are prescribed by the International Civil Aviation Organization (ICAO), however, and have decided advantages over the informal procedure described above.

11.2 Distress and urgency communications procedures discussed in the following paragraphs relate to the use of air ground voice communications.

11.3 The initial communication, and if considered necessary, any subsequent transmissions by an aircraft in distress should begin with the signal MAYDAY, preferably repeated three times. The signal PAN−PAN should be used in the same manner for an urgency condition.

11.4 Distress communications have absolute priority over all other communications, and the word MAYDAY commands radio silence on the frequency in use. Urgency communications have priority over all other communications except distress, and the word PAN−PAN warns other stations not to interfere with urgency transmissions.

11.5 Normally, the station addressed will be the air traffic facility or other agency providing air traffic services, on the frequency in use at the time. If the pilot is not communicating and receiving services, the station to be called will normally be the air traffic facility or other agency in whose area of responsibility the aircraft is operating, on the appropriate assigned frequency. If the station addressed does not respond, or if time or the situation dictates, the distress or urgency message may be broadcast, or a collect call may be used, addressing "Any Station (Tower) (Radio) (Radar)."

11.6 The station addressed should immediately acknowledge a distress or urgency message, provide assistance, coordinate and direct the activities of assisting facilities, and alert the appropriate Search and Rescue coordinator if warranted. Responsibility will be transferred to another station only if better handling will result.

11.7 All other stations, aircraft and ground, will continue to listen until it is evident that assistance is being provided. If any station becomes aware that the station being called either has not received a distress or urgency message, or cannot communicate with the aircraft in difficulty, it will attempt to contact the aircraft and provide assistance.

11.8 Although the frequency in use or other frequencies assigned by ATC are preferable, the following emergency frequencies can be used for distress or urgency communications, if necessary or desirable:

11.8.1 121.5 MHz and 243.0 MHz. Both have a range generally limited to line of sight. 121.5 MHz is guarded by direction finding stations and some military and civil aircraft. 243.0 MHz is guarded by military aircraft. Both 121.5 MHz and 243.0 MHz are guarded by military towers, most civil towers, flight service stations, and radar facilities. Normally ARTCC emergency frequency capability does not extend to radar coverage limits. If an ARTCC does not respond when called on 121.5 MHz or 243.0 MHz, call the nearest tower or flight service station.

11.8.2 2182 kHz. The range is generally less than 300 miles for the average aircraft installation. It can be used to request assistance from stations in the maritime service. 2182 kHz is guarded by major radio stations serving Coast Guard Rescue Coordination Centers and Coast Guard units along the sea coasts of the U.S. and shores of the Great Lakes. The call "Coast Guard" will alert all Coast Guard Radio Stations within range. 2182 kHz is also guarded by most commercial coast stations and some ships and boats.

12. Two−Way Radio Communications Failure

12.1 It is virtually impossible to provide regulations and procedures applicable to all possible situations associated with two−way radio communications failure. During two−way radio communications failure when confronted by a situation not covered in the regulation, pilots are expected to exercise good judgment in whatever action they elect to take. Should the situation so dictate, they should not be reluctant to use the emergency action contained in 14 CFR Section 91.3(b).

12.2 Whether two−way communications failure constitutes an emergency depends on the circumstances, and in any event is a determination made by the pilot. 14 CFR Section 91.3 authorizes a pilot to deviate from any rule to the extent required to meet an emergency.

12.3 In the event of two−way radio communications failure, ATC service will be provided on the basis that the pilot is operating in accordance with 14 CFR Section 91.185. A pilot experiencing two−way communications failure should (unless emergency authority is exercised) comply with 14 CFR Section 91.185 as indicated below.

12.4 Unless otherwise authorized by ATC, each pilot who has two−way radio communications failure when operating under IFR must comply with the following conditions:

12.4.1 If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot must continue the flight under VFR and land as soon as practicable.

NOTE−
This procedure also applies when two-way radio failure occurs while operating in Class A airspace. The primary objective of this provision in 14 CFR Section 91.185 is to preclude extended IFR operation by these aircraft within the ATC system. Pilots should recognize that operation under these conditions may unnecessarily as well as adversely affect other users of the airspace, since ATC may be required to reroute or delay other users in order to protect the failure aircraft. However, it is not intended that the requirement to "land as soon as practicable" be construed to mean "as soon as possible." Pilots retain the prerogative of exercising their best judgment and are not required to land at an unauthorized airport, at an airport unsuitable for the type of aircraft flown, or to land only minutes short of their intended destination.

12.4.2 If the failure occurs in IFR conditions, or if VFR conditions cannot be complied with, each pilot must continue the flight according to the following requirements.

12.5 Route requirements:

12.5.1 By the route assigned in the last ATC clearance received.

12.5.2 If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance.

12.5.3 In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance.

12.5.4 In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan.

12.6 Altitude requirements. At the HIGHEST of the following altitudes or flight levels FOR THE ROUTE SEGMENT BEING FLOWN:

12.6.1 The altitude or flight level assigned in the last ATC clearance received.

12.6.2 The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in 14 CFR Section 91.121(c)) for IFR operations.

12.6.3 The altitude or flight level ATC has advised may be expected in a further clearance.

NOTE−
The intent of the rule is that a pilot who has experienced two−way radio failure should select the appropriate altitude for the particular route segment being flown and make the necessary altitude adjustments for subsequent route segments. If the pilot received an "expect further clearance" containing a higher altitude to expect at a specified time or fix, he/she should maintain the highest of the following altitudes until that time/fix: (1) his/her last assigned altitude, or (2) the minimum altitude/flight level for IFR operations.

Upon reaching the time/fix specified, the pilot should commence his/her climb to the altitude he/she was advised to expect. If the radio failure occurs after the time/fix specified, the altitude to be expected is not applicable and the pilot should maintain an altitude consistent with 1 or 2 above.

If the pilot receives an "expect further clearance" containing a lower altitude, the pilot should maintain the highest of 1 or 2 above until that time/fix specified in paragraph 12.7, Leave Clearance Limit.

EXAMPLE−
1. *A pilot experiencing two−way radio failure at an assigned altitude of 7,000 feet is cleared along a direct route which will require a climb to a minimum IFR altitude of 9,000 feet, should climb to reach 9,000 feet at the time or place where it becomes necessary (see 14 CFR Section 91.177(b)). Later while proceeding along an airway with an MEA of 5,000 feet, the pilot would descend to 7,000 feet (the last assigned altitude), because that altitude is higher than the MEA.*

2. *A pilot experiencing two−way radio failure while being progressively descended to lower altitudes to begin an approach is assigned 2,700 feet until crossing the VOR and then cleared for the approach. The MOCA along the airway is 2,700 feet and MEA is 4,000 feet. The aircraft is within 22 NM of the VOR. The pilot should remain at 2,700 feet until crossing the VOR because that altitude is the minimum IFR altitude for the route segment being flown.*

3. *The MEA between a and b − 5,000 feet. The MEA between b and c −5,000 feet. The MEA between c and d −11,000 feet. The MEA between d and e − 7,000 feet. A pilot had been cleared via a, b, c, d, to e. While flying between a and b the assigned altitude was 6,000 feet and the pilot was told to expect a clearance to 8,000 feet at b. Prior to receiving the higher altitude assignment, the pilot experienced two−way failure. The pilot would maintain 6,000 to b, then climb to 8,000 feet (the altitude the pilot was advised to expect.) The pilot would maintain 8,000 feet, then climb to 11,000 at c, or prior to c if necessary to comply with an MCA at c. (14 CFR Section 91.177(b).) Upon reaching d, the pilot would descend to 8,000 feet (even though the MEA was 7,000 feet), as 8,000 was the highest of the altitude situations stated in the rule 14 CFR Section 91.185.*

12.7 Leave Clearance Limit

12.7.1 When the clearance limit is a fix from which an approach begins, commence descent or descent and approach as close as possible to the expect further clearance time if one has been received, or if one has not been received, as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time en route.

12.7.2 If the clearance limit is not a fix from which an approach begins, leave the clearance limit at the expect further clearance time if one has been received, or if none has been received, upon arrival over the clearance limit, and proceed to a fix from which an approach begins and commence descent or descent and approach as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time en route.

13. Transponder Operation During Two−Way Communications Failure

13.1 If an aircraft with a coded radar beacon transponder experiences a loss of two−way radio capability, the pilot should adjust the transponder to reply on Mode 3/A, Code 7600.

13.2 The pilot should understand that the aircraft may not be in an area of radar coverage.

14. Reestablishing Radio Contact

14.1 In addition to monitoring the NAVAID voice feature, the pilot should attempt to reestablish communications by attempting contact:

14.1.1 On the previously assigned frequency.

14.1.2 With an FSS or ARINC.

14.2 If communications are established with an FSS or ARINC, the pilot should advise the aircraft's position, altitude, and last assigned frequency; then request further clearance from the controlling facility. The preceding does not preclude the use of 121.5 MHz. There is no priority on which action should be attempted first. If the capability exists, do all at the same time.

NOTE−
Aeronautical Radio Incorporated (ARINC) is a commercial communications corporation which designs, constructs, operates, leases or otherwise engages in radio activities serving the aviation community. ARINC has the capability of relaying information to/from ATC facilities throughout the country.

3.5 FAA Weather Services

3.5.1 The FAA provides the Flight Service program, which serves the weather needs of pilots through its flight service stations (FSS) (both government and contract via 1-800-WX-BRIEF) and via the Internet, through Leidos Flight Service.

3.5.2 The FAA maintains an extensive surface weather observing program. Airport observations (METAR and SPECI) in the U.S. are provided by automated observing systems. Various levels of human oversight of the METAR and SPECI reports and augmentation may be provided at select larger airports by either government or contract personnel qualified to report specified weather elements that cannot be detected by the automated observing system.

3.5.3 Other Sources of Weather Information

3.5.3.1 Weather and aeronautical information is also available from numerous private industry sources on an individual or contract pay basis. Information on how to obtain this service should be available from local pilot organizations.

3.5.3.2 Pilots can access Leidos Flight Services via the Internet. Pilots can receive preflight weather data and file domestic VFR and IFR flight plans. The following is the FAA contract vendor:

Leidos Flight Service
Internet Access: http://www.1800wxbrief.com
For customer service: 1−800−WXBRIEF

3.6 Use of Aviation Weather Products

3.6.1 Air carriers and operators certificated under the provisions of 14 CFR Part 119 are required to use the aeronautical weather information systems defined in the Operations Specifications issued to that certificate holder by the FAA. These systems may utilize basic FAA/National Weather Service (NWS) weather services, contractor− or operator−proprietary weather services and/or Enhanced Weather Information System (EWINS) when approved in the Operations Specifications. As an integral part of this system approval, the procedures for collecting, producing and disseminating aeronautical weather information, as well as the crew member and dispatcher training to support the use of system weather products, must be accepted or approved.

3.6.2 Operators not certificated under the provisions of 14 CFR Part 119 are encouraged to use FAA/NWS products through Flight Service Stations, Leidos Flight Service, and/or Flight Information Services−Broadcast (FIS−B).

3.6.3 The suite of available aviation weather product types is expanding, with the development of new sensor systems, algorithms and forecast models. The FAA and NWS, supported by various weather research laboratories and corporations under contract to the Government, develop and implement new aviation weather product types. The FAA's NextGen Aviation Weather Research Program (AWRP) facilitates collaboration between the NWS, the FAA, and various industry and research representatives. This collaboration ensures that user needs and technical readiness requirements are met before experimental products mature to operational application.

3.6.4 The AWRP manages the transfer of aviation weather R&D to operational use through technical review panels and conducting safety assessments to ensure that newly developed aviation weather products meet regulatory requirements and enhance safety.

3.6.5 The AWRP review and decision−making process applies criteria to weather products at various stages . The stages are composed of the following:

3.6.5.1 Sponsorship of user needs.

3.6.5.2 R & D and controlled testing.

3.6.5.3 Experimental application.

3.6.5.4 Operational application.

3.6.6 Pilots and operators should be aware that weather services provided by entities other than FAA, NWS, or their contractors may not meet FAA/NWS quality control standards. Hence, operators and pilots contemplating using such services should request and/or review an appropriate description of services and provider disclosure. This should include, but is not limited to, the type of weather product (for example, current weather or forecast weather), the currency of the product (that is, product issue and valid times), and the relevance of the product. Pilots and operators should be cautious when using unfamiliar products, or products not supported by FAA/NWS technical specifications.

NOTE−
When in doubt, consult with a FAA Flight Service Station Specialist.

3.6.7 In addition, pilots and operators should be aware there are weather services and products available from government organizations beyond the scope of the AWRP process mentioned earlier in this section. For example, governmental agencies such as the NWS and the Aviation Weather Center (AWC), or research organizations such as the National Center for Atmospheric Research (NCAR) display weather "model data" and "experimental" products which require training and/or expertise to properly interpret and use. These products are developmental prototypes that are subject to ongoing research and can change without notice. Therefore, some data on display by government organizations, or government data on display by independent organizations may be unsuitable for flight planning purposes. Operators and pilots contemplating using such services should request and/or review an appropriate description of services and provider disclosure. This should include, but is not limited to, the type of weather product (for example, current weather or forecast weather), the currency of the product (i.e., product issue and valid times), and the relevance of the product. Pilots and operators should be cautious when using unfamiliar weather products.

NOTE−
When in doubt, consult with a FAA Flight Service Station Specialist.

3.6.8 With increased access to weather products via the public Internet, the aviation community has access to an over whelming amount of weather information and data that support self-briefing. FAA AC 00-45 (current edition) describes the weather products distributed by the NWS. Pilots and operators using the public Internet to access weather from a third party vendor should request and/or review an appropriate description of services and provider disclosure. This should include, but is not limited to, the type of weather product (for example, current weather or forecast weather), the currency of the product (i.e., product issue and valid times), and the relevance of the product. Pilots and operators should be cautious when using unfamiliar weather products and when in doubt, consult with a Flight Service Specialist.

3.6.9 The development of new weather products, coupled with the termination of some legacy textual and graphical products may create confusion between regulatory requirements and the new products. All flight−related, aviation weather decisions must be based on all available pertinent weather products. As every flight is unique and the weather conditions for that flight vary hour by hour, day to day, multiple weather products may be necessary to meet aviation weather regulatory requirements. Many new weather products now have a Precautionary Use Statement that details the proper use or application of the specific product.

3.6.10 The FAA has identified three distinct types of weather information available to pilots and operators.

3.6.10.1 Observations. Raw weather data collected by some type of sensor suite including surface and airborne observations, radar, lightning, satellite imagery, and profilers.

3.6.10.2 Analysis. Enhanced depiction and/or interpretation of observed weather data.

3.6.10.3 Forecasts. Predictions of the development and/or movement of weather phenomena based on meteorological observations and various mathematical models.

3.6.11 Not all sources of aviation weather information are able to provide all three types of weather information. The FAA has determined that operators and pilots may utilize the following approved sources of aviation weather information:

3.6.11.1 Federal Government. The FAA and NWS collect raw weather data, analyze the observations, 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://aviationweather.gov/gfa**. Upon clicking the link above, select INFO on the top right corner of the map display. The next screen presents the option of selecting Overview, Products, and Tutorial. Simply select the tab of interest to explore the enhanced digital and graphical weather products designed to replace the legacy FA. Users should also refer to AC 00−45, *Aviation Weather Services*, for more detailed information on the GFA.

3.7.2.4 GFA Static Images. Some users with limited internet connectivity may access static images via the Aviation Weather Center (AWC) at: **http://www.aviationweather.gov/gfa/plot**. There are two static graphical images available, titled *Aviation Cloud Forecast* and *Aviation Surface Forecast*. The Aviation Cloud Forecast provides cloud coverage, bases, layers, 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

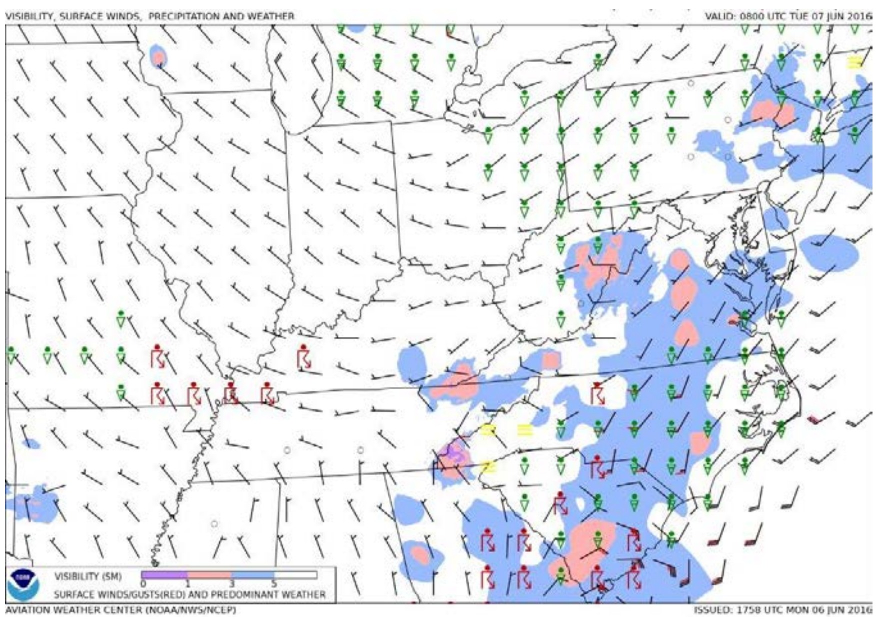
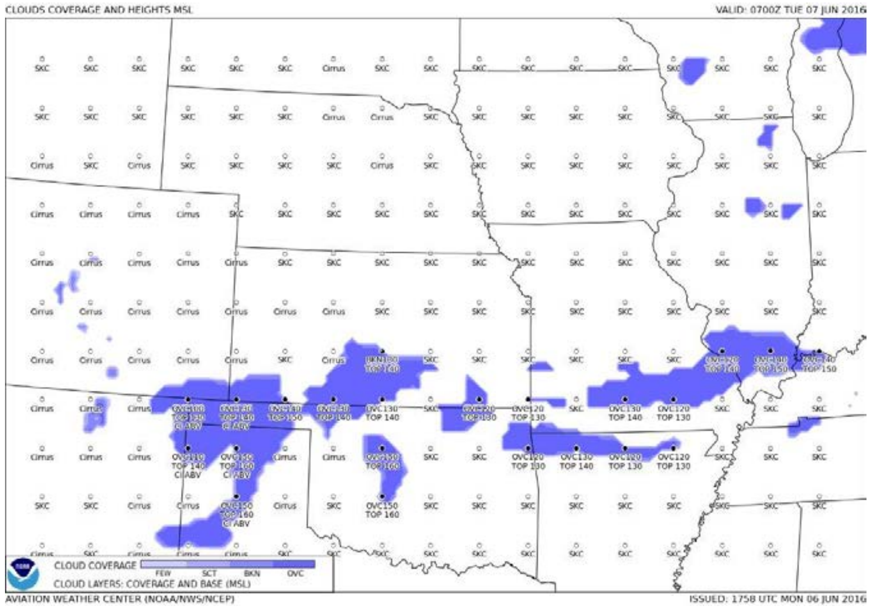


FIG GEN 3.5−3
Aviation Cloud Forecast



3.8 Preflight Briefing

3.8.1 Flight Service Stations (FSS) are the primary sources for obtaining preflight briefings and to file flight plans by phone or the Internet. Flight Service Specialists are qualified and certified as Pilot Weather Briefers by the FAA. They are not authorized to make original forecasts, but are authorized to translate and interpret available forecasts and reports directly into terms describing the weather conditions which can be expected along the flight route and at the destination. Three basic types of preflight briefings (Standard, Abbreviated, and Outlook) are available to serve the pilot's specific needs. Pilots should specify to the briefer the type of briefing they want, along with their appropriate background information. This will enable the briefer to tailor the information to the pilot's intended flight. The following paragraphs describe the types of briefings available and the information provided in each briefing.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5. Inflight Weather Advisory Broadcasts

ARTCCs broadcast a Severe Weather Forecast Alert (AWW), Convective SIGMET, SIGMET, AIRMET, Urgent Pilot Report, 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 advise pilots of the availability of hazardous weather advisories and to contact the nearest Flight Service facility for additional details.

EXAMPLE−

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

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

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

NOTE−

Terminal control facilities have the option to limit 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.

6. Flight Information Services (FIS)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6.1.4.7 FIS supports better pilot decision−making by increasing situational awareness. Better decision−

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

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

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

b) TBL GEN 3.5−2 lists the text and graphical products available through FIS−B and provided free−of−charge. Detailed information concerning FIS−B meteorological products can be found in Advisory Circular 00−45, Aviation Weather Services; and AC 00−63, Use of Cockpit Displays of Digital Weather and Aeronautical Information. Information on Special Use Airspace (SUA), Temporary Flight Restriction (TFR), and Notice to Airmen (NOTAM) products can be found in Chapters ENR 1 and ENR 5 of this manual.

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

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

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

e) Where applicable, FIS−B products include a look−ahead range expressed in nautical miles (NM) for three service domains: Airport Surface; Terminal Airspace; and Enroute/Gulf−of−Mexico (GOMEX). TBL GEN 3.5−3 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, or by sending an email to the ADS−B help desk at adsb@faa.gov. Reports should include:

1) Condition observed;

2) Date and time of observation;

3) Altitude and location of observation;

4) Type and call sign of the aircraft; and

5) Type and software version of avionics system.

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

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

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

6.2.1.2 In the case of a weather product which is the result of the application of a process which alters the form, function or content of the base FAA/NWS accepted weather product(s), that process, and any limitations to the application of the resultant product, should be described in the vendor's user guidance material. An example would be a NEXRAD radar composite/mosaic map, which has been modified by changing the scaling resolution. The methodology of assigning reflectivity values to the resultant image components should be described in the vendor's guidance material to ensure that the user can accurately interpret the displayed data.

TBL GEN 3.5−2

FIS−B Over UAT Product Update and Transmission Intervals

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

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

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

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

TBL GEN 3.5−3
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

7. Weather Observing Programs

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

7.2 Automated Weather Observing System (AWOS)

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

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

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

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

7.2.3.1 AWOS−A only reports altimeter setting.

NOTE−
Any other information is advisory only.

7.2.3.2 AWOS−AV reports altimeter and visibility;

NOTE−
Any other information is advisory only.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"Sandusky, Cowley Field automated weather observation."

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

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

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

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

7.3.2 Ceiling and Sky Cover

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

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

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

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

EXAMPLE−
"No clouds below one two thousand."

"Clear below one two thousand."

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

7.3.3 Visibility

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

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

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

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

7.3.5.1 Automated "remarks."

a) Variable visibility.

b) Density altitude.

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

a) Type and intensity of precipitation.

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

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

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

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

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

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

a) Automated "REMARKS":

1) Variable visibility.

2) Density altitude.

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

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

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

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

7.4.2 System Description

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

a) Individual weather sensors.

b) Data collection and processing units.

c) Peripherals and displays.

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

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

7.4.3.1 Cloud height indicator (one or possibly three).

7.4.3.2 Visibility sensor (one or possibly three).

7.4.3.3 Precipitation identification sensor.

7.4.3.4 Freezing rain sensor.

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

7.4.3.6 Ambient temperature/dew point temperature sensor.

7.4.3.7 Anemometer (wind direction and speed sensor).

7.4.3.8 Rainfall accumulation sensor.

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

7.4.4 The ASOS/AWOS data outlets include:

7.4.4.1 Those necessary for on−site airport users.

7.4.4.2 National communications networks.

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

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

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

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

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

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

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

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

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

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

8. Weather Radar Services

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

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

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

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

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

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

9. ATC Inflight Weather Avoidance Assistance

9.1 ATC Radar Weather Display

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

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

9.1.2.1 "LIGHT" (< 26 dBZ)

9.1.2.2 "MODERATE" (26 to 40 dBZ)

9.1.2.3 "HEAVY" (> 40 to 50 dBZ)

9.1.2.4 "EXTREME" (> 50 dBZ)

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

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

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

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

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

9.2 Weather Avoidance Assistance

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

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

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

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

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

9.2.1.3 Request a new route to avoid the affected area.

9.2.1.4 Request a change of altitude.

9.2.1.5 Request radar vectors around the affected areas.

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

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

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

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

9.2.5.1 Proposed point where detour will commence.

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

9.2.5.3 Point where original route will be resumed.

9.2.5.4 Flight conditions (IFR or VFR).

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

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

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

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

9.3 ATC Severe Weather Avoidance Plans

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

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

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

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

10. Notifications Required From Operators

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

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

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

11. Weather Observing Systems and Operating Procedures

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

12. Runway Visual Range (RVR)

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

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

12.1.1 A transmissometer projector and related items.

12.1.2 A transmissometer receiver (detector) and related items.

12.1.3 An analog recorder.

12.1.4 A signal data converter and related items.

12.1.5 A remote digital or remote display programmer.

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

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

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

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

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

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

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

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

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

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

12.8.1.2 A runway light intensity monitor (RLIM).

12.8.1.3 An ambient light sensor (ALS).

12.8.1.4 A data processor unit (DPU).

12.8.1.5 A controller display (CD).

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

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

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

12.8.4.1 100−foot increments for products below 800 feet.

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

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

12.8.4.4 25−meter increments for products below 150 meters.

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

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

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

13. Reporting of Cloud Heights

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

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

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

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

14. Reporting Prevailing Visibility

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

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

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

15. Estimating Intensity of Rain and Ice Pellets

15.1 Rain

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

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

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

15.2 Ice Pellets

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

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

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

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

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

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

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

17. Pilot Weather Reports (PIREPs)

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

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

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

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

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

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

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

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

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

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

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

17.5 The FAA, NWS, and other organizations that enter PIREPs into the weather reporting system use the format listed in TBL GEN 3.5−7,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.

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

EXAMPLE−

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

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

EXAMPLE−

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

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

TBL GEN 3.5−7

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 21.
12.	Icing	/IC	See paragraph 19.
13.	Remarks	/RM	For reporting elements not included or to clarify previously reported items

18. Mandatory MET Points

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

18.2 Mandatory MET Reporting Points Within the Houston FIR

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

18.3 Mandatory MET Reporting Points Within the Miami FIR

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

18.4 Mandatory MET Reporting Points Within the San Juan FIR

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

19. PIREPs Relating to Airframe Icing

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

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

TBL GEN 3.5−8

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

20. Definitions of Inflight Icing Terms

See TBL GEN 3.5−9, 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.

21. PIREPs Relating to Turbulence

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

21.1.1 Aircraft location.

21.1.2 Time of occurrence in UTC.

21.1.3 Turbulence intensity.

21.1.4 Whether the turbulence occurred in or near clouds.

21.1.5 Aircraft altitude, or flight level.

21.1.6 Type of aircraft.

21.1.7 Duration of turbulence.

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

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

21.2 Duration and classification of intensity should be made using TBL GEN 3.5−11, 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.
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.	**EXAMPLES:** a. Over Omaha. 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707.
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]		b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.

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

22. Wind Shear PIREPs

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

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

EXAMPLE−

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

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

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

EXAMPLE−

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

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

22.3 Wind Shear Escape

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

EXAMPLE−

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

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

EXAMPLE−

"Denver Tower, United ll54, wind shear escape complete, resuming last assigned heading/(name) DP/clearance."

or

"Denver Tower, United ll54, wind shear escape complete, request further instructions."

23. Clear Air Turbulence (CAT) PIREPs

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

24. Microbursts

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

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

24.3 The life cycle of a microburst as it descends in a convective rain shaft is seen in FIG GEN 3.5−7, 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.

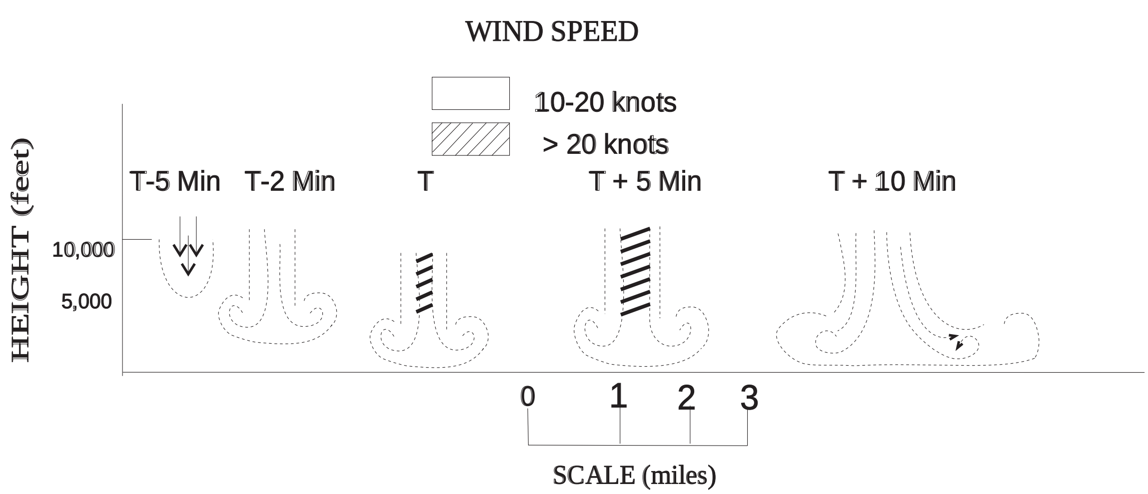
24.4 Characteristics of microbursts include:

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

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

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

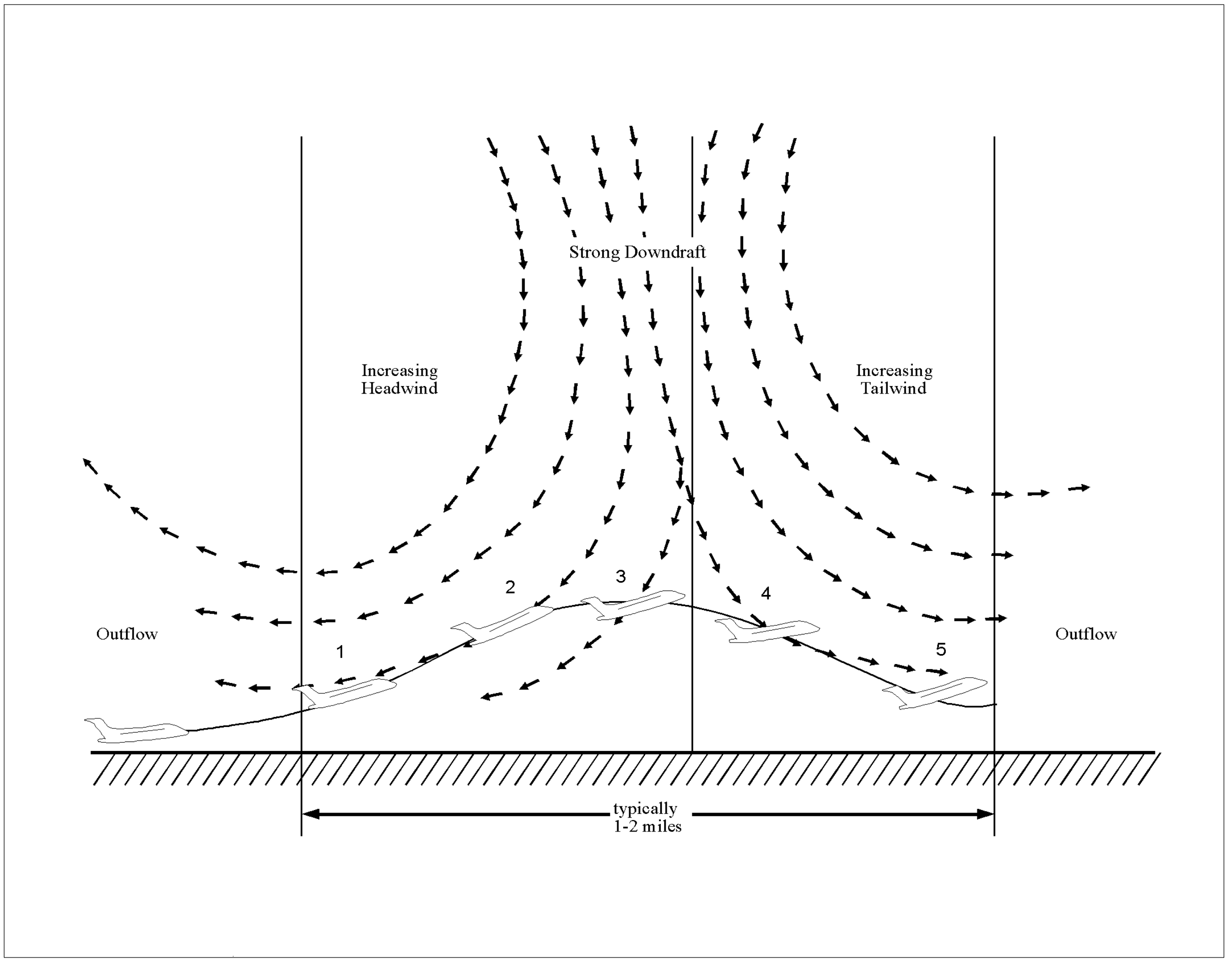
FIG GEN 3.5−7
Evolution of a Microburst



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.

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

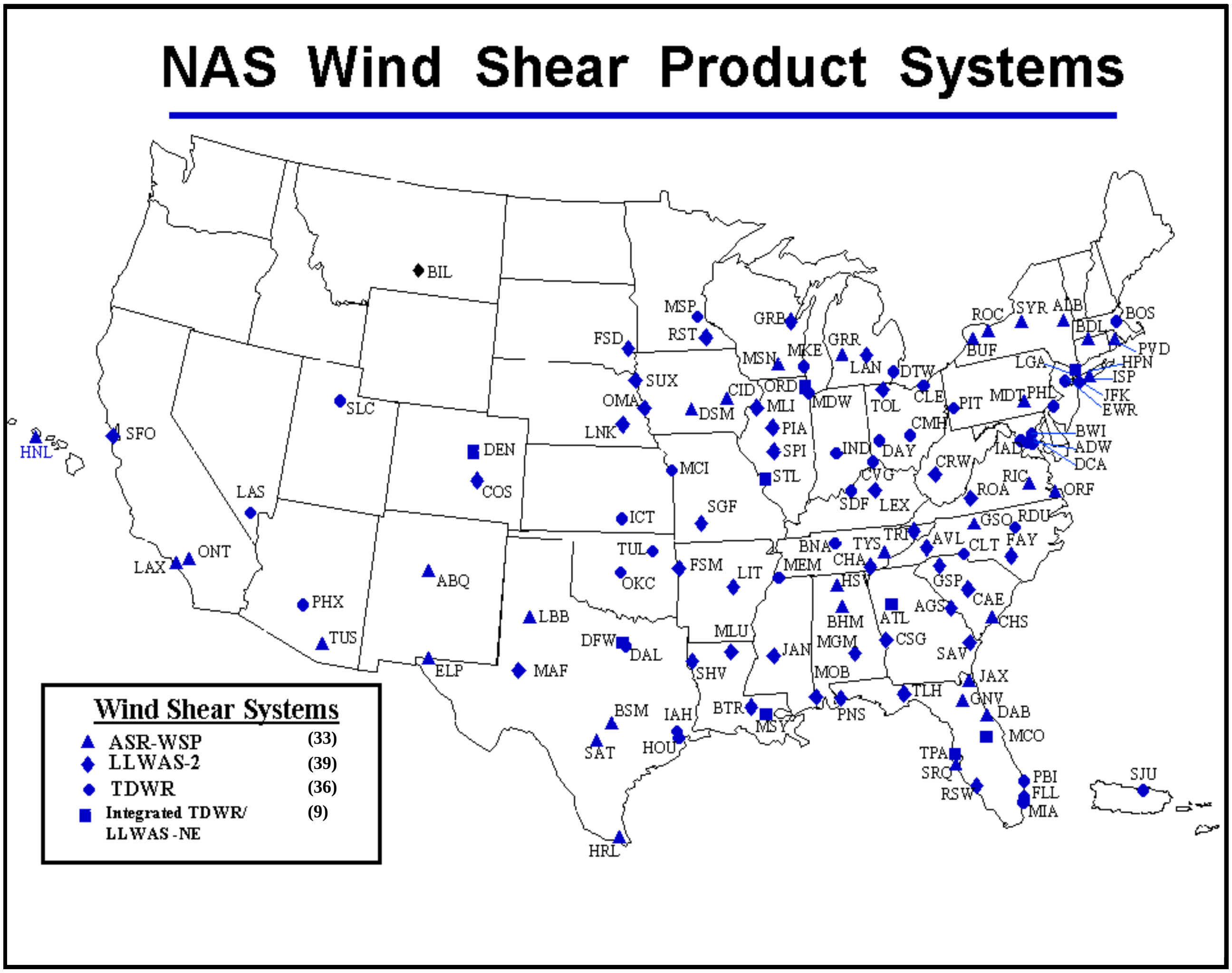
FIG GEN 3.5−8
Microburst Encounter During Takeoff



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.

24.5 Microburst wind shear may create a severe hazard for aircraft within 1,000 feet of the ground, particularly during the approach to landing and landing and take−off phases. The impact of a microburst on aircraft which have the unfortunate experience of penetrating one is characterized in FIG GEN 3.5−8. 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



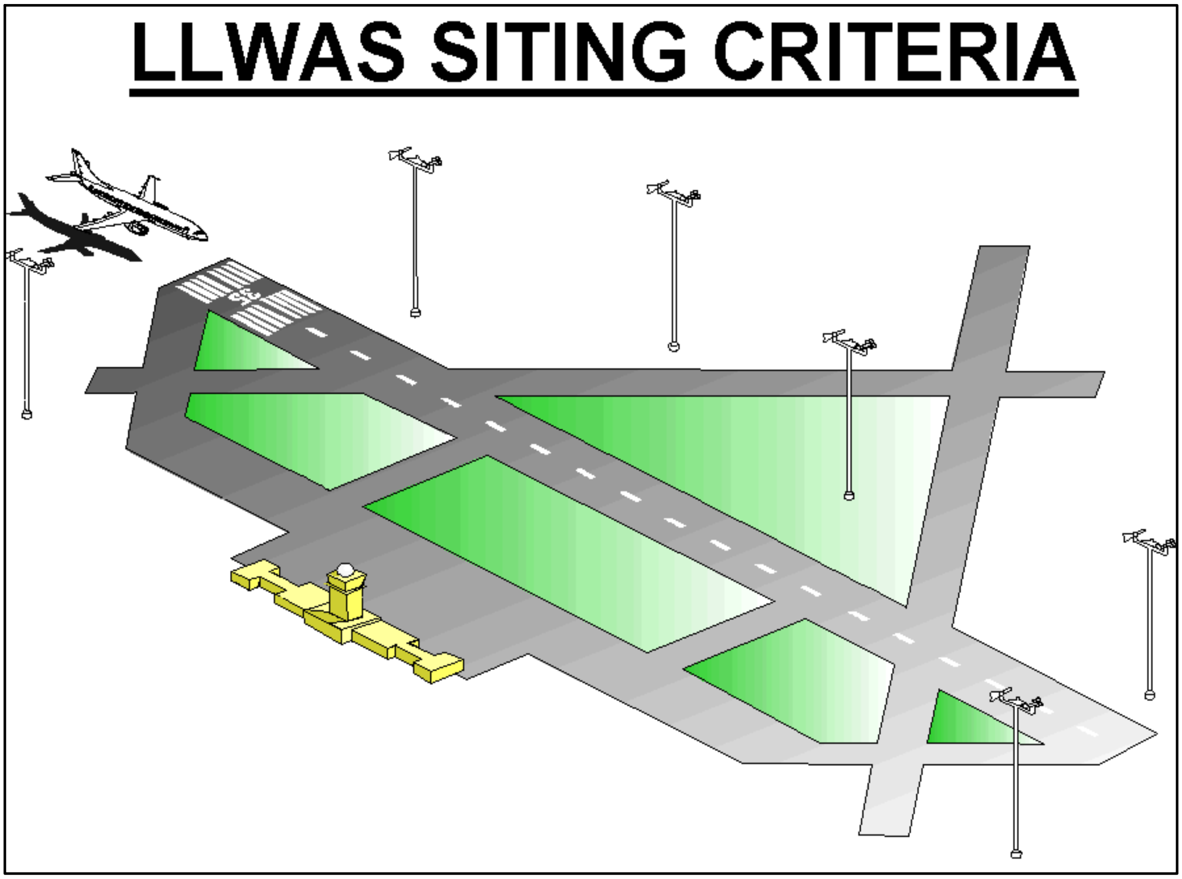
24.6 Detection of Microbursts, Wind Shear, and Gust Fronts

24.6.1 FAA's Integrated Wind Shear Detection Plan

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

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

FIG GEN 3.5−10
LLWAS Siting Criteria



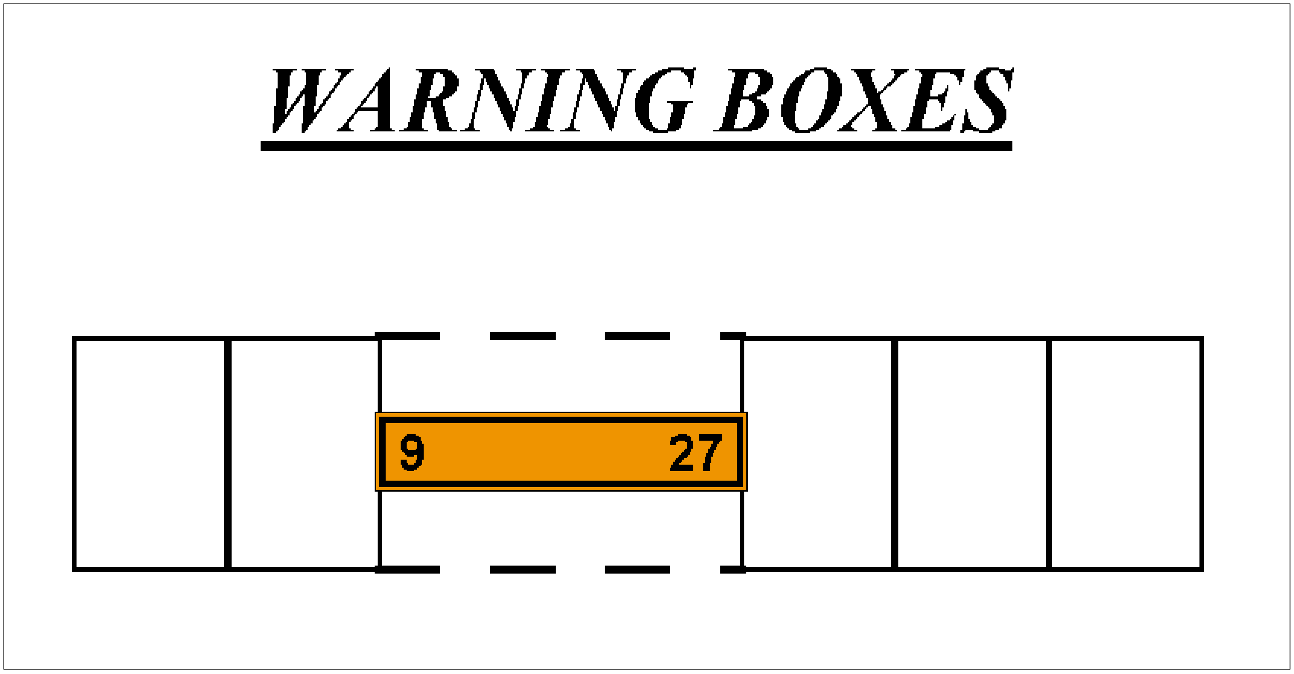
24.6.1.3 The early detection of a wind shear/microburst event, and the subsequent warning(s) issued to an aircraft on approach or departure, will alert the pilot/crew to the potential of, and to be prepared for, a situation that could become very dangerous! Without these warnings, the aircraft may NOT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

24.6.1.4 Low Level Wind Shear Alert System (LLWAS)

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

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



24.6.1.5 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.

24.6.1.6 Weather Systems Processor (WSP)

a) The WSP provides the controller, supervisor, traffic management specialist, and ultimately the pilot, with the same products as the terminal doppler weather radar at a fraction of the cost. This is accomplished by utilizing new technologies to access the weather channel capabilities of the existing ASR−9 radar located on or near the airport, thus eliminating the requirements for a separate radar location, land acquisition, support facilities, and the associated communication landlines and expenses.

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

c) This system is 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.

24.6.1.7 Operational Aspects of LLWAS, TDWR, and WSP

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

a) MICROBURST ALERTS

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

27A MBA 35K− 2MF 250 20

NOTE−
(See FIG GEN 3.5−12 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

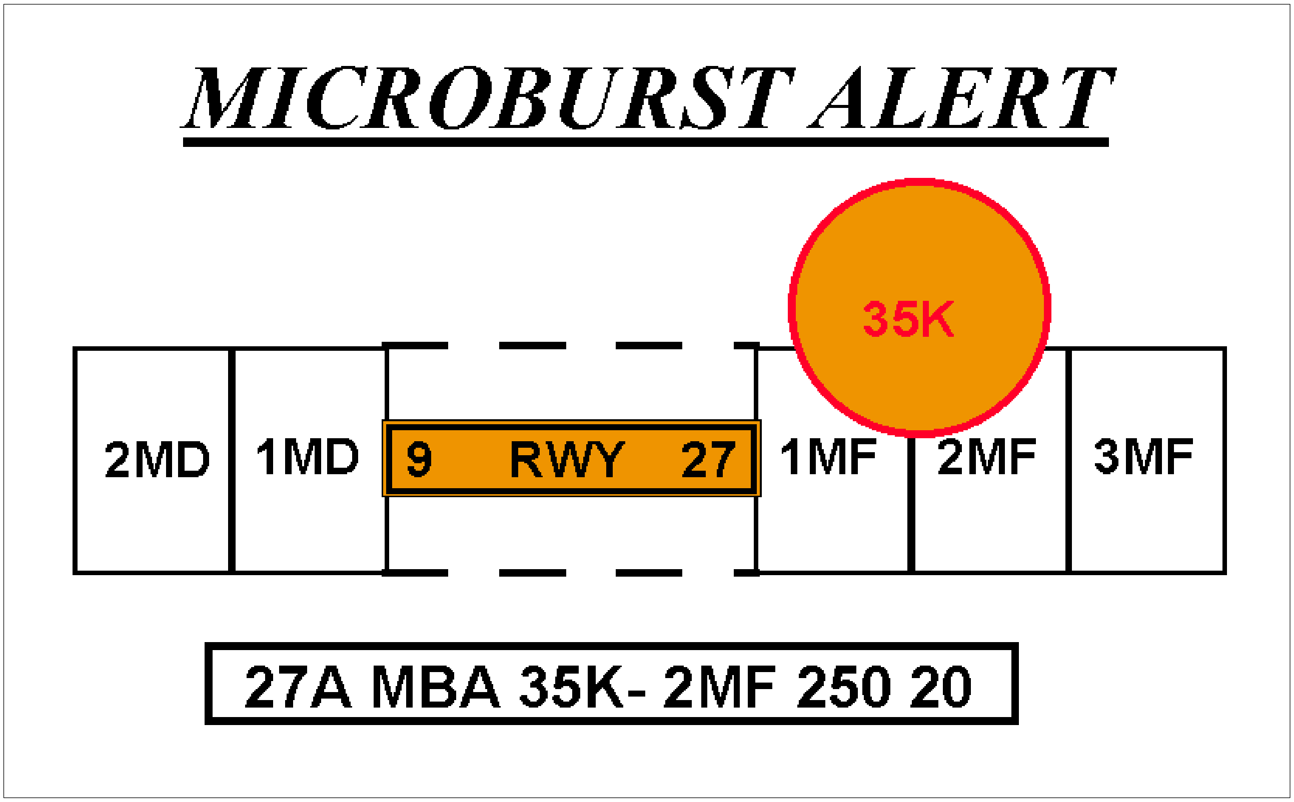


FIG GEN 3.5−13
Weak Microburst Alert

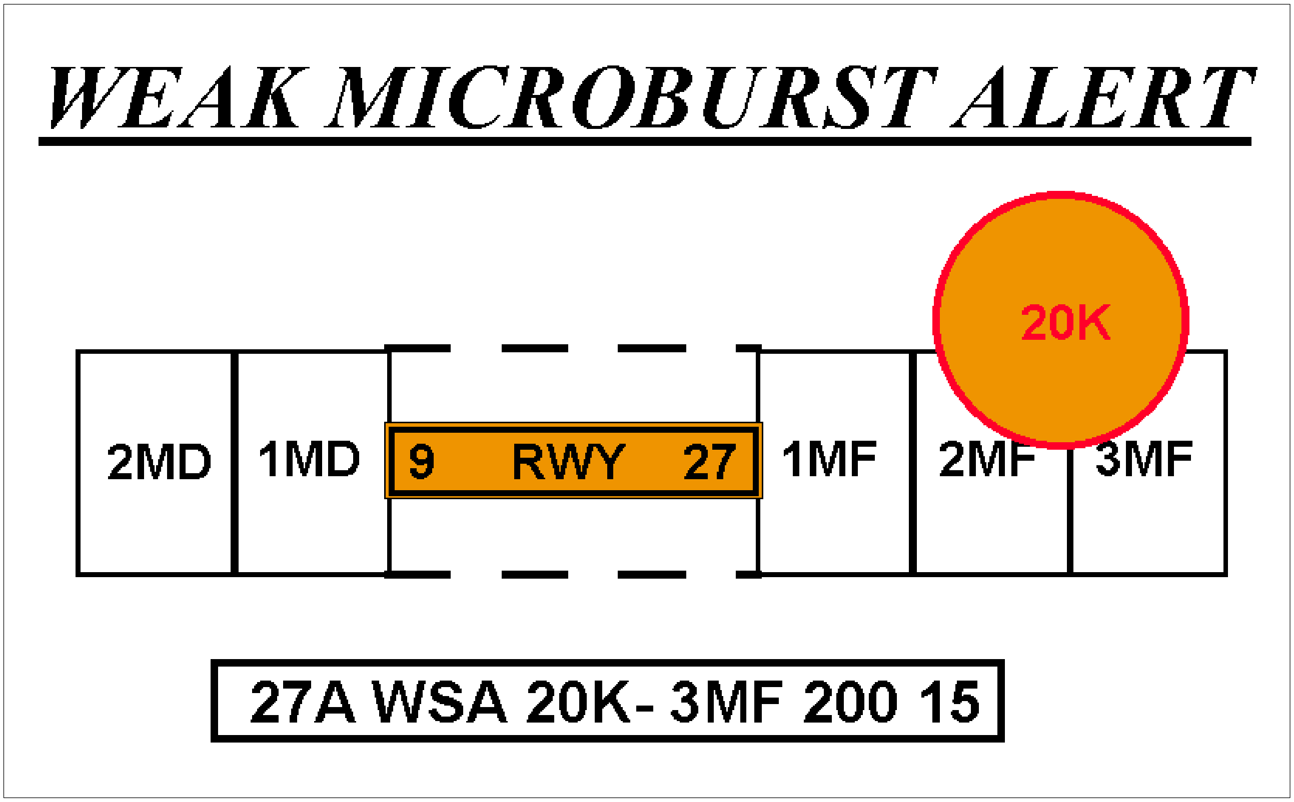
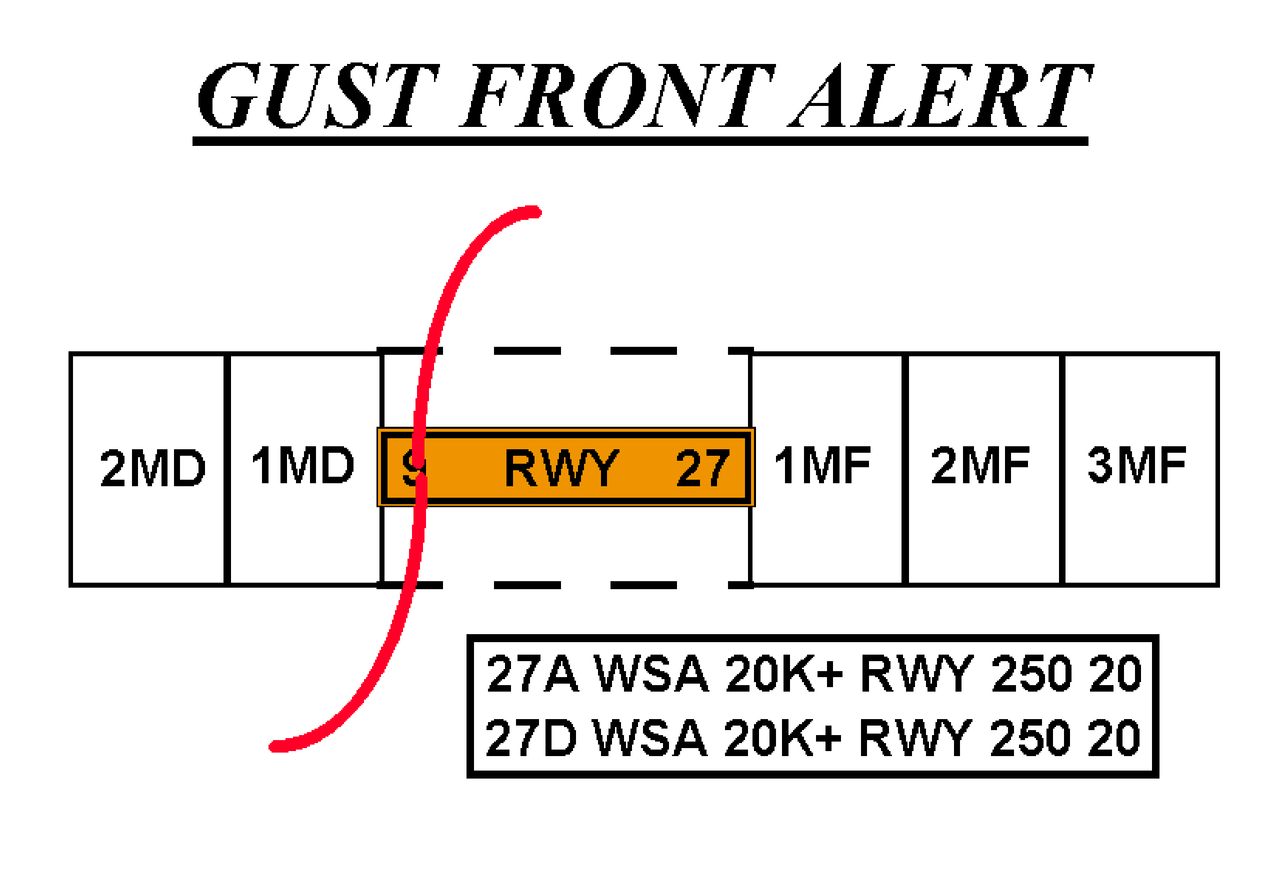


FIG GEN 3.5−14
Gust Front Alert



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.

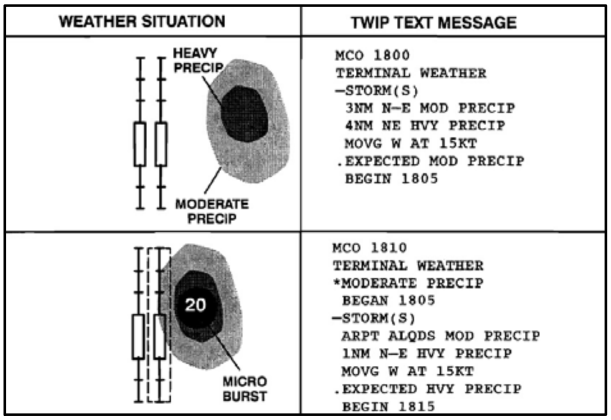
PHRASEOLOGY−
MULTIPLE WIND SHEAR ALERTS.
RUNWAY 27 ARRIVAL, WIND SHEAR ALERT, 20 KT GAIN ON RUNWAY;
RUNWAY 27 DEPARTURE, WIND SHEAR ALERT, 20 KT GAIN ON RUNWAY, WINDS 250 AT 20.

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.

24.6.1.8 The Terminal Weather Information for Pilots System (TWIP)

a) With the increase in the quantity and quality of terminal weather information available through TDWR, the next step is to provide this information directly to pilots rather than relying on voice communications from ATC. The National Airspace System 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

25. PIREPs Relating to Volcanic Ash Activity

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

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

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

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

26. Thunderstorms

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

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

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

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

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

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

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

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

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

27. Thunderstorm Flying

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

27.1.18 Do give a PIREP for the flight conditions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

28. Wake Turbulence

28.1 General

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

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

28.2 Vortex Generation

28.2.1 The creation of a pressure differential over the wing surface generates lift. The lowest pressure occurs over the upper wing surface and the highest pressure under the wing. This pressure differential triggers the roll up of the airflow at the rear of the wing resulting in swirling air masses trailing downstream of the wing tips. After the roll up is completed, the wake consists of two counter−rotating cylindrical vortices. (See FIG GEN 3.5−16.) The wake vortex is formed with most of the energy concentrated within a few feet of the vortex core.

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

28.3 Vortex Strength

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

28.3.2 Induced Roll

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

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

28.4 Vortex Behavior

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

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

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

28.4.1.3 Flight tests have shown that the vortices from larger aircraft sink at a rate of several hundred feet per minute, slowing their descent and diminishing in strength with time and distance behind the generating aircraft. Pilots should fly at or above the preceding aircraft's flight path, altering course as necessary to avoid the area directly behind and below the generating aircraft. (See FIG GEN 3.5−19.) Pilots, in all phases of flight, must remain vigilant of possible wake effects created by other aircraft. Studies have shown that atmospheric turbulence hastens wake breakup, while other atmospheric conditions can transport wake horizontally and vertically.

FIG GEN 3.5−16
Wake Vortex Generation

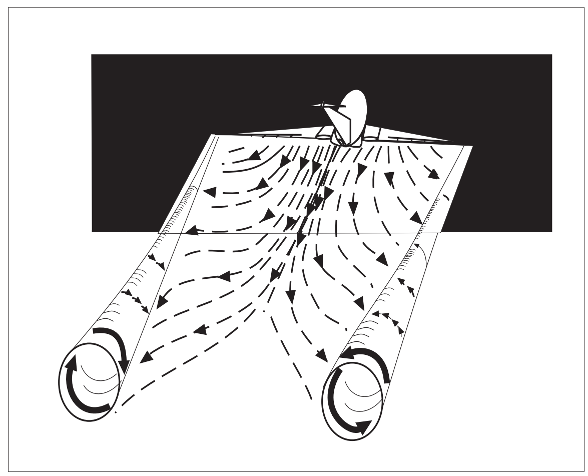


FIG GEN 3.5−17
Wake Encounter Counter Control

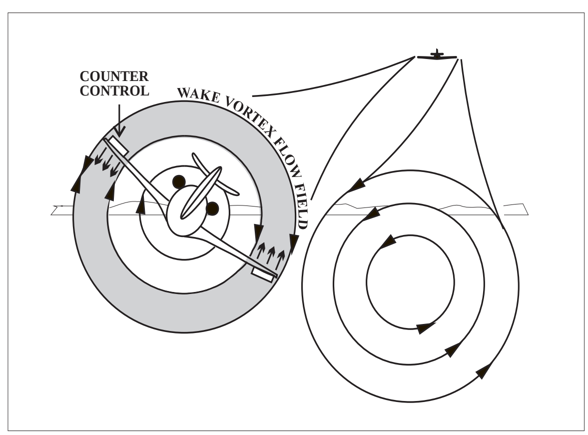


FIG GEN 3.5−18
Wake Ends/Wake Begins

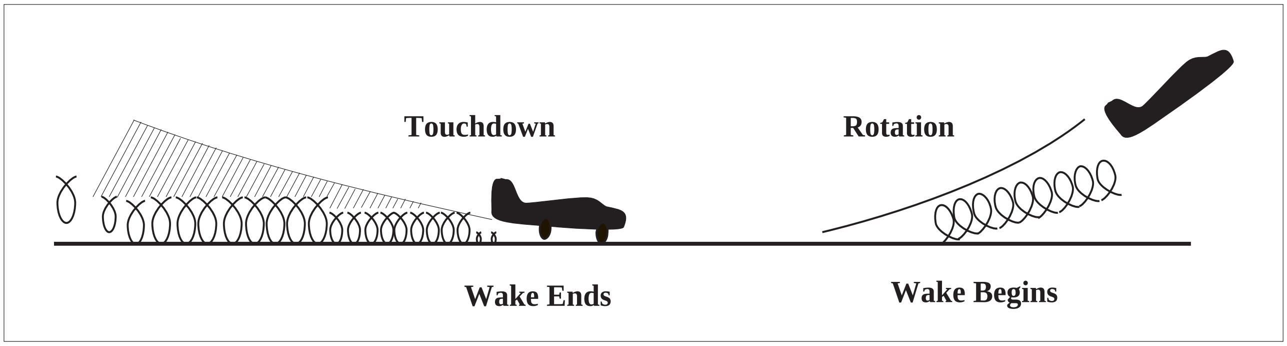


FIG GEN 3.5−19
Vortex Flow Field

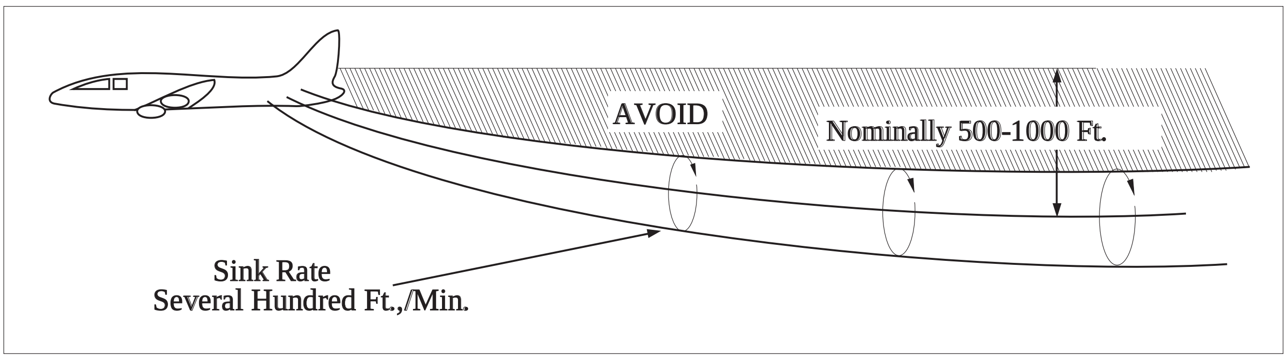
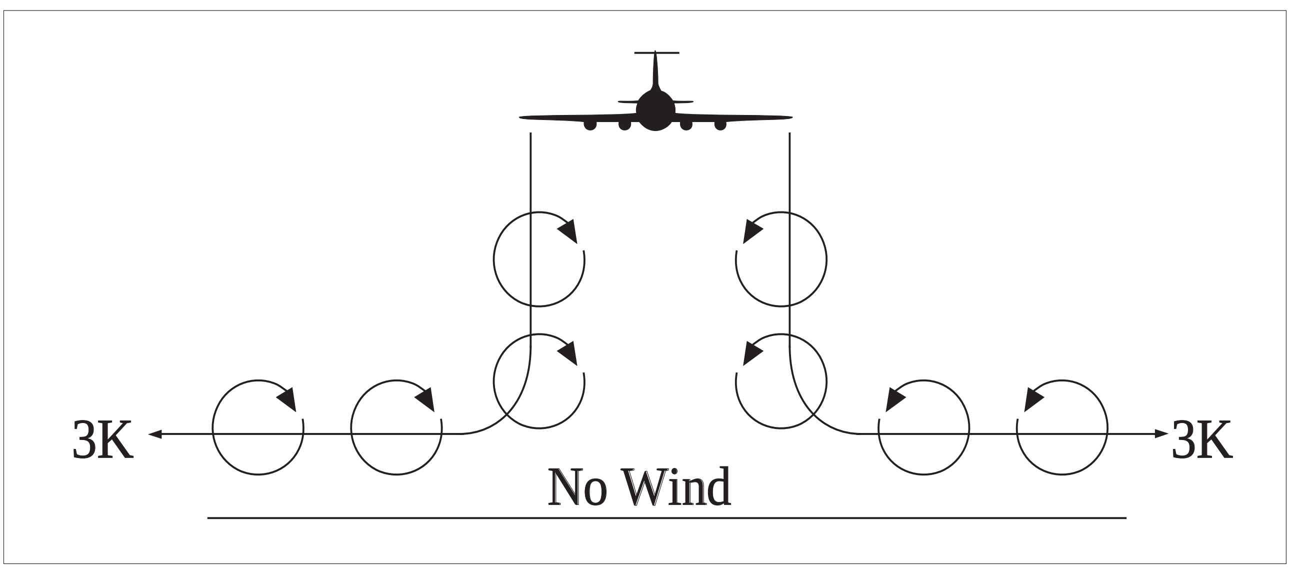


FIG GEN 3.5−20
Vortex Movement Near Ground − No Wind



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

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

FIG GEN 3.5−21

Vortex Movement Near Ground − with Cross Winds

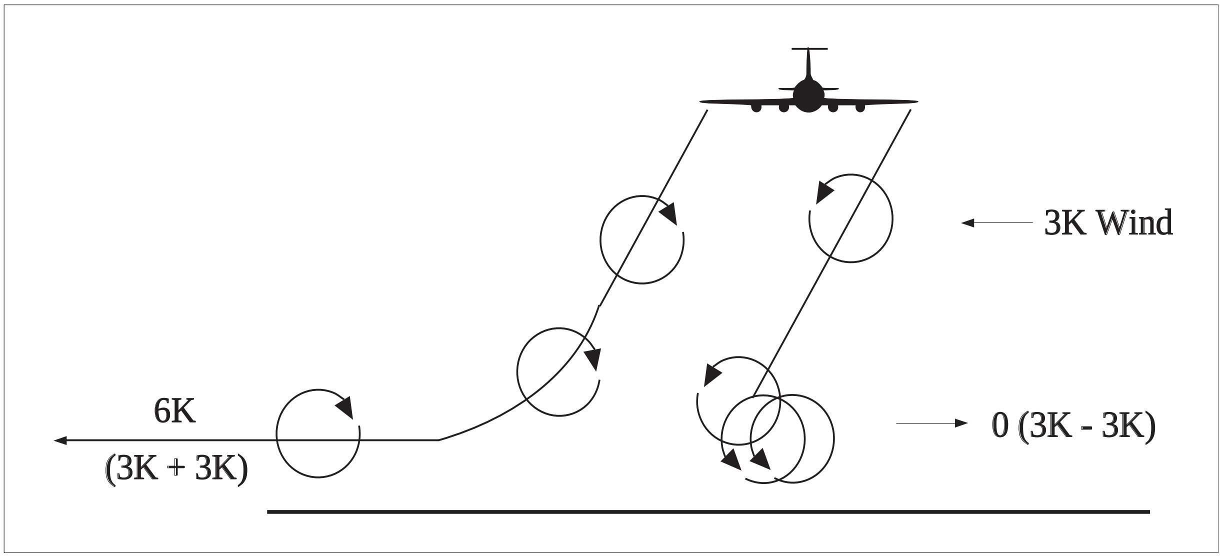
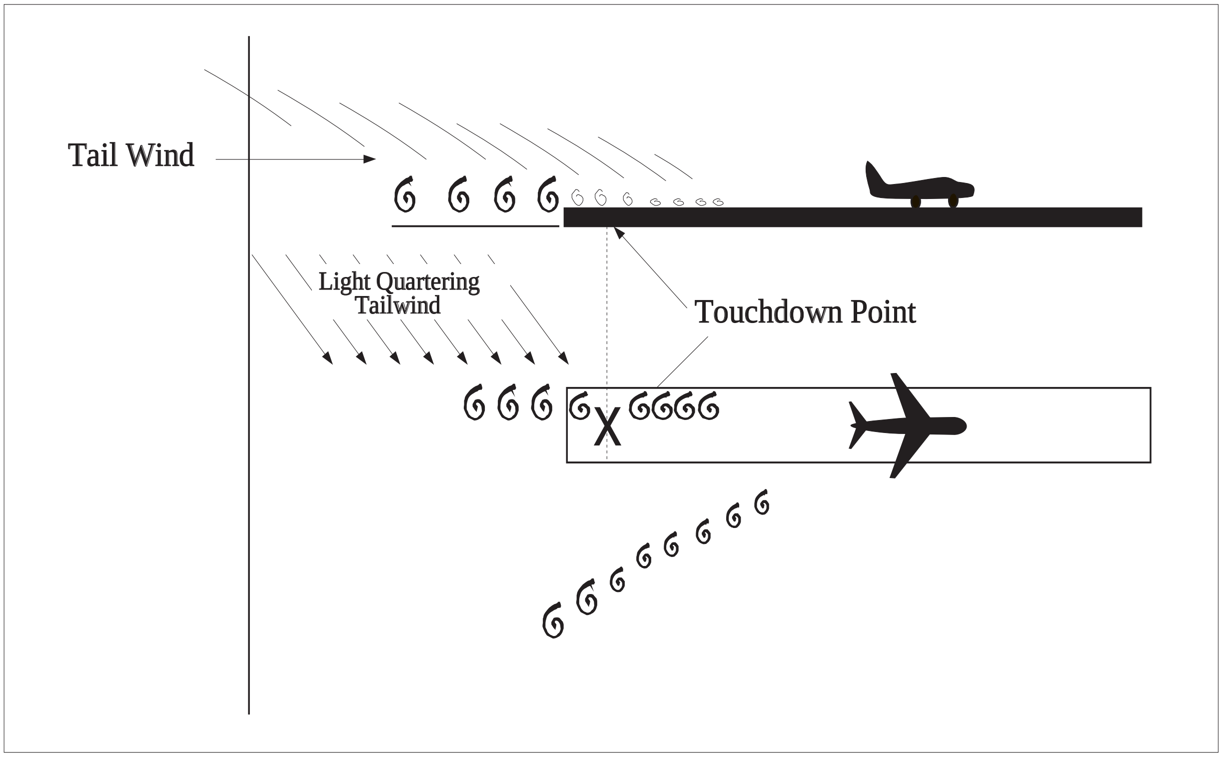


FIG GEN 3.5−22
Vortex Movement in Ground Effect − Tailwind



28.4.2 A crosswind will decrease the lateral movement of the upwind vortex and increase the movement of the downwind vortex. Thus, a light wind with a cross−runway component of 1 to 5 knots could result in the upwind vortex remaining in the touchdown zone for a period of time and hasten the drift of the downwind vortex toward another runway. (See FIG GEN 3.5−21.) 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 large aircraft upwind from their approach and takeoff flight paths. (See FIG GEN 3.5−22.)

28.5 Operations Problem Areas

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

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

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

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

28.5.3.1 Remain in the touchdown area.

28.5.3.2 Drift from aircraft operating on a nearby runway.

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

28.5.3.4 Sink into the traffic pattern from other airport operations.

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

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

28.6 Vortex Avoidance Procedures

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

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

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

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

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

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

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

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

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

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

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

28.7 Helicopters

28.7.1 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.

28.8 Pilot Responsibility

28.8.1 Research and testing have been conducted, in addition to ongoing wake initiatives, in an attempt to mitigate the effects of wake turbulence. Pilots must exercise vigilance in situations where they are responsible for avoiding wake turbulence.

28.8.2 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:

28.8.2.1 Traffic information.

28.8.2.2 Instructions to follow an aircraft.

28.8.2.3 The acceptance of a visual approach clearance.

28.8.3 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.

28.8.4 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.

28.8.4.1 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.

28.8.4.2 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.

28.8.5 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.

28.8.5.1 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.

28.8.5.2 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. Ensure you have adequate runway remaining, if conducting a touch−and−go landing, or adequate stopping distance available for a full stop landing.

28.8.6 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.

28.8.7 Pilots should notify ATC when a wake event is encountered. Be as descriptive as possible (i.e., bank angle, altitude deviations, intensity and duration of event, etc.) when reporting the event. ATC will record the event through their reporting system. You are also encouraged to use the Aviation Safety Reporting System (ASRS) to report wake events.

28.9 Air Traffic Wake Turbulence Separations

28.9.1 Because of the possible effects of wake turbulence, controllers are required to apply no less than minimum required separation to all aircraft operating behind a Super or Heavy, and to Small aircraft operating behind a B757, when aircraft are IFR; VFR and receiving Class B, Class C, or TRSA airspace services; or VFR and being radar sequenced.

28.9.1.1 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.

28.9.1.2 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.

28.9.2 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:

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

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

28.9.2.3 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.

28.9.3 A 3–minute interval will be provided for a **small** aircraft taking off:

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

28.9.3.2 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.

28.9.4 A 3–minute interval will be provided when a small aircraft will takeoff:

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

28.9.4.2 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.

28.9.5 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 28.9.4.1 and 28.9.4.2 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.

28.9.6 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."

28.9.7 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.

NOTE−
With the advent of new wake turbulence separation methodologies known as Wake Turbulence Recategorization, some of the requirements listed above may vary at facilities authorized to operate in accordance with Wake Turbulence Recategorization directives.

REFERENCE−
FAA Order JO 7110.659 Wake Turbulence Recategorization
FAA Order JO 7110.123 Wake Turbulence Recategorization − Phase II
FAA Order JO 7110.126, Consolidated Wake Turbulence

28.10 Development and New Capabilities

28.10.1 The suite of available wake turbulence tools, rules, and procedures is expanding, with the development of new methodologies. Based on extensive analysis of wake vortex behavior, new procedures and separation standards are being developed and implemented in the US and throughout the world. Wake research involves the wake generating aircraft as well as the wake toleration of the trailing aircraft.

28.10.2 The FAA and ICAO are leading initiatives, in terminal environments, to implement next−generation wake turbulence procedures and separation standards. The FAA has undertaken an effort to recategorize the existing fleet of aircraft and modify associated wake turbulence separation minima. This initiative is termed Wake Turbulence Recategorization (RECAT), and changes the current weight−based classes (Super, Heavy, B757, Large, Small+, and Small) to a wake−based categorical system that utilizes the aircraft matrices of weight, wingspan, and approach speed. RECAT is currently in use at a limited number of airports in the National Airspace System.

29. International Civil Aviation Organization (ICAO) Weather Formats

29.1 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.

29.2 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:

29.2.1 Type of report.

29.2.2 ICAO station identifier.

29.2.3 Date and time of report.

29.2.4 Modifier (as required).

29.2.5 Wind.

29.2.6 Visibility.

29.2.7 Runway Visual Range (RVR).

29.2.8 Weather phenomena.

29.2.9 Sky conditions.

29.2.10 Temperature/Dew point group.

29.2.11 Altimeter.

29.2.12 Remarks (RMK).

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

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

29.3.1.1 The METAR, an aviation routine weather report.

29.3.1.2 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.

29.3.2 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."

29.3.3 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)

29.3.4 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.

29.3.5 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

29.3.5.1 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."

29.3.5.2 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."

29.3.6 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

29.3.6.1 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.

29.3.6.2 Automated Visibility. ASOS/AWOS 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.

29.3.6.3 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."

29.3.6.4 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

29.3.7 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.)

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

29.3.7.2 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.

29.3.8 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.

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

29.3.8.2 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.)

29.3.8.3 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.

29.3.8.4 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)

29.3.8.5 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.

29.3.8.6 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.)

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

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

29.3.9.1 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.*

29.3.9.2 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).

29.3.9.3 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."

29.3.9.4 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.

29.3.9.5 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."

29.3.9.6 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."

29.3.9.7 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."

29.3.9.8 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."

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

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

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

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

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

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

CBMAM DSNT S − "cumulonimbus mammatus distant south."

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

EXAMPLE−
TCU OHD − "towering cumulus overhead."

TCU W − "towering cumulus west."

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

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

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

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

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

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

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

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

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

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

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

29.3.12.2 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

29.4 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

29.4.1 Explanation of TAF elements

29.4.1.1 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.

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

29.4.1.3 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."

29.4.1.4 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).

29.4.1.5 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"

29.5 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."*

29.6 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.

29.6.1 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."

29.6.2 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."

29.6.3 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 9^{th} to 24Z on the 10^{th}).	
	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.			

30. Meteorological Broadcasts (ATIS, VHF and LF)

30.1 Automatic Terminal Information Service (ATIS) Broadcasts

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

30.2 Navigational Aids Providing Broadcast Services

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

TBL GEN 3.5−13

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		

FIG GEN 3.6−15
Negative (Aircraft)

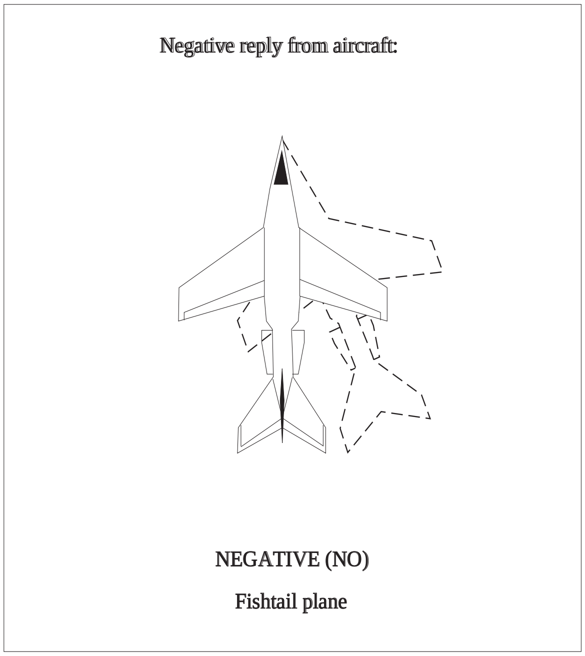


FIG GEN 3.6−16
Message received and understood (Aircraft)

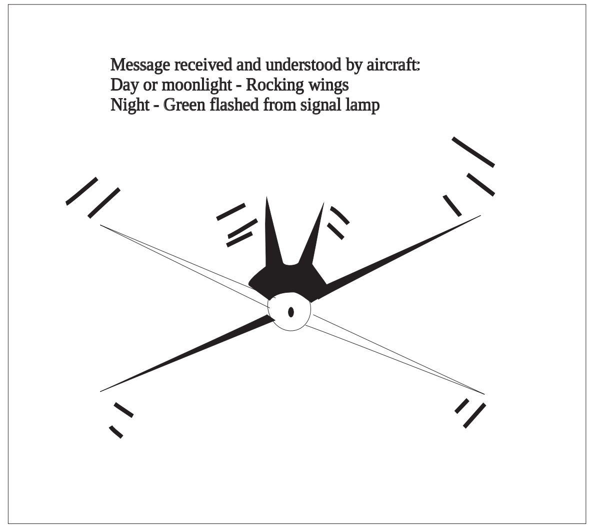
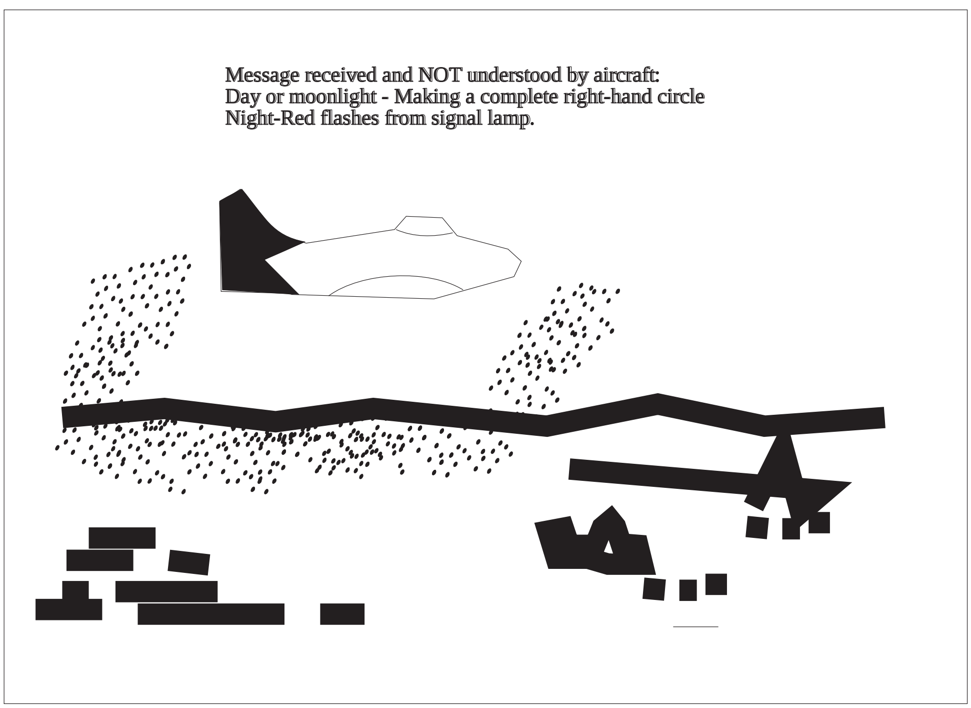


FIG GEN 3.6−17
Message received and NOT understood (Aircraft)



10. Pilot Responsibility and Authority

10.1 The pilot in command of an aircraft is directly responsible for, and is the final authority as to the operation of that aircraft. In an emergency requiring immediate action, the pilot in command may deviate from any rule in Title 14 of the Code of Federal Regulations (CFR), Part 91, Subpart A, General, and Subpart B, Flight Rules, to the extent required to meet that emergency (14 CFR Section 91.3(b)).

NOTE−
In the event of a pilot incapacitation, an Emergency Autoland system or an emergency descent system may assume operation of the aircraft and deviate to meet that emergency.

10.2 If the emergency authority of 14 CFR Section 91.3(b) is used to deviate from the provisions of an air traffic control clearance, the pilot in command must notify ATC as soon as possible and obtain an amended clearance (14 CFR Section 91.123(c)).

10.3 Unless deviation is necessary under the emergency authority of 14 CFR Section 91.3, pilots of IFR flights experiencing two−way radio communications failure are expected to adhere to the procedures prescribed under "IFR operations; two−way radio communications failure." (14 CFR Section 91.185)

11. Distress and Urgency Communications

11.1 A pilot who encounters a distress or urgency condition can obtain assistance simply by contacting the air traffic facility or other agency in whose area of responsibility the aircraft is operating, stating the nature of the difficulty, pilot's intentions, and assistance desired. Distress and urgency communications procedures prescribed by the International Civil Aviation Organization (ICAO), however, have decided advantages over the informal procedure described above.

11.2 Distress and urgency communications procedures discussed in the following paragraphs relate to the use of air−ground voice communications.

11.3 The initial communication, and if considered necessary, any subsequent transmissions by an aircraft in distress should begin with the signal MAYDAY, preferably repeated three times. The signal PAN−PAN should be used in the same manner for an urgency condition.

11.4 Distress communications have absolute priority over all other communications, and the word MAYDAY commands radio silence on the frequency in use. Urgency communications have priority over all other communications except distress, and the word PAN−PAN warns other stations not to interfere with urgency transmissions.

11.5 Normally, the station addressed will be the air traffic facility or other agency providing air traffic services on the frequency in use at the time. If the pilot is not communicating and receiving services, the station to be called will normally be the air traffic facility or other agency in whose area of responsibility the aircraft is operating on the appropriate assigned frequency. If the station addressed does not respond, or if time or the situation dictates, the distress or urgency message may be broadcast, or a collect call may be used, addressing "Any Station (Tower) (Radio) (Radar)."

11.6 The station addressed should immediately acknowledge a distress or urgency message, provide assistance, coordinate and direct the activities of assisting facilities, and alert the appropriate search and rescue coordinator if warranted. Responsibility will be transferred to another station only if better handling will result.

11.7 All other stations, aircraft and ground, will continue to listen until it is evident that assistance is being provided. If any station becomes aware that the station being called either has not received a distress or urgency message, or cannot communicate with the aircraft in difficulty, it will attempt to contact the aircraft and provide assistance.

11.8 Although the frequency in use or other frequencies assigned by ATC are preferable, the following emergency frequencies can be used for distress or urgency communications, if necessary or desirable:

11.8.1 121.5 MHz and 243.0 MHz − Both have a range generally limited to line of sight. 121.5 MHz is guarded by direction finding stations and some military and civil aircraft. 243.0 MHz is guarded by military aircraft. Both 121.5 MHz and 243.0 MHz are guarded by military towers, most civil towers, and radar facilities. Normally ARTCC emergency frequency capability does not extend to radar coverage limits. If an ARTCC does not respond when called on 121.5 MHz or 243.0 MHz, call the nearest tower.

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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2−61	31 DEC 20
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AD 0.5 List of Hand Amendments to the AIP − Not applicable

45.1.2 In the United States, ADS−B equipped aircraft exchange information on one of two frequencies: 978 or 1090 MHz. The 1090 MHz frequency is also associated with Mode A, C, and S transponder operations. 1090 MHz transponders with integrated ADS−B functionality extend the transponder message sets with additional ADS−B information. This additional information is known as an "extended squitter" message and is referred to as 1090ES. ADS−B equipment operating on 978 MHz is known as the Universal Access Transceiver (UAT).

45.1.3 ADS−B avionics can have the ability to both transmit and receive information. The transmission of ADS−B information from an aircraft is known as ADS−B Out. The receipt of ADS−B information by an aircraft is known as ADS−B In. All aircraft operating within the airspace defined in 14 CFR § 91.225 are required to transmit the information defined in § 91.227 using ADS−B Out avionics.

45.1.4 In general, operators flying at 18,000 feet and above (Class A airspace) are required to have 1090ES equipment. Those that do not fly above 18,000 may use either UAT or 1090ES equipment. (Refer to 14 CFR §§ 91.225 and 91.227.) While the regulations do not require it, operators equipped with ADS−B In will realize additional benefits from ADS−B broadcast services: Traffic Information Service – Broadcast (TIS−B) (Paragraph 46.) and Flight Information Service – Broadcast (FIS−B) (Paragraph 47.).

FIG ENR 1.1−34
ADS−B, TIS−B, and FIS−B:
Broadcast Services Architecture

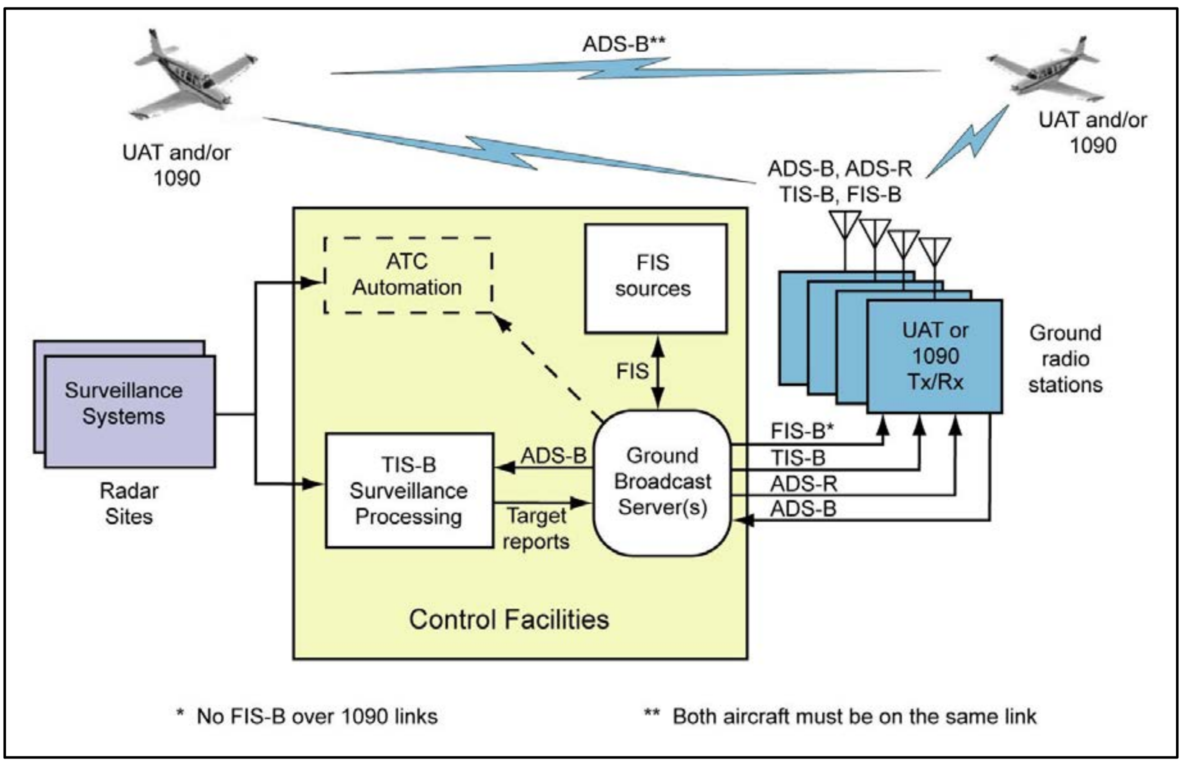


FIG ENR 1.1−35
En Route − ADS−B/ADS−R/TIS−B/FIS−B Service Ceilings/Floors

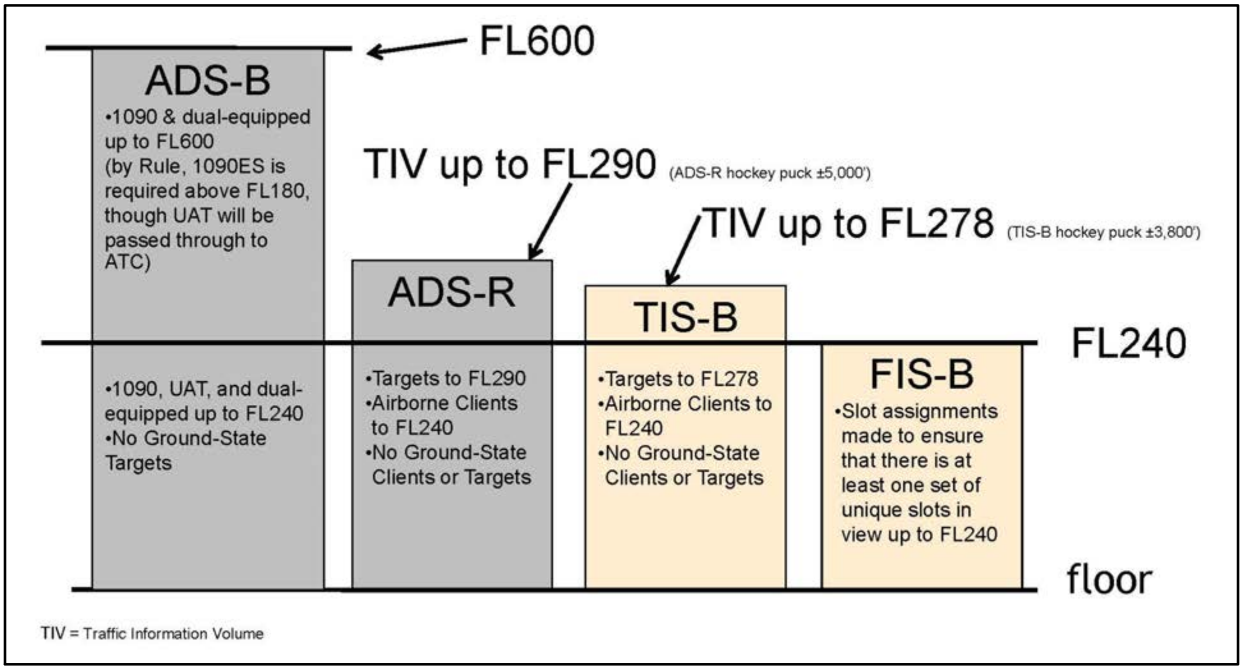
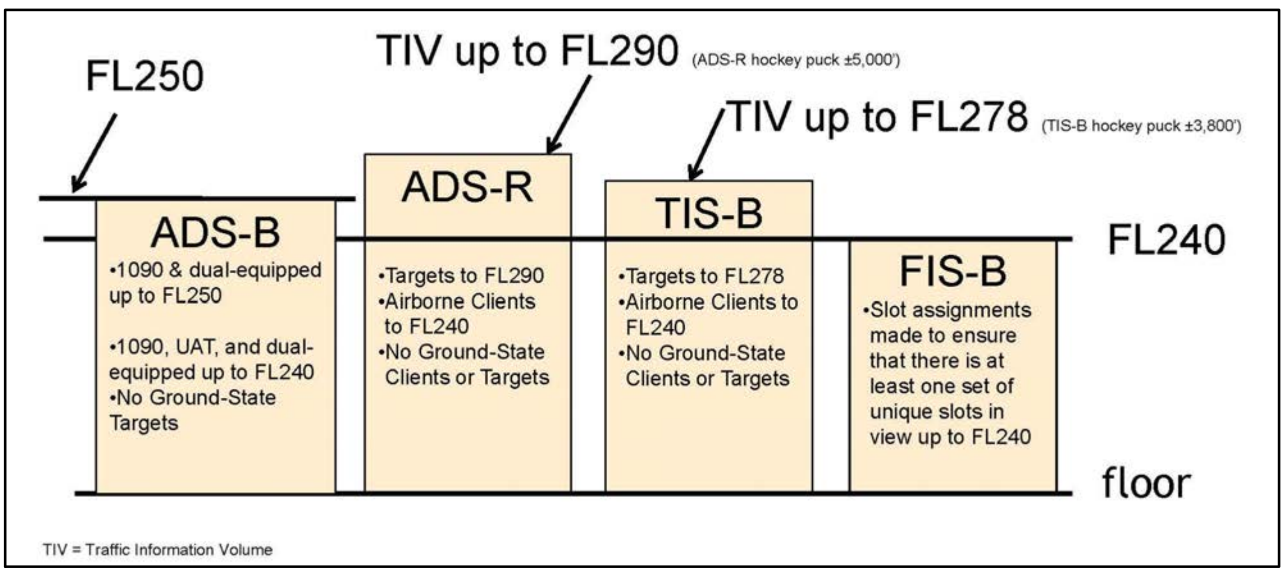
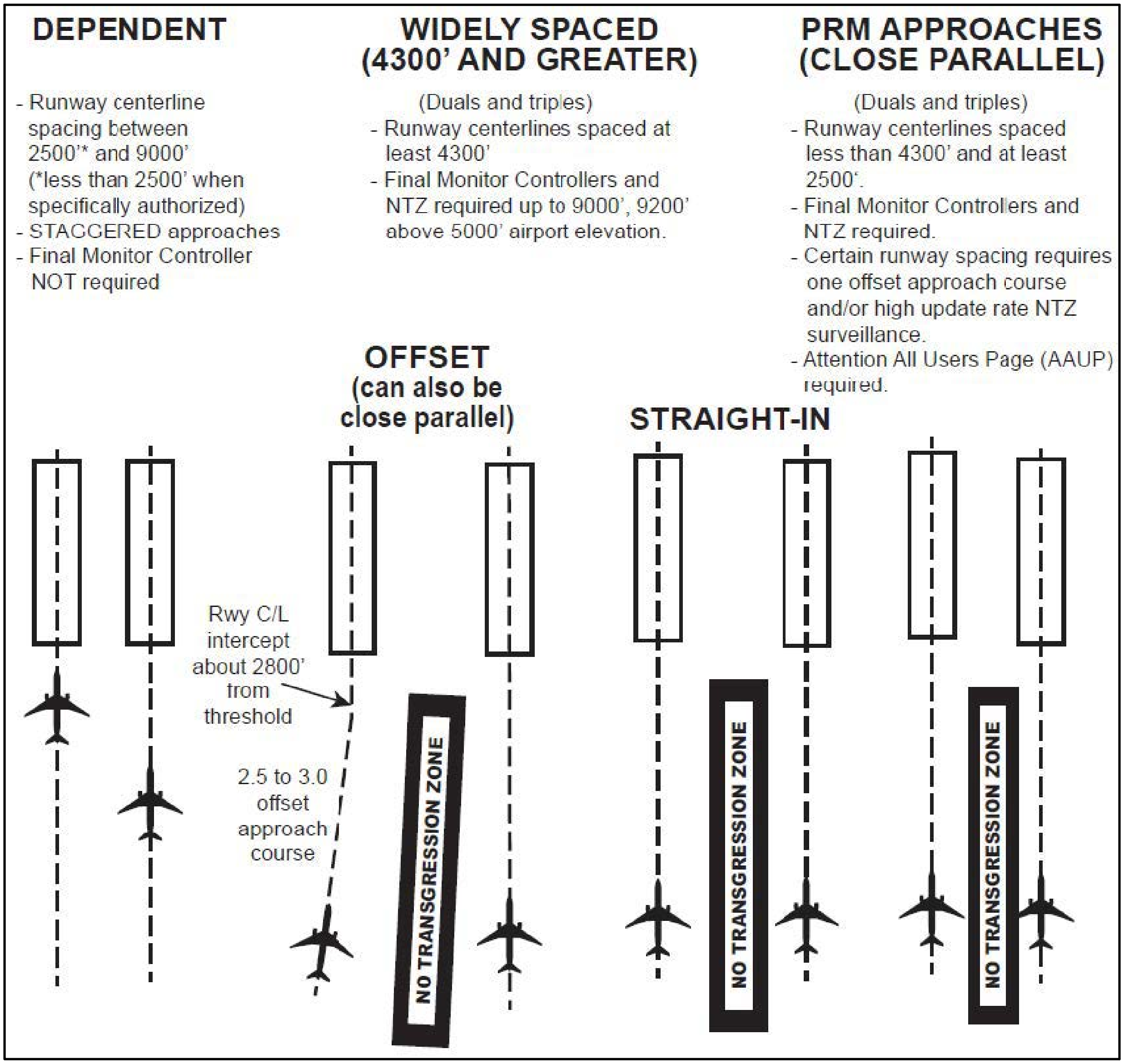


FIG ENR 1.1−36
Terminal − ADS−B/ADS−R/TIS−B/FIS−B Service Ceilings/Floors



17. Simultaneous Approaches to Parallel Runways

FIG ENR 1.5−33
Simultaneous Approaches
(Approach Courses Parallel and Offset between 2.5 and 3.0 degrees)



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 Dependent Approaches; Simultaneous Independent Approaches; and Simultaneous Close Parallel PRM Approaches. 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 final approach radar monitoring and communications capabilities. At some airports, one or more approach 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 Depending on weather conditions, traffic volume, and the specific combination of runways being utilized for arrival operations, a runway may be used for different types of simultaneous operations, including closely spaced dependent or independent approaches. Pilots should ensure that they understand the type of operation that is being conducted, and ask ATC for clarification if necessary.

17.3 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, glideslope/glidepath 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 are informed by ATC or through the ATIS that simultaneous approaches are in use.

17.4 The close proximity of adjacent aircraft conducting simultaneous independent approaches, especially 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 independent approaches, particularly 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.

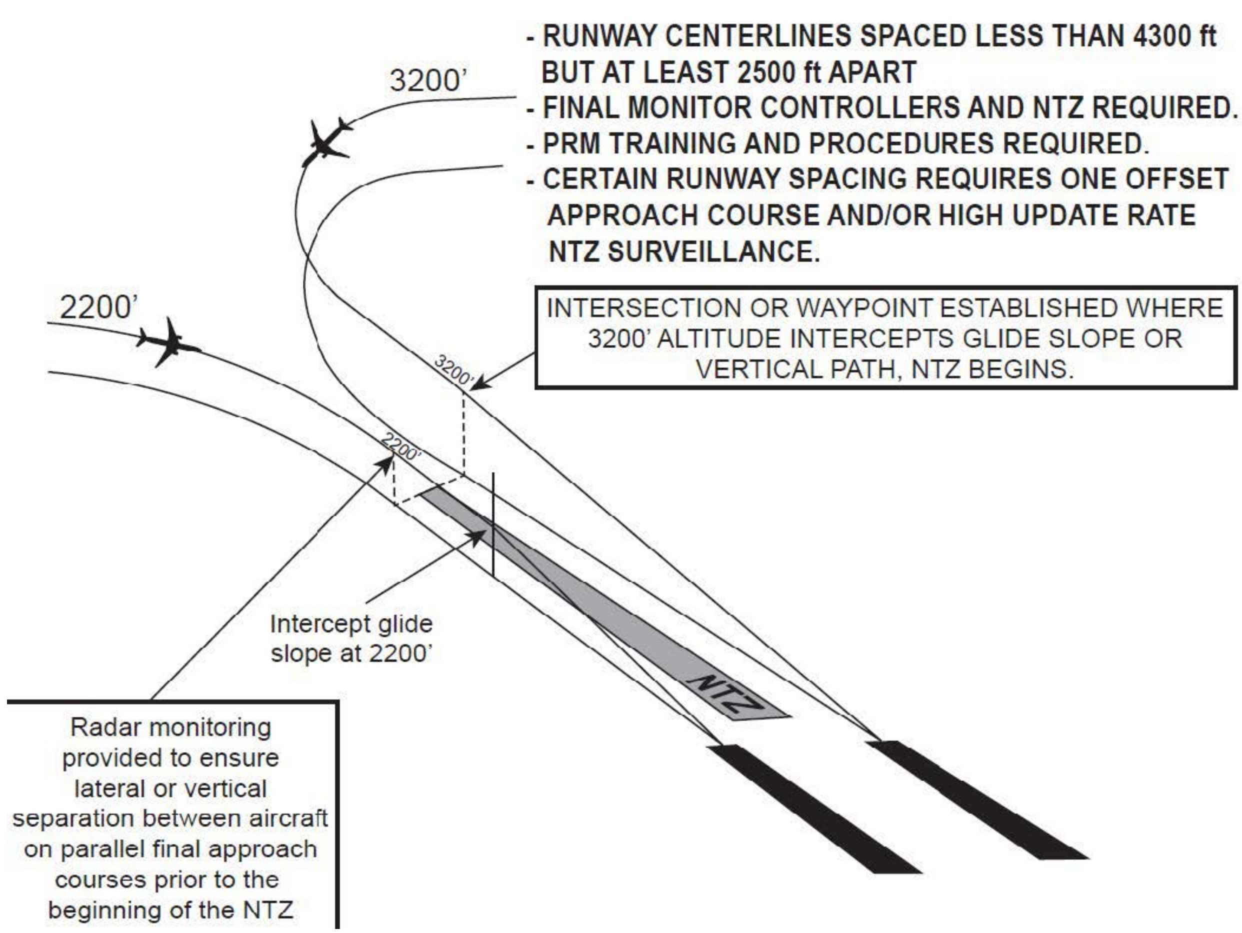
17.5 Strict radio discipline is mandatory during simultaneous independent and simultaneous close parallel PRM approach operations. This includes an alert listening watch and the avoidance of lengthy, unnecessary radio transmissions. Attention must be given to proper call sign usage to prevent the inadvertent 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 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.

17.6 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.

20. Simultaneous Close Parallel PRM Approaches and Simultaneous Offset Instrument Approaches (SOIA)

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 (final monitor aid) consists of a high resolution ATC radar display with 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, Paragraph 19. Simultaneous Independent ILS/RNAV/GLS Approaches.

20.1.2 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, radar display, publication of an AAUP, and use of a secondary PRM communications frequency. PRM approaches are depicted on a separate IAP titled (Procedure type) PRM Rwy XXX (Simultaneous Close Parallel or Close Parallel).

NOTE−
ATC does not use the word "independent" when advertising these operations on the ATIS.

EXAMPLE−
Simultaneous ILS PRM Runway 33 left and ILS PRM Runway 33 right approaches in use.

20.1.2.1 The pilot may request to conduct a different type of PRM approach to the same runway other than the one that is presently being used; for example, RNAV instead of ILS. However, pilots must always obtain ATC approval to conduct a different type of approach. Also, in the event of the loss of ground−based NAVAIDS, the ATIS may advertise other types of PRM approaches to the affected runway or runways.

20.1.2.2 The Attention All Users Page (AAUP) will address procedures for conducting PRM approaches.

20.2 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 a PRM approach.

20.2.1 Pilot Training Requirement. Pilots must complete special pilot training, as outlined below, before accepting a clearance for a simultaneous close parallel PRM approach.

20.2.1.1 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 includes the requirement for pilots to view the FAA training slide presentation, "Precision Runway Monitor (PRM) Pilot Procedures." 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 slide presentation.

20.2.1.2 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 slide presentation, "Precision Runway Monitor (PRM) Pilot Procedures." 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 slide presentation.

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 training slide presentation, "Precision Runway Monitor (PRM) Pilot Procedures." 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 slide presentation.

NOTE−
Depending on weather conditions, traffic volume, and the specific combination of runways being utilized for arrival operations, a runway may be used for different types of simultaneous operations, including closely spaced dependent or independent approaches. Use PRM procedures only when the ATIS advertises their use. For other types of simultaneous approaches, see ENR 1.5 paragraphs 17.and 18.

20.3 ATC Directed Breakout. An ATC directed "breakout" is defined as a vector off the final approach course of a threatened aircraft in response to another aircraft penetrating the NTZ.

20.4 Dual Communications. The aircraft flying the PRM approach must have the capability of enabling the pilot/s to listen to two communications frequencies simultaneously. 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 the PRM frequency if the tower 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.

TBL ENR 1.10−5

Aircraft COM, NAV, and Approach Equipment Qualifiers

INSERT one letter as follows:

N if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable,

(OR)

S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1),

(AND/OR)

INSERT one or more of the following letters to indicate the COM/NAV/approach aid equipment available and serviceable:

NOTE−

The capabilities described below comprise the following elements:

a. Presence of relevant serviceable equipment on board the aircraft.

b. Equipment and capabilities commensurate with flight crew qualifications.

c. Where applicable, authorization from the appropriate authority.

A	GBAS landing system	L	ILS
B	LPV (APV with SBAS)	M1	ATC RTF SATCOM (INMARSAT)
C	LORAN C	M2	Reserved
D	DME	M3	ATC RTF (Iridium)
E1	FMC WPR ACARS	O	VOR
E2	D-FIS ACARS	P1	CPDLC RCP 400 *(See Note 7.)*
E3	PDC ACARS	P2	CPDLC RCP 240 *(See Note 7.)*
F	ADF	P3	SATVOICE RCP 400 *(See Note 7.)*
G	(GNSS) (S*ee Note 2.)*	P4–P9	Reserved for RCP
H	HF RTF	R	PBN approved (*See Note 4.)*
I	Inertial navigation	T	TACAN
J1	CPDLC ATN VDL Mode 2 (*See Note 3.)*	U	UHF RTF
J2	CPDLC FANS 1/A HFDL	V	VHF RTF
J3	CPDLC FANS 1/A VDL Mode 4	W	RVSM approved
J4	CPDLC FANS 1/A VDL Mode 2	X	MNPS approved/North Atlantic (NAT) High Level Airspace (HLA) approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Y	VHF with 8.33 kHz channel spacing capability
J6	Reserved	Z	Other equipment carried or other capabilities (S*ee Note 5.)*
J7	CPDLC FANS 1/A SATCOM (Iridium)		

NOTE−

1. *If the letter S is used, standard equipment is considered to be VHF RTF, VOR, and ILS within U.S. domestic airspace.*

2. *If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ and separated by a space.*

3. *See RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard – DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.*

4. *If the letter R is used, the performance−based navigation levels that are authorized must be specified in Item 18 following the indicator PBN/. For further details, see paragraph 12.5.1.2.*

5. *If the letter Z is used, specify in Item 18 the other equipment carried, preceded by COM/, DAT/, and/or NAV/, as appropriate.*

6. *Information on navigation capability is provided to ATC for clearance and routing purposes.*

7. *Guidance on the application of performance−based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance−Based Communication and Surveillance (PBCS) Manual (Doc 9869).*

airspace if in compliance with all of the following conditions:

1.7.1.1 File and are on an active flight plan (IFR, VFR, or DVFR);

1.7.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.1.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.7.1.4 Maintain two−way radio communications with ATC;

1.7.1.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2;

1.7.1.6 Are operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation security program information) or are operating with and in accordance with an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information), if:

a) The aircraft is not registered in the U.S.; or

b) The aircraft is registered in the U.S. and its maximum takeoff gross weight is greater than 100,309 pounds (45,500 kgs);

1.7.1.7 Are in receipt of, and are operating in accordance with, an FAA routing authorization if the aircraft is registered in a U.S. State Department−designated special interest country or is operating with the ICAO 3LD of a company in a country listed as a U.S. State Department−designated special interest country, unless the operator holds valid FAA Part 129 operations specifications. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization. (See paragraph 1.11 for FAA routing authorization information.)

1.7.2 Civil aircraft registered in Canada or Mexico, and engaged in operations for the purposes of air ambulance, firefighting, law enforcement, search and rescue, or emergency evacuation are authorized to transit U.S. territorial airspace within 50 NM of their respective borders with the U.S., with or without an active flight plan, provided they have received and continuously transmit an ATC−assigned transponder code.

1.7.3 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less are authorized to transit U.S. territorial airspace if in compliance with all of the following conditions:

1.7.3.1 File and are on an active flight plan (IFR, VFR, or DVFR) that enters U.S. territorial airspace directly from any of the countries listed in this subparagraph 1.7.3. Flights that include a stop in a non−listed country prior to entering U.S. territorial airspace must comply with the requirements prescribed by subparagraph 1.7.1 above, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information);

1.7.3.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.7.3.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.7.3.4 Maintain two−way radio communications with ATC; and

1.7.3.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.7.4 Civil aircraft registered in Canada, Mexico, Bahamas, Bermuda, Cayman Islands, or the British Virgin Islands with a maximum certificated takeoff gross weight greater than 100,309 pounds (45,500 kgs) must comply with the requirements in subparagraph 1.7.1, including operating under an approved TSA aviation security program (see paragraph 1.10 for TSA aviation program information) or operating with, and in accordance with, an FAA/TSA airspace waiver (see paragraph 1.9 for FAA/TSA airspace waiver information).

1.7.5 Civil aircraft registered in the U.S., Canada, or Mexico with a maximum certificated takeoff gross weight of 100,309 pounds (45,500 kgs) or less that are operating without an operational transponder and/or the ability to maintain two−way radio communications with ATC, are authorized to transit U.S.

territorial airspace over Alaska if in compliance with all of the following conditions:

1.7.5.1 Enter and exit U.S. territorial airspace over Alaska north of the fifty−fourth parallel;

1.7.5.2 File and are on an active flight plan;

1.7.5.3 Squawk 1200 if VFR and equipped with a transponder; and

1.7.5.4 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8 Foreign State Aircraft Operations

1.8.1 Foreign state aircraft are authorized to operate in U.S. territorial airspace if in compliance with all of the following conditions:

1.8.1.1 File and are on an active IFR flight plan;

1.8.1.2 Equipped with an operational transponder with altitude reporting capability and continuously squawk an ATC assigned transponder code;

1.8.1.3 Equipped with an operational ADS−B Out when operating in airspace specified in 14 CFR 91.225;

1.8.1.4 Maintain two−way radio communications with ATC;

1.8.1.5 Comply with all other applicable ADIZ requirements described in paragraph 1.4 and any other national security requirements in paragraph 1.2.

1.8.2 Diplomatic Clearances. Foreign state aircraft may operate to or from, within, or in transit of U.S. territorial airspace only when authorized by the U.S. State Department by means of a diplomatic clearance, except as described in subparagraph 1.8.8 below.

1.8.2.1 Information about diplomatic clearances is available at the U.S. State Department website https://www.state.gov/diplomatic−aircraft−clearance−procedures−for−foreign−state−aircraft−to−operate−in−united−states−national−airspace/ (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) 453−8390.

NOTE−
A diplomatic clearance is not required for foreign state aircraft operations that transit U.S. controlled oceanic airspace but do not enter U.S. territorial airspace. (See subparagraph 1.8.4 for flight plan information.)

1.8.3 An FAA routing authorization for state aircraft operations of special interest countries listed in subparagraph 1.11.2 is required before the U.S. State Department will issue a diplomatic clearance for such operations. (See paragraph 1.11 for FAA routing authorizations information).

1.8.4 Foreign state aircraft operating with a diplomatic clearance must navigate U.S. territorial airspace on an active IFR flight plan, unless specifically approved for VFR flight operations by the U.S. State Department in the diplomatic clearance.

NOTE−
Foreign state aircraft operations to or from, within, or transiting U.S. territorial airspace; or transiting any U.S. controlled oceanic airspace, should enter ICAO code M in Item 8 of the flight plan to assist in identification of the aircraft as a state aircraft.

1.8.5 A foreign aircraft that operates to or from, within, or in transit of U.S. territorial airspace while conducting a state aircraft operation is not authorized to change its status as a state aircraft during any portion of the approved, diplomatically cleared itinerary.

1.8.6 A foreign aircraft described in subparagraph 1.8.5 above may operate from or within U.S. territorial airspace as a civil aircraft operation, once it has completed its approved, diplomatically cleared itinerary, if the aircraft operator is:

1.8.6.1 A foreign air carrier that holds valid FAA Part 129 operations specifications; and

1.8.6.2 Is in compliance with all other requirements applied to foreign civil aircraft operations from or within U.S. territorial airspace. (See paragraphs 1.5 and 1.6.)

1.8.7 Foreign state aircraft operations are not authorized to or from Ronald Reagan Washington National Airport (KDCA).

1.8.8 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.

1.10 TSA Aviation Security Programs

1.10.1 Applicants for U.S. air operator certificates will be provided contact information for TSA aviation security programs by the U.S. Department of Transportation during the certification process.

1.10.2 For information about applicable TSA security programs:

1.10.2.1 U.S. air carriers and commercial operators must contact their TSA Principal Security Specialist (PSS); and

1.10.2.2 Foreign air carriers must contact their International Industry Representative (IIR).

1.11 FAA Flight Routing Authorizations

1.11.1 Information about FAA routing authorizations for U.S. State Department−designated special interest country flight operations to or from, within, or transiting U.S. territorial airspace is available by country at:

1.11.1.1 FAA website: http://www.faa.gov/air_traffic/publications/us_restrictions/; or

1.11.1.2 Phone by contacting the FAA System Operations Support Center (SOSC) at (202) 267−8115.

1.11.2 **Special Interest Countries.** The U.S. State Department−designated special interest countries are Cuba, Iran, The Democratic People's Republic of Korea (North Korea), The People's Republic of China, The Russian Federation, Sudan, and Syria.

NOTE−
FAA flight routing authorizations are not required for aircraft registered in Hong Kong, Taiwan, or Macau.

1.11.3 Aircraft operating with the ICAO 3LD assigned to a company or entity from a country listed as a State Department−designated special interest country and holding valid FAA Part 129 operations specifications do not require FAA flight routing authorization.

1.11.4 FAA routing authorizations will only be granted for IFR operations. VFR and DVFR flight operations are prohibited for any aircraft requiring an FAA routing authorization.

1.12 Emergency Security Control of Air Traffic (ESCAT)

1.12.1 During defense emergency or air defense emergency conditions, additional special security instructions may be issued in accordance with 32 CFR Part 245, Plan for the Emergency Security Control of Air Traffic (ESCAT).

1.12.2 Under the provisions of 32 CFR Part 245, the military will direct the action to be taken in regard to landing, grounding, diversion, or dispersal of aircraft in the defense of the U.S. during emergency conditions.

1.12.3 At the time a portion or all of ESCAT is implemented, ATC facilities will broadcast appropriate instructions received from the Air Traffic Control System Command Center (ATCSCC) over available ATC frequencies. Depending on instructions received from the ATCSCC, VFR flights may be directed to land at the nearest available airport, and IFR flights will be expected to proceed as directed by ATC.

1.12.4 Pilots on the ground may be required to file a flight plan and obtain an approval (through FAA) prior to conducting flight operation.

2. Interception Procedures

2.1 General

2.1.1 In conjunction with the FAA, Air Defense Sectors monitor air traffic and could order an intercept in the interest of national security or defense. Intercepts during peacetime operations are vastly different from those conducted under increased states of readiness. The interceptors may be fighters or rotary wing aircraft. The reasons for aircraft intercept include, but are not limited to:

2.1.1.1 Identify an aircraft.

2.1.1.2 Track an aircraft.

2.1.1.3 Inspect an aircraft.

2.1.1.4 Divert an aircraft.

2.1.1.5 Establish communications with an aircraft.

2.1.2 All aircraft operating in US national airspace are highly encouraged to maintain a listening watch on VHF/UHF guard frequencies (121.5 or 243.0 MHz). If subjected to a military intercept, it is incumbent on civilian aviators to understand their responsibilities and to comply with ICAO standard signals relayed from the intercepting aircraft. Specifically, aviators are expected to contact air traffic control without delay (if able) on the local operating frequency or on VHF/UHF guard. Noncompliance may result in the use of force.

2.1.3 When specific information is required (i.e., markings, serial numbers, etc.) the interceptor pilot(s) will respond only if, in their judgment, the request can be conducted in a safe manner. Intercept procedures are described in some detail in the paragraphs below. In all situations, the interceptor pilot will consider safety of flight for all concerned throughout the intercept procedure. The interceptor pilot(s) will use caution to avoid startling the intercepted crew or passengers and understand that maneuvers considered normal for interceptor aircraft may be considered hazardous to other aircraft.

2.2 Fighter Intercept Phases (See FIG ENR 1.12−2)

2.2.1 Approach Phase

2.2.1.1 As standard procedure, intercepted aircraft are approached from behind. Typically, interceptor aircraft will be employed in pairs; however, it is not uncommon for a single aircraft to perform the intercept operation. Safe separation between interceptors and intercepted aircraft is the responsibility of the intercepting aircraft and will be maintained at all times.

2.2.2 Identification Phase

2.2.2.1 Interceptor aircraft will initiate a controlled closure toward the aircraft of interest, holding at a distance no closer than deemed necessary to establish positive identification and to gather the necessary information. The interceptor may also fly past the intercepted aircraft while gathering data at a distance considered safe based on aircraft performance characteristics.

2.2.3 Post Intercept Phase

2.2.3.1 An interceptor may attempt to establish communications via standard ICAO signals. In time-critical situations where the interceptor is seeking an immediate response from the intercepted aircraft or if the intercepted aircraft remains non-compliant to instruction, the interceptor pilot may initiate a divert maneuver. In this maneuver, the interceptor flies across the intercepted aircraft's flight path (minimum 500 feet separation and commencing from slightly below the intercepted aircraft altitude) in the general direction the intercepted aircraft is expected to turn. The interceptor will rock its wings (daytime) or flash external lights/select afterburners (night) while crossing the intercepted aircraft's flight path. The interceptor will roll out in the direction the intercepted aircraft is expected to turn before returning to verify the aircraft of interest is complying. The intercepted aircraft is expected to execute an immediate turn to the direction of the intercepting aircraft. If the aircraft of interest does not comply, the interceptor may conduct a second climbing turn across the intercepted aircraft's flight path (minimum 500 feet separation and commencing from slightly below the intercepted aircraft altitude) while expending flares as a warning signal to the intercepted aircraft to comply immediately and to turn in the direction indicated and to leave the area. The interceptor is responsible to maintain safe separation during these and all intercept maneuvers. Flight safety is paramount.

NOTE−

1. *NORAD interceptors will take every precaution to preclude the possibility of the intercepted aircraft experiencing jet wash/wake turbulence; however, there is a potential that this condition could be encountered.*

2. *During night/IMC, the intercept will be from below flight path.*

329.15 MHz, to 335.00 MHz radiates its signals in the direction of the localizer front course.

CAUTION−
False glide slope signals may exist in the area of the localizer back course approach which can cause the glide slope flag alarm to disappear and present unreliable glide slope information. Disregard all glide slope signal indications when making a localizer back course approach unless a glide slope is specified on the approach and landing chart.

6.4.2 The glide slope transmitter is located between 750 and 1,250 feet from the approach end of the runway (down the runway) and offset 250−600 feet from the runway centerline. It transmits a glide path beam 1.4 degrees wide (vertically).

NOTE−
The term "glide path" means that portion of the glide slope that intersects the localizer.

6.4.3 The glide path projection angle is normally adjusted to 3 degrees above horizontal so that it intersects the middle marker at about 200 feet and the outer marker at about 1,400 feet above the runway elevation. The glide slope is normally usable to the distance of 10 NM. However, at some locations, the glide slope has been certified for an extended service volume which exceeds 10 NM.

6.4.4 Pilots must be alert when approaching glidepath interception. False courses and reverse sensing will occur at angles considerably greater than the published path.

6.4.5 Make every effort to remain on the indicated glide path. Exercise caution: avoid flying below the glide path to assure obstacle/terrain clearance is maintained.

REFERENCE−
14 CFR Section 91.129(e).

6.4.6 A glide slope facility provides descent information for navigation down to the lowest authorized decision height (DH) specified in the approved ILS approach procedure. The glidepath may not be suitable for navigation below the lowest authorized DH and any reference to glidepath indications below that height must be supplemented by visual reference to the runway environment. Glide slopes with no published DH are usable to runway threshold.

6.4.7 The published glide slope threshold crossing height (TCH) DOES NOT represent the height of the actual glide slope on course indication above the runway threshold. It is used as a reference for planning purposes which represents the height above the runway threshold that an aircraft's glide slope antenna should be, if that aircraft remains on a trajectory formed by the four−mile−to−middle marker glidepath segment.

6.4.8 Pilots must be aware of the vertical height between the aircraft's glide slope antenna and the main gear in the landing configuration and, at the DH, plan to adjust the descent angle accordingly if the published TCH indicates the wheel crossing height over the runway threshold may be satisfactory. Tests indicate a comfortable wheel crossing height is approximately 20 to 30 feet, depending on the type of aircraft.

NOTE−
The TCH for a runway is established based on several factors including the largest aircraft category that normally uses the runway, how airport layout affects the glide slope antenna placement, and terrain. A higher than optimum TCH, with the same glide path angle, may cause the aircraft to touch down further from the threshold if the trajectory of the approach is maintained until the flare. Pilots should consider the effect of a high TCH on the runway available for stopping the aircraft.

6.5 Distance Measuring Equipment (DME)

6.5.1 When installed with an ILS and specified in the approach procedure, DME may be used:

6.5.1.1 In lieu of the outer marker.

6.5.1.2 As a back course final approach fix.

6.5.1.3 To establish other fixes on the localizer course.

6.5.2 In some cases, DME from a separate facility may be used within Terminal Instrument Procedures (TERPS) limitations:

6.5.2.1 To provide ARC initial approach segments.

6.5.2.2 As a final approach fix for back course approaches.

6.5.2.3 As a substitute for the outer marker.

6.6 Marker Beacon

6.6.1 ILS marker beacons have a rated power output of 3 watts or less and an antenna array designed to produce an elliptical pattern with dimensions, at 1,000 feet above the antenna, of approximately 2,400 feet in width and 4,200 feet in length. Airborne marker beacon receivers with a selective sensitivity feature should always be operated in the "low" sensitivity position for proper reception of ILS marker beacons.

6.6.2 ILS systems may have an associated OM. An MM is no longer required. Locations with a Category II ILS also have an Inner Marker (IM). Due to advances in both ground navigation equipment and airborne avionics, as well as the numerous means that may be used as a substitute for a marker beacon, the current requirements for the use of marker beacons are:

6.6.2.1 An OM or suitable substitute identifies the Final Approach Fix (FAF) for nonprecision approach (NPA) operations (for example, localizer only); and

6.6.2.2 The MM indicates a position approximately 3,500 feet from the landing threshold. This is also the position where an aircraft on the glide path will be at an altitude of approximately 200 feet above the elevation of the touchdown zone. A MM is no longer operationally required. There are some MMs still in use, but there are no MMs being installed at new ILS sites by the FAA; and

6.6.2.3 An IM, where installed, indicates the point at which an aircraft is at decision height on the glide path during a Category II ILS approach. An IM is only required for CAT II operations that do not have a published radio altitude (RA) minimum.

6.6.3 A back course marker, normally indicates the ILS back course final approach fix where approach descent is commenced.

TBL ENR 4.1−1
Marker Passage Indications

Marker	Code	Light
OM	− − −	BLUE
MM	• − • −	AMBER
IM	• • • •	WHITE
BC	• • • •	WHITE

7. Compass Locator

7.1 Compass locator transmitters are often situated at the middle and outer marker sites. The transmitters have a power of less than 25 watts, a range of at least 15 miles, and operate between 190 and 535 kHz. At some locations, higher−powered radio beacons, up to 400 watts, are used as outer marker compass locators.

7.2 Compass locators transmit two−letter identification groups. The outer locator transmits the first two letters of the localizer identification group, and the middle locator transmits the last two letters of the localizer identification group.

8. ILS Frequency

8.1 The frequency pairs in TBL ENR 4.1−2 are allocated for ILS.

TBL ENR 4.1−2
Frequency Pairs Allocated for ILS

Localizer MHz	Glide Slope
108.10	334.70
108.15	334.55
108.3	334.10
108.35	333.95
108.5	329.90
108.55	329.75
108.7	330.50
108.75	330.35
108.9	329.30
108.95	329.15
109.1	331.40
109.15	331.25
109.3	332.00
109.35	331.85
109.50	332.60
109.55	332.45
109.70	333.20
109.75	333.05
109.90	333.80
109.95	333.65
110.1	334.40
110.15	334.25
110.3	335.00
110.35	334.85
110.5	329.60
110.55	329.45
110.70	330.20
110.75	330.05
110.90	330.80
110.95	330.65
111.10	331.70
111.15	331.55
111.30	332.30
111.35	332.15
111.50	332.9
111.55	332.75
111.70	333.5
111.75	333.35
111.90	331.1
111.95	330.95

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.

d) Programming and flying the approaches (especially procedure turns and arcs);

e) Changing to another approach after selecting an approach;

f) Programming and flying "direct" missed approaches;

g) Programming and flying "routed" missed approaches;

h) Entering, flying, and exiting holding patterns, particularly on approaches with a second waypoint in the holding pattern;

i) Programming and flying a "route" from a holding pattern;

j) Programming and flying an approach with radar vectors to the intermediate segment;

k) Indication of the actions required for RAIM failure both before and after the FAWP; and

l) Programming a radial and distance from a VOR (often used in departure instructions).

TBL ENR 4.1−4

GPS IFR Equipment Classes/Categories

TSO−C129						
Equipment Class	**RAIM**	**Int. Nav Sys. to Prov. RAIM Equiv.**	**Oceanic**	**En Route**	**Terminal**	**Nonprecision Approach Capable**
Class A – GPS sensor and navigation capability.						
A1	yes		yes	yes	yes	yes
A2	yes		yes	yes	yes	no
Class B – GPS sensor data to an integrated navigation system (i.e. FMS, multi−sensor navigation system, etc.).						
B1	yes		yes	yes	yes	yes
B2	yes		yes	yes	yes	no
B3		yes	yes	yes	yes	yes
B4		yes	yes	yes	yes	no
Class C – GPS sensor data to an integrated navigation system (as in Class B) which provides enhanced guidance to an autopilot, or flight director, to reduce flight tech. errors. Limited to 14 CFR Part 121 or equivalent criteria.						
C1	yes		yes	yes	yes	yes
C2	yes		yes	yes	yes	no
C3		yes	yes	yes	yes	yes
C4		yes	yes	yes	yes	no

TBL ENR 4.1−5
GPS Approval Required/Authorized Use

Equipment Type[1]	Installation Approval Required	Operational Approval Required	IFR En Route[2]	IFR Terminal[2]	IFR Approach[3]	Oceanic Remote	In Lieu of ADF and/or DME[3]
Hand held[4]	X[5]						
VFR Panel Mount[4]	X						
IFR En Route and Terminal	X	X	X	X			X
IFR Oceanic/ Remote	X	X	X	X		X	X
IFR En Route, Terminal, and Approach	X	X	X	X	X		X

NOTE−
[1]*To determine equipment approvals and limitations, refer to the AFM, AFM supplements, or pilot guides.*
[2]*Requires verification of data for correctness if database is expired.*
[3]*Requires current database or verification that the procedure has not been amended since the expiration of the database.*
[4]*VFR and hand−held GPS systems are not authorized for IFR navigation, instrument approaches, or as a primary instrument flight reference. During IFR operations they may be considered only an aid to situational awareness.*
[5]*Hand−held receivers require no approval. However, any aircraft modification to support the hand−held receiver; i.e., installation of an external antenna or a permanent mounting bracket, does require approval.*

17. Wide Area Augmentation System (WAAS)

17.1 General

17.1.1 The FAA developed the WAAS to improve the accuracy, integrity and availability of GPS signals. WAAS will allow GPS to be used, as the aviation navigation system, from takeoff through approach when it is complete. WAAS is a critical component of the FAA's strategic objective for a seamless satellite navigation system for civil aviation, improving capacity and safety.

17.1.2 The International Civil Aviation Organization (ICAO) has defined Standards and Recommended Practices (SARPs) for satellite−based augmentation systems (SBAS) such as WAAS. India and Europe are building similar systems: EGNOS, the European Geostationary Navigation Overlay System; and India's GPS and Geo−Augmented Navigation (GAGAN) system. The merging of these systems will create an expansive navigation capability similar to GPS, but with greater accuracy, availability, and integrity.

17.1.3 Unlike traditional ground−based navigation aids, WAAS will cover a more extensive service area. Precisely surveyed wide−area reference stations (WRS) are linked to form the U.S. WAAS network. Signals from the GPS satellites are monitored by these WRSs to determine satellite clock and ephemeris corrections and to model the propagation effects of the ionosphere. Each station in the network relays the data to a wide−area master station (WMS) where the correction information is computed. A correction message is prepared and uplinked to a geostationary earth orbit satellite (GEO) via a GEO uplink subsystem (GUS) which is located at the ground earth station (GES). The message is then broadcast on the same frequency as GPS (L1, 1575.42 MHz) to WAAS receivers within the broadcast coverage area of the WAAS GEO.

17.1.4 In addition to providing the correction signal, the WAAS GEO provides an additional pseudorange measurement to the aircraft receiver, improving the availability of GPS by providing, in effect, an additional GPS satellite in view. The integrity of GPS is improved through real−time monitoring, and the accuracy is improved by providing differential corrections to reduce errors. The performance improvement is sufficient to enable approach procedures with GPS/WAAS glide paths (vertical guidance).

17.1.5 The FAA has completed installation of 3 GEO satellite links, 38 WRSs, 3 WMSs, 6 GES, and the required terrestrial communications to support the WAAS network including 2 operational control centers. Prior to the commissioning of the WAAS for public use, the FAA conducted a series of test and validation activities. Future dual frequency operations are planned.

17.1.6 GNSS navigation, including GPS and WAAS, is referenced to the WGS−84 coordinate system. It should only be used where the Aeronautical Information Publications (including electronic data and aeronautical charts) conform to WGS−84 or equivalent. Other countries civil aviation authorities may impose additional limitations on the use of their SBAS systems.

17.2 Instrument Approach Capabilities

17.2.1 A class of approach procedures which provide vertical guidance, but which do not meet the ICAO Annex 10 requirements for precision approaches has been developed to support satellite navigation use for aviation applications worldwide. These procedures are not precision and are referred to as Approach with Vertical Guidance (APV), are defined in ICAO Annex 6, and include approaches such as the LNAV/VNAV and localizer performance with vertical guidance (LPV). These approaches provide vertical guidance, but do not meet the more stringent standards of a precision approach. Properly certified WAAS receivers will be able to fly to LPV minima and LNAV/VNAV minima, using a WAAS electronic glide path, which eliminates the errors that can be introduced by using Barometric altimetry.

17.2.2 LPV minima takes advantage of the high accuracy guidance and increased integrity provided by WAAS. This WAAS generated angular guidance allows the use of the same TERPS approach criteria used for ILS approaches. LPV minima may have a decision altitude as low as 200 feet height above touchdown with visibility minimums as low as $^{1}/_{2}$ mile, when the terrain and airport infrastructure support the lowest minima. LPV minima is published on the RNAV (GPS) approach charts (see Paragraph 12., Instrument Approach Procedure Charts).

17.2.3 A different WAAS-based line of minima, called Localizer Performance (LP) is being added in locations where the terrain or obstructions do not allow publication of vertically guided LPV minima. LP takes advantage of the angular lateral guidance and smaller position errors provided by WAAS to provide a lateral only procedure similar to an ILS Localizer. LP procedures may provide lower minima than a LNAV procedure due to the narrower obstacle clearance surface.

NOTE−
WAAS receivers certified prior to TSO−C145b and TSO−C146b, even if they have LPV capability, do not contain LP capability unless the receiver has been upgraded. Receivers capable of flying LP procedures must contain a statement in the Aircraft Flight Manual (AFM), AFM Supplement, or Approved Supplemental Flight Manual stating that the receiver has LP capability, as well as the capability for the other WAAS and GPS approach procedure types.

17.2.4 WAAS provides a level of service that supports all phases of flight, including RNAV (GPS) approaches to LNAV, LP, LNAV/VNAV and LPV lines of minima, within system coverage. Some locations close to the edge of the coverage may have a lower availability of vertical guidance.

17.3 General Requirements

17.3.1 WAAS avionics must be certified in accordance with Technical Standard Order (TSO) TSO−C145, Airborne Navigation Sensors Using the (GPS) Augmented by the Wide Area Augmentation System (WAAS); or TSO−C146, Stand−Alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS), and installed in accordance with Advisory Circular (AC) 20−138, *Airworthiness Approval of Positioning and Navigation Systems*.

17.3.2 GPS/WAAS operation must be conducted in accordance with the FAA−approved aircraft flight manual (AFM) and flight manual supplements. Flight manual supplements will state the level of approach procedure that the receiver supports. IFR approved WAAS receivers support all GPS only operations as long as lateral capability at the appropriate level is functional. WAAS monitors both GPS and WAAS satellites and provides integrity.

17.3.3 GPS/WAAS equipment is inherently capable of supporting oceanic and remote operations if the operator obtains a fault detection and exclusion (FDE) prediction program.

17.3.4 Air carrier and commercial operators must meet the appropriate provisions of their approved operations specifications.

17.3.5 Prior to GPS/WAAS IFR operation, the pilot must review appropriate Notices to Airmen (NO-

TAMs) and aeronautical information. This information is available on request from an Automated Flight Service Station. The FAA will provide NOTAMs to advise pilots of the status of the WAAS and level of service available.

17.3.5.1 The term MAY NOT BE AVBL is used in conjunction with WAAS NOTAMs and indicates that due to ionospheric conditions, lateral guidance may still be available when vertical guidance is unavailable. Under certain conditions, both lateral and vertical guidance may be unavailable. This NOTAM language is an advisory to pilots indicating the expected level of WAAS service (LNAV/VNAV, LPV, LP) may not be available.

EXAMPLE−
!FDC FDC NAV WAAS VNAV/LPV/LP MINIMA MAY NOT BE AVBL 1306111330-1306141930EST
or
!FDC FDC NAV WAAS VNAV/LPV MINIMA NOT AVBL, WAAS LP MINIMA MAY NOT BE AVBL 1306021200-1306031200EST

WAAS MAY NOT BE AVBL NOTAMs are predictive in nature and published for flight planning purposes. Upon commencing an approach at locations NOTAMed WAAS MAY NOT BE AVBL, if the WAAS avionics indicate 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 approach, reversion to LNAV minima or an alternate instrument approach procedure may be required. When GPS testing NOTAMS are published and testing is actually occurring, Air Traffic Control will advise pilots requesting or cleared for a GPS or RNAV (GPS) approach that GPS may not be available and request intentions. If pilots have reported GPS anomalies, Air Traffic Control will request the pilot's intentions and/or clear the pilot for an alternate approach, if available and operational.

17.3.5.2 WAAS area-wide NOTAMs are originated when WAAS assets are out of service and impact the service area. Area−wide WAAS NOT AVAILABLE (AVBL) NOTAMs indicate loss or malfunction of the WAAS system. In flight, Air Traffic Control will advise pilots requesting a GPS or RNAV (GPS) approach of WAAS NOT AVBL NOTAMs if not contained in the ATIS broadcast.

EXAMPLE−
For unscheduled loss of signal or service, an example NOTAM is: !FDC FDC NAV WAAS NOT AVBL 1311160600− 1311191200EST.
For scheduled loss of signal or service, an example NOTAM is: !FDC FDC NAV WAAS NOT AVBL 1312041015- 1312082000EST

17.3.5.3 Site−specific WAAS MAY NOT BE AVBL NOTAMs indicate an expected level of service; for example, LNAV/VNAV, LP, or LPV may not be available. Pilots must request site−specific WAAS NOTAMs during flight planning. In flight, Air Traffic Control will not advise pilots of WAAS MAY NOT BE AVBL NOTAMs.

NOTE−
Though currently unavailable, the FAA is updating its prediction tool software to provide this site-service in the future.

17.3.5.4 Most of North America has redundant coverage by two or more geostationary satellites. One exception is the northern slope of Alaska. If there is a problem with the satellite providing coverage to this area, a NOTAM similar to the following example will be issued:

EXAMPLE−
*!FDC **4/3406** (PAZA A0173/14) ZAN NAV WAAS SIGNAL MAY NOT BE AVBL NORTH OF LINE FROM 7000N150000W TO 6400N16400W. RMK WAAS USERS SHOULD CONFIRM RAIM AVAILABILITY FOR IFR OPERATIONS IN THIS AREA. T-ROUTES IN THIS SECTOR NOT AVBL. ANY REQUIRED ALTERNATE AIRPORT IN THIS AREA MUST HAVE AN APPROVED INSTRUMENT APPROACH PROCEDURE OTHER THAN GPS THAT IS ANTICIPATED TO BE OPERATIONAL AND AVAILABLE AT THE ESTIMATED TIME OF ARRIVAL AND WHICH THE AIRCRAFT IS EQUIPPED TO FLY. 1406030812-1406050812EST .*

17.3.6 When GPS−testing NOTAMS are published and testing is actually occurring, Air Traffic Control will advise pilots requesting or cleared for a GPS or RNAV (GPS) approach that GPS may not be available and request intentions. If pilots have reported GPS anomalies, Air Traffic Control will request the pilot's intentions and/or clear the pilot for an alternate approach, if available and operational.

EXAMPLE−
Here is an example of a GPS testing NOTAM:
*!GPS **06/001** ZAB NAV GPS (INCLUDING WAAS, GBAS, AND ADS-B) MAY NOT BE AVAILABLE WITHIN A 468NM RADIUS CENTERED AT 330702N1062540W (TCS 093044) FL400-UNL DECREASING IN AREA WITH A DECREASE IN ALTITUDE DEFINED AS: 425NM RADIUS AT FL250, 360NM RADIUS AT*

10000FT, 354NM RADIUS AT 4000FT AGL, 327NM RADIUS AT 50FT AGL. 1406070300-1406071200.

17.3.7 When the approach chart is annotated with the **W** symbol, site−specific WAAS MAY NOT BE AVBL NOTAMs or Air Traffic advisories are not provided for outages in WAAS LNAV/VNAV and LPV vertical service. Vertical outages may occur daily at these locations due to being close to the edge of WAAS system coverage. 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 the 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.

NOTE−
Area−wide WAAS NOT AVBL NOTAMs apply to all airports in the WAAS NOT AVBL area designated in the NOTAM, including approaches at airports where an approach chart is annotated with the **W** *symbol.*

17.3.8 GPS/WAAS was developed to be used within GEO coverage over North America without the need for other radio navigation equipment appropriate to the route of flight to be flown. Outside the WAAS coverage or in the event of a WAAS failure, GPS/WAAS equipment reverts to GPS−only operation and satisfies the requirements for basic GPS equipment. (See ENR 4.1 paragraph 17. for these requirements).

17.3.9 Unlike TSO−C129 avionics, which were certified as a supplement to other means of navigation, WAAS avionics are evaluated without reliance on other navigation systems. As such, installation of WAAS avionics does not require the aircraft to have other equipment appropriate to the route to be flown. (See ENR 4.1 paragraph 17. for more information on equipment requirements.)

17.3.9.1 Pilots with WAAS receivers may flight plan to use any instrument approach procedure authorized for use with their WAAS avionics as the planned approach at a required alternate, with the following restrictions. When using WAAS at an alternate airport, flight planning must be based on flying the RNAV (GPS) LNAV or circling minima line, or minima on a GPS approach procedure, or conventional approach procedure with "or GPS" in the title. Code of Federal Regulation (CFR) Part 91 nonprecision weather requirements must be used for planning. Upon arrival at an alternate, when the WAAS navigation system indicates that LNAV/VNAV or LPV service is available, then vertical guidance may be used to complete the approach using the displayed level of service. The FAA has begun removing the **A** **NA** (Alternate Minimums Not Authorized) symbol from select RNAV (GPS) and GPS approach procedures so they may be used by approach approved WAAS receivers at alternate airports. Some approach procedures will still require the **A** **NA** for other reasons, such as no weather reporting, so it cannot be removed from all procedures. Since every procedure must be individually evaluated, removal of the **A** **NA** from RNAV (GPS) and GPS procedures will take some time.

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.

17.4 Flying procedures with WAAS

17.4.1 WAAS receivers support all basic GPS approach functions and provide additional capabilities. One of the major improvements is the ability to generate glide path guidance, independent of ground equipment or barometric aiding. This eliminates several problems such as hot and cold temperature effects, incorrect altimeter setting or lack of a local altimeter source. It also allows approach procedures to be built without the cost of installing ground stations at each airport or runway. Some approach certified receivers may only generate a glide path with performance similar to Baro−VNAV and are only approved to fly the LNAV/VNAV line of minima on the RNAV (GPS) approach charts. Receivers with additional capability (including faster update rates and smaller integrity limits) are approved to fly the LPV line of minima. The lateral integrity changes dramatically from the 0.3 NM (556 meter) limit for GPS, LNAV and LNAV/VNAV approach mode, to 40 meters for LPV. It also provides vertical integrity monitoring, which bounds the vertical error to 50 meters for LNAV/VNAV and LPVs with minima of 250' or above, and bounds the vertical error to 35 meters for LPVs with minima below 250'.

17.4.2 When an approach procedure is selected and active, the receiver will notify the pilot of the most accurate level of service supported by the combination of the WAAS signal, the receiver, and the selected approach, using the naming conventions on the minima lines of the selected approach procedure. For example, if an approach is published with LPV minima and the receiver is only certified for LNAV/VNAV, the equipment would indicate "LNAV/VNAV available," even though the WAAS signal would support LPV. If flying an existing LNAV/VNAV procedure with no LPV minima, the receiver will notify the pilot "LNAV/VNAV available," even if the receiver is certified for LPV and the signal supports LPV. If the signal does not support vertical guidance on procedures with LPV and/or LNAV/VNAV minima, the receiver annunciation will read "LNAV available." On lateral only procedures with LP and LNAV minima the receiver will indicate "LP available" or "LNAV available" based on the level of lateral service available. Once the level of service notification has been given, the receiver will operate in this mode for the duration of the approach procedure, unless that level of service becomes unavailable. The receiver cannot change back to a more accurate level of service until the next time an approach is activated.

NOTE−
Receivers do not "fail down" to lower levels of service once the approach has been activated. If only the vertical off flag appears, the pilot may elect to use the LNAV minima if the rules under which the flight is operating allow changing the type of approach being flown after commencing the procedure. If the lateral integrity limit is exceeded on an LP approach, a missed approach will be necessary since there is no way to reset the lateral alarm limit while the approach is active.

17.4.3 Another additional feature of WAAS receivers is the ability to exclude a bad GPS signal and continue operating normally. This is normally accomplished by the WAAS correction information. Outside WAAS coverage or when WAAS is not available, it is accomplished through a receiver algorithm called FDE. In most cases this operation will be invisible to the pilot since the receiver will continue to operate with other available satellites after excluding the "bad" signal. This capability increases the reliability of navigation.

17.4.4 Both lateral and vertical scaling for the LNAV/VNAV and LPV approach procedures are different than the linear scaling of basic GPS. When the complete published procedure is flown, ±1 NM linear scaling is provided until two (2) NM prior to the FAF, where the sensitivity increases to be similar to the angular scaling of an ILS. There are two differences in the WAAS scaling and ILS: 1) on long final approach segments, the initial scaling will be ±0.3 NM to achieve equivalent performance to GPS (and better than ILS, which is less sensitive far from the runway); 2) close to the runway threshold, the scaling changes to linear instead of continuing to become more sensitive. The width of the final approach course is tailored so that the total width is usually 700 feet at the runway threshold. Since the origin point of the lateral splay for the angular portion of the final is not fixed due to antenna placement like localizer, the splay angle can remain fixed, making a consistent width of final for aircraft being vectored onto the final approach course on different length runways. When the complete published procedure is not flown, and instead the aircraft needs to capture the extended final approach course similar to ILS, the vector to final (VTF) mode is used. Under VTF, the scaling is linear at ±1 NM until the point where the ILS angular splay reaches a width of ±1 NM regardless of the distance from the FAWP.

17.4.5 The WAAS scaling is also different than GPS TSO−C129 in the initial portion of the missed approach. Two differences occur here. First, the scaling abruptly changes from the approach scaling to the missed approach scaling, at approximately the departure end of the runway or when the pilot selects missed approach guidance rather than ramping as GPS does. Second, when the first leg of the missed approach is a Track to Fix (TF) leg aligned within 3 degrees of the inbound course, the receiver will change to 0.3 NM linear sensitivity until the turn initiation point for the first waypoint in the missed approach procedure, at which time it will abruptly change to terminal (±1 NM) sensitivity. This allows the elimination of close in obstacles in the early part of the missed approach that may otherwise cause the DA to be raised.

17.4.6 There are two ways to select the final approach segment of an instrument approach. Most receivers use menus where the pilot selects the airport, the runway, the specific approach procedure and finally the IAF, there is also a channel number selection method. The pilot enters a unique 5−digit number provided on the approach chart, and the receiver recalls the matching final approach segment from the aircraft database. A list of information including the available IAFs is displayed and the pilot selects the appropriate IAF. The pilot should confirm that the correct final approach segment was loaded by cross checking the Approach ID, which is also provided on the approach chart.

17.4.7 The Along−Track Distance (ATD) during the final approach segment of an LNAV procedure (with a minimum descent altitude) will be to the MAWP. On LNAV/VNAV and LPV approaches to a decision altitude, there is no missed approach waypoint so the along−track distance is displayed to a point normally located at the runway threshold. In most cases, the MAWP for the LNAV approach is located on the runway threshold at the centerline, so these distances will be the same. This distance will always vary slightly from any ILS DME that may be present, since the ILS DME is located further down the runway. Initiation of the missed approach on the LNAV/ VNAV and LPV approaches is still based on reaching the decision altitude without any of the items listed in 14 CFR Section 91.175 being visible, and must not be delayed while waiting for the ATD to reach zero. The WAAS receiver, unlike a GPS receiver, will automatically sequence past the MAWP if the missed approach procedure has been designed for RNAV. The pilot may also select missed approach prior to the MAWP; however, navigation will continue to the MAWP prior to waypoint sequencing taking place.

18. Ground Based Augmentation System (GBAS) Landing System (GLS)

18.1 General

18.1.1 The GLS provides precision navigation guidance for exact alignment and descent of aircraft on approach to a runway. GBAS equipment provides localized differential augmentation to the Global Positioning System (GPS).

NOTE−
To remain consistent with international terminology, the FAA will use the term GBAS in place of the former term Local Area Augmentation System (LAAS).

18.1.2 GLS displays three−dimension vertical and horizontal navigation guidance to the pilot much like ILS. GLS navigation is based on GPS signals augmented by position correction, integrity parameters, and approach path definition information transmitted over VHF from the local GBAS ground station. One GBAS station can support multiple GLS precision approaches to nearby runways within the GBAS's maximum use distance.

18.1.3 GLS provides guidance similar to ILS approaches for the final approach segment, though the approach service volume has different dimensions (see FIG ENR 4.1−3). The GLS approach is constructed using the RNP approach (RNP APCH) navigation specification, and may include vertically−guided turn(s) after the IAF or on the missed approach procedure. Portions of the approach prior to an IAF and after the final approach segment may also require Area Navigation (RNAV) typically using the Required Navigation Performance 1 (RNP 1) navigation specification. See AIP Section ENR 1.17 paragraph 1.1 for more information on navigation specifications.

18.1.4 GLS consists of a GBAS Ground Facility (GGF), at least four ground reference stations, a corrections processor, a VHF Data Broadcast (VDB) uplink antenna, an aircraft GBAS receiver, and a charted instrument approach procedure.

18.2 Procedure

18.2.1 Pilots will select the five digit GBAS channel number of the associated GLS approach within the Flight Management System (FMS) menu or manually select the five digits (system dependent). Selection of the GBAS channel number also tunes the VDB.

18.2.2 Following procedure selection, confirmation that the correct GLS procedure is loaded can be accomplished by cross checking the charted Reference Path Indicator (RPI) or approach ID with the cockpit displayed RPI or audio identification of the RPI with Morse Code (for some systems). Distance to the runway threshold will be displayed to the pilot once the aircraft is inside the approach service volume.

18.2.3 The pilot will fly the GLS approach using many of the same techniques as ILS including using a heading or lateral steering mode to intercept the GLS final approach course and then switching to the appropriate approach navigation mode once the aircraft is within the approach service volume and prior to the glide path intercept point. See also the Instrument Procedures Handbook for more information on GLS.

19. Precision Approach Systems Other than ILS and GLS

19.1 General

Approval and use of precision approach systems other than ILS and GLS require the issuance of special instrument approach procedures.

19.2 Special Instrument Approach Procedure

19.2.1 Special instrument approach procedures must be issued to the aircraft operator if pilot training, aircraft equipment, and/or aircraft performance is different than published procedures. Special instrument approach procedures are not distributed for general public use. These procedures are issued to an aircraft operator when the conditions for operations approval are satisfied.

19.2.2 General aviation operators requesting approval for special procedures should contact the local Flight Standards District Office to obtain a letter of authorization. Air carrier operators requesting approval for use of special procedures should contact their Certificate Holding District Office for authorization through their Operations Specification.

19.3 Transponder Landing System (TLS)

19.3.1 The TLS is designed to provide approach guidance utilizing existing airborne ILS localizer, glide slope, and transponder equipment.

19.3.2 Ground equipment consists of a transponder interrogator, sensor arrays to detect lateral and vertical position, and ILS frequency transmitters. The TLS detects the aircraft's position by interrogating its transponder. It then broadcasts ILS frequency signals to guide the aircraft along the desired approach path.

19.3.3 TLS instrument approach procedures are designated Special Instrument Approach Procedures. Special aircrew training is required. TLS ground equipment provides approach guidance for only one aircraft at a time. Even though the TLS signal is received using the ILS receiver, no fixed course or glidepath is generated. The concept of operation is very similar to an air traffic controller providing radar vectors, and just as with radar vectors, the guidance is valid only for the intended aircraft. The TLS ground equipment tracks one aircraft, based on its transponder code, and provides correction signals to course and glidepath based on the position of the tracked aircraft. Flying the TLS corrections computed for another aircraft will not provide guidance relative to the approach; therefore, aircrews must not use the TLS signal for navigation unless they have received approach clearance and completed the required coordination with the TLS ground equipment operator. Navigation fixes based on conventional NAVAIDs or GPS are provided in the special instrument approach procedure to allow aircrews to verify the TLS guidance.

19.4 Special Category I Differential GPS (SCAT−I DGPS)

19.4.1 The SCAT−I DGPS is designed to provide approach guidance by broadcasting differential correction to GPS.

19.4.2 SCAT−I DGPS procedures require aircraft equipment and pilot training.

19.4.3 Ground equipment consists of GPS receivers and a VHF digital radio transmitter. The SCAT−I DGPS detects the position of GPS satellites relative to GPS receiver equipment and broadcasts differential corrections over the VHF digital radio.

19.4.4 Category I Ground Based Augmentation System (GBAS) will displace SCAT−I DGPS as the public−use service.

provide "see−and−avoid" capability to the UAS crew and to provide the necessary compliance with 14 CFR Section 91.113. For UAS operations approved at or above FL180, UAS operate under the same requirements as that of manned aircraft (i.e., flights are operated under instrument flight rules, are in communication with ATC, and are appropriately equipped).

5.3 UAS operations may be approved at either controlled or uncontrolled airports and are typically disseminated by NOTAM. In all cases, approved UAS operations must comply with all applicable regulations and/or special provisions specified in the COA or in the operating limitations of the special airworthiness certificate. At uncontrolled airports, UAS operations are advised to operate well clear of all known manned aircraft operations. Pilots of manned aircraft are advised to follow normal operating procedures and are urged to monitor the CTAF for any potential UAS activity. At controlled airports, local ATC procedures may be in place to handle UAS operations and should not require any special procedures from manned aircraft entering or departing the traffic pattern or operating in the vicinity of the airport.

5.4 In addition to approved UAS operations described above, a recently approved agreement between the FAA and the Department of Defense authorizes small UAS operations wholly contained within Class G airspace, and in no instance, greater than 1200 feet AGL over military owned or leased property. These operations do not require any special authorization as long as the UA remains within the lateral boundaries of the military installation as well as other provisions including the issuance of a NOTAM. Unlike special use airspace, these areas may not be depicted on an aeronautical chart.

5.5 There are several factors a pilot should consider regarding UAS activity in an effort to reduce potential flight hazards. Pilots are urged to exercise increased vigilance when operating in the vicinity of restricted or other special use airspace, military operations areas, and any military installation. Areas with a preponderance of UAS activity are typically noted on sectional charts advising pilots of this activity. Since the size of a UA can be very small, they may be difficult to see and track. If a UA is encountered during flight, as with manned aircraft, never assume that the pilot or crew of the UAS can see you, maintain increased vigilance with the UA and always be prepared for evasive action if necessary. Always check NOTAMs for potential UAS activity along the intended route of flight and exercise increased vigilance in areas specified in the NOTAM.

6. Mountain Flying

6.1 Your first experience of flying over mountainous terrain (particularly if most of your flight time has been over the flatlands of the Midwest) could be a *never-to-be-forgotten nightmare* if proper planning is not done and if you are not aware of the potential hazards awaiting. Those familiar section lines are not present in the mountains; those flat, level fields for forced landings are practically nonexistent; abrupt changes in wind direction and velocity occur; severe updrafts and downdrafts are common, particularly near or above abrupt changes of terrain such as cliffs or rugged areas; even the clouds look different and can build up with startling rapidity. Mountain flying need not be hazardous if you follow the recommendations below:

6.1.1 File a Flight Plan. Plan your route to avoid topography which would prevent a safe forced landing. The route should be over populated areas and well known mountain passes. Sufficient altitude should be maintained to permit gliding to a safe landing in the event of engine failure.

6.1.2 Don't fly a light aircraft when the winds aloft, at your proposed altitude, exceed 35 miles per hour. Expect the winds to be of much greater velocity over mountain passes than reported a few miles from them. Approach mountain passes with as much altitude as possible. Downdrafts of from 1,500 to 2,000 feet per minute are not uncommon on the leeward side.

6.1.3 Don't fly near or above abrupt changes in terrain. Severe turbulence can be expected, especially in high wind conditions.

6.1.4 Understand Mountain Obscuration. The term Mountain Obscuration (MTOS) is used to describe a visibility condition that is distinguished from IFR because ceilings, by definition, are described as "above ground level" (AGL). In mountainous terrain clouds can form at altitudes significantly higher than the weather reporting station and at the same time nearby mountaintops may be obscured by low visibility. In these areas the ground level can also vary greatly over a small area.

Beware if operating VFR−on−top. You could be operating closer to the terrain than you think because the tops of mountains are hidden in a cloud deck below. MTOS areas are identified daily on The Aviation Weather Center located at: **http://www.aviationweather.gov**.

6.2 Some canyons run into a dead end. Don't fly so far up a canyon that you get trapped. ALWAYS BE ABLE TO MAKE A 180 DEGREE TURN.

6.3 VFR flight operations may be conducted at night in mountainous terrain with the application of sound judgment and common sense. Proper pre−flight planning, giving ample consideration to winds and weather, knowledge of the terrain and pilot experience in mountain flying are prerequisites for safety of flight. Continuous visual contact with the surface and obstructions is a major concern and flight operations under an overcast or in the vicinity of clouds should be approached with extreme caution.

6.4 When landing at a high altitude field, the same indicated airspeed should be used as at low elevation fields. Remember: that due to the less dense air at altitude, this same indicated airspeed actually results in a higher true airspeed, a faster landing speed, and more important, a longer landing distance. During gusty wind conditions which often prevail at high altitude fields, a power approach and power landing is recommended. Additionally, due to the faster groundspeed, your takeoff distance will increase considerably over that required at low altitudes.

6.5 Effects of Density Altitude. Performance figures in the aircraft owner's handbook for length of takeoff run, horsepower, rate of climb, etc., are generally based on standard atmosphere conditions (59°F, pressure 29.92 inches of mercury) at sea level. However, inexperienced pilots as well as experienced pilots may run into trouble when they encounter an altogether different set of conditions. This is particularly true in hot weather and at higher elevations. Aircraft operations at altitudes above sea level and at higher than standard temperatures are commonplace in mountainous area. Such operations quite often result in a drastic reduction of aircraft performance capabilities because of the changing air density. Density altitude is a measure of air density. It is not to be confused with pressure altitude − true altitude or absolute altitude. It is not to be used as a height reference, but as a determining criteria in the performance capability of an aircraft. Air density decreases with altitude. As air density decreases, density altitude increases. The further effects of high temperature and high humidity are cumulative, resulting in an increasing high density altitude condition. High density altitude reduces all aircraft performance parameters. To the pilot, this means that the normal horsepower output is reduced, propeller efficiency is reduced and a higher true airspeed is required to sustain the aircraft throughout its operating parameters. It means an increase in runway length requirements for takeoff and landings, and a decreased rate of climb. An average small airplane, for example, requiring 1,000 feet for takeoff at sea level under standard atmospheric conditions will require a takeoff run of approximately 2,000 at an operational altitude of 5,000 feet.

NOTE−
A turbo−charged aircraft engine provides some slight advantage in that it provides sea level horsepower up to a specified altitude above sea level.

6.6 Density Altitude Advisories. At airports with elevations of 2,000 feet and higher, control towers and FSSs will broadcast the advisory "Check Density Altitude" when the temperature reaches a predetermined level. These advisories will be broadcast on appropriate tower frequencies or, where available, ATIS. FSSs will broadcast these advisories as a part of Airport Advisory.

6.6.1 These advisories are provided by air traffic facilities, as a reminder to pilots that high temperatures and high field elevations will cause significant changes in aircraft characteristics. The pilot retains the responsibility to compute density altitude, when appropriate, as a part of preflight duties.

NOTE−
All FSSs will compute the current density altitude upon request.

7. Use of Runway Half−way Signs at Unimproved Airports

7.1 When installed, runway half−way signs provide the pilot with a reference point to judge takeoff acceleration trends. Assuming that the runway length is appropriate for takeoff (considering runway condition and slope, elevation, aircraft weight, wind, and temperature), typical takeoff acceleration should allow the airplane to reach 70 percent of lift−off airspeed by the midpoint of the runway. The "rule of thumb" is that should airplane acceleration not allow

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 P2 in Field 10a.

2.2.3 D1 in Field 10b.

2.2.4 (J5, J6, or J7) and R in Field 10a.

2.2.5 SUR/RSP180 in Field 18.

2.2.6 See FAA Advisory Circular 90−117, Data Link Communications, for guidance on Required Communication Performance (RCP) and Required Surveillance Performance (RSP) authorization.

2.2.7 See FAA Advisory Circular 90-105 for guidance on RNP 10 (RNAV 10) authorization.

2.3 If you are eligible for oceanic 30 NM longitudinal and lateral separation:

2.3.1 PBN/L1 in Field 18.

2.3.2 P2 in Field 10a.

2.3.3 D1 in Field 10b.

2.3.4 (J5, J6, or J7) and R in Field 10a.

2.3.5 SUR/RSP180 in Field 18.

2.3.6 See FAA Advisory Circular 90−117 for guidance on RCP and RSP authorization.

2.3.7 See FAA Advisory Circular 90-105 for guidance on RNP 4 authorization.

2.4 Oakland Oceanic FIR

2.4.1 In accordance with ICAO Doc 4444, flight plans with routes entering the Oakland Oceanic FIR (KZAK) must contain, among the estimated elapsed times (EET) in Field 18, an entry point for KZAK and an estimated time. It is not mandatory to file the boundary crossing point in Field 15 of the route of flight, but it is permitted.

2.4.2 The use of CPDLC and ADS−C in the Oakland Oceanic FIR (KZAK) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZAK and the aircraft will not be able to connect.

2.5 New York Oceanic FIR

2.5.1 The use of CPDLC and ADS−C in the New York Oceanic FIR (KZWY) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZWY and the aircraft will not be able to connect.

3. Flight Plan Addressing

3.1 In an effort to eliminate erroneous or duplicate flight plans that may be received from diverse locations, and to increase the safety of flight, operators must adhere to the following procedures when filing flight plans for departing flights from foreign aerodromes entering the United States National Airspace System:

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 canceling (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

3.4 Anchorage Oceanic FIRs

3.4.1 Anchorage Arctic FIR

3.4.1.1 Flight plans must be filed with PAZAZQZX.

3.4.2 Anchorage Oceanic FIR

3.4.2.1 Flight plans must be filed with both PAZAZQZX and PAZNZQZX.

3.5 San Juan CTA/FIR

3.5.1 All aircraft transitioning through San Juan FIR/CTA from a foreign facility that will operate in North Atlantic (NAT) High Level Airspace (HLA) must forward the full route of flight for flight plan verification.

3.5.2 This must be accomplished prior to exiting the San Juan FIR/CTA by one of the following means:

3.5.2.1 Via Direct pilot−controller communication; or

3.5.2.2 Via Aeronautical Radio, Inc. (ARINC), when requested by ATC.

NOTE−
This requirement does not apply to aircraft operating outside of NAT HLA.

4. Beacon Code Requirements

4.1 Oakland Oceanic FIR

4.1.1 Upon entering the Oakland Oceanic CTA and after radar service is terminated; all aircraft should adjust their transponder to display code 2000 on their display. Aircraft should maintain code 2000 thereafter until otherwise directed by Air Traffic Control.

4.2 New York Oceanic FIR

4.2.1 All aircraft transitioning into the West Atlantic Route System (WATRS) via fixed ATS routes must remain on the last ATC−assigned beacon code.

4.3 Anchorage Oceanic FIR

4.3.1 CPDLC aircraft crossing the Anchorage/Oakland FIR boundary westbound between 150W and 160W must contact San Francisco ARINC HF Radio by 140W to receive a discrete beacon code for use in Anchorage airspace.

4.4 Anchorage Arctic FIR

4.4.1 4.4.1 RESERVED

4.5 Houston Oceanic FIR

4.5.1 All aircraft entering the Houston Oceanic CTA/FIR should remain on the last ATC−assigned beacon code.

4.6 Miami CTA/FIR

4.6.1 There is no primary radar or weather returns available from the Grand Turk, Georgetown, and Nassau radar systems. Since radar separation is dependent upon the receipt of transponder returns, all aircraft within antenna coverage of either system are required to squawk transponder codes as assigned by ATC, or, if none assigned, squawk the appropriate stratum code.

4.6.2 Aircraft departing and overflying the Santo Domingo and Port Au Prince FIRs can expect ATC assigned codes from those ATS providers. If a code is not assigned by either Santo Domingo or Port Au Prince, pilots should request a code. The assigned code should be squawked prior to entering the Miami CTA/FIR.

5. Position Reporting in the Oceanic Environment

5.1 Pilots must report over each point used in the flight plan to define the route of flight, even if the point is depicted on aeronautical charts as an "on request" (non−compulsory) reporting point. For aircraft providing automatic position reporting via an Automatic Dependent Surveillance− Contract (ADS−C) logon, pilots should discontinue voice position reports.

5.2 Advanced Technology and Oceanic Procedures (ATOP) cannot accept CPDLC position reports containing latitude and longitude in the ARINC 424 format. The flight crew should use latitudes and longitudes encoded as waypoint names in the ICAO format (for example, 54N150W).

NOTE−
ARINC 424 describes a 5−character latitude/longitude format for aircraft navigation databases (for example, 10N40 describes a latitude/longitude of 10N140W). The ATSU will reject any downlink message containing waypoint names in the ARINC 424 format.

5.3 Oakland Oceanic FIR

5.3.1 Aircraft filed on PACOTS routes within Oakland Oceanic CTA/FIR airspace must make position reports using latitude/longitude coordinates or named fixes as specified in the track definition messages (TDM). Position reports must comprise information on present position, estimated next position, and ensuing position. Reporting points of reference not specified in the TDM and/or rounding off geographical coordinates is prohibited.

5.4 New York Oceanic FIR

5.4.1 Position reports should be made via ADSC, if the aircraft has ADS−C capability. The two types of ADS−C contracts that will be established with each aircraft are a twenty (20) minute Periodic Report Rate and a five (5) mile Lateral Deviation Event. This is in addition to normal waypoint reports.

5.4.2 Operators should not use CPDLC for position reports but it should be used for all other ATC communications. Position reports should be made via HF if ADS−C is not available.

5.5 Anchorage Oceanic FIR

5.5.1 All waypoints filed in Field 15 of the ICAO flight plan (route field) must be reported as a position report.

5.5.2 Position reports are to be made via ADS, CPDLC or Voice communication in that order of preference.

5.5.3 Aircraft with an active ADS connection must make a CPDLC position report when crossing the IFR boundary (inbound) to ensure CPDLC connectivity.

5.6 Anchorage Arctic FIR

5.6.1 Flights crossing the Anchorage Arctic FIR along 141W between 72N and 90N must file their 141W crossing point as a route element in field 15 of the ICAO flight plan.

5.6.2 All waypoints filed in Field 15 of the ICAO flight plan (route field) must be reported as a position report.

5.7 Houston Oceanic FIR

5.7.1 Position reports and the ability to communicate at any point of the route of flight is vital to the air traffic safety and control process. When flight planning, users are responsible to ensure that they will be capable of compliance. Inability to comply is in violation of ICAO requirements. The communication requirements for IFR flights within the Houston Oceanic Control Area are:

5.7.1.1 Functioning two−way radio communications equipment capable of communicating with at least one ground station from any point on the route;

5.7.1.2 Maintaining a continuous listening watch on the appropriate radio frequency; and

5.7.1.3 Reporting of mandatory points.

5.7.2 The following describes an area in the Houston CTA/FIR where reliable VHF air−to−ground communications below FL180 are not available:

5.7.2.1 26 30 00N 86 00 00W TO 26 30 00N 92 00 00W;

5.7.2.2 TO 24 30 00N 93 00 00W TO 24 30 00N 88 00 00W to;

5.7.2.3 TO 24 00 00N 86 00 00W TO BEGINNING POINT.

5.7.2.4 Communications within this area are available for all oceanic flights via HF.

NOTE−
The attention of pilots planning flights within the Houston CTA/FIR is directed to the communications and position reports requirements specified in the following ICAO Documents: Annex 2, Paragraphs 3.6.3 and 3.6.5; Annex 11, Paragraph 6.1.2; DOC 4444 Part 2 Paragraph 14; and DOC 7030 CAR Paragraph 3.

6. Satellite Voice (SATVOICE) Communication Services for Air Traffic Control (ATC)

6.1 The FAA provides Inmarsat and Iridium SATVOICE services for air−to−ground and ground−to−air calls directly with Oakland, New York, and Anchorage Air Route Traffic Control Centers (ARTCC) and New York and San Francisco RADIO. The FAA's SATVOICE services are supplemental to HF voice communication services.

6.2 The pilot must limit direct SATVOICE contact with ATC to distress and urgency situations, or when other means are not available, and communication is essential.

6.3 When unable to communicate on HF, the pilot may conduct normal and routine communications with ATC via New York RADIO or San Francisco RADIO on SATVOICE.

6.4 The aircraft SATVOICE equipment must be approved in accordance with Advisory Circular 20−150, Airworthiness Approval of Satellite Voice (SATVOICE) Equipment Supporting Air Traffic Service (ATS) Communication.

NOTE−
Portable satellite phones are NOT approved for normal and routine ATC communications.

6.5 The operator must use the SATVOICE equipment in accordance with ICAO Doc 10038, Satellite Voice Operations Manual (SVOM), with emphasis on the following:

6.5.1 If the flight intends to use SATVOICE capability, the operator must file the appropriate designator (that is, M1, M2, or M3) in Item 10, and the ICAO aircraft address (that is, hexadecimal code) in Item 18 of the flight plan.

REFERENCE−
Aeronautical Information Manual, Chapter 5, Air Traffic Procedures

6.5.2 The operator must establish procedures to ensure the flight maintains voice communications (that may include SATVOICE and any required HF SELCAL checks) with every ATS unit along the route of flight.

6.5.3 When using SATVOICE, the pilot must follow RTF conventions identical to HF/VHF communications in accordance with applicable standards and regulations pertaining to aeronautical communications.

6.5.4 Satellite service providers have assigned ICAO priority level 2/HGH/Q12 Operational high (second highest) to calls between aircraft and Air Navigation Service Providers. The pilot must verify the priority of the call and act only on ATC clearances/instructions from SATVOICE calls with priority level 2/HGH/Q12, and if in doubt terminate the call and initiate a new call for confirmation.

6.5.5 The pilot must answer SATVOICE calls when contacted either by the ARTCC or RADIO facility.

6.6 The SATVOICE short codes for ARTCCs and RADIO are in accordance with TBL ENR 7.1−2.

TBL ENR 7.1−2
SATVOICE Short Codes for ARTCCs and RADIO Facilities

Oceanic Control Area (OCA)	ATC Direct (only for distress, urgency, other means not available)		ATC via RADIO Facility (when unable to communicate on HF)	
	ARTCC	SATVOICE Short Code	RADIO Facility	SATVOICE Short Code
New York East	New York ARTCC	436695	New York RADIO	436623
New York West	New York ARTCC	436696		
Oakland	Oakland ARTCC	436697	San Francisco RADIO	436625
Anchorage	Anchorage ARTCC	436602		

7. Air−to−Air Frequency

7.1 Houston, San Juan and Miami FIRs

7.1.1 Frequency 123.45 MHz is the approved air−to−air VHF channel within the above FIRs. This frequency will be used for flights operating over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.

7.1.2 Frequency 123.45 MHz replaces the previously published frequencies used within the Houston, San Juan, and Miami FIRs. This change is necessary to comply with Amendment 74 to ICAO Annex 10, Volume II, which designated 123.45 as the global standard VHF air−to−air frequency.

8. Strategic Lateral Offset Procedure (SLOP) While Within FAA−Controlled Oceanic Airspace and the Anchorage Flight Information Region (FIR)

8.1 These procedures have been developed in accordance with ICAO Document 4444 Procedures for Air Navigation Services – Air Traffic Management, paragraph 16.5.

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

8.3 These procedures are authorized in FAA controlled oceanic airspace, Anchorage FIR, and the airspace surrounding the island of Bermuda, the airspace controlled by the Honolulu Control Facility (HCF) and the airspace controlled by the Guam Combined Center Radar Approach Control (CERAP

8.3.1 Pilots should apply an offset outbound after reaching their cruising flight level and retain the offset until the top of descent, unless local ATC dictates otherwise.

8.3.2 For flights departing Hawaii, pilots should apply SLOP upon reaching their initial cruise flight level and they are within 70 NM of entering the Oakland Oceanic Control Area.

8.3.3 For flights arriving Hawaii, pilots should discontinue SLOP no later than 70 NM after entering HCF airspace, or when receiving radar vectors from HCF, whichever occurs first. Pilots of Hawaiian inter−island flights must not use SLOP.

8.3.4 Aircraft transiting Bermuda airspace, HCF airspace, or Guam CERAP airspace may remain on their established offset.

8.3.5 Aircraft flying in the Anchorage FIR may apply SLOP as follows:

8.3.5.1 Throughout the entire Anchorage Arctic FIR.

8.3.5.2 In those portions of the Anchorage Domestic and Anchorage Oceanic FIRs (including offshore control areas) which are more than twelve miles offshore.

8.3.5.3 Over the land area of the Alaska Peninsula west of 160° West longitude.

8.4 These procedures provide for offsets within the following guidelines: Along a route or track there will be 21 positions that an aircraft may fly: on centerline or at increments of .1 NM (for example, .1, .2, .3, .4 ….. 1.8, 1.9, 2.0) right of centerline out to a maximum offset of 2 NM. Offsets must not exceed 2 NM right of centerline. The intent of this procedure is to reduce risk (add safety margin) by distributing aircraft laterally across the 21 available positions.

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

8.4.2 Pilots should also fly one of the available offset positions described above to avoid wake turbulence. Pilots should use whatever means available to determine the best offset to fly. An aircraft overtaking a lower altitude aircraft on the same routing should offset within the confines of this procedure, if capable, so as to create the least amount of wake turbulence for the aircraft being overtaken.

8.4.3 Aircraft should not offset to the left of center line nor offset more than 2 NM right of center line. Pilots may contact other aircraft on VHF frequency 123.45, as necessary, to coordinate the best wake turbulence offset option.

NOTE−
It is recognized that pilots will use their judgment to determine the action most appropriate to any given situation and have the final authority and responsibility for the safe operation of the aircraft.

8.4.4 There is no ATC clearance required for this procedure and it is not necessary that ATC be advised.

ENR 7.2 Data Link Procedures

1. Oakland Oceanic Airspace

1.1 Oakland ARTCC has full CPDLC and ADS−C services in the entire Oakland Oceanic FIR for FANS−1/A capable aircraft. The Oakland Oceanic FIR log−on address is “KZAK;” the facility is “OAKODYA.” CADS LOGON is not supported.

1.2 The use of CPDLC and ADS−C in the Oakland Oceanic FIR (KZAK) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZAK and the aircraft will not be able to connect.

1.3 Prior to entering the Oakland Oceanic FIR, contact ARINC and:

1.3.1 Identify the flight as ADS−C and/or CPDLC connected;

1.3.2 Provide departure, destination and aircraft registration number; and

1.3.3 Request a SELCAL check.

NOTE−

1. *Expect to receive primary and secondary HF frequency assignments from ARINC for the entire route of flight within the Oakland Oceanic FIR.*

2. *Pilots must maintain HF communications capability with ARINC at all times within the Oakland Oceanic FIR.*

1.4 Aircraft entering the Oakland Oceanic FIR data link service area from non−data link airspace should:

1.4.1 Log on to CPDLC at least 15 but not more than 45 minutes prior to entering the Oakland Oceanic FIR CPDLC service area.

1.4.2 Contact ARINC on HF for a SELCAL check and provide the information outlined in paragraph 1.3. Send a position report when CPDLC is established.

1.5 Aircraft entering the Oakland Oceanic FIR data link service area from adjacent data link airspace should:

1.5.1 Determine the status of the CPDLC connection. If KZAK is the active center, the pilot must contact ARINC on HF for a SELCAL check, identify the flight as a CPDLC flight, and send a position report via CPDLC.

1.5.2 If KZAK is not the active center, the pilot must, within 5 minutes after the boundary is crossed, terminate the CPDLC connection, then log on to KZAK, contact ARINC on HF for a SELCAL check, and advise ARINC that they are a CPDLC flight. Send a position report when CPDLC ATC COM is established.

1.6 Flights overflying Honolulu Control Facility (HCF) airspace will receive an END SERVICE message prior to entering HCF airspace that will result in termination of CPDLC. Aircraft must re−log on to CPDLC prior to reentering Oakland Oceanic FIR airspace when HCF advises to contact en route communications or ARINC.

1.7 Flights overflying Guam Combined Center Radar Approach Control (CERAP) airspace should maintain the CPDLC connection with Oakland ARTCC; however, do not use CPDLC for ATC COM until Guam CERAP advises you to again contact en route communications or ARINC.

2. Anchorage Oceanic Airspace

2.1 Anchorage ARTCC has full CPDLC capability and normal service in the Arctic FIR for FANS−1/A capable aircraft within INMARSAT or Iridium coverage. The Anchorage Arctic FIR log−on address is “PAZA;” the facility is “ANCXFXA.” CADS LOGON is not supported.

2.2 Anchorage ARTCC has full CPDLC capability and normal service in the Anchorage Domestic and Oceanic FIRs, South of N63 and west of W165 for FANS−1/A capable aircraft. The Anchorage log−on address is “PAZN;” the facility is “ANCATYA.” CADS LOGON is not supported.

2.3 Prior to entering the Anchorage Oceanic FIR, contact ARINC and:

2.3.1 Identify the flight as ADS−C and/or CPDLC connected;

2.3.2 Provide departure, destination and aircraft registration number; and

2.3.3 Request a SELCAL check.

NOTE−

1. *HF service in the Anchorage Arctic FIR is provided via GANDER Radio. ARINC maintains an HF LDOC station at Barrow, Alaska that may be of use when the solar conditions inhibit normal communications via GANDER. HF service in the Anchorage Oceanic FIR is provided via ARINC.*

2. *Expect to receive primary and secondary HF frequency assignments from ARINC for the entire route of flight when within the Anchorage Oceanic FIR.*

3. *Pilots must maintain HF communications capability with appropriate en route RADIO (ARINC or GANDER) at all times within the Anchorage Arctic or Oceanic FIRs.*

3. New York Oceanic Airspace

3.1 New York ARTCC provides full CPDLC and ADS−C services throughout its Oceanic Airspace to FANS−1/A capable flights. The New York Oceanic FIR FANS LOGON address is "KZWY." CADS LOGON is not supported. Flights should use ADS for position reporting and CPDLC for all other ATC communications while in the New York Oceanic Area.

3.2 The use of CPDLC and ADS−C in the New York Oceanic FIR (KZWY) is only permitted by Inmarsat and Iridium customers. All other forms of data link connectivity are not authorized. Users must ensure that the proper data link code is filed in Item 10a of the ICAO FPL in order to indicate which satellite medium(s) the aircraft is equipped with. The identifier for Inmarsat is J5 and the identifier for Iridium is J7. If J5 or J7 is not included in the ICAO FPL, then the LOGON will be rejected by KZWY and the aircraft will not be able to connect.

3.3 Prior to entering the New York Oceanic FIR, contact ARINC and:

3.3.1 Identify the flight as ADS−C and/or CPDLC connected;

3.3.2 State the name of the next CTA/FIR to be entered along with the latitude and longitude or waypoint exit point leaving the New York FIR; and

3.3.3 Request a SELCAL check.

NOTE−

1. *Expect to receive primary and secondary HF frequency assignments from ARINC for the route of flight within the data link service area.*

2. *Pilots must maintain HF communications capability with ARINC at all times within the New York Oceanic FIR.*

3.4 If the flight will exit ZNY oceanic airspace into domestic airspace (including over New York Bermuda RADAR):

3.4.1 Identify the flight as ADS and/or CPDLC connected;

3.4.2 If operating on the Organized Track System (OTS), state the track letter;

3.4.3 State the name of the next CTA/FIR to be entered along with the latitude and longitude or waypoint exit point leaving the ZNY FIR; and

3.4.4 Request a SELCAL check.

NOTE−

ARINC may require flights to contact them at 60 West for HF frequency updates.

3.5 Aircraft entering the New York Oceanic FIR data link service area from non−data link airspace should:

3.5.1 LOGON to KZWY at least 15 minutes but not more than 45 minutes prior to entering the New York Oceanic CTA/FIR.

3.5.2 Prior to entering the New York Oceanic FIR contact ARINC on HF or VHF providing the information as outlined in paragraph 3.3.

NOTE−

Do not send a CPDLC position report to confirm CDA prior to, or upon crossing, the FIR.

3.6 Aircraft entering the New York Oceanic FIR data link service area from adjacent data link airspace should:

3.6.1 Determine the status of the FANS connection when crossing the New York Oceanic FIR boundary.

NOTE−

CPDLC and ADS services will be forwarded automatically between New York, Santa Maria, and Gander OCA's. CPDLC connections will be transferred approximately 5 minutes prior to the boundary crossing point.

3.6.1.1 If KZWY is the active connection when crossing the New York Oceanic FIR boundary the pilot must:

3.6.1.2 Contact ARINC on HF providing the information as outlined in paragraph 3.3.

3.6.2 If KZWY is not the active center when crossing the New York Oceanic FIR boundary the pilot must:

3.6.2.1 Terminate the CPDLC connection, then log−on to KZWY; and

3.6.2.2 Contact ARINC on HF providing the information as outlined in paragraph 3.3.

NOTE−
Do not send a CPDLC position report to confirm CDA prior to, or upon crossing, the FIR.

3.7 Flights overflying Bermuda RADAR airspace should:

3.7.1 Prior to entering New York Bermuda RADAR airspace, aircraft will receive an END SERVICE message that will result in termination of CPDLC.

3.7.2 Aircraft must re−log−on to KZWY prior to re−entering the New York Oceanic CTA/FIR when they are advised by ATC to contact ARINC on HF.

3.8 Aircraft exiting the KZWY data link service area and approaching New York Center Domestic, New York Center Bermuda RADAR, San Juan, Piarco, Jacksonville, Miami, Moncton, and Gander Domestic can expect a CPDLC uplink message containing the VHF frequency assignment for the next facility. CPDLC End Service will be sent approximately 5 minutes prior to the boundary crossing point.

4. Data Link Failure

4.1 In the event of data link failure or outages, flight crews must contact ATC via HF voice for routine communications. SATVOICE contact should be limited to distress, urgency, and HF communications failure situations.

ENR 7.3 Special Procedures for In−Flight Contingencies in Oceanic Airspace

1. Introduction

1.1 Although all possible contingencies cannot be covered, the procedures in paragraphs 2, 3, and 5 provide for the more frequent cases such as:

1.1.1 Inability to comply with assigned clearance due to meteorological conditions (see paragraph 5);

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

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

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

1.2 The pilot must take action as necessary to ensure the safety of the aircraft. The pilot's judgment shall determine the sequence of actions to be taken in regard to the prevailing circumstances. Air traffic control shall render all possible assistance.

2. General Procedures

NOTE−
FIG ENR 7.3−1 provides an aid for understanding and applying the contingency procedures contained in paragraphs 2 and 3.

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

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

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

2.2.1.1 Aircraft position relative to any organized track or route system;

2.2.1.2 The direction of flights and flight levels allocated on adjacent tracks;

2.2.1.3 The direction to an alternate airport;

2.2.1.4 Any strategic lateral offset being flown; and

2.2.1.5 Terrain clearance;

2.2.2 The aircraft should be flown at a flight level and an offset track where other aircraft are less likely to be encountered;

2.2.3 Watch for conflicting traffic both visually and by ACAS (if equipped), leaving ACAS in RA mode at all times unless aircraft operating limits dictate otherwise;

2.2.4 Turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

2.2.5 Keep the SSR transponder on at all times and, when able, squawk 7700, as appropriate;

2.2.6 As soon as practicable, the pilot shall advise air traffic control of any deviation from assigned clearance;

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

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

2.2.9 When emergency situations are communicated via CPDLC, the controller may respond via CPDLC. However, the controller may also attempt to make voice communication contact with the aircraft;

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

2.2.10 Establish communications with nearby aircraft by broadcasting at suitable intervals on 121.5

MHz (or as a backup on the inter−pilot air−to−air frequency 123.45 MHz). Also broadcast where appropriate on the frequency in use: aircraft identification, the nature of the distress condition, intention of the person in command, position (including the ATS route designator or the track code, as appropriate), and flight level; and

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

2.3 Actions to be Taken Once Offset from Track:

NOTE−
The pilot's judgement of the situation and the need to ensure the safety of the aircraft will determine whether the actions outlined in 2.3.2.1 or 2.3.2.2 will be taken. Factors for the pilot to consider when diverting from the cleared route or track without an ATC clearance include, but are not limited to: operation within a parallel track system; the potential for User Preferred Routes (UPR) parallel to the aircraft's track or route; the nature of the contingency (for example, aircraft system malfunction); and weather factors (for example, convective weather at lower flight levels).

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

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

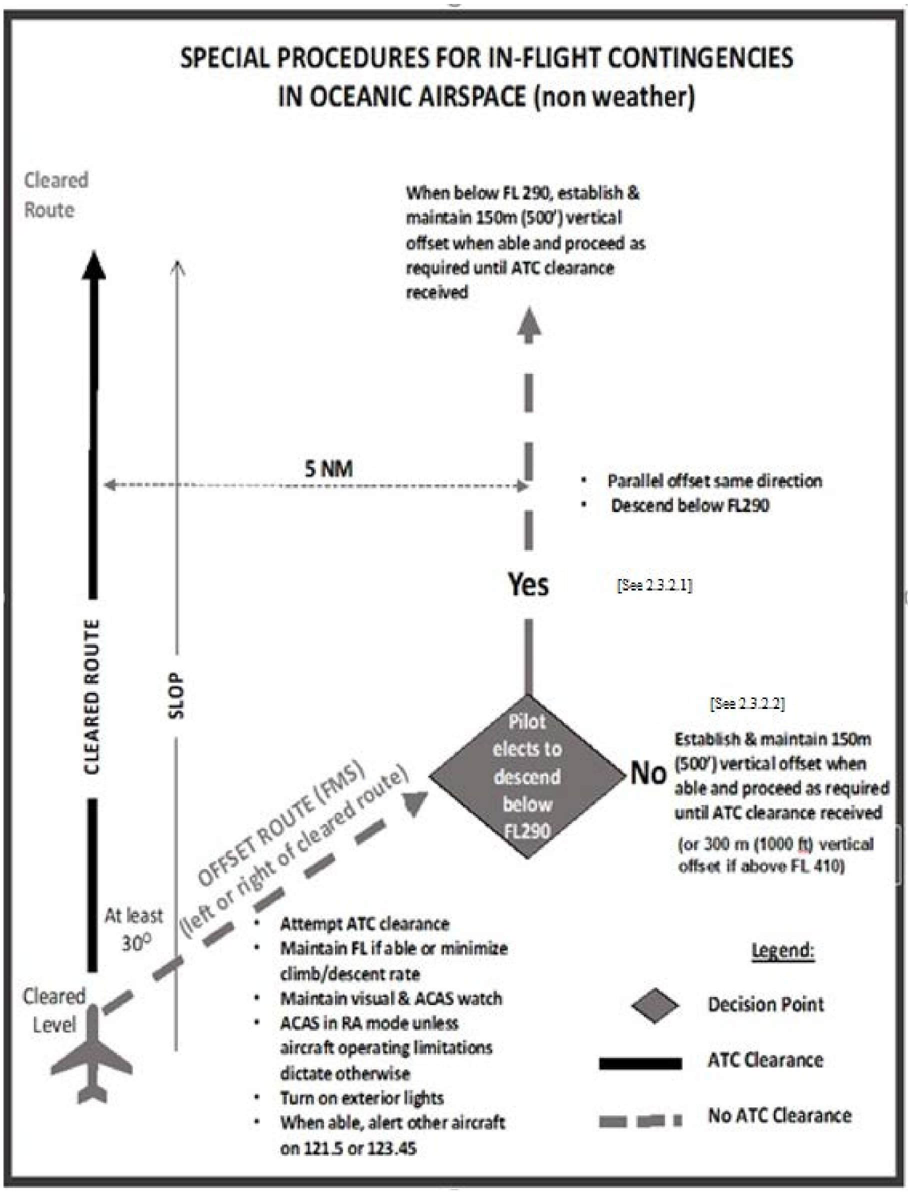
2.3.2.1 Descend below FL 290, establish a 150 m (500 ft) vertical offset from those flight levels normally used, and proceed as required by the operational situation or, if an ATC clearance has been obtained, proceed in accordance with the clearance, or

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

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

NOTE−
Altimetry system error may lead to less than actual 150 m (500 ft) vertical separation when the procedure above is applied. In addition, with the 150 m (500 ft) vertical offset applied, ACAS RAs may occur.

FIG ENR 7.3−1
Visual Aid for Understanding and Applying the Contingency Procedures Guidance



3. Extended Range Operations by Airplanes with Two−Turbine Power−Units (ETOPS)

3.1 If the contingency procedures are employed by a twin−engine aircraft as a result of an engine shutdown or failure of an ETOPS critical system, the pilot should advise ATC as soon as practicable of the situation, reminding ATC of the type of aircraft involved, and request expeditious handling.

4. Weather Deviation Procedures

4.1 General.

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

4.1.1 When weather deviation is required, the pilot should contact ATC via CPDLC or voice. A rapid response may be obtained by either:

4.1.1.1 Stating, "WEATHER DEVIATION REQUIRED" to indicate that priority is desired on the frequency and for ATC response; or

4.1.1.2 Requesting a weather deviation using a CPDLC lateral downlink message.

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

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

4.2 Actions to be Taken When Controller−Pilot Communications Are Established:

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

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

4.2.2 ATC should take one of the following actions:

4.2.2.1 When appropriate separation can be applied, issue clearance to deviate from track; or

4.2.2.2 If there is conflicting traffic and ATC is unable to establish appropriate separation, ATC should:

a) Advise the pilot of inability to issue clearance for the requested deviation;

b) Advise the pilot of conflicting traffic; and

c) Request the pilot's intentions.

4.2.3 The pilot should take one of the following actions:

4.2.3.1 Comply with the ATC clearance issued; or

4.2.3.2 Advise ATC of intentions and execute the procedures provided in paragraph 4.3.

4.3 Actions to be Taken if a Revised ATC Clearance Cannot Be Obtained:

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

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

4.3.1.1 If possible, deviate away from an organized track or route system;

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

4.3.1.3 Watch for conflicting traffic both visually and by reference to ACAS, if equipped;

4.3.1.4 Turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

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

4.3.1.6 For deviations greater than or equal to 9.3 km (5.0 NM) from the originally cleared track or route, when the aircraft is approximately 9.3 km (5.0 NM) from track, initiate a level change in accordance with TBL ENR 7.3−1.

4.3.1.7 If the pilot receives clearance to deviate from the cleared track or route for a specified distance and subsequently requests but is denied clearance to deviate beyond that distance, the pilot should apply an altitude offset in accordance with TBL ENR 7.3−1 immediately;

4.3.1.8 When returning to track or route, the aircraft should be at the previously assigned flight level prior to a point 9.3 km (5.0 NM) from the route centerline.

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

NOTE−
If, as a result of actions taken under the provisions of 4.3.1 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.

TBL ENR 7.3−1
Altitude Offset When Denied Clearance to Deviate 9.3 km (5.0 NM) or More

Originally Cleared Track or Route Center Line	Deviations ≥ 9.3 km (5 NM)	Level Change
EAST (000°− 179° magnetic)	LEFT	DESCEND 90 m (300 ft)
	RIGHT	CLIMB 90 m (300 ft)
WEST (180°− 359° magnetic)	LEFT	CLIMB 90 m (300 ft)
	RIGHT	DESCEND 90 m (300 ft)

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.

appropriate documents and/or contact the airplane or avionics manufacturer to determine the RNP 10 time limit applicable to their aircraft. They will then need to determine its effect, if any, on their operation. Unless otherwise approved, the basic RNP 10 time limit is 6.2 hours between position updates for aircraft on which Inertial Navigation Systems (INS) or Inertial Reference Units (IRU) provide the only source of long range navigation. Extended RNP 10 time limits of 10 hours and greater are already approved for many IRU systems. FAA Advisory Circular 90−105 contains provisions for extending RNP 10 time limits.

1.11 Flight Planning Requirements

1.11.1 Operators must make ICAO flight plan annotations in accordance with this paragraph and, if applicable, Paragraph 1.7, Provisions for Accommodation of Non−RNP 10 Aircraft (Not Authorized RNP 10 or RNP 4).

1.11.2 ICAO flight plans must be filed for operation on oceanic routes and areas in the Houston Oceanic CTA/FIR, the Gulf of Mexico portion of the Miami CTA/FIR, the Monterrey CTA and Merida High CTA.

1.11.3 To inform ATC that they have obtained RNP 10 or RNP 4 authorization and are eligible for 50 NM lateral separation, operators must:

1.11.3.1 Annotate ICAO Flight Plan Item 10 (Equipment) with the letter "R"; and

1.11.3.2 Annotate Item 18 (Other Information) with, as appropriate, "PBN/A1" for RNP 10 aircraft or "PBN/L1" for RNP 4 aircraft (no space between letters and numbers).

NOTE−
The letter "R" indicates that the performance−based navigation specification (for example, RNP 10 or RNP 4) is specified in Item 18 following the indicator "PBN/."

1.12 Pilot and Dispatcher Basic and In−Flight Contingency Procedures.

1.12.1 The RNP 10 and RNP 4 Job Aids contain references to pilot and, if applicable, dispatcher procedures contained in Advisory Circular 90−105 and ICAO PBN Manual, Volume II, Parts B and C, Chapter 1.

1.12.2 Pilots should use SLOP procedures in the course of regular oceanic operations. SLOP procedures are published in ICAO Document 4444, 15th Edition, Amendment 2, paragraph 16.5.

NOTE−
See ENR 7.1, paragraph 8.

1.12.3 ICAO Doc 4444, Chapter 15, In−flight Contingency Procedures contains important guidance for pilot training programs. Chapter 15 includes Special Procedures for In−flight Contingencies in Oceanic Airspace, as well as Weather Deviation Procedures. Chapter 15 covers in−flight diversion and turn−back scenarios, loss of navigation capability, and procedures to follow for weather avoidance. This critical guidance is reprinted in AIP Section ENR 7.3, the International Notices found in the External Links section of the Federal NOTAM System (FNS) NOTAM Search or Air Traffic Plans and Publications website and FAA Advisory Circular 91−70, Oceanic and Remote Continental Airspace Operations.

1.12.4 When pilots suspect a navigation system malfunction, in addition to the actions suggested in ICAO Doc. 4444, Chapter 15, the following actions should be taken:

1.12.4.1 Immediately inform ATC of navigation system malfunction or failure;

1.12.4.2 Accounting for wind drift, fly magnetic compass heading to maintain track; and

1.12.4.3 Request radar vectors from ATC, when available.

1.13 Pilot Report of Non−RNP 10 Status

1.13.1 The pilot must report the lack of RNP 10 or RNP 4 status in accordance with the following:

1.13.1.1 When the operator/aircraft is not authorized RNP 10 or RNP 4 (See paragraph 1.7.)

1.13.1.2 If approval status is requested by the controller:

1.13.1.3 The pilot must communicate approval status using the following phraseology in TBL ENR 7.4−1.

TBL ENR 7.4−1

Controller Request	Pilot Response
[*call sign*] “CONFIRM RNP 10 OR 4 APPROVED”	“AFFIRM RNP 10 APPROVED” or “AFFIRM RNP 4 APPROVED” as appropriate; or “NEGATIVE RNP 10”

2. Oakland Oceanic Airspace

2.1 The application of 50 NM lateral separation minima between aircraft authorized RNP 10 or RNP 4 is supported.

2.2 RNP 10 is required for all aircraft operating in the Central East Pacific (CEP) fixed track system and Pacific Organized Track System (PACOTS).

2.3 Non−RNP 10 approved aircraft may file via random track, at any altitude, at least 100 NM from any PACOTS track.

3. Anchorage Oceanic FIR

3.1 The application of 50 NM lateral separation minima between aircraft authorized RNP 10 or RNP 4 is supported.

3.2 Non−RNP 10 approved aircraft may file via random track, at any altitude, at least 100 NM from the North Pacific (NOPAC) fixed track system. Aircraft entering the NOPAC should flight plan in accordance with Notices contained in the Alaska Chart Supplement.

4. Anchorage Arctic FIR

4.1 The application of 50 NM lateral separation minima between aircraft authorized RNP 10 is supported.

5. New York Oceanic Airspace

5.1 ATC applies 50 NM lateral separation between aircraft authorized RNP 10 or RNP 4 within New York Oceanic West airspace. ATC similarly applies 50 NM lateral separation in the Atlantic portion of the Miami Oceanic CTA as well as the San Juan CTA/FIR. ATC may apply 50 NM lateral separation between aircraft authorized RNP 10 or RNP 4 in New York Oceanic East.

5.2 Aircraft authorized RNP 10 or RNP 4 will have a better chance of obtaining their preferred routing and altitude in the most densely used airspace (that is, below FL 410) because of their ability to participate in ATC’s use of 50 NM lateral separation. Non−RNP 10 or non−RNP 4 aircraft will be spaced at least 90 NM laterally from other aircraft.

5.3 ATC will not apply 50 NM lateral separation on routes that are defined by reference to ICAO standard ground−based navigation aids. In addition, 50 NM lateral separation is not applied to aircraft on the following route segments, at and above FL 310, because the routes are considered within ATC radar and VHF radio coverage:

5.3.1 M201 between VIRST and VEGAA, and

5.3.2 L453 between SAUCR and AZEZU.

NOTE−
SLOP is not to be used while flying these route segments.

5.4 Flight plan filing and addressing requirements are detailed in ENR 7.1, paragraphs 2 and 3.

5.5 Operators of aircraft not authorized RNP 10 or RNP 4 are expected to follow the procedures in ENR 7.4 paragraphs 1. 7 and 1.13 for alerting ATC of their RNP status. Those operators are expected to indicate their “non−RNP 10” status in Item 18 of their ATC flight plan. In addition, pilots are expected to inform ATC of their “non−RNP 10” status on initial call to ATC on WATRS routes and when reading back a clearance to descend through FL 410.

5.6 Filing a flight plan for, and conducting operations under, RNP 10 or RNP 4 navigation specifications require the aircraft to be equipped with two operable long−range navigation systems (LRNS). Operators who indicate RNP 10 or RNP 4 capability on their ATC flight plans, and subsequently experience a LRNS failure while operating on a WATRS route, must alert ATC to this failure. If the pilot believes the aircraft can continue to be navigated within 10 NM of the cleared route with the single LRNS, ATC should be informed; as such, ATC may continue the aircraft on the cleared route.

5.7 In the event of LRNS failure prior to joining a WATRS route, pilots must inform ATC of the failure and ensure ATC is aware the aircraft is no longer qualified for the RNP level indicated in the flight plan. In addition to this notification, pilots should request ATC amend their flight plan to remove the RNP capability indication in Item 18 of the flight plan.

5.8 Information regarding operations in WATRS can be found in the West Atlantic Route System, Gulf of Mexico, and Caribbean Resource Guide for U.S. Operators which is available at:
http://www.faa.gov/about/office_headquarters_offices/avs/offices/afx/afs/afs400/afs410/media.WATRS.pdf

6. Provisions for Accommodation of Non−RNP 10 Aircraft (Not Authorized RNP 10 or RNP 4)

The guidance contained in paragraphs 1.7 and 1.13 of this section is applicable to all operations using Non−RNP 10 aircraft throughout the airspace covered by this document.

7. RNP 10 or RNP 4 Authorization Policy and Procedures for Aircraft and Operators

The guidance contained in paragraphs 1.8 and 1.9 of this section is applicable to operations throughout the airspace covered by this document.

8. Flight Planning Requirements

The guidance contained in paragraphs 1.7 and 1.11 of this section is applicable to operations throughout the airspace covered by this document.

9. Pilot and Dispatcher Basic and In−Flight Contingency Procedures

Information and guidance pertaining to in−flight contingency procedures, applicable in all the oceanic airspace covered by this AIP are provided in ENR 7.4, paragraph 1.12 as well as section ENR 7.3.

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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APPENDIX

A−1	16 JUL 20
1 through 440	N/A

AD 0.5 List of Hand Amendments to the AIP − Not applicable

AD 1. AERODROMES – INTRODUCTION

AD 1.1 Aerodrome Availability

1. General Regulations Concerning Airport Use

1.1 International arrivals with scheduled passenger service are not permitted to land at any aerodrome not listed in this AIP except in cases of real emergency or where special permission has been granted.

1.2 The conditions under which aircraft may land, be parked, housed or otherwise dealt with at U.S. aerodromes is under the control of the aerodrome owner/operator. Conditions and fees pertaining to landing, parking, or storing are variable from aerodrome to aerodrome and are not published in the U.S. AIP.

2. Landings Made Elsewhere Than at International Aerodromes

2.1 Permission to land at airports other than "international" and "landing rights" airports may be obtained in some limited cases; however, advance arrangements (preferably in writing) must be made with the U.S. Customs office nearest the airport of intended arrival (see GEN 1). Advance notice of arrival is required as usual. Pilots should be aware that mileage and per diem costs may be accrued in addition to any overtime charges if applicable.

2.2 If an emergency landing is made elsewhere than at an international aerodrome or a designated alternate aerodrome, the pilot in command must report the landing as promptly as possible by telephone or the most convenient means to the nearest Customs office. He/she should keep all merchandise or baggage in a segregated place and should not permit any passenger or crewmember to depart the place of arrival or mingle with the public without official permission, unless it is necessary for preservation of life, health, or property.

3. Traffic of Persons and Vehicles on Aerodromes

3.1 The grounds of each aerodrome are divided into two zones:

3.1.1 A public zone comprising the part of the aerodrome open to the public; and

3.1.2 A restricted zone comprising the rest of the aerodrome.

3.2 Movement of Persons

3.2.1 Access to the restricted zone is authorized only under conditions prescribed by the rules governing the aerodrome as established by the officials responsible for aerodrome security.

3.2.2 The customs, security, immigration and health inspection offices and areas, and the premises assigned to transit traffic are normally accessible only to passengers, to staff members of the responsible authorities or airlines, and to authorized persons in pursuit of their duties.

3.2.3 The movement of persons having access to the restricted zone of the aerodrome is subject to the conditions prescribed by applicable air traffic and by the security regulations laid down by the person responsible for the management of the aerodrome.

3.3 Movement of Vehicles

3.3.1 The movement of vehicles in the restricted zone is strictly limited to vehicles driven or used by persons having official permission.

3.3.2 Drivers of vehicles, of whatever type, driving within the confines of the aerodrome, must respect the direction of traffic, the traffic signs, and the posted speed limits and generally comply with the provisions of the highway code and with instructions given by the competent authorities.

4. General Information and Aerodrome Lighting and Marking

4.1 Aerodrome lighting information is contained in paragraphs 12. through 16. Information on aerodrome marking aids and signs is contained in paragraph 17.

4.2 Designated international U.S. aerodromes with scheduled passenger service in large aircraft and certain airports designated as alternate service aerodromes are listed in , Aerodromes.

5. Aerodrome Administration

5.1 The administration of all airports is the responsibility of the aerodrome owner.

5.2 Ownership of aerodromes in the U.S. is vested in three different groups: the Federal Government, non−Federal governments, and private organizations or individuals. It is the policy of the U.S. Federal Government to have its aerodromes comply with ICAO Standards and Recommended Practices. Exceptions are noted as differences below and in GEN 1.7. Aerodromes owned by non−Federal governments and private organizations or individuals are encouraged to comply with International Standards and Recommended Practices in part through the regulation of aircraft operations into the aerodromes and in part through agreements under which Federal aid is made available for aerodrome development or improvement. Further compliance is by voluntary action on the part of the aerodrome owner.

6. Conditions of Availability

6.1 An aerodrome which is open for public use may be used by a particular aircraft upon consideration of the meteorological conditions existing at the time and provided that the aircraft's performance and load classification (runway weight−bearing classification) is consistent with the physical characteristics of the aerodrome.

6.2 Civil Use of Military Fields

6.2.1 Except at joint−use airfields, U.S. Army, Air Force, Navy, Marine Corps, and Coast Guard airfields are available for use by civil aircraft only with prior permission or in an emergency. An approved civil aircraft landing permit is required for use at all except Coast Guard airfields. With minor exceptions, authority to use military airfields is granted only to aircraft on official government business.

6.2.2 An application for a permit must be submitted to the appropriate military department a minimum of 30 days prior to the first intended landing. A permit application consists of Department of Defense Forms DD Form 2400, Civil Aircraft Certificate of Insurance; DD Form 2401, Civil Aircraft Landing Permit; and DD Form 2402, Hold Harmless Agreement.

6.2.3 Forms and instructions can be obtained from the following addresses.

Army:	Director, USAASA ATTN: MOAS−AS Building 1466 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060−5582 Telephone: (703) 806−4864
Air Force:	HQ USAF/XOO−CA 1480 Air Force Pentagon, Room 4D1010 Washington DC 20330−1480 Telephone: (703) 697−5967
Navy/ Marine Corps:	Commander Naval Facilities Engineering Command, Code 141JB 200 Stovall Street, Room 10N45 Alexandria, VA 22332−2300 Telephone: (703) 325−0475

At Coast Guard airfields, prior permission must be requested from the commanding officer of the airfield to be used.

7. Applicable ICAO Documents

ICAO Standards and Recommended Practices contained in Annex 14 are applied with the exceptions noted in GEN 1.7, Differences from ICAO Standards, Recommended Practices and Procedures.

8. Maintenance of Aerodrome Movement Areas

8.1 It is the responsibility of the relevant aerodrome authority to maintain the aerodrome in a satisfactory condition.

8.2 Clearance of snow and measurement of snow, ice, standing water, braking action, etc., and the reporting of such pavement conditions is within the responsibility of the aerodrome authority.

9. Dissemination of Information on the Condition of Paved Surface

9.1 Information on surface condition of runways, taxiways and aprons will be published, when available and when necessary.

9.2 At aerodromes where an ATS unit is established, if a runway is affected by standing water, snow, slush or ice during the approach of an aircraft for landing, and such conditions are notified by the aerodrome management to the ATS unit, such conditions will be made available to the aircraft.

10. Rescue and Fire Fighting Facilities

10.1 Adequate rescue and fire−fighting vehicles, equipment and personnel are provided at aerodromes available for international commercial air transport.

10.2 Temporary interruptions to rescue and fire−fighting service, or non−availability of such services, are made known by NOTAM.

10.3 Certificated Aerodromes (14 CFR Part 139)

Aerodromes serving certain air carriers under 14 CFR Part 139 are indicated by a CFR Index which relates to the availability of crash, fire, and rescue equipment. (See TBL AD 1.1−1.)

11. Bird Concentrations in the Vicinity of Aerodromes

11.1 Animal and bird notices are not normally published in aerodrome remarks. Pilots should be aware that animals and birds are frequently found in the vicinity of aerodromes and should exercise due caution. However, selected bird notices may be published, but only after approval by the appropriate Regional Bird Hazard Group.

TBL AD 1.1−1

14 CFR PART 139 CERTIFICATED AIRPORTS

Indexes and Fire Fighting and Rescue Equipment Requirements

Airport Index	Required Number of Vehicles	Aircraft Length	Agent & Water for Foam
A	1	< 90’	500# DC or 450# DC + 100 gal H_20
B	1 or 2	≥ 90’ & < 126’	Index A + 1500 gal H_20
C	2 or 3	≥ 126’ & < 159’	Index A + 3000 gal H_20
D	3	≥ 159’ & < 200’	Index A + 4000 gal H_20
E	3	≥ 200’	Index A + 6000 gal H_20
> Greater Than; < Less Than; ≥ Equal To or Greater Than; H_20 Water; DC Dry Chemical			
NOTE− Vehicle and capacity requirements for airports holding limited operating certificates are determined on a case−by−case basis.			

12. Airport Lighting Aids

12.1 Approach Light Systems (ALS)

12.1.1 Approach light systems provide the basic means for transition from instrument flight to visual flight for landing. Operational requirements dictate the sophistication and configuration of the approach light system for a particular runway.

12.1.2 Approach light systems are a configuration of signal lights starting at the landing threshold and extending into the approach area a distance of 2400−3000 feet for precision instrument runways and 1400−1500 feet for nonprecision instrument runways. Some systems include sequenced flashing lights which appear to the pilot as a ball of light traveling towards the runway at high speed (twice each second).

12.2 Visual Glideslope Indicators

12.2.1 Visual Approach Slope Indicator (VASI)

12.2.1.1 The VASI is a system of lights so arranged to provide visual descent guidance information during the approach to a runway. These lights are visible from 3−5 miles during the day and up to 20 miles or more at night. The visual glide path of the VASI provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 4 NM from the runway threshold. Descent, using the VASI, should not be initiated until the aircraft is visually aligned with the runway. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the VASI may be offset from the extended runway centerline. This will be noted in the Chart Supplement U.S. and/or applicable notices to airmen (NOTAM).

12.2.1.2 VASI installations may consist of either 2, 4, 6, 12, or 16 light units arranged in bars referred to as near, middle, and far bars. Most VASI installations consist of 2 bars, near and far, and may consist of 2, 4, or 12 light units. Some airports have VASIs consisting of three bars, near, middle, and far, which provide an additional visual glide path to accommodate high cockpit aircraft. This installation may consist of either 6 or 16 light units. VASI installations consisting of 2, 4, or 6 lights units are located on one side of the runway, usually the left. Where the installation consists of 12 or 16 light units, the light units are located on both sides of the runway.

12.2.1.3 Two−bar VASI installations provide one visual glide path which is normally set at 3 degrees. Three−bar VASI installations provide two visual glide paths. The lower glide path is provided by the near and middle bars and is normally set at 3 degrees while the upper glide path, provided by the middle and far bars, in normally $^1/_4$ degree higher. This higher glide path is intended for use only by high cockpit aircraft to provide a sufficient threshold crossing height. Although normal glide path angles are three degrees, angles at some locations may be as high as 4.5 degrees to give proper obstacle clearance. Pilots of high performance aircraft are cautioned that use of VASI angles in excess of 3.5 degrees may cause an increase in runway length required for landing and rollout.

12.2.1.4 The basic principle of the VASI is that of color differentiation between red and white. Each light unit projects a beam of light having a white segment in the upper part of the beam and red segment in the lower part of the beam. The light units are arranged so that the pilot using the VASIs during an approach will see the combination of lights shown below.

12.2.1.5 For 2−BAR VASI (4 light units), see FIG AD 1.1−2.

12.2.1.6 For 3−BAR VASI (6 light units), see FIG AD 1.1−3.

12.2.1.7 For other VASI configurations, see FIG AD 1.1−4.

12.2.2 Precision Approach Path Indicator (PAPI). The precision approach path indicator (PAPI) uses light units similar to the VASI but are installed in a single row of either two or four light units. These lights are visible from about 5 miles during the day and up to 20 miles at night. The visual glide path of the PAPI typically provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 3.4 NM from the runway threshold. Descent, using the PAPI, should not be initiated until the aircraft is visually aligned with the runway. The row of light units is normally installed on the left side of the runway and the glide path indications are as depicted. Lateral course guidance is provided by the runway or runway lights. In certain circumstances, the safe obstruction clearance area may be reduced by narrowing the beam width or shortening the usable distance due to local limitations, or the PAPI may be offset from the extended runway centerline. This will be noted in the Chart Supplement U.S. and/or applicable NOTAMs. (See FIG AD 1.1−5.)

12.2.3 Tri−color Systems. Tri−color visual approach slope indicators normally consist of a single light unit, projecting a three−color visual approach path into the final approach area of the runway upon which the indicator is installed. The below glide path indication is red, the above glide path indication is amber, and the on glide path indication is green. These types of indicators have a useful range of approximately $^1/_2$ to 1 mile during the day and up to 5 miles at night depending upon the visibility conditions. (See FIG AD 1.1−6.)

12.2.4 Pulsating Systems. Pulsating visual approach slope indicators normally consist of a single light unit projecting a two−color visual approach path into the final approach area of the runway upon which the indicator is installed. The on glide path indication may be a steady white light or alternating RED and WHITE light. The slightly below glide path indication is a steady red light. If the aircraft descends further below the glide path, the red light starts to pulsate. The above glide path indication is a pulsating white light. The pulsating rate increases as the aircraft gets further above or below the desired glide slope.

The useful range of the system is about four miles during the day and up to ten miles at night.
(See FIG AD 1.1−7.)

12.2.5 Alignment of Elements Systems. Alignment of elements systems are installed on some small general aviation airports and are a low cost system consisting of painted plywood panels, normally black and white or fluorescent orange. Some of these systems are lighted for night use. The useful range of these systems is approximately $^3/_4$ mile. To use the system the pilot positions the aircraft so the elements are in alignment. The glide path indications are shown in FIG AD 1.1−8.

12.3 Runway End Identifier Lights (REIL)

12.3.1 REILs are installed at many airfields to provide rapid and positive identification of the approach end of a particular runway. The system consists of a pair of synchronized flashing lights, one of which is located laterally on each side of the runway threshold facing the approach area. They are effective for:

12.3.1.1 Identification of a runway surrounded by a preponderance of other lighting.

12.3.1.2 Identification of a runway which lacks contrast with surrounding terrain.

12.3.1.3 Identification of a runway during reduced visibility.

12.4 Runway Edge Light Systems

12.4.1 Runway edge lights are used to outline the edges of runways during periods of darkness or restricted visibility conditions. These light systems are classified according to the intensity or brightness they are capable of producing: they are the High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and the Low Intensity Runway Lights (LIRL). The HIRL and MIRL systems have variable intensity controls; whereas, the LIRLs normally have one intensity setting.

12.4.2 The runway edge lights are white; except on instrument runways, yellow replaces white on the last 2,000 feet or half the runway length, whichever is less, to form a caution zone for landings.

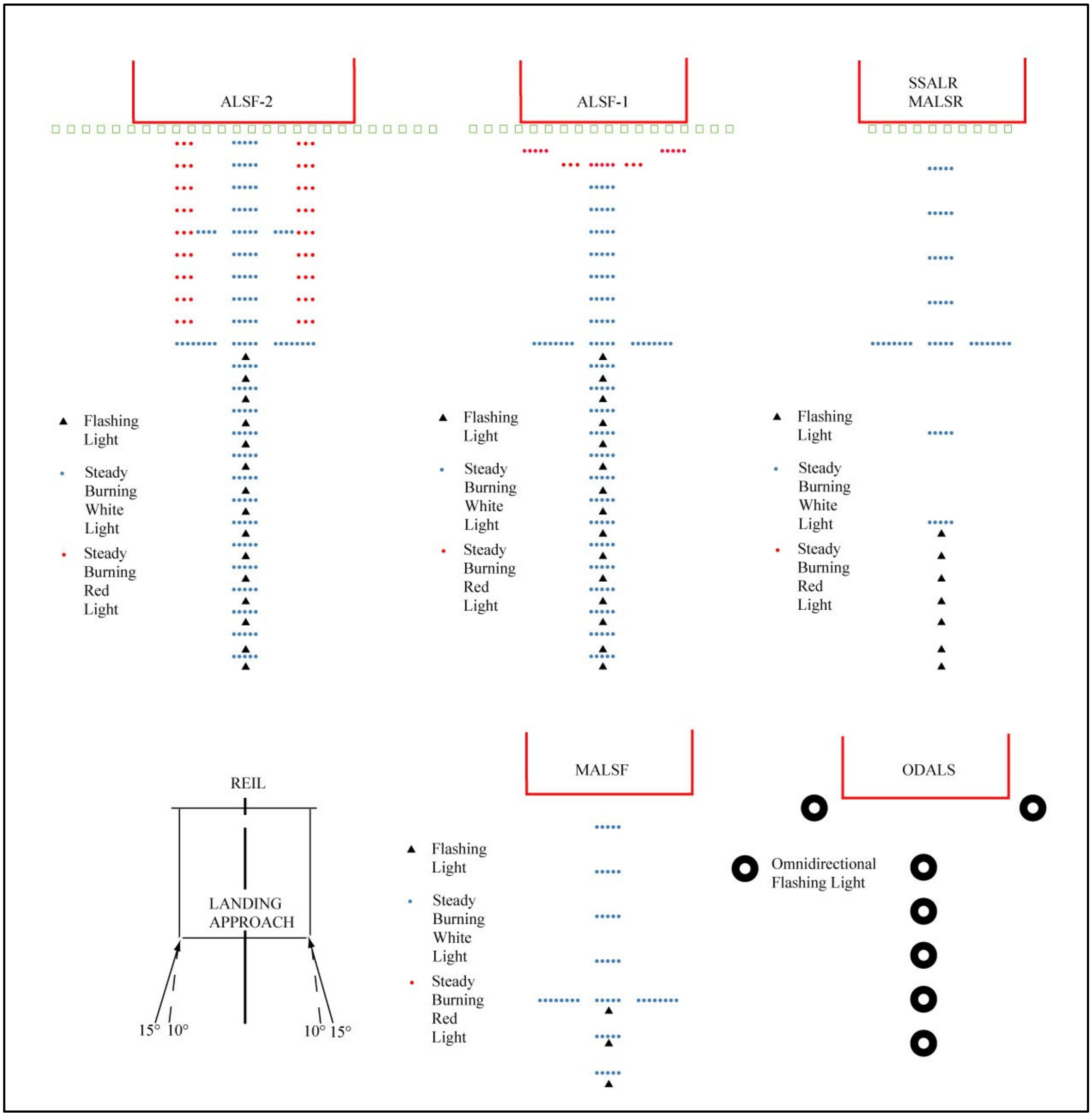
12.4.3 The lights marking the ends of the runway emit red light toward the runway to indicate the end of the runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft.

12.5 In−Runway Lighting

12.5.1 Runway Centerline Lighting System (RCLS). Runway centerline lights are installed on some precision approach runways to facilitate landing under adverse visibility conditions. They are located along the runway centerline and are spaced at 50−foot intervals. When viewed from the landing threshold, the runway centerline lights are white until the last 3,000 feet of the runway. The white lights begin to alternate with red for the next 2,000 feet, and for the last 1,000 feet of the runway, all centerline lights are red.

12.5.2 Touchdown Zone Lights (TDZL). Touchdown zone lights are installed on some precision approach runways to indicate the touchdown zone when landing under adverse visibility conditions. They consist of two rows of transverse light bars disposed symmetrically about the runway centerline. The system consists of steady−burning white lights which start 100 feet beyond the landing threshold and extend to 3,000 feet beyond the landing threshold or to the midpoint of the runway, whichever is less.

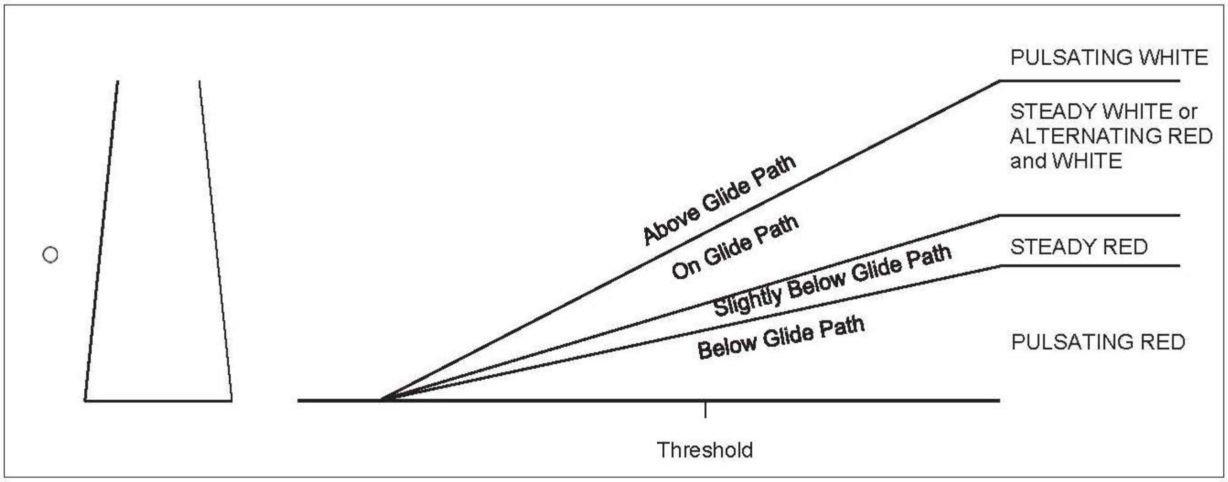
FIG AD 1.1−1
Precision & Nonprecision Configurations



NOTE−
Civil ALSF−2 may be operated as SSALR during favorable weather conditions.

FIG AD 1.1−7

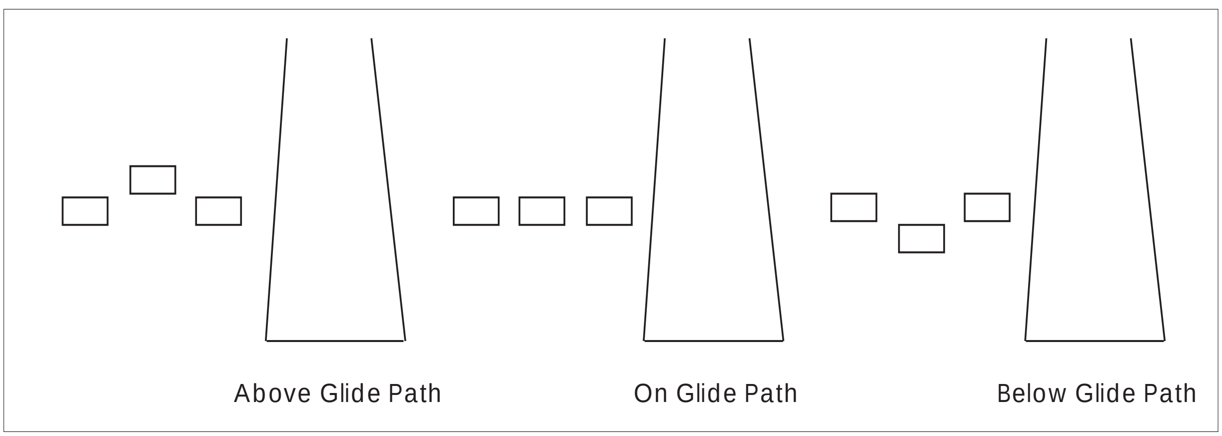
Pulsating Visual Approach Slope Indicator



NOTE−
Since the PVASI consists of a single light source which could possibly be confused with other light sources, pilots should exercise care to properly locate and identify the light signal.

FIG AD 1.1−8

Alignment of Elements



12.5.3 Taxiway Centerline Lead−Off Lights. Taxiway centerline lead−off lights provide visual guidance to persons exiting the runway. They are color−coded to warn pilots and vehicle drivers that they are within the runway environment or instrument landing system (ILS) critical area, whichever is more restrictive. Alternate green and yellow lights are installed, beginning with green, from the runway centerline to one centerline light position beyond the runway holding position or ILS critical area holding position.

12.5.4 Taxiway Centerline Lead−On Lights. Taxiway centerline lead−on lights provide visual guidance to persons entering the runway. These "lead−on" lights are also color−coded with the same color pattern as lead−off lights to warn pilots and vehicle drivers that they are within the runway environment or instrument landing system (ILS) critical area, whichever is more conservative. The fixtures used for lead−on lights are bidirectional, i.e., one side emits light for the lead−on function while the other side emits light for the lead−off function. Any fixture that emits yellow light for the lead−off function must also emit yellow light for the lead−on function. (See FIG AD 1.1−12.)

12.5.5 Land and Hold Short Lights. Land and hold short lights are used to indicate the hold short point on certain runways which are approved for Land and Hold Short Operations (LAHSO). Land and hold short lights consist of a row of pulsing white lights installed across the runway at the hold short point. Where installed, the lights will be on anytime LAHSO is in effect. These lights will be off when LAHSO is not in effect.

REFERENCE−
ENR 1.1, Paragraph 22, Pilot Responsibilities When Conducting Land and Hold Short Operations (LAHSO).

12.6 Runway Status Light (RWSL) System

12.6.1 Introduction: RWSL is a fully automated system that provides runway status information to pilots and surface vehicle operators to clearly indicate when it is unsafe to enter, cross, or takeoff from a runway. The RWSL system processes information from surveillance systems and activates Runway Entrance Lights (REL) and Takeoff Hold Lights (THL) in accordance with the position and velocity of the detected surface traffic and approach traffic. REL and THL are in−pavement light fixtures that are directly visible to pilots and surface vehicle operators. RWSL is an independent safety enhancement that does not substitute for or convey an ATC clearance. Clearance to enter, cross, takeoff from, or operate on a runway must still be received from ATC. Although ATC has limited control over the system, personnel do not directly use and may not be able to view light fixture activations and deactivations during the conduct of daily ATC operations.

12.6.2 Runway Entrance Lights (REL): The REL system is composed of flush mounted, in-pavement, unidirectional light fixtures that are parallel to and focused along the taxiway centerline and directed toward the pilot at the hold line. An array of REL lights include the first light at the hold line followed by a series of evenly spaced lights to the runway edge; one additional light at the runway centerline is in line with the last two lights before the runway edge (see FIG AD 1.1−9 and FIG AD 1.1−10). When activated, the red lights indicate that there is high speed traffic on the runway or there is an aircraft on final approach within the activation area.

12.6.2.1 REL Operating Characteristics − Departing Aircraft:

When a departing aircraft reaches a site adaptable speed of approximately 30 knots, all taxiway intersections with REL arrays along the runway ahead of the aircraft will illuminate (see FIG AD 1.1−9. As the aircraft approaches an REL equipped taxiway intersection, the lights at that intersection extinguish approximately 3 to 4 seconds before the aircraft reaches it. This allows controllers to apply "anticipated separation" to permit ATC to move traffic more expeditiously without compromising safety. After the aircraft is declared "airborne" by the system, all REL lights associated with this runway will extinguish.

12.6.2.2 REL Operating Characteristics − Arriving Aircraft:

When an aircraft on final approach is approximately 1 mile from the runway threshold, all sets of taxiway REL light arrays that intersect the runway illuminate. The distance is adjustable and can be configured for specific operations at particular airports. Lights extinguish at each equipped taxiway intersection approximately 3 to 4 seconds before the aircraft reaches it to apply anticipated separation until the aircraft has slowed to approximately 80 knots (site adjustable parameter). Below 80 knots, all arrays that are not within 30 seconds of the aircraft's forward path are extinguished. Once the arriving aircraft slows to approximately 34 knots (site adjustable parameter), it is declared to be in a taxi state, and all lights extinguish.

12.6.2.3 What a pilot would observe: A pilot at or approaching the hold line to a runway will observe RELs illuminate and extinguish in reaction to an aircraft or vehicle operating on the runway, or an arriving aircraft operating less than 1 mile from the runway threshold.

12.6.2.4 When a pilot observes the red lights of the REL, that pilot will stop at the hold line or remain stopped. The pilot will then contact ATC for resolution if the clearance is in conflict with the lights. Should pilots note illuminated lights under circumstances when remaining clear of the runway is impractical for safety reasons (for example, aircraft is already on the runway), the crew should proceed according to their best judgment while understanding the illuminated lights indicate the runway is unsafe to enter or cross. Contact ATC at the earliest possible opportunity.

12.6.3 Takeoff Hold Lights (THL) : The THL system is composed of flush mounted, in-pavement, unidirectional light fixtures in a double longitudinal row aligned either side of the runway centerline lighting. Fixtures are focused toward the arrival end of the runway at the "line up and wait" point. THLs extend for 1,500 feet in front of the holding aircraft starting at a point 375 feet from the departure threshold (see FIG AD 1.1−11). Illuminated red lights provide a signal, to an aircraft in position for takeoff or rolling, that it is unsafe to takeoff because the runway is occupied or about to be occupied by another aircraft or ground vehicle. Two aircraft, or a surface vehicle and an aircraft, are required for the lights to illuminate. The departing aircraft must be in position for takeoff or beginning takeoff roll. Another aircraft or a surface vehicle must be on or about to cross the runway.

12.6.3.1 THL Operating Characteristics − Departing Aircraft:

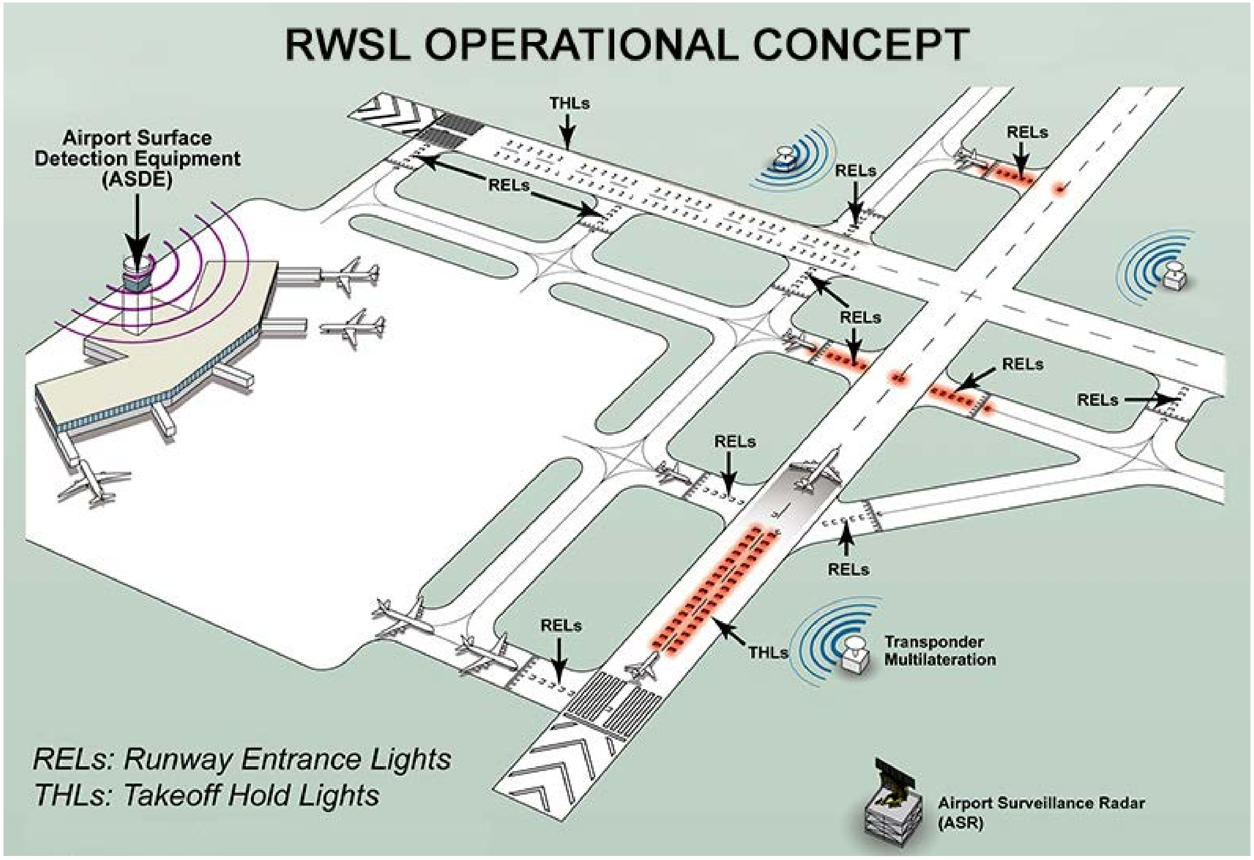
THLs will illuminate for an aircraft in position for departure or departing when there is another aircraft or vehicle on the runway or about to enter the runway (see FIG AD 1.1−9.) Once that aircraft or vehicle exits the runway, the THLs extinguish. A pilot may notice lights extinguish prior to the downfield aircraft or vehicle being completely clear of the runway but still moving. Like RELs, THLs have an "anticipated separation" feature.

NOTE−
When the THLs extinguish, this is not clearance to begin a takeoff roll. All takeoff clearances will be issued by ATC.

12.6.3.2 What a pilot would observe: A pilot in position to depart from a runway, or has begun takeoff roll, will observe THLs illuminate in reaction to an aircraft or vehicle on the runway or entering or crossing it. Lights will extinguish when the runway is clear. A pilot may observe several cycles of illumination and extinguishing depending on the amount of crossing traffic.

12.6.3.3 When a pilot observes the red light of the THLs, the pilot should safely stop if it's feasible or remain stopped. The pilot must contact ATC for resolution if any clearance is in conflict with the lights. Should pilots note illuminated lights while in takeoff roll and under circumstances when stopping is impractical for safety reasons, the crew should proceed according to their best judgment while understanding the illuminated lights indicate that continuing the takeoff is unsafe. Contact ATC at the earliest possible opportunity.

FIG AD 1.1−9
Runway Status Light System



12.6.4 Pilot Actions

12.6.4.1 When operating at airports with RWSL, pilots will operate with the transponder/ADS−B "On" when departing the gate or parking area until it is shut down upon arrival at the gate or parking area. This ensures interaction with the FAA surveillance systems such as ASDE-X/Airport Surface Surveillance Capability (ASSC) which provide information to the RWSL system.

12.6.4.2 Pilots must always inform the ATCT when they have stopped due to an RWSL indication that is in conflict with ATC instructions. Pilots must request clarification of the taxi or takeoff clearance.

12.6.4.3 Never cross over illuminated red lights. Under normal circumstances, RWSL will confirm the pilot's taxi or takeoff clearance previously issued by ATC. If RWSL indicates that it is unsafe to takeoff from, land on, cross, or enter a runway, immediately notify ATC of the conflict and re-confirm the clearance.

12.6.4.4 Do not proceed when lights have extinguished without an ATC clearance. RWSL verifies an ATC clearance, it does not substitute for an ATC clearance.

12.6.4.5 Never land if PAPI continues to flash. Execute a go around and notify ATC.

12.6.5 ATC Control of RWSL System:

12.6.5.1 Controllers can set in−pavement lights to one of five (5) brightness levels to assure maximum conspicuity under all visibility and lighting conditions. REL and THL subsystems may be independently set.

12.6.5.2 System lights can be disabled should RWSL operations impact the efficient movement of air traffic or contribute, in the opinion of the ATC Manager, to unsafe operations. Whenever the system or a component is disabled, a NOTAM must be issued, and the Automatic Terminal Information System (ATIS) must be updated.

12.7 Control of Lighting Systems

12.7.1 Operation of approach light systems and runway lighting is controlled by the control tower (ATCT). At some locations the FSS may control the lights where there is no control tower in operation.

12.7.2 Pilots may request that lights be turned on or off. Runway edge lights, in−pavement lights and approach lights also have intensity controls which may be varied to meet the pilot's request. Sequenced flashing lights may be turned on and off. Some sequenced flashing system also have intensity control.

12.8 Pilot Control of Airport Lighting

12.8.1 Radio control of lighting is available at selected airports to provide airborne control of lights by keying the aircraft's microphone. Control of lighting system is often available at locations without specified hours for lighting or where there is no control tower or FSS, or when the control tower or FSS is closed (locations with a part−time tower or FSS). All lighting systems which are radio controlled at an airport, whether on a single runway or multiple runways, operate on the same radio frequency.
(See TBL AD 1.1−2 and TBL AD 1.1−3.)

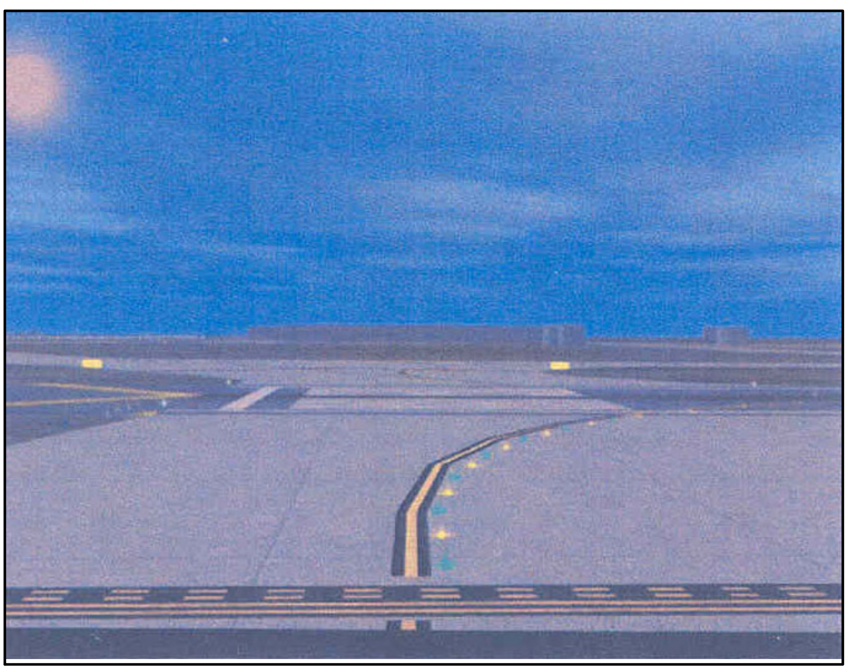
12.8.2 With FAA approved systems, various combinations of medium intensity approach lights, runway lights, taxiways lights, VASI and/or REIL may be activated by radio control. On runways with both approach lighting and runway lighting (runway edge lights, taxiway lights, etc.) systems, the approach lighting system takes precedence for air−to−ground radio control over the runway lighting system which is set at a predetermined intensity step, based on expected visibility conditions. Runways without approach lighting may provide radio controlled intensity adjustments of runway edge lights. Other lighting systems, including VASI, REIL, and taxiway lights, may be either controlled with the runway edge lights or controlled independently of the runway edge lights.

12.8.3 The control system consists of a 3−step control responsive to 7, 5, and/or 3 microphone clicks. This 3−step control will turn on lighting facilities capable of either 3−step, 2−step or 1−step operation. The 3−step and 2−step lighting facilities can be altered in intensity, while the 1−step cannot. All lighting is illuminated for a period of 15 minutes from the most recent time of activation and may not be extinguished prior to end of the 15−minute period (except for 1−step and 2−step REILs which may be turned off when desired by keying the mike 5 or 3 times, respectively).

FIG AD 1.1−10
Runway Entrance Lights

FIG AD 1.1−11
Takeoff Hold Lights

FIG AD 1.1−12
Taxiway Lead−On Light Configuration



TBL AD 1.1−2
Runways With Approach Lights

Lighting System	Number of Intensity Steps	Status During Nonuse Period	Intensity Step Selected Per Number of Mike Clicks		
			3 Clicks	**5 Clicks**	**7 Clicks**
Approach Lights (Med. Int.)	2	Off	Low	Low	High
Approach Lights (Med. Int.)	3	Off	Low	Med	High
MIRL	3	Off or Low	◆	◆	◆
HIRL	5	Off or Low	◆	◆	◆
VASI	2	Off	✯	✯	✯
NOTES: ◆Predetermined intensity step. ✯Low intensity for night use. High intensity for day use as determined by photocell control.					

TBL AD 1.1−3
Runways Without Approach Lights

Lighting System	Number of Intensity Steps	Status During Nonuse Period	Intensity Step Selected Per Number of Mike Clicks		
			3 Clicks	**5 Clicks**	**7 Clicks**
MIRL	3	Off or Low	Low	Med.	High
HIRL	5	Off or Low	Step 1 or 2	Step 3	Step 5
LIRL	1	Off	On	On	On
VASI✯	2	Off	◆	◆	◆
REIL✯	1	Off	Off	On / Off	On
REIL✯	3	Off	Low	Med.	High
NOTES: ◆Low intensity for night use. High intensity for day use as determined by photocell control. ✯The control of VASI and/or REIL may be independent of other lighting systems.					

12.8.4 Suggested use is to always initially key the mike 7 times; this assures that all controlled lights are turned on to the maximum available intensity. If desired, adjustment can then be made, where the capability is provided, to a lower intensity (or the REIL turned off) by keying 5 and/or 3 times. Due to the close proximity of airports using the same frequency, radio controlled lighting receivers may be set at a low sensitivity requiring the aircraft to be relatively close to activate the system. Consequently, even when lights are on, always key mike as directed when overflying an airport of intended landing or just prior to entering the final segment of an approach. This will assure the aircraft is close enough to activate the system and a full 15 minutes lighting duration is available. Approved lighting systems may be activated by keying the mike (within 5 seconds) as indicated in TBL AD 1.1−4.

TBL AD 1.1−4
Radio Control System

Key Mike	Function
7 times within 5 seconds	Highest intensity available
5 times within 5 seconds	Medium or lower intensity (Lower REIL or REIL-off)
3 times within 5 seconds	Lowest intensity available (Lower REIL or REIL-off)

12.8.5 The Chart Supplement U.S. contains the types of lighting, runway, and the frequency that is used to activate the system for all public use airports with FAA standard systems. Airports with instrument approach procedures include data on the approach chart identifying the light system(s), the runway on which they are installed, and the frequency that is used to activate the system(s).

NOTE−
Although the CTAF is used to activate the lights at many airports, other frequencies may also be used. The appropriate frequency for activating the lights on the airport is provided in the Chart Supplement U.S. and the standard instrument approach procedures publications. It is not identified on the sectional charts.

12.8.6 Where the airport is not served by an instrument approach procedure, it may have either the standard FAA approach control system or an independent type system of different specification installed by the airport sponsor. The Chart Supplement U.S. contains descriptions of pilot−controlled lighting systems for each airport having other than FAA approved systems, and explains the type lights, method of control, and operating frequency in clear text.

13. Airport/Heliport Beacons

13.1 Airport and heliport beacons have a vertical light distribution to make them most effective from one to ten degrees above the horizon; however, they can be seen well above and below this peak spread. The beacon may be an omnidirectional capacitor-discharge device, or it may rotate at a constant speed which produces the visual effect of flashes at regular intervals. Flashes may be one or two colors alternately. The total number of flashes are:

13.1.1 24 to 30 per minute for beacons marking airports, landmarks, and points on Federal airways.

13.1.2 30 to 45 per minute for beacons marking heliports.

13.2 The colors and color combinations of beacons are:

13.2.1 White and Green−Lighted land airport.

13.2.2 *Green alone−Lighted land airport.

13.2.3 White and Yellow−Lighted water airport.

13.2.4 *Yellow alone−Lighted water airport.

13.2.5 Green, Yellow, and White−Lighted heliport.

NOTE−
**Green alone or yellow alone is used only in connection with a white-and-green or white-and-yellow beacon display, respectively.*

13.3 Military airport beacons flash alternately white and green, but are differentiated from civil beacons by dual−peaked (two quick) white flashes between the green flashes.

13.4 In Class B, C, D, and E surface areas, operation of the airport beacon during the hours of daylight indicates that the ground visibility is less than 3 miles and/or the ceiling is less than 1,000 feet. An ATC clearance in accordance with 14 CFR Part 91 is required for landing, takeoff and flight in the traffic pattern. Pilots should not rely solely on the operation of the airport beacon to indicate if weather conditions are IFR or VFR. At locations with control towers, when controls are in the tower, ATC personnel turn the beacon on. At many airports, the airport beacon is turned on by a photoelectric cell or time clocks and ATC personnel cannot control it. There is no regulatory requirement for daylight operation, and it is the pilot's responsibility to comply with proper pre−flight planning in accordance with 14 CFR Section 91.103.

14. Taxiway Lights

14.1 Taxiway Edge Lights. Taxiway edge lights are used to outline the edges of taxiways during periods of darkness or restricted visibility conditions. These fixtures emit blue light.

NOTE−
At most major airports these lights have variable intensity settings and may be adjusted at pilot request or when deemed necessary by the controller.

14.2 Taxiway Centerline Lights. Taxiway centerline lights are used to facilitate ground traffic under low visibility conditions. They are located along the taxiway centerline in a straight line on straight portions, on the centerline of curved portions, and along designated taxiing paths in portions of runways, ramps, and apron areas. Taxiway centerline lights are steady burning and emit green light.

14.3 Clearance Bar Lights. Clearance bar lights are installed at holding positions on taxiways in order to increase the conspicuity of the holding position in low visibility conditions. They may also be installed to indicate the location of an intersecting taxiway during periods of darkness. Clearance bars consist of three in−pavement, steady−burning yellow lights.

14.4 Runway Guard Lights. Runway guard lights are installed at taxiway/runway intersections. They are primarily used to enhance the conspicuity of taxiway/runway intersections during low visibility conditions, but may be used in all weather conditions. Runway guard lights consist of either a pair of elevated flashing yellow lights installed on either side of the taxiway, or a row of in-pavement yellow lights installed across the entire taxiway, at the runway holding position marking.

NOTE−
Some airports may have a row of three or five in−pavement yellow lights installed at taxiway/runway intersections. They should not be confused with clearance bar lights described in paragraph 14.3 above.

14.5 Stop Bar Lights. Stop bar lights, when installed, are used to confirm the ATC clearance to enter or cross the active runway in low visibility conditions (below 1,200 feet Runway Visual Range). A stop bar consists of a row of red, unidirectional, steady−burning in-pavement lights installed across the entire taxiway at the runway holding position, and elevated steady−burning red lights on each side. A controlled stop bar is operated in conjunction with the taxiway centerline lead-on lights which extend from the stop bar toward the runway. Following the ATC clearance to proceed, the stop bar is turned off and the lead-on lights are turned on. The stop bar and lead-on lights are automatically reset by a sensor or backup timer.

CAUTION−
Pilots should never cross a red illuminated stop bar, even if an ATC clearance has been given to proceed onto or across the runway.

NOTE−
If after crossing a stop bar, the taxiway centerline lead−on lights inadvertently extinguish, pilots should hold their position and contact ATC for further instructions.

15. Air Navigation and Obstruction Lighting

15.1 Aeronautical Light Beacons

15.1.1 An aeronautical light beacon is a visual NAVAID displaying flashes of white and/or colored light to indicate the location of an airport, a heliport, a landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction. The light used may be a rotating beacon or one or more flashing lights. The flashing lights may be supplemented by steady burning lights of lesser intensity.

15.1.2 The color or color combination display by a particular beacon and/or its auxiliary lights tell whether the beacon is indicating a landing place, landmark, point of the Federal airways, or an obstruction. Coded flashes of the auxiliary lights, if employed, further identify the beacon site.

15.2 Code Beacons and Course Lights

15.2.1 Code Beacons. The code beacon, which can be seen from all directions, is used to identify airports and landmarks. The code beacon flashes the three− or four−character airport identifier in International Morse Code six to eight times per minute. Green flashes are displayed for land airports while yellow flashes indicate water airports.

15.2.2 Course Lights. The course light, which can be seen clearly from only one direction, is used only with rotating beacons of the Federal Airway System; two course lights, back to back, direct coded flashing beams of light in either direction along the course of airway.

NOTE−
Airway beacons are remnants of the "lighted" airways which antedated the present electronically equipped federal airways system. Only a few of those beacons exist today to mark airway segments in remote mountain areas. Flashes in Morse code identify the beacon site.

15.3 Obstruction Lights

15.3.1 Obstructions are marked/lighted to warn airmen of their presence during daytime and nighttime conditions. They may be marked/lighted in any of the following combinations:

15.3.1.1 Aviation Red Obstruction Lights. Flashing aviation red beacons (20 to 40 flashes per minute) and steady burning aviation red lights during nighttime operation. Aviation orange and white paint is used for daytime marking.

15.3.1.2 Medium Intensity Flashing White Obstruction Lights. Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 500 feet (153 m) AGL or less in height, other methods of marking and lighting the structure may be omitted. Aviation orange and white paint is always required for daytime marking on structures exceeding 500 feet (153 m) AGL. This system is not normally installed on structures less than 200 feet (61 m) AGL.

15.3.1.3 High Intensity White Obstruction Lights. Flashing high intensity white lights during daytime with reduced intensity for twilight and nighttime operation. When this type system is used, the marking of structures with red obstruction lights and aviation orange and white paint may be omitted.

15.3.1.4 Dual Lighting. A combination of flashing aviation red beacons and steady burning aviation red lights for nighttime operation and flashing high intensity white lights for daytime operation. Aviation orange and white paint may be omitted.

15.3.1.5 Catenary Lighting. Lighted markers are available for increased night conspicuity of high−voltage (69KV or higher) transmission line catenary wires. Lighted markers provide conspicuity both day and night.

15.3.2 Medium intensity omnidirectional flashing white lighting system provides conspicuity both day and night on catenary support structures. The unique sequential/simultaneous flashing light system alerts pilots of the associated catenary wires.

15.3.3 High intensity flashing white lights are being used to identify some supporting structures of overhead transmission lines located across rivers, chasms, gorges, etc. These lights flash in a middle, top, lower light sequence at approximately 60 flashes per minute. The top light is normally installed near the top of the supporting structure, while the lower light indicates the approximate lower portion of the wire span. The lights are beamed towards the companion structure and identify the area of the wire span.

15.3.4 High intensity flashing white lights are also employed to identify tall structures, such as chimneys and towers, and obstructions to air navigation. The lights provide a 360 degree coverage about the structure at 40 flashes per minute and consist of from one to seven levels of lights depending upon the height of the structure. Where more than one level is used, the vertical banks flash simultaneously.

16. Runway Lead−in Light System (RLLS)

16.1 The lead−in lighting system consists of a series of flashing lights installed at or near ground level to describe the desired course to a runway or final approach. Each group of lights is positioned and aimed so as to be conveniently sighted and followed from the approaching aircraft under conditions at or above approach minimums under consideration. The system may be curved, straight, or combination thereof, as required. The lead−in lighting system may be terminated at any approved approach lighting system, or it may be terminated at a distance from the landing threshold which is compatible with authorized visibility minimums permitting visual reference to the runway environment.

16.2 The outer portion uses groups of lights to mark segments of the approach path beginning at a point within easy visual range of a final approach fix. These groups are spaced close enough together (approximately one mile) to give continuous lead−in guidance. A group consists of at least three flashing lights in a linear or cluster configuration and may be augmented by steady burning lights where required. When practicable, groups flash in sequence toward runways. Each system is designed to suit local conditions and to provide the visual guidance intended. The design of all RLLS is compatible with the requirements of U.S. Standards for Terminal Instrument Procedures (TERPS) where such procedures are applied for establishing instrument minimums.

17. Airport Marking Aids and Signs

17.1 General

17.1.1 Airport pavement markings and signs provide information that is useful to a pilot during takeoff, landing, and taxiing.

17.1.2 Uniformity in airport markings and signs from one airport to another enhances safety and improves efficiency. Pilots are encouraged to work with the operators of the airports they use to achieve the marking and sign standards described in this section.

17.1.3 Pilots who encounter ineffective, incorrect, or confusing markings or signs on an airport should make the operator of the airport aware of the problem. These situations may also be reported under the Aviation Safety Reporting Program as described in ENR 1.16. Pilots may also report these situations to the FAA regional airports division.

17.1.4 The markings and signs described in this section reflect the current FAA recommended standards.

REFERENCE−
AC 150/5340−1, Standards for Airport Markings.
AC 150/5340−18, Standards for Airport Sign Systems.

17.2 Airport Pavement Markings

17.2.1 General. For the purpose of this section, the airport pavement markings have been grouped into the four areas:

17.2.1.1 Runway Markings.

17.2.1.2 Taxiway Markings.

17.2.1.3 Holding Position Markings.

17.2.1.4 Other Markings.

17.2.2 Marking Colors. Markings for runways are white. Markings defining the landing area on a heliport are also white except for hospital heliports which use a red "H" on a white cross. Markings for taxiways, areas not intended for use by aircraft (closed and hazardous areas), and holding positions (even if they are on a runway) are yellow.

17.3 Runway Markings

17.3.1 General. There are three types of markings for runways: visual, nonprecision instrument, and precision instrument. TBL AD 1.1−5 identifies the marking elements for each type of runway, and TBL AD 1.1−6 identifies runway threshold markings.

17.3.2 Runway Designators. Runway numbers and letters are determined from the approach direction. The runway number is the whole number nearest one−tenth the magnetic azimuth of the centerline of the runway, measured clockwise from the magnetic north. The letters differentiate between left (L), right (R), or center (C) parallel runways, as applicable:

17.3.2.1 For two parallel runways "L" "R."

17.3.2.2 For three parallel runways "L" "C" "R."

17.3.3 Runway Centerline Marking. The runway centerline identifies the center of the runway and provides alignment guidance during takeoff and landing. The centerline consists of a line of uniformly spaced stripes and gaps.

17.3.4 Runway Aiming Point Marking. The aiming point marking serves as a visual aiming point for a landing aircraft. These two rectangular markings consist of a broad white stripe located on each side of the runway centerline and approximately 1,000 feet from the landing threshold, as shown in FIG AD 1.1−13, Precision Instrument Runway Markings.

17.3.5 Runway Touchdown Zone Markers. The touchdown zone markings identify the touchdown zone for landing operations and are coded to provide distance information in 500 feet (150 m) increments. These markings consist of groups of one, two, and three rectangular bars symmetrically arranged in pairs about the runway centerline as shown in FIG AD 1.1−13. For runways having touchdown zone markings on both ends, those pairs of markings which extend to within 900 feet (270 m) of the midpoint between the thresholds are eliminated.

TBL AD 1.1−5
Runway Marking Elements

Marking Element	Visual Runway	Nonprecision Instrument Runway	Precision Instrument Runway
Designation	X	X	X
Centerline	X	X	X
Threshold	X[1]	X	X
Aiming Point	X[2]	X	X
Touchdown Zone			X
Side Stripes			X

[1]On runways used, or intended to be used, by international commercial transports.
[2]On runways 4,000 feet (1200 m) or longer used by jet aircraft.

TBL AD 1.1−6
Number of Runway Threshold Stripes

Runway Width	Number of Stripes
60 feet (18 m)	4
75 feet (23 m)	6
100 feet (30 m)	8
150 feet (45 m)	12
200 feet (60 m)	16

17.3.6 Runway Side Stripe Marking. Runway side stripes delineate the edges of the runway. They provide a visual contrast between the runway and the abutting terrain or shoulders. Side stripes consist of continuous white stripes located on each side of the runway. (See FIG AD 1.1−17.)

17.3.7 Runway Shoulder Markings. Runway shoulder stripes may be used to supplement runway side stripes to identify pavement areas contiguous to the runway sides that are not intended for use by aircraft. Runway shoulder stripes are yellow. (See FIG AD 1.1−15.)

17.3.8 Runway Threshold Markings. Runway threshold markings come in two configurations. They consist of either eight longitudinal stripes of uniform dimensions disposed symmetrically about the runway centerline (as shown in FIG AD 1.1−13) or the number of stripes is related to the runway width as indicated in TBL AD 1.1−6. A threshold marking helps identify the beginning of the runway that is available for landing. In some instances, the landing threshold may be relocated or displaced.

17.3.8.1 Relocation of a Threshold. Sometimes construction, maintenance, or other activities require the threshold to be relocated towards the rollout end of the runway. (See FIG AD 1.1−16.) When a threshold is relocated, it closes not only a set portion of the approach end of a runway, but also shortens the length of the opposite direction runway. In these cases, a NOTAM should be issued by the airport operator identifying the portion of the runway that is closed (for example, 10/28 W 900 CLSD). Because the duration of the relocation can vary from a few hours to several months, methods identifying the new threshold may vary. One common practice is to use a ten−foot wide white threshold bar across the width of the runway. Although the runway lights in the area between the old threshold and new threshold will not be illuminated, the runway markings in this area may or may not be obliterated, removed, or covered.

17.3.8.2 Displaced Threshold. A displaced threshold is a threshold located at a point on the runway other than the designated beginning of the runway. Displacement of a threshold reduces the length of runway available for landings. The portion of runway behind a displaced threshold is available for takeoffs in either direction and landings from the opposite direction. A ten−foot wide white threshold bar is located across the width of the runway at the displaced threshold. White arrows are located along the centerline in the area between the beginning of the runway and displaced threshold. White arrowheads are located across the width of the runway just prior to the threshold bar, as shown in FIG AD 1.1−17.

NOTE−
Airport operator. When reporting the relocation or displacement of a threshold, the airport operator should avoid language which confuses the two.

17.3.9 Demarcation Bar. A demarcation bar delineates a runway with a displaced threshold from a blast pad, stopway, or taxiway that precedes the runway. A demarcation bar is 3 feet (1 m) wide and yellow, since it is not located on the runway. (See FIG AD 1.1−18.)

17.3.10 Chevrons. These markings are used to show pavement areas aligned with the runway that are unusable for landing, takeoff, and taxiing. Chevrons are yellow. (See FIG AD 1.1−19).

17.3.11 Runway Threshold Bar. A threshold bar delineates the beginning of the runway that is available for landing when the threshold has been relocated or displaced. A threshold bar is 10 feet (3 m) in width and extends across the width of the runway, as shown in FIG AD 1.1−17.

18. Taxiway Markings

18.1 General. All taxiways should have centerline markings and runway holding position markings whenever they intersect a runway. Taxiway edge markings are present whenever there is a need to separate the taxiway from a pavement that is not intended for aircraft use or to delineate the edge of the taxiway. Taxiways may also have shoulder markings and holding position markings for Instrument Landing System (ILS) critical areas and taxiway/taxiway intersection markings.

REFERENCE−
AD 1.1, Paragraph 19. Holding Position Markings

18.2 Taxiway Centerline.

18.2.1 Normal Centerline. The taxiway centerline is a single continuous yellow line, 6 inches (15 cm) to 12 inches (30 cm) in width. This provides a visual cue to permit taxiing along a designated path. Ideally, the aircraft should be kept centered over this line during taxi. However, being centered on the taxiway centerline does not guarantee wingtip clearance with other aircraft or other objects.

18.2.2 Enhanced Centerline. At some airports, mostly the larger commercial service airports, an enhanced taxiway centerline will be used. The enhanced taxiway centerline marking consists of a parallel line of yellow dashes on either side of the normal taxiway centerline. The taxiway centerlines are enhanced for a maximum of 150 feet prior to a runway holding position marking. The purpose of this enhancement is to warn the pilot that he/she is approaching a runway holding position marking and should prepare to stop unless he/she has been cleared onto or across the runway by ATC.
(See FIG AD 1.1−20.)

18.3 Taxiway Edge Markings. Taxiway edge markings are used to define the edge of the taxiway. They are primarily used when the taxiway edge does not correspond with the edge of the pavement. There are two types of markings depending upon whether the aircraft is supposed to cross the taxiway edge:

18.3.1 Continuous Markings. These consist of a continuous double yellow line, with each line being at least 6 inches (15 cm) in width spaced 6 inches (15 cm) apart. They are used to define the taxiway edge from the shoulder or some other abutting paved surface not intended for use by aircraft.

18.3.2 Dashed Markings. These markings are used when there is an operational need to define the edge of a taxiway or taxilane on a paved surface where the adjoining pavement to the taxiway edge is intended for use by aircraft (for example, an apron). Dashed taxiway edge markings consist of a broken double yellow line, with each line being at least 6 inches (15 cm) in width, spaced 6 inches (15 cm) apart (edge to edge). These lines are 15 feet (4.5 m) in length with 25−foot (7.5 m) gaps. (See FIG AD 1.1−21.)

18.4 Taxi Shoulder Markings. Taxiways, holding bays, and aprons are sometimes provided with paved shoulders to prevent blast and water erosion. Although shoulders may have the appearance of full strength pavement, they are not intended for use by aircraft and may be unable to support an aircraft. Usually the taxiway edge marking will define this area. Where conditions exist such as islands or taxiway curves that may cause confusion as to which side of the edge stripe is for use by aircraft, taxiway shoulder markings may be used to indicate the pavement is unusable. Taxiway shoulder markings are yellow. (See FIG AD 1.1−22.)

18.5 Surface Painted Taxiway Direction Signs. Surface painted taxiway direction signs have a yellow background with a black inscription. These signs are provided when it is not possible to provide taxiway direction signs at intersections or when it is necessary to supplement such signs. These markings are located adjacent to the centerline with signs indicating turns to the left being on the left side of the taxiway centerline, and signs indicating turns to the right being on the right side of the centerline.
(See FIG AD 1.1−23.)

18.6 Surface Painted Location Signs. Surface painted location signs have a black background with a yellow inscription. When necessary, these markings are used to supplement location signs located along side the taxiway and assist the pilot in confirming the designation of the taxiway on which the aircraft is located. These markings are located on the right side of the centerline. (See FIG AD 1.1−23.)

18.7 Geographic Position Markings. These markings are located at points along low visibility taxi routes designated in the airport's Surface Movement Guidance Control System (SMGCS) plan. They are used to identify the location of taxiing aircraft during low visibility operations. Low visibility operations are those that occur when the runway visible range (RVR) is below 1,200 feet (360 m). They are positioned to the left of the taxiway centerline in the direction of taxiing. (See FIG AD 1.1−24.) The geographic position marking is a circle comprised of an outer black ring contiguous to a white ring with a pink circle in the middle. When installed on asphalt or other dark−colored pavements, the white ring and the black ring are reversed (i.e., the white ring becomes the outer ring and the black ring becomes the inner ring). It is designated with either a number or a number and letter. The number corresponds to the consecutive position of the marking on the route.

19. Holding Position Markings

19.1 Runway Holding Position Markings. For runways, these markings indicate where aircraft MUST STOP when approaching a runway. They consist of four yellow lines, two solid and two dashed, spaced six or twelve inches apart, and extending across the width of the taxiway or runway. The solid lines are always on the side where the aircraft must hold. There are three locations where runway holding position markings are encountered.

19.1.1 Runway Holding Position Markings on Taxiways. These markings identify the locations on a taxiway where aircraft MUST STOP when a clearance has not been issued to proceed onto the runway. Generally, runway holding position markings also identify the boundary of the runway safety area (RSA) for aircraft exiting the runway. Runway holding position markings are shown in FIG AD 1.1−25 and FIG AD 1.1−28. When instructed by ATC, "*Hold short of Runway XX*," the pilot MUST STOP so that no part of the aircraft extends beyond the runway holding position marking. When approaching runways at airports with an operating control tower, pilots must not cross the runway holding position marking without ATC clearance. Pilots approaching runways at airports without an operating control tower must ensure adequate separation from other aircraft, vehicles, and pedestrians prior to crossing the holding position markings. An aircraft exiting a runway is not clear of the runway until all parts of the aircraft have crossed the applicable holding position marking.

NOTE−
Runway holding position markings identify the beginning of an RSA, and a pilot MUST STOP to get clearance before crossing (at airports with operating control towers).

REFERENCE−
ENR 1.1, Paragraph 23, Exiting the Runway After Landing.

19.1.2 Runway Holding Position Markings on Runways. These markings identify the locations on runways where aircraft MUST STOP. These markings are located on runways used by ATC for Land And Hold Short Operations (for example, see FIG ENR 1.1−8) and Taxiing operations. For taxiing operations, the pilot MUST STOP prior to the holding position markings unless explicitly authorized to cross by ATC. A sign with a white inscription on a red background is located adjacent to these holding position markings. (See FIG AD 1.1−26.) The holding position markings are placed on runways prior to the intersection with another runway, or some designated point. Pilots receiving and accepting instructions "*Cleared to land Runway XX, hold short of Runway YY*" from ATC must either exit Runway XX prior to the holding position markings, or stop at the holding position markings prior to Runway YY. Otherwise, pilots are authorized to use the entire landing length of the runway and disregard the holding position markings.

19.1.3 Holding Position Markings on Taxiways Located in Runway Approach Areas. These markings are used at some airports where it is necessary to hold an aircraft on a taxiway located in the approach or departure area of a runway so that the aircraft does not interfere with the operations on that runway. This marking is collocated with the runway approach/departure area holding position sign. When specifically instructed by ATC, "*Hold short of Runway XX approach or Runway XX departure area*," the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. (See Paragraph 21.2.2, Runway Approach Area Holding Position Sign, and FIG AD 1.1−27, Taxiways Located in Runway Approach Area.)

19.2 Holding Position Markings for Instrument Landing System (ILS). Holding position markings for ILS critical areas consist of two yellow solid lines spaced two feet apart connected by pairs of solid lines spaced ten feet apart extending across the width of the taxiway as shown in FIG AD 1.1−28. A sign with an inscription in white on a red background is located adjacent to these hold position markings. When instructed by ATC to hold short of the ILS critical area, pilots MUST STOP so that no part of the aircraft extends beyond the holding position marking. When approaching the holding position marking, pilots must not cross the marking without ATC clearance. The ILS critical area is not clear until all parts of the aircraft have crossed the applicable holding position marking.

REFERENCE−
ENR 4.1, Paragraph 6, Instrument Landing System (ILS).

19.3 Holding Position Markings for Intersecting Taxiways Holding position markings for intersecting taxiways consist of a single dashed line extending across the width of the taxiway as shown in FIG AD 1.1−29. They are located on taxiways where ATC holds aircraft short of a taxiway intersection. When instructed by ATC, "*Hold short of Taxiway XX*," the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. When the marking is not present, the pilot MUST STOP the aircraft at a point which provides adequate clearance from an aircraft on the intersecting taxiway.

19.4 Surface Painted Holding Position Signs. Surface painted holding position signs have a red background with a white inscription and supplement the signs located at the holding position. This type of marking is normally used where the width of the holding position on the taxiway is greater than 200 feet (60 m). It is located to the left side of the taxiway centerline on the holding side and prior to the holding position marking. (See FIG AD 1.1−23.)

20. Other Markings

20.1 Vehicle Roadway Markings. The vehicle roadway markings are used when necessary to define a pathway for vehicle operations on or crossing areas that are also intended for aircraft. These markings consist of a white solid line to delineate each edge of the roadway and a dashed line to separate lanes within the edges of the roadway. In lieu of the solid lines, zipper markings may be used to delineate the edges of the vehicle roadway. (See FIG AD 1.1−30.) Details of the zipper markings are shown in FIG AD 1.1−31.

20.2 VOR Receiver Checkpoint Markings. The VOR receiver checkpoint marking allows the pilot to check aircraft instruments with navigational aid signals. It consists of a painted circle with an arrow in the middle; the arrow is aligned in the direction of the checkpoint azimuth. This marking, and an associated sign, is located on the airport apron or taxiway at a point selected for easy access by aircraft but where other airport traffic is not to be unduly obstructed. (See FIG AD 1.1−32.)

NOTE−
The associated sign contains the VOR station identification letter and course selected (published) for the check, the words "VOR check course," and DME data (when applicable). The color of the letters and numerals are black on a yellow background.

EXAMPLE−
VOR SIGN
DCA 176−356
VOR check course
DME XXX

20.3 Nonmovement Area Boundary Markings. These markings delineate the movement area; i.e., area under ATC. These markings are yellow and located on the boundary between the movement and nonmovement area. The nonmovement area boundary markings consist of two yellow lines (one solid and one dashed) 6 inches (15 cm) in width. The solid line is located on the nonmovement area side, while the dashed yellow line is located on the movement area side. The nonmovement boundary marking area is shown in FIG AD 1.1−33.

20.4 Marking and Lighting of Permanently Closed Runways and Taxiways. For runways and taxiways which are permanently closed, the lighting circuits will be disconnected. The runway threshold, runway designation, and touchdown markings are obliterated and yellow crosses are placed at each end of the runway and at 1,000 foot intervals. (See FIG AD 1.1−34.)

20.5 Temporarily Closed Runways and Taxiways. To provide a visual indication to pilots that a runway is temporarily closed, crosses are placed on the runway only at each end of the runway. The crosses are yellow in color. (See FIG AD 1.1−34.)

20.5.1 A raised lighted yellow cross may be placed on each runway end in lieu of the markings described in paragraph 20.5 to indicate the runway is closed.

20.5.2 A visual indication may not be present depending on the reason for the closure, duration of the closure, airfield configuration, and the existence and the hours of operation of an airport traffic control tower. Pilots should check NOTAMs and the Automated Terminal Information System (ATIS) for local runway and taxiway closure information.

20.5.3 Temporarily closed taxiways are usually treated as hazardous areas, in which no part of an aircraft may enter, and are blocked with barricades. However, as an alternative, a yellow cross may be installed at each entrance to the taxiway.

20.6 Helicopter Landing Areas. The markings illustrated in FIG AD 1.1−35 are used to identify the landing and takeoff area at a public use heliport and hospital heliport. The letter "H" in the markings is oriented to align with the intended direction of approach. FIG AD 1.1−35 also depicts the markings for a closed airport.

20.7 Airport Signs. There are six types of signs installed on airfields: mandatory instruction signs, location signs, direction signs, destination signs, information signs, and runway distance remaining signs. The characteristics and use of these signs are discussed below.

REFERENCE−
Advisory Circular−150/5340−18, Standards for Airport Sign Systems.

21. Mandatory Instruction Signs

21.1 These signs have a red background with a white inscription and are used to denote:

21.1.1 An entrance to a runway or critical area.

21.1.2 Areas where an aircraft is prohibited from entering.

21.2 Typical mandatory signs and applications are:

21.2.1 Runway Holding Position Sign. This sign is located at the holding position on taxiways that intersect a runway or on runways that intersect other runways. The inscription on the sign contains the designation of the intersecting runway, as shown in FIG AD 1.1−36. The runway numbers on the sign are arranged to correspond to the respective runway threshold. For example, "15−33" indicates that the threshold for Runway 15 is to the left and the threshold for Runway 33 is to the right.

21.2.1.1 On taxiways that intersect the beginning of the takeoff runway, only the designation of the takeoff runway may appear on the sign (as shown in FIG AD 1.1−37) while all other signs will have the designation of both runway directions.

21.2.1.2 If the sign is located on a taxiway that intersects the intersection of two runways, the designations for both runways will be shown on the sign along with arrows showing the approximate alignment of each runway, as shown in FIG AD 1.1−38. In addition to showing the approximate runway alignment, the arrow indicates the direction to the threshold of the runway whose designation is immediately next to the arrow.

21.2.2 Runway Approach Area Holding Position Sign. At some airports, it is necessary to hold an aircraft on a taxiway located in the approach or departure area for a runway so that the aircraft does not interfere with operations on that runway. In these situations, a sign with the designation of the approach end of the runway followed by a "dash" (−) and letters "APCH" will be located at the holding position on the taxiway. Holding position markings in accordance with Paragraph 19. Holding Position Markings, will be located on the taxiway pavement. An example of this sign is shown in FIG AD 1.1−39. In this example, the sign may protect the approach to Runway 15 and/or the departure for Runway 33.

21.2.3 ILS Critical Area Holding Position Sign. At some airports, when the instrument landing system is being used, it is necessary to hold an aircraft on a taxiway at a location other than the holding position described in Paragraph 19. Holding Position Markings. In these situations, the holding position sign for these operations will have the inscription "ILS" and be located adjacent to the holding position marking on the taxiway described in paragraph 19. An example of this sign is shown in FIG AD 1.1−40.

21.2.4 No Entry Sign. This sign, shown in FIG AD 1.1−41, prohibits an aircraft from entering an area. Typically, this sign would be located on a taxiway intended to be used in only one direction or at the intersection of vehicle roadways with runways, taxiways or aprons where the roadway may be mistaken as a taxiway or other aircraft movement surface.

NOTE−
Holding position signs provide the pilot with a visual cue as to the location of the holding position marking.

REFERENCE−
AD 1.1, Paragraph 19. Holding Position Markings

22. Location Signs

Location signs are used to identify either a taxiway or runway on which the aircraft is located. Other location signs provide a visual cue to pilots to assist them in determining when they have exited an area. The various location signs are described below.

22.1 Taxiway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1−42. The inscription is the designation of the taxiway on which the aircraft is located. These signs are installed along taxiways either by themselves or in conjunction with direction signs or runway holding position signs. (See FIG AD 1.1−43 and FIG AD 1.1−47.)

22.2 Runway Location Sign. This sign has a black background with a yellow inscription and yellow border, as shown in FIG AD 1.1−44. The inscription is the designation of the runway on which the aircraft is located. These signs are intended to complement the information available to pilots through their magnetic compass and typically are installed where the proximity of two or more runways to one another could cause pilots to be confused as to which runway they are on.

22.3 Runway Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the pavement holding position marking, as shown in FIG AD 1.1−45. This sign, which faces the runway and is visible to the pilot exiting the runway, is located adjacent to the holding position marking on the pavement. The sign is intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the runway."

22.4 ILS Critical Area Boundary Sign. This sign has a yellow background with a black inscription with a graphic depicting the ILS pavement holding position marking, as shown in FIG AD 1.1−46. This sign is located adjacent to the ILS holding position marking on the pavement and can be seen by pilots leaving the critical area. The sign is intended to provide pilots with another visual cue which they can use as a guide in deciding when they are "clear of the ILS critical area."

23. Direction Signs

23.1 Direction signs have a yellow background with a black inscription. The inscription identifies the designation(s) of the intersecting taxiway(s) leading out of intersection that a pilot would normally be expected to turn onto or hold short of. Each designation is accompanied by an arrow indicating the direction of the turn.

23.2 Except as noted in subparagraph 23.5, each taxiway designation shown on the sign is accompanied by only one arrow. When more than one taxiway designation is shown on the sign, each designation and its associated arrow is separated from the other taxiway designations by either a vertical message divider or a taxiway location sign as shown in FIG AD 1.1−47.

23.3 Direction signs are normally located on the left prior to the intersection. When used on a runway to indicate an exit, the sign is located on the same side of the runway as the exit. FIG AD 1.1−48 shows a direction sign used to indicate a runway exit.

23.4 The taxiway designations and their associated arrows on the sign are arranged clockwise starting from the first taxiway on the pilot's left. (See FIG AD 1.1−47.)

23.5 If a location sign is located with the direction signs, it is placed so that the designations for all turns to the left will be to the left of the location sign; the designations for continuing straight ahead or for all turns to the right would be located to the right of the location sign. (See FIG AD 1.1−47.)

23.6 When the intersection is comprised of only one crossing taxiway, it is permissible to have two arrows associated with the crossing taxiway, as shown in FIG AD 1.1−49. In this case, the location sign is located to the left of the direction sign.

24. Destination Signs

24.1 Destination signs also have a yellow background with a black inscription indicating a destination on the airport. These signs always have an arrow showing the direction of the taxiing route to that destination. FIG AD 1.1−50 is an example of a typical destination sign. When the arrow on the destination sign indicates a turn, the sign is located prior to the intersection.

24.2 Destinations commonly shown on these types of signs include runways, aprons, terminals, military areas, civil aviation areas, cargo areas, international areas, and fixed base operators. An abbreviation may be used as the inscription on the sign for some of these destinations.

24.3 When the inscription for two or more destinations having a common taxiing route are placed on a sign, the destinations are separated by a "dot" (●) and one arrow would be used, as shown in FIG AD 1.1−51. When the inscription on a sign contains two or more destinations having different taxiing routes, each destination will be accompanied by an arrow and will be separated from the other destinations on the sign with a vertical black message divider as shown in FIG AD 1.1−52.

25. Information Signs

25.1 Information signs have a yellow background with a black inscription. They are used to provide the pilot with information on such things as areas that cannot be seen from the control tower, applicable radio frequencies, and noise abatement procedures. The airport operator determines the need, size, and location for these signs.

26. Runway Distance Remaining Signs

26.1 Runway distance remaining signs have a black background with a white numeral inscription and may be installed along one or both side(s) of the runway. The number on the signs indicates the distance (in thousands of feet) of landing runway remaining. The last sign (i.e., the sign with the numeral "1") will be located at least 950 feet from the runway end. FIG AD 1.1−53 shows an example of a runway distance remaining sign.

27. Aircraft Arresting Systems

27.1 Certain airports are equipped with a means of rapidly stopping military aircraft on a runway. This equipment, normally referred to as EMERGENCY ARRESTING GEAR, generally consists of pendant cables supported over the runway surface by rubber "donuts." Although most devices are located in the overrun areas, a few of these arresting systems have cables stretched over the operational areas near the ends of a runway.

27.2 Arresting cables which cross over a runway require special markings on the runway to identify the cable location. These markings consist of 10 feet diameter solid circles painted "identification yellow," 30 feet on center, perpendicular to the runway centerline across the entire runway width. Additional details are contained in AC 150/5220−9, Aircraft Arresting Systems for Joint Civil/Military Airports.

NOTE−
Aircraft operations on the runway are not restricted by the installation of aircraft arresting devices.

27.3 Engineered Materials Arresting Systems (EMAS). EMAS, which is constructed of high energy−absorbing materials of selected strength, is located in the safety area beyond the end of the runway. EMAS will be marked with yellow chevrons. EMAS is designed to crush under the weight of commercial aircraft and will exert deceleration forces on the landing gear. These systems do not affect the normal landing and takeoff of airplanes. More information concerning EMAS is in FAA Advisory Circular AC 150/5220−22, Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns. (See FIG AD 1.1−54.)

NOTE−
EMAS may be located as close as 35 feet beyond the end of the runway. Aircraft and ground vehicles should never taxi or drive across the EMAS or beyond the end of the runway if EMAS is present.

28. Security Identification Display Area (SIDA)

28.1 Security Identification Display Areas (SIDA) are limited access areas that require a badge issued in accordance with procedures in 49 CFR Part 1542. A SIDA can include the Air Operations Area (AOA), e.g., aircraft movement area or parking area, or a Secured Area, such as where commercial passengers enplane. The AOA may not be a SIDA, but a Secured Area is always a SIDA. Movement through or into a SIDA is prohibited without authorization and proper identification being displayed. If you are unsure of the location of a SIDA, contact the airport authority for additional information. Airports that have a SIDA will have a description and map detailing boundaries and pertinent features available. (See FIG AD 1.1−55.)

28.2 Pilots or passengers without proper identification that are observed entering a SIDA may be reported to the Transportation Security Administration (TSA) or airport security and may be subject to civil and criminal fines and prosecution. Pilots are advised to brief passengers accordingly. Report suspicious activity to the TSA by calling AOPA's Airport Watch Program, 866−427−3287. 49 CFR 1540 requires each individual who holds an airman certificate, medical certificate, authorization, or license issued by the FAA to present it for inspection upon a request from TSA.

FIG AD 1.1−13
Precision Instrument Runway Markings

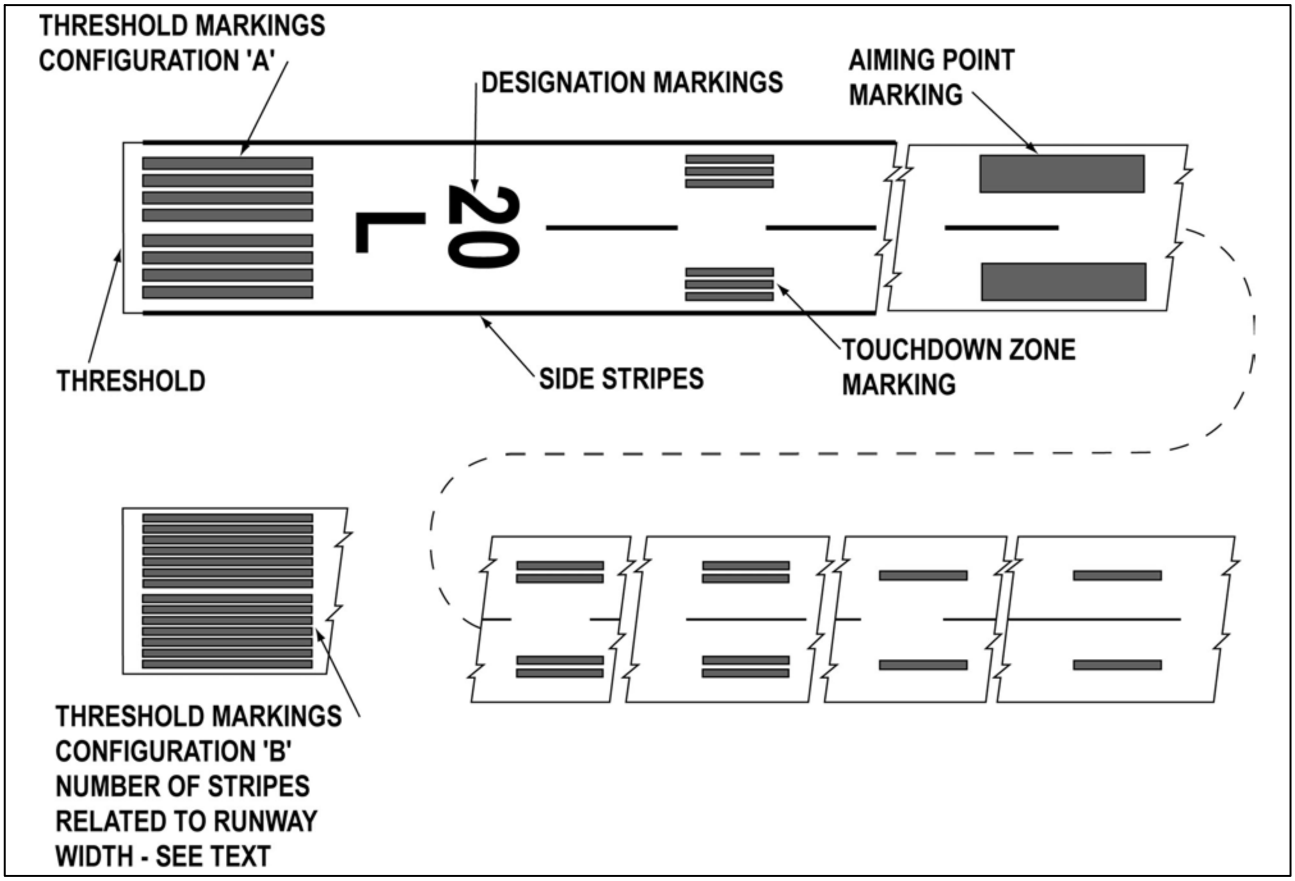


FIG AD 1.1−14
Nonprecision Instrument Runway and Visual Runway Markings

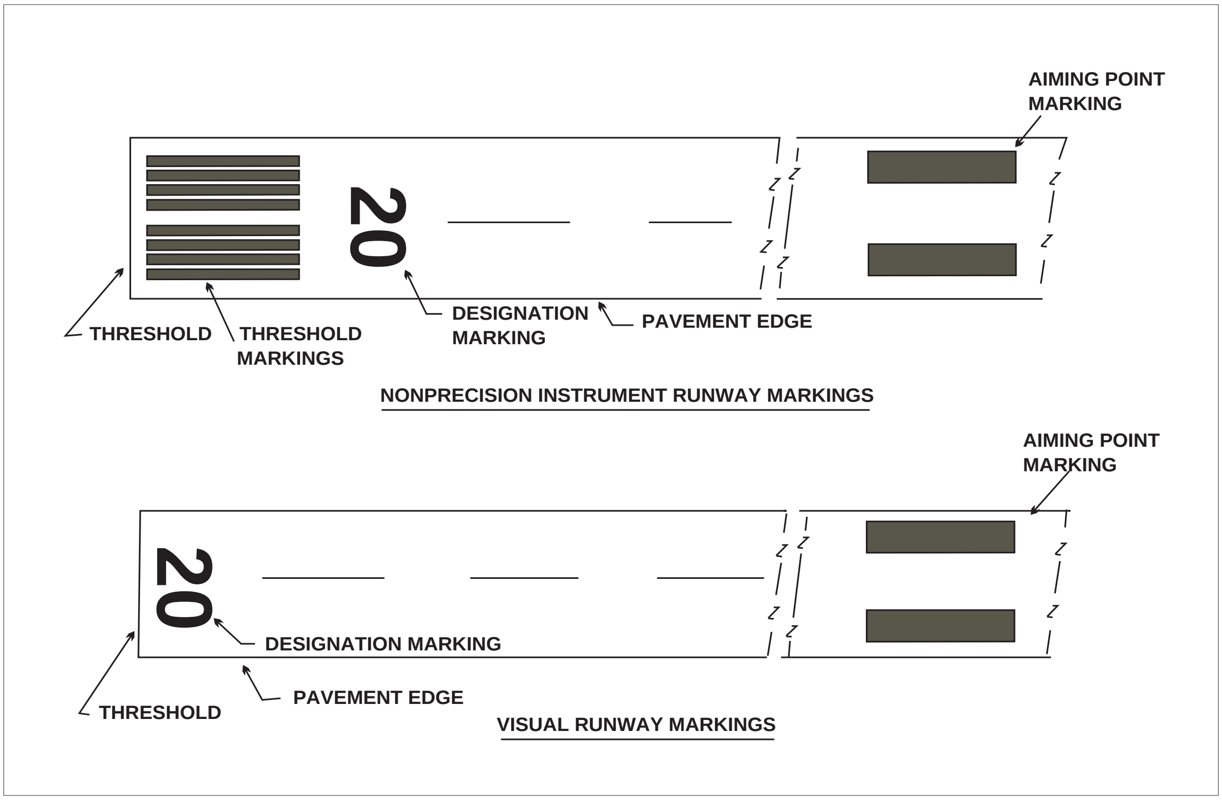


FIG AD 1.1−15
Runway Shoulder Markings

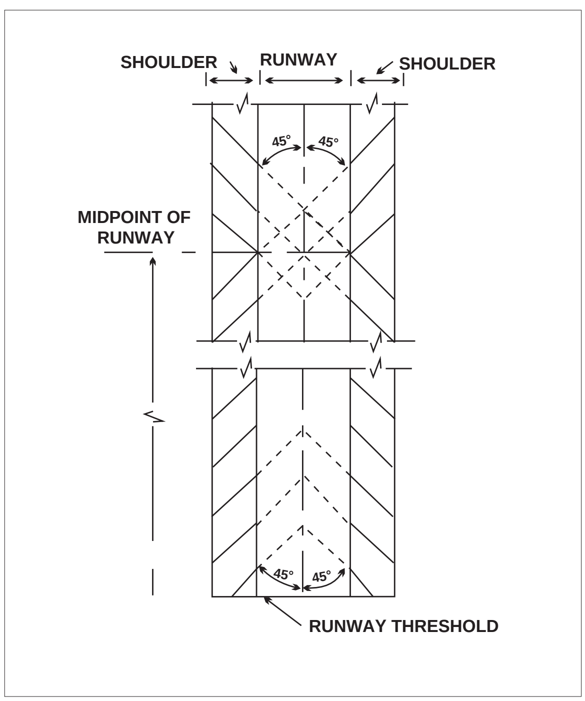


FIG AD 1.1−16
Relocation of a Threshold with Markings for Taxiway Aligned with Runway

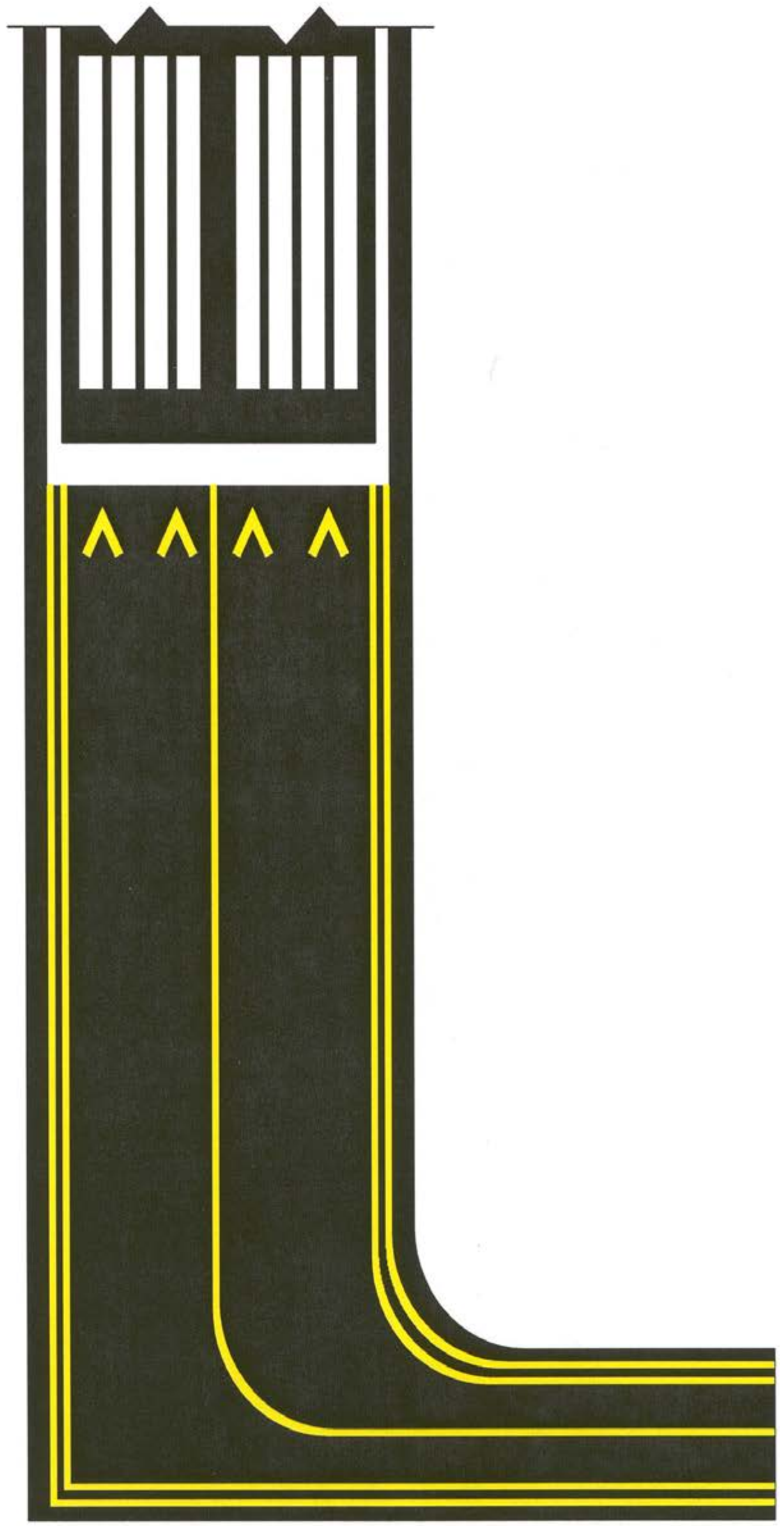


FIG AD 1.1−17
Displaced Threshold Markings

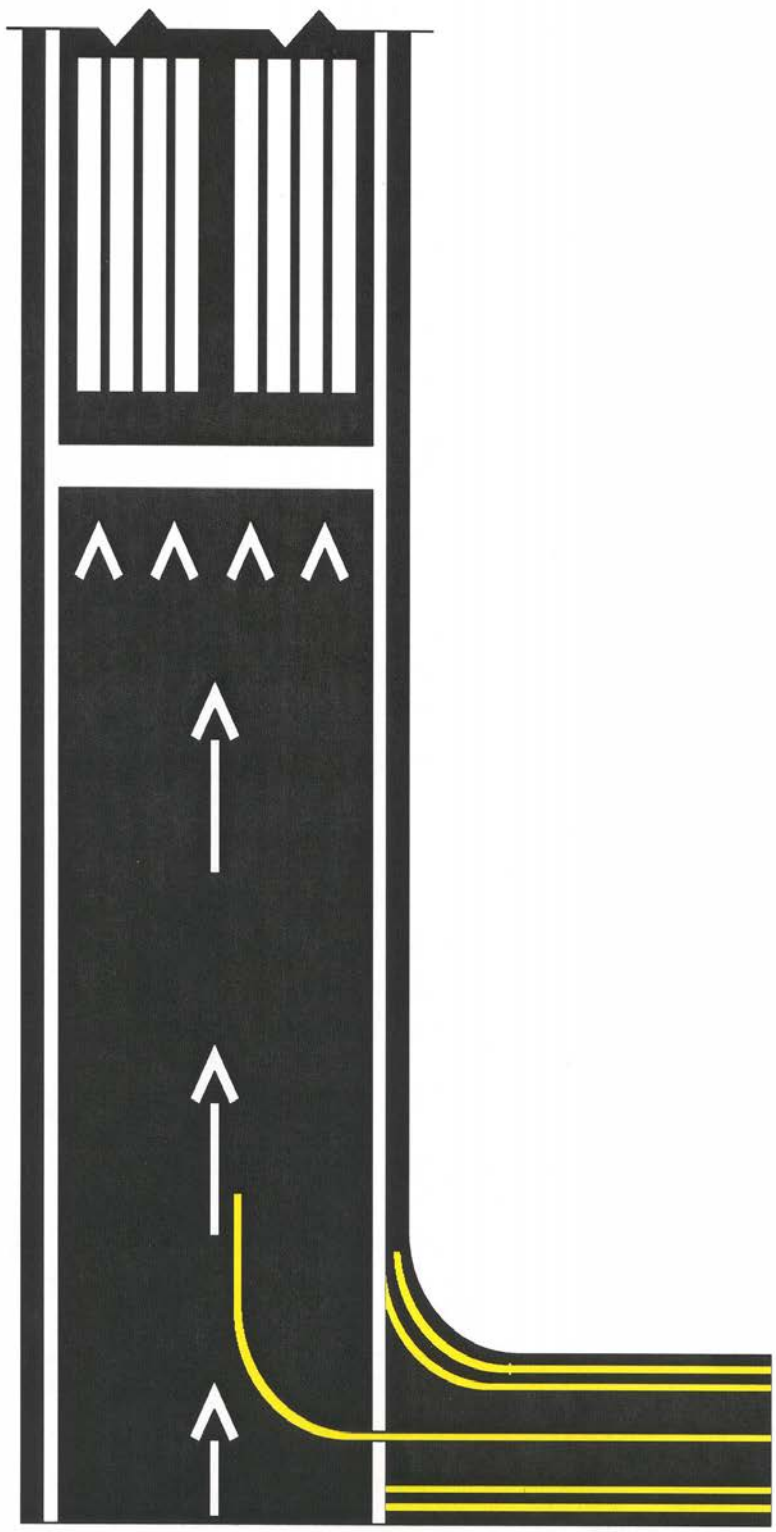


FIG AD 1.1−18
Markings for Blast Pad or Stopway or Taxiway Preceding a Displaced Threshold

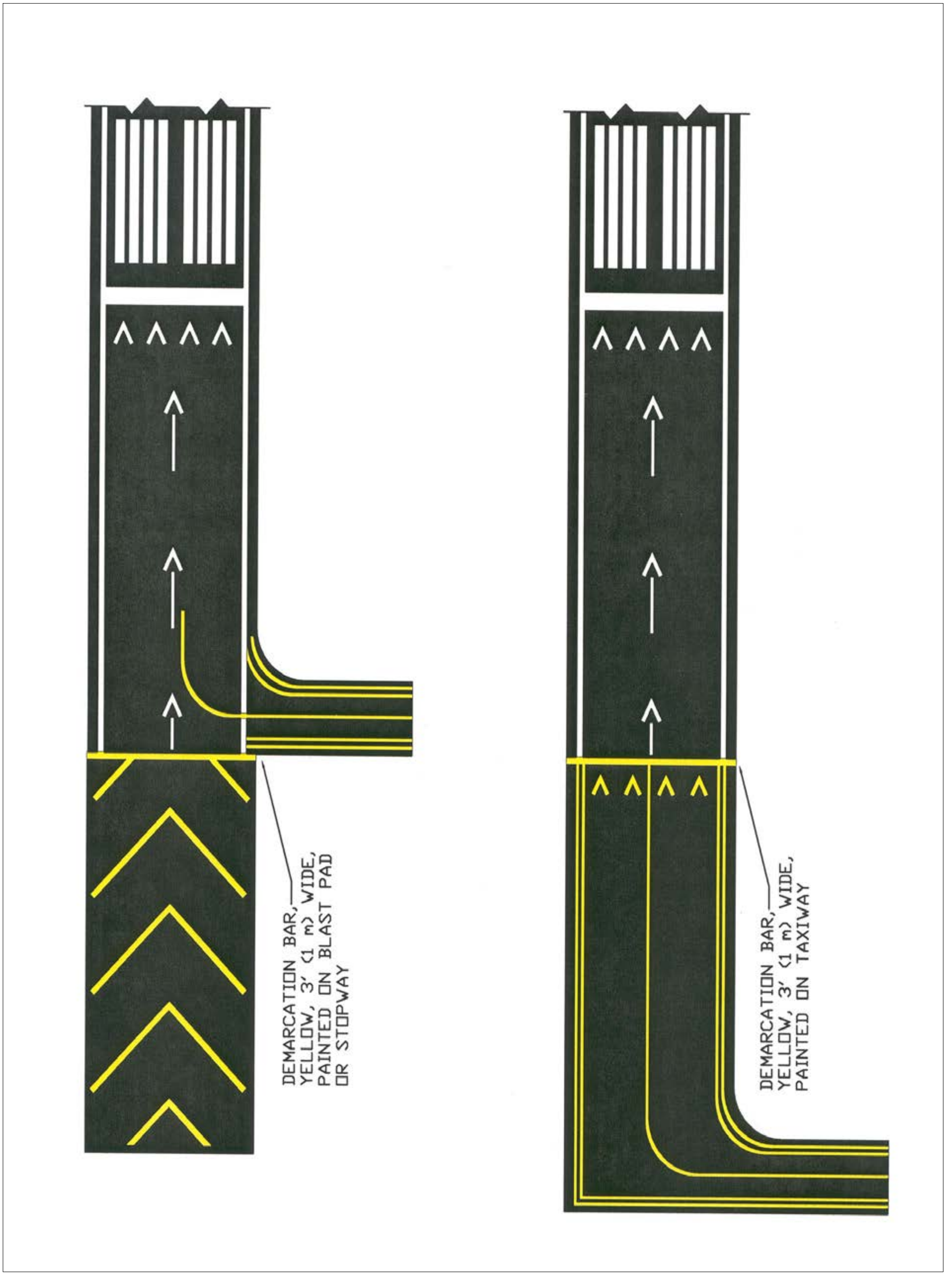


FIG AD 1.1−19
Markings for Blast Pads and Stopways

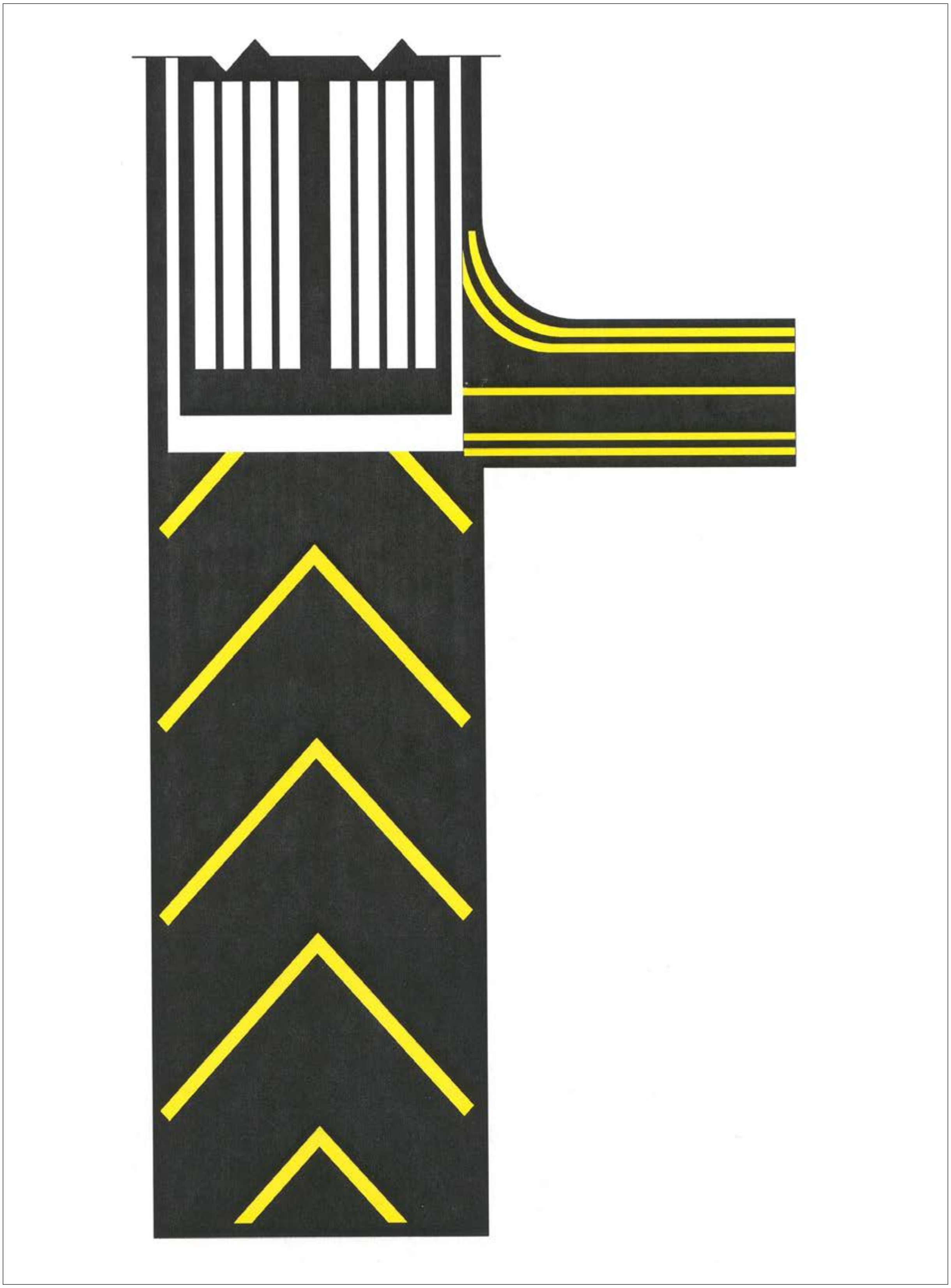


FIG AD 1.1−20
Enhanced Taxiway Centerline

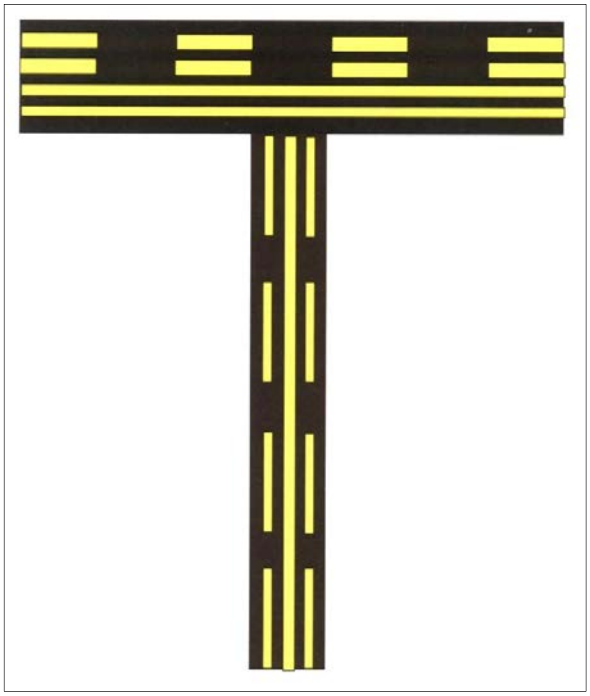


FIG AD 1.1−21
Dashed Markings

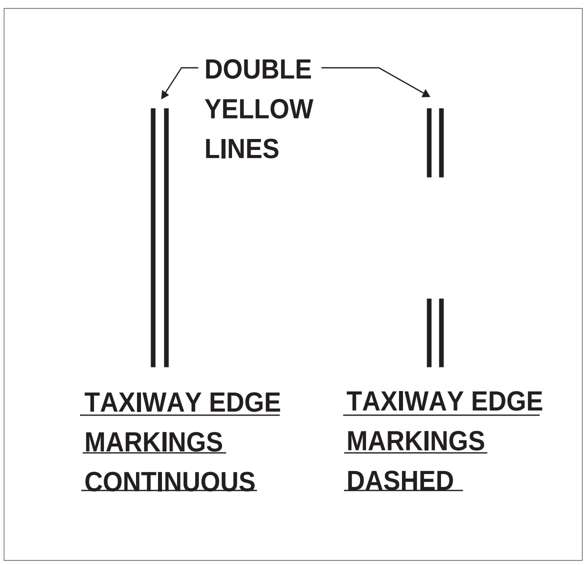


FIG AD 1.1−22
Taxi Shoulder Markings

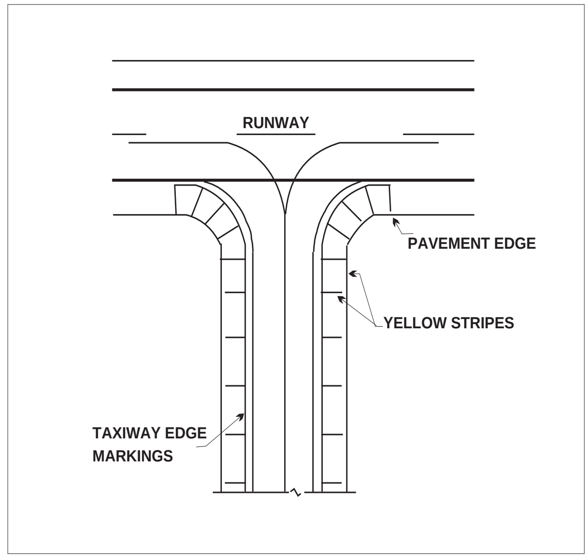


FIG AD 1.1−23
Surface Painted Signs

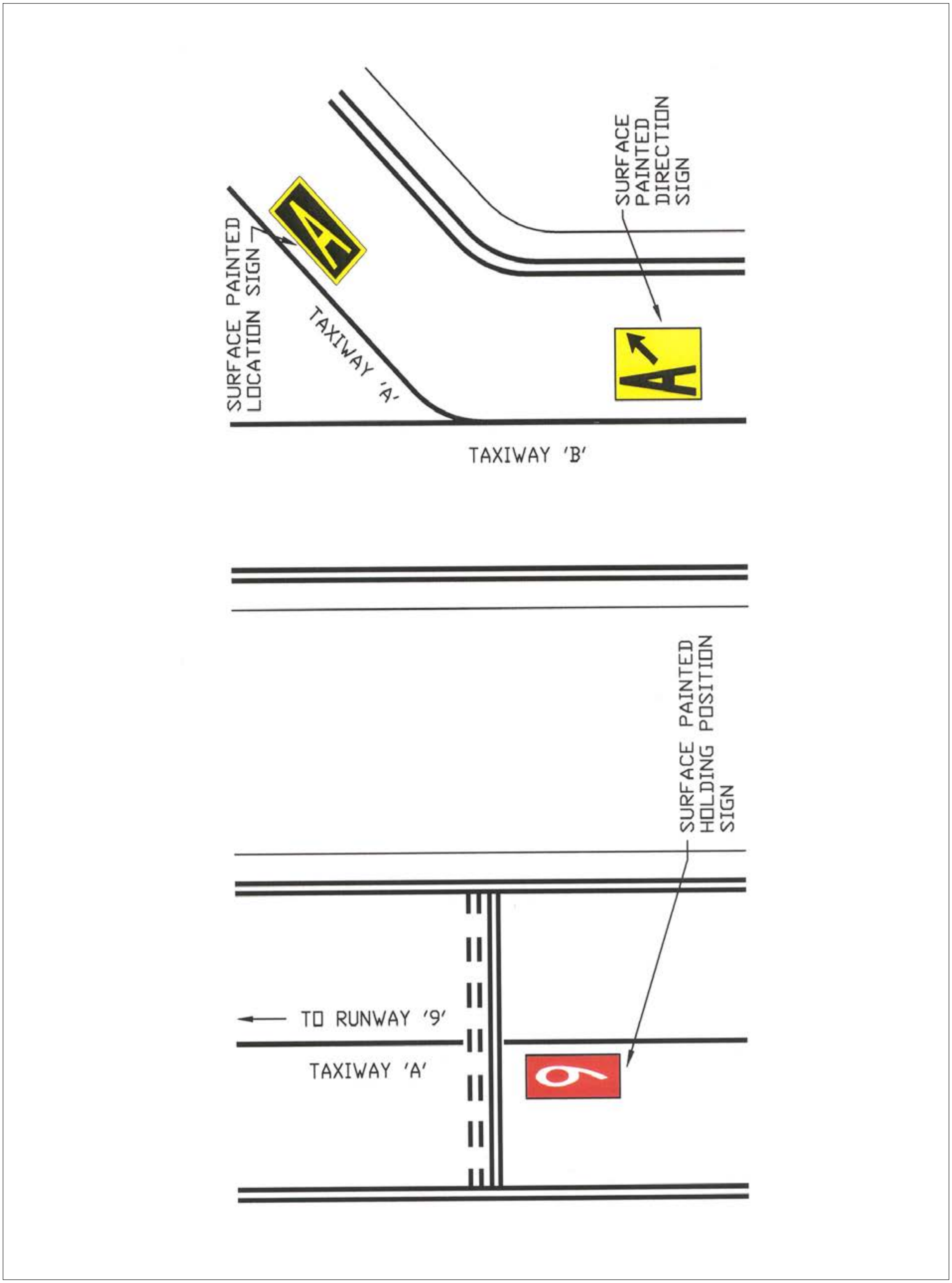


FIG AD 1.1−24
Geographic Position Markings

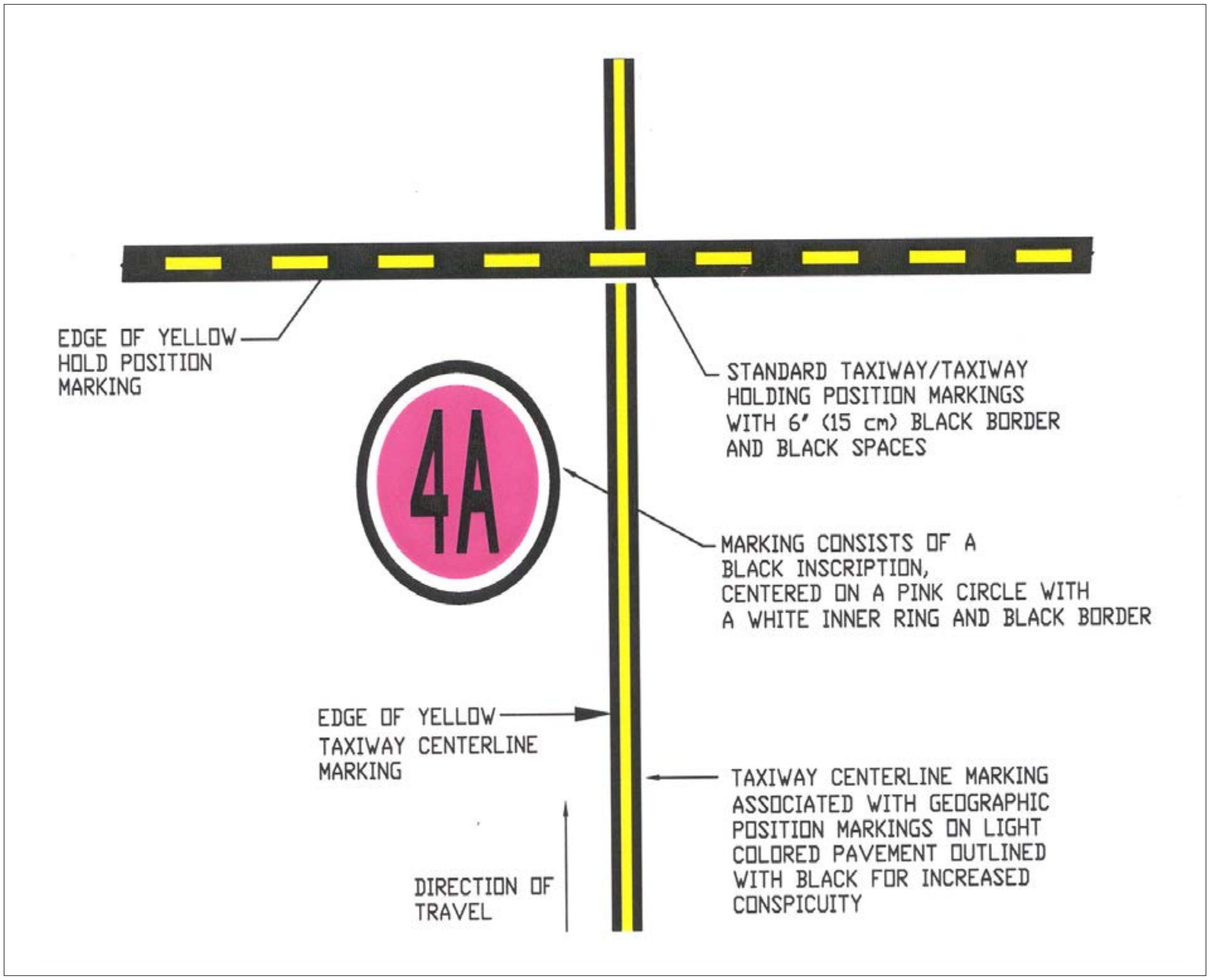


FIG AD 1.1−25
Runway Holding Position Markings on Taxiway

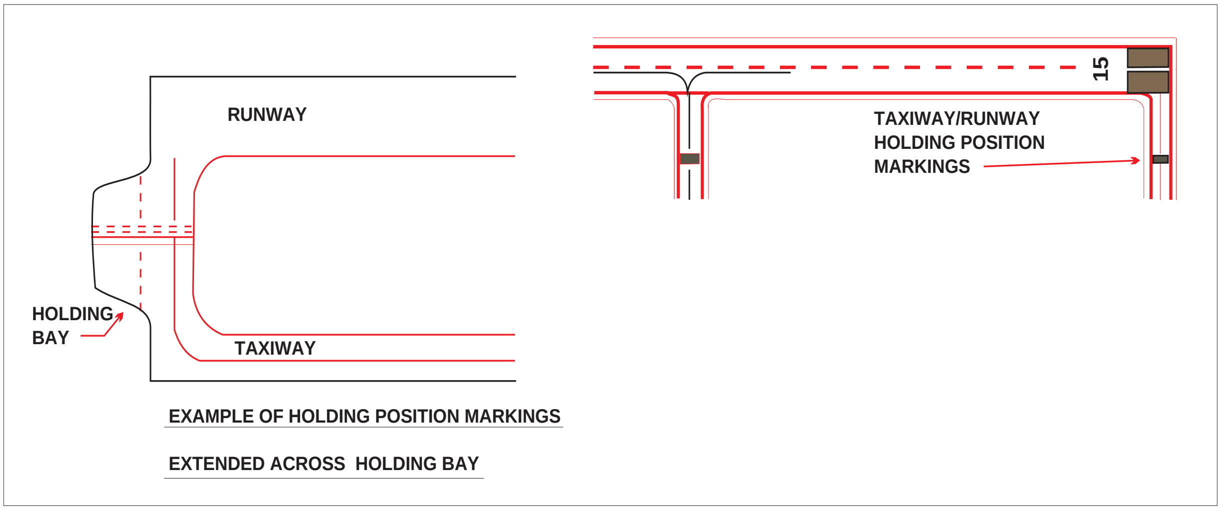


FIG AD 1.1−26
Runway Holding Position Markings on Runways

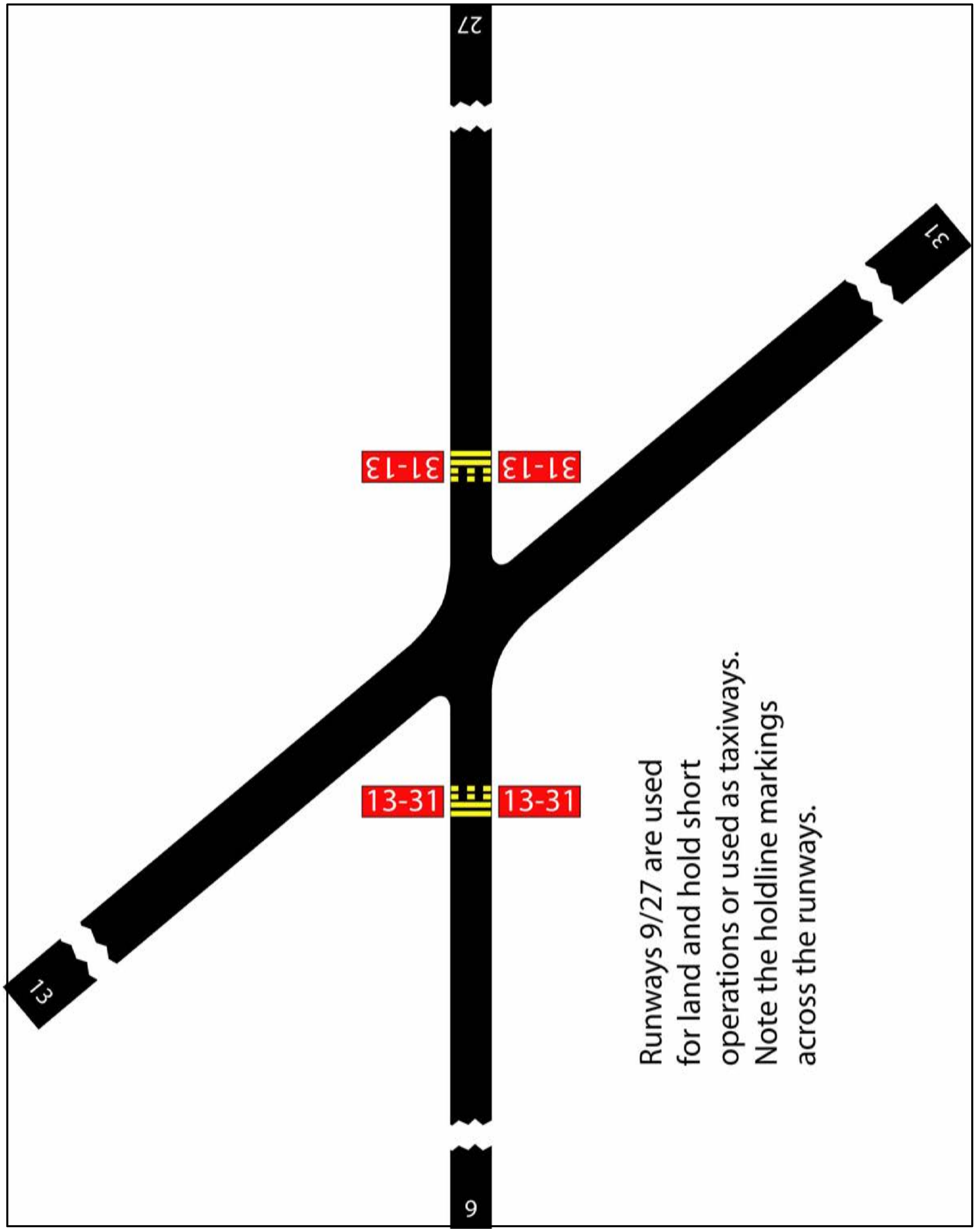


FIG AD 1.1−27
Taxiways Located in Runway Approach Area

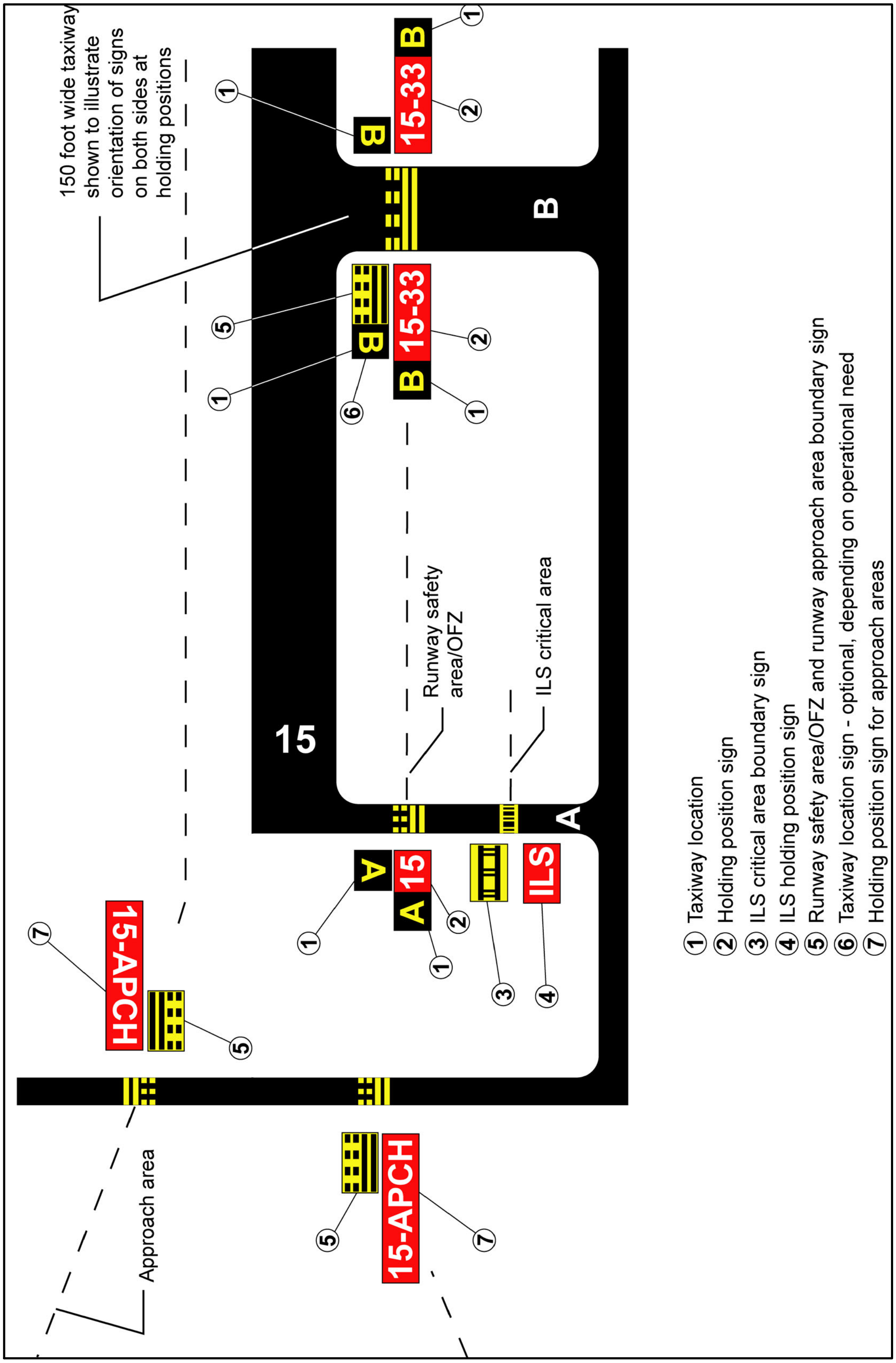


FIG AD 1.1−28
Holding Position Markings: ILS Critical Area

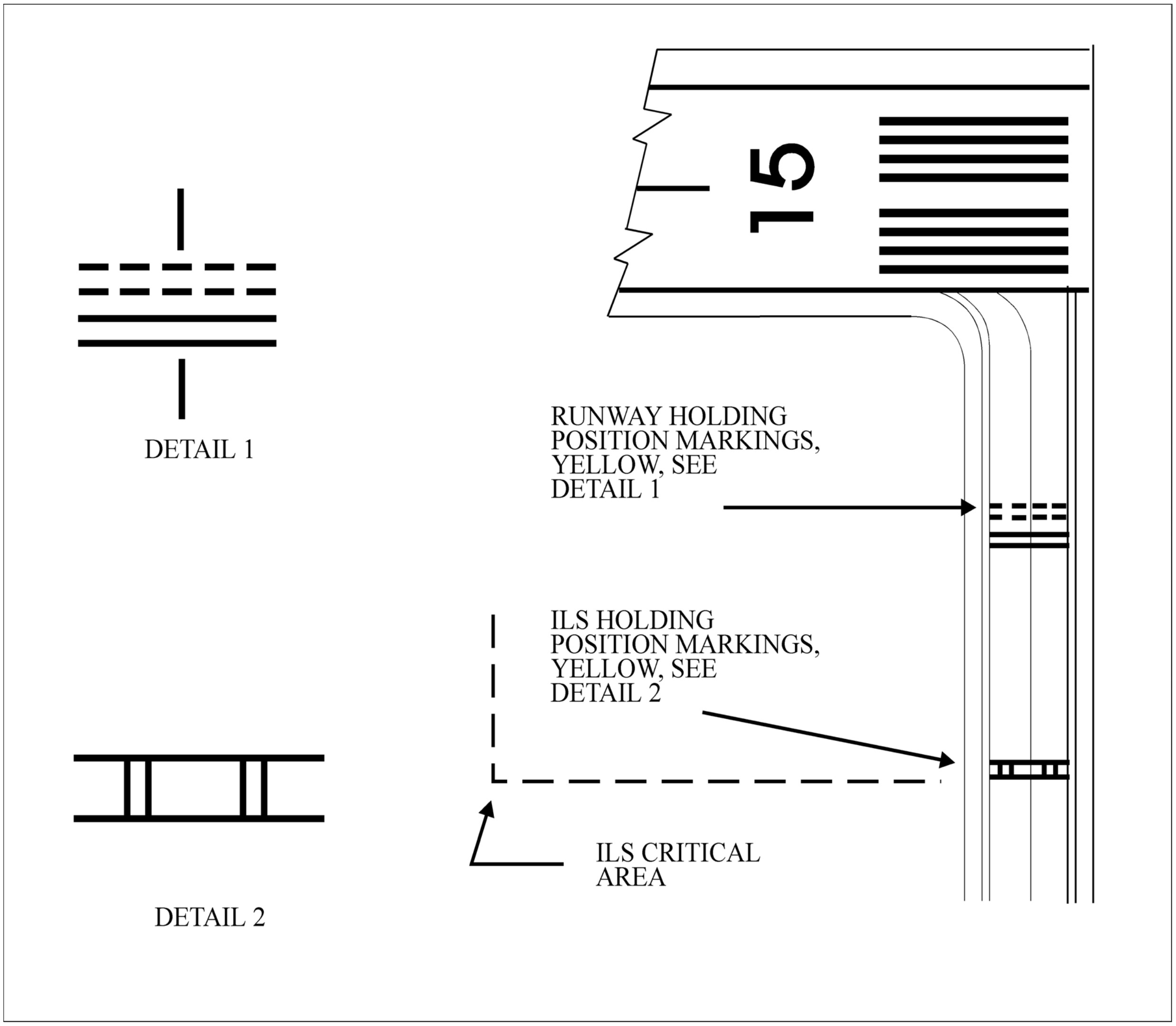


FIG AD 1.1−29

Holding Position Markings: Taxiway/Taxiway Intersections

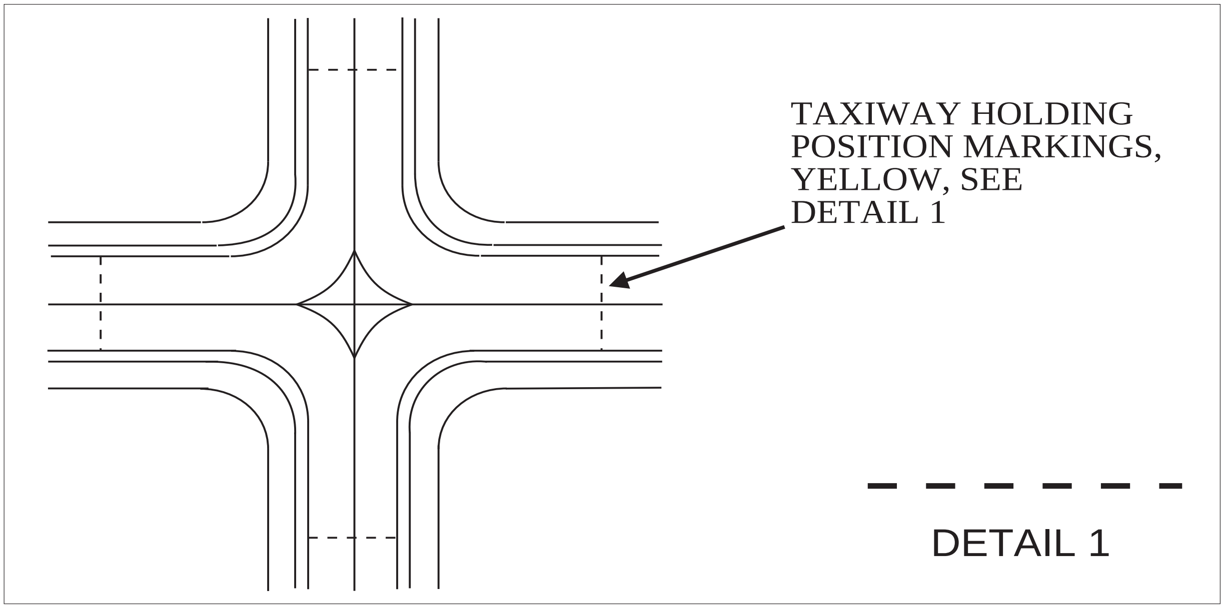


FIG AD 1.1−30

Vehicle Roadway Markings

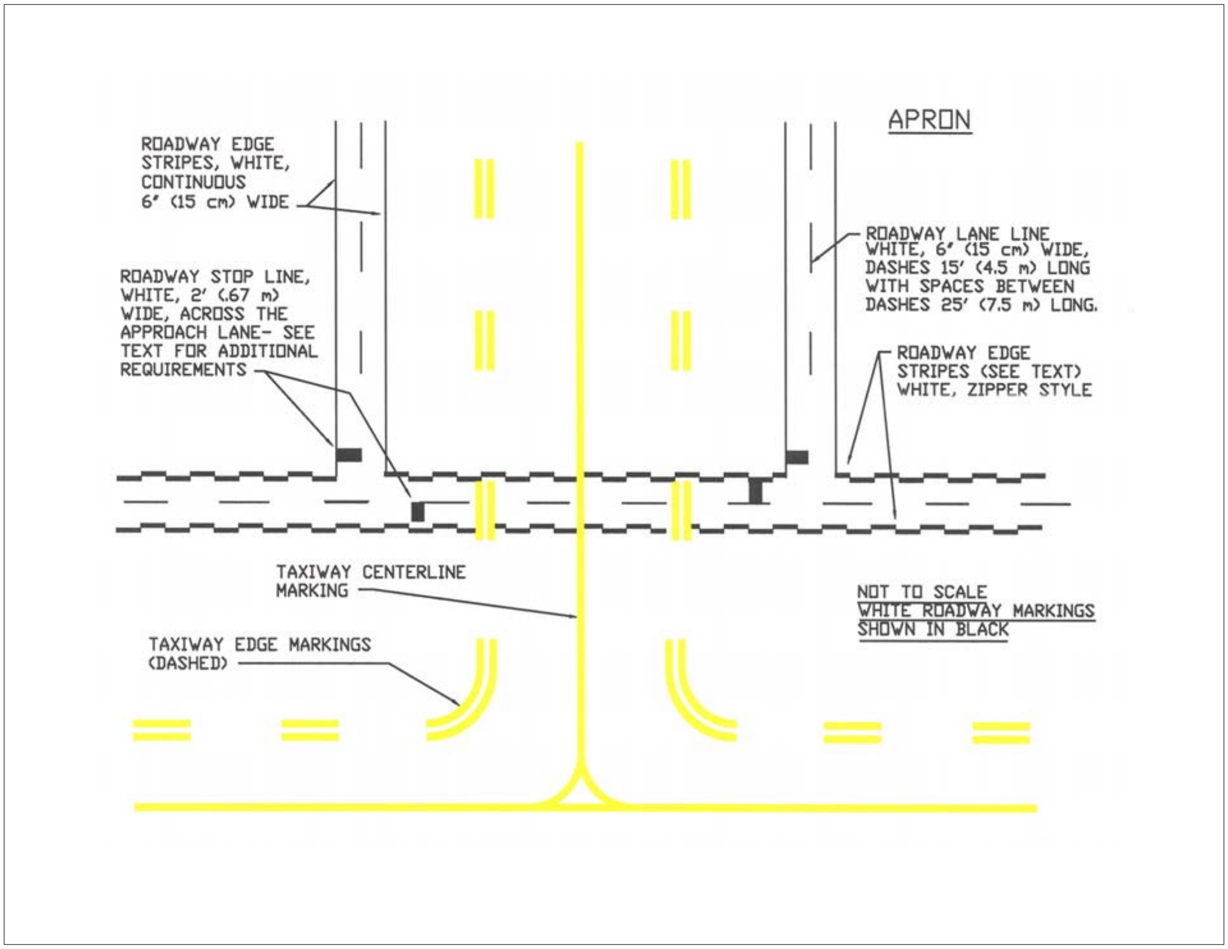


FIG AD 1.1−31
Roadway Edge Stripes, White, Zipper Style

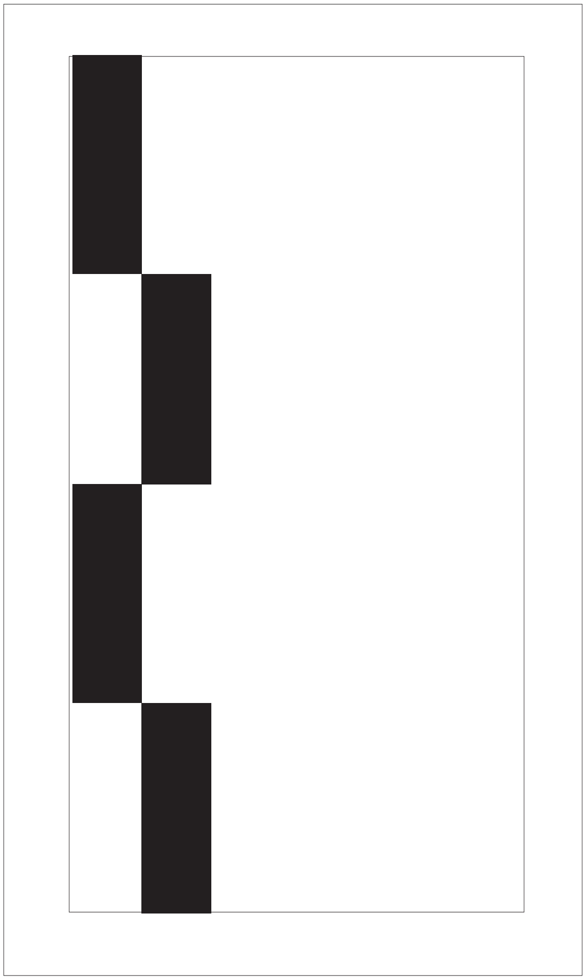


FIG AD 1.1−32
Ground Receiver Checkpoint Markings

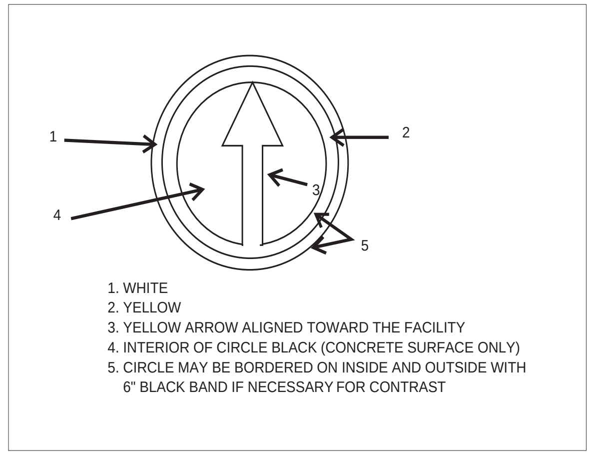


FIG AD 1.1−33
Nonmovement Area Boundary Markings

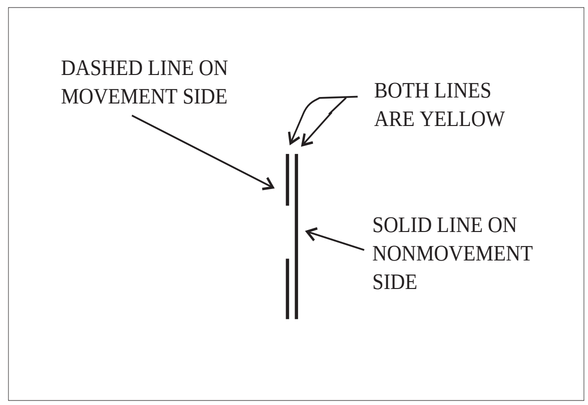


FIG AD 1.1−34
Closed or Temporarily Closed Runway and Taxiway Markings

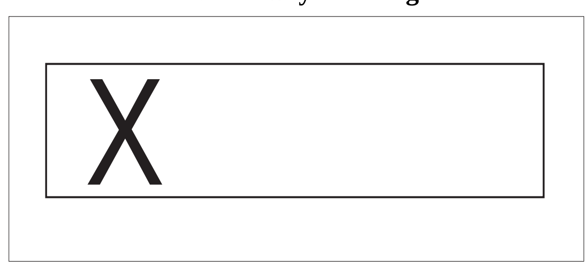


FIG AD 1.1−35
Helicopter Landing Areas

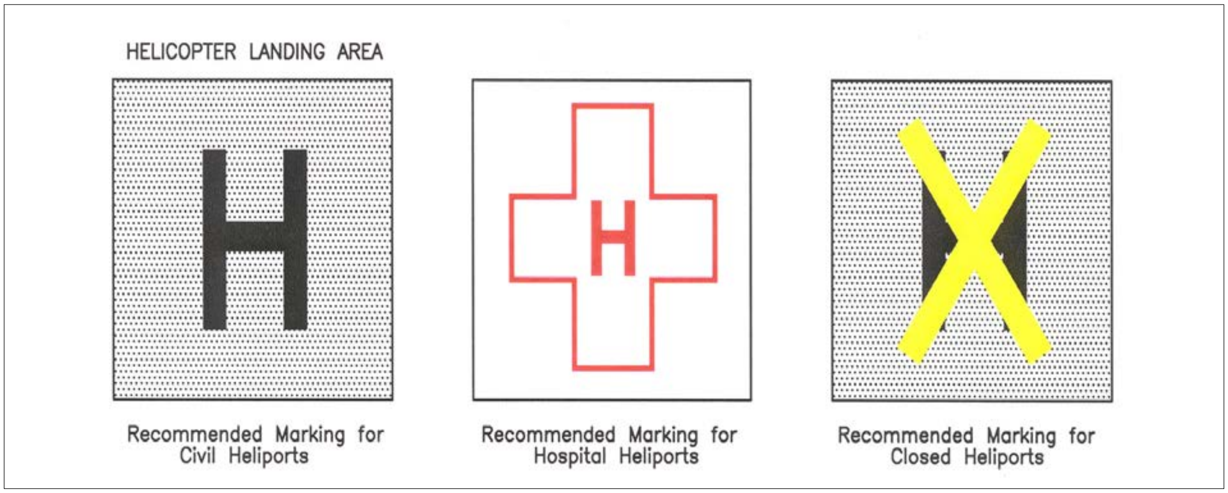


FIG AD 1.1−36
Runway Holding Position Sign

FIG AD 1.1−37
Holding Position Sign at Beginning of Takeoff Runway

FIG AD 1.1−38
Holding Position Sign for a Taxiway that Intersects the Intersection of Two Runways

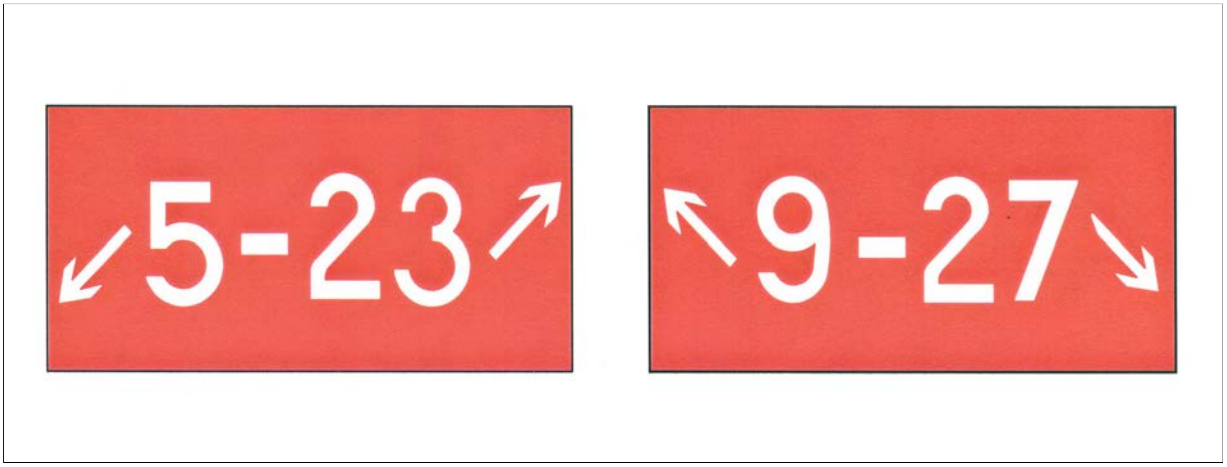


FIG AD 1.1−39
Holding Position Sign for a Runway Approach Area

FIG AD 1.1−40
Holding Position Sign for ILS Critical Area

FIG AD 1.1−41
Sign Prohibiting Aircraft Entry into an Area

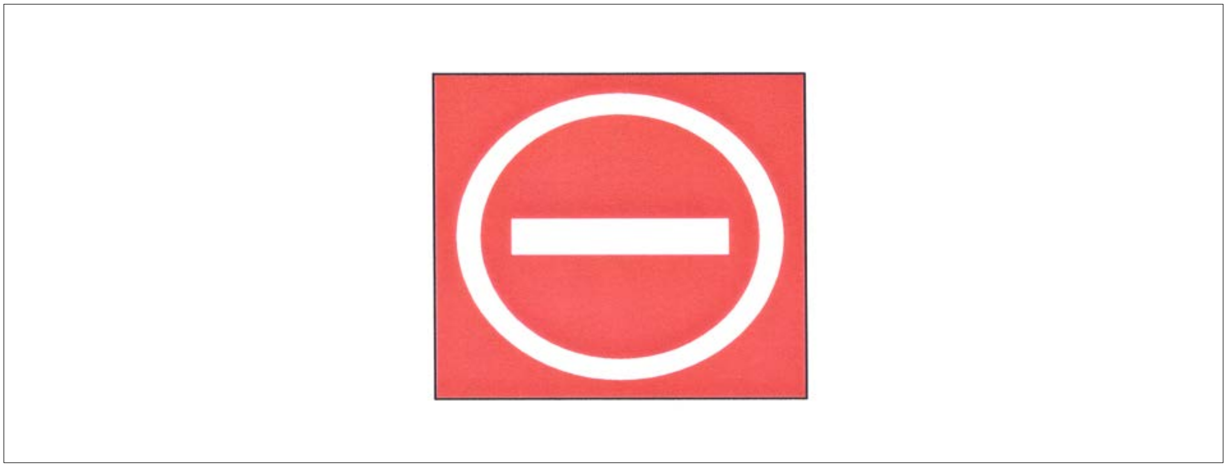


FIG AD 1.1−42
Taxiway Location Sign

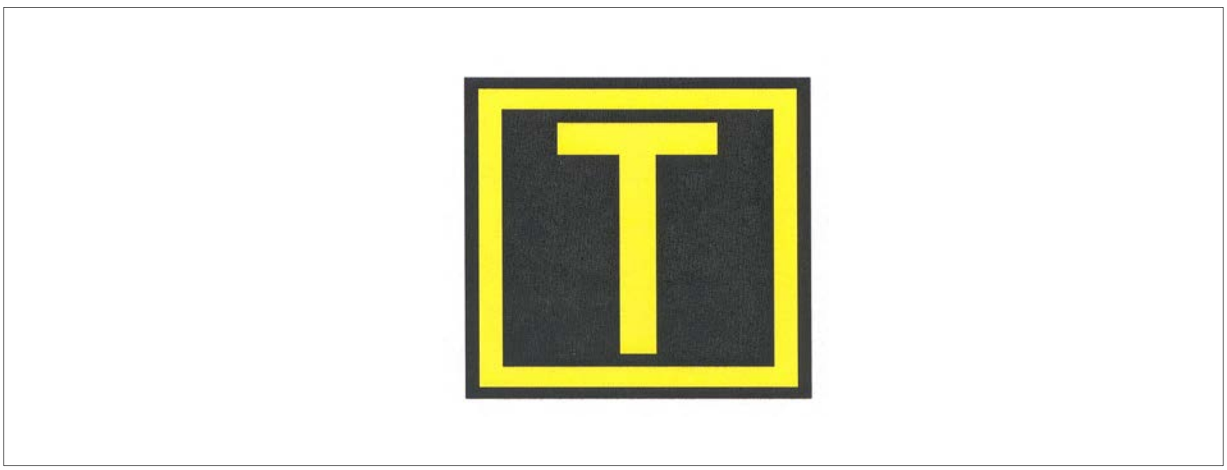


FIG AD 1.1−43
Taxiway Location Sign Collocated with Runway Holding Position Sign

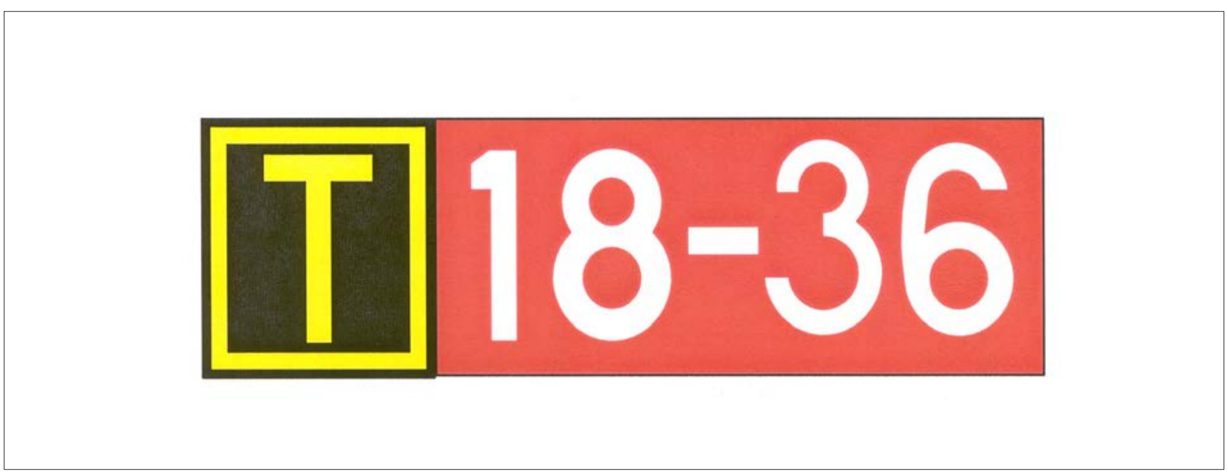


FIG AD 1.1−44
Runway Location Sign

FIG AD 1.1−45
Runway Boundary Sign

FIG AD 1.1−46
ILS Critical Area Boundary Sign

FIG AD 1.1−47

Direction Sign Array with Location Sign on Far Side of Intersection

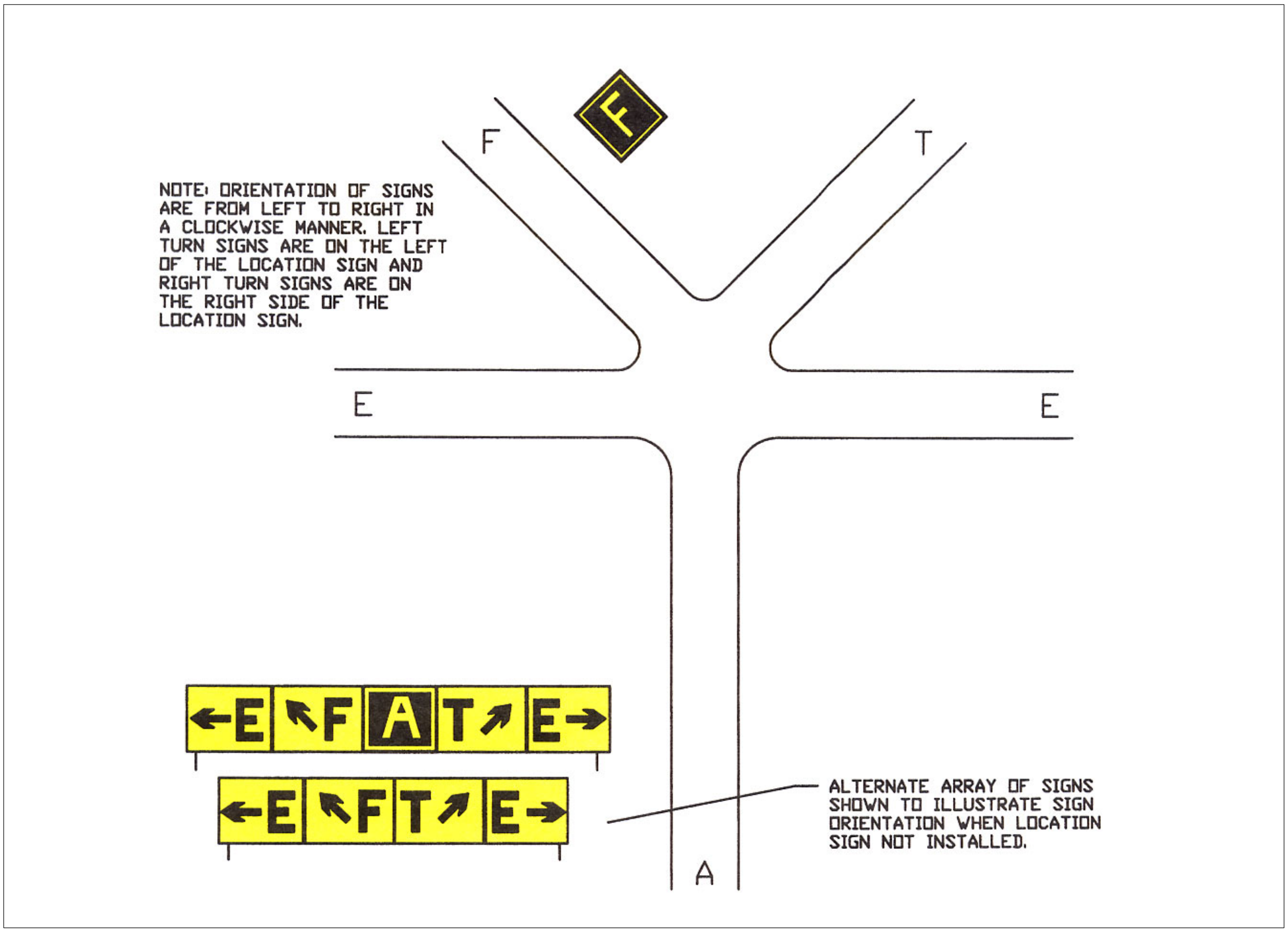


FIG AD 1.1−48

Direction Sign for Runway Exit

FIG AD 1.1−49
Direction Sign Array for Simple Intersection

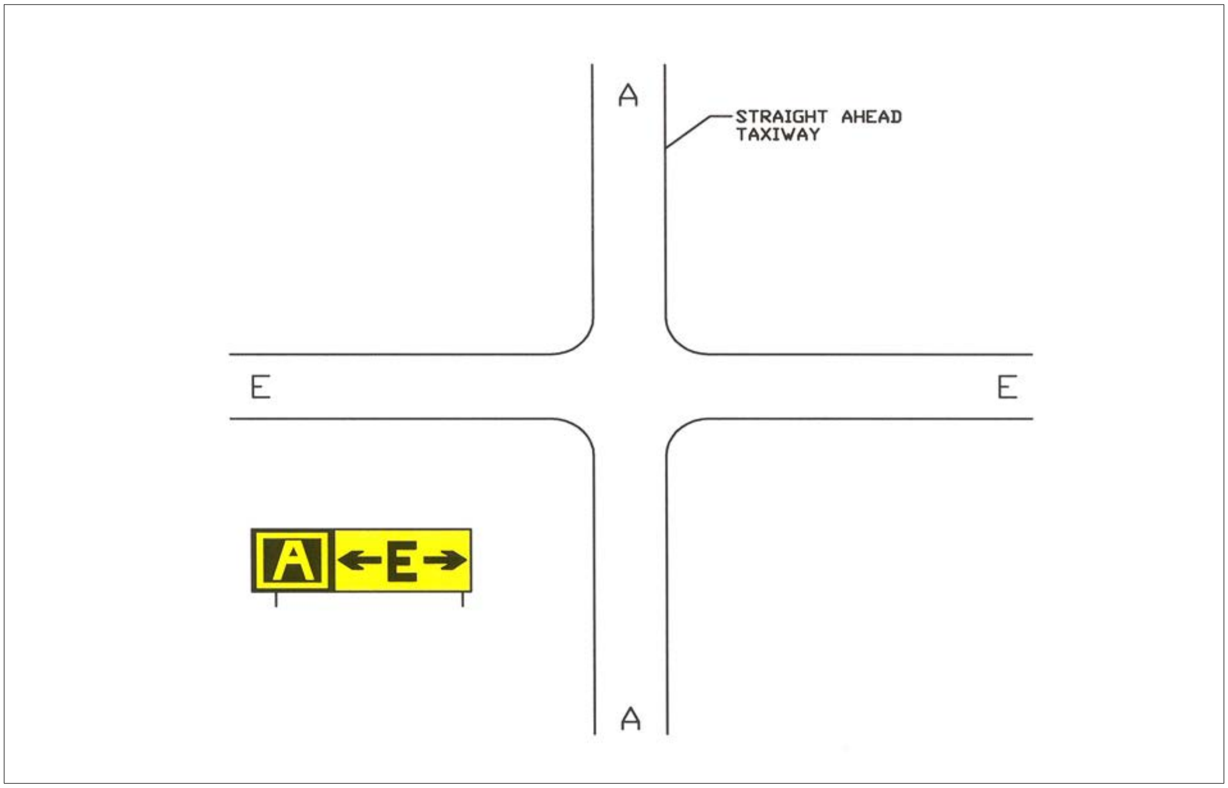


FIG AD 1.1−50
Destination Sign for Military Area

FIG AD 1.1−51
Destination Sign for Common Taxiing Route to Two Runways

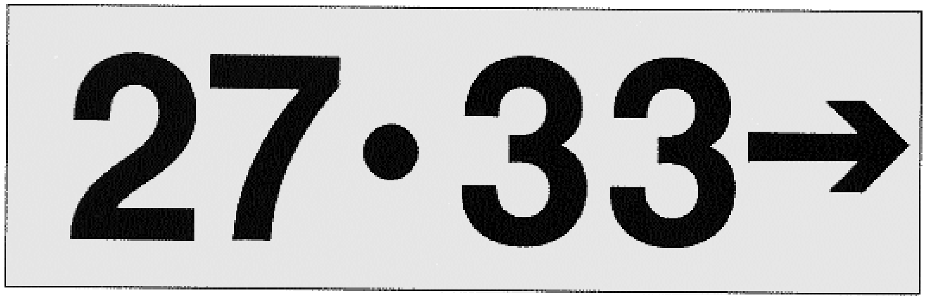


FIG AD 1.1−52
Destination Sign for Different Taxiing Routes to Two Runways

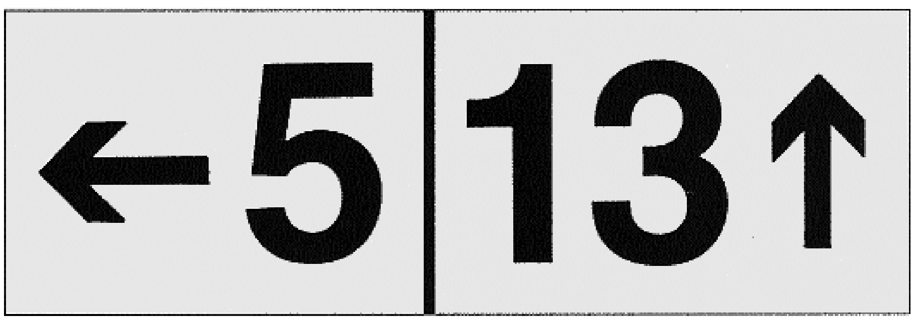


FIG AD 1.1−53
**Runway Distance Remaining Sign Indicating
3,000 feet of Runway Remaining**

FIG AD 1.1−54
Engineered Materials Arresting System (EMAS)

FIG AD 1.1−55
Sample SIDA Warning Sign

AD 2. AERODROMES

1. The following is a partial list of U.S. airports designated to serve international operations. This list contains U.S. airports with scheduled passenger service in large aircraft and certain airports designated as alternate service airports. Omitted from this list are designated general aviation airports, airports with scheduled cargo but no scheduled passenger service, and certain airports having international service in commuter−type aircraft.

ICAO ID	Location	Airport Name	Designation
Alaska			
PANC	Anchorage	Ted Stevens Anchorage International	Regular
PAED	Anchorage	Elmendorf AFB	Alternate
PACD	Cold Bay	Cold Bay	Alternate
PAEI	Fairbanks	Eielson AFB	Alternate
PAFA	Fairbanks	Fairbanks International	Regular
PAJN	Juneau	Juneau International	Regular
PAKN	King Salmon	King Salmon	Alternate
American Samoa			
NSTU	Pago Pago	Pago Pago International	Regular
Arizona			
KPHX	Phoenix	Phoenix Sky Harbor International	Regular
KTUS	Tucson	Tucson International	Regular
California			
KFAT	Fresno	Fresno Yosemite International	Alternate
KLAX	Los Angeles	Los Angeles International	Regular
KOAK	Oakland	Metropolitan Oakland International	Regular
KONT	Ontario	Ontario International	Alternate
KPMD	Palmdale	Palmdale Regional/ USAF Plant 42	Alternate
KSMF	Sacramento	Sacramento International	Alternate
KSAN	San Diego	San Diego International	Regular
KSFO	San Francisco	San Francisco International	Regular
KSJC	San Jose	San Jose Norman Y. Mineta International	Regular
KSCK	Stockton	Stockton Metropolitan	Alternate
Colorado			
KDEN	Denver	Denver International	Regular
KPUB	Pueblo	Pueblo Memorial	Alternate
Connecticut			
KBDL	Windsor Locks	Bradley International	Regular
District of Columbia			
KIAD	Washington	Washington Dulles International	Regular
Florida			
KFLL	Fort Lauderdale	Fort Lauderdale−Hollywood International	Regular
KRSW	Fort Myers	Southwest Florida International	Regular
KMIA	Miami	Miami International	Regular
KMCO	Orlando	Orlando International	Regular
KTPA	Tampa	Tampa International	Regular
KPBI	West Palm Beach	Palm Beach International	Regular
Georgia			
KATL	Atlanta	Hartsfield − Jackson Atlanta International	Regular
Guam			
PGUM	Agana	Guam International	Regular
PGUA	Guam Island	Andersen AFB	Alternate
Hawaii			
PHTO	Hilo	Hilo International	Alternate
PHNL	Honolulu	Honolulu International	Regular
PHOG	Kahului	Kahului	Regular
Illinois			
KORD	Chicago	Chicago−O'Hare International	Regular
Indiana			
KIND	Indianapolis	Indianapolis International	Regular

ICAO ID	Location	Airport Name	Designation
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
New Jersey			
KEWR	Newark	Newark Liberty International	Regular
New York			
KJFK	New York	John F. Kennedy International	Regular

ICAO ID	Location	Airport Name	Designation
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
Pennsylvania			
KPHL	Philadelphia	Philadelphia International	Regular
KPIT	Pittsburgh	Pittsburgh International	Regular
Puerto Rico			
TJMZ	Mayaguez	Eugenio Maria De Hostos	Regular
TJSJ	San Juan	Luis Munoz Marin International	Regular
Tennessee			
KMEM	Memphis	Memphis International	Regular
KBNA	Nashville	Nashville International	Regular
Texas			
KDFW	Dallas	Dallas−Fort Worth International	Regular
KELP	El Paso	El Paso International	Regular
KIAH	Houston	George Bush Intercontinental/ Houston	Regular
KLRD	Laredo	Laredo International	Regular
KSAT	San Antonio	San Antonio International	Regular

ICAO ID	Location	Airport Name	Designation
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.. Λ
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.

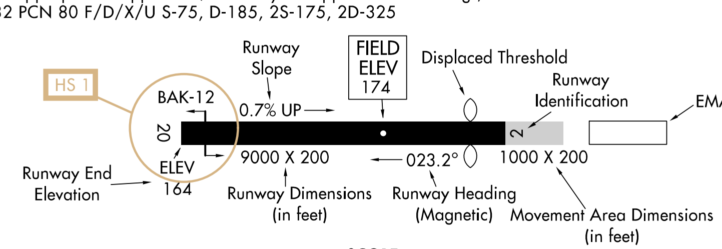
True/magnetic North orientation may vary from diagram to diagram

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

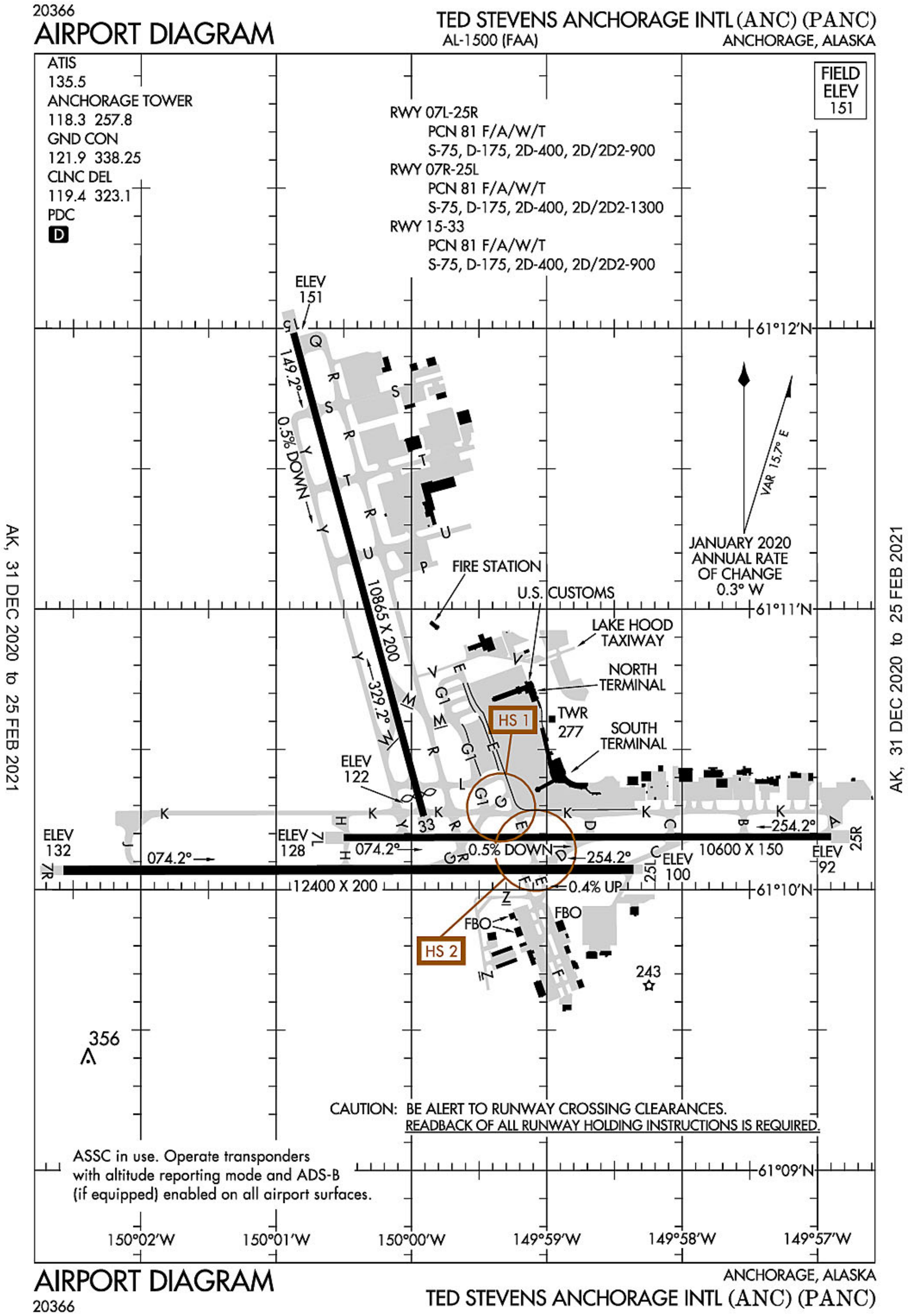
Airport diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations. Airport diagrams are not intended to be used for approach and landing or departure operations. For revisions to Airport Diagrams: Consult FAA Order 7910.4.

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: 61−10−26.705N / 149−59−53.295W
2.2.2 From City: 4 miles SW of ANCHORAGE, AK
2.2.3 Elevation: 151.4 ft
2.2.5 Magnetic Variation: 16E (2020)
2.2.6 Airport Contact: JIM SZCZESNIAK
BOX 196960
ANCHORAGE, AK 99519
(907−266−2600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A,A1
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 4/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 07L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10600 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−11.1539N / 150−0−29.9998W
2.12.6 Threshold Elevation: 127.6 ft
2.12.6 Touchdown Zone Elevation: 128.2 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10600 ft x 150 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−11.3202N / 149−56−53.8826W
2.12.6 Threshold Elevation: 91.5 ft
2.12.6 Touchdown Zone Elevation: 91.8 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−4.1216N / 150−2−34.3367W
2.12.6 Threshold Elevation: 131.7 ft
2.12.6 Touchdown Zone Elevation: 131.7 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12400 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−4.3722N / 149−58−21.535W
2.12.6 Threshold Elevation: 100.4 ft
2.12.6 Touchdown Zone Elevation: 114.6 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 165
2.12.3 Dimensions: 10865 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−11−59.03N / 150−0−52.31W
2.12.6 Threshold Elevation: 151.3 ft
2.12.6 Touchdown Zone Elevation: 151.4 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 345
2.12.3 Dimensions: 10865 ft x 200 ft
2.12.4 PCN: 81 F/A/W/T
2.12.5 Coordinates: 61−10−15.75N / 149−59−54.49W
2.12.6 Threshold Elevation: 121.7 ft
2.12.6 Touchdown Zone Elevation: 120.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 10600
2.13.3 Take−off 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 Take−off Run Available: 10600
2.13.3 Take−off Distance Available: 10600
2.13.4 Accelerate−Stop Distance Available: 10600
2.13.5 Landing Distance Available: 10600

2.13.1 Designation: 07R
2.13.2 Take−off Run Available: 10900
2.13.3 Take−off 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 Take−off Run Available: 12400
2.13.3 Take−off Distance Available: 12400
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 15
2.13.2 Take−off Run Available: 10865
2.13.3 Take−off Distance Available: 10865
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 33
2.13.2 Take−off Run Available: 10865
2.13.3 Take−off Distance Available: 11965
2.13.4 Accelerate−Stop Distance Available: 10865
2.13.5 Landing Distance Available: 10400

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 119.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 323.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/S
2.18.3 Channel: 128.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 135.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 338.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61−10−14.0636N / 149−56−33.0327W
2.19.6 Site Elevation: 105.5 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61−10−13.93N / 150−0−9.62W
2.19.6 Site Elevation: 122.8 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 16E
2.19.2 ILS Identification: TGN
2.19.5 Coordinates: 61−10−11.3329N / 149−56−32.6534W
2.19.6 Site Elevation: 84.7 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61−10−2.0211N / 149−57−58.3996W
2.19.6 Site Elevation: 112 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61−10−8.1823N / 150−2−12.4572W
2.19.6 Site Elevation: 124.9 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 16E
2.19.2 ILS Identification: ANC
2.19.5 Coordinates: 61−10−4.3906N / 149−57−55.495W
2.19.6 Site Elevation: 97.7 ft

2.19.1 ILS Type: DME for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61−10−0.0069N / 149−59−40.3379W
2.19.6 Site Elevation: 134.7 ft

2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61−11−46.76N / 150−0−54.42W
2.19.6 Site Elevation: 151.3 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 16E
2.19.2 ILS Identification: BSC
2.19.5 Coordinates: 61−9−59.9158N / 149−59−45.6352W
2.19.6 Site Elevation: 120.9 ft

General Remarks:

RIGHT TURN OUT OF RAMP PARKING AREA R−2 THROUGH R−4 PROHIBITED.

UNLGTD 489 FT TWR 2 1/2 MILES NORTHEAST.

NOISE SENSITIVE AREA IN EFFECT; CTC APRT OPNS 907−266−2600 FOR FURTHER INFO.

MIGRATORY BIRDS INVOF ARPT SPRING THROUGH FALL.

FAA RAMP PPR − CTC ANC FIFO FREQ 135.85, 907−271−2414 OR AVN 405−954−9780 MON−FRI 0600−1430L.

RY 07R: BACK TXG FM TWY J FOR DEP PROHIBITED.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

NO COMPASS CALIBRATION PAD.

TO COORDINATE NON−TRANSPONDER OR NON−RADIO OPNS CTC ANC ATCT AT 907−271−2700 DURG ADMIN HRS (0730−1600 WKDAYS). DURG NON−ADMIN HRS & HOLIDAYS CTC FAA AT 907−271−5936.

TWY S, EAST OF TWY R NOT LIGHTED.

TWY V SECURITY GATE EAST OF TWY E; KEY 121.75 5 TIMES TO ACTVT.TWY V RESTRICTED TO ACFT WEIGHING 12500 LBS OR LESS. SUBJECT TO JET BLAST WEST OF TWY E.

FOR WSO PHONE 907−266−5105.

ALL TURBOJET/TURBOFAN ACFT DEPARTING RWYS 7R/7L DURING A RWY 15/33 CLOSURE WILL EMPLOY THE FAA CLOSE−IN NADP OR ICAO PROCEDURE B NADP WHEN SAFETY PERMITS.

USE FREQ 122.55 (RCO) FOR FILING, ACTIVATING & CANCELING FLIGHT PLANS IN THE ANCHORAGE BOWL AREA.

RWY END 25L HAS 200 FT BLAST PAD.

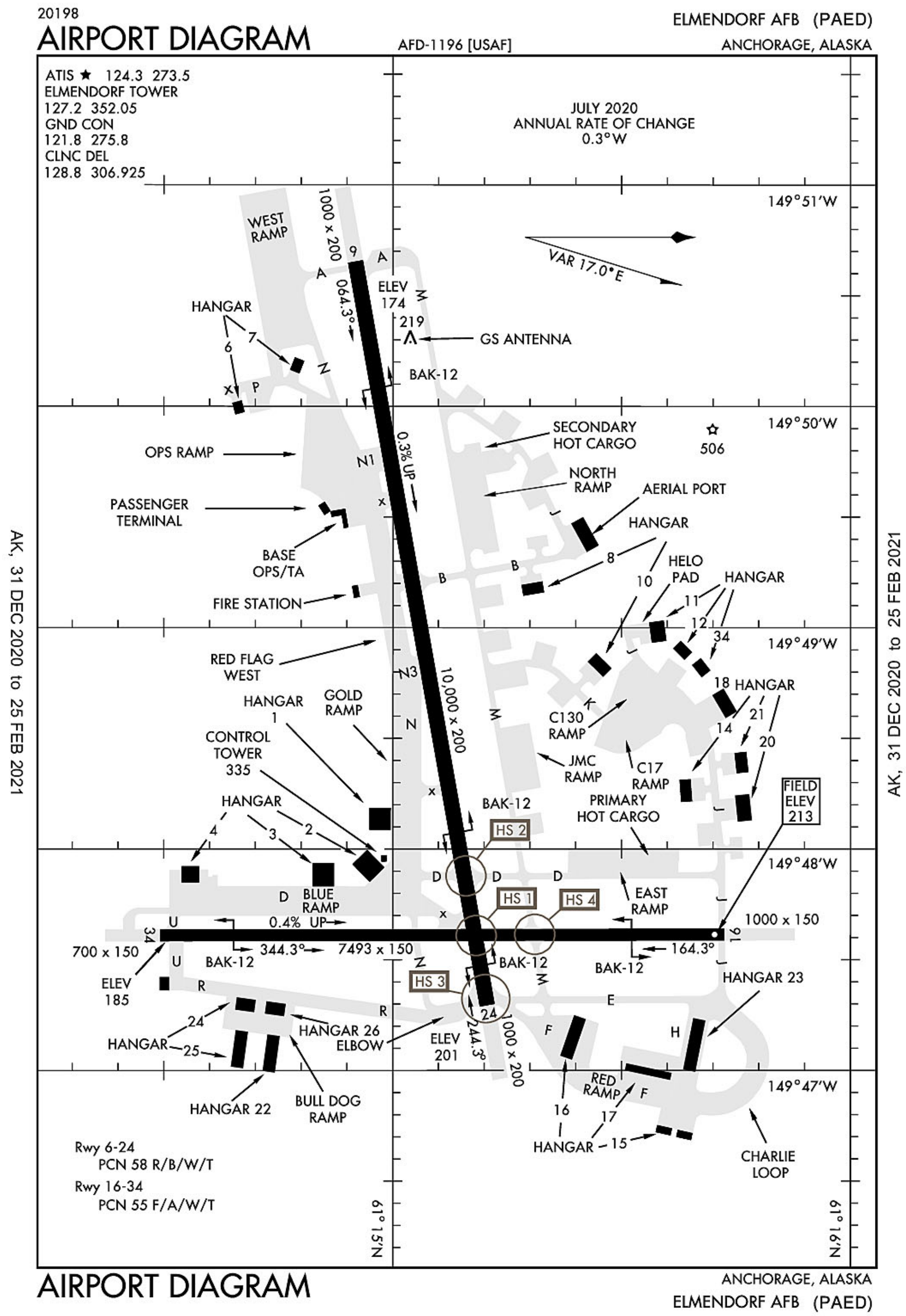
PORTIONS OF TWY K BTN TWY H & TWY J NOT VIS FROM ATCT.

ONE HR PPR FOR NON−TRANSPONDER ACFT OPNS. PPR FOR NON−RADIO ACFT OPNS. NO NIGHTTIME NON−RADIO ACFT OPNS PERMITTED. PILOTS MUST PROVIDE AN ETA & REMAIN WITHIN PLUS OR MINUS 15 MINUTES OF ETA.

ANCHORAGE WX CAMERA AVBL ON INTERNET AT HTTP://AVCAMS.FAA.GOV

TRANSIENT MILITARY ACFT PPR.

Anchorage, Alaska
Elmendorf AFB
ICAO Identifier PAED



Anchorage, AK
Elmendorf AFB
ICAO Identifier PAED

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 61−15−4.8715N / 149−48−23.4924W
2.2.2 From City: 3 miles NE of ANCHORAGE, AK
2.2.3 Elevation: 213 ft
2.2.5 Magnetic Variation: 18E (2015)
2.2.6 Airport Contact: AIRFIELD MGR
300SS/DOFJ
ELMENDORF AFB, AK 99506
(907−552−2444)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types:
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06
2.12.2 True Bearing: 80
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61−14−55.08N / 149−50−39.34W
2.12.6 Threshold Elevation: 174.5 ft
2.12.6 Touchdown Zone Elevation: 174.5 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 260
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 58 R/B/W/T
2.12.5 Coordinates: 61−15−12.16N / 149−47−18.02W
2.12.6 Threshold Elevation: 201.3 ft
2.12.6 Touchdown Zone Elevation: 201.3 ft

2.12.1 Designation: 16
2.12.2 True Bearing: 180
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61−15−43.43N / 149−47−36.52W
2.12.6 Threshold Elevation: 212.5 ft
2.12.6 Touchdown Zone Elevation: 212.4 ft

2.12.1 Designation: 34
2.12.2 True Bearing: 360
2.12.3 Dimensions: 7493 ft x 150 ft
2.12.4 PCN: 55 F/A/W/T
2.12.5 Coordinates: 61−14−29.64N / 149−47−36.57W
2.12.6 Threshold Elevation: 184.9 ft
2.12.6 Touchdown Zone Elevation: 194.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 24
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 16
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 34
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P2L

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ATIS
2.18.3 Channel: 124.3
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: ATIS
2.18.3 Channel: 273.5
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: CD/P
2.18.3 Channel: 128.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 306.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 275.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 127.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 352.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS (11AF RESCUE COORD CNTR)
2.18.3 Channel: 123.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (11AF RESCUE COORD CNTR)
2.18.3 Channel: 282.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (11AF COMD CEN)
2.18.3 Channel: 381
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (ARTIC WARRIOR OPS)
2.18.3 Channel: 381
2.18.5 Hours of Operation:

2.18.1 Service Designation: PMSV METRO
2.18.3 Channel: 346.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 134.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 18E
2.19.2 ILS Identification: EDF
2.19.5 Coordinates: 61−15−1.2N / 149−50−17W
2.19.6 Site Elevation: 169.2 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 18E
2.19.2 ILS Identification: EDF
2.19.5 Coordinates: 61−15−14.33N / 149−46−52.29W
2.19.6 Site Elevation: 212.3 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 18E
2.19.2 Navigation Aid Identification: EDF
2.19.5 Coordinates: 61−15−18.03N / 149−46−9.03W
2.19.6 Site Elevation: 226.2 ft

General Remarks:

DURING VMC DEPS/MISSED APCHS/GO AROUNDS; ACFT SHALL MAINTAIN AT OR BLW 1200 FT MLS UNTIL DEP END OF RWY 06.

RWY 34 HAS A 500 FT DISPLACED THLD ALLOWING 7993 FT USABLE FOR TKFS (RWY 34 TKFS ONLY). ACFT REQG TO USE THE ADDITIONAL 500 FT FOR RWY 34 TKF MUST CTC ATC.

EXTENSIVE SVC DELAY FOR FUEL.

RWY 16/34 RUBBER ACCUM NORTH & SOUTH 1000 FT.

RWY 34 DEPARTURES FOR ACFT WITH WINGSPANS GREATER THAN 98 FT RQR PRIOR COORD WITH AMC, ATC TWR, OR ALD MGT.

CAUTION: UNLIT TERRAIN 0 FT AGL/341 FT MSL, 1909 FT PRIOR TO THLD, 1914 FT RIGHT OF COURSE.

TRAN ALERT ACFT SVC LTD TO POL SERVICING, INTAKE INSPECTIONS, MAGNETIC CHIP DETECTOR INSPECTIONS AND EOR INSPECTIONS.

QUIET HR 0630−1400Z WKDAYS; 0630−1600Z WKEND & HOLS, AMC ACFT EXEMPT.

PREVENTIVE MAINT: TACAN WED AND FRI 1600−1700Z; ILS TUE AND THR 1500−1700Z; PAR SAT−SUN 1800−2000Z; ASR SAT−SUN 2000−2200.

LIMITED MAINTENANCE CAPABILITIES ON WKEND.

JOAP & LOW & HIGH PRESURE NITROGEN SERVICING FURNISHED DURING NORMAL DUTY HOURS, OTR TIMES ON REQUEST.

OIL: O−123, O−128, O−133, O−148, O−156, JOAP.

HGR SPACE & WARM STORAGE EXTREMELY LMTD OCT−MAY.

FOR CURRENT RCR/RSC’S ON RWY 06/24 AND RWY 16/34, AND AFLD RCRS CTC TWR.

CHANGE JET AIRCRAFT STARTING UNITS (JASU) TO, (A/M32A−86), MC−1A), (MC−2A), (AM32A−60A). (AM32−95)150 +/−5 LBS/MIN (2055 +/−68CFM) AT 51 +/−02 PSIA. LASS 150 +/−5 LBS/MIN @ 49 +/−2 PSIA.

IF EXP TO USE RWY 16 FOR DEP OR RWY 34 FOR LDG SEE JBER CARTEE AIRSPACE DESCRIPTION IN NOTICES SEC OF THIS SUPPLEMENT.

ACFT REQUIRING CABLES DE−RIGGED MUST CTC BASE OPS 24 HR PRIOR TO ARR OR MAKE REQ PRIOR TO PPR BEING ISSUED.

ALL FTR ACFT ON ARR EXPECT REDUCED SEPARATION; SAME TYPE ACFT AND DAY 3000 FT; DISSIMILAR ACFT AND/OR NIGHT 6000 FT; AHEAD/BEHIND FORMATION LDG−6000 FT.

ALL NON−AMC ACFT RQR 732 AMS MAINT/SVC MAY EXPERIENCE LOGISTICAL DELAYS DUE TO MISSION NECESSITIES.

FREQUENT ACTIVITY IN R2203. WHEN UNABLE TO AVOID CTC ATCT.

SPECIAL AIR TRAFFIC RULES FAR PART 93, SEE REGULATORY NOTICES IN THE SUPPLEMENT.

FLUID: PRESAIR, DE−ICE, NITROGEN−LHNIT.

NORMAL BARRIER CONFIGURATION DUR FTR FLY WINDOW LEAVES 5675 FT BTN CABLES ON RWY 06/24, OUTSIDE OF FTR FLY WINDOWS THERE IS 7658 FT BTN CABLES.

DV SPOTS 1 AND 3 LTD TO ACFT WITH WINGSPANS OF 136 FT OR LESS.

ALL VIP ACFT CTC BASE OPS 30 MIN PRIOR TO ARR ON PTD 372.2 OR 134.1 OR C907−552−2107.

ALL TRAN AIRCREWS OPERATING AT ELMENDORF AIRFIELD MUST DROP OFF A COPY OF THEIR CREW ORDERS TO AFLD MGMT UPON ARR.

UNITS DEPLOYING TO, STAGING OUT OF, OR FLYING LCL SORTIES AT ELMENDORF AFB MUST DEPLOY WITH MAINT PERS REQUIRED TO COMPLETE OPS TO INCLUDE DE−ICE QUALIFIED CREWMEMBERS DUR COLD WX OPS.

ANY DEPLOYED OR STAGED ACFT WILL NOT RCV TA SUPPORT BYD INITIAL BLOCK IN.

UNLESS PARTICIPATING IN MAJCOM SPONSORED EXER AT ELMENDORF; DEPLOYED OR STAGED UNITS MUST CTC 3 WG SCHEDULING AT DSN 317−552−2406 OR C907−552−2406 AS EARLY AS POSSIBLE TO COORD LOCAL AREA ORIENTATION BRIEFING, MAINT SPONSORSHIP IF APPLICABLE, AND 3 OG/CC APVL PRIOR TO LCL AREA OPS.

C17/C130 OVERT LIGHTS AVBL ON RWY 16/34. C17/C130 COVERT LIGHTS AVBL ON RWY 16.

NO SIGNS OR PAINTED HOLD SHORT LINES ON INTERSECTING RYS.

CAUTION: MOOSE ON & INVOF RWY.

LNDG RWY 16 NOT RCMND FOR JET ACFT EXCPT DURG DAY VFR DUE OBSTRN 337 FT MSL LCTD 1950 FT FM THR & 574 FT W OF CNGRLN.

WX OPR H24; DSN 317−552−4903/4397, C907−552−4903/4397. AUGMENTED SFC VIS RSTD E−SW BY BLDG.

EAST RAMP HOT SPOT 19 LTD, EXPLOSIVES CATS 1.1 AND 1.2 GREATER THAN OR EQUAL TO 450 LBS N.E.W. RQR EVAC OF BLDGS 16521 & 16519 FOR DURATION OF HOT ON HS19. FOR BLDG EVAC CTC 907−552−2577.

IFF SVC AVBL.

CAUTION: NUMEROUS ACFT WILL BE OPR IFR BETWEEN 1500−2000 MSL FROM BGQ 092/10 INTO R2203 TO EDF 320/07 INVOF BIG LAKE, PALMER, BIRCHWOOD, GOOSEBAY AND WASILLA, AK., MON−SAT 0300−0800Z++, AND TUES AND THU 1800−2200Z++.

CAUTION: WHEN RWY 16 VGSI INOP, STR−IN TO RWY 16 ONLY AUTHORIZED AT NIGHT WITH MAJCOM A3 APVL.

RWY 16/34 RWY DIST REMAINING (RDR) SIGNS NOT LCTD IN CORRECT LCTN. AT RWY 16 − 2 RDR 2487 FT OF RWY REMAINING. AT RWY 16 −1 RDR 1487 FT OF RWY REMAINING.

NOTICE: A RIDGE EXTENDING FROM APPROXIMATELY 260−020 DEGS ONE TO TWO MILES FROM THE TOWER PREVENTS OBSERVATION OF FOG OVER KNIK ARM. VISIBILITY MAY DROP RAPIDLY AS FOG POURS OVER RIDGE.

FUEL: J8

AFLD MGMT DOES NOT HAVE COMSEC STORAGE AVBL, FOR COMSEC STORAGE CTC COMMAND POST DSN 317−552−3000.

AMC ACFT ON AN AMC ASGN MSN CAN EXP TO HAVE MAINT SVC ACCOMPLISHED BY 732 AMS.

ALL ACFT MAINTAIN IDLE POWER ON OUTBOARD ENG WHILE TAXIING.

NVD OPS ON RWY 16/34 & RWY 06/24 MON−FRI FROM 0400−1000Z++.

JOAP, JOINT OIL ANALYSIS PROGRAM AVBL. LHNIT, LOW & HIGH PRESSURE NITROGEN SERVICING AVBL. DE−ICE, TYPE 1 DE−ICE LIFTOFF P−88; TYPE 4 ANTI−ICE CLARIANT SAFEWING MP−LAUNCH.

PPRS WILL BE ISSUED NO EARLIER THAN 7 DAYS PRIOR TO ARR.

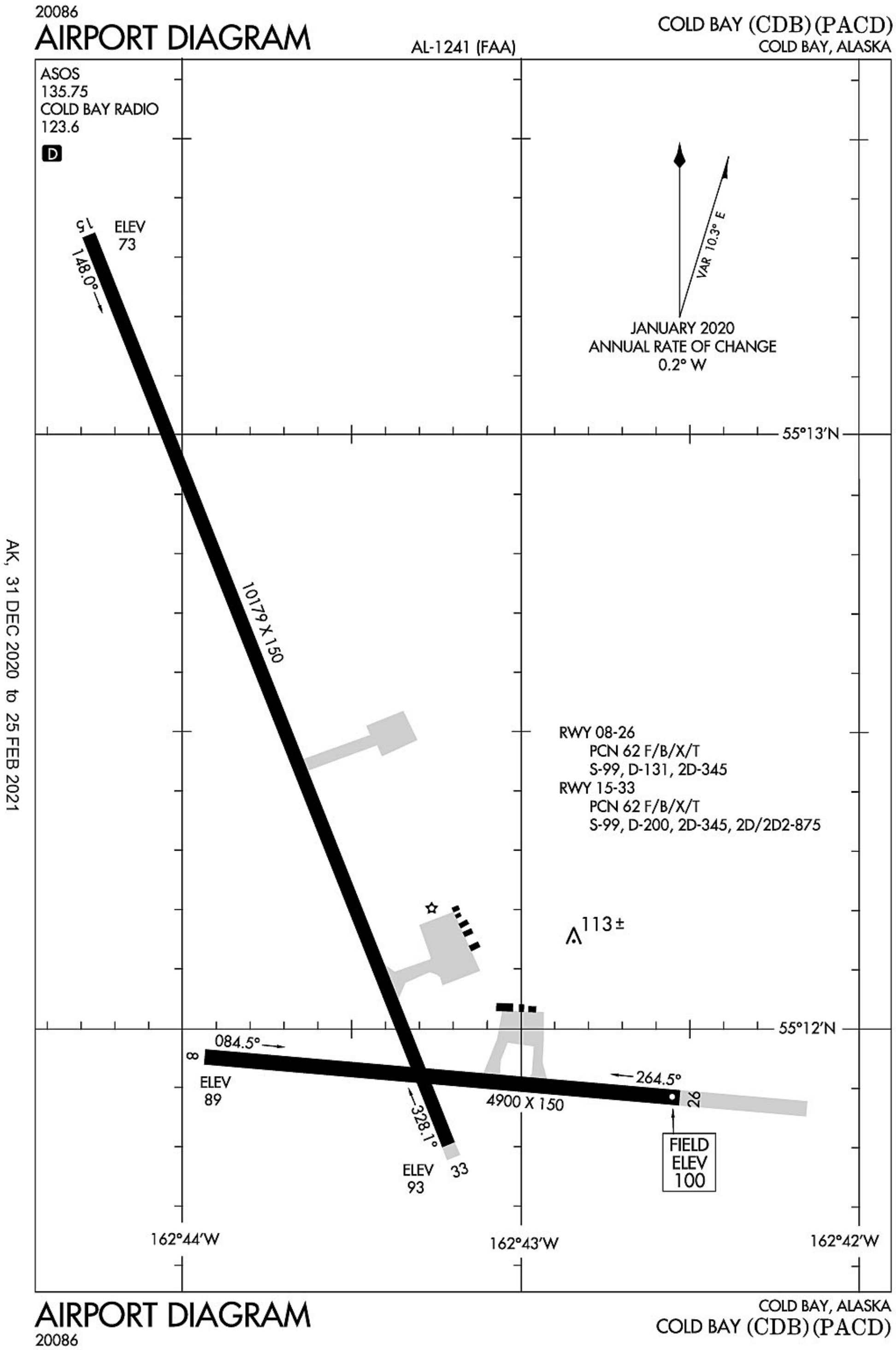
ACFT REQUIRING CUSTOMS AND AG INSPECTIONS ARE RQR TO CTC BASE OPS NO LATER THAN 90 MIN PRIOR TO ARR.

PPR REQUIRED FOR ALL NON JBER ASSIGNED ACFT EXCEPT NON−EXPLOSIVE LADEN AMCC ACFT UNLESS CONDUCTING LCL TRNG.

SUBMIT ALL PPR REQUESTS UTILIZING THE PAED PPR REQUEST FORM LOCATED IN THE PAED GIANT REPORT STIF TO BASEOPS3@US.AF.MIL NO EARLIER THAN 30 DAYS PRIOR AND NO LATER THAN 48 HOURS PRIOR TO ARRIVAL TO BEGIN COORDINATION FOR PPR.

TWYS N2, N4 & N5 PERM CLOSED.

Cold Bay, Alaska
Cold Bay
ICAO Identifier PACD



Cold Bay, AK
Cold Bay
ICAO Identifier PACD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 55−12−21.3N / 162−43−34.5W
2.2.2 From City: 0 miles N of COLD BAY, AK
2.2.3 Elevation: 99.5 ft
2.2.5 Magnetic Variation: 12E (2015)
2.2.6 Airport Contact: HAROLD KREMER
BOX 97
COLD BAY, AK 99571
(907−532−5000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, MON − SAT Days, 0700 − 1800 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 4/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 95
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−57.1589N / 162−43−56.7308W
2.12.6 Threshold Elevation: 88.9 ft
2.12.6 Touchdown Zone Elevation: 95.2 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 275
2.12.3 Dimensions: 4900 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−53.1425N / 162−42−32.588W
2.12.6 Threshold Elevation: 99.5 ft
2.12.6 Touchdown Zone Elevation: 99.5 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 158
2.12.3 Dimensions: 10179 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−13−20.4998N / 162−44−16.4235W
2.12.6 Threshold Elevation: 72.5 ft
2.12.6 Touchdown Zone Elevation: 75 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 338
2.12.3 Dimensions: 10179 ft x 150 ft
2.12.4 PCN: 62 F/B/X/T
2.12.5 Coordinates: 55−11−47.2428N / 162−43−11.707W
2.12.6 Threshold Elevation: 93.3 ft
2.12.6 Touchdown Zone Elevation: 93.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 4900
2.13.3 Take−off Distance Available: 4900
2.13.4 Accelerate−Stop Distance Available: 4900
2.13.5 Landing Distance Available: 4900

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 4900
2.13.3 Take−off Distance Available: 4900
2.13.4 Accelerate−Stop Distance Available: 4900
2.13.5 Landing Distance Available: 4900

2.13.1 Designation: 15
2.13.2 Take−off Run Available: 10180
2.13.3 Take−off Distance Available: 10180
2.13.4 Accelerate−Stop Distance Available: 10180
2.13.5 Landing Distance Available: 10180

2.13.1 Designation: 33
2.13.2 Take−off Run Available: 10180
2.13.3 Take−off Distance Available: 10180
2.13.4 Accelerate−Stop Distance Available: 10180
2.13.5 Landing Distance Available: 10180

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 12E
2.19.2 ILS Identification: CDB
2.19.5 Coordinates: 55−13−12.7692N / 162−44−3.6464W
2.19.6 Site Elevation: 71 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 12E
2.19.2 ILS Identification: CDB
2.19.5 Coordinates: 55−11−40.9813N / 162−43−7.3592W
2.19.6 Site Elevation: 95.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 10E
2.19.2 Navigation Aid Identification: CDB
2.19.5 Coordinates: 55−16−2.2606N / 162−46−26.3866W
2.19.6 Site Elevation: 98.5 ft

General Remarks:
TWR 4.8 NM NW OF ARPT UNLGTD, TWR 0.9 NM S OF ARPT UNLGTD AND TWR 0.4 NM N OF ARPT UNLGTD.

ARPT SAND LARGER GRADATION THAN FAA RECOMMENDED/SEE AC150/5200−30.

WX CAMERA AVBL ON INTERNET AT HTTP://AVCAMS.FAA.GOV

BRAKELOCK TURNS NOT ALLOWED ON RYS.

NO CUSTOMS AVBL; 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.

ROTG BCN OPS UNMONITORED WHEN CDB FSS UNMANNED.

REMARK: NWS WEATHER BALLOON LAUNCH FACILITY LOCATED ON AIRPORT,SEE INSIDE BACK COVER FOR OPERATIONS DETAILS.

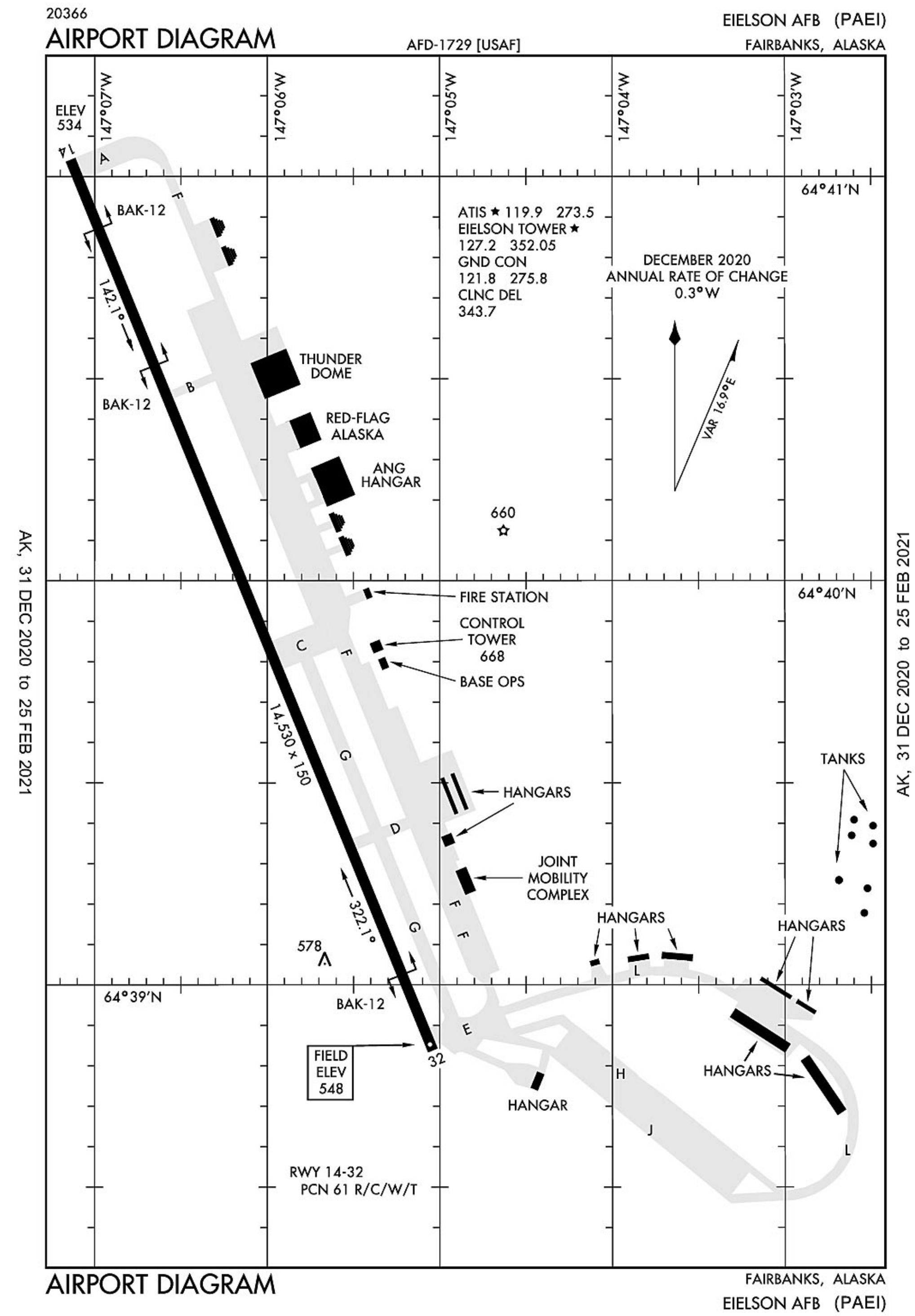
PERSONNEL AND EQUIPMENT MAY BE WORKING ON THE RY AT ANY TIME.

LARGE BIRDS NEAR APCH ENDS OF ALL RYS.

CFR INDEX B. INDEX MAY BE REDUCED FOR ACFT LESS THAN 90’.

SNOW & ICE REMOVAL AND ARPT HAZ RPRTG ONLY PERFORMED DURG DUTY HRS UNLESS BY PRIOR ARNGMT IN WRITING WITH AMGR.

Fairbanks, Alaska
Eielson AFB
ICAO Identifier PAEI



Fairbanks, AK
Eielson AFB
ICAO Identifier PAEI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 64−39−56.32N / 147−6−5.18W
2.2.2 From City: 17 miles SE of FAIRBANKS, AK
2.2.3 Elevation: 547.5 ft
2.2.5 Magnetic Variation: 19E (2015)
2.2.6 Airport Contact: CHIEF AIRFIELD
MANAGEMENT
343 CSG/OTM
EIELSON AFB, AK 99702
(907−377−3201)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 1600−0800Z++ Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types:
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 32
2.12.2 True Bearing: 339
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 61 R/C/W/T
2.12.5 Coordinates: 64−38−49.48N / 147−5−5.85W
2.12.6 Threshold Elevation: 547.5 ft
2.12.6 Touchdown Zone Elevation: 547.5 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 159
2.12.3 Dimensions: 14530 ft x 150 ft
2.12.4 PCN: 61 R/C/W/T
2.12.5 Coordinates: 64−41−3.14N / 147−7−4.52W
2.12.6 Threshold Elevation: 533.9 ft
2.12.6 Touchdown Zone Elevation: 536.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 32
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 14
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 32
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 119.9
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: ATIS
2.18.3 Channel: 273.5
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: CD/P
2.18.3 Channel: 343.7
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: COMD POST (IGLOO OPS)
2.18.3 Channel: 259.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: COMD POST (IGLOO OPS, HAVE QUICK)
2.18.3 Channel: 289.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: GND/P
2.18.3 Channel: 275.8
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 127.2
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 352.05
2.18.5 Hours of Operation: 1600−0800Z++

2.18.1 Service Designation: OPS (SOURDOUGH)
2.18.3 Channel: 139.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (168 ANG OPS)
2.18.3 Channel: 238.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (168 ANG OPS)
2.18.3 Channel: 293.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (SOURDOUGH)
2.18.3 Channel: 359.15
2.18.5 Hours of Operation:

2.18.1 Service Designation: PMSV METRO
2.18.3 Channel: 346.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 139.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: RANGE CTL (SUAIS RADIO)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 118.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 259.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 318.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 320.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 324.3
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 14. Magnetic variation: 19E
2.19.2 ILS Identification: EIL
2.19.5 Coordinates: 64−40−51.59N / 147−7−6.54W
2.19.6 Site Elevation: 532 ft

2.19.1 ILS Type: Localizer for runway 14. Magnetic variation: 19E
2.19.2 ILS Identification: EIL
2.19.5 Coordinates: 64−38−33.05N / 147−4−51.27W
2.19.6 Site Elevation: 548 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 19E
2.19.2 ILS Identification: EAF
2.19.5 Coordinates: 64−38−58.93N / 147−5−25.28W
2.19.6 Site Elevation: 540 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic variation: 19E
2.19.2 ILS Identification: EAF
2.19.5 Coordinates: 64−41−22.13N / 147−7−21.41W
2.19.6 Site Elevation: 528 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 19E
2.19.2 Navigation Aid Identification: EIL
2.19.5 Coordinates: 64−39−13.67N / 147−5−38.21W
2.19.6 Site Elevation: 542.4 ft

General Remarks:

ALASKA ANG 168TH AREFS OPS DSN (317−377−8800, C 907−377−8800) ANG OPR 24 HRS. AIRFIELD MANAGEMENT DSN 317−377−1861/3201.

DEP ACFT REMAIN AT OR BLW 1500 FT TIL DEP END OF RWY.

SEE AP1 SUPPLEMENTARY ARPT RMKS. LIMITED SECRET AND COMSEC STORAGE AVBL AT AIRFIELD MANAGEMENT.

OVERHEAD TFC PAT ALT 2000 FT MSL; RECTANGULAR TFC PAT ALT 1500 FT MSL.

QUIET HRS DLY 0700−1500Z−, NO TKOF, LDG, LO APCH, OR TGL, EXCEPTIONS RQR OPS GROUP COMMANDER APPROVAL. UNCONTROLLED TKOF/LDG NOT AUTH.

DURING BIRD WATCH CONDITION MODERATE LCL PATTERN WORK LIMITED TO MIN RQR WITH OG/CC APPROVAL, NO TGL, FORMATION TKOF/LNDG PROHIBITED AND LOW APCH LIMITED TO 300 FT AGL. DURING BIRD WATCH CONDITION SEVERE; TKOF, PATTERN, AND LNDG PROHIBITED WITHOUT OG/CC APPROVAL, EXCP FOR EMERG.

ALL CONTINGENCY OPER CTC AMGR FOR COORDINATION.

TRAN ALERT: TRANSIENT MAINT LMTD TO F16 SVCG UPON AIRCREW REQ. THRU FLIGHT/BPO/PRE-FLIGHT ISNP OF F16 NOT AVBL.

NO ENGINE RUNNING ON−LOADS/OFF−LOADS (ERO) SERVICES AVAILABLE FOR AMC AIRCRAFT.

NSTD RWY EDGE LGTS.

FOR FLT ADVISORIES OR STATUS OF RESTRICTED & MOAS CTC EIELSON RANGE CTL ON SAUIS RADIO 125.3 OR CALL 1−800−758−8723.

AIR TERMINAL AND GROUND HANDLING SVC OPRS 1630−0030Z++ WEEKDAYS. ACFT REQUIRING TERMINAL AND GROUND HANDLING SVC ARE REQUIRED TO PROVIDE ADVANCE NOTICE OR DELAYS IN SVC MAY BE EXPERIENCED. ACFT REQUIRING SVC SHOULD MAKE PRIOR COORDINATION WITH AIRFIELD MANAGEMENT.

N & S BARRIER RUNOUT REDUCED TO 950 FT.

MOOSE HAVE BEEN SPOTTED ON OR NEAR THE RWY ENVIRONMENT ALL HRS OF THE DAY.

PRE−COORDINATE WITH MAINT OPS CENTER DSN 317−377−1205 NO LATER THAN 48 HRS FROM ETA. ANY DEPLOYED OR STAGED ACFT WILL NOT RECEIVE TA SUPPORT BYD INITIAL BLOCK IN/FINAL BLOCK OUT, UNLESS PARTICIPATING IN MAJCOM SPONSORED EXER AT EIELSON. UHF IS THE PREF PATTERN FREQ.

VHF PTD FREQUENCY IS UNMONITORED.

MILITARY−FLUID DE−ICE AVBL, ANTI−ICE UNAVBL.

CTC AIRFIELD MANAGEMENT DSN 317−377−1861, C907−377−1861 FOR PPR NUMBER NO EARLIER THAN 5 DAYS AND NO LATER THAN 24 HR PRIOR TO ARR. PPR GOOD FOR +/− 30 MIN OF PPR TIME. COORD OF PPR OUTSIDE OF TIME BY PHONE IS REQ OR PPR NR WILL BE CONSIDERED CNL. EXP ARR TIME RESTRICTION FOR ALL ACFT EXC AIR EVAC AND DV CODE 7 OR HIGHER.

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 ACFT. REPORT ALL BIRD AND ANIMAL STRIKES ON & INVOF EILSON TO AIRFIELD MANAGEMENT, DSN 317−377−186, PTD OR 354 FW/SE DSN 317−377−4110.

TRANS ALERT SVC AVBL 0700−0000 MON−FRI EXCP HOL; OTHER TIMES PPR THROUGH BASOPS.

CAUTION: NSTD LGT, 2000 FT OF RWY EDGE LGT BTN DELTA−CHARLIE TWYS LCTD 12 FT FR RWY EDGE.

PAEW ON RWY 14−32 WHEN TWR UNMANNED.

AUGMENTATION CAPABLE 1600−0800Z−. DUR EVAC OF WX STN CTC OP WX SQDN AT NR ABV. ALT WX LCTN VIS SEVERELY LTD DUE TO BLDG AND PRK ACFT.

TRANS BILLETING EXTREMELY LTD/EXTENSIVE FUEL DELAYS DUR RED FLAG ALASKA EXERCISE (APR−OCT).

AIRPORT RMKS: RWY 300 FT WIDE ENTIRE LENGTH, CENTER 150 FT USABLE.

UNMONITORED WHEN PAEI TWR CLSD. WX SUPPORT OPR H24, DSN 317−377−3140/1160 FR 1600−0800Z−; FR 0800−1600Z− PLEASE CALL COMD POST FOR AFTERHOURS DSN 317−377−1500. SVC PRIORITY GIVEN TO LCL FLYING SCHEDULE. WX BRIEFING AVBL DSN 317−377−3140/1160.

PORTIONS OF APRON ’O’ ROW AND SOUTH RAMP NOT VISIBLE FROM TWR.

LOOP TWY EAST OF CORROSION/ HANGAR 1348 THROUGH THE 4/8 BAY AREA RESTRICTED TO ACFT W/WINGSPAN OF 45 FT OR SMALLER.

EDGE LGT NSTD RWY 32/14 AT TWY A RWY EDGE LGT AT TWY A ENTRANCE ON THE EAST SIDE OF THE RWY; RESULTING GAP BTN LGT IS 446 FT.

BASE OPS DOES NOT HAVE COMSEC RESPONSIBILITIES. BASE OPS WILL NOT ISSUE COMSEC.

TO AVOID DELAY FILE FLIGHT PLAN AT LEAST 2 HRS PRIOR TO ESTIMATED TIME OF DEPARTURE. ARRIVALS REQUIRING CUSTOMS MUST NOTIFY COMMAND POST 1.5 HRS PRIOR TO LANDING. U.S. IMMIGRATION SVC NOT AVBL. AIR TERMINAL AND GROUND HANDLING SVC OPRS 1630−0030Z++ WEEKDAYS.

CARGO & PSGR CARRYING ACFT CALL COMMAND POST 3 HRS PROIR TO LNDG AND 30 MIN PROIR TO LNDG AND STATE NUMBER OF PASSENGERS.

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.

EDGE LGT NSTD RWY 32/14 AT TWY C RWY EDGE LGT AT TWY C ENTRANCE ON THE EAST SIDE OF THE RWY; RESULTING GAP BTN LGT IS 400 FT.

AIRCREW BE ADVISED FLD COND NOTAM (FICON) AND RWY COND CODE (RWYCC) NOT REPORTED BY AMOPS.

ALL PACAF FTR ACFT ON ARR EXPECT REDUCED RWY SEPARATION; SIMILAR FTR TYPE/DAY − 3000 FT; DISSIMILAR FTR TYPE AND/OR NGT WET RWY OR RCR RPT LESS THAN 17 − 6000 FT; BEHIND FORMATION LNDG − 6000 FT; FTR TYPE LDG BEHIND NON−FTR TYPE − 9000 FT; RCR VALIDATED AS CONDITIONS WARRANT.

AVOID SMALL ARMS RANGE LCTD 2.5 NM E OF APCH END RWY 32. SMALL ARM RANGE ACTIVE WKD 1700−0100Z++, SFC TO 3500 FT AGL.

CRYPTO MATERIALS NOT AVBL TRAN CREW. ALL ACFT WITH VIP CTC AIRFIELD MANAGEMENT 20−30 MINUTES PRIOR TO ETA WITH FIRM CHOCK TIME. LTD FLEET SVC AVBL, NO POTABLE WATER.

RWY 14 & 32 PAPI GS NOT COINCIDENTAL WITH ILS GS.

LIMITED SECRET AND COMSEC STORAGE AVBL AT BASE OPS. AIRFIELD MANAGEMENT DOES NOT HAVE COMSEC RESPONSIBILITIES. FOR TOP SECRET AND COMSEC ISSUE/STORAGE CTC COMMAND COMMAND POST DSN 317−377−1500.

PHONE PATCH CAPABILITY THROUGH 354 FW/CP AT 907−377−1500. FMQ19 907−377−5846.

FAIRBANKS FSS LC 474−0137. FOR FLIGHT ADVISORIES OR STATUS OF RESTRICTED AND MILITARY OPERATING AREAS, CTC EIELSON RANGE CONTROL ON SUAIS RADIO 125.3 OR TELEPHONE 1−800−758−8723.

ARFF STATUS CRITICAL LVL OF SVC (CLS) 62% FOR USAF CAT 10; AND REDUCED LVL OF SVC (RLS) 81% FOR USAF CAT 9.

BRIEFING FOR TRANSIENT AIRCREWS BEYOND NORMAL OPERATING HRS VIA 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.

RWY 14/32 BAK−12 DEP END CABLES IN RAISED POSITION; BAK−12 AER 14/32 AVBL WITH 20 MIN PRIOR NOTICE. NORTH BARRIER RUNOUT REDUCED TO 950 FT, HOOK EQUIPPPED ACFT BE ALERT.

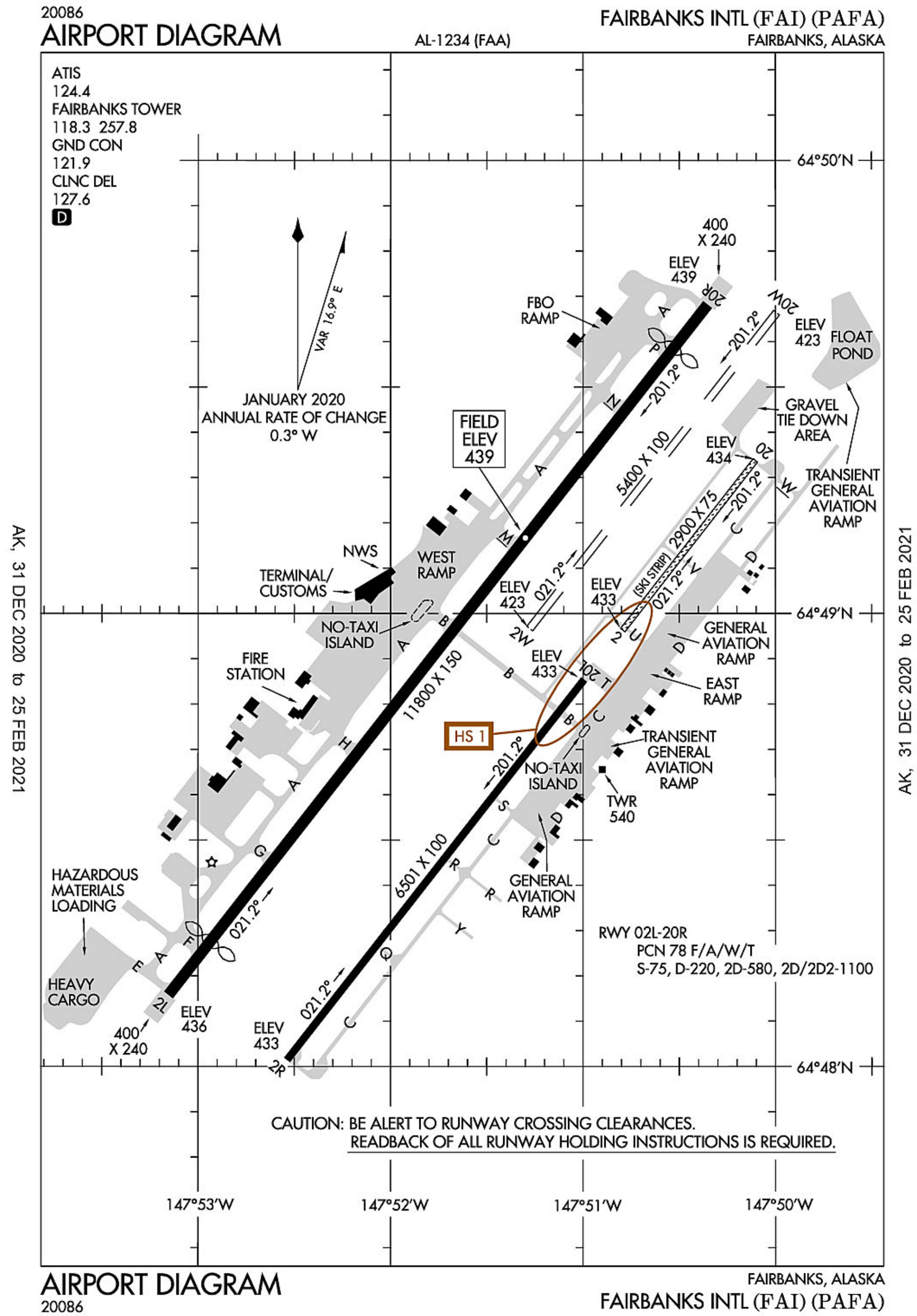
CAUTION: FIRE HYDRANTS LCTD 64 FT NE OF TWY H CNTLN.

AIRPORT RMKS: PRIME KNGHT NOT AVBL.

ARPT OPR 1600−0800Z++.

RADIO/NAV/WEATHER REMARKS − (F) 1500−0700Z ++ DAILY.

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: 64−48−54.4N / 147−51−23.2W
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: ANGIE SPEAR
6450 AIRPORT WAY − SUITE 1
FAIRBANKS, AK 99709
(907−474−2500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 3/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 38
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−48−57.8002N / 147−50−47.5998W
2.12.6 Threshold Elevation: 433 ft
2.12.6 Touchdown Zone Elevation: 434.6 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 218
2.12.3 Dimensions: 2900 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−49−20.2644N / 147−50−6.2715W
2.12.6 Threshold Elevation: 433.6 ft
2.12.6 Touchdown Zone Elevation: 434.6 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 38
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−48−9.4756N / 147−53−9.1838W
2.12.6 Threshold Elevation: 435.6 ft
2.12.6 Touchdown Zone Elevation: 438.6 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 218
2.12.3 Dimensions: 11800 ft x 150 ft
2.12.4 PCN: 78 F/A/W/T
2.12.5 Coordinates: 64−49−40.9108N / 147−50−21.1293W
2.12.6 Threshold Elevation: 438.9 ft
2.12.6 Touchdown Zone Elevation: 439 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 38
2.12.3 Dimensions: 6501 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−48−0.8635N / 147−52−32.2371W
2.12.6 Threshold Elevation: 433.2 ft
2.12.6 Touchdown Zone Elevation: 433.2 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 218
2.12.3 Dimensions: 6501 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−48−51.2387N / 147−50−59.6666W
2.12.6 Threshold Elevation: 433.1 ft
2.12.6 Touchdown Zone Elevation: 434.2 ft

2.12.1 Designation: 20W
2.12.2 True Bearing: 218
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−49−39.8349N / 147−49−59.6293W
2.12.6 Threshold Elevation: 423.4 ft
2.12.6 Touchdown Zone Elevation: 423 ft

2.12.1 Designation: 02W
2.12.2 True Bearing: 38
2.12.3 Dimensions: 5400 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 64−48−58.0039N / 147−51−16.5892W
2.12.6 Threshold Elevation: 423.4 ft
2.12.6 Touchdown Zone Elevation: 423 ft

AD 2.13 Declared Distances

2.13.1 Designation: 02
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 20
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 02L
2.13.2 Take−off Run Available: 11800
2.13.3 Take−off 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 Take−off Run Available: 11800
2.13.3 Take−off Distance Available: 12800
2.13.4 Accelerate−Stop Distance Available: 11800
2.13.5 Landing Distance Available: 11050

2.13.1 Designation: 02R
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 20L
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 20W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 02W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 02
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 02L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 02R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 02W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: APCH/P DEP/P (360−179)
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (360−179)
2.18.3 Channel: 251.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (180−359)
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (180−359)
2.18.3 Channel: 363.2

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 119.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 124.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/S
2.18.3 Channel: 327.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RADAR
2.18.3 Channel: 253.525
2.18.5 Hours of Operation:

2.18.1 Service Designation: RADAR
2.18.3 Channel: 338.275
2.18.5 Hours of Operation:

2.18.1 Service Designation: RADAR
2.18.3 Channel: 353.525
2.18.5 Hours of Operation:

2.18.1 Service Designation: TRSA (180−359)
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TRSA (360−179)
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TRSA (360−179)
2.18.3 Channel: 251.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TRSA (180−359)
2.18.3 Channel: 363.2
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 02L. Magnetic variation: 18E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64−49−50.7376N / 147−50−15.0194W
2.19.6 Site Elevation: 434.8 ft

2.19.1 ILS Type: Glide Slope for runway 02L. Magnetic variation: 18E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64−48−21.0041N / 147−52−36.2974W
2.19.6 Site Elevation: 431.4 ft

2.19.1 ILS Type: Inner Marker for runway 02L. Magnetic variation: 18E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64−48−7.6611N / 147−53−12.5267W
2.19.6 Site Elevation: 429.8 ft

2.19.1 ILS Type: Localizer for runway 02L. Magnetic variation: 18E
2.19.2 ILS Identification: CNA
2.19.5 Coordinates: 64−49−49.8419N / 147−50−4.688W
2.19.6 Site Elevation: 438.1 ft

2.19.1 ILS Type: DME for runway 20R. Magnetic variation: 18E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64−48−1.3387N / 147−53−28.1554W
2.19.6 Site Elevation: 430 ft

2.19.1 ILS Type: Glide Slope for runway 20R. Magnetic variation: 18E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64−49−24.4215N / 147−50−39.7123W
2.19.6 Site Elevation: 434.3 ft

2.19.1 ILS Type: Localizer for runway 20R. Magnetic variation: 18E
2.19.2 ILS Identification: FAI
2.19.5 Coordinates: 64−48−1.4733N / 147−53−23.8771W
2.19.6 Site Elevation: 429.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 21E
2.19.2 Navigation Aid Identification: FAI
2.19.5 Coordinates: 64−48−0.2537N / 148−0−43.1132W
2.19.6 Site Elevation: 1526.4 ft

General Remarks:
FOR AVBLTY OF SUMMER GRAVEL STRIP RY 02/20 AND WINTER SKI STRIP RY 02/20 CONSULT LOCAL NOTAMS AND CTC TWR PRIOR TO ARRIVAL /DEPARTURE.

NWS WEATHER BALLOON LAUNCH SITE 2000 FEET WEST OF MIDFIELD RUNWAY 02L/20R. LAUNCHES ARE TWICE DAILY AT 1100 AND 2300 HOURS UTC.

MILITARY CONTRACT FUEL AVBL.

COLD TEMPERATURE AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −32C.

FOR TRANSIENT HELICOPTER PARKING CALL ARPT OPS 907−451−2300.

WX CAMERA AVBL ON INTERNET AT HTTP://AVCAMS.FAA.GOV

FOR FLIGHTS IN MOAS EAST OF FAIRBANKS RECOMMEND CONTACTING EIELSON RANGR CONTROL ON 125.3/126.3 OR CALL 1−800−758−8723 FOR INFORMATION ON MILITARY ACTIVITES.

SPB CONTROLLED BY FAIRBANKS INTL ATCT. CTC ATCT ON FREQ 118.3 AS SOON AS PRACTICAL AFTER START UP FOR TAXI ON THE POND. FLOAT POND TFC AS ASSIGNED BY FAIRBANKS ATCT. LIMITED TRANSIENT FLOAT PLANE PARKING AVBL, CTC REPUBLIC PARKING SYSTEM, LLC 907−455−4571 FOR INFORMATION. SFC FROZEN IN WINTER, NOT MONITORED.

ATCT LOCATED AT 64−48−39.438N 147−50−55.722W, ELEVATION 538 FT MSL.

BE ALERT FOR SNOW REMOVAL EQUIPMENT OPNS FM 1 OCT TO 15 MAY.

TRANSIENT PARKING EAST RAMP FOR ACFT WITH WINGSPAN LESS THAN 79 FT. NO TRANSIENT ACFT PARKING ON WEST RAMP, CTC APT OPS 907−451−2300 FOR INFO & MEDIVAC PARKING.

ALL RWY HOLD LINES AND COMPASS ROSE AT TWY W OBSCURED OCTOBER 1 THRU APRIL 1.

NOISE ABATEMENT PROCEDURES IN EFECT FM 2200−0800 ALL LARGE ACFT, TURBINE ENGINE, AND HEAVY ACFT UTILIZE RWY 02L FOR ARRS AND RWY 20R FOR DEPS WHEN WIND IS NOT AN OPERATIOINAL FACTOR. CTC APRT OPNS FOR ENGINE RUN−UP LOCATIONS.

N/S TAXIWAY (TWY A) IS WEST AND PARALLEL TO RWY 02L/20R. BE ALERT TO AVOID LANDING ON TAXIWAY.

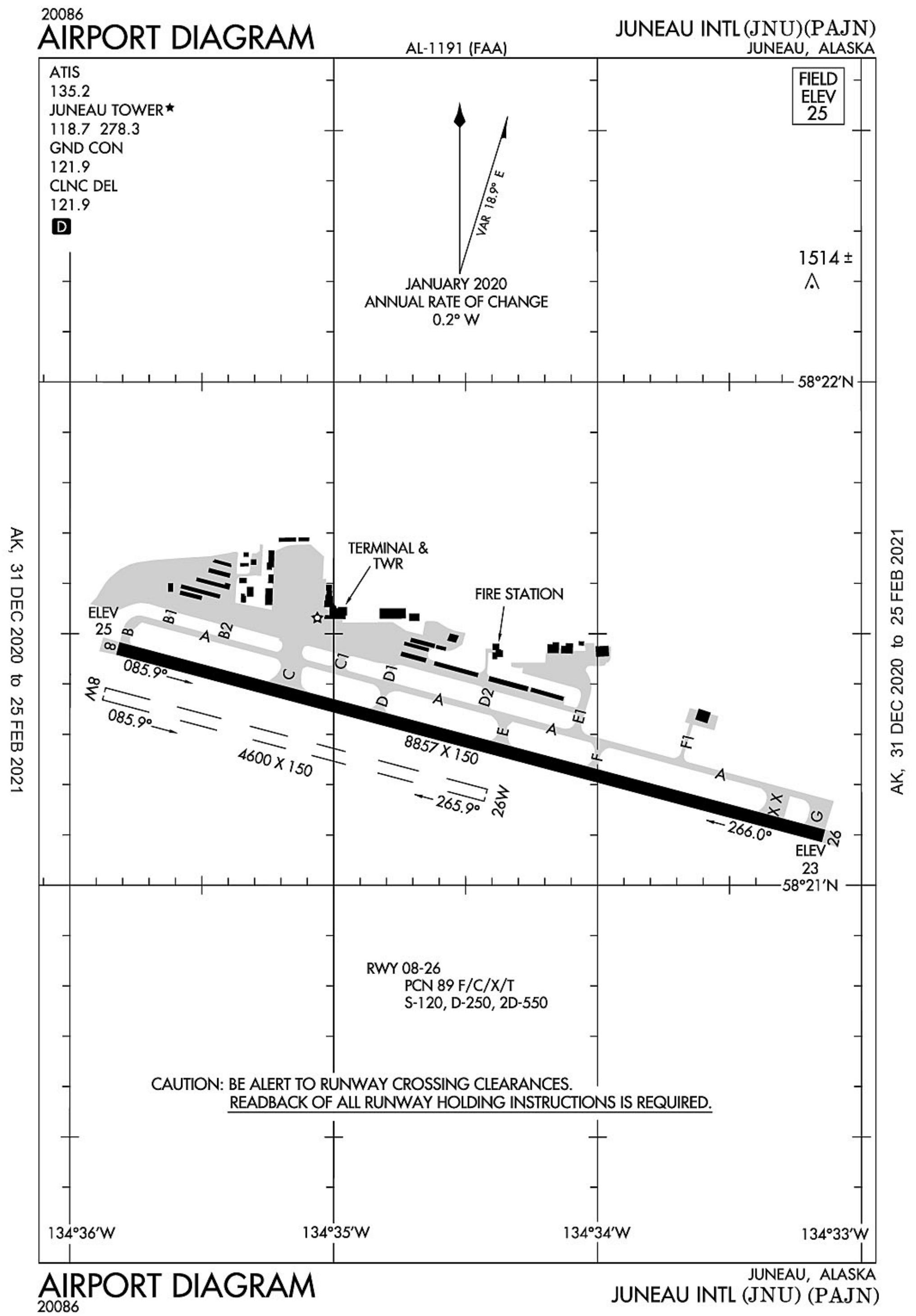
NE COMPASS ROSE CLSD TO HELICOPTERS OVER 12500 LBS. FROST HEAVES SOUTH 2600 FT RWY 02R/20L

CONTACT ARPT OPS 907−451−2300 WITH SAFETY CONCERNS.

SEE ADDITIONAL PAGES UNDER NOTICES FOR TRSA AND FAIRBANKS AREA INFORMATION.

RWY 02R/20L IS LIMITED FOR USE BY ACFT DESIGN GROUP B II, ACFT OR SMALLER.

Juneau, Alaska
Juneau International
ICAO Identifier PAJN



Juneau, AK
Juneau Intl
ICAO Identifier PAJN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 58−21−16.9625N / 134−34−42.4939W
2.2.2 From City: 7 miles NW of JUNEAU, AK
2.2.3 Elevation: 25.3 ft
2.2.5 Magnetic Variation: 20E (2015)
2.2.6 Airport Contact: PATTY WAHTO
1873 SHELL SIMMONS DR, SUITE 200
JUNEAU, AK 99801 (907−789−7821)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 4/1/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08
2.12.2 True Bearing: 105
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58−21−28.25N / 134−35−49.09W
2.12.6 Threshold Elevation: 25 ft
2.12.6 Touchdown Zone Elevation: 25.3 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 285
2.12.3 Dimensions: 8857 ft x 150 ft
2.12.4 PCN: 89 F/C/X/T
2.12.5 Coordinates: 58−21−5.88N / 134−33−8.63W
2.12.6 Threshold Elevation: 23.4 ft
2.12.6 Touchdown Zone Elevation: 23.4 ft

2.12.1 Designation: 08W
2.12.2 True Bearing:
2.12.3 Dimensions: 4600 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 58−21−22.82N / 134−35−52.23W
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 26W
2.12.2 True Bearing:
2.12.3 Dimensions: 4600 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 58−21−10.71N / 134−34−25.26W
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 08
2.13.2 Take−off Run Available: 8857
2.13.3 Take−off 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 Take−off Run Available: 8857
2.13.3 Take−off Distance Available: 8857
2.13.4 Accelerate−Stop Distance Available: 8457
2.13.5 Landing Distance Available: 8457

2.13.1 Designation: 08W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 26W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: V2L

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ATIS
2.18.3 Channel: 135.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 1 APR − SEP 30 0600 − 2300, 1 OCT − MAR 31, 0700 − 2000.

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 1 APR − SEP 30 0600 − 2300, 1 OCT − MAR 31, 0700 − 2000.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.7
2.18.5 Hours of Operation: 1 APR − SEP 30 0600 − 2300, 1 OCT − MAR 31, 0700 − 2000.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 278.3
2.18.5 Hours of Operation: 1 APR − SEP 30 0600 − 2300, 1 OCT − MAR 31, 0700 − 2000.

2.18.1 Service Designation: LCL/S (SEASONAL USE ONLY)
2.18.3 Channel: 120.7
2.18.5 Hours of Operation: 1 APR − SEP 30 0600 − 2300, 1 OCT − MAR 31, 0700 − 2000.

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 64.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 124.65
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−31.0221N / 134−38−10.216W
2.19.6 Site Elevation: 179.8 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−32.035N / 134−38−10.3944W
2.19.6 Site Elevation: 165 ft

2.19.1 ILS Type: Outer Marker for runway 08. Magnetic variation: 20E
2.19.2 ILS Identification: JDL
2.19.5 Coordinates: 58−21−33.5717N / 134−41−58.0236W
2.19.6 Site Elevation: 57.9 ft

General Remarks:
FOR LCL CALL TO JUNEAU FSS CALL 907−789−7380.

TRANSIENT DOCK AVBL FOR PUBLIC USE FOR UP TO SIX ACFT, SW CORNER.

RY 08/26 SAND USED TO ENHANCE RY FRICTION MAY NOT MEET FAA SPECS.

TPA 1500 AGL FOR LARGE TURBINE ACFT; 1000 FT AGL FOR FIXED WING ACFT; 500 FT AGL FOR HELICOPTERS.

APRON TERMINAL RAMP CLSD TO ROTORCRAFT. APRON US CUSTOMS RAMP CLSD TO ACFT WITH WINGSPAN MORE THAN 79 FT INTL ACFT WITH WINGSPAN MORE THAN 79 FT AND ALL INTL ROTORCRAFT USE E−1 RAMP (NTL GUARD RAMP).

WILDLIFE & BIRDS ON & INVOF ARPT.

BATTLESHIP ISLAND RLLS GROUPING; CENTER LIGHT 582132.88N 1344012.22W. IJDL−LOCALIZER RLLS GROUPING; CENTER LIGHT 582132.02N 1343810.39W.

COLD TEMPERATURE AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −0C.

PARAGLIDING ACTIVITY 3 MILES N OF ARPT INVOF THUNDER MOUNTAIN & OVER GASTINEAU CHANNEL NEARS DOWNTOWN APR 15−OCT 1 6000 FT & BLO.

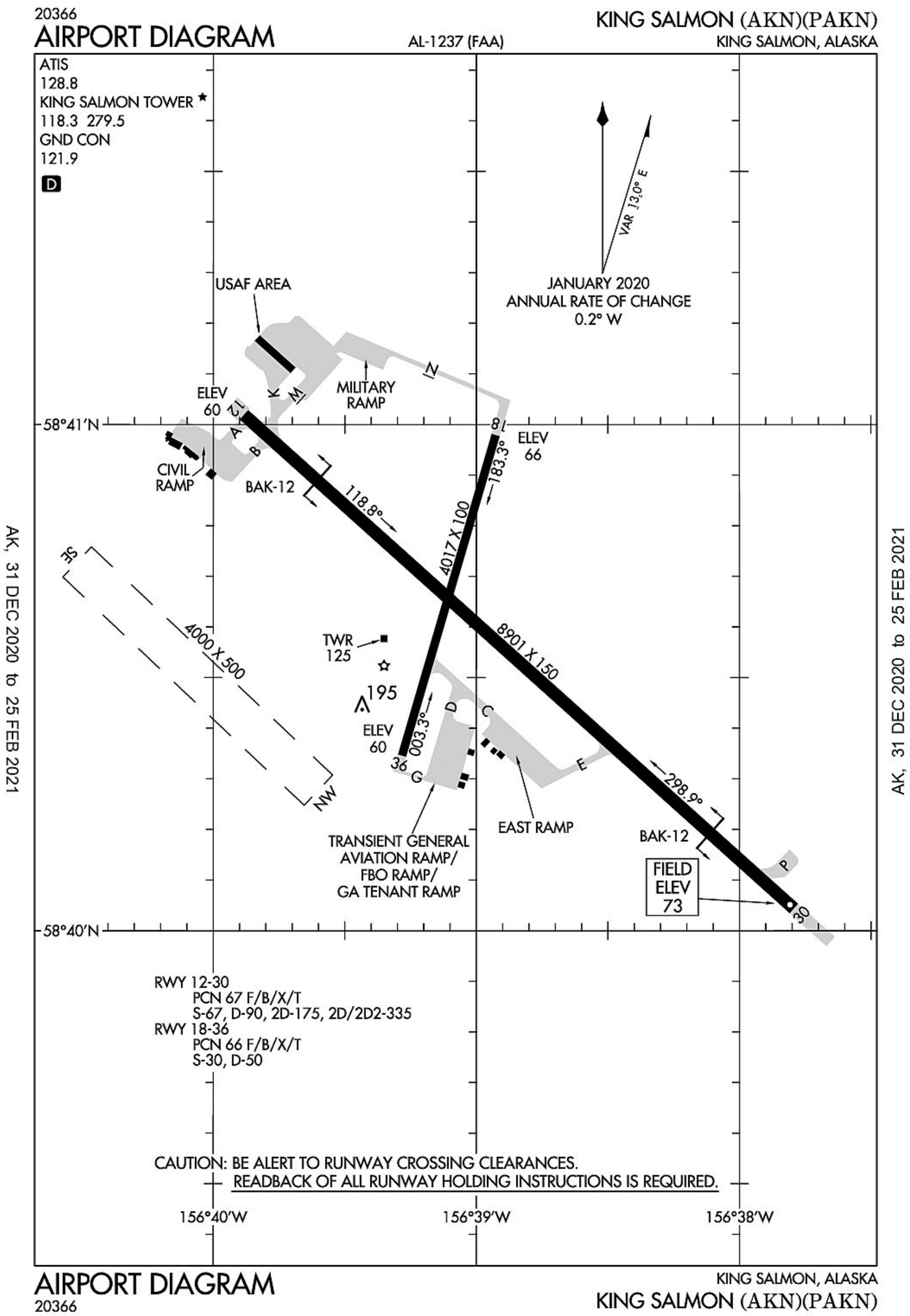
INCREASED HELICOPTER/LIGH ACFT ACTIVITY APR 15−OCT 1 ENTIRE LENGTH ON GASTINEAU CHANNEL & WITHIN 5 MILES OF ARPT.

NATIONAL GUARD 24 HR PPR DUE TO LIMITED PARKING C907−789−3366. 0730−1600 WEEKDAYS CONTACT GUARD OPS 10 MIN PRIOR TO LANDING ON 124.65.

SEE SPECIAL NOTICES AND GENERAL NOTICES FOR ADDITIONAL INFORMATION ON OPNS IN JUNEAU AREA.

LENA POINT, PEDERSON HILL AND SISTERS ISLAND WX CAMERAS AVBL ON INTERNET AT HTTP://AVCAMS.FAA.GOV

King Salmon, Alaska
King Salmon
ICAO Identifier PAKN



King Salmon, AK
King Salmon
ICAO Identifier PAKN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 58−40−35.3765N / 156−38−55.2876W
2.2.2 From City: 0 miles SE of KING SALMON, AK
2.2.3 Elevation: 73.4 ft
2.2.5 Magnetic Variation: 16E (2010)
2.2.6 Airport Contact: FLOYD WILSON
PO BOX 65
KING SALMON, AK 99613 (907−246−3325)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0800−1800 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 3/21/2005

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 12
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58−41−2.184N / 156−39−53.0154W
2.12.6 Threshold Elevation: 59.9 ft
2.12.6 Touchdown Zone Elevation: 61.8 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8901 ft x 150 ft
2.12.4 PCN: 67 F/B/X/T
2.12.5 Coordinates: 58−40−3.68N / 156−37−47.63W
2.12.6 Threshold Elevation: 73.4 ft
2.12.6 Touchdown Zone Elevation: 73.4 ft

2.12.1 Designation: 18
2.12.2 True Bearing: 196
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58−40−59.7835N / 156−38−55.6139W
2.12.6 Threshold Elevation: 66.1 ft
2.12.6 Touchdown Zone Elevation: 66.1 ft

2.12.1 Designation: 36
2.12.2 True Bearing: 16
2.12.3 Dimensions: 4017 ft x 100 ft
2.12.4 PCN: 66 F/B/X/T
2.12.5 Coordinates: 58−40−21.7997N / 156−39−16.9583W
2.12.6 Threshold Elevation: 59.9 ft
2.12.6 Touchdown Zone Elevation: 65.2 ft

2.12.1 Designation: NW
2.12.2 True Bearing:
2.12.3 Dimensions: 4000 ft x 500 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: SE
2.12.2 True Bearing:
2.12.3 Dimensions: 4000 ft x 500 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 12
2.13.2 Take−off Run Available: 8901
2.13.3 Take−off 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 Take−off Run Available: 8901
2.13.3 Take−off Distance Available: 8901
2.13.4 Accelerate−Stop Distance Available: 8501
2.13.5 Landing Distance Available: 8501

2.13.1 Designation: 18
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 36
2.13.2 Take−off Run Available:

2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: NW
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: SE
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 12
2.14.2 Approach Lighting System: SSALR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: NW
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: SE
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 128.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0800−2000 1 AUG−14 JUN. 0800−2200 15 JUN− 31 JUL.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 0800−2000 1 AUG−14 JUN. 0800−2200 15 JUN− 31 JUL.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 279.5
2.18.5 Hours of Operation: 0800−2000 1 AUG−14 JUN. 0800−2200 15 JUN− 31 JUL.

2.18.1 Service Designation: PTD
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 12. Magnetic variation: 16E
2.19.2 ILS Identification: AKN
2.19.5 Coordinates: 58−39−59.6N / 156−37−31.7W
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: 58−40−57.3435N / 156−39−29.887W
2.19.6 Site Elevation: 64 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 16E
2.19.2 ILS Identification: AKN
2.19.5 Coordinates: 58−39−56.5549N / 156−37−32.3734W
2.19.6 Site Elevation: 78 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 16E
2.19.2 Navigation Aid Identification: AKN
2.19.5 Coordinates: 58−43−28.9653N / 156−45−8.4483W
2.19.6 Site Elevation: 94.6 ft

General Remarks:
FLOCKS OF LARGE MIGRATORY BIRDS IN VCNTY DURG SEASON.

LANDING AREA RWY NW/SE ALSO USED BY BOATS.

TSA REGULATED ARPT. SEE 49 CFR 1542. ALL GATES AND DOORS MUST BE SECURED AT ALL TIMES. TRANSIENT OR UNFAMILIAR PILOTS CONTACT ARPT MGR WITH QUESTIONS.

PRIVATE JETS MAY PARK ON THE SE SECTION OF E RAMP; CALL AMGR AT 907−246−3325 FOR INFO.

WX CAMERA AVBL ON INTERNET AT HTTP://AVCAMS.FAA.GOV

MILITARY FTRS/EMERGENCY DIVERTS CALL WARRIOR SOF/ELMENDORF SOF ON UHF AT 395.15.NON−EMERG/NON−FTR ACFT CALL KING SALMON OPS; 24 HR POINT NORMALLY MONITORS CTAF DURING OPR HRS.

RCR UPDATED AS REQUIRED DURING 11TH AF FTR FLYING WINDOW. AIRCREWS COORD RCR CHECKS WITH KING SALMON OPS − 907−439−3001 OR 907−439−6000. ACFT OPNS RSTRD TO LOW APCH/FULL STOP LNDG ONLY.

600 FT SAFETY AREA APCH END RWY 12.

ONE INCH DIP ON CNTRLN 1850 FT FM AER 36 EXTDS TO THREE INCH DIP 25 FT WIDE ON WEST EDGE.

ALL FTR ACFT ON ARR EXP REDUCED SEPARATION; SIMILAR APCH CHARACTERISTICS AND DAY − 3000 FT; DISSIMILAR APCH CHARACTERISTICS AND/OR NIGHT − 6000 FT; AHEAD/BEHIND FORMATION LANDING − 6000 FT.

APRON SPOTS 4, 5, 6, 7 NORTH OF MILITARY HANGARS CLSD EXC PROP ACFT. TWY P CLSD.

NWS WEATHER BALLOON LAUNCH FACILITY LOCATED ON AIRPORT, SEE INSIDE BACK COVER FOR OPERATION DETAILS.

OFF PAVEMENT OPERATIONS BY ACFT; INCLUDING HELICOPTERS; NOT AUTHORIZED AT THE ACR APRON. NO LANDING; PARKING OR TKOFS PERMITTED FROM DIRT OR GRASS.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −31C.

LOCKED WHEEL TURNS PROHIBITED ON ANY SURFACE.

ARFF EQUIPMENT STAFFED DURING PERIODS OF ACR ACTIVITY ONLY.

RWY 18/36 NOT INSPECTED FOR MIL OPERATIONS.

SNOW, ICE REMOVAL & ARPT HAZ COND PERFORMED & RPRTD DURING MAINT DUTY HRS.

FLIGHTS ORIG OUTSIDE ALASKA REFER TO USAF FCG. NO CSTMS AVBL.

CIVILIAN TRANSIENT PARKING ON SE RAMP ONLY; OTHER PARKING LONGER THAN 48 HRS REQUIRES PERMIT.

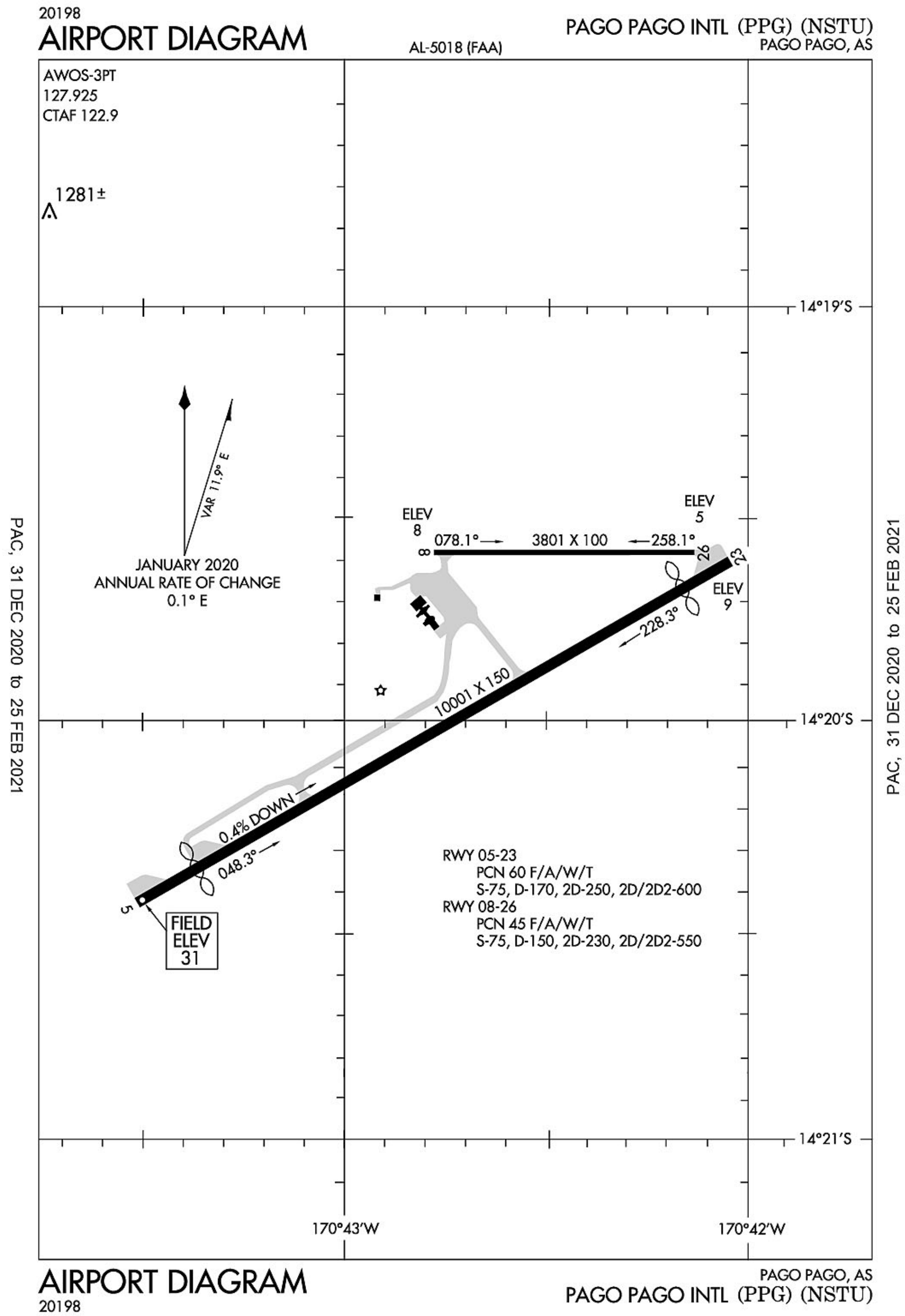
GENERAL AVIATION APRON,PAVEMENT CRUMBLING, POSSIBLE FOD HAZARD. JET AIRCRAFT BE ALERT DURING RUN−UP TO AVOID DAMAGE WITH JET WASH.

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. MIL

AIRCRAFT NEED TO CONFIRM FUEL REQUIREMENTS 24−48 HOURS IN ADVANCE.

ARFF IS AVBL FOR PART 121 CARRIERS INVOLVED IN ETOPS OPERATIONS WITH 30 MINUTES NOTICE.

Pago Pago, American Samoa
Pago Pago/International
ICAO Identifier NSTU



Pago Pago, AS
Pago Pago Intl
ICAO Identifier NSTU

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 14−19−53.984S / 170−42−41.411W
2.2.2 From City: 3 miles SW of PAGO PAGO, AS
2.2.3 Elevation: 31.2 ft
2.2.5 Magnetic Variation: 12E (1990)
2.2.6 Airport Contact: 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 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05
2.12.2 True Bearing: 60
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 60 F/A/W/T
2.12.5 Coordinates: 14−20−25.8311S / 170−43−30.8448W
2.12.6 Threshold Elevation: 31.2 ft
2.12.6 Touchdown Zone Elevation: 29.3 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 240
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 60 F/A/W/T
2.12.5 Coordinates: 14−19−36.4755S / 170−42−2.6116W
2.12.6 Threshold Elevation: 8.7 ft
2.12.6 Touchdown Zone Elevation: 8.7 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3801 ft x 100 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−19−35.126S / 170−42−46.7563W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.1 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 3801 ft x 100 ft
2.12.4 PCN: 45 F/A/W/T
2.12.5 Coordinates: 14−19−35.1106S / 170−42−8.096W
2.12.6 Threshold Elevation: 4.8 ft
2.12.6 Touchdown Zone Elevation: 5.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 23
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 08
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 26
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 05
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−19−37.6403S / 170−42−14.7077W
2.19.6 Site Elevation: 19.1 ft

2.19.1 ILS Type: Glide Slope for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−20−13.069S / 170−43−15.1842W
2.19.6 Site Elevation: 24.5 ft

2.19.1 ILS Type: Localizer for runway 05. Magnetic variation: 12E
2.19.2 ILS Identification: TUT
2.19.5 Coordinates: 14−19−38.7728S / 170−42−12.8837W
2.19.6 Site Elevation: 5.1 ft

General Remarks:
OLOTELE MT 1617 FT MSL 3.5 MILES WEST OF THLD RY 08.

ALL ACFT EXCDG 100000 GWT UPON TD TAXI TO THR TURN− ARND BFR TXG TO APRON. ACFT UNDER 100000 MAKE TURN−ARND WHERE FEASIBLE.

ALL ACFT TRANSITING PAGO PAGO (EXCP COMMERCIAL CARRIERS) MUST MAKE FUEL ARRANGEMENTS WITH PPG AT 684−733−3158.

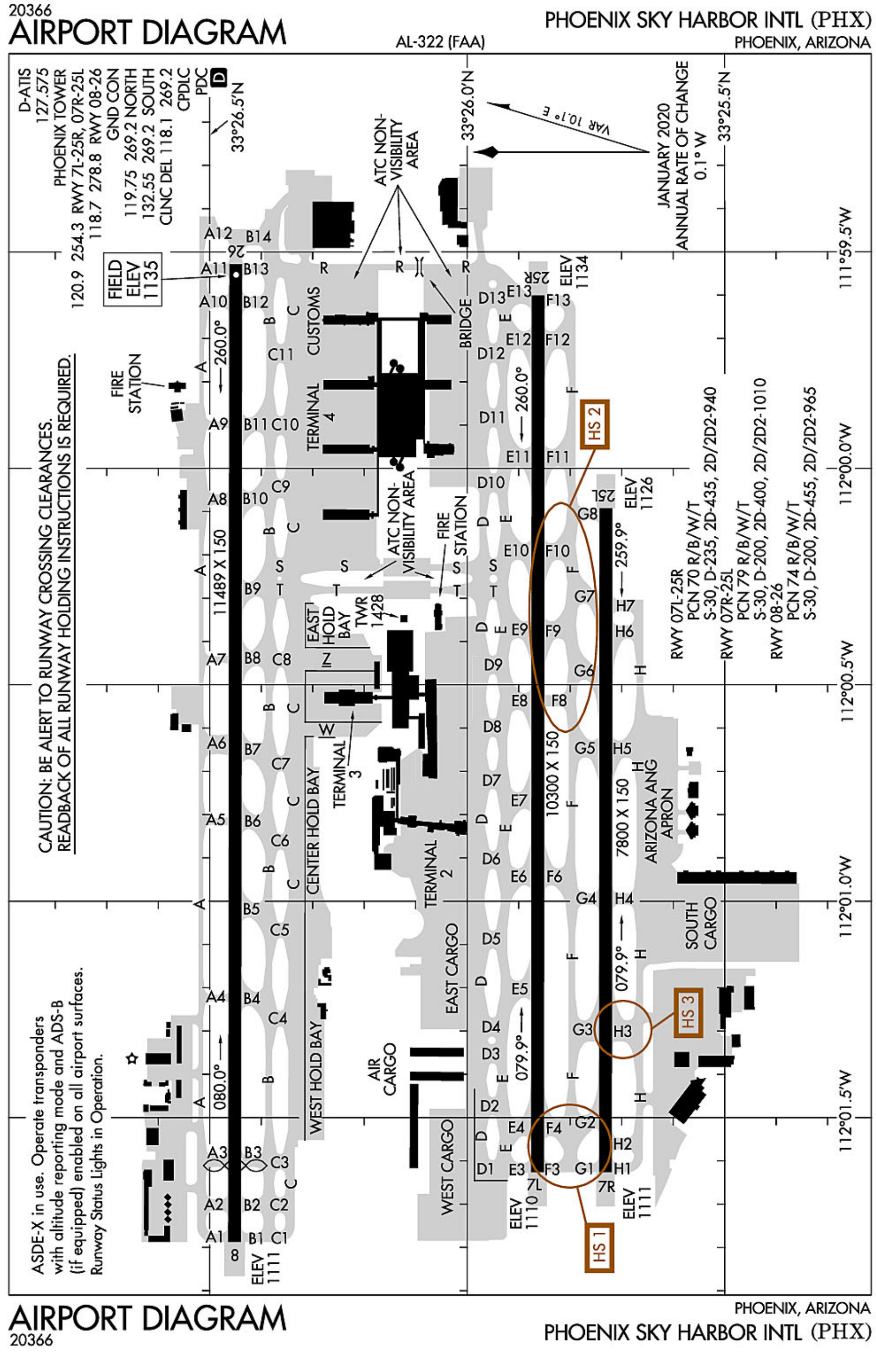
<ALL FLTS (EXCP SKED) PRIOR PMSN FROM AMGR WITH 24 HRS PRIOR NOTICE.

FOR NOTAM CONTACT NEW ZEALAND (643) 358−1688FSS: NEW ZEALAND

SEA SPRAY FM SURF & BLOW HOLES MAY DRIFT ACRS RWY 05/23 UNDER ROUGH SEA CONDS.

PERMLY LGTD & MKD 226’ TWR ATOP MT ALAVA 4.3SM NNE ARPT.

Phoenix, Arizona
Phoenix Sky Harbor International
ICAO Identifier KPHX



Phoenix, AZ
Phoenix Sky Harbor Intl
ICAO Identifier KPHX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 33−26−3.4N / 112−0−41.7W
2.2.2 From City: 3 miles E of PHOENIX, AZ
2.2.3 Elevation: 1134.8 ft
2.2.5 Magnetic Variation: 12E (2000)
2.2.6 Airport Contact: CHARLENE V. REYNOLDS
2485 E BUCKEYE RD
PHOENIX, AZ 85034
(602−273−3302)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 07L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33−25−51.8081N / 112−1−37.5659W
2.12.6 Threshold Elevation: 1110.2 ft
2.12.6 Touchdown Zone Elevation: 1116.5 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10300 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 33−25−51.7284N / 111−59−36.0429W
2.12.6 Threshold Elevation: 1134 ft
2.12.6 Touchdown Zone Elevation: 1134.1 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33−25−43.8354N / 112−0−5.5412W
2.12.6 Threshold Elevation: 1126.3 ft
2.12.6 Touchdown Zone Elevation: 1126.4 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7800 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 33−25−43.8923N / 112−1−37.5686W
2.12.6 Threshold Elevation: 1111 ft
2.12.6 Touchdown Zone Elevation: 1115.9 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33−26−26.9643N / 111−59−31.6884W
2.12.6 Threshold Elevation: 1134.7 ft
2.12.6 Touchdown Zone Elevation: 1134.8 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11489 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 33−26−27.0993N / 112−1−47.257W
2.12.6 Threshold Elevation: 1111.1 ft
2.12.6 Touchdown Zone Elevation: 1118 ft

AD 2.13 Declared Distances
2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 10300
2.13.3 Take−off 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 Take−off Run Available: 10300
2.13.3 Take−off Distance Available: 10300
2.13.4 Accelerate−Stop Distance Available: 10300
2.13.5 Landing Distance Available: 10300

2.13.1 Designation: 25L
2.13.2 Take−off Run Available: 7800
2.13.3 Take−off Distance Available: 7800
2.13.4 Accelerate−Stop Distance Available: 7800
2.13.5 Landing Distance Available: 7800

2.13.1 Designation: 07R
2.13.2 Take−off Run Available: 7800
2.13.3 Take−off Distance Available: 7800
2.13.4 Accelerate−Stop Distance Available: 7800
2.13.5 Landing Distance Available: 7800

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 11489
2.13.3 Take−off Distance Available: 11489
2.13.4 Accelerate−Stop Distance Available: 11489
2.13.5 Landing Distance Available: 11489

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 11489
2.13.3 Take−off Distance Available: 11489
2.13.4 Accelerate−Stop Distance Available: 11489
2.13.5 Landing Distance Available: 10591

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 127.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (NORTH)
2.18.3 Channel: 119.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (SOUTH)
2.18.3 Channel: 132.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26)
2.18.3 Channel: 118.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07L/25R, 07R/25L)
2.18.3 Channel: 120.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07L/25R, 07R/25L)
2.18.3 Channel: 254.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26)
2.18.3 Channel: 278.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33−25−54.0771N / 111−59−19.1054W
2.19.6 Site Elevation: 1143 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33−25−49.0529N / 112−1−25.2134W
2.19.6 Site Elevation: 1106.5 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: PHX
2.19.5 Coordinates: 33−25−51.7152N / 111−59−20.367W
2.19.6 Site Elevation: 1133.5 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33−25−41.1847N / 111−59−52.1833W
2.19.6 Site Elevation: 1135.8 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33−25−46.628N / 112−1−25.0931W
2.19.6 Site Elevation: 1107.4 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: AHA
2.19.5 Coordinates: 33−25−43.8252N / 111−59−52.2902W
2.19.6 Site Elevation: 1124.2 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33−25−41.1847N / 111−59−52.1833W
2.19.6 Site Elevation: 1117.1 ft

2.19.1 ILS Type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33−25−40.9318N / 112−0−16.8722W
2.19.6 Site Elevation: 1120.3 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: RJG
2.19.5 Coordinates: 33−25−43.8995N / 112−1−49.6368W
2.19.6 Site Elevation: 1103.2 ft

2.19.1 ILS Type: DME for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33−26−24.3207N / 111−59−19.7057W
2.19.6 Site Elevation: 1149.2 ft

2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33−26−29.6544N / 112−1−24.6276W
2.19.6 Site Elevation: 1111.7 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 12E
2.19.2 ILS Identification: SYQ
2.19.5 Coordinates: 33−26−26.9483N / 111−59−19.7443W
2.19.6 Site Elevation: 1134.1 ft

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 12E
2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−24.3207N / 111−59−19.7057W
2.19.6 Site Elevation: 1149.2 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 12E
2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−29.603N / 111−59−44.4331W
2.19.6 Site Elevation: 1129.1 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 12E
2.19.2 ILS Identification: CWJ
2.19.5 Coordinates: 33−26−27.1078N / 112−1−59.2267W
2.19.6 Site Elevation: 1105.1 ft

General Remarks:
TWYS A, A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, F BTN G2 AND G3, D BTN D8 AND T, D BTN S AND R, RESTRICTED TO A WINGSPAN OF LESS THAN 135 FT.

NO EXPERIMENTAL FLT OR GND DMSTRN ON ARPT WO PRIOR WRITTEN CONSENT FM THE AIRSIDE OPS.

NO ENG RUNS ON ARPT WO PRIOR COORDN WITH AIRSIDE OPS. NO ENG RUNS ON ARPT BETWEEN 2300L − 0500L.

RWY STATUS LGTS ARE IN OPN.

FOR GENERAL QUESTIONS CALL AIRPORT COMMUNICATIONS CENTER (602) 273−3302

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY R OVERHEAD TRAIN BRIDGE AT MIDPOINT PROVIDES 82FT−4 IN. CLEARANCE.

TWY H5, H6, H7, TWY H BTN TWY H4 AND TWY H7 CLSD TO ACFT WINGSPAN MORE THAN 171 FT.

TWY F BTW TWY INT G2 AND G3 CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT DUE TO FAA NAV EQUIPMENT.

NO TOUCH AND GO OR STOP AND GO OPNS ALLOWED WO PRIOR WRITTEN CONSENT FM THE AIRSIDE OPS.

REVIEW HOT SPOT INFO ON AIRPORT DIAGRAM. ADDITIONAL SAFETY VIDEO @ HTTP://SKYHARBOR.-COM/BUSINESS/FORPILOTS/SAFETYVIDEOFORPILOTS

FEE FOR ALL CHARTERS; TRAVEL CLUBS AND CERTAIN REVENUE PRODUCING ACFT.

AIRCRAFT DESIGN GROUP VI OPNS WITH PPR.

TWYS C BTN S AND R, D BTN D2 AND D7, D3, D6, H BTN H4 AND H7, H7 RESTRICTED TO WINGSPAN OF LESS THAN 171 FT.

TWY R AND PORTIONS OF TWYS S AND T DIRECTLY BELOW THE ATCT ARE NON VISIBLE AREAS FROM THE ATCT.

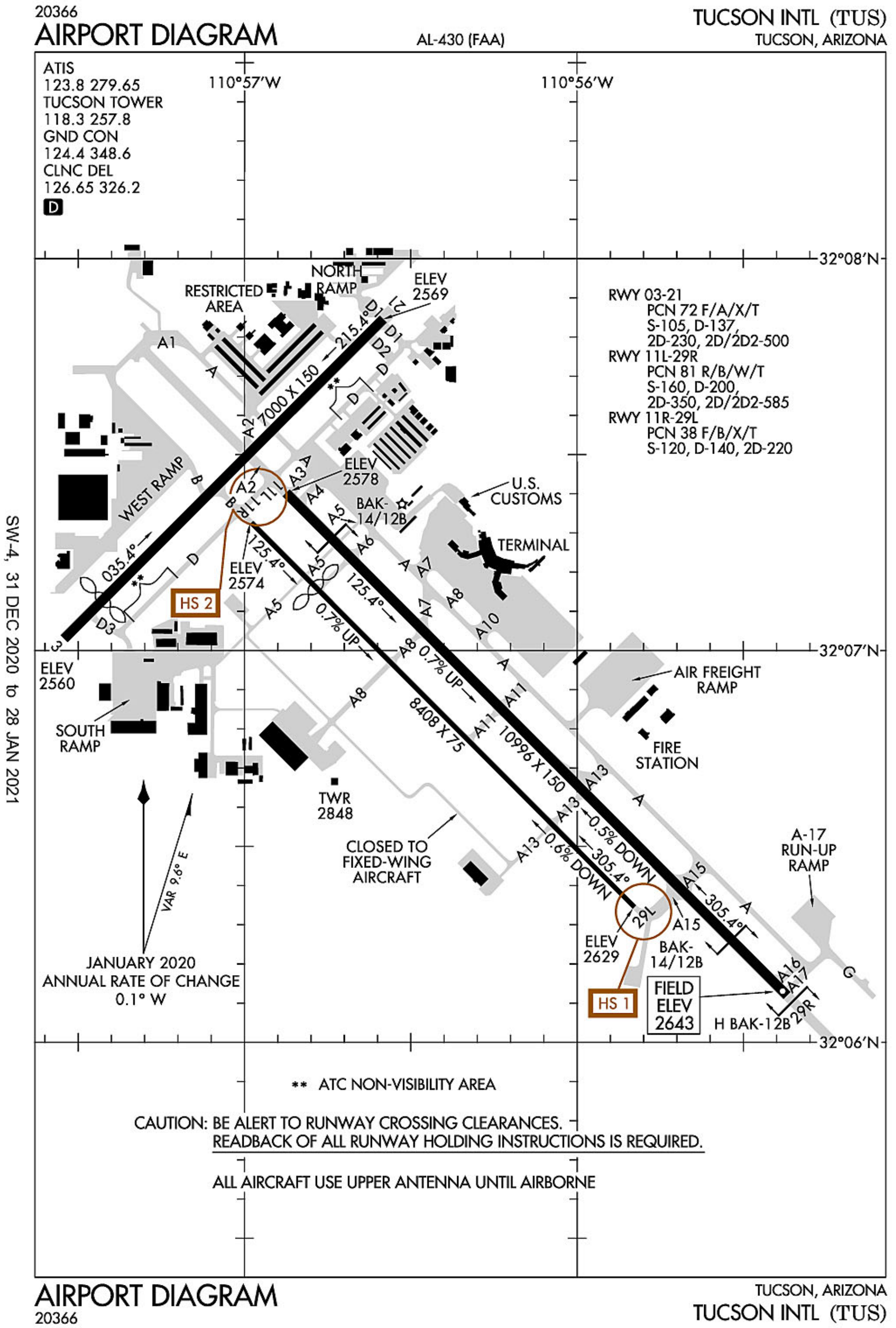
NATL GUARD HAS LMTD TSNT MAINTENANCE AND PARKING RON BY PPR (602)302−9119.

INTERNATIONAL GATE USE RQS COORDN WITH ARPT OPS 48 HOURS PRIOR TO ARRIVAL.

NOISE ABATEMENT PROCEDURES ARE IN AFFECT AT ALL TIMES.

INTERNATIONAL LANDING RIGHTS RQRS US CUSTOMS AND BORDER PROTECTION NOTIFICATION 48 HOURS PRIOR TO LANDING.

Tucson, Arizona
Tucson International
ICAO Identifier KTUS



Tucson, AZ
Tucson Intl
ICAO Identifier KTUS

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 32−6−57.849N / 110−56−27.65W
2.2.2 From City: 6 miles S of TUCSON, AZ
2.2.3 Elevation: 2643 ft
2.2.5 Magnetic Variation: 12E (1995)
2.2.6 Airport Contact: DANETTE BEWLEY
TUCSON APT AUTH 7250 S
TUCSON BLVD
TUCSON, AZ 85756
(520−573−8100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32−7−1.7975N / 110−57−32.5438W
2.12.6 Threshold Elevation: 2560.2 ft
2.12.6 Touchdown Zone Elevation: 2572.1 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7000 ft x 150 ft
2.12.4 PCN: 72 F/A/X/T
2.12.5 Coordinates: 32−7−50.7361N / 110−56−34.9535W
2.12.6 Threshold Elevation: 2568.8 ft
2.12.6 Touchdown Zone Elevation: 2572.4 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−7−24.1289N / 110−56−52.4852W
2.12.6 Threshold Elevation: 2577.7 ft
2.12.6 Touchdown Zone Elevation: 2598.5 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10996 ft x 150 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−6−7.1598N / 110−55−22.1441W
2.12.6 Threshold Elevation: 2643 ft
2.12.6 Touchdown Zone Elevation: 2643 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−7−19.5659N / 110−56−58.741W
2.12.6 Threshold Elevation: 2573.5 ft
2.12.6 Touchdown Zone Elevation: 2605 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 8408 ft x 75 ft
2.12.4 PCN: 38 F/B/X/T
2.12.5 Coordinates: 32−6−20.7186N / 110−55−49.6599W
2.12.6 Threshold Elevation: 2628.6 ft
2.12.6 Touchdown Zone Elevation: 2628.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 7000
2.13.3 Take−off 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 Take−off Run Available: 6000
2.13.3 Take−off 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 Take−off Run Available: 10996
2.13.3 Take−off 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 Take−off Run Available: 10996
2.13.3 Take−off Distance Available: 10996
2.13.4 Accelerate−Stop Distance Available: 10996
2.13.5 Landing Distance Available: 10996

2.13.1 Designation: 11R
2.13.2 Take−off Run Available: 6998
2.13.3 Take−off 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 Take−off Run Available: 6998
2.13.3 Take−off Distance Available: 6998
2.13.4 Accelerate−Stop Distance Available: 6998
2.13.5 Landing Distance Available: 6998

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG COMD POST
2.18.3 Channel: 138.525
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 123.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 279.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 126.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 326.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 124.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 119
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−5−54.9712N / 110−55−3.2284W
2.19.6 Site Elevation: 2676.1 ft

2.19.1 ILS Type: Glide Slope for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−7−14.7604N / 110−56−48.0571W
2.19.6 Site Elevation: 2580.1 ft

2.19.1 ILS Type: Localizer for runway 11L. Magnetic variation: 12E
2.19.2 ILS Identification: TUS
2.19.5 Coordinates: 32−5−53.5044N / 110−55−6.1189W
2.19.6 Site Elevation: 2659.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 12E
2.19.2 Navigation Aid Identification: TUS
2.19.5 Coordinates: 32−5−42.7296N / 110−54−53.4781W
2.19.6 Site Elevation: 2670.5 ft

General Remarks:
MILITARY: ANG RAMP RSTD TO ACFT WITH WINGSPAN LESS THAN 59 FT.

B747 ACFT TAXI WITH INBOARD ENGINES ONLY.

SERVICE−A−GEAR: BAK−14/BAK−12B APCH END RWY 11L AND BAK−14/BAK−12B APCH END RWY 29R, ENGAGEMENTS AVBL ONLY DUR ANG DUTY HR AND 15 MIN PN RQR. BAK−12B OVRN RWY 29R AND BAK−12B OVRN RWY 11L SERVICEABLE BUT NOT CERTIFIED. BAK−12B IN RWY 11L OVERRUN HAS 850 FT RUN OUT.

RWY 11L/29R HAS DSTC REMAINING MKS ON NE SIDE. RWY 03/21 HAS DSTC REMAINING MKRS ON SE SIDE.

CALL OPERATIONS OFFICE AT 520−573−8190.

ALL ACFT USE UPPER ANTENNA UNTIL AIRBORNE.

ACFT DEPG RWY 11R REQD TO ATTAIN AT LEAST 400 FT AGL PRIOR TO STARTING TURN. DO NOT MISTAKE TWY A FOR A LANDING SURFACE. TWY A IS NORTH AND PARALLEL TO RWY 11L. ENSURE CORRECT LINEUP. RWY 29L IS THE SHORTER RWY SOUTH OF RWY 29R.

MILTARY/COMM/BASE−OPS: UPON ARR CTC TITAN OR PUMA ON ANG BASE OPS/COMD POST FREQ.

HELICOPTER OPNS LCTD SOUTH OF RWY 11R/29L & WEST OF TWY A13.

RWY 11R/29L RESTRICTED TO TKOF/LAND ACFT WITH WING SPAN LESS THAN 73 FT & LNDG SPEED LESS THAN 120 KNOTS.

SERVICE−FUEL: A++(MIL)

PPR REQUIRED FOR ALL CHARTER, SPORTS TEAM, CARGO AND MILITARY AIRCRAFT. CONTACT AIRSIDE OPERATIONS FOR PPR NUMBER AT 520−573−8190. LANDING AND PARKING FEES MAY APPLY FOR ACFT 12500 LBS AND UP.

PORTIONS OF TWY D NOT VISIBLE FROM ATCT DUE TO HANGARS.

TWY A5 LMTD TO 70000 LBS OR LESS.

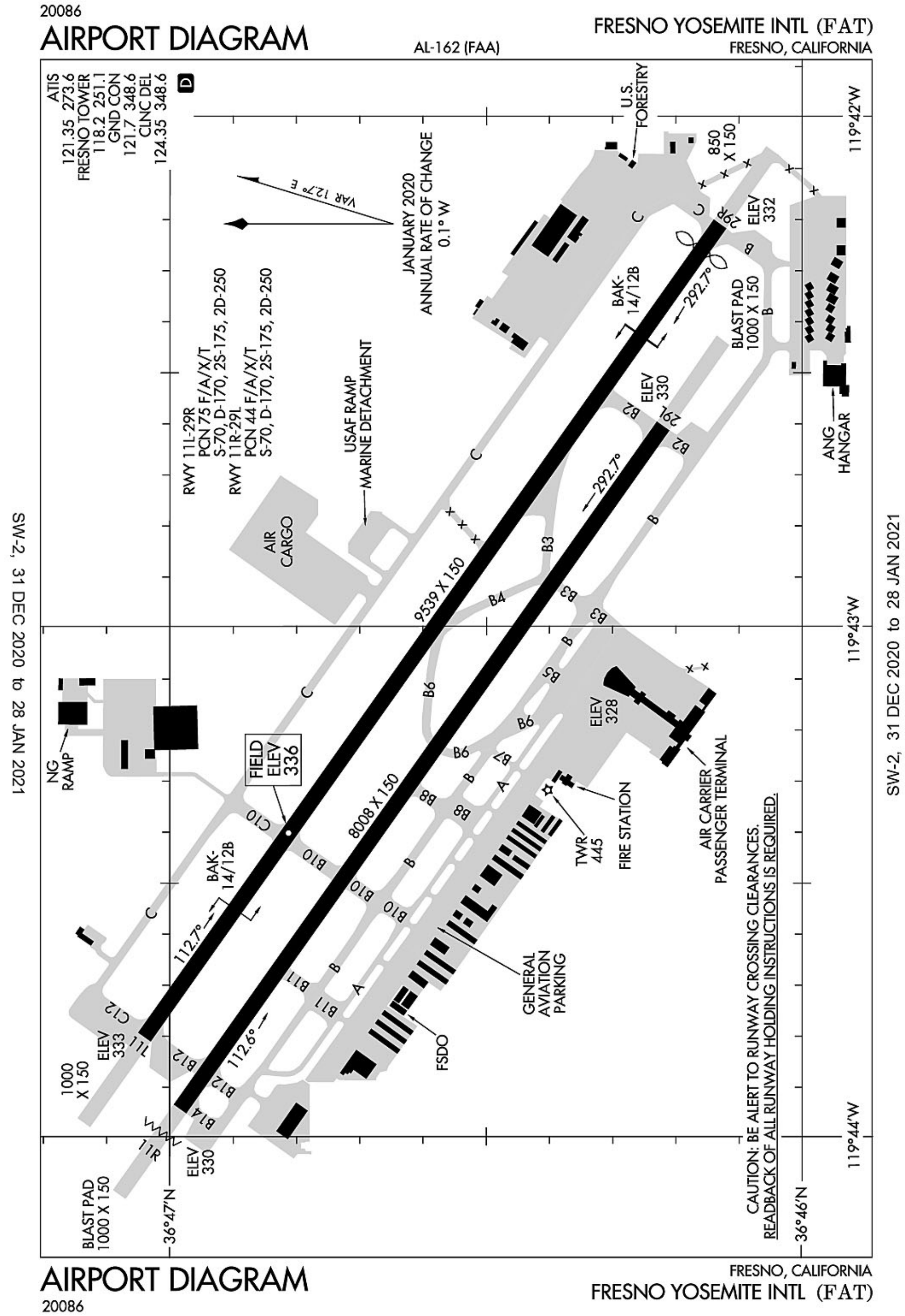
NO B−747 TRNG EXCP PPR; NO FLT TRNG 2200−0600 EXCP PPR; CALL AIRSIDE OPERATIONS DEPT 520−573−8190.

AIR CARRIERS USE RWY 11L/29R & RWY 03/21

NO PUBLIC SERVICES AVAILABLE AT THE TUS EXECUTIVE TERMINAL.

MILITARY: ANG − OFFL BUS ONLY. PPR DSN 844−6731, C520−295−6731, FAX EXTN 6732. 72 HR PRIOR NOTICE REQ FOR ALL PPR'S. BASE OPS OPR 1300−2200Z++ MON−FRI EXC HOL. NO TRAN ALERT MAINT AVBL. NO CONTRACT FUEL AVBL. TRAN ACFT EXP STR−IN FULL STOP ONLY.

Fresno, California
Fresno Yosemite International
ICAO Identifier KFAT



Fresno, CA
Fresno Yosemite Intl
ICAO Identifier KFAT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 36−46−35.6N / 119−43−7.8W
2.2.2 From City: 5 miles NE of FRESNO, CA
2.2.3 Elevation: 335.5 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: KEVIN R. MEIKLE
4995 E CLINTON WAY
FRESNO, CA 93727
(559−621−4500)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 11L
2.12.2 True Bearing: 125
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−47−2.406N / 119−43−48.3081W
2.12.6 Threshold Elevation: 333 ft
2.12.6 Touchdown Zone Elevation: 335.5 ft

2.12.1 Designation: 29R
2.12.2 True Bearing: 305
2.12.3 Dimensions: 9539 ft x 150 ft
2.12.4 PCN: 75 F/A/X/T
2.12.5 Coordinates: 36−46−7.8228N / 119−42−12.6898W
2.12.6 Threshold Elevation: 332 ft
2.12.6 Touchdown Zone Elevation: 332.6 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 305
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36−46−13.2042N / 119−42−36.4402W
2.12.6 Threshold Elevation: 329.9 ft
2.12.6 Touchdown Zone Elevation: 330.7 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 125
2.12.3 Dimensions: 8008 ft x 150 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 36−46−59.0217N / 119−43−56.7171W
2.12.6 Threshold Elevation: 330 ft
2.12.6 Touchdown Zone Elevation: 332.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 11L
2.13.2 Take−off Run Available: 9539
2.13.3 Take−off 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 Take−off Run Available: 9539
2.13.3 Take−off Distance Available: 9539
2.13.4 Accelerate−Stop Distance Available: 9539
2.13.5 Landing Distance Available: 9227

2.13.1 Designation: 29L
2.13.2 Take−off Run Available: 8008
2.13.3 Take−off Distance Available: 8008
2.13.4 Accelerate−Stop Distance Available: 8008
2.13.5 Landing Distance Available: 8008

2.13.1 Designation: 11R
2.13.2 Take−off Run Available: 8008
2.13.3 Take−off Distance Available: 8008
2.13.4 Accelerate−Stop Distance Available: 8008
2.13.5 Landing Distance Available: 8008

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 11L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L

2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 140
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 298.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P DEP/P (091−239)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (091−239)
2.18.3 Channel: 323.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (240−090)
2.18.3 Channel: 119.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (240−090)
2.18.3 Channel: 351.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S (S/SE VISALIA AREA)
2.18.3 Channel: 118.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S (S/SE VISALIA AREA)
2.18.3 Channel: 268.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 121.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 273.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (240−090)
2.18.3 Channel: 119.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (091−239)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (091−239)
2.18.3 Channel: 323.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (240−090)
2.18.3 Channel: 351.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 251.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 40.95
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 132
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 255.8
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 11L. Magnetic variation: 13E
2.19.2 ILS Identification: RPW
2.19.5 Coordinates: 36−47−10.81N / 119−43−56.63W
2.19.6 Site Elevation: 347.1 ft

2.19.1 ILS Type: Localizer for runway 11L. Magnetic variation: 13E
2.19.2 ILS Identification: RPW
2.19.5 Coordinates: 36−46−2.54N / 119−42−3.44W
2.19.6 Site Elevation: 331.3 ft

2.19.1 ILS Type: DME for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−47−10.81N / 119−43−56.63W
2.19.6 Site Elevation: 347.1 ft

2.19.1 ILS Type: Glide Slope for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−46−18.84N / 119−42−23.4799W
2.19.6 Site Elevation: 332 ft

2.19.1 ILS Type: Localizer for runway 29R. Magnetic variation: 13E
2.19.2 ILS Identification: FAT
2.19.5 Coordinates: 36−47−8.2801N / 119−43−58.6W
2.19.6 Site Elevation: 333.7 ft

General Remarks:
MILITARY: SVC: RWY 29R AND 11L A−GEAR CABLE AVBL UPON REQ ONLY; DEFAULT POSN DOWN.

MILITARY: ANG: CTC ANG OPS FOR LCL BIRD WATCH COND (BWC).

SERVICE− JET AIR START UNIT (JASU): (AM32A−60) 2(AGPU)

FRESNO YOSEMITE INTL IS NOISE SENSITIVE; NOISE ABATEMENT PROCEDURES IN EFFECT.

SERVICE − FUEL: ROSS AVIATION, C559−251−1555

RETRACTABLE BAK−12/14 AVBL ON RY 11L AND RY 29R ARE KEPT IN RECESSED POSITION UNTIL REQ FOR USE; TWR MUST BE NOTIFIED AT LEAST 5 SECONDS PRIOR TO ENGAGEMENT SO THAT THE AG CABLE MAY BE RAISED.

POSSIBLE WAKE TURBULENCE OR WIND SHEAR ARR TO RY 29L OR DEP FM RY 11R. JET TESTING CONDUCTED AT AIR NATIONAL GUARD RAMP LCTD AT SE CORNER OF ARPT.

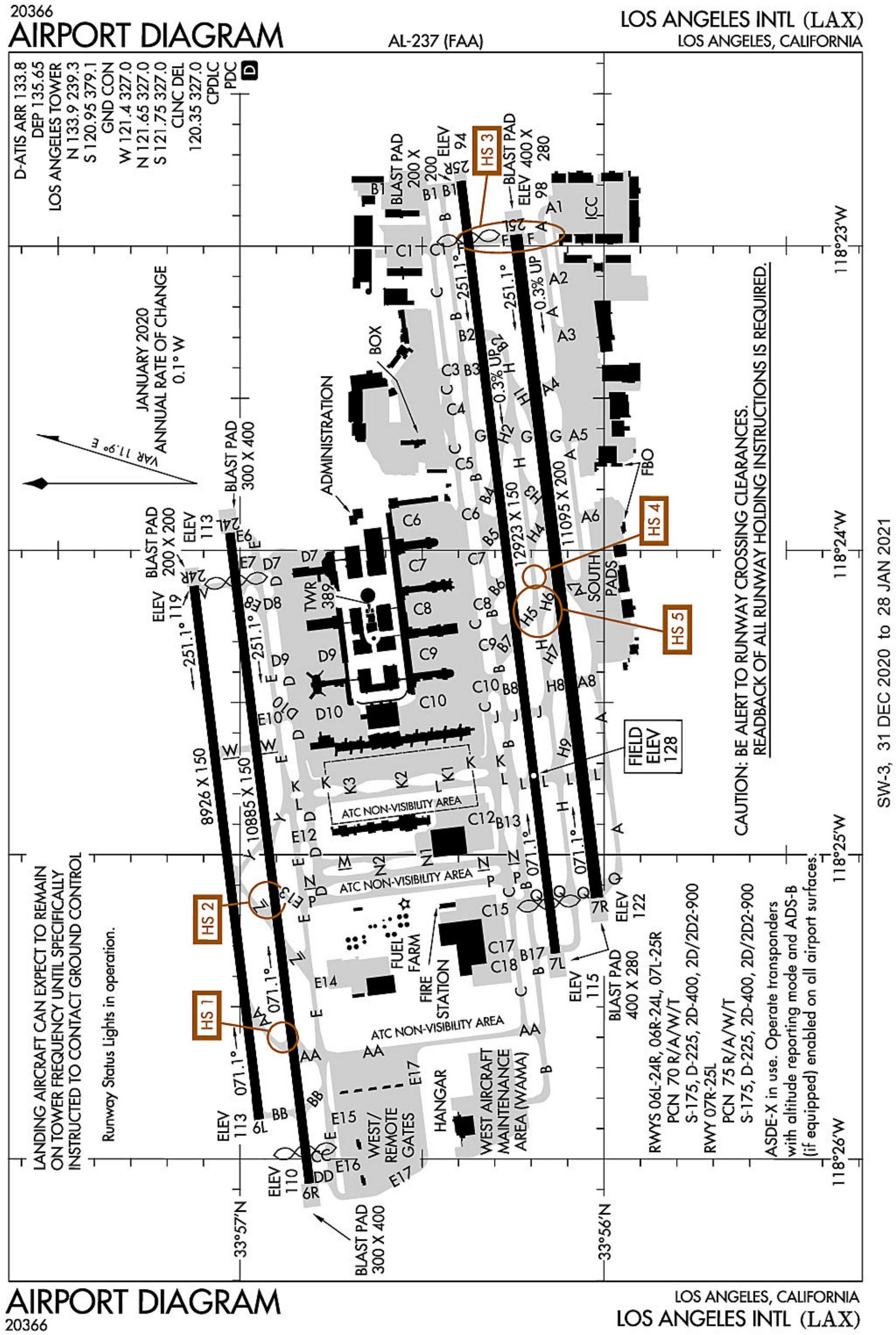
SERVICE−FUEL: SIGNATURE FLIGHT SUPPORT, C559−981−2490

NO MULT APCHS AND LNDGS MON−SAT 2200−0700 AND SUN 1800−1000.

LGTD RY DISTANCE REMAINING MARKERS ON SOUTH SIDE OF RY 11R/29L; LGTD RY DISTANCE REMAINING MARKERS BOTH SIDES OF RY 11L/29R− 11L DRM ON NORTH SIDE; 29R DRM ON SOUTH SIDE.

NUMEROUS BIRDS INVOF ARPT.

Los Angeles, California
Los Angeles International
ICAO Identifier KLAX



Los Angeles, CA
Los Angeles Intl
ICAO Identifier KLAX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 33−56−32.987N / 118−24−28.975W
2.2.2 From City: 9 miles SW of LOS ANGELES, CA
2.2.3 Elevation: 127.8 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: VIJI PRASAD
ONE WORLD WAY
LOS ANGELES, CA 90009
(424−646−8251)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−56.8049N / 118−25−52.1755W
2.12.6 Threshold Elevation: 113.1 ft
2.12.6 Touchdown Zone Elevation: 118.8 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 263
2.12.3 Dimensions: 8926 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−57−7.5741N / 118−24−7.0161W
2.12.6 Threshold Elevation: 118.9 ft
2.12.6 Touchdown Zone Elevation: 122.4 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−48.5368N / 118−26−4.8042W
2.12.6 Threshold Elevation: 109.9 ft
2.12.6 Touchdown Zone Elevation: 116.2 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 10885 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−57−1.6678N / 118−23−56.5656W
2.12.6 Threshold Elevation: 112.9 ft
2.12.6 Touchdown Zone Elevation: 122.5 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 263
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−23.5604N / 118−22−47.2005W
2.12.6 Threshold Elevation: 94.3 ft
2.12.6 Touchdown Zone Elevation: 103.8 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 83
2.12.3 Dimensions: 12923 ft x 150 ft
2.12.4 PCN: 70 R/A/W/T
2.12.5 Coordinates: 33−56−7.9864N / 118−25−19.4335W
2.12.6 Threshold Elevation: 114.8 ft
2.12.6 Touchdown Zone Elevation: 127.8 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 83
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−1.1378N / 118−25−8.466W
2.12.6 Threshold Elevation: 121.7 ft
2.12.6 Touchdown Zone Elevation: 127.6 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 263
2.12.3 Dimensions: 11095 ft x 200 ft
2.12.4 PCN: 75 R/A/W/T
2.12.5 Coordinates: 33−56−14.5069N / 118−22−57.7701W
2.12.6 Threshold Elevation: 97.8 ft
2.12.6 Touchdown Zone Elevation: 103.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: 8926
2.13.3 Take−off Distance Available: 8926
2.13.4 Accelerate−Stop Distance Available: 8566
2.13.5 Landing Distance Available: 8566

2.13.1 Designation: 24R
2.13.2 Take−off Run Available: 8926
2.13.3 Take−off Distance Available: 8926
2.13.4 Accelerate−Stop Distance Available: 8926
2.13.5 Landing Distance Available: 8926

2.13.1 Designation: 06R
2.13.2 Take−off Run Available: 10285
2.13.3 Take−off 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 Take−off Run Available: 10285
2.13.3 Take−off Distance Available: 10285
2.13.4 Accelerate−Stop Distance Available: 10285
2.13.5 Landing Distance Available: 9483

2.13.1 Designation: 25R
2.13.2 Take−off Run Available: 12091
2.13.3 Take−off Distance Available: 12091
2.13.4 Accelerate−Stop Distance Available: 12091
2.13.5 Landing Distance Available: 11134

2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 12091
2.13.3 Take−off Distance Available: 12091
2.13.4 Accelerate−Stop Distance Available: 12091
2.13.5 Landing Distance Available: 11259

2.13.1 Designation: 07R
2.13.2 Take−off Run Available: 11095
2.13.3 Take−off 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 Take−off Run Available: 11095
2.13.3 Take−off Distance Available: 11095
2.13.4 Accelerate−Stop Distance Available: 11095
2.13.5 Landing Distance Available: 11095

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 327
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 133.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 121.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (NORTH−CMPLX)
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (SOUTH CMPLX)
2.18.3 Channel: 121.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 327
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (HELICOPTERS)
2.18.3 Channel: 119.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (SOUTH CMPLX)
2.18.3 Channel: 120.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (NORTH CMPLX)
2.18.3 Channel: 133.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (NORTH CMPLX & HELI)
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (SOUTH CMPLX)
2.18.3 Channel: 379.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS (SAMSO FLT OPS)
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: RAMP CTL (TXL C10 0630L−2330L)
2.18.3 Channel: 129.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (TXL C7 0600L−2300L)
2.18.3 Channel: 129.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (TXL C6 0600L−2300L)
2.18.3 Channel: 129.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (TXL C9 0530L−2230L)
2.18.3 Channel: 130.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (TXL C8 0500L−2359L)
2.18.3 Channel: 130.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (TXL D9)
2.18.3 Channel: 131.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SFRA
2.18.3 Channel: 128.55
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33−56−50.7522N / 118−26−26.6221W
2.19.6 Site Elevation: 139.3 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33−56−54.5859N / 118−25−39.8249W
2.19.6 Site Elevation: 110.5 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic

variation: 12E
2.19.2 ILS Identification: UWU
2.19.5 Coordinates: 33−57−8.5767N / 118−23−57.1965W
2.19.6 Site Elevation: 108.5 ft

2.19.1 ILS Type: DME for runway 24R. Magnetic variation: 12E
2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33−56−50.7522N / 118−26−26.6221W
2.19.6 Site Elevation: 139.3 ft

2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 12E
2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33−57−2.4082N / 118−24−18.522W
2.19.6 Site Elevation: 116.7 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 12E
2.19.2 ILS Identification: OSS
2.19.5 Coordinates: 33−56−53.1648N / 118−26−27.6839W
2.19.6 Site Elevation: 125.5 ft

2.19.1 ILS Type: DME for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33−56−49.9191N / 118−26−22.7714W
2.19.6 Site Elevation: 134.3 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33−56−53.3646N / 118−25−47.3623W
2.19.6 Site Elevation: 108 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 12E
2.19.2 ILS Identification: GPE
2.19.5 Coordinates: 33−57−2.4125N / 118−23−49.2874W
2.19.6 Site Elevation: 106.3 ft

2.19.1 ILS Type: DME for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33−56−49.9191N / 118−26−22.7714W
2.19.6 Site Elevation: 134.3 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33−57−2.31N / 118−24−18.51W
2.19.6 Site Elevation: 116.7 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 12E
2.19.2 ILS Identification: HQB
2.19.5 Coordinates: 33−56−46.746N / 118−26−22.2482W
2.19.6 Site Elevation: 123.4 ft

2.19.1 ILS Type: DME for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33−56−4.8698N / 118−25−24.8206W
2.19.6 Site Elevation: 104.3 ft

2.19.1 ILS Type: Glide Slope for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33−56−7.743N / 118−24−56.7237W
2.19.6 Site Elevation: 119.8 ft

2.19.1 ILS Type: Localizer for runway 07L. Magnetic variation: 12E
2.19.2 ILS Identification: IAS
2.19.5 Coordinates: 33−56−24.7529N / 118−22−35.5432W
2.19.6 Site Elevation: 90 ft

2.19.1 ILS Type: DME for runway 25R. Magnetic variation: 12E
2.19.2 ILS Identification: CFN
2.19.5 Coordinates: 33−56−4.8698N / 118−25−24.8206W
2.19.6 Site Elevation: 104.3 ft

2.19.1 ILS Type: Glide Slope for runway 25R. Magnetic variation: 12E
2.19.2 ILS Identification: CFN
2.19.5 Coordinates: 33−56−17.8773N / 118−23−10.1796W
2.19.6 Site Elevation: 97.5 ft

2.19.1 ILS Type: Localizer for runway 25R. Magnetic

variation: 12E
2.19.2 ILS Identification: CFN
2.19.5 Coordinates: 33−56−7.2503N / 118−25−26.6262W
2.19.6 Site Elevation: 119.3 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−56−3.1899N / 118−25−20.7882W
2.19.6 Site Elevation: 126 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−55−59.9253N / 118−24−55.0492W
2.19.6 Site Elevation: 118.2 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 12E
2.19.2 ILS Identification: MKZ
2.19.5 Coordinates: 33−56−15.7853N / 118−22−45.2443W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−56−3.1899N / 118−25−20.7882W
2.19.6 Site Elevation: 126 ft

2.19.1 ILS Type: Glide Slope for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−56−17.7739N / 118−23−10.2139W
2.19.6 Site Elevation: 97.3 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 12E
2.19.2 ILS Identification: LAX
2.19.5 Coordinates: 33−55−59.8649N / 118−25−20.8676W
2.19.6 Site Elevation: 118.4 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E
2.19.2 Navigation Aid Identification: LAX
2.19.5 Coordinates: 33−55−59.3368N / 118−25−55.246W
2.19.6 Site Elevation: 185 ft

General Remarks:
TWY D BTN TWY D7 AND D8 (N OF TRML ONE) CLSD TO ACFT WITH WINGSPAN GTR THAN 157 FT.

SIMUL ACFT OPNS PROHIBITED ON TWYS L AND H9 BTWN RWYS 07L/25R AND 07R/25L.

MILITARY AF: ALL MIL AIRCREWS MUST CTC 61 ABW/CP FLT OPS FOR PRK LCTN/INSTR. NO GOVT TRANSPORTATION, QTRS OR SECURITY AVBL. VIP NOTIFICATION PRO APPLY. USER FEES ASSESSED USING AVCARD CREDIT. CTC ATLANTIC AVIATION FBO 131.6 INBD. INBD RELAY ETA, VIP CODE, SVC RQ 30 MIN PRIOR TO ARR.

SBND TURN NOT AVBL FROM WEST REMOTE GATE 408 AND WEST REMOTE GATE 409

RWY STATUS LGTS IN OPN.

RWY 7R/25L PREFERRED EMERG RWY.

AMERICAN EAGLE TRML SOUTHBOUND TAXING ACFT USE MNM PWR DUE TO BLAST HAZ.

ANY ACFT THAT COMES TO A STOP OR HAS ITS MOMENTUM INTRPD WHILE TURNING AND TAXING INTO ITS PRKG PSN, MUST STOP AND BE TOWED.

TURB MAY BE DEFLECTED UPWARD FM THE BLAST FENCE 180 FT E OF RWY 25R.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PRACTICE INSTRUMENT APPROACHES & TOUCH AND GO LANDINGS ARE PROHIBITED.

NMRS BIRDS ON AND IN VCNTY OF ARPT.

WEST REMOTE GATES: ACFT USE OF OPEN GATES AS TAXI PATH IS PROHIBITED (GATES 406, 407, 408, 409).

NOISE SENS ARPT ON WESTERLY TAKEOFFS NO TURNS BEFORE CROSSING SHORELINE OVER−OCEAN APCHS UTILIZED 0000−0630.

ACFT USE MINIMAL PWR WHEN TXG VCNTY TRMLS DUE BLAST HAZ.

MILITARY RSTD: ALL MIL ACFT OFFL BUS ONLY, MIN 24 HR PPR, CTC 61 ABW/CP FLT OPS DSN 633−3779/4014,C310−653−3779/4014.

ACFT WITH LEN GTR THAN 240 FT ARE PROHIBITED ON TXLS C7, C8 AND C9 BTN TXL C AND TWY B.

ACFT WITH WINGSPAN GTR THAN 198 FT OBND FM TXL D8 MAY NOT TURN WBND ONTO TXL D.

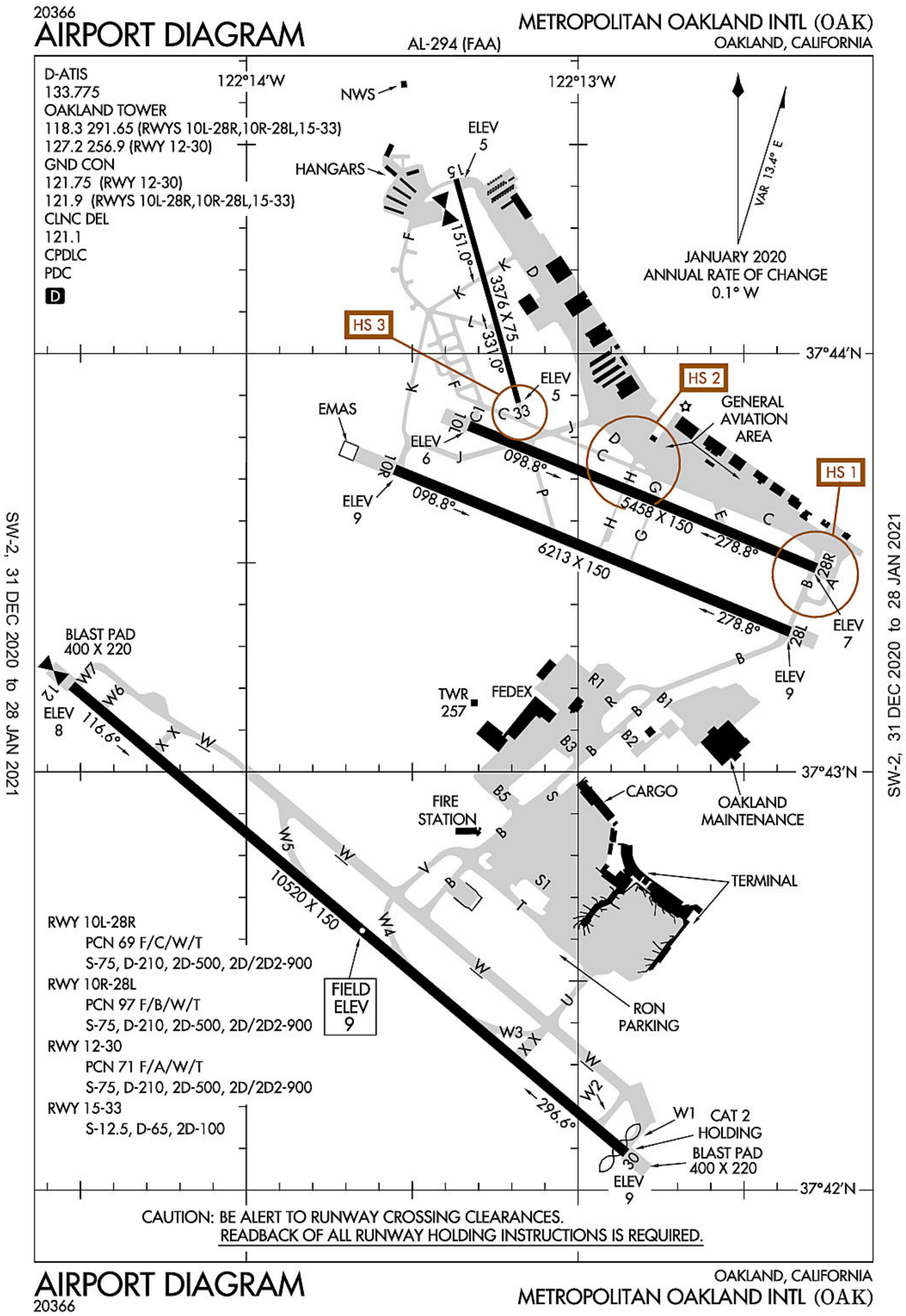
ACFT WITH WINGSPAN GTR THAN 155 FT WB ON TXL C ARE NOT AUTHD TO MAKE LEFT TURN ON TWY C10 UNDER PWR.

FOR ACFT WITH WINGSPAN GTR THAN 214 FT CTC LAX AIRSIDE OPS (424)−646−5292 FOR ARPT RESTRICTIONS.

MAJOR CONSTRUCTION ON AIRPORT, DAILY.

SIMUL ACFT OPNS PROHIBITED ON TWY H2 AND G BTN RWYS 07L/25R AND 07R/25L.

Oakland, California
Metropolitan Oakland International
ICAO Identifier KOAK



Oakland, CA
Metropolitan Oakland Intl
ICAO Identifier KOAK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−43−16.5N / 122−13−16.1W
2.2.2 From City: 4 miles S of OAKLAND, CA
2.2.3 Elevation: 9 ft
2.2.5 Magnetic Variation: 14E (2015)
2.2.6 Airport Contact: MATT DAVIS
METROPOLITAN OAKLAND
INTL ARPT
OAKLAND, CA 94621
(510−563−6436)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28R
2.12.2 True Bearing: 292
2.12.3 Dimensions: 5458 ft x 150 ft
2.12.4 PCN: 69 F/C/W/T
2.12.5 Coordinates: 37−43−29.3247N / 122−12−16.9329W
2.12.6 Threshold Elevation: 5.8 ft
2.12.6 Touchdown Zone Elevation: 6.8 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 112
2.12.3 Dimensions: 5458 ft x 150 ft
2.12.4 PCN: 69 F/C/W/T
2.12.5 Coordinates: 37−43−49.6865N / 122−13−19.8481W
2.12.6 Threshold Elevation: 5.5 ft
2.12.6 Touchdown Zone Elevation: 6.3 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 292
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 97 F/B/W/T
2.12.5 Coordinates: 37−43−20.178N / 122−12−21.6341W
2.12.6 Threshold Elevation: 8.2 ft
2.12.6 Touchdown Zone Elevation: 8.7 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 112
2.12.3 Dimensions: 6213 ft x 150 ft
2.12.4 PCN: 97 F/B/W/T
2.12.5 Coordinates: 37−43−43.345N / 122−13−33.2509W
2.12.6 Threshold Elevation: 8.1 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: 71 F/A/W/T
2.12.5 Coordinates: 37−42−5.3735N / 122−12−51.3251W
2.12.6 Threshold Elevation: 9 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 130
2.12.3 Dimensions: 10520 ft x 150 ft
2.12.4 PCN: 71 F/A/W/T
2.12.5 Coordinates: 37−43−12.2256N / 122−14−31.6133W
2.12.6 Threshold Elevation: 8.3 ft
2.12.6 Touchdown Zone Elevation: 8.6 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 164
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 37−44−25.0497N / 122−13−22.1076W
2.12.6 Threshold Elevation: 1.5 ft
2.12.6 Touchdown Zone Elevation: 4.6 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 344
2.12.3 Dimensions: 3376 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 37−43−52.9005N / 122−13−10.826W
2.12.6 Threshold Elevation: 3.9 ft
2.12.6 Touchdown Zone Elevation: 4.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 5458
2.13.3 Take−off Distance Available: 5458
2.13.4 Accelerate−Stop Distance Available: 5458
2.13.5 Landing Distance Available: 5458

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 5458
2.13.3 Take−off Distance Available: 5458
2.13.4 Accelerate−Stop Distance Available: 5336
2.13.5 Landing Distance Available: 5336

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 6213
2.13.3 Take−off Distance Available: 6213
2.13.4 Accelerate−Stop Distance Available: 6213
2.13.5 Landing Distance Available: 6213

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 6213
2.13.3 Take−off Distance Available: 6213
2.13.4 Accelerate−Stop Distance Available: 6213
2.13.5 Landing Distance Available: 6213

2.13.1 Designation: 30
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 12
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 15
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 33
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 133.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (RWY 12/30)
2.18.3 Channel: 121.75

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 10L/28R, 10R/28L, 15/33)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 10L/28R, 10R/28L, 15/33)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12/30)
2.18.3 Channel: 127.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12/30)
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 10L/28R, 10R/28L, 15/33)
2.18.3 Channel: 291.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 124.9
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: OAK
2.19.5 Coordinates: 37−43−28.5955N / 122−12−30.6206W
2.19.6 Site Elevation: 3.3 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: OAK
2.19.5 Coordinates: 37−43−54.55N / 122−13−34.86W
2.19.6 Site Elevation: 5.2 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 14E
2.19.2 ILS Identification: AAZ
2.19.5 Coordinates: 37−43−2.9276N / 122−14−22.8383W
2.19.6 Site Elevation: 3.3 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 14E
2.19.2 ILS Identification: AAZ
2.19.5 Coordinates: 37−42−2.2539N / 122−12−46.6503W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: DME for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−43−29.85N / 122−14−58.1W
2.19.6 Site Elevation: 18 ft

2.19.1 ILS Type: Glide Slope for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−42−9.7514N / 122−13−5.6277W
2.19.6 Site Elevation: 4.3 ft

2.19.1 ILS Type: Localizer for runway 30. Magnetic variation: 14E
2.19.2 ILS Identification: INB
2.19.5 Coordinates: 37−43−29.8732N / 122−14−58.1043W
2.19.6 Site Elevation: 9.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 17E
2.19.2 Navigation Aid Identification: OAK
2.19.5 Coordinates: 37−43−33.3223N / 122−13−24.9086W
2.19.6 Site Elevation: 13.4 ft

General Remarks:
100 FT LGTD MICROWAVE ANT TWR LCTD 1320 FT WSW OF OAK VORTAC; S OF UPWIND END OF RWY 28L.

TWY A, E, G, H BTN RWY 28R AND TWY C MAX ACFT WT 150,000 LBS.

PREFERENTIAL RWY USE PROGRAM IN EFFECT 2200−0600. NORTH FLD PREF ARR RWY 28L, NORTH FLD PREF DEP RWYS 10R OR 28R. IF THESE RWYS UNACCEPTABLE FOR SAFETY OR ATC INSTRN THEN RWY 12/30 MUST BE USED.

TWY C BTN TWY G & J MAX ACFT WEIGHT 90,000 LBS SINGLE; 144,000 LBS DUAL; 257,000 LBS TANDEM.

400 FT BY 220 FT BLAST PAD RWY 12 AND RWY 30.

TWY P MAX ACFT WT 116,000 LBS SINGLE; 190,000 LBS DUAL; 305,000 LBS DUAL TANDEM; 735,000 LBS DOUBLE DUAL TANDEM.

NOISE ABATEMENT PROCS N/A IN EMERGS OR WHENEVER RWY 12/30 IS CLSD DUE TO MAINT, SAFETY, WINDS OR WX.

RWY 15/33 CLSD TO ACR ACFT.

FOR NOISE ABATEMENT INFO CTC NOISE ABATEMENT OFC AT (510) 563−6463.

TWY C BTN RWY 28R & TWY G AND TWYS B, J, AND D MAX ACFT WT 861,000 LBS.

TWY K BTN TWY J AND INT TWYS F, L, K MAX ACFT WT 33000 LBS SINGLE; 45000 LBS DUAL; TANDEM NA.

24 HR NOISE ABATEMENT PROCEDURE − TBJT AND TURBOFAN PWRD ACFT, TURBOROPS OVER 17,000 LBS, FOUR−ENGINE RECIPROCATING PWRD ACFT, AND SURPLUS MIL ACFT OVER 12,500 POUNDS SHOULD NOT DEP RWYS 28L & 28R OR LAND ON RWYS 10R & 10L.

TWY C BTN TWY J & F MAX ACFT WEIGHT 76,000 LBS SINGLE; 115,000 LBS DUAL; 257,000 LBS TANDEM (DUAL TANDEM NA).

RWYS 30, 28R AND RWY 28L DIST RMNG SIGNS L SIDE.

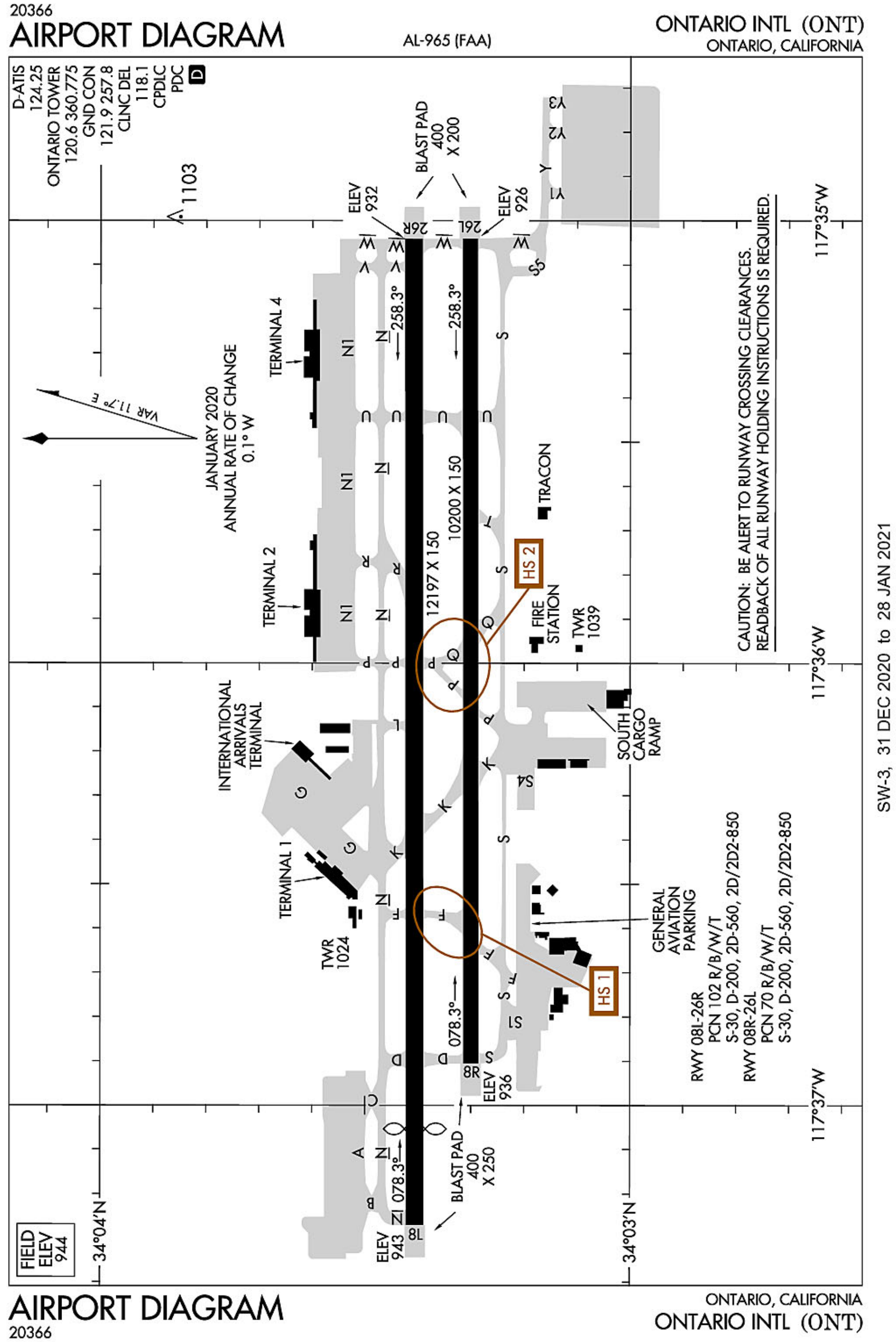
ACFT WITH EXPERIMENTAL OR LTD CERTIF HAVING OVER 1000 HORSEPOWER OR 4000 LBS ARE RSTRD TO RWY 12/30.

BIRDS ON & INVOF ARPT.

TWY G & H BTN RWY 28L & 28R: MAX ACFT WT 12,500 LBS.

TWY K BTN TWY D & INT TWYS F, L, K MAX ACFT WEIGHT 56,000 LBS SINGLE; 70,000 LBS DUAL; 130,000 LBS TANDEM.

Ontario, California
Ontario International
ICAO Identifier KONT



Ontario, CA
Ontario Intl
ICAO Identifier KONT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 34−3−21.651N / 117−36−4.275W
2.2.2 From City: 2 miles E of ONTARIO, CA
2.2.3 Elevation: 944.1 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: MARK THORPE
1923 EAST AVION STREET
ONTARIO, CA 91761
(909−544−5300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34−3−24.7651N / 117−37−22.1586W
2.12.6 Threshold Elevation: 943.2 ft
2.12.6 Touchdown Zone Elevation: 944.1 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12197 ft x 150 ft
2.12.4 PCN: 102 R/B/W/T
2.12.5 Coordinates: 34−3−24.8259N / 117−34−57.2057W
2.12.6 Threshold Elevation: 931.8 ft
2.12.6 Touchdown Zone Elevation: 931.8 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34−3−17.8579N / 117−36−58.4219W
2.12.6 Threshold Elevation: 936 ft
2.12.6 Touchdown Zone Elevation: 936 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10200 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 34−3−17.9013N / 117−34−57.1985W
2.12.6 Threshold Elevation: 926.2 ft
2.12.6 Touchdown Zone Elevation: 926.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 12197
2.13.3 Take−off 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 Take−off Run Available: 12197
2.13.3 Take−off 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 Take−off Run Available: 10200
2.13.3 Take−off 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 Take−off Run Available: 10200
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 124.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 360.775
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 12E
2.19.2 ILS Identification: AOD
2.19.5 Coordinates: 34−3−21.2425N / 117−36−59.9428W
2.19.6 Site Elevation: 935.9 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 12E
2.19.2 ILS Identification: AOD
2.19.5 Coordinates: 34−3−24.8274N / 117−34−45.0837W
2.19.6 Site Elevation: 929.1 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34−3−22.0428N / 117−37−33.7049W
2.19.6 Site Elevation: 955 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34−3−22.0256N / 117−35−11.0293W
2.19.6 Site Elevation: 925.2 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 12E
2.19.2 ILS Identification: ONT
2.19.5 Coordinates: 34−3−24.7616N / 117−37−34.6764W
2.19.6 Site Elevation: 946.2 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34−3−20.4777N / 117−37−8.8646W
2.19.6 Site Elevation: 947.7 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34−3−21.9048N / 117−35−11.0216W
2.19.6 Site Elevation: 925.2 ft

2.19.1 ILS Type: Inner Marker for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34−3−17.924N / 117−34−47.8618W
2.19.6 Site Elevation: 923.6 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 12E
2.19.2 ILS Identification: TWO
2.19.5 Coordinates: 34−3−17.8524N / 117−37−10.2711W
2.19.6 Site Elevation: 931.1 ft

General Remarks:
ALL MILITARY AND GENERAL AVIATION (FIXED OR ROTOR WING) ACFT OPS ARE RESTRICTED TO FBO FACILITIES WITH ADVANCE COORDINATION; OVERNIGHT TIEDOWN AND PARKING FEE.

PILOTS SHOULD USE JUDGEMENTAL OVERSTEER ON TWY S−4.

ACFT PRKG AND CONTR GND SVCS ARE LTD FOR UNSKED OPS. FOR SKED INFO CALL AIRFIELD OPS (909) 214−7682/7683.

EASTBOUND B747, B777, A330, A340 OR LARGER ACFT ON TWY S PROHIBITED FROM NORTHBOUND TURNS ONTO TWY K.

TWY S−4 RSTD TO ACFT WITH WINGSPAN 117 FT OR SMALLER.

FBO ON FREQ 130.75.

B747, B777, A330, A340 OR LARGER ACFT ON TWY S PROHIBITED FROM NORTHBOUND TURNS ONTO TWY P.

NOISE ABATEMENT PROCEDURES IN EFFECT; FULL−LENGTH TURBOJET DEP ENCOURAGED, NIGHTLY PREFERENTIAL RWY USAGE, 2200−0700.

TWY Y EAST OF TWY W IS A NON−MOVEMENT AREA; ALL ACFT CTC RAMP CTL 131.325 FOR ACCESS.

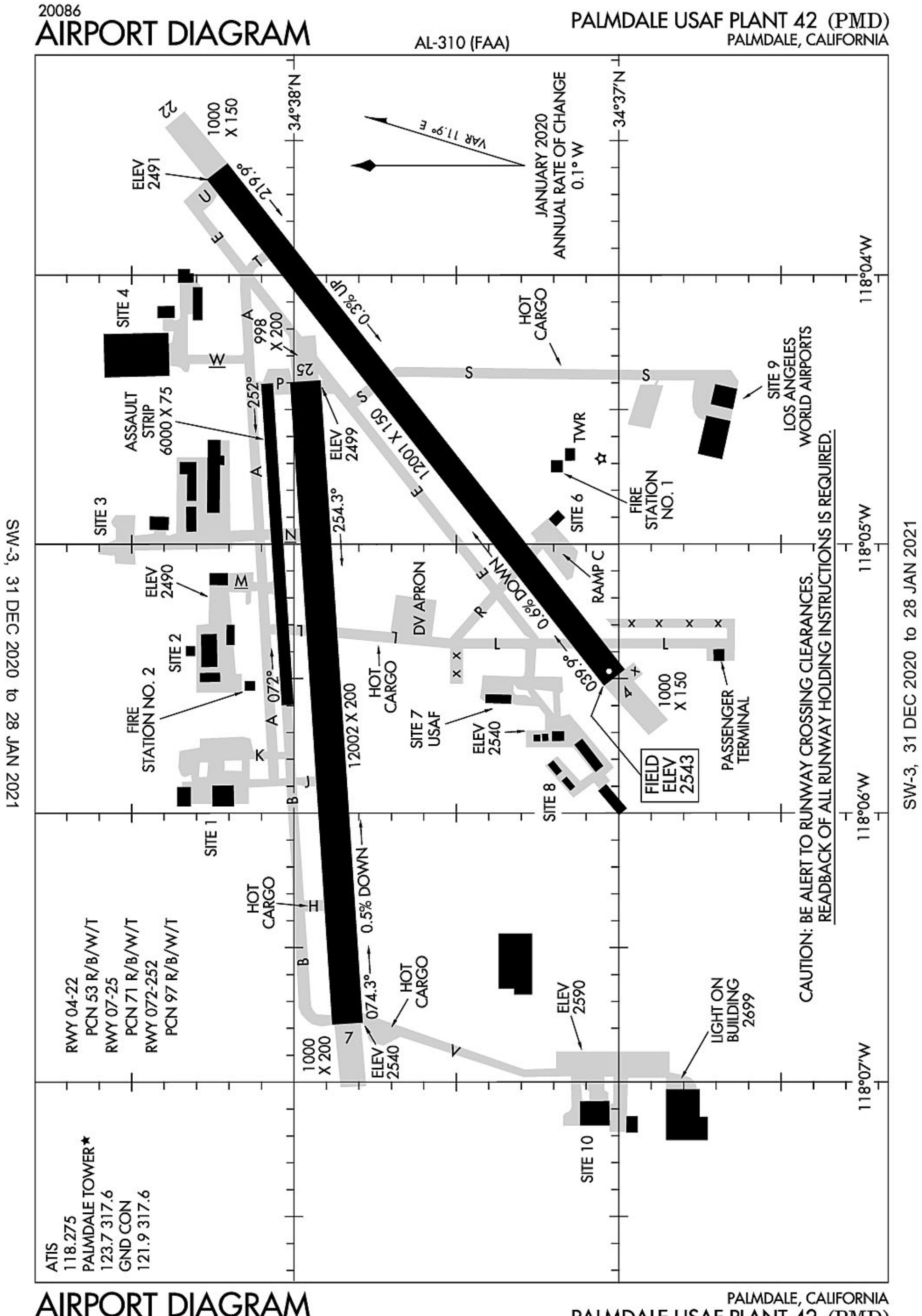
PTNS OF TWY S IN THE VCY OF TWY F ARE NOT VSB FM ATCT; PILOTS USE CTN ENTERING TWY F SOUTH OF TWY S.

WILDLIFE HAZARD MGT PLAN IN EFFECT; POTENTIAL BIRD HAZARDS MAY EXIST ON AND INVOF ARPT; BE ALERT TO LARGE NUMBERS OF STARLINGS AND CROWS POSSIBLE ON APCH TO RY 26L AND RY 26R, HAWKS, EAGLES, FALCONS AND OWLS SPOTTED ON OCCASION.

ACFT ACCESS TO TWY R FROM RWY 26R PROHIBITED

TWY F SOUTH OF TWY S RSTRD TO ACFT WITH 117 FT WINGSPAN AND SMALLER. TWY F SOUTH OF RWY 26L RSTRD TO ACFT WITH 180 FT WINGSPAN.

Palmdale, California
Palmdale Regional/USAF Plant 42
ICAO Identifier KPMD



Palmdale, CA
Palmdale Rgnl/USAF Plant 42
ICAO Identifier KPMD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 34−37−45.8N / 118−5−4.39W
2.2.2 From City: 3 miles NE of PALMDALE, CA
2.2.3 Elevation: 2542.5 ft
2.2.5 Magnetic Variation: 12E (2020)
2.2.6 Airport Contact: KEN NEITZEL
2503 E AVE P
PALMDALE, CA 93550
(661−272−6715)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 1330−0600Z++ Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types:
2.4.5 Hangar Space:
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04
2.12.2 True Bearing: 52
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−37−0.842N / 118−5−29.802W
2.12.6 Threshold Elevation: 2542.5 ft
2.12.6 Touchdown Zone Elevation: 2542.5 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 232
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 53 R/B/W/T
2.12.5 Coordinates: 34−38−14.236N / 118−3−36.966W
2.12.6 Threshold Elevation: 2491.1 ft
2.12.6 Touchdown Zone Elevation: 2497.9 ft

2.12.1 Designation: 25
2.12.2 True Bearing: 266
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−57.991N / 118−4−23.743W
2.12.6 Threshold Elevation: 2498.7 ft
2.12.6 Touchdown Zone Elevation: 2503.4 ft

2.12.1 Designation: 07
2.12.2 True Bearing: 86
2.12.3 Dimensions: 12002 ft x 200 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 34−37−50.106N / 118−6−47.029W
2.12.6 Threshold Elevation: 2540.2 ft
2.12.6 Touchdown Zone Elevation: 2540.2 ft

2.12.1 Designation: 252
2.12.2 True Bearing:
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 072
2.12.2 True Bearing:
2.12.3 Dimensions: 6000 ft x 75 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 22
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 25
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 07
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 252
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 072
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 252
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 072
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 118.275
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: OPR 1330−0600Z++.

2.18.1 Service Designation: GND/P
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: OPR 1330−0600Z++.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 123.7
2.18.5 Hours of Operation: OPR 1330−0600Z++.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: OPR 1330−0600Z++.

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 236.6
2.18.5 Hours of Operation: OPR 1330−0600Z++.

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 25. Magnetic variation: 12E
2.19.2 ILS Identification: PMD
2.19.5 Coordinates: 34−38−1.256N / 118−4−40.078W
2.19.6 Site Elevation: 2491.8 ft

2.19.1 ILS Type: Localizer for runway 25. Magnetic variation: 12E
2.19.2 ILS Identification: PMD
2.19.5 Coordinates: 34−37−48.786N / 118−7−10.911W
2.19.6 Site Elevation: 2552.2 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E
2.19.2 Navigation Aid Identification: PMD
2.19.5 Coordinates: 34−37−53.0341N / 118−3−49.7607W
2.19.6 Site Elevation: 2498 ft

General Remarks:
PRKG RAMP LCTD S OF RWY 22 & TWY V NOT VSB FM ATCT.

MISC: COMSEC STORAGE UNAVBL.

MISC: WINDS ARE EST DUE TO FMQ−13 WIND SENSORS BEING ACCURATE TO WITHIN ONLY +/− 2 KT. ATC/WX WILL NOT INCL/RELAY WIND CORR INTO FCST/PHRASEOLOGY. THEREFORE, AIRCREWS WILL INCORPORATE A +/− 2 KT ACCURACY INTO THEIR DECISION MAKING PROCESS FOR FLYING OPR.

CAUTION: RWY 25 NSTD MRK: SPOT LDG ZONE MRK LCTD AT 6000 FT REMAINING MRK. RWY 07−25 DECEPTIVE SFC MRK EXCEED STANDARD BY APPROX 50 FT.

ALL DEPT ACFT MUST FILE FPL WITH P42 AFLD MGMT OPS.

MISC: BASE OPS OPR 1330−0600Z++, CLSD FEDERAL HOL.

CAUTION: USE EXTREME CAUTION FOR UNMANNED AERIAL SYSTEMS (UAS) OPS IN VCNTY.

MILITARY USE: ASSAULT LDG ZONE LCTD 1ST 6,000 EAST END OF TWY B. RWY 252 MRK ONLY FOR C−130 ASSAULT OPR; ONE−WAY LDG ONLY.

RSTD − OFFL BUS ONLY. MIL ARPT. CIVIL USE RQR USAF APVL AND DD FORM 2400/01/02. PPR RQR FOR FULL STOP LDG ONLY. CALL C661−272−6619/6614.

RSTD: OVERNIGHT PRK UNAUTHD ON C−RAMP.

TRAN ALERT (2 OF 2): UNABLE TO SVC ACFT WITH ORDNANCE. LTD GRD SUPPORT EQUIPMENT AVBL. NO POTABLE WATER SVC. NO TRAN MAINT AVBL. GND SVC UNAVBL WHEN LIGHTNING WITHIN 5 NM.

CAUTION: CONTRACTOR LEASED SITES ARE INTENDED FOR ACFT BASED THEREIN; ENTRY GATES AND APRONS MAY NOT MEET AF OBST STDS.

BIRD HAZ POTENTIAL EXISTS. MIGRATORY SEASON PHASE II 1 OCT − 31 MAR. DURG BWC MODERATE, TKOF AND LNDG PERMITTED. DURG BWC SEVERE, TKOF AND LNDG PROHIBITED.

FUEL: A++ AVBL. NO TRANS ACFT FUEL SVC AVBL. LTD FUELING AVBL; GOVT ACFT ONLY 1600−2300Z++ MON−FRI. 24 HR PN WITH AFLD MGR RQR; NO SAME DAY REQ; GAS AND GO UNAVBL. EXPECT 2+ HR DELAY FOR FUEL.

RSTD: RWY RESERVED FOR ACFT BASED THEREIN ON SAT AND SUN. GRD CREWS MUST INSPECT ALL ANTICIPATED AFLD PAVEMENTS RQR FOR THEIR MSN PRIOR TO EACH ACFT ARR OR DEP

SERVICE−JASU: POWER CARS UNAVBL.

DRAINAGE DITCHES PARL RWY 22 FM TWY S TO TWY U.

MISC: FLT PLANS MUST BE FILED AND ACTIVATED WITH P42 AFLD MGMT. USE FLT SVC WHEN P42 AFLD MGMT CLSD.

CAUTION: VARIOUS ACFT TEST OPS MARKINGS PAINTED IN WHITE ON TAXIWAY UNIFORM.

CAUTION: CIV ACFT MAY NOT BE GRANTED ACCESS TO KPMD CLASS D FOR PRACTICE APCH OR TRSN OVER ARPT BDRYS.

TRAN ALERT (1 OF 2): NO FLEET SVC AVBL. NO FLW ME SVC AVBL. EXP PROGRESSIVE TAXI TO PRK. AIRCREW RESPONSIBLE FOR ACFT PINNING/SAFING.

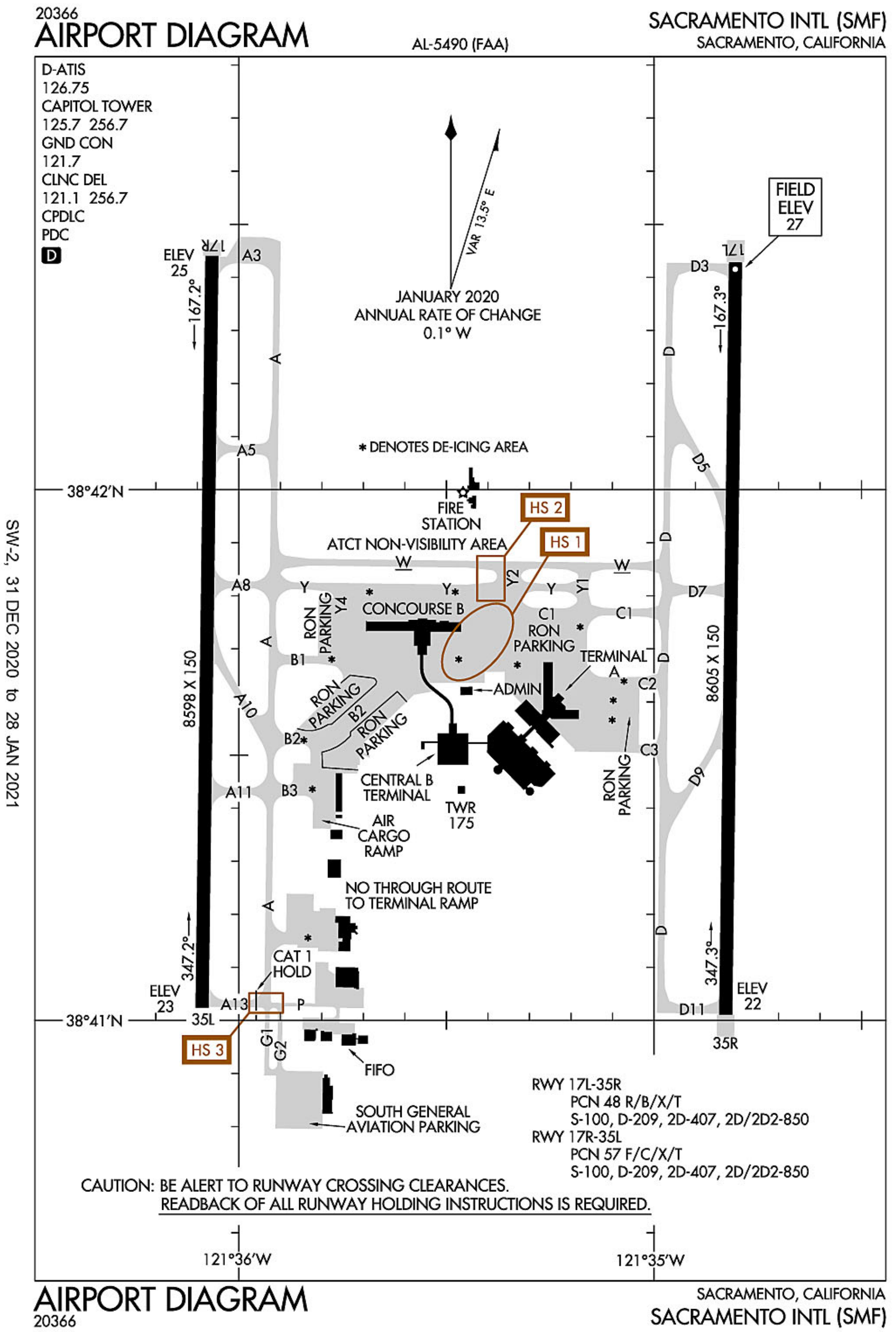
UNLGT OBSTN SURROUND AFLD.

SERVICE−LGT: GATED THLD LGT RWY 07−25 AND RWY 04−22.

MISC: INDUS INSTLN − NO TRNSPN, LODGING OR NML SVC AVBL ON SITE.

RSTD: TWY L BTN RWY 04/22 AND PAX TRML UNLGTD AND USABLE FOR DAYLT VFR ONLY.

Sacramento, California
Sacramento International
ICAO Identifier KSMF



Sacramento, CA
Sacramento Intl
ICAO Identifier KSMF

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−41−43.6N / 121−35−26.8W
2.2.2 From City: 10 miles NW of SACRAMENTO, CA
2.2.3 Elevation: 26.9 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: SHERI THOMPSON−DUARTE
6900 AIRPORT BLVD
SACRAMENTO, CA 95837
((916) 874−0560)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 17L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 48 R/B/X/T
2.12.5 Coordinates: 38−42−25.6973N / 121−34−48.2125W
2.12.6 Threshold Elevation: 26.9 ft
2.12.6 Touchdown Zone Elevation: 26.9 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8605 ft x 150 ft
2.12.4 PCN: 48 R/B/X/T
2.12.5 Coordinates: 38−41−0.6506N / 121−34−49.642W
2.12.6 Threshold Elevation: 22.1 ft
2.12.6 Touchdown Zone Elevation: 23.8 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 57 F/C/X/T
2.12.5 Coordinates: 38−42−26.4236N / 121−36−3.8961W
2.12.6 Threshold Elevation: 24.8 ft
2.12.6 Touchdown Zone Elevation: 25.3 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 8598 ft x 150 ft
2.12.4 PCN: 57 F/C/X/T
2.12.5 Coordinates: 38−41−1.439N / 121−36−5.3075W
2.12.6 Threshold Elevation: 22.5 ft
2.12.6 Touchdown Zone Elevation: 23.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 17L
2.13.2 Take−off Run Available: 8605
2.13.3 Take−off Distance Available: 8605
2.13.4 Accelerate−Stop Distance Available: 8605
2.13.5 Landing Distance Available: 8605

2.13.1 Designation: 35R
2.13.2 Take−off Run Available: 8605
2.13.3 Take−off Distance Available: 8605
2.13.4 Accelerate−Stop Distance Available: 8605
2.13.5 Landing Distance Available: 8605

2.13.1 Designation: 17R
2.13.2 Take−off Run Available: 8598
2.13.3 Take−off Distance Available: 8598
2.13.4 Accelerate−Stop Distance Available: 8598
2.13.5 Landing Distance Available: 8598

2.13.1 Designation: 35L
2.13.2 Take−off Run Available: 8598
2.13.3 Take−off 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: 17L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: ALSF2

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 256.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 126.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 256.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 256.7
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38−40−50.2189N / 121−34−46.3009W
2.19.6 Site Elevation: 30.9 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38−42−15.18N / 121−34−43.22W
2.19.6 Site Elevation: 21.7 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 13E
2.19.2 ILS Identification: MDK
2.19.5 Coordinates: 38−40−50.67N / 121−34−49.81W
2.19.6 Site Elevation: 17.4 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38−40−34.7038N / 121−36−3.046W
2.19.6 Site Elevation: 34 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38−42−15.8608N / 121−36−9.106W
2.19.6 Site Elevation: 22.9 ft

2.19.1 ILS Type: Inner Marker for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38−42−34.0974N / 121−36−3.7746W
2.19.6 Site Elevation: 23 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 13E
2.19.2 ILS Identification: SMF
2.19.5 Coordinates: 38−40−35.7492N / 121−36−5.7322W
2.19.6 Site Elevation: 19.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38−40−34.7038N / 121−36−3.046W
2.19.6 Site Elevation: 34 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38−41−12.5012N / 121−36−0.0807W
2.19.6 Site Elevation: 21.7 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 13E
2.19.2 ILS Identification: HUX
2.19.5 Coordinates: 38−42−36.65N / 121−36−3.72W
2.19.6 Site Elevation: 22 ft

General Remarks:

WEST RAMP SPOTS 56−60 & F1 RSTRD TO TOW IN AND TOW OUT ONLY FROM TXL B2. WHEN PUSHING BACK FOR DEP FROM WEST RAMP SPOTS 56−60 & F1 EACH ACFT IS TO PUSH BACK ON TO TXL B2 AND PULL FWD TO THE "ENGINE START LINE" PRIOR TO STARTING ENGS.

CROP DUSTERS OPER INVOF ARPT AT OR BELOW 200 FT AGL.

MILITARY AIRCRAFT PARKING LIMITED. CONTACT ARPT OPNS IF PARKING IS REQUIRED (916) 806−5309.

NOISE SENSITIVE AREAS W OF ARPT ON SAC RIVER. LCL TURN DISCOURAGED FOR JET ACFT. WHEN CONDUCTING IFR APCH IN VFR CONDITIONS EXECUTE MISSED APCH AT DEP END OF RYS. PLAN VFR PATTERNS TO E. USE MIN POWER SETTINGS.

UNPAVED SFC NORTH OF TWY P AND EAST OF TWY A AND SOUTH OF CARGO 1 RAMP CLSD TO HEL.

TWY B1 CLSD TO CARGO ACFT.

PORTION OF TWY W 500 FT EAST OF TWY A TO 2100 FT EAST OF TWY A IS NOT VISIBLE FROM ATCT.

TWY Y4 RESTRICTED TO AIRCRAFT WITH A WINGSPAN OF LESS THAN 118 FT (GROUP III).

ALL ACFT CTC ATC GND CTL PRIOR TO MOVEMENT ON RAMP.

TWY RMK #2: THE MAXIMUM ALLOWABLE GROSS AIRCRAFT LOAD FOR TWYS G1, G2, AND THE GENERAL AVIATION PARKING APRON IS: 70,000 LBS FOR SINGLE GEAR AIRCRAFT; 170,000 LBS FOR DUAL GEAR AIRCRAFT; AND 250,000 LBS FOR DUAL TANDEM GEAR AIRCRAFT.

FAA GWT STRENGTH EVALUATION MD−11 = 590,000 LBS.

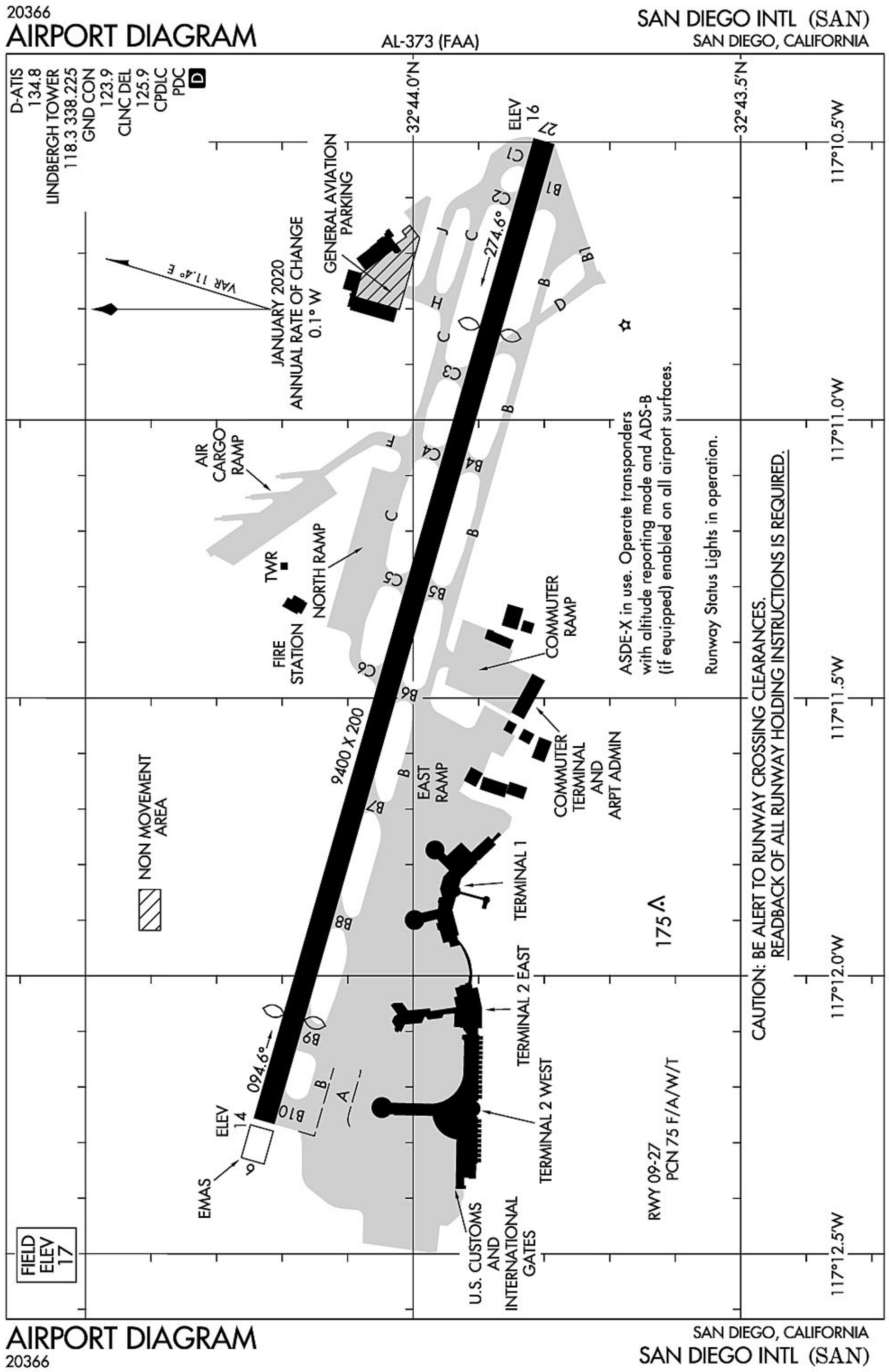
(A49A−16R) ALSF2 OPERS AS SSALR TILL WEATHER GOES BELOW VFR.

GND VEHICLE SURVEILLANCE SYS IN USE. OPR TRANSPONDERS WITH ALT RPRTG MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AP SFCS.

BIRDS ON AND IN VICINITY OF ARPT.

TWY RMK #2 CONT'D: AN AIRCRAFT CANNOT EXCEED THE AIRPLANE DESIGN GROUP III CRITERIA AND MUST HAVE A WHEEL BASE OF LESS THAN 60 FT.

San Diego, California
San Diego International
ICAO Identifier KSAN



San Diego, CA
San Diego Intl
ICAO Identifier KSAN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 32−44−0.8N / 117−11−22.8W
2.2.2 From City: 2 miles W of SAN DIEGO, CA
2.2.3 Elevation: 16.8 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: DEAN ROBBINS
3225 N HARBOR DRIVE
SAN DIEGO, CA 92101
(619−400−2718)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 27
2.12.2 True Bearing: 286
2.12.3 Dimensions: 9400 ft x 200 ft
2.12.4 PCN: 75 F/A/W/T
2.12.5 Coordinates: 32−43−48.0086N / 117−10−29.9018W
2.12.6 Threshold Elevation: 16.4 ft
2.12.6 Touchdown Zone Elevation: 16.7 ft

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: 32−44−13.6413N / 117−12−15.6841W
2.12.6 Threshold Elevation: 13.7 ft
2.12.6 Touchdown Zone Elevation: 16.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 27
2.13.2 Take−off Run Available: 9401
2.13.3 Take−off Distance Available: 9401
2.13.4 Accelerate−Stop Distance Available: 9401
2.13.5 Landing Distance Available: 7591

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 8280
2.13.3 Take−off Distance Available: 9401
2.13.4 Accelerate−Stop Distance Available: 8280
2.13.5 Landing Distance Available: 7280

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD/P
2.18.3 Channel: 125.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 134.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 123.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 338.225
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 11E
2.19.2 ILS Identification: SAN
2.19.5 Coordinates: 32−43−47.0838N / 117−10−28.4698W

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: Localizer for runway 09. Magnetic variation: 11E
2.19.2 ILS Identification: SAN
2.19.5 Coordinates: 32−43−47.6019N / 117−10−28.237W
2.19.6 Site Elevation: 25.9 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 11E
2.19.2 ILS Identification: UBR
2.19.5 Coordinates: 32−44−11.4624N / 117−12−20.064W
2.19.6 Site Elevation: 22.7 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 11E
2.19.2 ILS Identification: UBR
2.19.5 Coordinates: 32−44−14.7891N / 117−12−20.4337W
2.19.6 Site Elevation: 10.9 ft

General Remarks:
CROSS−BLEED ENGINE STARTS PERMITTED ONLY ON PARALLEL TWY WITH ACFT ALIGNED ON TWY CNTRLN.

RWY STATUS LGTS IN OPN.

747 AND LARGER ACFT ARE PROHIBITED FM MAKING INTERSECTION TKOFS.

INTERMITTENT PRESENCE OF BIRDS ON AND INVOF OF ARPT.

ACFT WITH WINGSPANS GTR THAN 171 FT (52M) RSTD FROM USING TWY D SOUTH OF TWY B, AND WHEN EXITING RWY 09 WB ON TWY B.

DUE TO PAEW ON RY 09−27, 30 MINUTE PPR 0830−1230Z FOR ALL LANDINGS AND DEPARTURES CALL 619−400−2710.

IN THE EVENT OF A DIVERSION OR IRREGULAR OPERATIONS EVENTS, ACFT OPERATORS CONTACT THE APT DUTY MGR (619) 400−2710 FOR PPR DUE TO LIMITATIONS ASSOCIATED WITH HANDLING DIVERTED FLTS. LIMITATIONS INCLUDE RESTRICTED GATE SPACE, CUSTOMS SERVICES AS WELL AS ACFT SERVICING & PARKING.

MILITARY ACFT ON OFFICIAL BUSINESS ONLY CONTACT ARPT OPS AT 619−400−2710 FOR PPR.

TERRAIN & BLDGS TO 500’ MSL N & E WITHIN 1 1/2 MI.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PILOTS REQUIRED TO CTC ATCT GROUND CONTROLLER PRIOR TO PUSHBACK, TOW OUT AND TAXI FOR TRAFFIC ADVISORIES.

30 MIN PPR (619−400−2710) FOR ACFT WITH OVER 171 FT WINGSPAN.

ACFT CROSSING RY 09/27 ON TWY C6, HOLD SHORT OF TWY C6 FACING WEST ON TWY C, PARALLEL TO RY.

ULTRALIGHT ACFT PROHIBITED ON AP.

TAXIING ACFT ARE PROHIBITED FROM PASSING TO THE SOUTH OF ACFT LCTD ON TWY B INTO ALLEY LCTD BTWN GATES 7 AND 14.

TAXILANE A RSTRD TO ACFT WITH WINGSPANS OF 135 FT OR LESS.

TWY C EDGE LGTS OTS INDEFLY.

OUTBOARD ENGINES OF FOUR−ENGINE ACFT ARE TO BE KEPT AT IDLE POWER FOR ALL GND MANEUVERING.

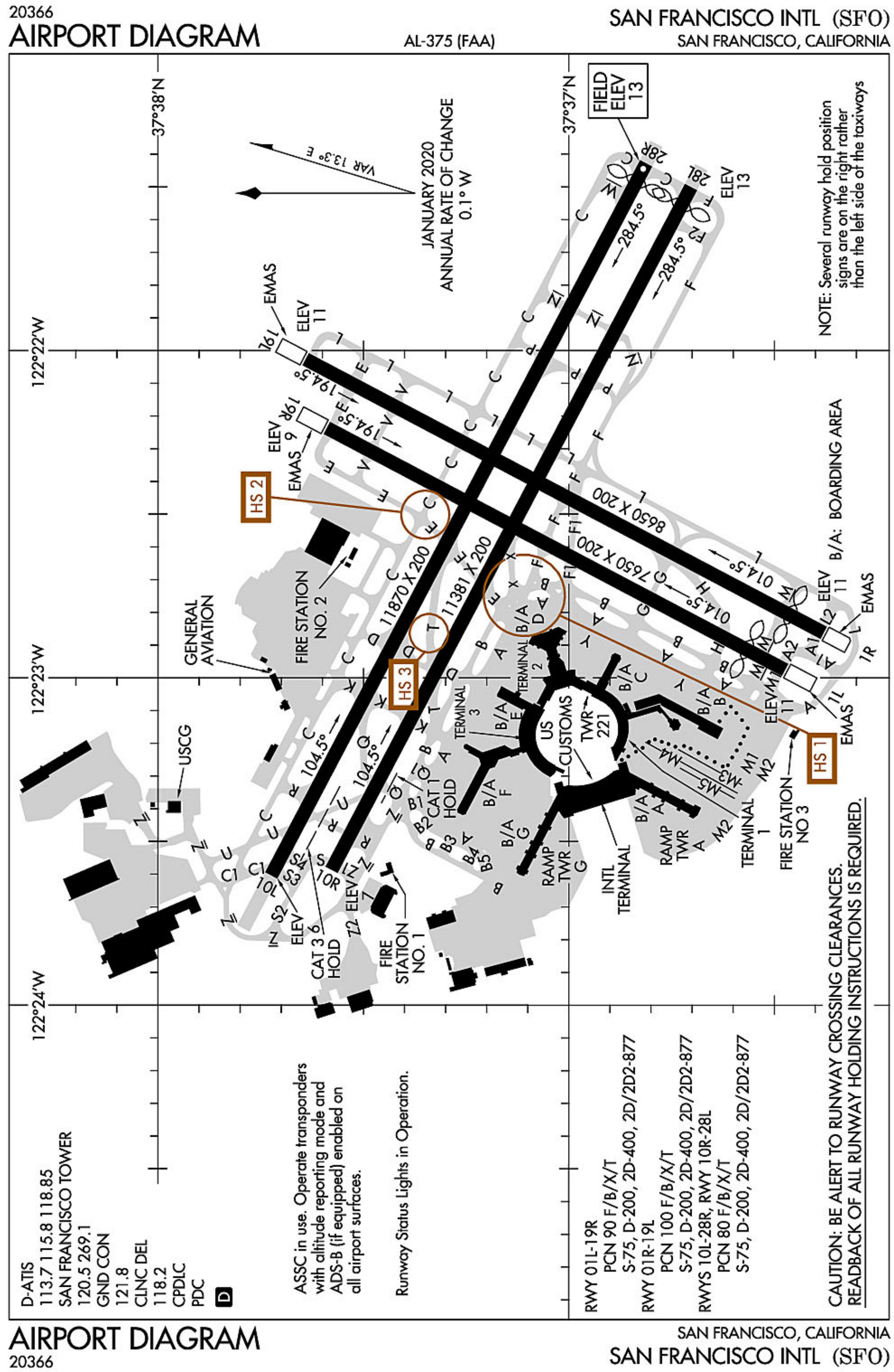
TAXIING ACFT SHALL FOLLOW LEAD−IN LINES UNTIL THE NOSE WHEEL OF THE ACFT HAS ENTERED THE NON−MOVEMENT AREA OF THE ALLEY.

TO REDUCE JET BLAST IMPACT AT N END OF TWY F ACFT WILL NOT START ENG UNTIL 800 FT FM N END OF TWY F; ABEAM THE SECOND PARKING PAD.

PRACTICE APPROACHES AND TGL PROHIBITED.

FOR ACCESS TO/FR TERMINAL 2: GATES 23, 25, 27, 29, 31, 33−51 AND THE ISLAND AND WEST RON PRKG RAMPS, CTC RAMP CTL ON 129.775 SRY 131.975 FR 0600−2400. FR 0000−0600 CTC GROUND CTL ON 123.9.

San Francisco, California
San Francisco International
ICAO Identifier KSFO



San Francisco, CA
San Francisco Intl
ICAO Identifier KSFO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−37−7.7N / 122−22−31.5W
2.2.2 From City: 8 miles SE of SAN FRANCISCO, CA
2.2.3 Elevation: 13.1 ft
2.2.5 Magnetic Variation: 14E (2015)
2.2.6 Airport Contact: IVAR SATERO
PO BOX 8097
SAN FRANCISCO, CA 94128
((650) 821−3355)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
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: 19R
2.12.2 True Bearing: 208
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−37−35.3329N / 122−22−14.1939W
2.12.6 Threshold Elevation: 9.2 ft
2.12.6 Touchdown Zone Elevation: 11.2 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 28
2.12.3 Dimensions: 7650 ft x 200 ft
2.12.4 PCN: 90 F/B/X/T
2.12.5 Coordinates: 37−36−28.4323N / 122−22−58.5426W
2.12.6 Threshold Elevation: 10.7 ft
2.12.6 Touchdown Zone Elevation: 10.9 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 208
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−37−38.4319N / 122−22−1.599W
2.12.6 Threshold Elevation: 10.5 ft
2.12.6 Touchdown Zone Elevation: 11 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 28
2.12.3 Dimensions: 8650 ft x 200 ft
2.12.4 PCN: 100 F/B/X/T
2.12.5 Coordinates: 37−36−22.7876N / 122−22−51.7467W
2.12.6 Threshold Elevation: 11.4 ft
2.12.6 Touchdown Zone Elevation: 11.2 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−37−43.4594N / 122−23−36.2107W
2.12.6 Threshold Elevation: 5.5 ft
2.12.6 Touchdown Zone Elevation: 7 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11870 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−36−48.721N / 122−21−25.708W
2.12.6 Threshold Elevation: 13 ft
2.12.6 Touchdown Zone Elevation: 12.9 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 298
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−36−42.163N / 122−21−30.057W
2.12.6 Threshold Elevation: 12.6 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 118
2.12.3 Dimensions: 11381 ft x 200 ft
2.12.4 PCN: 80 F/B/X/T
2.12.5 Coordinates: 37−37−34.648N / 122−23−35.1796W
2.12.6 Threshold Elevation: 7.1 ft
2.12.6 Touchdown Zone Elevation: 8 ft

2.12.1 Designation: 28X
2.12.2 True Bearing:
2.12.3 Dimensions: 0 ft x 0 ft

2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 7650
2.13.3 Take−off Distance Available: 7650
2.13.4 Accelerate−Stop Distance Available: 7650
2.13.5 Landing Distance Available: 7650

2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 7650
2.13.3 Take−off Distance Available: 7650
2.13.4 Accelerate−Stop Distance Available: 7650
2.13.5 Landing Distance Available: 7010

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 8650
2.13.3 Take−off Distance Available: 8650
2.13.4 Accelerate−Stop Distance Available: 8650
2.13.5 Landing Distance Available: 8650

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 8650
2.13.3 Take−off Distance Available: 8650
2.13.4 Accelerate−Stop Distance Available: 8650
2.13.5 Landing Distance Available: 8090

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 11870
2.13.3 Take−off 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 Take−off Run Available: 11870
2.13.3 Take−off Distance Available: 11870
2.13.4 Accelerate−Stop Distance Available: 11870
2.13.5 Landing Distance Available: 11236

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 11381
2.13.3 Take−off Distance Available: 11381
2.13.4 Accelerate−Stop Distance Available: 10981
2.13.5 Landing Distance Available: 10275

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 11381
2.13.3 Take−off Distance Available: 11381
2.13.4 Accelerate−Stop Distance Available: 10704
2.13.5 Landing Distance Available: 10704

2.13.1 Designation: 28X
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 118.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 113.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 115.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 118.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 28L)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 28R)
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37−36−18.7188N / 122−22−59.4082W
2.19.6 Site Elevation: 20.6 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37−37−30.7381N / 122−22−11.0577W
2.19.6 Site Elevation: 6.3 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 14E
2.19.2 ILS Identification: SIA
2.19.5 Coordinates: 37−36−16.2796N / 122−22−56.0614W
2.19.6 Site Elevation: 19 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37−37−48.1978N / 122−23−40.6085W
2.19.6 Site Elevation: 17.7 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37−36−51.3989N / 122−21−43.1171W
2.19.6 Site Elevation: 8.2 ft

2.19.1 ILS Type: Inner Marker for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37−36−46.1575N / 122−21−19.7418W
2.19.6 Site Elevation: 13 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 14E
2.19.2 ILS Identification: GWQ
2.19.5 Coordinates: 37−37−46.3566N / 122−23−43.1194W
2.19.6 Site Elevation: 5.3 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−37−39.5363N / 122−23−41.4575W
2.19.6 Site Elevation: 20.3 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−36−51.2769N /

122−21−43.1999W
2.19.6 Site Elevation: 8.2 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 14E
2.19.2 ILS Identification: SFO
2.19.5 Coordinates: 37−37−37.471N / 122−23−41.9198W
2.19.6 Site Elevation: 9.3 ft

2.19.1 ILS Type: DME for runway 28X. Magnetic variation: 14E
2.19.2 ILS Identification: FNP
2.19.5 Coordinates: 37−37−14.906N / 122−22−6.9396W
2.19.6 Site Elevation: 22.4 ft

2.19.1 ILS Type: Glide Slope for runway 28X. Magnetic variation: 14E
2.19.2 ILS Identification: FNP
2.19.5 Coordinates: 37−36−51.5421N / 122−21−43.0484W
2.19.6 Site Elevation: 8.2 ft

2.19.1 ILS Type: Localizer for runway 28X. Magnetic variation: 14E
2.19.2 ILS Identification: FNP
2.19.5 Coordinates: 37−37−16.6754N / 122−22−6.2154W
2.19.6 Site Elevation: 15.5 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 17E
2.19.2 Navigation Aid Identification: SFO
2.19.5 Coordinates: 37−37−10.1465N / 122−22−26.0165W
2.19.6 Site Elevation: 6 ft

General Remarks:
SEVERAL RY HOLD POSITION SIGNS ARE ON THE RIGHT RATHER THAN THE LEFT SIDE OF THE TWYS.

NOISE SENSITIVE ARPT; FOR NOISE ABATEMENT PROCEDURES CTC ARPT NOISE OFFICE MON−FRI 0800−1700 BY CALLING 650−821−5100.

RWY STATUS LGTS IN OPN.

PAEW APCH END RYS 28L, 28R, 19L INDEFLY.

ALL OUBD TWY ZULU 2 HVY ACFT WITH A WINGSPAN OF 171 FT OR GTR UNDER PWR PROHIBITED FROM ENTERING WB TWY ZULU.

RWY 1L CLSD TO DEPARTING TRIJET ACFT WITH WINGSPAN GREATER THAN 155 FT.

AIRLINE PILOTS SHALL STRICTLY FOLLOW THE PAINTED NOSE GEAR LINES AND NO OVERSTEERING ADJUSTMENT IS PERMITTED.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

FLOCKS OF BIRDS FEEDING ALONG SHORELINE ADJ TO ARPT; ON OCCASIONS FLY ACROSS VARIOUS PARTS OF THE ARPT.

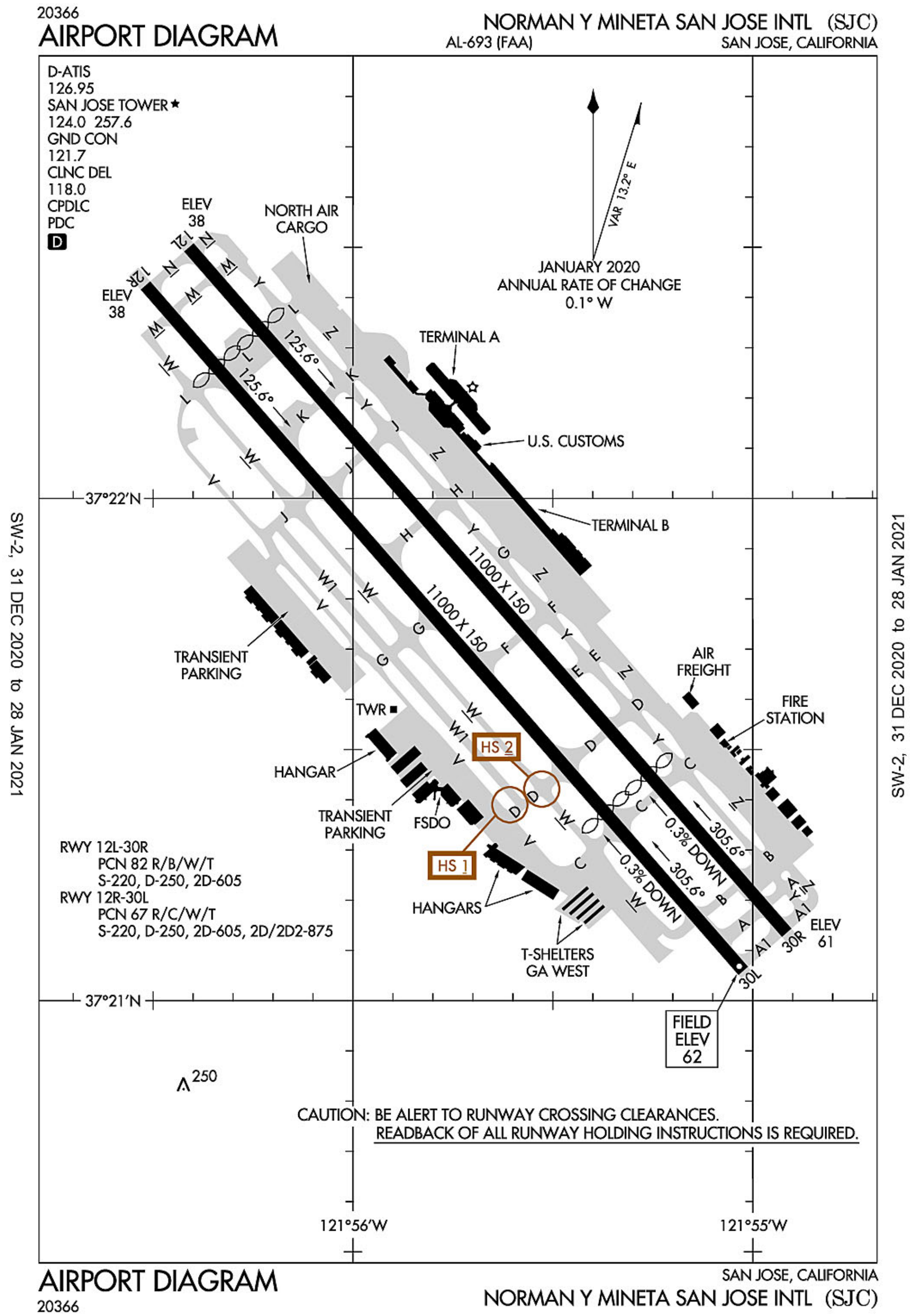
TWY S2 BTN TWY Z AND TWY S3 CLSD TO ACFT WITH WINGSPAN OVER THAN 215 FT.

HIGH SPEED TWY (T) GRVD FULL WIDTH BTN RWY 28R AND 28L.

RY 10 PREFERRED RY BTWN 0100−0600 WEATHER AND FLIGHT CONDITIONS PERMITTING.

SIMULTANEOUS OPERATIONS IN EFFECT ALL RYS.

San Jose, California
Norman Y. Mineta San Jose International
ICAO Identifier KSJC



San Jose, CA
Norman Y. Mineta San Jose Intl
ICAO Identifier KSJC

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−21−46.781N / 121−55−43.034W
2.2.2 From City: 2 miles NW of SAN JOSE, CA
2.2.3 Elevation: 62.2 ft
2.2.5 Magnetic Variation: 13E (2020)
2.2.6 Airport Contact: JOHN AITKEN
1701 AIRPORT BLVD., SUITE B−1130
SAN JOSE, CA 95110
((408) 277−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 12L
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 37−22−29.9801N / 121−56−24.6377W
2.12.6 Threshold Elevation: 37.7 ft
2.12.6 Touchdown Zone Elevation: 43.8 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 37−21−8.1324N / 121−54−54.9212W
2.12.6 Threshold Elevation: 61.1 ft
2.12.6 Touchdown Zone Elevation: 55.2 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 139
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−22−25.4266N / 121−56−31.1597W
2.12.6 Threshold Elevation: 38.2 ft
2.12.6 Touchdown Zone Elevation: 45.6 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 67 R/C/W/T
2.12.5 Coordinates: 37−21−3.5766N / 121−55−1.4432W
2.12.6 Threshold Elevation: 62.1 ft
2.12.6 Touchdown Zone Elevation: 57 ft

AD 2.13 Declared Distances
2.13.1 Designation: 12L
2.13.2 Take−off Run Available: 10139
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 10139
2.13.5 Landing Distance Available: 8831

2.13.1 Designation: 30R
2.13.2 Take−off Run Available: 10134
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 10134
2.13.5 Landing Distance Available: 7597

2.13.1 Designation: 12R
2.13.2 Take−off Run Available: 9883
2.13.3 Take−off 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 Take−off Run Available: 10152
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 10152
2.13.5 Landing Distance Available: 7614

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 12L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 30R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 118
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 126.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 124
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: LCL/P IC
2.18.3 Channel: 257.6
2.18.5 Hours of Operation: 0600−0000

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37−21−2.6639N / 121−55−1.3459W
2.19.6 Site Elevation: 81.4 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37−22−6.0334N / 121−56−14.5901W
2.19.6 Site Elevation: 36.8 ft

2.19.1 ILS Type: Localizer for runway 12R. Magnetic variation: 13E
2.19.2 ILS Identification: SLV
2.19.5 Coordinates: 37−21−3.0434N / 121−55−0.8585W
2.19.6 Site Elevation: 75.1 ft

2.19.1 ILS Type: DME for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37−22−27.575N / 121−56−32.6145W
2.19.6 Site Elevation: 56 ft

2.19.1 ILS Type: Glide Slope for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37−21−33.0094N / 121−55−27.8798W
2.19.6 Site Elevation: 48.6 ft

2.19.1 ILS Type: Localizer for runway 30L. Magnetic variation: 13E
2.19.2 ILS Identification: SJC
2.19.5 Coordinates: 37−22−27.1917N / 121−56−33.1047W
2.19.6 Site Elevation: 49.6 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 16E
2.19.2 Navigation Aid Identification: SJC
2.19.5 Coordinates: 37−22−28.9638N / 121−56−40.8069W
2.19.6 Site Elevation: 34.5 ft

General Remarks:
UNSCHEDULED OPNS BY GROUP 5 ACFT (B747) AND LARGER NOT AUTH EXCEPT WITH PRIOR ARPT APPROVAL CTC AMGR (408) 392−3500.

CURFEW HRS 2300−0700 FAR 36 STAGE II, 2330−0630 FAR 36 STAGE III ACFT LISTED ON THE SCHEDULE OF AUTHORIZED AIRCRAFT ISSUED BY THE DIRECTOR OF AVIATION. DELAYED SCHEDULED FLIGHTS, AND ALTERNATE/EMERGENCY OPERATIONS MAY BE EXEMPT FROM CURFEW HOUR RESTRICTIONS.

PRIOR AIRPORT NOTIFICATION IS REQUIRED FOR ALL LATE/EARLY ARRIVALS. CONTACT MANAGER ON DUTY AT (408) 392−3500.

FIRST 400 FT RY 30R & RY 30L CLSD FOR TKOF DC10, MD11, L1011.

TWY V LTD TO ACFT WITH WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

TWY W BETWEEN TWY J AND TWY L CAN SUPPORT GROUP IV ACFT.

RRP RQRD FM FBO FOR TSNT HEL OPS.

FOR CD WHEN ATCT IS CLSD CTC NORCAL APCH AT 916−361−3748.

TWY Y WILL BE PERIODICALLY RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 171 FT (MD−11 OR SMALLER) DRG B−787 AND B−747 OPNS ON RWY 12L/30R.

TWY D BETWEEN TWY W AND TWY V LIMITED TO ACFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER).

TWY Z WILL BE PERIODICALLY RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 118 FT (B−737−900 OR SMALLER) DRG B−787 AND B−747 OPNS. TWY Z BTN 200 FT NW OF TWY H AND 200 FT NW OF TWY K LTD TO ACFT WITH WINGSPAN OF LESS THAN 135 FT (B−757−300 OR SMALLER).

HIGH INTENSITY LIGHT ACTIVITY: HIGH INTENSITY LIGHTS (LASERS AND LARGE MEDIA SCREENS) MAY BE VISIBLE TO ARR AND DEP ACFT TO SAN JOSE INTERNATIONAL AIRPORT DURING EVENTS AT THE LEVI STADIUM COMPLEX (37−24−15N/121−58−14W, SJC VORTAC R−303/2.1 DME). FLIGHT CREWS SHOULD USE CAUTION WHEN OPERATING IN THIS AREA DURING STADIUM EVENTS. COCKPIT ILLUMINATION AND GLARE EFFECT REDUCING VIS MAY BE INTENSIFIED DURING ARR AND DEP OPS ESPECIALLY AT NIGHT.

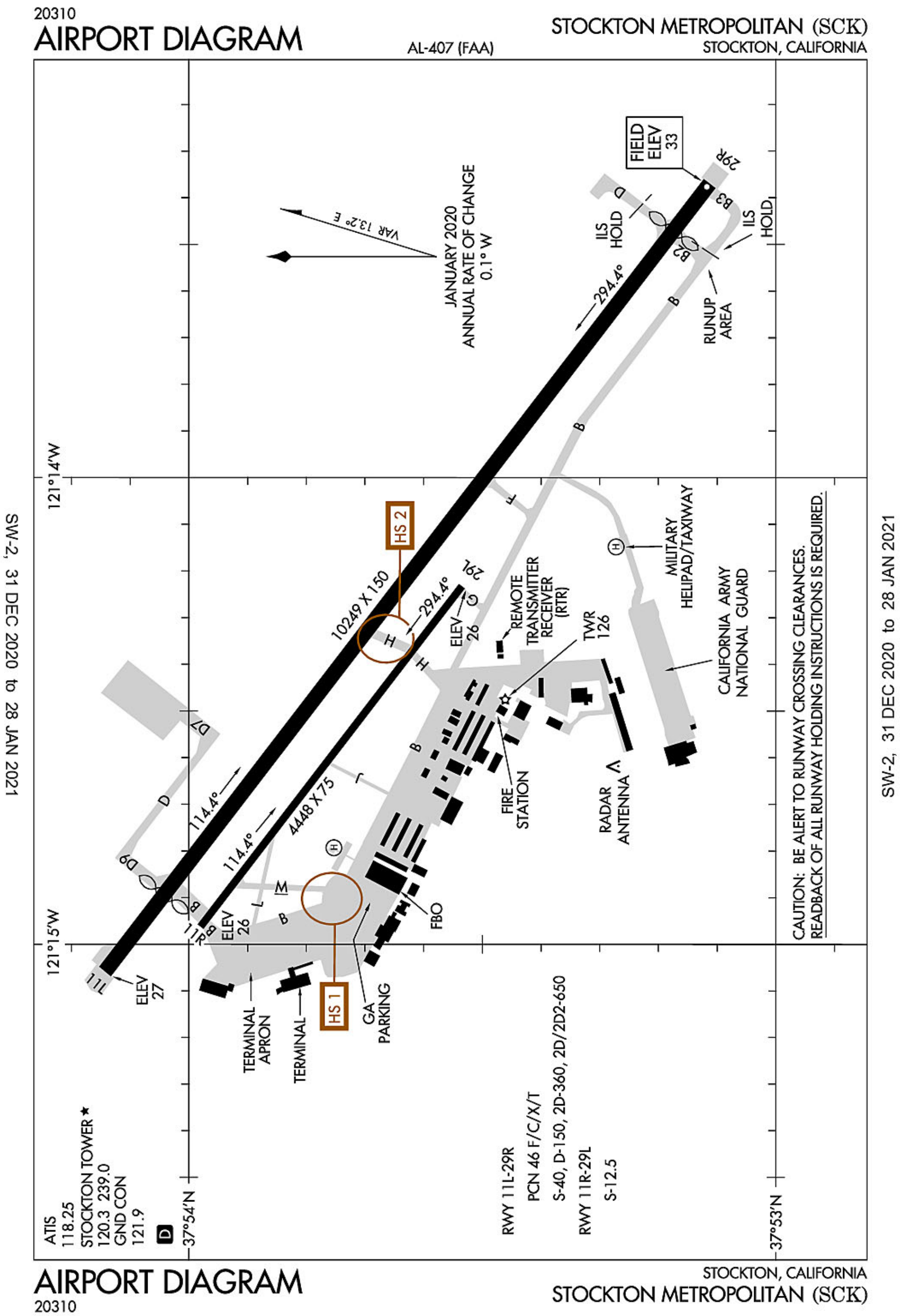
BIRDS FREQUENTLY ON OR IN VICINITY OF AIRPORT.

ALL TURBINE ENGINE RUN−UPS REQUIRE PRIOR AIRPORT APPROVAL, CONTACT MGR ON DUTY (408) 392−3500.

NOISE ABATEMENT PROCEDURE: RY 30L/12R IS PREFERRED ARRIVAL RY FOR JET ACFT AND RY 12L/30R IS THE PREFERRED DEP RY FOR JET ACFT. ALL JET ACFT TKOFS ARE TO BE INITIATED FM EOR UNLESS DIRECTED OTHERWISE BY ATCT.

HOT SPOT 3: RY 11−29 IS NOW TWY W1. SURFACE IS USABLE ONLY AS TAXIWAY AND IS MARKED AND SIGNED AS A TWY.

Stockton, California
Stockton Metropolitan
ICAO Identifier KSCK



Stockton, CA
Stockton Metropolitan
ICAO Identifier KSCK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−53−39.877N / 121−14−19.464W
2.2.2 From City: 3 miles SE of STOCKTON, CA
2.2.3 Elevation: 33.2 ft
2.2.5 Magnetic Variation: 14E (2010)
2.2.6 Airport Contact: RUSSELL STARK
5000 S. AIRPORT WAY
ROOM 202
STOCKTON, CA 95206
(209−468−4700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100,100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 29R
2.12.2 True Bearing: 308
2.12.3 Dimensions: 10249 ft x 150 ft
2.12.4 PCN: 46 F/C/X/T
2.12.5 Coordinates: 37−53−6.64N / 121−13−21.88W
2.12.6 Threshold Elevation: 33.2 ft
2.12.6 Touchdown Zone Elevation: 32.3 ft

2.12.1 Designation: 11L
2.12.2 True Bearing: 128
2.12.3 Dimensions: 10249 ft x 150 ft
2.12.4 PCN: 46 F/C/X/T
2.12.5 Coordinates: 37−54−8.4321N / 121−15−3.2005W
2.12.6 Threshold Elevation: 26.5 ft
2.12.6 Touchdown Zone Elevation: 29.1 ft

2.12.1 Designation: 29L
2.12.2 True Bearing: 308
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 37−53−31.8561N / 121−14−13.4466W
2.12.6 Threshold Elevation: 25.9 ft
2.12.6 Touchdown Zone Elevation: 26.6 ft

2.12.1 Designation: 11R
2.12.2 True Bearing: 128
2.12.3 Dimensions: 4448 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 37−53−58.6715N / 121−14−57.4211W
2.12.6 Threshold Elevation: 26.2 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 70 ft x 70 ft
2.12.4 PCN:
2.12.5 Coordinates: 37−53−45.27N / 121−14−47.57W
2.12.6 Threshold Elevation: 26 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 29R
2.13.2 Take−off Run Available: 8856
2.13.3 Take−off Distance Available: 9856
2.13.4 Accelerate−Stop Distance Available: 9210
2.13.5 Landing Distance Available: 8650

2.13.1 Designation: 11L
2.13.2 Take−off Run Available: 8474
2.13.3 Take−off Distance Available: 9474
2.13.4 Accelerate−Stop Distance Available: 8604
2.13.5 Landing Distance Available: 8650

2.13.1 Designation: 29L
2.13.2 Take−off Run Available: 4448
2.13.3 Take−off Distance Available: 4448
2.13.4 Accelerate−Stop Distance Available: 4448
2.13.5 Landing Distance Available: 3386

2.13.1 Designation: 11R
2.13.2 Take−off Run Available: 4448
2.13.3 Take−off Distance Available: 4448
2.13.4 Accelerate−Stop Distance Available: 4448
2.13.5 Landing Distance Available: 4448

2.13.1 Designation: H1
2.13.2 Take−off Run Available:

2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 29R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 11R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System: ODALS
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 49
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 118.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.3
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 239
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 139.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 356.9
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−54−12.58N / 121−15−15.2W
2.19.6 Site Elevation: 22 ft

2.19.1 ILS Type: Glide Slope for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−53−19.8816N / 121−13−35.2049W
2.19.6 Site Elevation: 29.3 ft

2.19.1 ILS Type: Localizer for runway 29R. Magnetic variation: 14E
2.19.2 ILS Identification: SCK
2.19.5 Coordinates: 37−54−14.48N / 121−15−13.13W
2.19.6 Site Elevation: 23.5 ft

General Remarks:
PRACTICE CIRCLING APPROACHES TO RWYS 11L/11R NA FOR ANY TURBINE POWERED ACFT/PROP DRIVEN ACFT EXCEEDING 12500 LBS EXCP BY PPR FM AMGR.

TSNT PILOTS USE CTN; DO NOT ENTER THE TSA RSTRD AREA ADJ TO THE TSNT PRKG AREA.

BE ALERT TO ELEVD MALSR APCH END RWY 29R LCTD ON BLAST PAD.

PAVEMENT PRIOR TO THLD OF RWY 11L NOT AVBL FOR TAXI BACK OPS.

ARPT CLSD TO TGL & PLANNED LOW APCHS FOR TURBOJET ACFT 2200−0700 EXCEPT BY PPR FM AMGR PART 36 STAGE 3 ACFT.

TRANSIENT PARKING AVBL AT FBO.

THE FLWG AREAS NOT VISIBLE FM ATCT: TWY B FM TRML APN TO INT AT TWY M; TWY B FM 300 FT W OF TWY J TO 375 FT E OF TWY J; NON MOVEMENT AREA S OF TWY B FROM TRML APN TO 200 FT W OF TWY H; SE HALF OF TRML APN; TSNT PRKG APN.

AVOID OVERFLYING SAN JOAQUIN GENERAL HOSPITAL & THE CITY OF MANTECA.

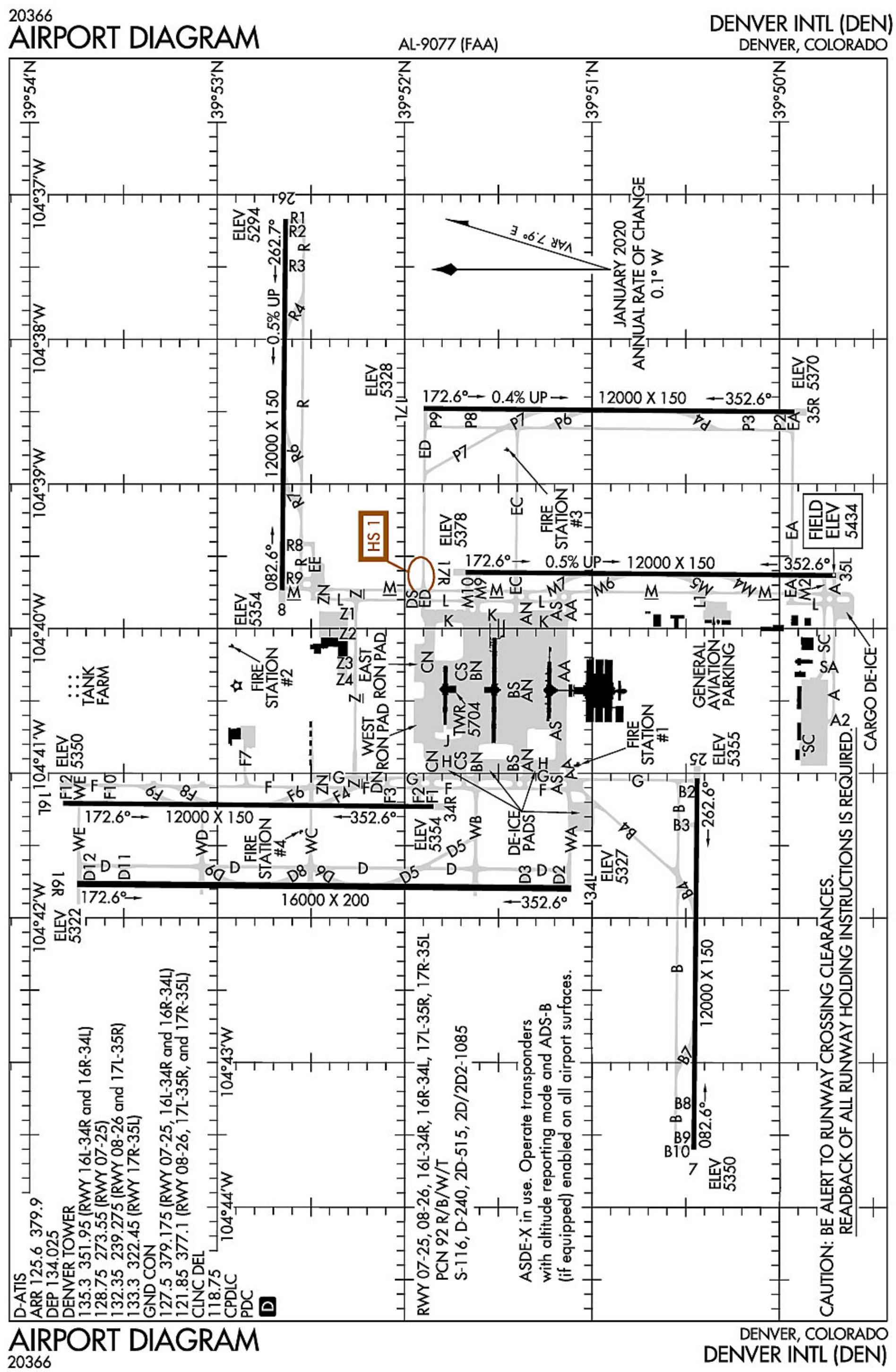
FOR CD WHEN ATCT CLSD CTC NORCAL APCH AT 916−361−0516.

MILITARY USE: ARNG OPR 1500−2330Z++ MON−FRI. DSN 466−5319, C209−983−5319, FAX 5391. PPR REQUIRED. LDTD TRAN SVC AND MAINT AVBL FOR CH47.

SEAGULLS ON AND IN VCNTY OF ARPT MOSTLY DURING RAINY WEATHER.

TRML APN, CARGO APN, TWYS B, B2, B3, F, D, D7, D9, AND H FOR ACFT OVER 12500 LBS. ALL OTR TWYS RSTRD TO ACFT LESS THAN 12500 LBS.

Denver, Colorado
Denver International
ICAO Identifier KDEN



Denver, CO
Denver Intl
ICAO Identifier KDEN

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−51−42N / 104−40−23.4W
2.2.2 From City: 16 miles NE of DENVER, CO
2.2.3 Elevation: 5433.8 ft
2.2.5 Magnetic Variation: 8E (2015)
2.2.6 Airport Contact: KIM DAY
ADMIN BLDG, 8500 PENA BLVD
DENVER, CO 80249
((303) 342−2206)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 2/1/1995

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 25
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−50−26.3667N / 104−41−2.1712W
2.12.6 Threshold Elevation: 5355 ft
2.12.6 Touchdown Zone Elevation: 5355 ft

2.12.1 Designation: 07
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−50−27.4022N / 104−43−35.963W
2.12.6 Threshold Elevation: 5350.2 ft
2.12.6 Touchdown Zone Elevation: 5351.6 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 271
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−52−38.0769N / 104−37−10.1479W
2.12.6 Threshold Elevation: 5294.4 ft
2.12.6 Touchdown Zone Elevation: 5309.4 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 91
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−52−39.2009N / 104−39−44.0267W
2.12.6 Threshold Elevation: 5354.3 ft
2.12.6 Touchdown Zone Elevation: 5354.3 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−53−49.3301N / 104−41−12.4998W
2.12.6 Threshold Elevation: 5349.9 ft
2.12.6 Touchdown Zone Elevation: 5357.1 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−50.7743N / 104−41−13.8782W
2.12.6 Threshold Elevation: 5353.7 ft
2.12.6 Touchdown Zone Elevation: 5353.7 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−53−44.869N / 104−41−45.9006W
2.12.6 Threshold Elevation: 5321.8 ft
2.12.6 Touchdown Zone Elevation: 5326.3 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 16000 ft x 200 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−6.7926N / 104−41−47.7166W
2.12.6 Threshold Elevation: 5327 ft
2.12.6 Touchdown Zone Elevation: 5327 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−53.8287N / 104−38−28.6959W
2.12.6 Threshold Elevation: 5328.1 ft
2.12.6 Touchdown Zone Elevation: 5338.5 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−49−55.2707N / 104−38−30.1554W
2.12.6 Threshold Elevation: 5370 ft
2.12.6 Touchdown Zone Elevation: 5370 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−51−40.4821N / 104−39−36.5561W
2.12.6 Threshold Elevation: 5377.9 ft
2.12.6 Touchdown Zone Elevation: 5391.9 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 39−49−41.9262N / 104−39−37.9841W
2.12.6 Threshold Elevation: 5433.8 ft
2.12.6 Touchdown Zone Elevation: 5433.8 ft

AD 2.13 Declared Distances

2.13.1 Designation: 25
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 13000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 13000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 16000
2.13.3 Take−off 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 Take−off Run Available: 16000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off 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: 25
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 125.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 125.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 134.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 134.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08/26, 17L/35R, 17R/35L)
2.18.3 Channel: 121.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08/26, 17L/35R, 17R/35L)
2.18.3 Channel: 121.85

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 07/25, 16L/34R, 16R/34L)
2.18.3 Channel: 127.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 07/25, 16L/34R, 16R/34L)
2.18.3 Channel: 127.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08/26, 17L/35R, 17R/35L)
2.18.3 Channel: 377.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08/26, 17L/35R, 17R/35L)
2.18.3 Channel: 377.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 07/25, 16L/34R, 16R/34L)
2.18.3 Channel: 379.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 07/25, 16L/34R, 16R/34L)
2.18.3 Channel: 379.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07/25)
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07/25)
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26, 17L/35R)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26, 17L/35R)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17R/35L)
2.18.3 Channel: 133.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17R/35L)
2.18.3 Channel: 133.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16R/34L)
2.18.3 Channel: 135.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16R/34L)
2.18.3 Channel: 135.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26, 17L/35R)
2.18.3 Channel: 239.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26, 17L/35R)
2.18.3 Channel: 239.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07/25)
2.18.3 Channel: 273.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 07/25)
2.18.3 Channel: 273.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17R/35L)
2.18.3 Channel: 322.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17R/35L)
2.18.3 Channel: 322.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16R/34L)
2.18.3 Channel: 351.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16R/34L)
2.18.3 Channel: 351.95

2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39−50−23.6632N / 104−40−48.6232W
2.19.6 Site Elevation: 5359.1 ft

2.19.1 ILS Type: Glide Slope for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39−50−23.2656N / 104−43−22.6558W
2.19.6 Site Elevation: 5340.5 ft

2.19.1 ILS Type: Localizer for runway 07. Magnetic variation: 8E
2.19.2 ILS Identification: DZG
2.19.5 Coordinates: 39−50−26.2755N / 104−40−49.0613W
2.19.6 Site Elevation: 5354.9 ft

2.19.1 ILS Type: DME for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39−50−23.6632N / 104−40−48.6232W
2.19.6 Site Elevation: 5359.1 ft

2.19.1 ILS Type: Glide Slope for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39−50−22.4098N / 104−41−15.7881W
2.19.6 Site Elevation: 5344.2 ft

2.19.1 ILS Type: Localizer for runway 25. Magnetic variation: 8E
2.19.2 ILS Identification: ERP
2.19.5 Coordinates: 39−50−27.4883N / 104−43−49.0723W
2.19.6 Site Elevation: 5348.9 ft

2.19.1 ILS Type: DME for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39−52−41.8784N / 104−39−57.5078W
2.19.6 Site Elevation: 5360.2 ft

2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39−52−43.1529N / 104−39−29.8599W
2.19.6 Site Elevation: 5342.2 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 8E
2.19.2 ILS Identification: FUI
2.19.5 Coordinates: 39−52−37.9791N / 104−36−57.0352W
2.19.6 Site Elevation: 5283.1 ft

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 8E
2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39−52−41.8784N / 104−39−57.5078W
2.19.6 Site Elevation: 5360.2 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 8E
2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39−52−42.2239N / 104−37−22.3854W
2.19.6 Site Elevation: 5293.2 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 8E
2.19.2 ILS Identification: JOY
2.19.5 Coordinates: 39−52−39.2968N / 104−39−57.142W
2.19.6 Site Elevation: 5347.6 ft

2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39−53−59.6091N / 104−41−15.7719W
2.19.6 Site Elevation: 5357 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39−53−39.5473N / 104−41−17.8695W
2.19.6 Site Elevation: 5346.5 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 8E
2.19.2 ILS Identification: LTT
2.19.5 Coordinates: 39−51−40.6701N / 104−41−13.996W
2.19.6 Site Elevation: 5343.2 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39−53−59.6091N / 104−41−15.7719W
2.19.6 Site Elevation: 5357 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39−52−1.3925N / 104−41−19.0115W
2.19.6 Site Elevation: 5346.4 ft

2.19.1 ILS Type: Inner Marker for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39−51−42.2879N / 104−41−13.9788W
2.19.6 Site Elevation: 5345 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 8E
2.19.2 ILS Identification: OUF
2.19.5 Coordinates: 39−53−59.4426N / 104−41−12.3812W
2.19.6 Site Elevation: 5349.7 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ
2.19.5 Coordinates: 39−53−55.7414N / 104−41−50.8967W
2.19.6 Site Elevation: 5323.5 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ
2.19.5 Coordinates: 39−53−34.8236N / 104−41−51.2764W
2.19.6 Site Elevation: 5316.8 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 8E
2.19.2 ILS Identification: DQQ
2.19.5 Coordinates: 39−50−56.7831N / 104−41−47.8336W
2.19.6 Site Elevation: 5320.8 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39−53−55.7414N / 104−41−50.8967W
2.19.6 Site Elevation: 5323.5 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39−51−17.5994N / 104−41−52.8493W
2.19.6 Site Elevation: 5317.6 ft

2.19.1 ILS Type: Inner Marker for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39−50−58.2971N / 104−41−47.8092W
2.19.6 Site Elevation: 5321.4 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 8E
2.19.2 ILS Identification: DXU
2.19.5 Coordinates: 39−53−54.875N / 104−41−45.7848W
2.19.6 Site Elevation: 5320.1 ft

2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39−52−4.266N / 104−38−25.1893W
2.19.6 Site Elevation: 5345.1 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39−51−44.0596N / 104−38−23.5605W
2.19.6 Site Elevation: 5326 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 8E
2.19.2 ILS Identification: BXP
2.19.5 Coordinates: 39−49−45.1652N / 104−38−30.282W

2.19.6 Site Elevation: 5362.9 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39−52−4.266N / 104−38−25.1893W
2.19.6 Site Elevation: 5345.1 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39−50−6.3585N / 104−38−24.7651W
2.19.6 Site Elevation: 5359.9 ft

2.19.1 ILS Type: Inner Marker for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39−49−46.7811N / 104−38−30.2697W
2.19.6 Site Elevation: 5364.5 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 8E
2.19.2 ILS Identification: DPP
2.19.5 Coordinates: 39−52−3.9404N / 104−38−28.572W
2.19.6 Site Elevation: 5335.5 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−51−50.9244N / 104−39−33.0513W
2.19.6 Site Elevation: 5388 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−51−30.9128N / 104−39−31.4164W
2.19.6 Site Elevation: 5378 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 8E
2.19.2 ILS Identification: ACX
2.19.5 Coordinates: 39−49−31.8218N / 104−39−38.1041W
2.19.6 Site Elevation: 5427.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−51−50.9244N / 104−39−33.0513W
2.19.6 Site Elevation: 5388 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−49−52.7648N / 104−39−32.5991W
2.19.6 Site Elevation: 5422.6 ft

2.19.1 ILS Type: Inner Marker for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−49−33.4386N / 104−39−38.091W
2.19.6 Site Elevation: 5428.6 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 8E
2.19.2 ILS Identification: AQD
2.19.5 Coordinates: 39−51−50.5996N / 104−39−36.4352W
2.19.6 Site Elevation: 5377.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: DEN
2.19.5 Coordinates: 39−48−45.0506N / 104−39−38.6643W
2.19.6 Site Elevation: 5452.1 ft

General Remarks:
TWY F7 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

OVERHEAD PSGR BRIDGE ON SOUTH SIDE OF CONCOURSE ’A’ PRVDS 42 FT TAIL & 118 FT WINGSPAN CLNC WHEN ON TWY CNTRLN.

WATERFOWL AND MIGRATORY BIRD ACTIVITY INVOF ARPT YEAR ROUND.

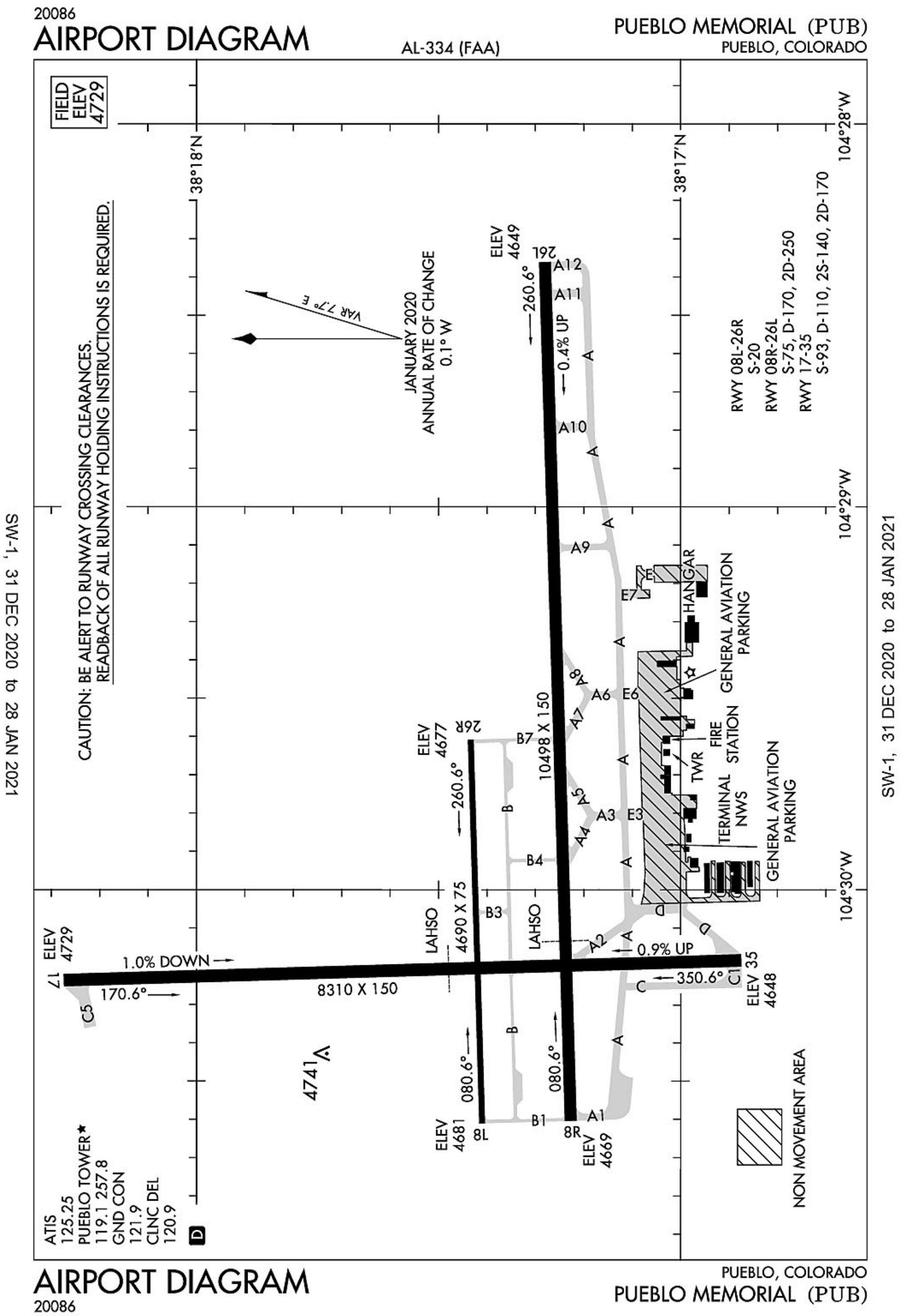
ARPT MAINTAINS CLEARWAYS (500 FT X 1,000 FT, 1.25% SLOPE) ON DEP RY 08, RY 25, & RY 34R.

CUSTOMS AVBL WITH PRIOR PERMISSION.

INFORMAL RY USE PROGRAM IS IN EFFECT 24 HRS A DAY. FOR ADDITIONAL NOISE ABATEMENT INFORMATION CONTACT AIRPORT MANAGEMENT AT 303−342−4200.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Pueblo, Colorado
Pueblo Memorial
ICAO Identifier KPUB



Pueblo, CO
Pueblo Memorial
ICAO Identifier KPUB

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−17−23.811N / 104−29−52.901W
2.2.2 From City: 5 miles E of PUEBLO, CO
2.2.3 Elevation: 4729.3 ft
2.2.5 Magnetic Variation: 8E (2015)
2.2.6 Airport Contact: GREG PEDROZA
31201 BRYAN CIRCLE
PUEBLO, CO 81001
(719−553−2744)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0500−2200 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I A certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 88
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−17−24.3081N / 104−30−36.6451W
2.12.6 Threshold Elevation: 4681.2 ft
2.12.6 Touchdown Zone Elevation: 4681.2 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 268
2.12.3 Dimensions: 4690 ft x 75 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−17−25.7014N / 104−29−37.865W
2.12.6 Threshold Elevation: 4677 ft
2.12.6 Touchdown Zone Elevation: 4678.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 88
2.12.3 Dimensions: 10498 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−17−13.6348N / 104−30−36.2409W
2.12.6 Threshold Elevation: 4669.4 ft
2.12.6 Touchdown Zone Elevation: 4671.4 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 268
2.12.3 Dimensions: 10498 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−17−16.7526N / 104−28−24.6616W
2.12.6 Threshold Elevation: 4648.8 ft
2.12.6 Touchdown Zone Elevation: 4658.9 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 178
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−18−15.0609N / 104−30−14.6942W
2.12.6 Threshold Elevation: 4729.3 ft
2.12.6 Touchdown Zone Elevation: 4729.3 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 358
2.12.3 Dimensions: 8310 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 38−16−52.9717N / 104−30−11.6348W
2.12.6 Threshold Elevation: 4648.1 ft
2.12.6 Touchdown Zone Elevation: 4676.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 4690
2.13.3 Take−off 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 Take−off Run Available: 4690
2.13.3 Take−off 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 Take−off Run Available: 10496
2.13.3 Take−off 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 Take−off Run Available: 10496
2.13.3 Take−off Distance Available: 10496
2.13.4 Accelerate−Stop Distance Available: 10496
2.13.5 Landing Distance Available: 10496

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 8308
2.13.3 Take−off 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 Take−off Run Available: 8308
2.13.3 Take−off Distance Available: 8308
2.13.4 Accelerate−Stop Distance Available: 8308
2.13.5 Landing Distance Available: 8308

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 125.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.9
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.1
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 0600−2200

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 8E
2.19.2 ILS Identification: PUB
2.19.5 Coordinates: 38−17−18.9334N / 104−30−21.5794W
2.19.6 Site Elevation: 4672.8 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 8E
2.19.2 ILS Identification: PUB
2.19.5 Coordinates: 38−17−17.2016N / 104−28−6.1097W
2.19.6 Site Elevation: 4653.1 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 8E
2.19.2 ILS Identification: TFR
2.19.5 Coordinates: 38−17−21.3596N / 104−28−39.1966W
2.19.6 Site Elevation: 4649.4 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic

variation: 8E
2.19.2 ILS Identification: TFR
2.19.5 Coordinates: 38−17−13.2497N / 104−30−52.5582W
2.19.6 Site Elevation: 4668 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: PUB
2.19.5 Coordinates: 38−17−39.3132N / 104−25−46.0107W
2.19.6 Site Elevation: 4755.5 ft

General Remarks:
HIGH VOLUME TRNG DA−20 ACFT SR−SS MON−FRI. OVERHEAD PATTERN DURG TRNG. EXTENSIVE USE OF TRNG AREA 12−28 DME N−SW OF ARPT 500 FT AGL−8500 FT MSL.

BE ALERT; INTENSIVE USAF STUDENT TRAINING IN VICINITY OF COLORADO SPRINGS & PUEBLO COLORADO.

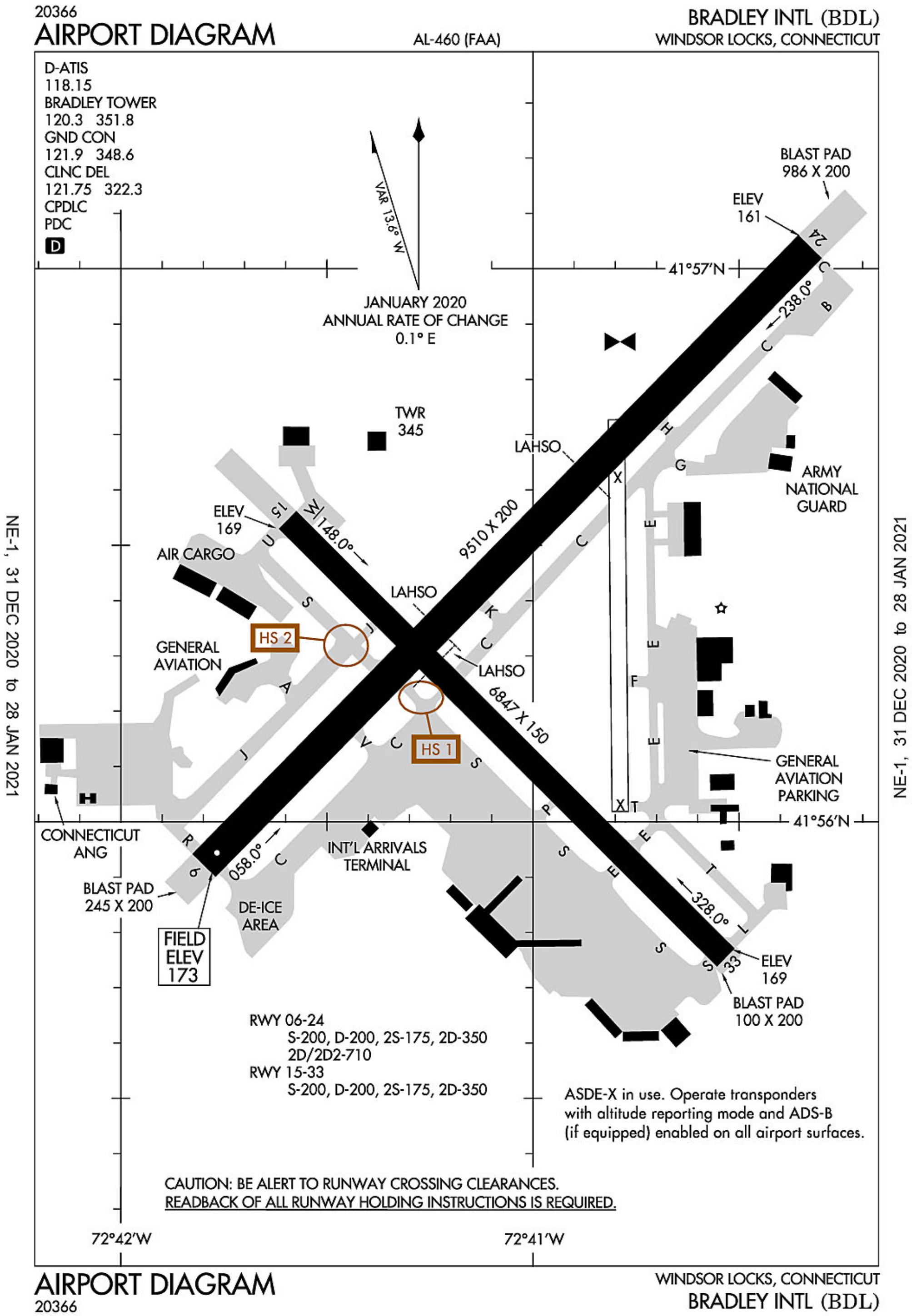
CONDITIONS NOT MONITORED 2200L−0500L.

SEE FLIP AP/1 SUPPLEMENTARY ARPT INFO.

TWY A BTN TWY A2 AND A6 50 FT WID.

FOR CD CTC PUEBLO APCH AT 303−342−1916, WHEN APCH CLSD CTC DENVER ARTCC AT 303−651−4257.

Windsor Locks, Connecticut
Bradley International
ICAO Identifier KBDL



Windsor Locks, CT
Bradley Intl
ICAO Identifier KBDL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−56−20.9N / 72−41−0.1W
2.2.2 From City: 3 miles W of WINDSOR LOCKS, CT
2.2.3 Elevation: 173.3 ft
2.2.5 Magnetic Variation: 14W (1980)
2.2.6 Airport Contact: KEVIN DILLON, AAE
BRADLEY INTL AIRPORT
WINDSOR LOCKS, CT 6096
(860−292−2003)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01
2.12.2 True Bearing: 359
2.12.3 Dimensions: 4269 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−56−1.4056N / 72−40−46.6234W
2.12.6 Threshold Elevation: 170.5 ft
2.12.6 Touchdown Zone Elevation: 170.4 ft

2.12.1 Designation: 19
2.12.2 True Bearing: 179
2.12.3 Dimensions: 4269 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−56−43.5734N / 72−40−47.5714W
2.12.6 Threshold Elevation: 168.9 ft
2.12.6 Touchdown Zone Elevation: 170.2 ft

2.12.1 Designation: 06
2.12.2 True Bearing: 44
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−55−55.25N / 72−41−47.6885W
2.12.6 Threshold Elevation: 173 ft
2.12.6 Touchdown Zone Elevation: 173.3 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 224
2.12.3 Dimensions: 9510 ft x 200 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−57−2.3952N / 72−40−19.6697W
2.12.6 Threshold Elevation: 160.9 ft
2.12.6 Touchdown Zone Elevation: 170 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−56−32.6254N / 72−41−35.7104W
2.12.6 Threshold Elevation: 168.8 ft
2.12.6 Touchdown Zone Elevation: 170.8 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 6847 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 41−55−45.3238N / 72−40−30.9557W
2.12.6 Threshold Elevation: 168.5 ft
2.12.6 Touchdown Zone Elevation: 171.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01
2.13.2 Take−off Run Available: 4268
2.13.3 Take−off Distance Available: 4268
2.13.4 Accelerate−Stop Distance Available: 4268
2.13.5 Landing Distance Available:

2.13.1 Designation: 19
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available: 4268

2.13.1 Designation: 06
2.13.2 Take−off Run Available: 9509
2.13.3 Take−off 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 Take−off Run Available: 9509
2.13.3 Take−off 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 Take−off Run Available: 6847
2.13.3 Take−off 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 Take−off Run Available: 6847
2.13.3 Take−off Distance Available: 6847
2.13.4 Accelerate−Stop Distance Available: 6847
2.13.5 Landing Distance Available: 6847

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 06
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 138.55
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 349.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 118.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 351.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 41.9
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 123.45
2.18.5 Hours of Operation:

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 243.9
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41−57−17.2894N / 72−39−56.5118W
2.19.6 Site Elevation: 163.8 ft

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41−56−5.5448N / 72−41−41.8869W
2.19.6 Site Elevation: 169.3 ft

2.19.1 ILS Type: Inner Marker for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41−55−49.4746N / 72−41−56.067W
2.19.6 Site Elevation: 171.3 ft

2.19.1 ILS Type: Localizer for runway 06. Magnetic variation: 14W
2.19.2 ILS Identification: BDL
2.19.5 Coordinates: 41−57−17.8499N / 72−39−59.4045W
2.19.6 Site Elevation: 149.5 ft

2.19.1 ILS Type: DME for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41−57−17.2894N / 72−39−56.5118W
2.19.6 Site Elevation: 163.8 ft

2.19.1 ILS Type: Glide Slope for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41−56−53.5757N / 72−40−25.9626W
2.19.6 Site Elevation: 156.7 ft

2.19.1 ILS Type: Inner Marker for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41−57−12.0728N / 72−40−6.9772W
2.19.6 Site Elevation: 139.9 ft

2.19.1 ILS Type: Localizer for runway 24. Magnetic variation: 14W
2.19.2 ILS Identification: MYQ
2.19.5 Coordinates: 41−55−47.661N / 72−41−57.6296W
2.19.6 Site Elevation: 170.3 ft

2.19.1 ILS Type: DME for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41−56−37.9724N / 72−41−47.432W
2.19.6 Site Elevation: 181.8 ft

2.19.1 ILS Type: Glide Slope for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41−55−54.7672N / 72−40−38.5896W
2.19.6 Site Elevation: 167.6 ft

2.19.1 ILS Type: Localizer for runway 33. Magnetic variation: 14W
2.19.2 ILS Identification: IKX
2.19.5 Coordinates: 41−56−40.2961N / 72−41−46.2065W
2.19.6 Site Elevation: 168.3 ft

General Remarks:

TWY J CLOSED BTN S & R TO ACFT WITH WING SPANS IN EXCESS OF 170 FT.

ASDE−X IN USE. OPR TRANSPONDERS WITH ALT RPRTG MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL ARPT SFCS.

CAUTION: ANG RAMP MRK MAY NOT BE APPROPRIATE FOR LARGE ACFT: FLW MARSHALLERS INSTR.

OPS CTC AUTOVON 636−8385; COML 860−627−3001.

NMRS BIRDS FQTLY ON OR INVOF ARPT.

MILITARY: ARNG − DSN 636−7519/7520. C860−292−4519/4520.

MILITARY: ANG: AFLD MGR DOES NOT ISSUE OR STORE COMSEC FOR TRAN CREWS.

MILITARY: ANG: PPR V220−2356.

FUEL: A++ (MIL).

PARL TWY OPNS ON TWY C AND TWY B RSTD TO ACFT W/ WINGSPANS OF 171 FT OR LESS.

NO DE−ICING AVBL AT ANG.

MILITARY: ANG: WHEN CKG ATIS, BIRDS IN VCY MAY INDC HEIGHTENED BIRD WATCH CONDITION (BWC). USAF ACFT CTC ANG AIRFIELD OPS ON UHF FOR CURRENT BWC.

MILITARY: ANG: NSTD YELLOW AEROSPACE GND EQPT AND FIRE BOTTLE BOXES PAINTED ON ANG RAMP.

NO TRNG FLTS, NO PLAS, NO TGLS BTN: 2300 − 0700 MON THRU SAT & 2300 − 1200 SUN.

MILITARY: ANG: OPR 1200−2030Z++ MON−FRI (SAT, SUN UTA).

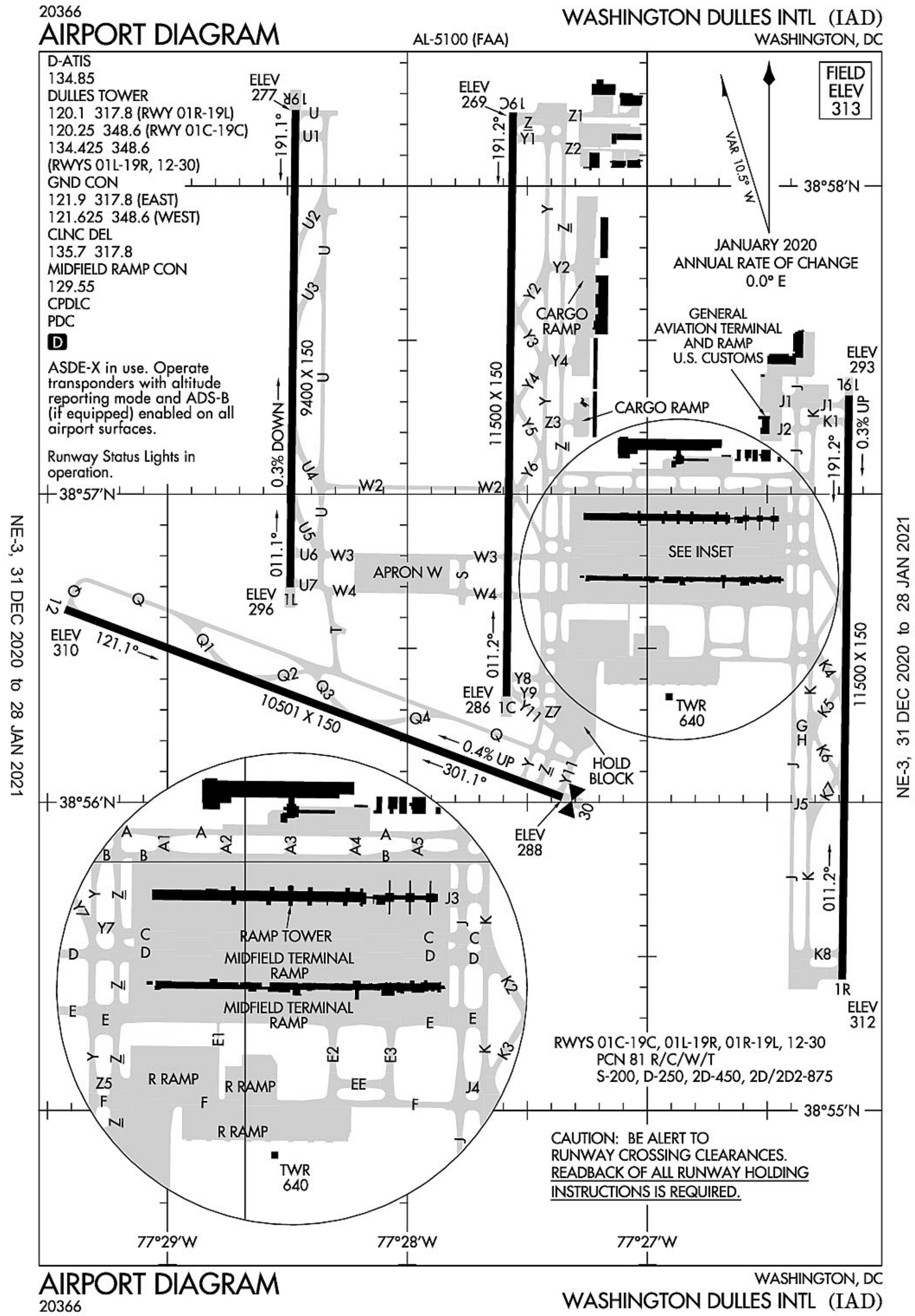
FIXED WING ACFT USE LOW IDLE FOR TAXI, NO ENGINE CHECKS OR POWER RUNS ALLOWED ON THE ARNG RAMP DUE TO POSSIBLE FOD HAZARD.

BASH PHASE II INCRD BIRD ACTVTY SEP−OCT AND MAR−APR.

(E117) CT ANG AND U.S. ARMY NG.

ACFT REQG US CUST SVCS MUST PARK ON THE CUST SPOT W/ THE NOSE OF THE ACFT FACING SW. CTC CUST AT 860−292−1314 WHEN PARKED.

Washington, District of Columbia
Washington Dulles International
ICAO Identifier KIAD



Washington, DC
Washington Dulles Intl
ICAO Identifier KIAD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−56−50.8N / 77−27−35.8W
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: MIKE STEWART
1 SAARINEN CIRCLE
DULLES, VA 20166
(703−572−2730)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19C
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−58−14.3066N / 77−27−33.5452W
2.12.6 Threshold Elevation: 268.5 ft
2.12.6 Touchdown Zone Elevation: 271.3 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: 38−56−20.6392N / 77−27−35.1991W
2.12.6 Threshold Elevation: 286.1 ft
2.12.6 Touchdown Zone Elevation: 286.3 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 1
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−41.88N / 77−28−29.3151W
2.12.6 Threshold Elevation: 296 ft
2.12.6 Touchdown Zone Elevation: 296.1 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 181
2.12.3 Dimensions: 9400 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−58−14.7845N / 77−28−27.9825W
2.12.6 Threshold Elevation: 276.9 ft
2.12.6 Touchdown Zone Elevation: 278.4 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: 38−55−25.526N / 77−26−11.222W
2.12.6 Threshold Elevation: 311.7 ft
2.12.6 Touchdown Zone Elevation: 312.4 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 181
2.12.3 Dimensions: 11500 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−57−19.185N / 77−26−9.526W
2.12.6 Threshold Elevation: 293.2 ft
2.12.6 Touchdown Zone Elevation: 302.2 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 291
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−0.997N / 77−27−21.233W
2.12.6 Threshold Elevation: 287.8 ft
2.12.6 Touchdown Zone Elevation: 287.8 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 111
2.12.3 Dimensions: 10501 ft x 150 ft
2.12.4 PCN: 81 R/C/W/T
2.12.5 Coordinates: 38−56−37.58N / 77−29−25.599W
2.12.6 Threshold Elevation: 309.8 ft
2.12.6 Touchdown Zone Elevation: 309.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19C
2.13.2 Take−off Run Available: 11500
2.13.3 Take−off Distance Available: 11500

2.13.4 Accelerate−Stop Distance Available: 11500
2.13.5 Landing Distance Available: 11089

2.13.1 Designation: 01C
2.13.2 Take−off Run Available: 11500
2.13.3 Take−off Distance Available: 11500
2.13.4 Accelerate−Stop Distance Available: 11500
2.13.5 Landing Distance Available: 11500

2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 9400
2.13.3 Take−off 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 Take−off Run Available: 9400
2.13.3 Take−off Distance Available: 9400
2.13.4 Accelerate−Stop Distance Available: 9400
2.13.5 Landing Distance Available: 9400

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 11500
2.13.3 Take−off 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 Take−off Run Available: 11500
2.13.3 Take−off Distance Available: 11500
2.13.4 Accelerate−Stop Distance Available: 11500
2.13.5 Landing Distance Available: 11500

2.13.1 Designation: 30
2.13.2 Take−off Run Available: 10501
2.13.3 Take−off Distance Available: 10501
2.13.4 Accelerate−Stop Distance Available: 10501
2.13.5 Landing Distance Available: 10501

2.13.1 Designation: 12
2.13.2 Take−off Run Available: 10501
2.13.3 Take−off Distance Available: 10501
2.13.4 Accelerate−Stop Distance Available: 10501
2.13.5 Landing Distance Available: 10501

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 135.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 317.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 134.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 121.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (EAST)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (EAST)
2.18.3 Channel: 317.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01R/19L)
2.18.3 Channel: 120.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01C/19C)
2.18.3 Channel: 120.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01L/19R, RWY 12/30)
2.18.3 Channel: 134.425
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01R/19L)
2.18.3 Channel: 317.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01C/19C)
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01L/19R, RWY 12/30)
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (MIDFLD)
2.18.3 Channel: 129.55
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 01C. Magnetic variation: 10W
2.19.2 ILS Identification: OSZ
2.19.5 Coordinates: 38−56−31.0615N / 77−27−40.7425W
2.19.6 Site Elevation: 283.3 ft

2.19.1 ILS Type: Localizer for runway 01C. Magnetic variation: 10W
2.19.2 ILS Identification: OSZ
2.19.5 Coordinates: 38−58−24.6686N / 77−27−33.3933W
2.19.6 Site Elevation: 263.2 ft

2.19.1 ILS Type: Glide Slope for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−58−4.1832N / 77−27−37.9999W
2.19.6 Site Elevation: 266.3 ft

2.19.1 ILS Type: Inner Marker for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−58−22.9443N / 77−27−33.4218W
2.19.6 Site Elevation: 263.4 ft

2.19.1 ILS Type: Localizer for runway 19C. Magnetic variation: 10W
2.19.2 ILS Identification: DLX
2.19.5 Coordinates: 38−56−14.614N / 77−27−35.2866W
2.19.6 Site Elevation: 283.9 ft

2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38−58−25.0778N / 77−28−31.1627W
2.19.6 Site Elevation: 279.3 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38−56−52.8723N / 77−28−34.3495W
2.19.6 Site Elevation: 287.9 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38−56−33.3915N / 77−28−29.4465W
2.19.6 Site Elevation: 275 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 10W
2.19.2 ILS Identification: OIU
2.19.5 Coordinates: 38−58−24.7673N / 77−28−27.8426W
2.19.6 Site Elevation: 276.9 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38−58−25.0778N / 77−28−31.1627W
2.19.6 Site Elevation: 279.3 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38−58−4.4568N / 77−28−33.3233W
2.19.6 Site Elevation: 272 ft

2.19.1 ILS Type: Inner Marker for runway 19R. Magnetic variation: 10W
2.19.2 ILS Identification: ISU
2.19.5 Coordinates: 38−58−23.5142N / 77−28−27.8585W
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: 38−56−31.8979N / 77−28−29.4605W
2.19.6 Site Elevation: 298.2 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 10W
2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38−55−11.0826N / 77−26−8.8302W
2.19.6 Site Elevation: 313.9 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 10W
2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38−55−35.845N / 77−26−4.749W
2.19.6 Site Elevation: 306.5 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 10W
2.19.2 ILS Identification: IAD
2.19.5 Coordinates: 38−57−30.868N / 77−26−9.357W
2.19.6 Site Elevation: 301.8 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−55−11.0826N / 77−26−8.8302W
2.19.6 Site Elevation: 313.9 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−57−9.268N / 77−26−4.613W
2.19.6 Site Elevation: 291.1 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 10W
2.19.2 ILS Identification: SGC
2.19.5 Coordinates: 38−55−11.807N / 77−26−11.427W
2.19.6 Site Elevation: 315.3 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 10W
2.19.2 ILS Identification: AJU
2.19.5 Coordinates: 38−56−30.399N / 77−29−15.535W
2.19.6 Site Elevation: 303.5 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 10W
2.19.2 ILS Identification: AJU
2.19.5 Coordinates: 38−55−57.27N / 77−27−8.47W
2.19.6 Site Elevation: 279.8 ft

General Remarks:

TAXILANE ’C’ ACTIVE; PUSHBACK CLNCS ON NORTH SIDE OF MIDFIELD TERMINAL ARE ONTO TAXILANE ’D’ ONLY UNLESS OTHERWISE AUTH.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ENGINE RUN−UPS BTW 2200L & 0700L REQUIRE PRIOR APPROVAL FM ARPT OPS.

LARGE FLOCKS OF BIRDS ON & INVOF ARPT/DEER INVOF ARPT.

B747−8 RESTRICTED TO MAXIMUM TAXI SPEED 17 KTS (20 MPH) ON TWY J.

RUNUP BLX FOR RWY 30 DSGND AS NON−MOVEMENT AREA.

DURING PERIODS OF ACFT SATURATION LONG TERM PARKING MAY NOT BE AVAILABLE. SERVICES FOR FUEL AND GO ONLY WILL BE AVAILABLE.

ACR PUSH BACKS & PWR FM ALL APRON PSNS REQUIRE CLNC FM MWAA RAMP TWR.

RY STATUS LGTS ARE IN OPN.

ALL AIRCRAFT WITH WINGSPAN EXCEEDING 118 FT ARE RESTRICTED FROM USING TAXILANE A BTN A1 & A5.

ALL 180 DEG TURNS OUT OF APRON POSITIONS SHALL BE MADE USING MINIMUM POWER.

RY 30 DEPARTURES USE UPPER ANTENNA FOR ATC COMMUNICATIONS.

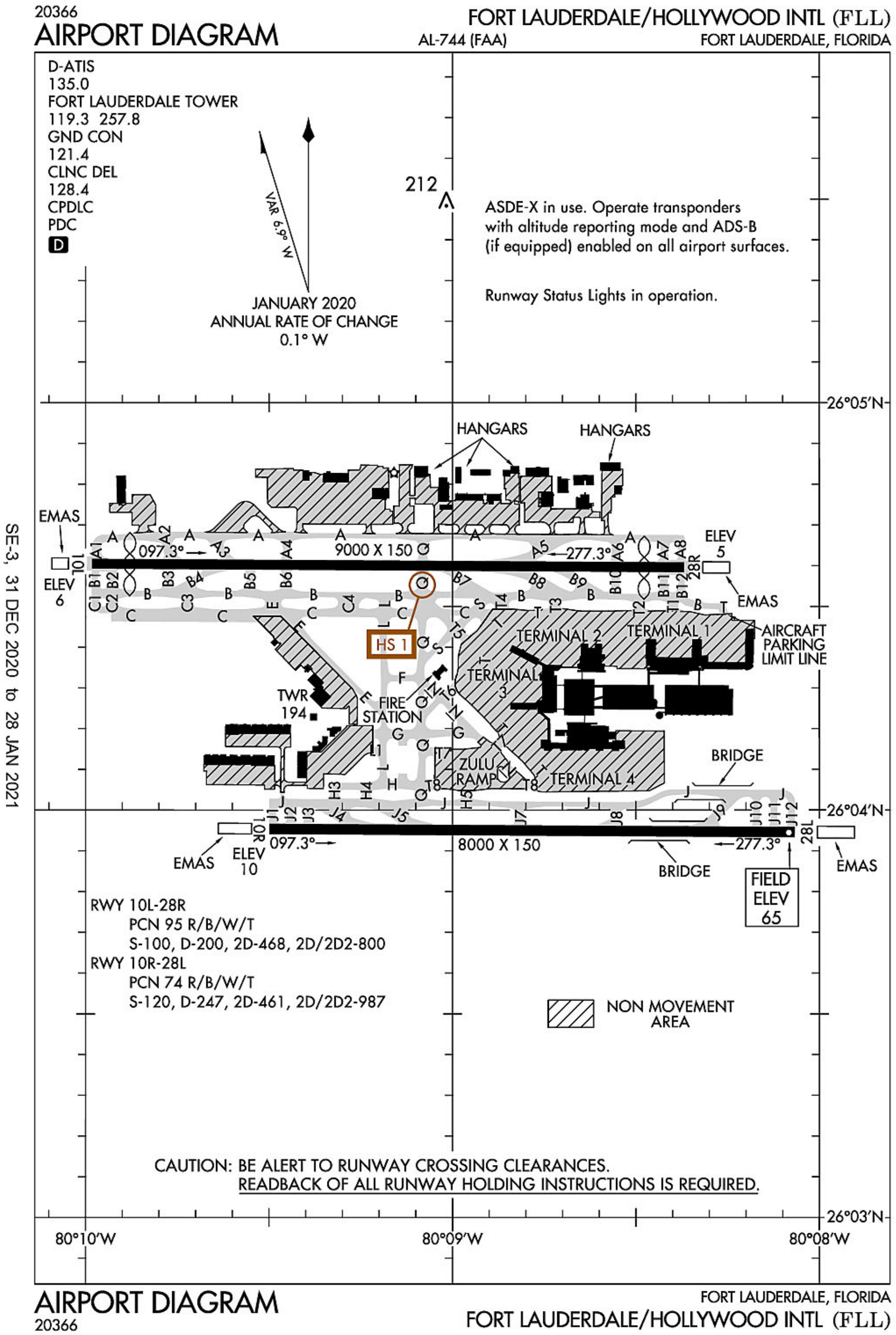
TWY E1 RESTRICTED TO ACFT WITH A WINGSPAN LESS THAN 79 FT.

FLIGHT TRAINING BETWEEN 2200−0700 IS PROHIBITED.

ITNRNT ACFT CTC FBO ON 122.95 OR 129.77 FOR SVCS.

LDG FEE. FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL. NOTE: SEE SPECIAL NOTICES −−CONTINUOUS POWER FACILITIES.

Fort Lauderdale, Florida
Fort Lauderdale−Hollywood International
ICAO Identifier KFLL



Fort Lauderdale, FL
Fort Lauderdale/Hollywood Intl
ICAO Identifier KFLL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 26−4−18N / 80−8−58.9W
2.2.2 From City: 3 miles SW of FORT LAUDERDALE, FL
2.2.3 Elevation: 65 ft
2.2.5 Magnetic Variation: 6W (2015)
2.2.6 Airport Contact: MARK GALE
2200 SW 45TH STREET,
SUITE 101
DANIA BEACH, FL 33312
(954−359−6100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 26−4−37.0166N / 80−9−59.5381W
2.12.6 Threshold Elevation: 5.6 ft
2.12.6 Touchdown Zone Elevation: 7.1 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 26−4−36.4507N / 80−8−20.835W
2.12.6 Threshold Elevation: 5.3 ft
2.12.6 Touchdown Zone Elevation: 6.7 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26−3−57.1919N / 80−9−30.056W
2.12.6 Threshold Elevation: 10.1 ft
2.12.6 Touchdown Zone Elevation: 14.3 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 26−3−56.6718N / 80−8−2.3388W
2.12.6 Threshold Elevation: 65 ft
2.12.6 Touchdown Zone Elevation: 65 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: MALSF

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ARKES DP
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

2.18.1 Service Designation: BAHMA DP
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 135
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FORT LAUDERDALE DP (FOR ARKES, PREDA, THNDR, AND ZAPPA TRANSITION)
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

2.18.1 Service Designation: FORT LAUDERDALE DP (FOR MNATE TRANSITION)
2.18.3 Channel: 128.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: FORT LAUDERDALE DP (FOR BEECH TRANSITION)
2.18.3 Channel: 128.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 120.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PREDA DP
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

2.18.1 Service Designation: RAMP CTL (NORTH)
2.18.3 Channel: 118.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (SOUTH)
2.18.3 Channel: 129.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: THNDR DP
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

2.18.1 Service Designation: ZAPPA DP
2.18.3 Channel: 126.05
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26−4−40.1757N / 80−8−15.6721W
2.19.6 Site Elevation: 11.3 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26−4−39.6411N / 80−9−42.3329W
2.19.6 Site Elevation: 2.9 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: LHI
2.19.5 Coordinates: 26−4−36.4066N / 80−8−13.1434W
2.19.6 Site Elevation: 4.3 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic varia-

tion: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26−4−34.5346N / 80−10−2.4136W
2.19.6 Site Elevation: 10.4 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26−4−39.627N / 80−8−39.0644W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: UDL
2.19.5 Coordinates: 26−4−37.0351N / 80−10−2.8297W
2.19.6 Site Elevation: 4.6 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26−3−58.8348N / 80−7−55.7162W
2.19.6 Site Elevation: 68.3 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26−3−53.1134N / 80−9−18.5896W
2.19.6 Site Elevation: 5.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 6W
2.19.2 ILS Identification: FLL
2.19.5 Coordinates: 26−3−56.6314N / 80−7−55.5666W
2.19.6 Site Elevation: 64.4 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 6W
2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−59.4802N / 80−9−40.4489W
2.19.6 Site Elevation: 14.7 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 6W
2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−52.7404N / 80−8−15.5298W
2.19.6 Site Elevation: 45 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 6W
2.19.2 ILS Identification: ADI
2.19.5 Coordinates: 26−3−57.2361N / 80−9−37.7655W
2.19.6 Site Elevation: 7.5 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 6W
2.19.2 Navigation Aid Identification: FLL
2.19.5 Coordinates: 26−4−26.1833N / 80−9−59.1921W
2.19.6 Site Elevation: 5.6 ft

General Remarks:
PPR FOR ACFT WITH EXPLOSIVES.

ASDE−X IN USE; OPR PARROT WITH ALT RPRTG MODE & ADS−B (IF EQUIPPED) ENABLED ON ARPT SFCS.

ARR FM N & W MNTN 6000 FT UNTIL ABM RWY 28R ON DOWNWIND; ARR FM N MNTN 6000 FT UNTIL ABM RWY 10L ON DOWNWIND.

EAST SIDE OF CONCOURSE B AVBL TO ACFT WITH WINGSPAN LESS THAN 124.9 FT.

ALL RWYS NOISE SENSITIVE; NOISE ABATEMENT IN EFCT − 954−359−6181.

RWY STATUS LIGHTS IN OPRN.

TWY N BTN TWY Q & TWY T6 CLSD TO ACFT WITH WINGSPAN GTR THAN 171 FT & TAIL HEIGHT GTR THAN 60 FT.

NO VFR APCHS OR BASE LEGS UNTIL OFFSHORE.

TURB BLW 1000 FT OVR LANDFILL LCTD 2 NM W.

PPR FOR ACFT WITH WINGSPANS GTR THAN 118 FT ON TWY E BTN TWY C & TWY L.

JET RUNUPS NA 2300−0700.

ACFT OPRG FROM TRML 1, 2, 3, 4 MUST CTC RAMP CTL. RAMP CTL EFF − CTC ARPT OPS FOR HRS.

IR CARRIER ACFT USE RAMP PUSH BACK PROCS PRESCRIBED BY ARPT OPS.

TWY J BGN TO ELEV 900 FT EAST OF TWY Q. DUE TO ELEV ALL ACFT REMAIN ON CNTRLN; TWY T8 & TAXILANE T NOT ACCESSIBLE FM TWY J.

ACFT LDG RWY 10R & EXITING J9 FOLLOW TWY LEAD OFF LINE ONTO J9.

NMRS TREES SW QUADRANT OF ARPT.

BIRDS ON & INVOF ARPT; CONCENTRATION OF BIRDS BLW 500 FT 2.0 NM W OF 10L & 10R AER.

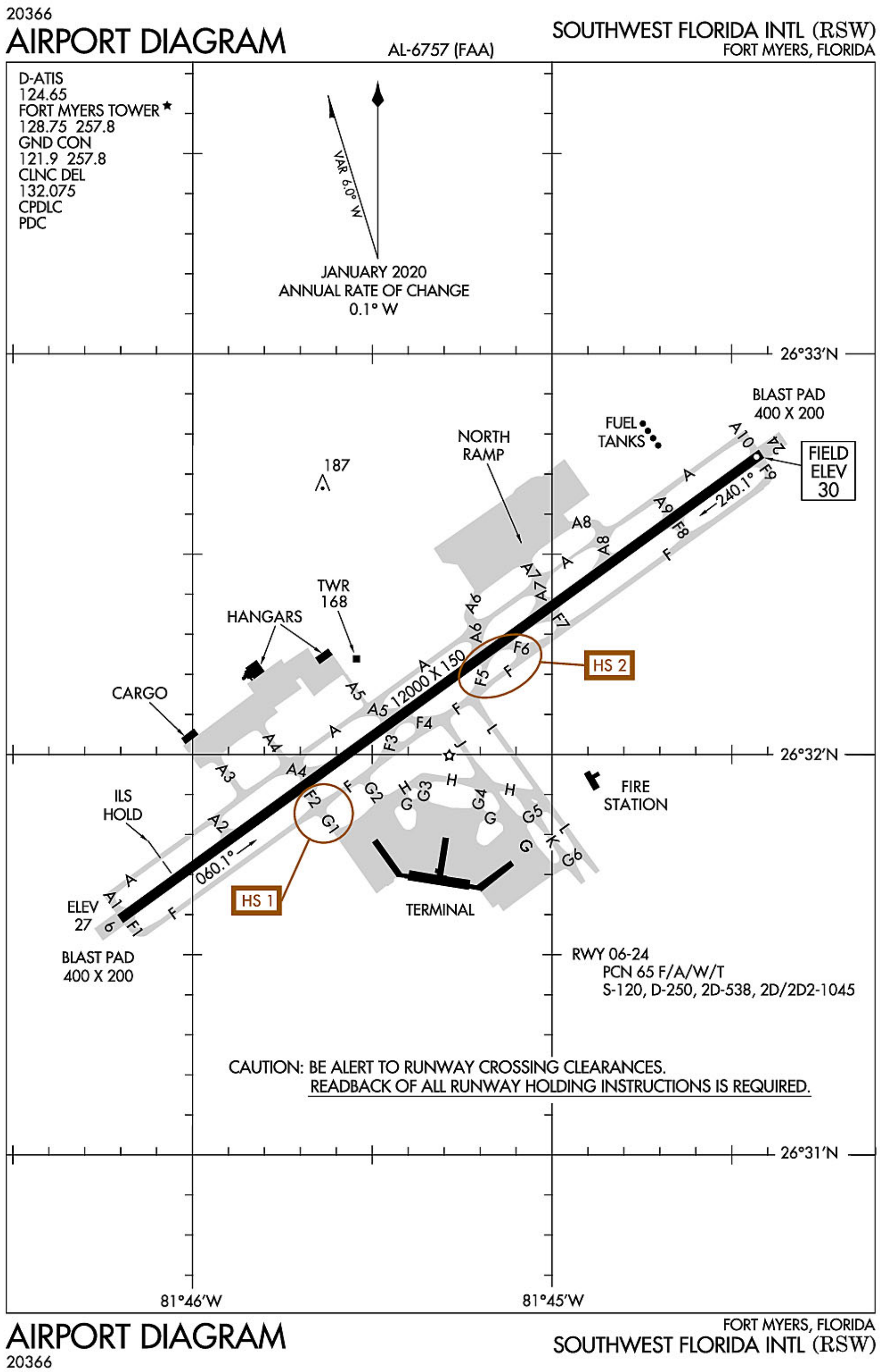
CLSD TO ACR TRAINING; LRG ACFT TRNG OVER 58000 LBS MAX CERTD GROSS TKOF WEIGHT; ALL TRNG 2300−0700.

PREFERENTIAL RWY USE PROGRAM IN EFCT; CTC NOISE ABATEMENT OFFICE.

TWY B EAST OF TWY B12 & TAXILANE T EAST OF TWY T1 CLSD TO ACFT WITH WINGSPAN GTR THAN 126 FT & TAIL HGT GTR THAN 46 FT.

HIGH LIGHT MASTS WNW APCH END RWY 28L.

Fort Myers, Florida
Southwest Florida International
ICAO Identifier KRSW



Fort Myers, FL
Southwest Florida Intl
ICAO Identifier KRSW

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 26−32−10.2N / 81−45−18.6W
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: BEN SIEGEL
11000 TERMINAL ACCESS RD.
FORT MYERS, FL 33913
(239−590−4400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1983

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 24
2.12.2 True Bearing: 234
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−32−45.0236N / 81−44−25.0345W
2.12.6 Threshold Elevation: 29.7 ft
2.12.6 Touchdown Zone Elevation: 29.7 ft

2.12.1 Designation: 06
2.12.2 True Bearing: 54
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 65 F/A/W/T
2.12.5 Coordinates: 26−31−35.3468N / 81−46−12.0693W
2.12.6 Threshold Elevation: 26.5 ft
2.12.6 Touchdown Zone Elevation: 26.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 24
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 06
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ALICO DP (RWY 24)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: ALICO DP (RWY 06)
2.18.3 Channel: 126.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: ALICO DP (RWY 06/24)
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (121−240)
2.18.3 Channel: 124.125
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (241−300)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (001−120)
2.18.3 Channel: 126.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (301−360)
2.18.3 Channel: 127.05

2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (241−120)
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P (121−240)
2.18.3 Channel: 371.85
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 126.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CD/P
2.18.3 Channel: 132.075
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (121−240)
2.18.3 Channel: 124.125
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (241−300)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (001−120)
2.18.3 Channel: 126.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (301−360)
2.18.3 Channel: 127.05
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (241−120)
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CLASS C (121−240)
2.18.3 Channel: 371.85
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CSHEL DP (RWY 24)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CSHEL DP (RWY 06)
2.18.3 Channel: 126.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: CSHEL DP (RWY 06/24)
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 124.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: GND/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: MOOKY DP (RWY 06)
2.18.3 Channel: 124.125
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: MOOKY DP (RWY 24)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: MOOKY DP (RWY 24)
2.18.3 Channel: 306.2
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: MOOKY DP (RWY 06)
2.18.3 Channel: 371.85
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: SCUBY DP
2.18.3 Channel: 124.125
2.18.5 Hours of Operation: 0600−0000

2.18.1 Service Designation: SCUBY DP
2.18.3 Channel: 371.85
2.18.5 Hours of Operation: 0600−0000

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 06. Magnetic variation: 4W
2.19.2 ILS Identification: RSW
2.19.5 Coordinates: 26−32−53.21N / 81−44−17.42W
2.19.6 Site Elevation: 26 ft

2.19.1 ILS Type: Glide Slope for runway 06. Magnetic variation: 4W
2.19.2 ILS Identification: RSW
2.19.5 Coordinates: 26−31−43.49N / 81−46−4.32W
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: 26−32−51.1216N / 81−44−15.6633W
2.19.6 Site Elevation: 27.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 2W
2.19.2 Navigation Aid Identification: RSW
2.19.5 Coordinates: 26−31−47.5508N / 81−46−32.7643W
2.19.6 Site Elevation: 25 ft

General Remarks:

ACR USE RAMP PROC PRESCRIBED BY ARPT OPS.

CAUTION: OPEN BAGGAGE BAYS & CONST WITHIN TERMINAL RAMP AREA. AIRCREWS USE MINIMUM THRUST SETTINGS IN THESE AREAS, SPCLY DURG SINGLE ENG TAXI. CROSS−BLEED STARTS ONLY ALLOWED AFT REACHING THE TUG RELEASE POINT.

GND CLNC RQRD PRIOR TO ENTERING TWY G.

TWY F6 EXIT SIGN LCTD IMT BFR TWY F5.

DEP ACFT OBTAIN APVL FM GND CTL PRIOR TO PUSHBACK FM GATES B7, B9, C8, C9 & D10A. PILOTS ADVISE TUG OPR OF OBTAINED CLNC FM GND CTL PRIOR TO ENTERING TWY G. DEP CTC GND CTL PRIOR TO LEAVING THE COMMUTER RAMP FROM GATES D9A & D9B.

GATES B7 & B9 EXP CALL SPOT #7. GATES C8 & C9 EXP CALL SPOT #4. GATE D10A EXP CALL SPOT #2.

LGTS ON PARALLEL ROAD & PARKING LOT NW OF RWY 06/24 CAN BE MISTAKEN FOR RWY & APCH ENVIRONMENT.

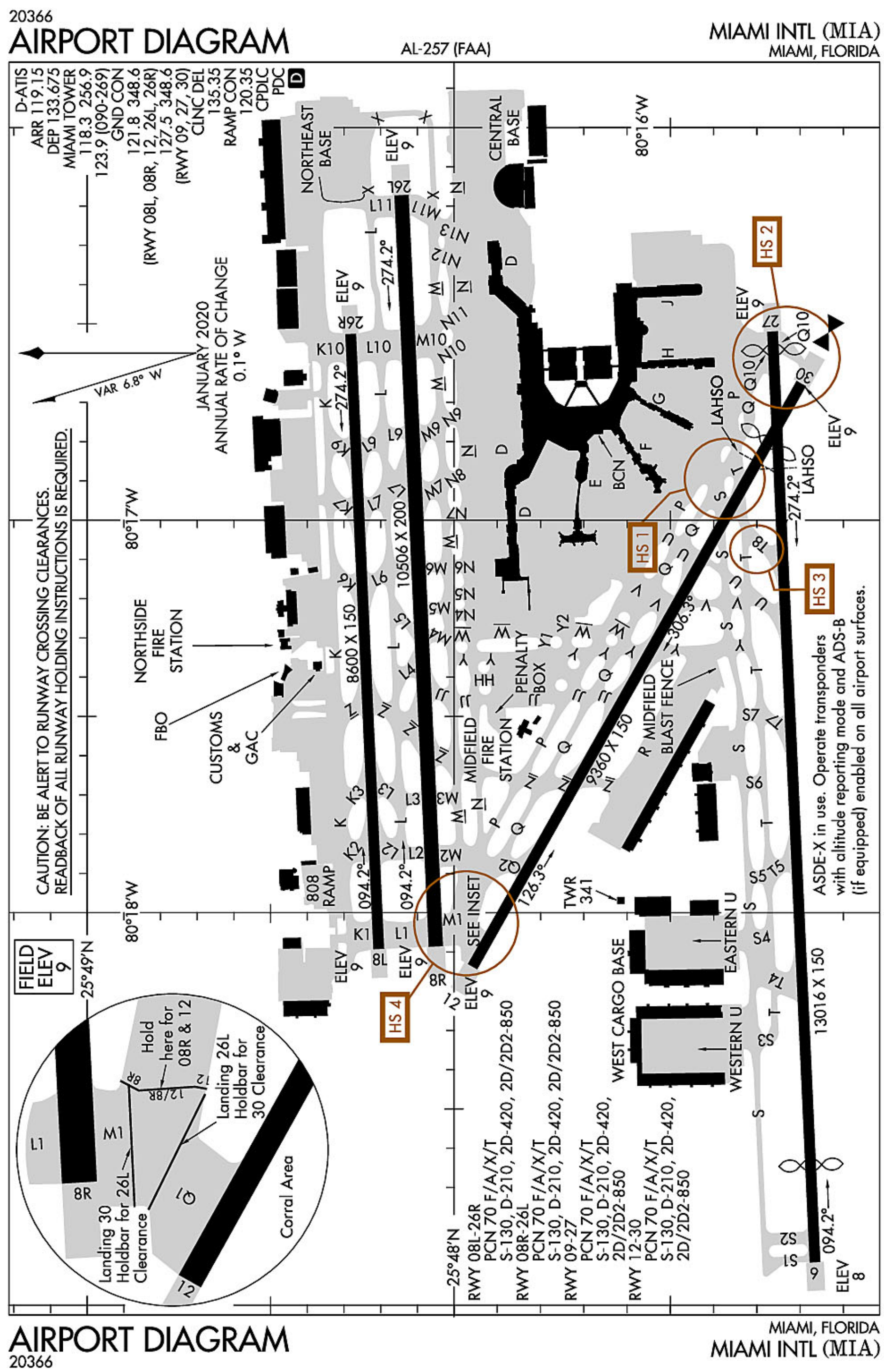
ALL ACFT ON RAMP EXP CLOCKWISE FLOW. OUTBOUND TRAFFIC FROM GATES D2, D4, D6, D8 & D10 PROCEED TO CALL SPOT 1; OUTBOUND TRAFFIC FROM GATES C2, C4, C6, D1, D3, D5 & D7 PROCEED TO CALL SPOT 3; OUTBOUND TRAFFIC FROM GATES B2, B4, B6, B8, C1, C3, C5 & C7 PROCEED TO CALL SPOT 5; OUTBOUND TRAFFIC FROM GATES B1, B3 & B5 PROCEED TO CALL SPOT 9; ALL OUTBOUND TRAFFIC REQUEST TAXI INSTRUCTIONS.

NO HELI OPS PERMITTED ON TRML APRON.

TFC PROCD DRCTLY TO GATE UNLESS DRCTD BY ATC; ADVISE ATC IF GATE IS NOT AVBL.

RWY USE PROGRAM IN EFFECT; USE DISTANT NOISE ABATEMENT DEP PROFILE. VISUAL APCH TO RWY 06 W OF FORT MYERS BEACH MAINTAIN 3000 FT UNTIL CROSSING SHORELINE 12 NM SW OF ARPT. RWY 24 PREFERRED BTN 2200−0600. FOR NOISE ABATEMENT PROC CTC AMGR.

Miami, Florida
Miami International
ICAO Identifier KMIA



Miami, FL
Miami Intl
ICAO Identifier KMIA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 25−47−43.3N / 80−17−24.417W
2.2.2 From City: 8 miles NW of MIAMI, FL
2.2.3 Elevation: 9.3 ft
2.2.5 Magnetic Variation: 5W (2000)
2.2.6 Airport Contact: LESTER SOLA
MIAMI−DADE AVIATION DEPARTMENT
MIAMI, FL 33102
(305−876−7077)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 26R
2.12.2 True Bearing: 267
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−14.3204N / 80−16−31.5499W
2.12.6 Threshold Elevation: 8.8 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 87
2.12.3 Dimensions: 8600 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−10.432N / 80−18−5.5508W
2.12.6 Threshold Elevation: 8.9 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 87
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−2.5177N / 80−18−5.1588W
2.12.6 Threshold Elevation: 8.5 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 267
2.12.3 Dimensions: 10506 ft x 200 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−48−7.2652N / 80−16−10.3282W
2.12.6 Threshold Elevation: 8.9 ft
2.12.6 Touchdown Zone Elevation: 9 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 87
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−47−9.9421N / 80−18−53.4173W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.2 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 267
2.12.3 Dimensions: 13016 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−47−15.8328N / 80−16−31.1711W
2.12.6 Threshold Elevation: 9 ft
2.12.6 Touchdown Zone Elevation: 9.1 ft

2.12.1 Designation: 30
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9360 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−47−11.8224N / 80−16−39.0805W
2.12.6 Threshold Elevation: 8.7 ft
2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 12
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9360 ft x 150 ft
2.12.4 PCN: 70 F/A/X/T
2.12.5 Coordinates: 25−47−57.4262N / 80−18−8.2439W
2.12.6 Threshold Elevation: 9.1 ft
2.12.6 Touchdown Zone Elevation: 9.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 8600

2.13.3 Take−off Distance Available: 8600
2.13.4 Accelerate−Stop Distance Available: 8600
2.13.5 Landing Distance Available: 8600

2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 8600
2.13.3 Take−off 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 Take−off Run Available: 10506
2.13.3 Take−off 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 Take−off Run Available: 10506
2.13.3 Take−off Distance Available: 10506
2.13.4 Accelerate−Stop Distance Available: 10220
2.13.5 Landing Distance Available: 10220

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 13016
2.13.3 Take−off 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 Take−off Run Available: 13016
2.13.3 Take−off Distance Available: 13016
2.13.4 Accelerate−Stop Distance Available: 13016
2.13.5 Landing Distance Available: 12755

2.13.1 Designation: 30
2.13.2 Take−off Run Available: 9355
2.13.3 Take−off Distance Available: 9355
2.13.4 Accelerate−Stop Distance Available: 8853
2.13.5 Landing Distance Available: 7913

2.13.1 Designation: 12
2.13.2 Take−off Run Available: 9355
2.13.3 Take−off Distance Available: 9355
2.13.4 Accelerate−Stop Distance Available: 8579
2.13.5 Landing Distance Available: 8579

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANNEY STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ANNEY STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ANNEY STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ANNEY STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (090−269)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (090−269)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (270−089)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (270−089)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (090−269)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (090−269)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (270−089)
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (270−089)
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (270−089)
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (270−089)
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S (270−089)
2.18.3 Channel: 263.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S (270−089)
2.18.3 Channel: 263.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUFI STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUFI STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUFI STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUFI STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 135.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 135.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (090−269)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (090−269)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (270−089)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (270−089)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (270−089)
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (270−089)
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (090−269)

2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (090−269)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CURSO STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CURSO STAR
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CURSO STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CURSO STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR (WEST)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR (WEST)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR (EAST)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR (EAST)
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CYPRESS STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARRIVAL)
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARRIVAL)
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEPART)
2.18.3 Channel: 133.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEPART)
2.18.3 Channel: 133.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 125.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 125.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (270−089)
2.18.3 Channel: 290.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (270−089)
2.18.3 Channel: 290.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 354.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 354.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P IC (270−089)
2.18.3 Channel: 119.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P IC (270−089)
2.18.3 Channel: 119.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DVALL STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DVALL STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DVALL STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DVALL STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: FLIPR STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FLIPR STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FLIPR STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FLIPR STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOWEE STAR
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOWEE STAR
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOWEE STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOWEE STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (RWY 08L/26R, 08R/26L, 12)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (RWY 08L/26R, 08R/26L, 12)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (RWY 09/27, 30)
2.18.3 Channel: 127.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (RWY 09/27, 30)
2.18.3 Channel: 127.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HILEY STAR
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HILEY STAR
2.18.3 Channel: 124.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HILEY STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HILEY STAR
2.18.3 Channel: 322.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (090−269)
2.18.3 Channel: 123.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (090−269)
2.18.3 Channel: 123.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (270−089)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (270−089)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL
2.18.3 Channel: 120.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL
2.18.3 Channel: 120.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RTIS (120−300 WITHIN 25 NM)
2.18.3 Channel: 125.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RTIS (120−300 WITHIN 25 NM)
2.18.3 Channel: 125.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SSCOT STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SSCOT STAR
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SSCOT STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SSCOT STAR
2.18.3 Channel: 350.225
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: ROY
2.19.5 Coordinates: 25−48−16.3597N / 80−16−18.3104W
2.19.6 Site Elevation: 20.1 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: ROY
2.19.5 Coordinates: 25−48−14.865N / 80−16−18.3941W
2.19.6 Site Elevation: 6.8 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: CNV
2.19.5 Coordinates: 25−48−7.1241N / 80−18−16.4684W
2.19.6 Site Elevation: 20.3 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: CNV
2.19.5 Coordinates: 25−48−9.969N / 80−18−16.6983W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25−48−5.0878N / 80−16−0.575W
2.19.6 Site Elevation: 15.6 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25−48−6.1715N / 80−17−54.807W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: MFA
2.19.5 Coordinates: 25−48−7.688N / 80−16−0.0426W
2.19.6 Site Elevation: 6.3 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25−48−5.8074N / 80−18−14.9415W
2.19.6 Site Elevation: 14.3 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25−48−9.7347N / 80−16−22.5043W

2.19.6 Site Elevation: 5.9 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: VIN
2.19.5 Coordinates: 25−48−2.1576N / 80−18−13.7966W
2.19.6 Site Elevation: 7.6 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 5W
2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25−47−15.8249N / 80−16−17.2451W
2.19.6 Site Elevation: 20.1 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 5W
2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25−47−7.8388N / 80−18−26.7053W
2.19.6 Site Elevation: 7.5 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 5W
2.19.2 ILS Identification: BUL
2.19.5 Coordinates: 25−47−16.4165N / 80−16−17.1006W
2.19.6 Site Elevation: 18.4 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 5W
2.19.2 ILS Identification: MIA
2.19.5 Coordinates: 25−47−11.7269N / 80−16−45.3981W
2.19.6 Site Elevation: 4.7 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 5W
2.19.2 ILS Identification: MIA
2.19.5 Coordinates: 25−47−9.3891N / 80−19−6.6406W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: DME for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25−47−11.2767N / 80−16−32.4152W
2.19.6 Site Elevation: 15.9 ft

2.19.1 ILS Type: Glide Slope for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25−47−50.78N / 80−17−58.58W
2.19.6 Site Elevation: 7 ft

2.19.1 ILS Type: Localizer for runway 12. Magnetic variation: 5W
2.19.2 ILS Identification: GEM
2.19.5 Coordinates: 25−47−9.6403N / 80−16−34.8108W
2.19.6 Site Elevation: 8.3 ft

2.19.1 ILS Type: DME for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX
2.19.5 Coordinates: 25−47−57.7789N / 80−18−14.5127W
2.19.6 Site Elevation: 14.7 ft

2.19.1 ILS Type: Glide Slope for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX
2.19.5 Coordinates: 25−47−17.643N / 80−16−59.572W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: Localizer for runway 30. Magnetic variation: 5W
2.19.2 ILS Identification: DCX
2.19.5 Coordinates: 25−47−59.8764N / 80−18−13.0372W
2.19.6 Site Elevation: 8.9 ft

General Remarks:
ACFT WITH A WINGSPAN GTR THAN 171 FT ARE PROHIBITED FM TXG ON TWY P EAST OF TWY U.

ALL MEDICAL EMERGENCIES ARRIVALS, WITH THE EXCEPTION OF AIR AMBULANCE FLIGHTS, MUST SECURE DOORS UNTIL ARFF IS ON SCENE.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ALL DIVERSION CTC FREQ 130.5 UPON ARR.

ALL TURBOJET ACFT USE DSNT NOISE ABATEMENT DEP PROFILE FROM ALL RYS EXC A320, B727, B737−800, B767−400, AND DC9 WHICH SHOULD USE CLOSE−IN NOISE ABATEMENT ABATEMENT PROFILE.

B757, HEAVY AND SUPER ACFT ARE NOT AUTH INT DEP FOR ANY RWY UNLESS A PTN IS CLSD OR UNUNSL.

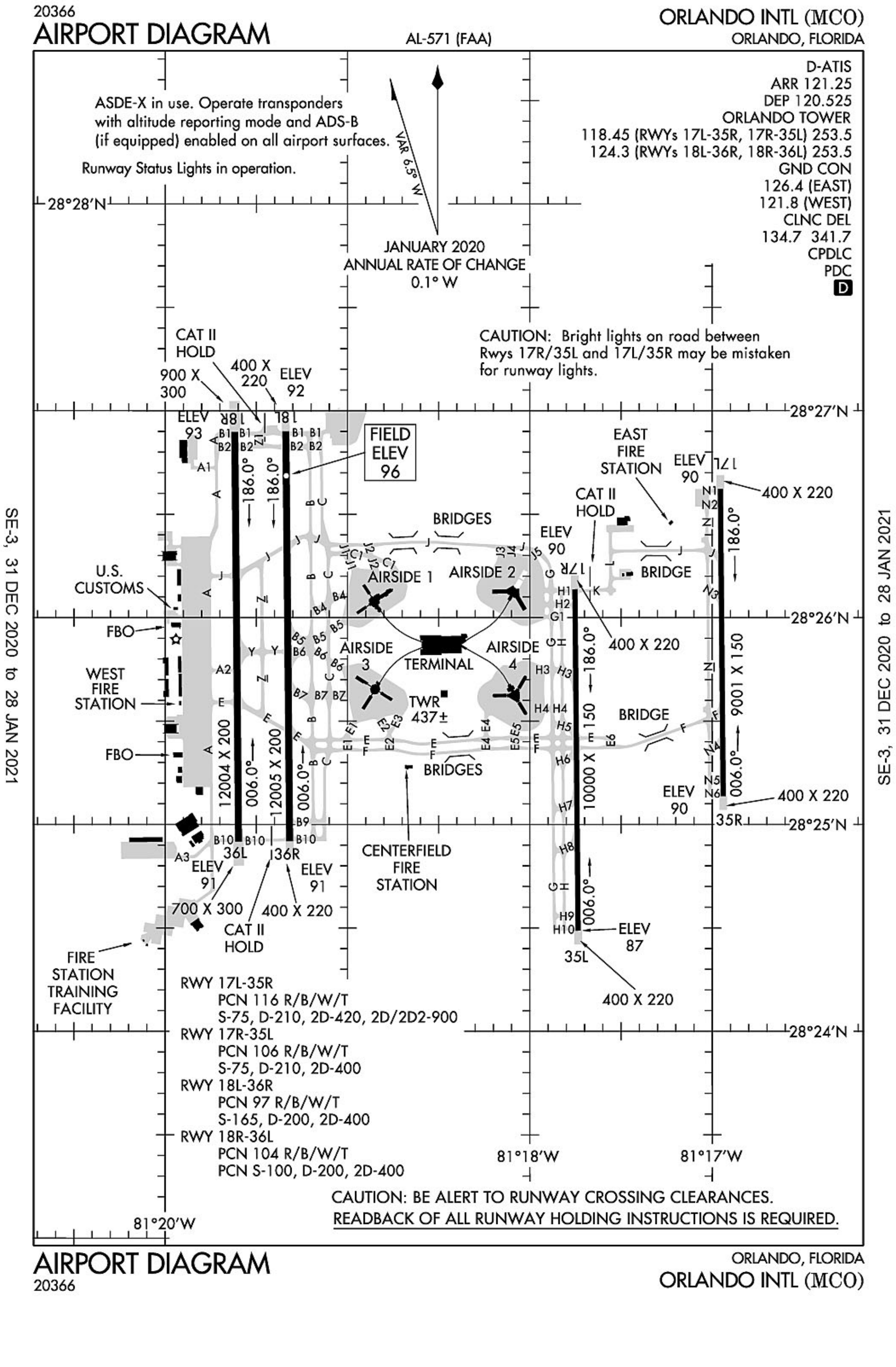
PPR 3 HRS PRIOR TO ALL ARRIVALS ON THE GENERAL AVIATION CENTER (GAC) RAMP 305−876−7550 CTC RAMP CONTROL UPON ARRIVAL ON FREQUENCY 131.600. ACFT WITH WINGSPAN GREATER THAN 78 FT ARE PROHIBITED FROM ENTERING THE GAC RAMP.

CLSD NON ENG ACFT.

BIRDS ON & INVOF ARPT.

PPR FOR INBOUND MILITARY FLIGHTS 100 NM ON FREQ 130.5.

Orlando, Florida
Orlando International
ICAO Identifier KMCO



Orlando, FL
Orlando Intl
ICAO Identifier KMCO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 28−25−45.8N / 81−18−32.4W
2.2.2 From City: 6 miles SE of ORLANDO, FL
2.2.3 Elevation: 96.4 ft
2.2.5 Magnetic Variation: 6W (2015)
2.2.6 Airport Contact: 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 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 17L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28−26−37.308N / 81−16−57.2924W
2.12.6 Threshold Elevation: 89.7 ft
2.12.6 Touchdown Zone Elevation: 89.9 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 116 R/B/W/T
2.12.5 Coordinates: 28−25−8.1974N / 81−16−56.3802W
2.12.6 Threshold Elevation: 89.7 ft
2.12.6 Touchdown Zone Elevation: 89.8 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28−26−8.2029N / 81−17−45.1656W
2.12.6 Threshold Elevation: 90.1 ft
2.12.6 Touchdown Zone Elevation: 90.2 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 106 R/B/W/T
2.12.5 Coordinates: 28−24−29.1952N / 81−17−44.1335W
2.12.6 Threshold Elevation: 86.7 ft
2.12.6 Touchdown Zone Elevation: 88.3 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−24−55.1469N / 81−19−19.0358W
2.12.6 Threshold Elevation: 91 ft
2.12.6 Touchdown Zone Elevation: 92.3 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12005 ft x 200 ft
2.12.4 PCN: 97 R/B/W/T
2.12.5 Coordinates: 28−26−54.0038N / 81−19−20.3022W
2.12.6 Threshold Elevation: 92.4 ft
2.12.6 Touchdown Zone Elevation: 96.4 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−26−53.8569N / 81−19−37.1091W
2.12.6 Threshold Elevation: 92.5 ft
2.12.6 Touchdown Zone Elevation: 93.5 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 12004 ft x 200 ft
2.12.4 PCN: 104 R/B/W/T
2.12.5 Coordinates: 28−24−55.007N / 81−19−35.8294W
2.12.6 Threshold Elevation: 91.1 ft
2.12.6 Touchdown Zone Elevation: 92.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 17L
2.13.2 Take−off Run Available: 9000

2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 17R
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 12005
2.13.3 Take−off Distance Available: 12005
2.13.4 Accelerate−Stop Distance Available: 11601
2.13.5 Landing Distance Available: 11601

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 12005
2.13.3 Take−off Distance Available: 12005
2.13.4 Accelerate−Stop Distance Available: 12005
2.13.5 Landing Distance Available: 12005

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 12004
2.13.3 Take−off 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 Take−off Run Available: 12004
2.13.3 Take−off Distance Available: 12004
2.13.4 Accelerate−Stop Distance Available: 11621
2.13.5 Landing Distance Available: 11621

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 17L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: AR OPS
2.18.3 Channel: 41.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: AR OPS
2.18.3 Channel: 148.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD/P
2.18.3 Channel: 134.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 341.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 120.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 121.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (EAST)
2.18.3 Channel: 126.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17L/35R, 17R/35L)
2.18.3 Channel: 118.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18L/36R, 18R/36L)
2.18.3 Channel: 124.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 253.5
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28−24−57.9921N / 81−16−51.737W
2.19.6 Site Elevation: 97 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28−26−27.0479N / 81−16−52.5933W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: Inner Marker for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28−26−45.819N / 81−16−57.3985W
2.19.6 Site Elevation: 89.6 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 6W
2.19.2 ILS Identification: ARK
2.19.5 Coordinates: 28−24−57.8892N / 81−16−56.2728W
2.19.6 Site Elevation: 89.1 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28−26−48.2377N / 81−16−52.8447W
2.19.6 Site Elevation: 98.3 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28−25−18.6301N / 81−16−51.8726W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Inner Marker for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28−24−59.6772N / 81−16−56.2924W
2.19.6 Site Elevation: 89.2 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 6W
2.19.2 ILS Identification: CER
2.19.5 Coordinates: 28−26−47.6103N / 81−16−57.3979W
2.19.6 Site Elevation: 89.6 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28−24−18.9549N / 81−17−47.0755W
2.19.6 Site Elevation: 86.4 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28−25−57.8375N /

81−17−40.5783W
2.19.6 Site Elevation: 92.7 ft

2.19.1 ILS Type: Inner Marker for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28−26−16.6991N / 81−17−45.2569W
2.19.6 Site Elevation: 84.9 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 6W
2.19.2 ILS Identification: DIZ
2.19.5 Coordinates: 28−24−18.7729N / 81−17−44.0255W
2.19.6 Site Elevation: 81.6 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28−26−18.3948N / 81−17−48.1528W
2.19.6 Site Elevation: 95.5 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28−24−39.5307N / 81−17−39.7618W
2.19.6 Site Elevation: 83.7 ft

2.19.1 ILS Type: Inner Marker for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28−24−20.5349N / 81−17−44.0395W
2.19.6 Site Elevation: 82.1 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28−26−18.5959N / 81−17−45.2712W
2.19.6 Site Elevation: 87.7 ft

2.19.1 ILS Type: Middle Marker for runway 35L. Magnetic variation: 6W
2.19.2 ILS Identification: DDO
2.19.5 Coordinates: 28−24−1.5295N / 81−17−43.8604W
2.19.6 Site Elevation: 82.4 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28−27−0.7626N / 81−19−18.0064W
2.19.6 Site Elevation: 96.2 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28−25−5.5139N / 81−19−23.6289W
2.19.6 Site Elevation: 87.7 ft

2.19.1 ILS Type: Inner Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28−24−46.6452N / 81−19−18.9395W
2.19.6 Site Elevation: 86.6 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28−27−1.4488N / 81−19−20.3839W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: Middle Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: OJP
2.19.5 Coordinates: 28−24−31.8917N / 81−19−18.7794W
2.19.6 Site Elevation: 84.5 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28−24−42.2043N / 81−19−38.5819W
2.19.6 Site Elevation: 94.7 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28−26−43.5N / 81−19−32.21W
2.19.6 Site Elevation: 89 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28−24−41.97N / 81−19−35.69W
2.19.6 Site Elevation: 86 ft

2.19.1 ILS Type: Middle Marker for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: TFE
2.19.5 Coordinates: 28−27−20.0402N / 81−19−37.3925W
2.19.6 Site Elevation: 87.4 ft

General Remarks:
WHEN ORL ILS RY 7 AND MCO ILS RYS 17 & 18R SIMULTANEOUS OPERATIONS ARE CONDUCTED, ATC RADAR REQUIRED.

UNLESS ADV BY ATIS, DEP FLTS ON INITIAL CTC WITH GND CTL: ACFT ON WEST RAMP, AIRSIDE 1 & 3 (GATES 1−59) USE GND CTL 121.8. ACFT AT AIRSIDE 2 & 4 (GATES 60 AND HIGHER), USE GND CTL 126.4.

WEST RAMP CUSTOMS INSPECTION PRKG AREA RSTD TO ACFT WINGSPAN LESS THAN 118'

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY A, BTN W RAMP S END AND TWY B10, RSTRD TO ACFT WINGSPAN LESS THAN 171 FT. PPR FOR ACFT WINGSPAN 171 FT OR GTR.

TWY J3 AND TWY J4 RSTD TO WINGSPAN OF LESS THAN 118 FT.

RUNWAY STATUS LIGHTS ARE IN OPERATION.

BRIGHT LGTS ON ROAD BTN RY 17R/35L AND RY 17L/35R MAY BE MISTAKEN FOR RY LGTS.

AVOID CONTACT WITH TAXIWAY EDGE LIGHTS; ALL AIRCRAFT DETERMINED TO BE FAA DESIGN GROUP IV AND ABOVE MUST PERFORM JUDGEMENTAL OVERSTEERING INSTEAD OF COCKPIT CENTERLINE STEERING WHEN TAXIING.

TWY A, SOUTH OF TWY A3 RSTD TO WINGSPAN OF LESS THAN 118 FT. PPR REQUIRED FOR WINGSPAN 118 FT OR GREATER.

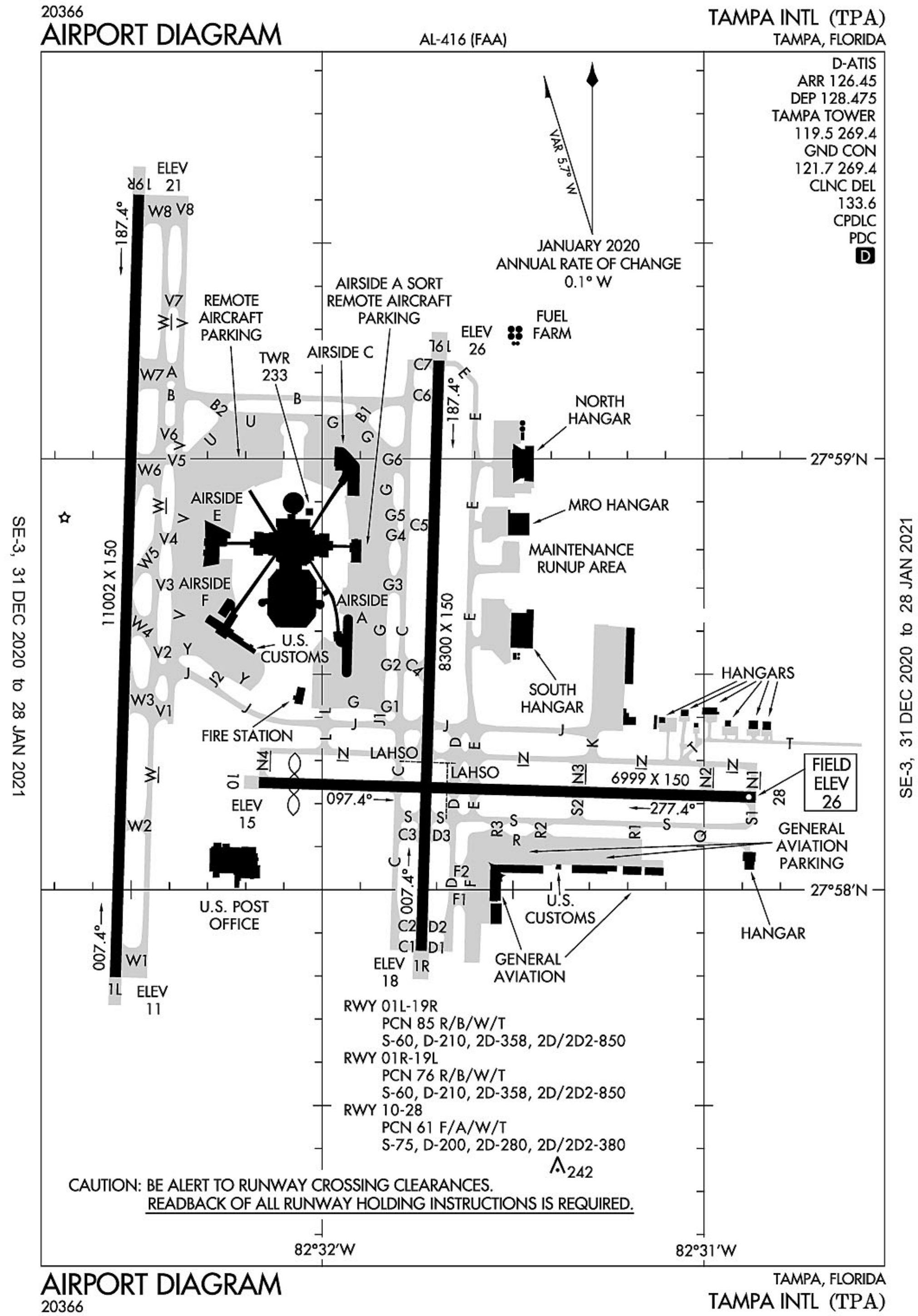
RY 17L−35R UNLIT 0400−1100Z.

USE CAUTION IN VCNTY OF TWY "A" ALONG WEST RAMP.

BIRDS & DEER ON & INVOF ARPT.

ACFT WITH WINGSPAN GREATER THAN 214 FT MUST ADHERE TO SPECIFIC RY AND TAXI ROUTES. CONTACT AIRFIELD OPS AT 407−825−2036 FOR DETAILS.

Tampa, Florida
Tampa International
ICAO Identifier KTPA



Tampa, FL
Tampa Intl
ICAO Identifier KTPA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 27−58−31.7N / 82−31−59.7W
2.2.2 From City: 6 miles W of TAMPA, FL
2.2.3 Elevation: 26.4 ft
2.2.5 Magnetic Variation: 5W (2010)
2.2.6 Airport Contact: JOHN TILIACOS
PO BOX 22287
TAMPA, FL 33622
(813−870−8700)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19R
2.12.2 True Bearing: 182
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−59−36.7423N / 82−32−28.7801W
2.12.6 Threshold Elevation: 21 ft
2.12.6 Touchdown Zone Elevation: 21 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 2
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 27−57−47.8596N / 82−32−32.4793W
2.12.6 Threshold Elevation: 10.7 ft
2.12.6 Touchdown Zone Elevation: 10.8 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 182
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27−59−13.6607N / 82−31−41.5739W
2.12.6 Threshold Elevation: 26 ft
2.12.6 Touchdown Zone Elevation: 26.1 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 2
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 27−57−51.5169N / 82−31−44.3687W
2.12.6 Threshold Elevation: 17.7 ft
2.12.6 Touchdown Zone Elevation: 20.5 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 92
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27−58−14.9917N / 82−32−9.9027W
2.12.6 Threshold Elevation: 14.5 ft
2.12.6 Touchdown Zone Elevation: 21.8 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 272
2.12.3 Dimensions: 6999 ft x 150 ft
2.12.4 PCN: 61 F/A/W/T
2.12.5 Coordinates: 27−58−12.8902N / 82−30−51.8781W
2.12.6 Threshold Elevation: 26.4 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 11002
2.13.3 Take−off Distance Available: 11002
2.13.4 Accelerate−Stop Distance Available: 11002
2.13.5 Landing Distance Available: 11002

2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 11002
2.13.3 Take−off Distance Available: 11002
2.13.4 Accelerate−Stop Distance Available: 10800
2.13.5 Landing Distance Available: 10800

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 8300
2.13.3 Take−off Distance Available: 8300
2.13.4 Accelerate−Stop Distance Available: 8300
2.13.5 Landing Distance Available: 8300

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 8300
2.13.3 Take−off Distance Available: 8300
2.13.4 Accelerate−Stop Distance Available: 8300
2.13.5 Landing Distance Available: 8300

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 6999
2.13.3 Take−off 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 Take−off Run Available: 6999
2.13.3 Take−off Distance Available: 6999
2.13.4 Accelerate−Stop Distance Available: 6501
2.13.5 Landing Distance Available: 6501

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P (001−150)
2.18.3 Channel: 118.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (220−360)
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (151−219)
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (220−360)
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (001−150)
2.18.3 Channel: 285.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (151−219)
2.18.3 Channel: 353.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 118.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 307.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 353.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BAYPO DP
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BAYPO DP
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLOND STAR
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLOND STAR
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRDGE STAR
2.18.3 Channel: 119.65

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRDGE STAR
2.18.3 Channel: 353.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 133.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (151−219)
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (001−150)
2.18.3 Channel: 119.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (220−360)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (001−150)
2.18.3 Channel: 290.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (220−360)
2.18.3 Channel: 316.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (151−219)
2.18.3 Channel: 353.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CROWD DP
2.18.3 Channel: 135.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CROWD DP
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 126.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 128.475
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DADES STAR
2.18.3 Channel: 135.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DADES STAR
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DARBS STAR
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DARBS STAR
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEAKK STAR
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEAKK STAR
2.18.3 Channel: 353.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: ENDED DP
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ENDED DP
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOOXX STAR
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FOOXX STAR
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GANDY DP
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GANDY DP
2.18.3 Channel: 353.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 269.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 269.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 119.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LGTNG DP
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LGTNG DP
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LZARD STAR
2.18.3 Channel: 135.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LZARD STAR
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SYKES DP
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SYKES DP
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAMPA DP
2.18.3 Channel: 135.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAMPA DP
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27−59−43.4N / 82−32−25.65W
2.19.6 Site Elevation: 20 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27−57−58.2392N / 82−32−36.5897W
2.19.6 Site Elevation: 7.6 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27−57−39.6244N / 82−32−32.7564W
2.19.6 Site Elevation: 6.4 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 5W
2.19.2 ILS Identification: AMP
2.19.5 Coordinates: 27−59−44.7869N / 82−32−28.5048W
2.19.6 Site Elevation: 20.6 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27−57−37.34N / 82−32−31.94W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27−59−26.4582N / 82−32−33.5927W
2.19.6 Site Elevation: 17.2 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 5W
2.19.2 ILS Identification: JRT
2.19.5 Coordinates: 27−57−37.46N / 82−32−32.84W
2.19.6 Site Elevation: 5 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 5W
2.19.2 ILS Identification: TWJ
2.19.5 Coordinates: 27−59−22.9831N / 82−31−38.4291W
2.19.6 Site Elevation: 35.9 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 5W
2.19.2 ILS Identification: TWJ
2.19.5 Coordinates: 27−59−23.9328N / 82−31−41.2197W
2.19.6 Site Elevation: 25.6 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27−59−3.1644N / 82−31−37.4636W
2.19.6 Site Elevation: 23.8 ft

2.19.1 ILS Type: Inner Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27−59−23.6601N / 82−31−41.2251W
2.19.6 Site Elevation: 25.7 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 27−57−40.972N / 82−31−44.7284W
2.19.6 Site Elevation: 13.7 ft

2.19.1 ILS Type: Outer Marker for runway 19L. Magnetic variation: 5W
2.19.2 ILS Identification: TPA
2.19.5 Coordinates: 28−5−7.2047N / 82−31−30.8942W
2.19.6 Site Elevation: 42.5 ft

General Remarks:

TWY RSTRS: AIRPLANE DESIGN GRP V OR LGR − TWY N WEST OF TWY L UNAVBL. TWY E NORTH OF TWY J ALSO UNUSBL FOR WINGSPAN GREATER THAN 171 FT UNLESS PPR FROM ARPT OPS.

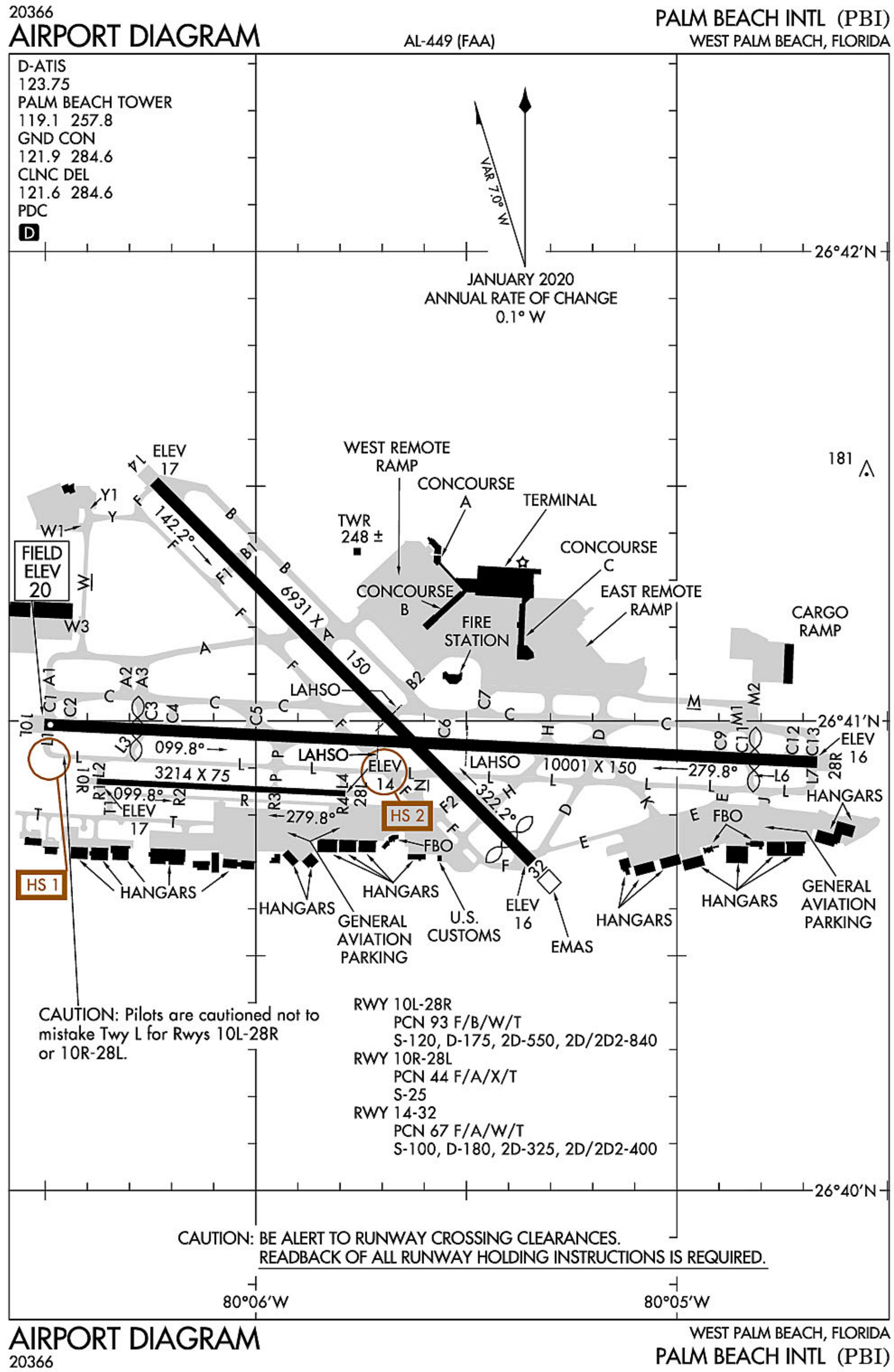
RY 19L IS NOISE SENSITIVE TO TURBOJET DEPARTURES. RY 01R IS NOISE SENSITIVE TO TURBOJET ARRIVALS. PUBLISHED NOISE ABATEMENT PROCEDURES IN EFFECT.

TAXILANE F AND TAXILANE R ARE NON−MOVEMENT AREAS. BOTH LCTNS ARE UNAVBL FOR GROUP IV ACFT WITH A WINGSPAN GTR THAN 117 FT WO PPR FROM ARPT OPS. TAXILANE T PPR FROM ARPT OPS RQRD FOR ACFT WITH A WINGSPAN GTR THAN 90 FT.

ONLY ACFT WITH PRIOR PERMISSION MAY USE TERMINAL APRON; ALL OTHERS USE GA APRON.

BIRD ACTIVITY ON AND IN VCNTY OF ARPT.

West Palm Beach, Florida
Palm Beach International
ICAO Identifier KPBI



West Palm Beach, FL
Palm Beach Intl
ICAO Identifier KPBI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 26−40−59.382N / 80−5−44.131W
2.2.2 From City: 3 miles W of WEST PALM BEACH, FL
2.2.3 Elevation: 19.6 ft
2.2.5 Magnetic Variation: 6W (2010)
2.2.6 Airport Contact: LAURA BEEBE
846 PALM BEACH INTL AIRPORT
WEST PALM BEACH, FL 33406
(561−471−7420)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10L
2.12.2 True Bearing: 93
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26−40−59.5493N / 80−6−30.1296W
2.12.6 Threshold Elevation: 19.6 ft
2.12.6 Touchdown Zone Elevation: 16.3 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 93 F/B/W/T
2.12.5 Coordinates: 26−40−54.7438N / 80−4−40.0137W
2.12.6 Threshold Elevation: 16.4 ft
2.12.6 Touchdown Zone Elevation: 18.3 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26−40−52.282N / 80−6−22.6416W
2.12.6 Threshold Elevation: 17.1 ft
2.12.6 Touchdown Zone Elevation: 17.2 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 3214 ft x 75 ft
2.12.4 PCN: 44 F/A/X/T
2.12.5 Coordinates: 26−40−50.7327N / 80−5−47.2501W
2.12.6 Threshold Elevation: 13.6 ft
2.12.6 Touchdown Zone Elevation: 16.9 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 6931 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26−41−30.596N / 80−6−14.482W
2.12.6 Threshold Elevation: 17 ft
2.12.6 Touchdown Zone Elevation: 17.3 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 6931 ft x 150 ft
2.12.4 PCN: 67 F/A/W/T
2.12.5 Coordinates: 26−40−41.913N / 80−5−20.622W
2.12.6 Threshold Elevation: 15.8 ft
2.12.6 Touchdown Zone Elevation: 15.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 10001
2.13.3 Take−off Distance Available: 10001
2.13.4 Accelerate−Stop Distance Available: 10001
2.13.5 Landing Distance Available: 8800

2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 10001
2.13.3 Take−off Distance Available: 10001
2.13.4 Accelerate−Stop Distance Available: 10001
2.13.5 Landing Distance Available: 9189

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 3214
2.13.3 Take−off Distance Available: 3214
2.13.4 Accelerate−Stop Distance Available: 3214
2.13.5 Landing Distance Available: 3214

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 3214

2.13.3 Take−off Distance Available: 3214
2.13.4 Accelerate−Stop Distance Available: 3214
2.13.5 Landing Distance Available: 3214

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 6926
2.13.3 Take−off Distance Available: 6926
2.13.4 Accelerate−Stop Distance Available: 6000
2.13.5 Landing Distance Available: 6000

2.13.1 Designation: 32
2.13.2 Take−off Run Available: 6926
2.13.3 Take−off Distance Available: 6926
2.13.4 Accelerate−Stop Distance Available: 6926
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
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUFIT DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUFIT DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUFIT DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUFIT DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 284.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS

2.18.3 Channel: 123.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: FRWAY STAR
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FRWAY STAR
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 284.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 118.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 384.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LMORE DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LMORE DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LMORE DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LMORE DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIXAE DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIXAE DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIXAE DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIXAE DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PALM BEACH DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PALM BEACH DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PALM BEACH DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PALM BEACH DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SLIDZ DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SLIDZ DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SLIDZ DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SLIDZ DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TBIRD DP (SOUTH)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TBIRD DP (NORTH)
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TBIRD DP (NORTH)
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TBIRD DP (SOUTH)
2.18.3 Channel: 343.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TUXXI STAR
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TUXXI STAR
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WLACE STAR
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WLACE STAR
2.18.3 Channel: 317.4
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26−40−51.4319N / 80−4−29.0092W
2.19.6 Site Elevation: 23.3 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26−40−55.9795N / 80−6−6.0748W
2.19.6 Site Elevation: 14.5 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 6W
2.19.2 ILS Identification: PBI
2.19.5 Coordinates: 26−40−54.2434N / 80−4−28.6079W
2.19.6 Site Elevation: 13 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: PWB
2.19.5 Coordinates: 26−40−53.0853N / 80−5−1.7298W
2.19.6 Site Elevation: 13.5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 6W
2.19.2 ILS Identification: PWB
2.19.5 Coordinates: 26−40−59.9773N / 80−6−39.9822W
2.19.6 Site Elevation: 18.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 3W
2.19.2 Navigation Aid Identification: PBI
2.19.5 Coordinates: 26−40−48.198N / 80−5−11.3586W
2.19.6 Site Elevation: 15.7 ft

General Remarks:
RY 10R/28L NON−AIR CARRIER ACFT ONLY.

BE ALERT: TWY L IS LCTD BTWN RYS 10L/28R & 10R/28L. TWY L IS WIDER AND LONGER THAN RY 10R/28L − DO NOT CONFUSE TWY L FOR RY. AIRCRAFT WITH WINGSPAN OF 118 FT OR GREATER IS PROHIBITED ON TWY L.

24 HR PPR FOR ACFT WITH WINGSPANS GTR THAN 171 FT.

NO ACFT WILL CROSS HOLD LINE WITHOUT AUTHORIZATION.

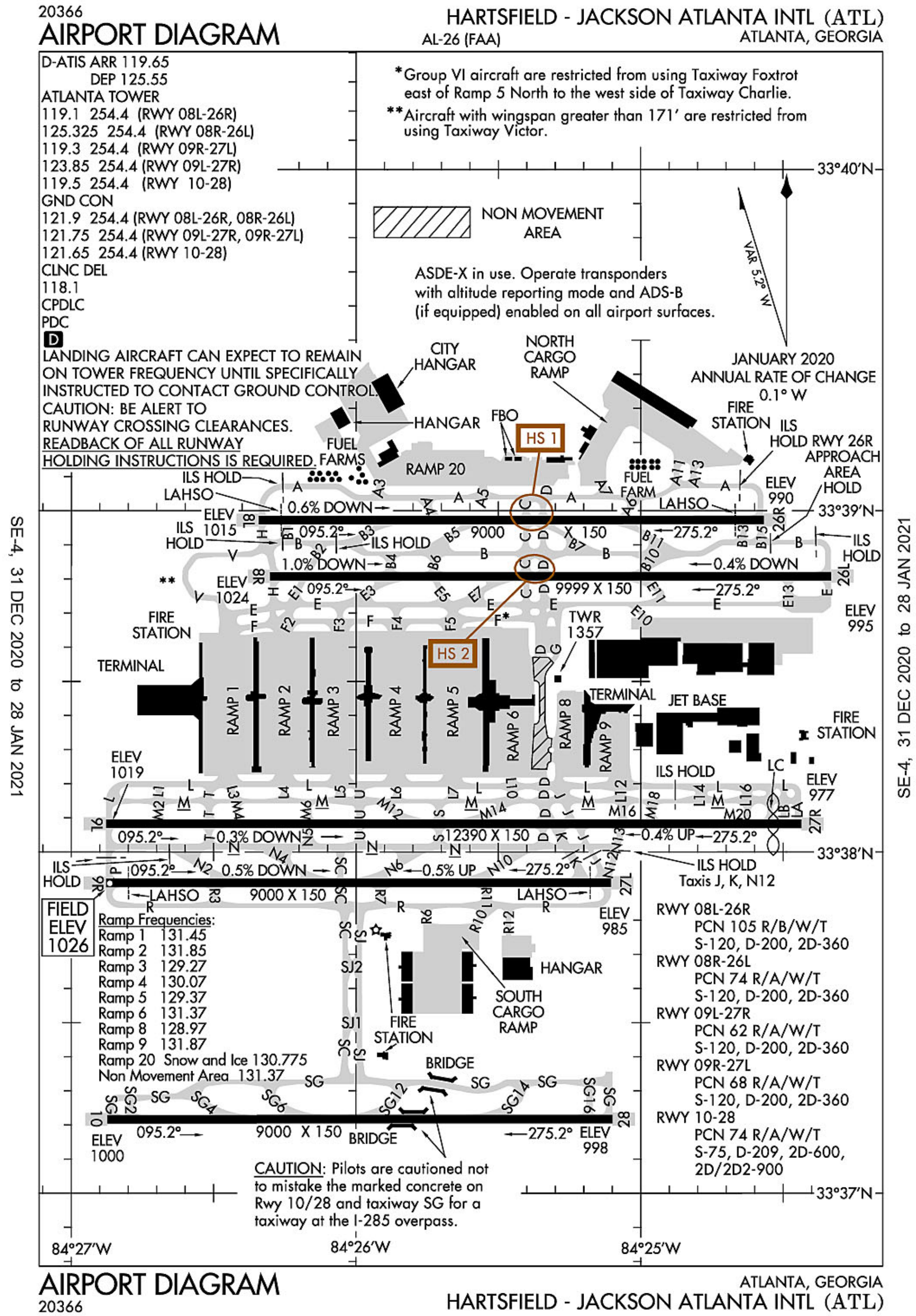
NOISE ABATEMENT PROCEDURES IN EFFECT. MULTIENGINE FLIGHT TRAINING PROHIBITED SS TO SR

SUN AND HOLIDAY; STRICT ENVIRONMENTAL OPERATING STAGE 2 ACFT 0300−1200Z CALL NOISE ABATEMENT OFFICER 561−471−7467.

BE ALERT; RYS 28L & 28R THLDS STAGGERED BY 5400 FT.

MIGRATORY BIRDS ON AND INVOF ARPT.

Atlanta, Georgia
Hartsfield−Jackson Atlanta International
ICAO Identifier KATL



Atlanta, GA
Hartsfield − Jackson Atlanta Intl
ICAO Identifier KATL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 33−38−12.1186N / 84−25−40.3104W
2.2.2 From City: 7 miles S of ATLANTA, GA
2.2.3 Elevation: 1026.2 ft
2.2.5 Magnetic Variation: 5W (2015)
2.2.6 Airport Contact: JOHN SELDEN
PO BOX 20509
ATLANTA, GA 30320
(404−530−6600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 33−38−58.3238N / 84−26−20.4923W
2.12.6 Threshold Elevation: 1014.6 ft
2.12.6 Touchdown Zone Elevation: 1014.6 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 105 R/B/W/T
2.12.5 Coordinates: 33−38−58.3515N / 84−24−34.0341W
2.12.6 Threshold Elevation: 990 ft
2.12.6 Touchdown Zone Elevation: 990 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.432N / 84−26−18.1035W
2.12.6 Threshold Elevation: 1023.7 ft
2.12.6 Touchdown Zone Elevation: 1023.8 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9999 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−38−48.4612N / 84−24−19.8313W
2.12.6 Threshold Elevation: 995.4 ft
2.12.6 Touchdown Zone Elevation: 995.5 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−4.929N / 84−24−26.158W
2.12.6 Threshold Elevation: 977.2 ft
2.12.6 Touchdown Zone Elevation: 984.6 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12390 ft x 150 ft
2.12.4 PCN: 62 R/A/W/T
2.12.5 Coordinates: 33−38−4.936N / 84−26−52.6807W
2.12.6 Threshold Elevation: 1018.7 ft
2.12.6 Touchdown Zone Elevation: 1018.7 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.5282N / 84−26−52.6768W
2.12.6 Threshold Elevation: 1026.1 ft

2.12.6 Touchdown Zone Elevation: 1026.2 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 68 R/A/W/T
2.12.5 Coordinates: 33−37−54.5649N / 84−25−6.243W
2.12.6 Threshold Elevation: 984.7 ft
2.12.6 Touchdown Zone Elevation: 998.9 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−13.0275N / 84−25−5.9358W
2.12.6 Threshold Elevation: 997.5 ft
2.12.6 Touchdown Zone Elevation: 997.5 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 74 R/A/W/T
2.12.5 Coordinates: 33−37−12.9808N / 84−26−52.3574W
2.12.6 Threshold Elevation: 1000.3 ft
2.12.6 Touchdown Zone Elevation: 1000.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 8500
2.13.5 Landing Distance Available: 8500

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 9999
2.13.3 Take−off 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 Take−off Run Available: 9999
2.13.3 Take−off Distance Available: 9999
2.13.4 Accelerate−Stop Distance Available: 9999
2.13.5 Landing Distance Available: 9999

2.13.1 Designation: 27R
2.13.2 Take−off Run Available: 12390
2.13.3 Take−off Distance Available: 12390
2.13.4 Accelerate−Stop Distance Available: 12190
2.13.5 Landing Distance Available: 11690

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 12390
2.13.3 Take−off Distance Available: 12390
2.13.4 Accelerate−Stop Distance Available: 11730
2.13.5 Landing Distance Available: 11730

2.13.1 Designation: 09R
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 27L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 8865
2.13.5 Landing Distance Available: 8865

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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: 08L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 125.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (RWY 10/28)
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 09L/27R, 09R/27L)
2.18.3 Channel: 121.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08L/26R, 08R/26L)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 254.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08L/26R)
2.18.3 Channel: 119.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09R/27L)
2.18.3 Channel: 119.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 10/28)
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09L/27R)
2.18.3 Channel: 123.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08R/26L)
2.18.3 Channel: 125.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 254.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 08L/26R, 08R/26L)
2.18.3 Channel: 126.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 09L/27R, 09R/27L)
2.18.3 Channel: 132.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 10/28)
2.18.3 Channel: 133.425
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−39−1.782N / 84−24−24.7032W
2.19.6 Site Elevation: 977.2 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−39−2.288N / 84−26−6.3042W
2.19.6 Site Elevation: 1001.7 ft

2.19.1 ILS Type: Inner Marker for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−38−58.3145N / 84−26−30.5173W
2.19.6 Site Elevation: 1017.7 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 5W
2.19.2 ILS Identification: HFW
2.19.5 Coordinates: 33−38−58.3506N / 84−24−23.3901W
2.19.6 Site Elevation: 985.2 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−38−53.87N / 84−26−32.61W
2.19.6 Site Elevation: 1008 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−39−2.3139N / 84−24−47.6304W
2.19.6 Site Elevation: 983.8 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 5W
2.19.2 ILS Identification: GXZ
2.19.5 Coordinates: 33−38−58.32N / 84−26−30.19W
2.19.6 Site Elevation: 1016 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−45.7727N / 84−24−7.5608W
2.19.6 Site Elevation: 992.1 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 5W

2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−52.4042N / 84−26−3.334W
2.19.6 Site Elevation: 1005 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 5W
2.19.2 ILS Identification: ATL
2.19.5 Coordinates: 33−38−48.4575N / 84−24−7.5394W
2.19.6 Site Elevation: 986.8 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33−38−49.0988N / 84−26−30.1749W
2.19.6 Site Elevation: 1030.3 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33−38−52.4111N / 84−24−32.8404W
2.19.6 Site Elevation: 993.7 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 5W
2.19.2 ILS Identification: BRU
2.19.5 Coordinates: 33−38−48.4526N / 84−26−30.1664W
2.19.6 Site Elevation: 1021 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33−38−7.48N / 84−24−44.38W
2.19.6 Site Elevation: 978 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33−38−2.42N / 84−26−39.67W
2.19.6 Site Elevation: 1014.6 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33−38−4.94N / 84−24−19.08W
2.19.6 Site Elevation: 949.5 ft

2.19.1 ILS Type: Outer Marker for runway 09L. Magnetic variation: 5W
2.19.2 ILS Identification: HZK
2.19.5 Coordinates: 33−37−57.073N / 84−32−3.073W
2.19.6 Site Elevation:

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 5W
2.19.2 ILS Identification: AFA
2.19.5 Coordinates: 33−38−7.45N / 84−24−44.13W
2.19.6 Site Elevation: 977.7 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 5W
2.19.2 ILS Identification: AFA
2.19.5 Coordinates: 33−38−4.931N / 84−27−2.2719W
2.19.6 Site Elevation: 1019.5 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33−37−56.6292N / 84−24−54.2376W
2.19.6 Site Elevation: 995.5 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33−37−58.482N / 84−26−39.0507W
2.19.6 Site Elevation: 1019.1 ft

2.19.1 ILS Type: Inner Marker for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN
2.19.5 Coordinates: 33−37−54.5222N / 84−27−2.5364W
2.19.6 Site Elevation: 1029.2 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 5W
2.19.2 ILS Identification: FUN

2.19.5 Coordinates: 33−37−54.5664N / 84−24−52.6064W
2.19.6 Site Elevation: 976.2 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33−37−53.7N / 84−27−3.53W
2.19.6 Site Elevation: 1003.8 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33−37−58.5048N / 84−25−18.9643W
2.19.6 Site Elevation: 986.7 ft

2.19.1 ILS Type: Inner Marker for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33−37−54.59N / 84−24−52.99W
2.19.6 Site Elevation: 983 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 5W
2.19.2 ILS Identification: FSQ
2.19.5 Coordinates: 33−37−54.53N / 84−27−3.03W
2.19.6 Site Elevation: 1015.7 ft

2.19.1 ILS Type: DME for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33−37−12.4476N / 84−24−53.9549W
2.19.6 Site Elevation: 999.7 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33−37−8.9408N / 84−26−38.7669W
2.19.6 Site Elevation: 985.4 ft

2.19.1 ILS Type: Inner Marker for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33−37−12.9816N / 84−27−2.5224W
2.19.6 Site Elevation: 1001 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 5W
2.19.2 ILS Identification: OMO
2.19.5 Coordinates: 33−37−13.0192N / 84−24−53.9594W
2.19.6 Site Elevation: 991.1 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33−37−12.4016N / 84−27−5.3143W
2.19.6 Site Elevation: 1003.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33−37−17.0569N / 84−25−18.9449W
2.19.6 Site Elevation: 989.2 ft

2.19.1 ILS Type: Inner Marker for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33−37−13.0151N / 84−24−55.769W
2.19.6 Site Elevation: 982.2 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 5W
2.19.2 ILS Identification: PKU
2.19.5 Coordinates: 33−37−12.9761N / 84−27−5.3149W
2.19.6 Site Elevation: 994.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 5W
2.19.2 Navigation Aid Identification: ATL
2.19.5 Coordinates: 33−37−44.6758N / 84−26−6.2343W
2.19.6 Site Elevation: 1040.3 ft

General Remarks:
ALL RWYS, TOUCH AND GO OPERATIONS, LOW APPROACHES, AND PRACTICE INSTRUMENT APPROACHES NOT PERMITTED.

ACFT WITH WINGSPAN GREATER THAN 214 FT SHOULD EXPECT TO USE RWYS 09L/27R AND 9R/27L.

RUNUPS ARE PERMITTED AT VARIOUS SITES; COORDINATE USE OF CITY FACILITIES, MOVEMENT AREAS, ALLOWABLE NON−MOVEMENT AREAS WITH DEPT OF AVIATION OPNS, 404−530−6620; AND COORDINATE THE USE OF THE AIRLINES' FACILITIES WITH THEM.

NO ACFT WITH WINGSPAN GEATER THAN OR EQUAL TO 225 FT MAY TAXI ON TWY M BETWEEN L14 AND L16, TWY N BETWEEN P AND SC, AND TWY N BETWEEN U AND K.

ALL ACFT WITH WINGSPANS GREATER THAN 214 FT ARE REQUIRED TO USE TAXI SPEEDS NOT GREATER THAN 15 MPH ON TWYS A, L, M, AND SJ.

WHEN ACFT WITH WINGSPANS GREATER THAN 214 FT ARE PRESENT ON THE FIELD, ALL OTHER ACFT MUST ADHERE TO THE TWY CENTERLINE ON TWYS L AND M, TWYS E AND F, AND TWYS SC AND SJ BETWEEN SG AND R DUE TO SEPARATION BETWEEN THE PARALLEL TWYS.

NOISE & OPNS MONITORING SYSTEM (NOMS) PROGRAM IN EFFECT; CALL THE ATLANTA DEPT OF AVIATION 770−43−NOISE OR 770−436−6473 FOR MORE INFO.

BE ALERT TO RWY CROSSING CLEARANCES. READBACK OF ALL RWY HOLDING INSTRUCTIONS IS REQUIRED.

GROUP VI ACFT (LOCKHEED GALAXY C−5; ANTONOV AN−124 & AN−125) WITH A WINGSPAN OF GREATER THAN 214 FT ARE RESTRICTED FM USING TWY F EAST OF RAMP 5 NORTH AND WEST OF TWY D.

RWY 9L DEPARTURES CAN EXPECT INTERSECTION DEPARTURE FM M2 WITH RWY REMAINING 11,440 FT (TORA/TODA) AND 10,780 (ASDA).

TWO ACFT WITH WINGSPANS GREATER THAN OR EQUAL TO 225 FT MAY NOT TAXISIMULTANEOUSLY ON ADJACENT PARALLEL TWYS L/M EXCEPT WEST OF L7 AT SPEEDS LESS THAN 15 MPH.

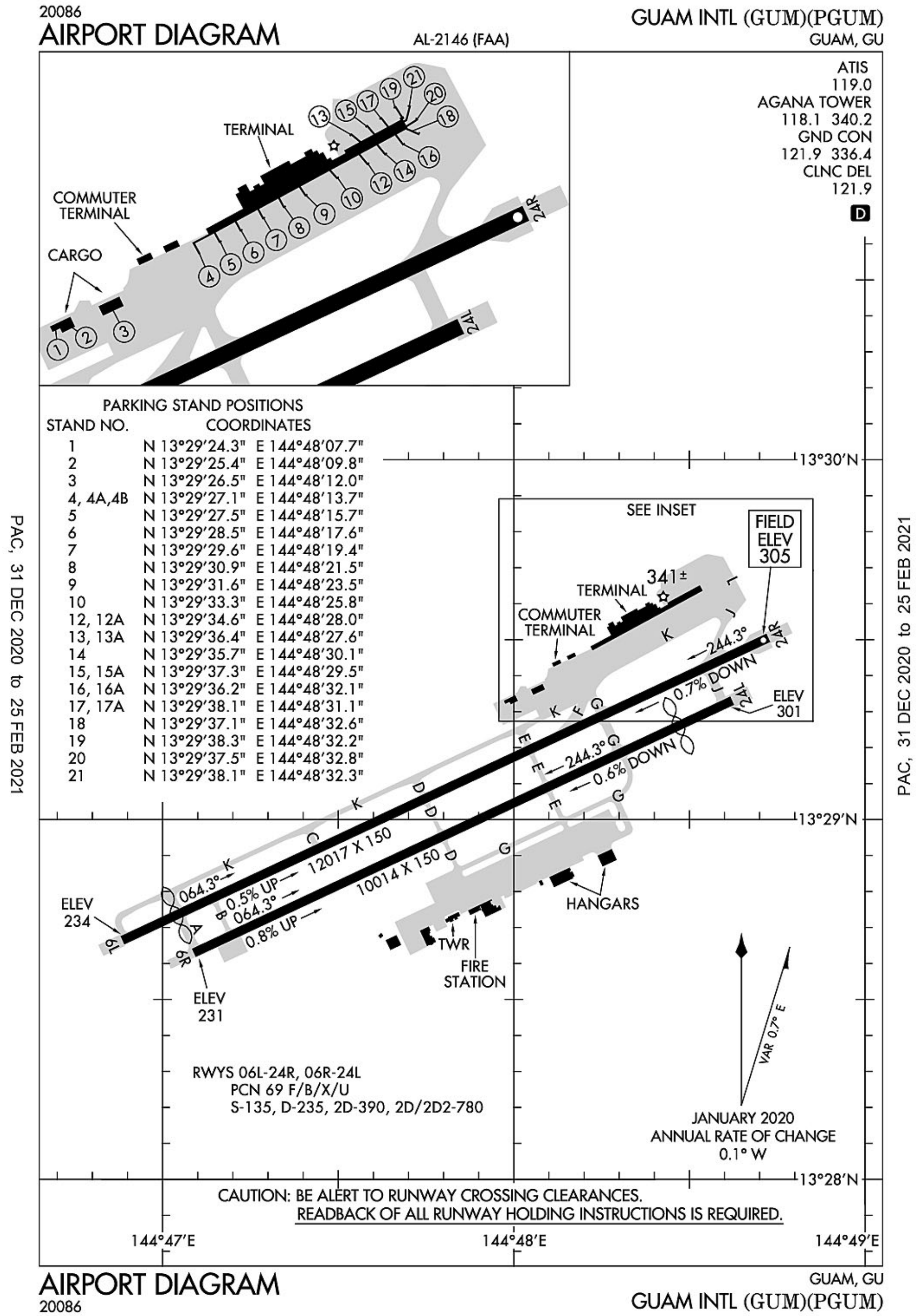
PREFERENTIAL RWY USE IN EFFECT, EXPECT TO USE RWYS 08R/26L, 09L/27R FOR DEPS; RWYS 08L/26R, 09R/27L ARE USED PRIMARILY FOR ARRIVALS.

NO ACFT WITH WINGSPAN GREATER THAN 213 FT MAY PASS ANOTHER ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 225 FT ON TWY L/M EAST OF L7.

ACFT WITH WINGSPAN GREATER THAN 171 FT ARE RSTRD FROM USING TWY V. ACFT WITH WINGSPAN GREATER THAN 171 FT ARE REQUIRED TO USE TAXI SPEEDS LESS THAN 15 MPH WHEN PASSING ACFT WITH WINGSPAN GREATER THAN 214FT ON TXWY L/M (EAST OF L7).

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Agana, Guam
Guam International
ICAO Identifier PGUM



Agana, GU
Guam Intl
ICAO Identifier PGUM

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 13−29−2.2224N / 144−47−49.6576E
2.2.2 From City: 3 miles NE of GUAM, GU
2.2.3 Elevation: 304.5 ft
2.2.5 Magnetic Variation: 2E (2000)
2.2.6 Airport Contact: TOM ADA
P.O. BOX 8770
TAMUNING, GU 96931
(671−646−0300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 4/1/1995

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 65
2.12.3 Dimensions: 12017 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−28−39.8522N / 144−46−53.1231E
2.12.6 Threshold Elevation: 233.6 ft
2.12.6 Touchdown Zone Elevation: 256.3 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 245
2.12.3 Dimensions: 12017 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−29−30.3057N / 144−48−43.4525E
2.12.6 Threshold Elevation: 304.5 ft
2.12.6 Touchdown Zone Elevation: 304.5 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: 13−28−37.7713N / 144−47−5.3307E
2.12.6 Threshold Elevation: 231.1 ft
2.12.6 Touchdown Zone Elevation: 258 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 245
2.12.3 Dimensions: 10014 ft x 150 ft
2.12.4 PCN: 69 F/B/X/U
2.12.5 Coordinates: 13−29−19.8177N / 144−48−37.2722E
2.12.6 Threshold Elevation: 300.7 ft
2.12.6 Touchdown Zone Elevation: 293.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: 12015
2.13.3 Take−off 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 Take−off Run Available: 12015
2.13.3 Take−off 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 Take−off Run Available: 10014
2.13.3 Take−off 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 Take−off Run Available: 10014
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 24L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ATIS
2.18.3 Channel: 119
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 336.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 340.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL
2.18.3 Channel: 121.6
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−29−38.0674N / 144−48−51.4932E
2.19.6 Site Elevation: 346.1 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−28−53.073N / 144−47−8.508E
2.19.6 Site Elevation: 246.1 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic variation: 2E
2.19.2 ILS Identification: GUM
2.19.5 Coordinates: 13−29−34.7116N / 144−48−53.0934E
2.19.6 Site Elevation: 312.6 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

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: AWD
2.19.5 Coordinates: 13−28−38N / 144−47−15.4E
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

General Remarks:
<1000’ OVRN S END & 450’ OVRN N END RWY 6L−24R.

CLASS III ACFT ARE PROHIBITED FROM MAKING ANY TURNS ONTO OR OFF TWY GOLF (SOUTH) WHILE UTILIZING TWY ECHO.

THE FIRST 500 FT OF THE LEFT SHOULDER OF RWY 24L IS NOT VISIBLE FROM THE TWR. PILOTS ARE ADVISED TO CAUTION FOR ANY PRESENCE OF WILDLIFE IN THAT AREA.

TRANSIENT ACFT PROVIDE 24 HRS ADVANCE INFORMATION TO EXEC MGR GUAM INTL ARPT AUTHORITY; 1−671−642−4455 MON−FRI 0800−1700 OR FAX 1−671−646−8823.

FOR PARKING INFORMATION ALL ACFT CTC RAMP CTL. ALL ACFT DEP TERMINAL PARKING CTC RAMP CTL FOR ENGINE START AND PUSHBACK.

ADG−VI AIRPLANES MAY DEPART ON RWY 6L AND RWY 24R WITH ACFT ON PARL TWY K AS LONG AS NO ADG−VI ACFT OCCUPIES THE PARL TWY BYD 1500 FT OF THE POINT OF TKOF ROLL.

FOR TAXG B747−8 ACFT ON TWY K FRONTING THE ACFT PRKG APN FROM GATES 5 − 16 AT THE MAIN TRML, MAX TAXG SPEED SHALL BE NO MORE THAN 15 MPH.

DRG TAXG OF THE B747−8 BTN GATES 5 − 16, ALL VEHICLES SHALL YIELD AND RMN CLEAR OF THE VEHICLE TFC PAT AND ARE RSTRD TO A MAX HGT OF 14 FT.

EFFECTIVE RY GRADIENT RY 06L 0.46% UP NE; RY 24R 0.70% DOWN SW; RY 06R 0.80 % UP NE; RY 24L 0.52% DOWN SW.

RISING TERRAIN 75 FT FM RY 24L THLD 140 FT EAST OF CNTRLN EXTENDED +8 FT.

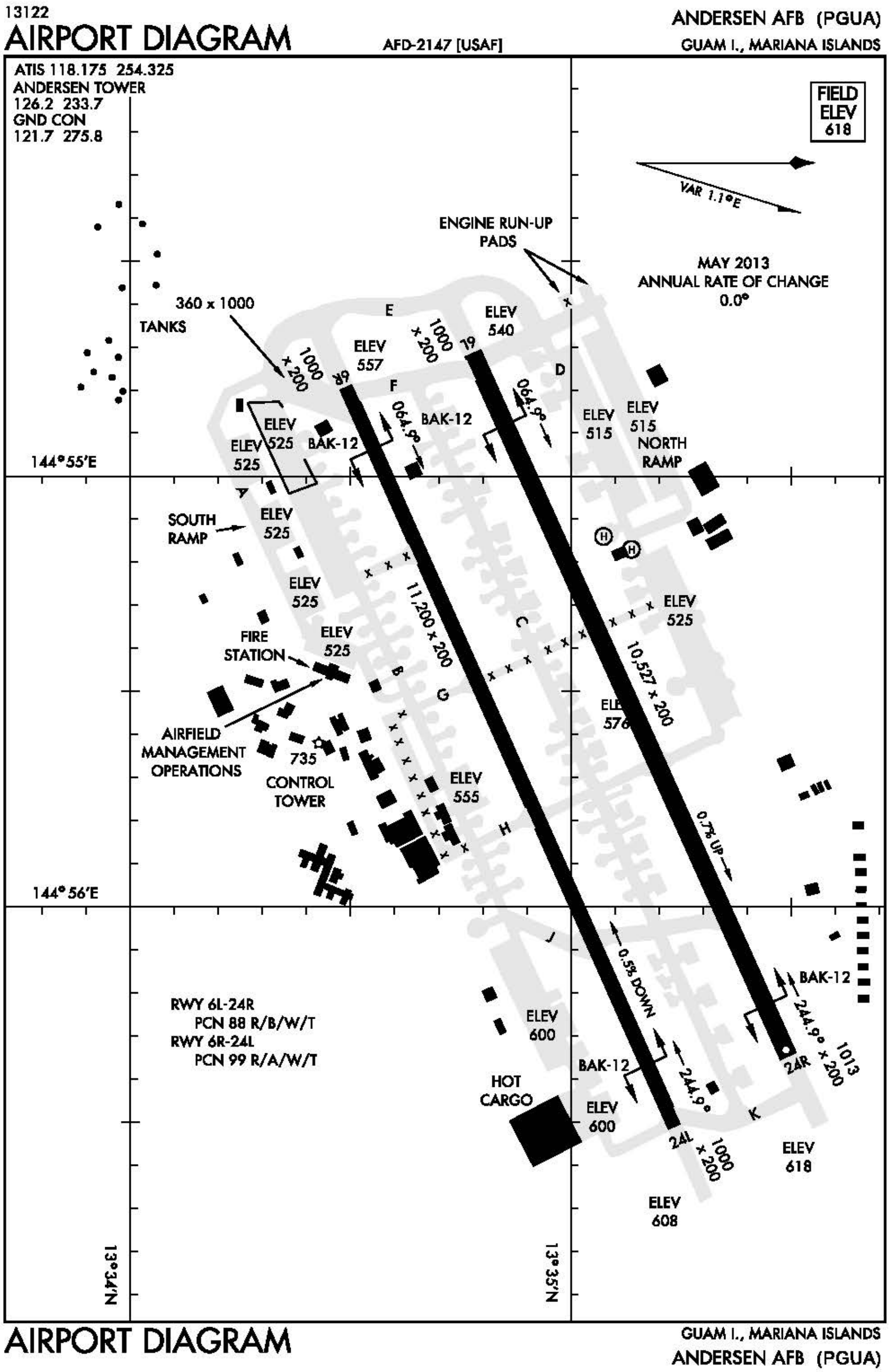
DEP VFR ACFT MAINT RY HDG TIL PAST DEP END OF RY AND REACHING 1000 FT AGL; RGT PAT 24L/R DO NOT EXCEED 1500 FT AGL IN TFC PAT.

FOR ALL ARRS, THE B747−8 AIRLINE WILL TOW THE ACFT INTO GATES 4 OR 18 FROM TWY K AND AIRLINE TO PRVD WING−WALKERS AS THE ACFT IS BEING TOWED INTO GATES 4 OR 18.

LGTD TWR 780 FT 1.3 NM ENE OF RY 24L THLD .

FOR THE B747−8, DRG RWY 24L & 24R OPS AND DUE TO JET BLAST EFCTS AT GATES 14, 16 & 18, THE B747−8 WILL BE TOWED FROM GATE 4 ON TWY K TO TWY J WITH THE ACFT PSND ON TWY J FACING TWD RWY 24R.

Andersen, Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA



Andersen,Mariana Island, GU
Andersen AFB
ICAO Identifier PGUA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 13−35−1.983N / 144−55−48.205E
2.2.2 From City: 0 miles N of YIGO, GU
2.2.3 Elevation: 618 ft
2.2.5 Magnetic Variation: 2E (1980)
2.2.6 Airport Contact: MAJOR BILLY G TOWLES
3 AD
ANDERSEN AFB, GUAM,
69912 ()
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types:
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing:
2.12.3 Dimensions: 10527 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−34−49.281N / 144−54−56.32E
2.12.6 Threshold Elevation: 539.5 ft
2.12.6 Touchdown Zone Elevation: 540 ft

2.12.1 Designation: 24R
2.12.2 True Bearing:
2.12.3 Dimensions: 10527 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−35−31.931N / 144−56−33.739E
2.12.6 Threshold Elevation: 617.9 ft
2.12.6 Touchdown Zone Elevation: 618 ft

2.12.1 Designation: 06R
2.12.2 True Bearing:
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−34−31.17N / 144−54−59.38E
2.12.6 Threshold Elevation: 557.1 ft
2.12.6 Touchdown Zone Elevation: 557.1 ft

2.12.1 Designation: 24L
2.12.2 True Bearing:
2.12.3 Dimensions: 11200 ft x 200 ft
2.12.4 PCN: 98 R/A/W/T
2.12.5 Coordinates: 13−35−16.58N / 144−56−43E
2.12.6 Threshold Elevation: 607.5 ft
2.12.6 Touchdown Zone Elevation: 608 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 24R
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 06R
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 24L
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: SALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: ALSF1
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L

2.14.2 Approach Lighting System: SALS
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 118.175
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 254.325
2.18.5 Hours of Operation:

2.18.1 Service Designation: COMD POST (36 WG BOONIE OPS)
2.18.3 Channel: 321
2.18.5 Hours of Operation:

2.18.1 Service Designation: COMD POST (36 WG BOONIE OPS)
2.18.3 Channel: 349.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 275.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 126.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 233.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PMSV METRO
2.18.3 Channel: 344.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: SFA
2.18.3 Channel: 281.4
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 2E
2.19.2 ILS Identification: YIG
2.19.5 Coordinates: 13−35−30.26N / 144−56−17.53E
2.19.6 Site Elevation: 593.6 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 2E
2.19.2 ILS Identification: YIG
2.19.5 Coordinates: 13−34−43.23N / 144−54−42.5E
2.19.6 Site Elevation: 533.6 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: UAM
2.19.5 Coordinates: 13−34−40.04N / 144−55−7.21E
2.19.6 Site Elevation: 544.6 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 2E
2.19.2 ILS Identification: UAM
2.19.5 Coordinates: 13−35−21.67N / 144−56−54.64E
2.19.6 Site Elevation: 606.6 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 2E
2.19.2 ILS Identification: PMY
2.19.5 Coordinates: 13−35−15.55N / 144−56−29.18E
2.19.6 Site Elevation: 596.1 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 2E
2.19.2 ILS Identification: PMY
2.19.5 Coordinates: 13−34−25.7N / 144−54−46.9E
2.19.6 Site Elevation: 568.8 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 2E
2.19.2 Navigation Aid Identification: UAM

2.19.5 Coordinates: 13−35−28.39N / 144−56−47.69E
2.19.6 Site Elevation: 615.9 ft

General Remarks:
FREQUENT RAIN SHOWERS OF SHORT DURATION, EXPECT WET RWY BRAKEING ACTION.

RSTD: ALL ACFT CTC 36 WG COMD POST 90 MIN OUT AND AT 30 MIN OUT PRIOR TO ARR.

CAUTION: NSTD DSPLCD THLD MARKINGS FOR RYS 06R, 06L, AND 24R.

MISC: AIRCRAFT EXCEEDING AFLD WEIGHTS MUST REQUEST WEIGHT BEARING CAPACITY WAIVER WITH 24 HR NOTICE TO AIRFIELD OPS TO PROCESS ANY APPROVALS NEEDED. IF REQUESTS ARE NOT MADE WITHIN 24 HRS EXPECT DELAYS.

RSTD: ACFT MUST ADHERE TO PPR ARR +/− 30 MIN. ACFT WITH WINGSPANS GREATER THAN 261’ NOT AUTHORIZED.

HAZUS AIR TURB FINAL APCH RWYS 24L/24R. NO VSBY REF AVBL ON NGT TKOF BYD END RWY 6.

SERVICE−LGT: RAMP LGT UNAVBL FOR NGT TIME OPS, AND UNSAFE ACFT MVMT COND EXIST ON NORTH RAMP 3; ACFT TAXI AT THEIR OWN RISK. ALL AFLD ILS STOP LGT UNSVC. VEGETATION OBST RWY 24R/L APCH LGT SYS.

ILS/RADAR−ILS: ILS CRITICAL AREAS NOT PROTECTED.

MISC: ANDERSEN AFB DOES NOT HAVE CAPABILITY TO STORE REFRIGERATED CARGO.

RSTD: RESTRICTIONS TO FLT OPNS DUR EA BWC. MOD: NO TOUCH AND GO LDG. RSTD LOW APPCH NO LOWER THAN 200’ OR AS DETERMINED BY SOF. SEVERE: RSTD LOW APPCH NO LOWER THAN 200’ OR AS DETERMINED BY SOF. EMERG LDG AND 36 OG/CC APV DEP ONLY. PHASE I: PHASE I:1 APR − 31 JUL. PHASE II: 1 AUG − 31 MAR.

SERVICE−LGT: ARPT BCN 763 FT MSL LCTD 1.4 NM SSW OF AFLD.

MISC: ”NO VHF CAPABILITIES WITH AFLD MGMT.”

A−GEAR BAK−12 RWYS 06L & 06R 30 MIN NTC RQR.

TWY B AND C BTN TWY J AND K CLSD DUE TO CONSTRUCTION.

CAUTION: TACAN CK PT SIGN ON TWY J SOUTH INCORRECT; CORRECT VERBIAGE: BRG 224 DIST 0.7 NM. ACFT WASH RACK ON NR 3 CLSD DUE TO CONST.

RSTD: PPR NR NOT RQRD FOR GDSS LOADED MSN. C130 MSNS LOADED IN GDSS RQR A PPR NR FROM AFLD MGMT. ALL AEROMEDICAL EVAC MSN ARE RQRD TO CTC COMD POST (DSN 366−2961, C671−366−2961) BY ANY MEANS AVAIL 3 HRS PRIOR TO ARR. ALL ACFT RQRD TO MAKE CALL 30 MIN PRIOR TO ARR.

RSTD: ALL OPR MUST OBTAIN APVL FR GND AND AMOPS PRIOR TO ENG START/RUN.

MISC: RWY 06L AND 06R UNDERRUNS 1000’ AVBL FOR TWY/TKOF. RWY 24R UNDERRUN AVBL 500’ FOR TAXI/TKOF.

BASE OPS V366−4188; FAX V366−6217.

CAUTION: USE EXTREME CAUTION FOR EXTV UAS OPS IN VCNTY OF ANDERSEN AFB.

SERVICE−FLUID: C−5 NITROGEN SVC CAPABILITY UNAVBL.

CAUTION: POTENTIAL FOR REDUCED BRAKING CAPABILITY AND/OR DIREC CTL EXISTS, PARTICULARLY DURING WET RSC FOR RWY 06L.

MAINT AVBL 0100−0400 WEEKDAY ONLY; CLOSED WEEKEND & HOL.

NO ARRESTING GEAR MARKERS LOCATED ON THE LEFT SIDE OF ALL APPROACH END BARRIERS.

MISC: ALL AIRCREWS TO RON MUST CK INTO AFLD MGT OPS AND PROVIDE POC INFO UPON ARR.

MISC: PAVEMENT PRIOR TO RY 06R AND RY 06L THLDS AVBL FOR TKOF RUN WHEN NECESSARY FOR MSN ACCOMPLISHMENT.

MISC: ATTN: ALL DRY ICE REQ MUST BE MADE THRU 734TH MS/ATOC DSN 315−366−3125/3137/3162 OR C671−366−3125/3137/3162. REQ MUST BE MADE AT LEAST 24 HR IN ADVANCE FOR ACFT LDG TUE−FRI AND 72 HR IN ADVANCE FOR ACFT LDG SAT−MON. DUR HOL, ADD 2 HR TO COORD TIME.

RSTD: PPR DSN 366−4188/1010.

NS ABTMT: QUIET HR 1200−2000Z (2200−0600L) DLY. NO AFTERBURNER, OR OVR FLT OF BASE AND LCL POPULATED AREAS. OTHER RESTRICTIONS BY NOTAM.

CAUTION: 47’ TACAN ANTENNAE LCTD 1,300 FT NE OF RY 24L & 1,300 FT SE OF RY 24R THLDS.

MISC: AFLD MGT HAS NO COMSEC STORAGE AVBL FOR TRAN AIRCREWS. TRANS AIRCREWS CAN STORE COMSEC UP TO TOP−SECRET AT 36 WG CP.

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 LCTD 317’ FROM RY CENTERLINE, 217’ FROM RY EDGE, MAX HEIGHT 8’. NO ARRESTING−GEAR MARKER LCTD ON LEFT SIDE OF ALL APPROACH END BARRIERS.

MISC: WX OPR H24, DSN 315−366−5230. AUTOMATED SENSOR PRVDS OBSN; AUGMENTED DUR HAZ WX & SENSOR OUTAGES. HUMAN WX OBSN VIEW OBSTD BY BLDG N−SSE. WX STN PRVDS LTD WX BRIEF SUPPORT. REMOTE WX BRIEF AVBL H24 FR 17 OWS AT DSN 315−449−8333/7950, C808−448−3809; 2 HR NTC RQRD FOR TIMELY BRIEF.

RSTD 1 OF 2: THERE WILL BE NO OVFT OF MARIANA CROW TERRITORIES BLW 1,000 FT AGL FROM SEP−MAY. OVFT BLW 1,000 FT AGL IS ALLOWED BTN JUNE AND AUG, THE CROW NON−BREEDING SEASON.

RSTD: PPR REQ MUST BE MADE 24 HR PRIOR EXC FOR WX−EVAC OPS.

AREA BTN 1000’ ROLL BAR AND THU LGT RWY 06R AND 06L UNLGTD. LAST 642’ PRIOR TO THU LGT 24R UNLGTD.

ANY CREW RQRG ASSISTANCE FR AGENCIES OUTSIDE OF AFLD SUPPORT, CTC WING RECEPTIONS DSN 315−366−3464, C671−366−3464.

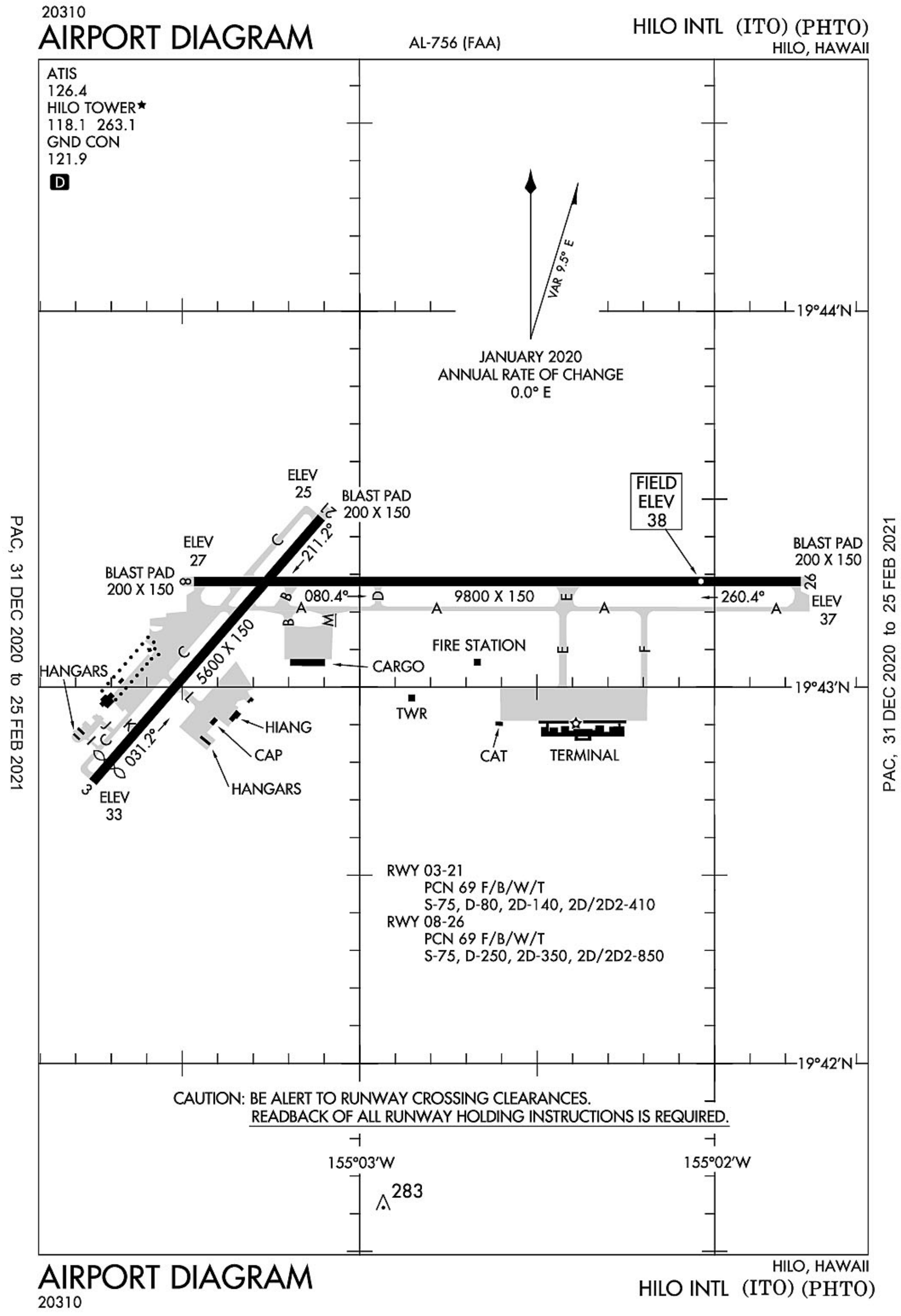
CAUTION: FAA SIZE 3 SIGNS LCTD GREATER THAN 60 FT FROM TWY EDGES TO ACCOM B−52 ACFT.

RSTD: BA ON BOTH RWYS MAY BE LESS THAN EXP DUE TO RUBBER BUILD−UP; PROBABILITY OF HYDROPLANING EXISTS.

RSTD: PPR NOT ISSUED MORE THAN 14 DAYS PRIOR TO ARR/DEP.

AFLD SIGNS ARE NOT FRANGIBLE.

Hilo, Hawaii
Hilo International
ICAO Identifier PHTO



Hilo, HI
Hilo Intl
ICAO Identifier PHTO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 19−43−12.9468N / 155−2−54.4925W
2.2.2 From City: 2 miles E of HILO, HI
2.2.3 Elevation: 37.6 ft
2.2.5 Magnetic Variation: 11E (1985)
2.2.6 Airport Contact: STEVEN J. SANTIAGO
ASSISTANT AIRPORT
DISTRICT MANAGER
HILO, HI 96720 (808−961−9300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0700−2030 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 41
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−42−44.9639N / 155−3−44.7803W
2.12.6 Threshold Elevation: 33.3 ft
2.12.6 Touchdown Zone Elevation: 33.7 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 221
2.12.3 Dimensions: 5600 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−26.9946N / 155−3−6.4865W
2.12.6 Threshold Elevation: 25.4 ft
2.12.6 Touchdown Zone Elevation: 31.4 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.9328N / 155−3−27.9882W
2.12.6 Threshold Elevation: 27.3 ft
2.12.6 Touchdown Zone Elevation: 30.1 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9800 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 19−43−16.9196N / 155−1−45.4051W
2.12.6 Threshold Elevation: 37 ft
2.12.6 Touchdown Zone Elevation: 37.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 5600
2.13.3 Take−off 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 Take−off Run Available: 5251
2.13.3 Take−off Distance Available: 5251
2.13.4 Accelerate−Stop Distance Available: 5510
2.13.5 Landing Distance Available: 5510

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 9800
2.13.3 Take−off Distance Available: 9800
2.13.4 Accelerate−Stop Distance Available: 9800
2.13.5 Landing Distance Available: 9800

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 9800
2.13.3 Take−off Distance Available: 9800
2.13.4 Accelerate−Stop Distance Available: 9800
2.13.5 Landing Distance Available: 9800

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08
2.14.2 Approach Lighting System: ODALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 119.7
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 120.25
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 323
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: ATIS
2.18.3 Channel: 126.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 0600−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 263.1
2.18.5 Hours of Operation: 0600−2200

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 26. Magnetic variation: 11E
2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−13.742N / 155−3−39.505W
2.19.6 Site Elevation: 39 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 11E
2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−20.887N / 155−1−58.099W
2.19.6 Site Elevation: 32.5 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 11E
2.19.2 ILS Identification: ITO
2.19.5 Coordinates: 19−43−16.933N / 155−3−38.784W
2.19.6 Site Elevation: 25.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: ITO
2.19.5 Coordinates: 19−43−16.862N / 155−0−39.435W
2.19.6 Site Elevation: 23 ft

General Remarks:
ATCT CTLS ENTRY/EXIT TFC ON TWYS F&E TO EAST TRML RAMP.

BE ALERT OCNL BIRD FLOCKS ON ARPT AND IN FLT ACROSS RWY 08/26 AND 03/21.

PPR FROM ARPT MGR FOR TRANSIENT PARKING.

FOR CD IF UNA TO CTC ON FSS FREQ, CTC HONOLULU CONTROL FACILITY AT 808−840−6262.

181’ LGTD SMOKE STACK 1/2 SM SOUTH OF FLD.

RY 08/26 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 450,000 LBS.

RY 03/21 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 230,000 LBS.

NOISE ABATEMENT: AVOID OVERFLIGHT OF NOISE SENSITIVE RESIDENTIAL AREAS N, W AND SW OF AIRPORT.

RY 3/21 CLSD TO TURBINE ACFT 1800−0600.

TWY E BTN TWY A AND RWY 08/26 PONDING DRG HVY RAINS.

RWY 08 PVD 1325' MKD BY CHEVRONS, UNUSBL FOR LNDG/TKOF/OVRN/STY; CANNOT BE USED IN COMPUTING TKOF DATA.

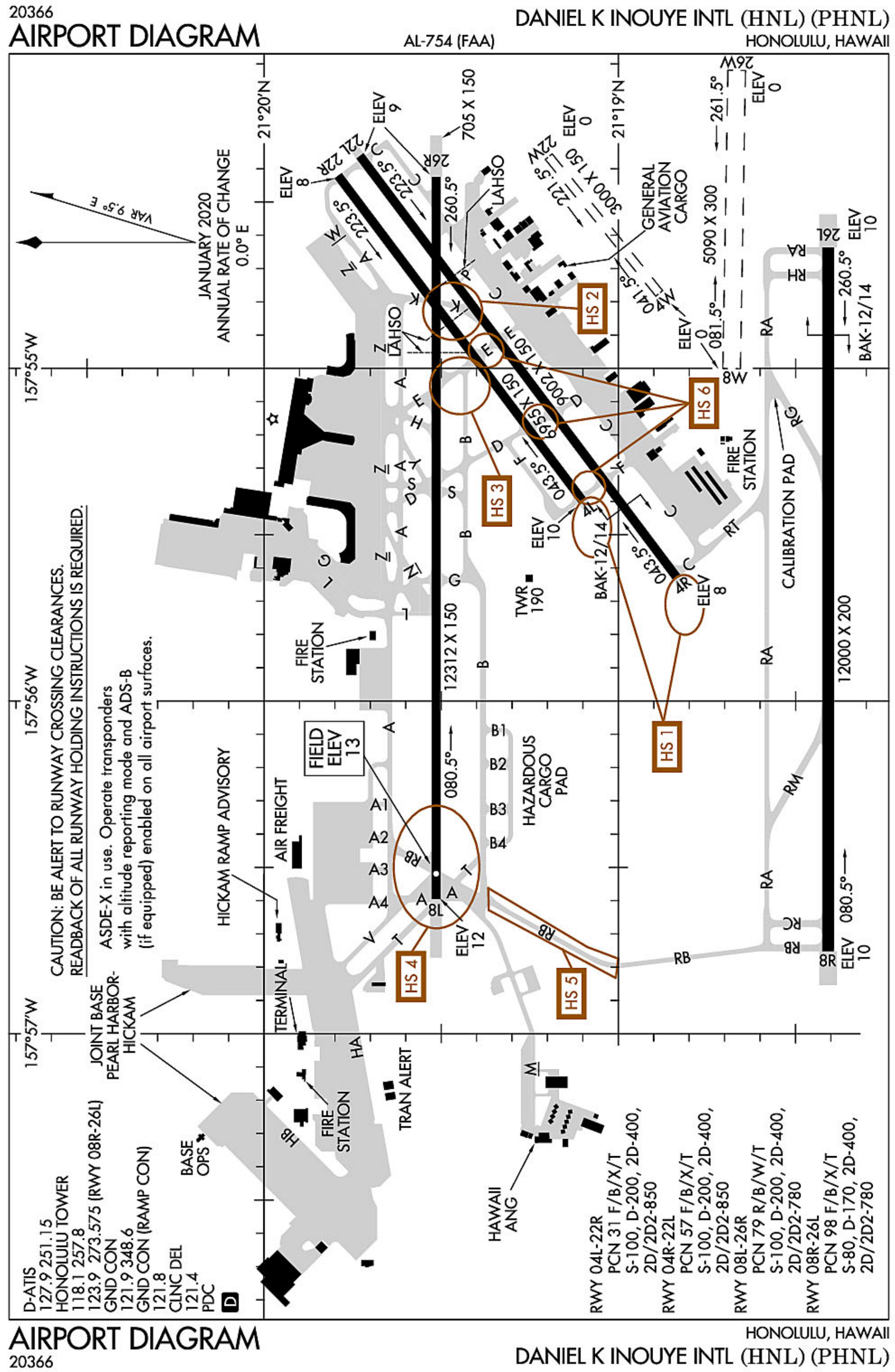
DIVISION 1.1, 1.2, 1.3 EXPLOSIVES PROHIBITED.

(A70A) JET FUEL AVBL MON−SAT 0800−1700 CALL (808) 935−6881/6122 OR 961−6601.

(E93) NO MKD PAD, HEL OPER FM FBO HANGER AREA.

PPR FROM AIRPORT MANAGER FOR TRANSPORTATION OF DIVISION 1.4 EXPLOSIVES AND HAZARDOUS MATERIAL IN OR OUT OF AIRPORT.

Honolulu, Hawaii
Honolulu International
ICAO Identifier PHNL



Honolulu, HI
Honolulu Intl
ICAO Identifier PHNL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 21−19−4.142N / 157−55−12.819W
2.2.2 From City: 3 miles NW of HONOLULU, HI
2.2.3 Elevation: 12.6 ft
2.2.5 Magnetic Variation: 11E (1990)
2.2.6 Airport Contact: ROY SAKATA
300 RODGERS BLVD. #12
HONOLULU, HI 96819
(808−836−6533)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A,A1+,B
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 53
2.12.3 Dimensions: 6955 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21−19−5.9954N / 157−55−23.9541W
2.12.6 Threshold Elevation: 9.8 ft
2.12.6 Touchdown Zone Elevation: 10.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 233
2.12.3 Dimensions: 6955 ft x 150 ft
2.12.4 PCN: 31 F/B/X/T
2.12.5 Coordinates: 21−19−47.4694N / 157−54−25.1972W
2.12.6 Threshold Elevation: 7.5 ft
2.12.6 Touchdown Zone Elevation: 9.6 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 53
2.12.3 Dimensions: 9002 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−18−50.1044N / 157−55−37.685W
2.12.6 Threshold Elevation: 8.1 ft
2.12.6 Touchdown Zone Elevation: 8.4 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 233
2.12.3 Dimensions: 9002 ft x 150 ft
2.12.4 PCN: 57 F/B/X/T
2.12.5 Coordinates: 21−19−43.7762N / 157−54−21.6299W
2.12.6 Threshold Elevation: 8.5 ft
2.12.6 Touchdown Zone Elevation: 8.6 ft

2.12.1 Designation: 04W
2.12.2 True Bearing: 51
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 21−18−53.09N / 157−54−46.44W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 22W
2.12.2 True Bearing: 231
2.12.3 Dimensions: 3000 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 21−19−11.7999N / 157−54−21.78W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.8826N / 157−56−35.6573W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12312 ft x 150 ft
2.12.4 PCN: 79 R/B/W/T
2.12.5 Coordinates: 21−19−30.884N / 157−54−25.4326W
2.12.6 Threshold Elevation: 8.4 ft
2.12.6 Touchdown Zone Elevation: 8.8 ft

2.12.1 Designation: 08R

2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.4938N / 157−56−45.061W
2.12.6 Threshold Elevation: 9.9 ft
2.12.6 Touchdown Zone Elevation: 10 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 98 F/B/X/T
2.12.5 Coordinates: 21−18−24.4867N / 157−54−38.152W
2.12.6 Threshold Elevation: 9.8 ft
2.12.6 Touchdown Zone Elevation: 9.8 ft

2.12.1 Designation: 08W
2.12.2 True Bearing: 91
2.12.3 Dimensions: 5090 ft x 300 ft
2.12.4 PCN:
2.12.5 Coordinates: 21−18−40.85N / 157−55−0W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 26W
2.12.2 True Bearing: 271
2.12.3 Dimensions: 5090 ft x 300 ft
2.12.4 PCN:
2.12.5 Coordinates: 21−18−39.9794N / 157−54−6.1782W
2.12.6 Threshold Elevation: 0 ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 6952
2.13.3 Take−off 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 Take−off Run Available: 6952
2.13.3 Take−off Distance Available: 6952
2.13.4 Accelerate−Stop Distance Available: 6952
2.13.5 Landing Distance Available: 6952

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 8937
2.13.5 Landing Distance Available: 8937

2.13.1 Designation: 04W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 22W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 12312
2.13.3 Take−off Distance Available: 12312
2.13.4 Accelerate−Stop Distance Available: 12312
2.13.5 Landing Distance Available: 12312

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 12300
2.13.3 Take−off Distance Available: 12300
2.13.4 Accelerate−Stop Distance Available: 12300
2.13.5 Landing Distance Available: 12300

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 08W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 26W
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V6L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26W
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: 15 AW COMD POST
2.18.3 Channel: 168
2.18.5 Hours of Operation:

2.18.1 Service Designation: 15 AW COMD POST
2.18.3 Channel: 295.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: ADZY (HONOLULU RAMP ADZY)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: ADZY (HICKAM RAMP ADZY)
2.18.3 Channel: 133.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: ADZY (HICKAM RAMP ADZY)
2.18.3 Channel: 254.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 293.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (WEST)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (WEST)
2.18.3 Channel: 269
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BANZI RNAV DP
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BANZI RNAV DP
2.18.3 Channel: 269
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 281.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (ARR E/NW DEP NW)
2.18.3 Channel: 119.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (ARR E/NW DEP NW)
2.18.3 Channel: 239.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: COMD POST
2.18.3 Channel: 141.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: COMD POST
2.18.3 Channel: 292.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 127.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 251.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P CLASS B (EAST)
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P CLASS B (EAST)
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KEAHI DP (JORDA,LANAI, UPOLU TRNS.)
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KEAHI DP (JORDA, LANAI, UPOLU TRNS.)
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KEOLA DP (KATHS,LIHUE,LILIA,NONNI,PUPPI, SOUTH KAUAI TRNS.)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KEOLA DP (KATHS,LIHUE,LILIA,PUPPI,SOUTH KAUAI TRNS.)
2.18.3 Channel: 269
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08R/26L)
2.18.3 Channel: 123.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08R/26L)
2.18.3 Channel: 273.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MOLOKAI DP (APACK, CLUTS ,EBBER, FITES, PULPS, ZIGIE TRNS.)
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MOLOKAI DP (APACK, CLUTS, EBBER, FITIES, PULPS, ZIGIE TRNS.)
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS (SHAKA OPS)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (SAC OPS)
2.18.3 Channel: 311
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS (SHAKA OPS)
2.18.3 Channel: 349.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: PALAY DP (LANAI, MOLOKAI TRNS.)
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PALAY DP (LANAI, MOLOKAI TRNS.)
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PIPLN RNAV DP
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PIPLN RNAV DP
2.18.3 Channel: 317.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PTD (HICKAM)
2.18.3 Channel: 133.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 372.2
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−19−47.9018N / 157−54−10.9794W
2.19.6 Site Elevation: 19.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−18−53.9933N / 157−55−26.9028W
2.19.6 Site Elevation: 5.6 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 11E
2.19.2 ILS Identification: IUM
2.19.5 Coordinates: 21−19−49.8152N / 157−54−13.0662W
2.19.6 Site Elevation: 5.1 ft

2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−27.8674N / 157−54−17.1566W
2.19.6 Site Elevation: 21.2 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−26.6745N / 157−56−24.533W
2.19.6 Site Elevation: 6.7 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−30.8788N / 157−54−14.7214W
2.19.6 Site Elevation: 5.4 ft

2.19.1 ILS Type: Outer Marker for runway 08L. Magnetic variation: 11E
2.19.2 ILS Identification: HNL
2.19.5 Coordinates: 21−19−28.9934N / 158−2−56.1122W
2.19.6 Site Elevation: 43.5 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: EPC
2.19.5 Coordinates: 21−19−37.0011N / 157−54−25.9888W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: EPC
2.19.5 Coordinates: 21−19−35.0845N / 157−54−28.3182W
2.19.6 Site Elevation: 6.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: HNL
2.19.5 Coordinates: 21−18−29.9581N / 157−55−49.4801W
2.19.6 Site Elevation: 5.1 ft

General Remarks:
MILITARY RSTD: JBPH−H IS PPR TO ALL NON−TFWC MSN, AMC TRNG MSN AND KC−135 8 UN & 8 EN MSN CALL 735TH MOC AT DSN (315) 499−6970 FOR PPR. ALL AMC PPR WILL BE COORD MON−FRI 1700−0400Z ONLY. ALL NON−AMC ACFT SUCH AS FOREIGN, SISTER SVC, TRAN ACFT OR KC−135 AND, QDN, QEN, PEN, KEN, CJZ, DV1, DV7, DC5, AND C−130 MSN MUST CTC 15 OSS/OSA (AMOPS) AT DSN (315) 449−0046 FOR PPR. ALL PPR WILL BE APVD NO EARLIER THAN 72 HR BUT NO LATER THAN 24 HR PRIOR.

CAUTION: DURING PERIODS OF REPEATED PRECIPITATION ANTICIPATE WET RY CONDTIONS, IF CURRENT CONDITIONS RQR CONFIRMATION CTC HONOLULU TWR ON INITIAL CONTACT.

CAUTION: RECREATIONAL BOATING ACTIVITIES ON AND INVOF WATERWAYS.

MILITARY: ALL MIL ACFT RQR CSTMS/AG/IMG INSPECTION MUST CTC 15WG COMMAND POST OR IF AMC CTC HICKAM AMCC, NLT 3 HRS PRIOR TO ARR WITH DEPARTURE LOCATION, EST BLOCK TIME, NR OF AIRCREW, CIV/MIL PAX, FOREIGN NATIONALS, AND DV CODES.*

ALL JET ACFT CTC RAMP CONTROL PRIOR TO ENGINE START AT GATE OR HARD STAND.

MILITARY CAUTION: NO FIGHTER TRANSIENT SUPPORT AVAILABLE IN ACCORDANCE WITH ACC LSET FLASH SAFETY 06–02. TRANSIENT FIGHTER UNITS SHOULD PROVIDE THEIR OWN MAINTENANCE SUPPORT.

BIRD STRIKE HAZARD ALL RUNWAYS.

MILITARY/COMMUNICATIONS: BEDTIME (ALL CORONET W TANKERS USE 311.0 FOR TANKER−FTR INTER−PLANE ON LAUNCH DAY. AFT DUTY HR DSN 448−8888 613AOC/AMD, FLT MGMT).

MILITARY RSTD: TWR APVL REQUIRED TO USE TWY KILO FROM RY 4R. TWY RA HOLD SHORT APCH ZONE RWY 04L/R AT HOLD LINE. TWY P CLSD TO ACFT OVER 12,500 LB.

MILITARY MISC: WX OPR H24, DSN 449−2251, C808−658−9961.

PPR FM AMGR FOR TRANSPORATION OF CLASS A OR B EXPLOS IN AND/OR OUT OF HNL.

TFC PAT OVHD ALT 2000 FT, RESTRICTED TO HIANG AND SENTRY ALOHA ACFT.

APRON TAXILANE 2 EAST END 360 FT CLSD.

MILITARY MISC: ANG − HI ANG AFLD OPS OPR 1500−0300Z MON−FRI AND UTA WKENDS; CLSD SAT, SUN AND HOL.

MILITARY CAUTION: FOD HAZARD EXISTS ON ALL MOVEMENT AREAS E OF TWY S. FIGHTER AIRCRAFT EXERCISE EXTREME CTN WHEN TAXIING.

MILITARY MISC 2 OF 2: WAIVERS WILL BE GRANTED ON EXTREME NEC. IF SHORT NOTICE MSN ESSENTIAL WAIVERS ARE NEC, CTC 15OG/CC BY FONE THRU 15 WG COMD POST(15 WG/CP) OR 154 OG/CC FOR HIANG AIRCRAFT. 15 WG COMMAND POST WILL PASS APVL TO HICKAM FLT SVC AND HICKAM RAMP ADZY.

MILITARY RSTD: MIL ACFT OPR DUR BIRD WATCH COND MODERATE (INITIAL TKOF OR FULL STOP LDG ONLY, NO MULTIPLE IFR/VFR APCH) AND SEVERE (TKOF AND LDG PROH WO 15 OG/CC APVL OR 154 OG/CC APVL FOR HIANG ACFT) CTC HIK RAMP, PTD, 15 WG COMD POST, 735 AMC COMD POST, 154 WG COMD POST FOR CURRENT COND.

MILITARY A−GEAR: HOOK MB100(B) LCTD 200 FT FM THLD RY 26R.

MILITARY TRAN ALERT: 15 WG CAN PROVIDE EQPT BUT CREWS MUST PROVIDE OWN PERS WHEN NEEDED.

MILITARY: TO MINIMIZE FOD POTENTIAL, ALL AIRCRAFT SHOULD USE MINIMUM THRUST, SPCLY OUTBOARD ENGINES, WHEN TAXIING PAST THE F−22 ALERT FAC ON TWY T.

TWYS G ADG V AND BELOW POWER IN W/PPR.

MILITARY: ALL ACFT INBD TO HICKAM SHOULD ADDRESS FLT PLAN TO PHIKYXYX.

MILITARY CAUTION: A FOD HAZARD EXISTS ON ALL TAXIWAYS AND RUNWAYS BUT ESPECIALLY ON RUNWAY 4L/22R AND TAXIWAYS NORTH OF RUNWAY 8L/26R.

MILITARY MISC: AFLD OPS DSN 449−0046/0048 FAX DSN 449−7624.

RYS 04W/22W AND 08W/26W RECREATIONAL BOATING ACTIVITIESON AND INVOF WATERWAYS.

MILITARY RSTD: UPON ARRIVAL, CREWS WILL PROCEED DIRECTLY TO COMMAND POST (BLDG 2050) AND COMPLETE AN OUTBOUND SETUP SHEET TO FACILITATE DEPARTURE REQUIREMENTS.

MILITARY MISC 1 OF 2: DUE TO SENSITIVITIES OF CITIZENS, FTR ACFT DEP ONLY AUTHORIZED FR 1700−0700Z MON−SAT, AND 1800−0700Z SUN AND HOL. ALL REQ FOR WAIVERS WILL BE SENT TO THE 15/OG/CC OR 154 OG/CC FOR HIANG AIRCRAFT AT LEAST 5 WORKING DAYS IN ADVANCE.

MILITARY MISC: NO COMSEC MATERIAL AVBL THRU HICKAM AIRFIELD OPS.

DUE TO NON−VISIBILITY TWR UNABLE TO DETERMINE IF THE FLWG AREAS ARE CLEAR OF OBSTRUCTIONS AND/OR TFC: PORTIONS OF TWY RB BTN TWY B & RY 08R; PORTIONS OF INTER−ISLAND ACFT PARKING RAMP.

RMN AT LEAST 1 MILE OFF SHORE OF WAIKIKI DIAMOND HEAD KOKO HEAD & EWA BEACH. ARR RWY 08L; FLY ILS APCH PROC OR A CLOSE−IN BASE LEG RMNG OVER CNTR OF PEARL HARBOR CHNL. ARR 26L/R; RNM AT TFC PAT ALTS AS LONG AS PSBL BFR BGNG DSCNT FOR LNDG.

MILITARY RSTD: ALL TRAN ACFT NOT ON AN AMC/TWCF MSN AND HOME STN ACFT TERMINATING AT JBPH−H, WILL PROVIDE A 3 HR OUT CALL (COMM 808−448−6900) AS WELL AS A 20−30 MIN OUT CALL ON 292.5 TO THE 15 WG/CP (KOA CONTROL).

DUE TO LOCATION OF ATCT, CONTROLLERS UNABLE TO DETERMINE WHETHER ACFT ARE ON CORRECT FINAL APCH TO RYS 04L−04R AND 22L−22R.

MILITARY SERVICE−A−GEAR: RWY 4R/22L AND 8R/26L SFC GROOVED WITHIN 10 FT OF A−G SYSTEM. POTENTIAL FOR FTR ACFT TAIL HOOK SKIP EXISTS.

MILITARY SERVICE−FUEL: A++ (MIL; AVBL H24).

WIDE BODY AND 4 ENGINE TBJTS LDG ON RY 04R ROLL TO END OF RY, NO LEFT TURN AT TWY K WO APVL.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

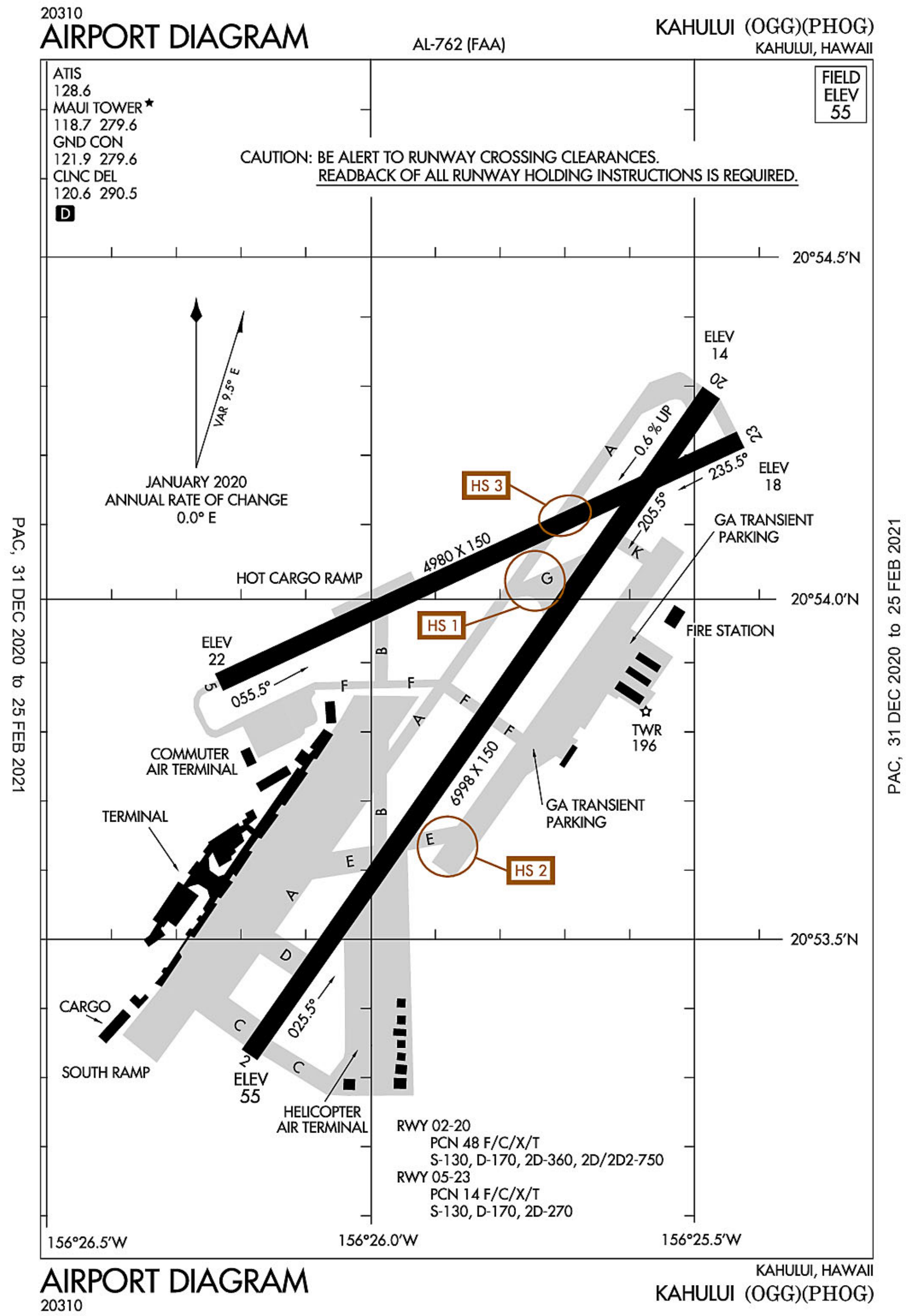
MILITARY: ALL MIL ACFT WITH VIP CODE 7 OR ABV CTC 15WG COMMAND POST OR RELAY THRU HF/SSB AWY 1 HR OUT TO CFM BLOCKTIME.

MILITARY REMARKS: SEE FLIP AP/3 SUPPLEMENTARY APRT INFO, RTE AND AREA RSTD, AND OAKLAND FIR FLT HAZ.

MILITARY MISC (2 OF 2 CONT'D): LTD WX BRIEF SUPPORT.REMOTE FLT WX BRIEFINGS CTC 17TH WX SQ H24, DSN 315−449−7950/8333, FAX DSN 315−449−8336; 2 HR PN RQR FOR TIMELY BRIEF.OFFICIAL OBSN TAKEN BY FAA. COOPERATIVE WX WATCH PROCEDURES DO NOT EXIST BTW WX AND ATC.

APRON TAXILANE 6 BTWN TWY C AND SOUTH RAMP CLSD EXCEPT GA/FIXED WING LOADING/UNLOADING ONLY.

Kahului, Hawaii
Kahului
ICAO Identifier PHOG



Kahului, HI
Kahului
ICAO Identifier PHOG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 20−53−55.135N / 156−25−49.651W
2.2.2 From City: 3 miles E of KAHULUI, HI
2.2.3 Elevation: 55.4 ft
2.2.5 Magnetic Variation: 11E (1990)
2.2.6 Airport Contact: MARVIN MONIZ
1 KAHULUI AIRPORT ROAD, UNIT 5
KAHULUI, HI 96732
(808−872−3808)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 35
2.12.3 Dimensions: 6998 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20−53−20.9058N / 156−26−10.7497W
2.12.6 Threshold Elevation: 55.3 ft
2.12.6 Touchdown Zone Elevation: 55.4 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 215
2.12.3 Dimensions: 6998 ft x 150 ft
2.12.4 PCN: 48 F/C/X/T
2.12.5 Coordinates: 20−54−17.7389N / 156−25−28.4443W
2.12.6 Threshold Elevation: 14.3 ft
2.12.6 Touchdown Zone Elevation: 27 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 65
2.12.3 Dimensions: 4980 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20−53−52.8965N / 156−26−13.521W
2.12.6 Threshold Elevation: 22.1 ft
2.12.6 Touchdown Zone Elevation: 22.2 ft

2.12.1 Designation: 23
2.12.2 True Bearing: 245
2.12.3 Dimensions: 4980 ft x 150 ft
2.12.4 PCN: 14 F/C/X/T
2.12.5 Coordinates: 20−54−13.7155N / 156−25−25.928W
2.12.6 Threshold Elevation: 17.6 ft
2.12.6 Touchdown Zone Elevation: 18.9 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 125 ft x 125 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 02
2.13.2 Take−off Run Available: 6995
2.13.3 Take−off Distance Available: 6995
2.13.4 Accelerate−Stop Distance Available: 6995
2.13.5 Landing Distance Available: 6995

2.13.1 Designation: 20
2.13.2 Take−off Run Available: 6995
2.13.3 Take−off Distance Available: 6995
2.13.4 Accelerate−Stop Distance Available: 6995
2.13.5 Landing Distance Available: 6995

2.13.1 Designation: 05
2.13.2 Take−off Run Available: 4990
2.13.3 Take−off Distance Available: 4990
2.13.4 Accelerate−Stop Distance Available: 4990
2.13.5 Landing Distance Available: 4990

2.13.1 Designation: 23
2.13.2 Take−off Run Available: 4990
2.13.3 Take−off Distance Available: 4990
2.13.4 Accelerate−Stop Distance Available: 4990
2.13.5 Landing Distance Available: 4990

2.13.1 Designation: H1
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 20
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P IC (SOUTH)
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: APCH/P DEP/P IC (NORTH)
2.18.3 Channel: 120.2
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: APCH/P DEP/P IC (SOUTH)
2.18.3 Channel: 225.4
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: APCH/P DEP/P IC (NORTH)
2.18.3 Channel: 322.4
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: ATIS
2.18.3 Channel: 128.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.6
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV) 0600−2400 (NOV−MAR)

2.18.1 Service Designation: CD/P
2.18.3 Channel: 290.5
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV) 0600−2400 (NOV−MAR)

2.18.1 Service Designation: CLASS C (SOUTH)
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: CLASS C (NORTH)
2.18.3 Channel: 120.2
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: CLASS C (SOUTH)
2.18.3 Channel: 225.4
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: CLASS C (NORTH)
2.18.3 Channel: 322.4
2.18.5 Hours of Operation: 0600−2300

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV) 0600−2400 (NOV−MAR)

2.18.1 Service Designation: GND/P
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV) 0600−2400 (NOV−MAR)

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.7
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV)

0600−2400 (NOV−MAR)

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 0600−2300 (MAR−NOV)
0600−2400 (NOV−MAR)

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−54−27.3859N / 156−25−23.7568W
2.19.6 Site Elevation: 22 ft

2.19.1 ILS Type: Glide Slope for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−53−29.5489N / 156−25−59.2238W
2.19.6 Site Elevation: 49.5 ft

2.19.1 ILS Type: Localizer for runway 02. Magnetic variation: 11E
2.19.2 ILS Identification: OGG
2.19.5 Coordinates: 20−54−25.9395N / 156−25−22.344W
2.19.6 Site Elevation: 11.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11E
2.19.2 Navigation Aid Identification: OGG
2.19.5 Coordinates: 20−54−23.2995N / 156−25−15.4249W
2.19.6 Site Elevation: 24.3 ft

General Remarks:
ACCESS TO HELIPAD FM TWY C ONLY.

ACFT OVR 30,000 LB LDG ON RY 02/20 UNA TO TURN OFF ONTO RY 05/23 DUE TO PAVEMENT COND.

MILITARY HELICOPTER OPS RESTRICTED TO THE SW CORNER OF HOT CARGO APRON (HAZMAT) N OF RWY 05−23.

MIGRATORY BIRD ACTIVITY BLO 1500 FT WI 5 NM RADIUS OF ARPT DURG AUG−MAY.

570’ LGTD TWR APRX 3 MI. W.

RY 02/20 SINGLE−BELLY TWIN TANDEM (SBTT) GWT 460,000 LBS.

TSNT PARKING LCTD ON NE SECTION OF E RAMP.

PPR FOR FIXED WING ACFT OPNS ON HELIPAD DURG NON−OPERATIONAL HRS CALL (808) 872−3880 5:15A−10:00P.

COMMUTER TERMINAL RAMP RESTRICTED TO ACFT 140000 LBS OR LESS.

DUE TO NONVISIBILITY ATCT UNABLE TO DETERMINE IF FLWG AREA IS CLEAR OF OBSTNS AND/OR TFC: PORTION OF TWY F BTN THE COMMUTER AIR TERMINAL & APCH END RY 05.

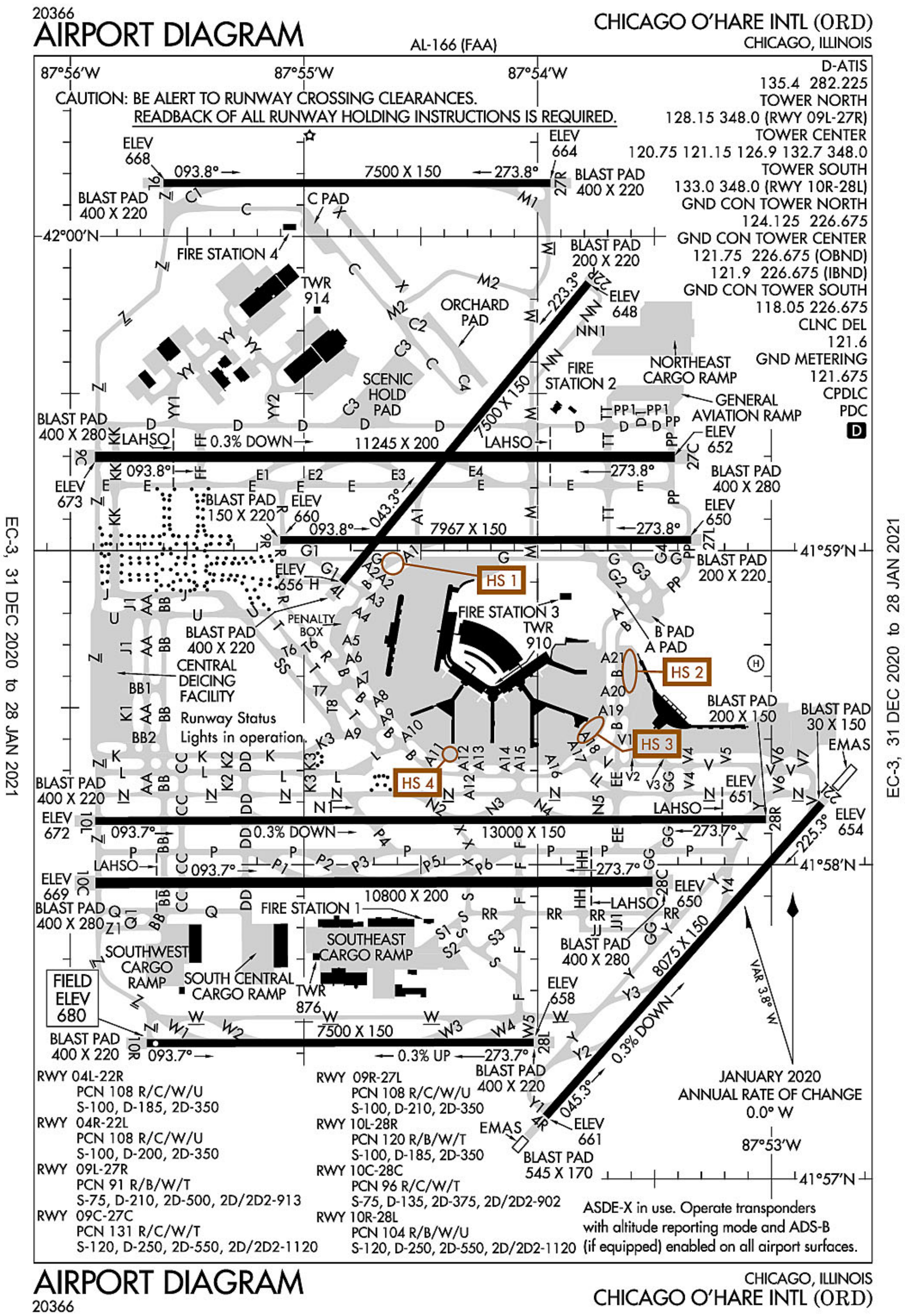
DUE TO NONVISIBILITY ATCT UNABLE TO PROVIDE ATC SVC BTN ACFT & GROUND VEHICLES ON THE COMMUTER AIR TERMINAL S OF TWY F AND THE HELICOPTER AIR TERMINAL E OF APCH END RY 02.

AREA E OF APCH END RY 02 DESIGNATED AS HELICOPTER OPER AREA. NO FIXED WING ACFT MAY OPER ON HELIPAD DURG OPNL HRS SR−SS.

RAMP AREA E SIDE RY 02 UNDER STATE AUTHORITY. FAA NOT RESPONSIBLE FOR DIRECTION & CTL GND TFC IN AREA.

24 HRS PPR FOR DIVISION 1.1,1.2,1.3 EXPLOSIVES AND 4 HRS PPR FOR OTHER HAZARDOUS CARGO IN/OUT OF ARPT; CTC (808) 872−3830 0745−1630 OTHER TIMES (808) 872−3888.

Chicago, Illinois
Chicago−O'Hare International
ICAO Identifier KORD



Chicago, IL
Chicago O'Hare Intl
ICAO Identifier KORD

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−58−35.864N / 87−54−26.111W
2.2.2 From City: 14 miles NW of CHICAGO, IL
2.2.3 Elevation: 680 ft
2.2.5 Magnetic Variation: 3W (2010)
2.2.6 Airport Contact: JAMIE RHEE
10510 WEST ZEMKE RO
CHICAGO, IL 60666
(773−686−8060)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 39
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−53.9601N / 87−54−50.1039W
2.12.6 Threshold Elevation: 655.7 ft
2.12.6 Touchdown Zone Elevation: 658.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 219
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−59−51.1336N / 87−53−46.9364W
2.12.6 Threshold Elevation: 647.7 ft
2.12.6 Touchdown Zone Elevation: 651.5 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 42
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−57−11.9778N / 87−53−57.9066W
2.12.6 Threshold Elevation: 661.4 ft
2.12.6 Touchdown Zone Elevation: 661.4 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 222
2.12.3 Dimensions: 8075 ft x 150 ft
2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−58−11.718N / 87−52−47.0759W
2.12.6 Threshold Elevation: 654.4 ft
2.12.6 Touchdown Zone Elevation: 654.4 ft

2.12.1 Designation: 09C
2.12.2 True Bearing: 90
2.12.3 Dimensions: 11245 ft x 200 ft
2.12.4 PCN: 131 R/C/W/T
2.12.5 Coordinates: 41−59−17.8928N / 87−55−53.6579W
2.12.6 Threshold Elevation: 673.2 ft
2.12.6 Touchdown Zone Elevation: 673.2 ft

2.12.1 Designation: 27C
2.12.2 True Bearing: 270
2.12.3 Dimensions: 11245 ft x 200 ft
2.12.4 PCN: 131 R/C/W/T
2.12.5 Coordinates: 41−59−17.9172N / 87−53−24.754W
2.12.6 Threshold Elevation: 652.4 ft
2.12.6 Touchdown Zone Elevation: 652.9 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−0−10.1909N / 87−53−56.6997W
2.12.6 Threshold Elevation: 663.6 ft
2.12.6 Touchdown Zone Elevation: 663.6 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−0−10.1954N / 87−55−36.0339W
2.12.6 Threshold Elevation: 668 ft
2.12.6 Touchdown Zone Elevation: 668 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7967 ft x 150 ft

2.12.4 PCN: 108 R/C/W/U
2.12.5 Coordinates: 41−59−2.0302N / 87−55−6.0672W
2.12.6 Threshold Elevation: 659.8 ft
2.12.6 Touchdown Zone Elevation: 659.8 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: 41−59−2.0405N / 87−53−20.5834W
2.12.6 Threshold Elevation: 650.1 ft
2.12.6 Touchdown Zone Elevation: 653.6 ft

2.12.1 Designation: 10C
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10800 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41−57−56.5251N / 87−55−53.4778W
2.12.6 Threshold Elevation: 669.4 ft
2.12.6 Touchdown Zone Elevation: 669.4 ft

2.12.1 Designation: 28C
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10800 ft x 200 ft
2.12.4 PCN: 96 R/C/W/T
2.12.5 Coordinates: 41−57−56.7568N / 87−53−30.5171W
2.12.6 Threshold Elevation: 650.1 ft
2.12.6 Touchdown Zone Elevation: 651.1 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41−58−8.6529N / 87−53−1.4244W
2.12.6 Threshold Elevation: 651.4 ft
2.12.6 Touchdown Zone Elevation: 651.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 13000 ft x 150 ft
2.12.4 PCN: 120 R/B/W/T
2.12.5 Coordinates: 41−58−8.3816N / 87−55−53.5142W
2.12.6 Threshold Elevation: 672.1 ft
2.12.6 Touchdown Zone Elevation: 672.1 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41−57−26.0865N / 87−54−1.0355W
2.12.6 Threshold Elevation: 658 ft
2.12.6 Touchdown Zone Elevation: 666.8 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 104 R/B/W/U
2.12.5 Coordinates: 41−57−25.924N / 87−55−40.3004W
2.12.6 Threshold Elevation: 680 ft
2.12.6 Touchdown Zone Elevation: 680 ft

2.12.1 Designation: 10X
2.12.2 True Bearing:
2.12.3 Dimensions: 0 ft x 0 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 200 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available:

2.13.1 Designation: 22R
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available: 7375

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 8075
2.13.3 Take−off 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 Take−off Run Available: 8075
2.13.3 Take−off Distance Available: 8075

2.13.4 Accelerate−Stop Distance Available: 8075
2.13.5 Landing Distance Available: 8075

2.13.1 Designation: 09C
2.13.2 Take−off Run Available: 11245
2.13.3 Take−off Distance Available: 11245
2.13.4 Accelerate−Stop Distance Available: 11245
2.13.5 Landing Distance Available: 11245

2.13.1 Designation: 27C
2.13.2 Take−off Run Available: 11245
2.13.3 Take−off Distance Available: 11245
2.13.4 Accelerate−Stop Distance Available: 11245
2.13.5 Landing Distance Available: 11245

2.13.1 Designation: 27R
2.13.2 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available: 7500

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available: 7500

2.13.1 Designation: 09R
2.13.2 Take−off Run Available: 7967
2.13.3 Take−off 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 Take−off Run Available: 7967
2.13.3 Take−off 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 Take−off Run Available: 10801
2.13.3 Take−off 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 Take−off Run Available: 10801
2.13.3 Take−off Distance Available: 10801
2.13.4 Accelerate−Stop Distance Available: 10801
2.13.5 Landing Distance Available: 10801

2.13.1 Designation: 28R
2.13.2 Take−off Run Available: 13000
2.13.3 Take−off Distance Available: 13000
2.13.4 Accelerate−Stop Distance Available: 13000
2.13.5 Landing Distance Available: 13000

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 13000
2.13.3 Take−off Distance Available: 13000
2.13.4 Accelerate−Stop Distance Available: 13000
2.13.5 Landing Distance Available: 12246

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available: 7500

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available: 7500

2.13.1 Designation: 10X
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: H1
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22L

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ALCP
2.18.3 Channel: 252.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 121.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 121.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/S
2.18.3 Channel: 119.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 135.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 282.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND METERING
2.18.3 Channel: 121.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (TWR SOUTH)
2.18.3 Channel: 118.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (TWR CENTER OUTBOUND)
2.18.3 Channel: 121.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (TWR CENTER INBOUND)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (TWR NORTH)
2.18.3 Channel: 124.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 226.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S (TWR CENTER)
2.18.3 Channel: 134.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR CENTER)
2.18.3 Channel: 120.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR CENTER)
2.18.3 Channel: 121.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR CENTER)
2.18.3 Channel: 126.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR NORTH RWY 09L/27R)
2.18.3 Channel: 128.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR CENTER)
2.18.3 Channel: 132.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (TWR SOUTH RWY 10R/28L)
2.18.3 Channel: 133
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 348
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S (TWR CENTER)
2.18.3 Channel: 127.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (TWR CENTER RWY 28C)
2.18.3 Channel: 119.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (TWR CENTER RWY 10C)
2.18.3 Channel: 119.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (TWR SOUTH RWY 10R)
2.18.3 Channel: 128.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (TWR SOUTH RWY 28L)
2.18.3 Channel: 128.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: VFR ADZY
2.18.3 Channel: 126.8
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 3W
2.19.2 ILS Identification: RXZ
2.19.5 Coordinates: 41−59−46.5114N / 87−53−59.027W
2.19.6 Site Elevation: 645.1 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 3W
2.19.2 ILS Identification: RXZ
2.19.5 Coordinates: 41−58−46.4888N / 87−54−58.3524W
2.19.6 Site Elevation: 655.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 3W
2.19.2 ILS Identification: FJU
2.19.5 Coordinates: 41−57−16.8552N / 87−53−44.3489W
2.19.6 Site Elevation: 654.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 3W
2.19.2 ILS Identification: FJU
2.19.5 Coordinates: 41−58−16.1967N / 87−52−41.7631W
2.19.6 Site Elevation: 646.6 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 3W
2.19.2 ILS Identification: LQQ
2.19.5 Coordinates: 41−58−0.7989N / 87−52−52.6077W
2.19.6 Site Elevation: 645.9 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 3W
2.19.2 ILS Identification: LQQ
2.19.5 Coordinates: 41−57−5.6133N / 87−54−5.4506W
2.19.6 Site Elevation: 653 ft

2.19.1 ILS Type: DME for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41−59−22.2017N / 87−56−7.1564W
2.19.6 Site Elevation: 673 ft

2.19.1 ILS Type: Glide Slope for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41−59−21.8838N / 87−55−38.906W
2.19.6 Site Elevation: 666.9 ft

2.19.1 ILS Type: Inner Marker for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41−59−17.8887N / 87−56−5.0459W
2.19.6 Site Elevation: 680.3 ft

2.19.1 ILS Type: Localizer for runway 09C. Magnetic variation: 3W
2.19.2 ILS Identification: OYG
2.19.5 Coordinates: 41−59−17.9166N / 87−53−10.9825W
2.19.6 Site Elevation: 656.2 ft

2.19.1 ILS Type: DME for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41−59−22.2017N / 87−56−7.1564W
2.19.6 Site Elevation: 673 ft

2.19.1 ILS Type: Glide Slope for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41−59−21.9035N / 87−53−38.9229W
2.19.6 Site Elevation: 645.3 ft

2.19.1 ILS Type: Inner Marker for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41−59−17.9169N / 87−53−13.3661W
2.19.6 Site Elevation: 655.9 ft

2.19.1 ILS Type: Localizer for runway 27C. Magnetic variation: 3W
2.19.2 ILS Identification: UYJ
2.19.5 Coordinates: 41−59−17.888N / 87−56−7.0322W
2.19.6 Site Elevation: 681.9 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42−0−14.0985N / 87−55−48.2323W
2.19.6 Site Elevation: 669.5 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42−0−14.2182N / 87−55−20.6714W
2.19.6 Site Elevation: 651.3 ft

2.19.1 ILS Type: Inner Marker for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42−0−10.1934N / 87−55−47.4231W
2.19.6 Site Elevation: 668.8 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 3W
2.19.2 ILS Identification: SAJ
2.19.5 Coordinates: 42−0−10.1874N / 87−53−43.3254W
2.19.6 Site Elevation: 660.9 ft

2.19.1 ILS Type: DME for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42−0−14.0985N / 87−55−48.2323W
2.19.6 Site Elevation: 669.5 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 3W

2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42−0−14.2137N / 87−54−11.7412W
2.19.6 Site Elevation: 648.4 ft

2.19.1 ILS Type: Inner Marker for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42−0−9.9864N / 87−53−45.3008W
2.19.6 Site Elevation: 663.1 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 3W
2.19.2 ILS Identification: ABU
2.19.5 Coordinates: 42−0−10.1939N / 87−55−50.1994W
2.19.6 Site Elevation: 668.1 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41−59−4.7161N / 87−53−10.2316W
2.19.6 Site Elevation: 653.7 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41−59−7.8117N / 87−54−51.2862W
2.19.6 Site Elevation: 658.2 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 3W
2.19.2 ILS Identification: JAV
2.19.5 Coordinates: 41−59−2.0448N / 87−53−10.493W
2.19.6 Site Elevation: 642.8 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41−59−4.7161N / 87−53−10.2316W
2.19.6 Site Elevation: 653.7 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41−59−6.8111N / 87−53−34.3515W
2.19.6 Site Elevation: 646.5 ft

2.19.1 ILS Type: Inner Marker for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41−59−1.8506N / 87−53−9.1944W
2.19.6 Site Elevation: 641.5 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 3W
2.19.2 ILS Identification: IAC
2.19.5 Coordinates: 41−59−2.0278N / 87−55−17.975W
2.19.6 Site Elevation: 665 ft

2.19.1 ILS Type: DME for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41−58−0.9714N / 87−56−9.15W
2.19.6 Site Elevation: 689.3 ft

2.19.1 ILS Type: Glide Slope for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41−57−52.8465N / 87−55−39.0226W
2.19.6 Site Elevation: 663 ft

2.19.1 ILS Type: Inner Marker for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41−57−56.5015N / 87−56−4.8681W
2.19.6 Site Elevation: 674.3 ft

2.19.1 ILS Type: Localizer for runway 10C. Magnetic variation: 3W
2.19.2 ILS Identification: SXH
2.19.5 Coordinates: 41−57−56.803N / 87−52−57.2925W
2.19.6 Site Elevation: 646.3 ft

2.19.1 ILS Type: DME for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41−58−0.9714N / 87−56−9.15W
2.19.6 Site Elevation: 689.3 ft

2.19.1 ILS Type: Glide Slope for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41−57−53.0321N / 87−53−44.3196W
2.19.6 Site Elevation: 642.4 ft

2.19.1 ILS Type: Inner Marker for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41−57−58.7451N / 87−53−19.1677W
2.19.6 Site Elevation: 648 ft

2.19.1 ILS Type: Localizer for runway 28C. Magnetic variation: 3W
2.19.2 ILS Identification: VZE
2.19.5 Coordinates: 41−57−56.5013N / 87−56−6.8848W
2.19.6 Site Elevation: 676.4 ft

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41−58−5.6721N / 87−52−41.6845W
2.19.6 Site Elevation: 656 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41−58−4.3877N / 87−55−38.7659W
2.19.6 Site Elevation: 665.3 ft

2.19.1 ILS Type: Inner Marker for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41−58−8.5523N / 87−56−4.8866W
2.19.6 Site Elevation: 676.8 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 3W
2.19.2 ILS Identification: MED
2.19.5 Coordinates: 41−58−8.6818N / 87−52−39.6951W
2.19.6 Site Elevation: 644.9 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41−58−5.6721N / 87−52−41.6845W
2.19.6 Site Elevation: 656 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41−58−4.4701N / 87−53−15.0487W
2.19.6 Site Elevation: 648.2 ft

2.19.1 ILS Type: Inner Marker for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41−58−6.1128N / 87−52−49.1235W
2.19.6 Site Elevation: 649.5 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 3W
2.19.2 ILS Identification: TSL
2.19.5 Coordinates: 41−58−8.356N / 87−56−6.8801W
2.19.6 Site Elevation: 679.1 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41−57−28.3399N / 87−53−27.4609W
2.19.6 Site Elevation: 669.6 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41−57−21.909N / 87−55−25.5702W
2.19.6 Site Elevation: 671.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 4W
2.19.2 ILS Identification: BYW
2.19.5 Coordinates: 41−57−31.6045N / 87−53−26.3741W
2.19.6 Site Elevation: 649.9 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−22.2251N / 87−53−34.2417W
2.19.6 Site Elevation: 656.1 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−22.0258N / 87−54−14.1801W
2.19.6 Site Elevation: 654 ft

2.19.1 ILS Type: Inner Marker for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−26.9517N / 87−53−47.4584W
2.19.6 Site Elevation: 650.4 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 4W
2.19.2 ILS Identification: VQX
2.19.5 Coordinates: 41−57−25.8994N / 87−55−53.7065W
2.19.6 Site Elevation: 680.2 ft

2.19.1 ILS Type: DME for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−22.2251N / 87−53−34.2417W
2.19.6 Site Elevation: 656.1 ft

2.19.1 ILS Type: Glide Slope for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−22.1087N / 87−55−25.5572W
2.19.6 Site Elevation: 671.8 ft

2.19.1 ILS Type: Inner Marker for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−25.9088N / 87−55−51.6695W
2.19.6 Site Elevation: 680 ft

2.19.1 ILS Type: Localizer for runway 10X. Magnetic variation: 4W
2.19.2 ILS Identification: IZJ
2.19.5 Coordinates: 41−57−26.1287N / 87−53−32.5409W
2.19.6 Site Elevation: 652.2 ft

General Remarks:
TXL BB2 CLSD TO WINGSPAN MORE THAN 118 FT

A380−800 OPR CONSTRAINTS EXIST ON RWYS, TWYS, & RAMPS − CTC ARPT OPS FOR INFO 773−686−2255.

BIRDS ON & INVOF ARPT; PYROTECHNICS & BIRD CANNONS IN USE.

BE ALERT: THE NORTHEAST/SOUTHWEST PORTION OF TWY YY IS NOT VSBL FM THE CENTER ATCT.

RWY STATUS LGTS ARE IN OPN.

MAG DEVIATION PSBL IMT W OF TWY Y & RWY 22L APCH ON TWY N.

EAST AND WEST GATES ARE MANNED 24 HRS A DAY.

ACFT ARE NOT PMTD TO STOP ON EITHER TWY A OR B BRIDGES.

BE ALERT: TWY S−1 OUTBOUND OR EASTBOUND ONLY, TWY S−2 INBOUND OR WESTBOUND ONLY, TWYS P1, P2, P3, P5, AND P6 NORTHBOUND ONLY, TWY A1 SOUTHBOUND ONLY FROM RWY 09R−27L, TWYS E1, E2, AND E4 SOUTHBOUND ONLY, TWY E3 WESTBOUND ONLY FROM RWY 09C−27C.

ALERT: DUPE ALPHA−NUMERIC TWY DESIGNATORS & TRML GATE DESIGNATIONS INVOLVING THE LTRS B, C, G, H, K, L & M.

SEE LND & HOLD SHORT OPS SECTION.

B747−8, B747−400, B777−200LR(F), B777−300ER, A350−900, A350−1000, A340−500, A340−600 & A330−900 CANNOT PASS ON TWY A & TWY B DUE TO INSUFFICIENT WINGTIP CLNC

LINE UP AND WAIT AUTHORIZATION IN EFF BTWN SS AND SR AT THE FLWG INTS: RWY 28R AT TWY GG, TWY EE AND TWY N5; RWY 10L AT TWY DD AND TWY CC AND TWY BB; RWY 27C AT TWY TT; RWY 9C AT TWY FF. THESE RWYS WILL BE USED FOR DEPS ONLY WHEN EXERCISING THE PROVISIONS OF THIS AUTHORIZATION.

ATCT IS AUZD TO CONDUCT SIMUL DEPS FM RWY 4L/4R, RWY 22R/22L, RWY 9R WITH RWY 9L OR RWY 10L, RWY 27L WITH 28R OR RWY 27R, RWY 10C WITH RWY 9R AND RWY 28C WITH RWY 27L WITH COURSE DIVERGENCE BEGINNING NO LATER THAN 4 MILES FM RY END.

PAEW NEAR VARIOUS TWYS.

ACFT WITH WINGSPAN GREATER THAN 214 FT RQR 48 HRS PPR − 773−686−2255.

B747−8 OPS NOT AUTHORIZED ON RWY 09R/27L, 09L/27R & 10R/28L.

PERIODIC FIRE DEPT TRNG AT N SECTOR OF THE ARPT.

NOISE ABATEMENT PROC IN EFFECT FM 2200 TO 0700; CTC AMGR − 773−686−2255.

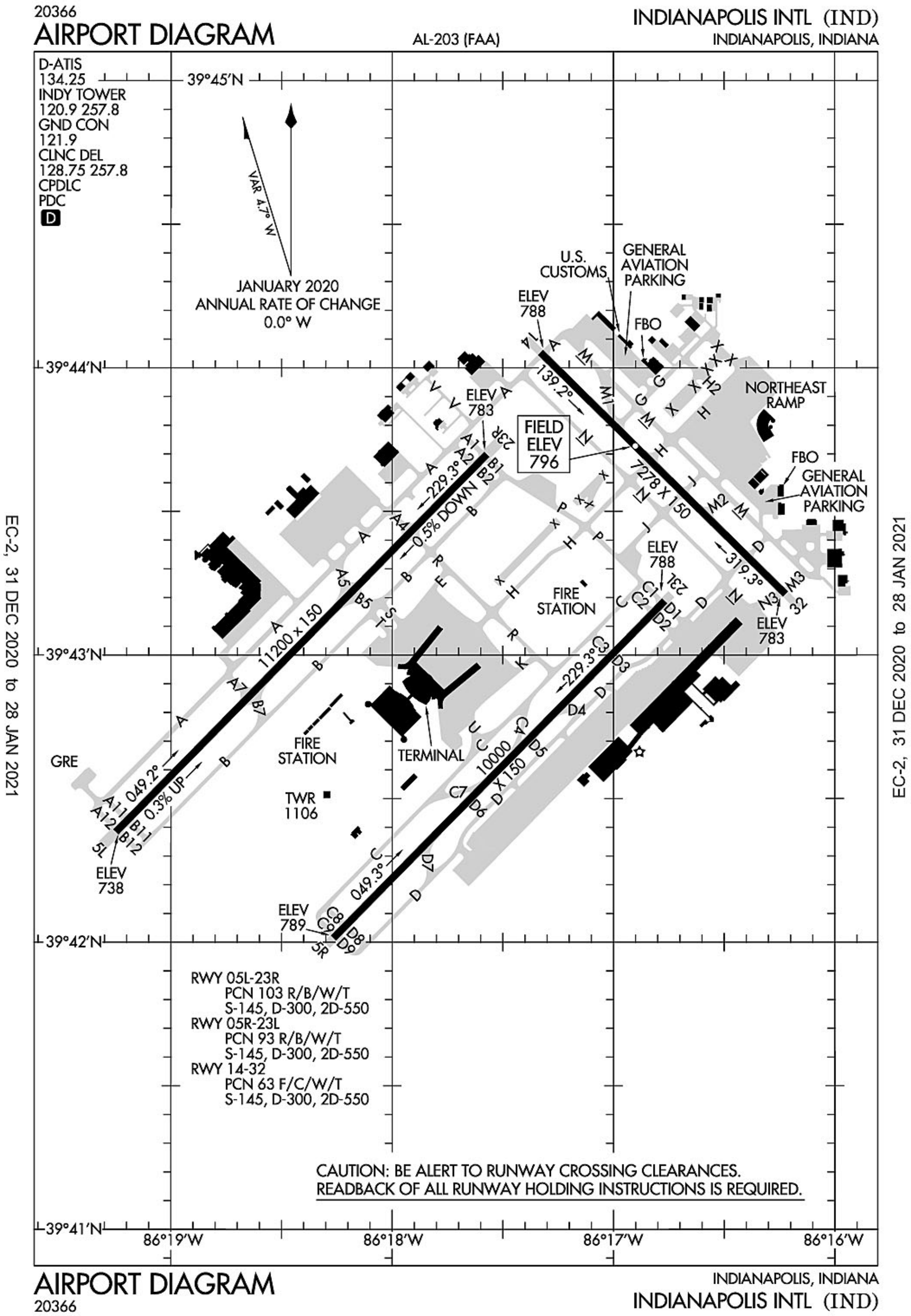
DVRSN ACRS WO A PRESENCE AT ORD SHOULD CTC ARPT OPNS 773−686−2255 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PRVD: CO, FLIGHT OPS CTC INFO, ACFT TYPE, PERSONS OB, INTL OR DOMESTIC, ANY GND HANDLER AGRMTS IN PLACE.

PRIM RUN−UP LOCATION GROUND RUN UP ENCLOSURE; SECONDARY RUN UP LOCATIONS AVBL UPON REQ − CTC CITY OPS 773−686−2255.

ALL PART 91 & UNSKED PART 125, 133 & 135 CHARTER OPERATORS CTC SIGNATURE FLIGHT SUPPORT AT 773−686−7000 REGARDING NEW SECURITY REGULATIONS PRIOR TO DEP.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Indianapolis, Indiana
Indianapolis International
ICAO Identifier KIND



Indianapolis, IN
Indianapolis Intl
ICAO Identifier KIND

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−43−2.3N / 86−17−40.7W
2.2.2 From City: 7 miles SW of INDIANAPOLIS, IN
2.2.3 Elevation: 796.2 ft
2.2.5 Magnetic Variation: 5W (2015)
2.2.6 Airport Contact: MARIO RODRIGUEZ
7800 COL. H. WEIR COOK
MEMORIAL DR.
INDIANAPOLIS, IN 46241
(317−487−9594)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39−42−23.0337N / 86−19−14.9025W
2.12.6 Threshold Elevation: 738 ft
2.12.6 Touchdown Zone Elevation: 747.3 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11200 ft x 150 ft
2.12.4 PCN: 103 R/B/W/T
2.12.5 Coordinates: 39−43−41.9101N / 86−17−34.3591W
2.12.6 Threshold Elevation: 782.9 ft
2.12.6 Touchdown Zone Elevation: 782.9 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39−42−0.873N / 86−18−15.906W
2.12.6 Threshold Elevation: 788.8 ft
2.12.6 Touchdown Zone Elevation: 790.7 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 39−43−11.2875N / 86−16−46.1248W
2.12.6 Threshold Elevation: 787.6 ft
2.12.6 Touchdown Zone Elevation: 790.1 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39−44−3.2059N / 86−17−19.7638W
2.12.6 Threshold Elevation: 787.5 ft
2.12.6 Touchdown Zone Elevation: 796.2 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 7278 ft x 150 ft
2.12.4 PCN: 63 F/C/W/T
2.12.5 Coordinates: 39−43−12.7458N / 86−16−13.3895W
2.12.6 Threshold Elevation: 782.6 ft
2.12.6 Touchdown Zone Elevation: 792.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05L
2.13.2 Take−off Run Available: 11200
2.13.3 Take−off 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 Take−off Run Available: 11200
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 7278
2.13.3 Take−off 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 Take−off Run Available: 7278
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 14
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P (WEST OF ACTIVE RWY)
2.18.3 Channel: 124.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (EAST OF ACTIVE RWY)
2.18.3 Channel: 127.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 317.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC
2.18.3 Channel: 128.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (WEST OF ACTIVE RWY)
2.18.3 Channel: 124.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (EAST)
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (EAST OF ACTIVE RWY)
2.18.3 Channel: 127.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 317.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 134.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (WEST)
2.18.3 Channel: 119.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (EAST)
2.18.3 Channel: 124.95

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39−43−51.3513N / 86−17−27.5671W
2.19.6 Site Elevation: 797.6 ft

2.19.1 ILS Type: Glide Slope for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39−42−32.7741N / 86−19−9.6768W
2.19.6 Site Elevation: 735.4 ft

2.19.1 ILS Type: Inner Marker for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39−42−15.7098N / 86−19−24.4367W
2.19.6 Site Elevation: 735.9 ft

2.19.1 ILS Type: Localizer for runway 05L. Magnetic variation: 5W
2.19.2 ILS Identification: IND
2.19.5 Coordinates: 39−43−49.0283N / 86−17−25.2797W
2.19.6 Site Elevation: 787.8 ft

2.19.1 ILS Type: DME for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39−43−51.3513N / 86−17−27.5671W
2.19.6 Site Elevation: 797.6 ft

2.19.1 ILS Type: Glide Slope for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39−43−36.5113N / 86−17−48.4342W
2.19.6 Site Elevation: 772.4 ft

2.19.1 ILS Type: Localizer for runway 23R. Magnetic variation: 5W
2.19.2 ILS Identification: UZK
2.19.5 Coordinates: 39−42−15.9186N / 86−19−23.9666W
2.19.6 Site Elevation: 736.6 ft

2.19.1 ILS Type: DME for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39−43−20.1868N / 86−16−39.5353W
2.19.6 Site Elevation: 802 ft

2.19.1 ILS Type: Glide Slope for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39−42−5.3627N / 86−18−2.9983W
2.19.6 Site Elevation: 788.5 ft

2.19.1 ILS Type: Inner Marker for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39−41−52.0586N / 86−18−27.1359W
2.19.6 Site Elevation: 776.4 ft

2.19.1 ILS Type: Localizer for runway 05R. Magnetic variation: 5W
2.19.2 ILS Identification: OQV
2.19.5 Coordinates: 39−43−18.3778N / 86−16−37.0825W
2.19.6 Site Elevation: 785.5 ft

2.19.1 ILS Type: DME for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39−43−20.1868N / 86−16−39.5353W
2.19.6 Site Elevation: 802 ft

2.19.1 ILS Type: Glide Slope for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39−43−2.4585N / 86−16−54.2858W
2.19.6 Site Elevation: 785 ft

2.19.1 ILS Type: Localizer for runway 23L. Magnetic variation: 5W
2.19.2 ILS Identification: FVJ
2.19.5 Coordinates: 39−41−53.5322N / 86−18−25.2565W
2.19.6 Site Elevation: 777.3 ft

2.19.1 ILS Type: Glide Slope for runway 14. Magnetic variation: 5W
2.19.2 ILS Identification: BJP
2.19.5 Coordinates: 39−43−59.3065N / 86−17−7.3342W
2.19.6 Site Elevation: 790 ft

2.19.1 ILS Type: Localizer for runway 14. Magnetic variation: 5W
2.19.2 ILS Identification: BJP
2.19.5 Coordinates: 39−43−5.64N / 86−16−4.06W
2.19.6 Site Elevation: 768.5 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 5W
2.19.2 ILS Identification: COA
2.19.5 Coordinates: 39−43−16.2751N / 86−16−25.5096W
2.19.6 Site Elevation: 781.7 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic variation: 5W
2.19.2 ILS Identification: COA
2.19.5 Coordinates: 39−44−10.3487N / 86−17−29.1696W
2.19.6 Site Elevation: 782.3 ft

General Remarks:
TWY V IS NOT AVBL FOR ACR OPS.

TWY H RUNS CONTIGUOUS AT NORTHEAST RAMP.

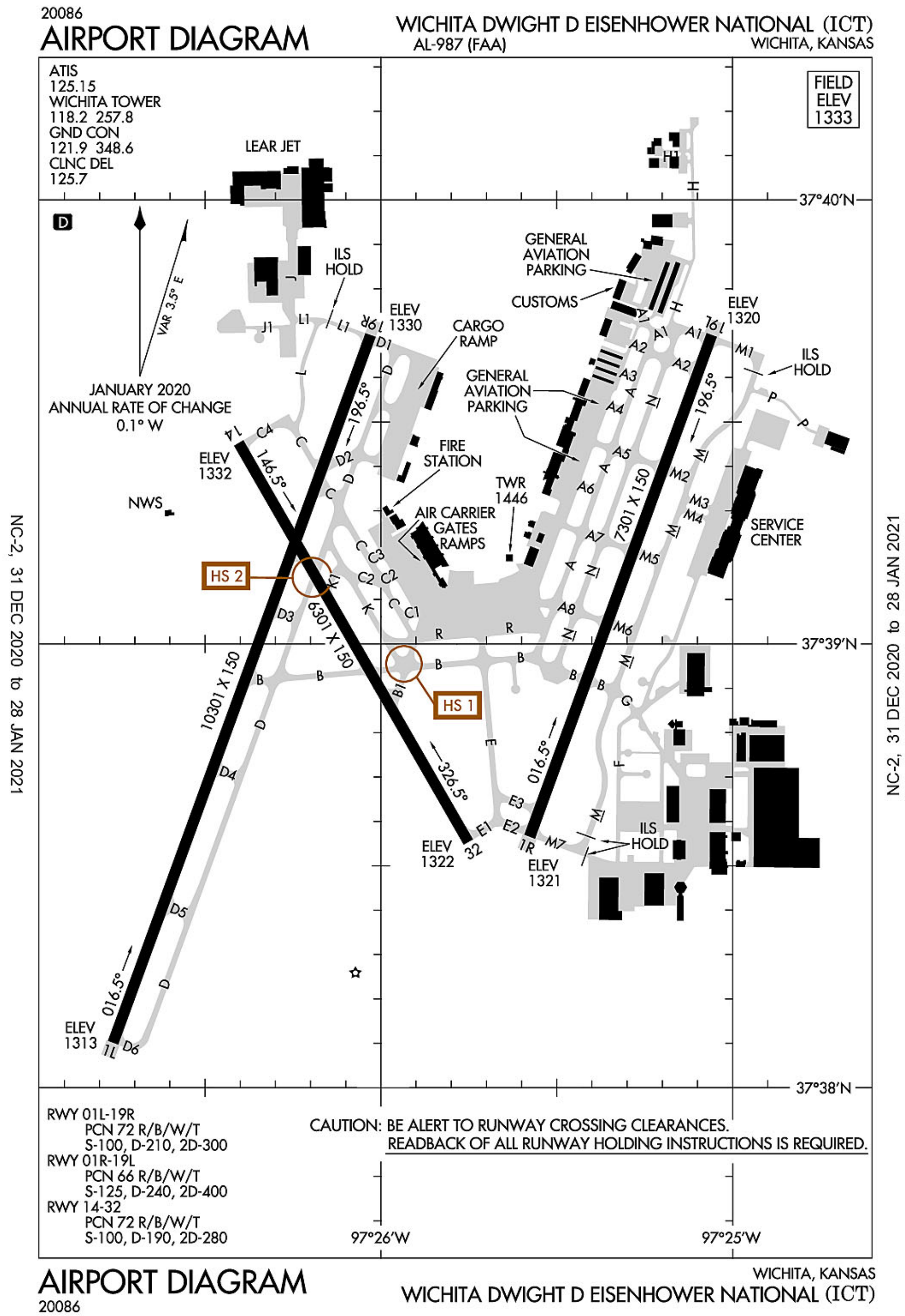
LARGE FLOCKS OF BIRDS ON & INVOF ARPT.

NOISE ABATEMENT PROCEDURES IN EFFECT CTC ARPT MGR.

PRIM STUDENT TGL NOT PMTD.

BE ALERT TO CLOSE PROXIMITY OF RWY 14/32 TO NORTHEAST RAMP.

Wichita, Kansas
Wichita Mid−Continent
ICAO Identifier KICT



Wichita, KS
Wichita Mid−Continent
ICAO Identifier KICT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 37−38−59.8N / 97−25−59W
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 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10301 ft x 150 ft
2.12.4 PCN: 72 R/B/W/T
2.12.5 Coordinates: 37−38−6.0674N / 97−26−45.5905W
2.12.6 Threshold Elevation: 1312.6 ft
2.12.6 Touchdown Zone Elevation: 1314.2 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: 37−39−41.763N / 97−26−1.7928W
2.12.6 Threshold Elevation: 1329.7 ft
2.12.6 Touchdown Zone Elevation: 1329.7 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7301 ft x 150 ft
2.12.4 PCN: 66 R/B/W/T
2.12.5 Coordinates: 37−39−41.7681N / 97−25−3.5639W
2.12.6 Threshold Elevation: 1319.8 ft
2.12.6 Touchdown Zone Elevation: 1319.9 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: 37−38−33.9452N / 97−25−34.6273W
2.12.6 Threshold Elevation: 1320.9 ft
2.12.6 Touchdown Zone Elevation: 1320.9 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: 37−38−33.2158N / 97−25−45.1013W
2.12.6 Threshold Elevation: 1321.6 ft
2.12.6 Touchdown Zone Elevation: 1321.7 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: 37−39−27.1616N / 97−26−24.2724W
2.12.6 Threshold Elevation: 1332.1 ft
2.12.6 Touchdown Zone Elevation: 1332.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 10301
2.13.3 Take−off 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 Take−off Run Available: 10301
2.13.3 Take−off Distance Available: 10301
2.13.4 Accelerate−Stop Distance Available: 10301
2.13.5 Landing Distance Available: 10301

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 7301
2.13.3 Take−off Distance Available: 7301
2.13.4 Accelerate−Stop Distance Available: 7301
2.13.5 Landing Distance Available: 7301

2.13.1 Designation: 01R

2.13.2 Take−off Run Available: 7301
2.13.3 Take−off Distance Available: 7301
2.13.4 Accelerate−Stop Distance Available: 7301
2.13.5 Landing Distance Available: 7301

2.13.1 Designation: 32
2.13.2 Take−off Run Available: 6301
2.13.3 Take−off Distance Available: 6301
2.13.4 Accelerate−Stop Distance Available: 6301
2.13.5 Landing Distance Available: 6301

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 6301
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P (270−009 BLW 5000 FT & BYD 20 NM)
2.18.3 Channel: 125.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (E IAB BLW 5000 FT)
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−009 BLW 5000 FT & BYD 20 NM)
2.18.3 Channel: 325.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (010−190)
2.18.3 Channel: 134.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (010−190)
2.18.3 Channel: 290.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (191−009)
2.18.3 Channel: 126.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (191−009)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 327.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (191−009)
2.18.3 Channel: 126.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (010−190 4000 FT & BLW)
2.18.3 Channel: 134.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (010−190 ABV 4000 FT)

2.18.3 Channel: 134.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (010−190 ABV 4000 FT)
2.18.3 Channel: 290.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (191−009)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37−38−16.7093N / 97−26−46.0112W
2.19.6 Site Elevation: 1310.4 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37−37−57.1412N / 97−26−49.6885W
2.19.6 Site Elevation: 1317 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37−39−51.3419N / 97−25−57.4083W
2.19.6 Site Elevation: 1319.9 ft

2.19.1 ILS Type: Outer Marker for runway 01L. Magnetic variation: 4E
2.19.2 ILS Identification: TWI
2.19.5 Coordinates: 37−33−33.9515N / 97−28−51.777W
2.19.6 Site Elevation: 1310 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: 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: Outer Marker for runway 19R. Magnetic variation: 4E
2.19.2 ILS Identification: HOV
2.19.5 Coordinates: 37−44−16.6132N / 97−24−0.9938W
2.19.6 Site Elevation: 1325.7 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37−39−52.0396N / 97−25−2.8177W
2.19.6 Site Elevation: 1326.6 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37−38−42.6371N / 97−25−24.6964W
2.19.6 Site Elevation: 1314.7 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37−39−51.99N / 97−24−58.88W
2.19.6 Site Elevation: 1307 ft

2.19.1 ILS Type: Outer Marker for runway 01R. Magnetic variation: 4E
2.19.2 ILS Identification: ICT
2.19.5 Coordinates: 37−34−41.4971N / 97−27−21.0931W
2.19.6 Site Elevation:

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: Glide Slope for runway 19L. Magnetic variation: 4E
2.19.2 ILS Identification: MVP
2.19.5 Coordinates: 37−39−30.78N / 97−25−3.17W
2.19.6 Site Elevation: 1312.1 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: 1318.3 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 7E
2.19.2 Navigation Aid Identification: ICT
2.19.5 Coordinates: 37−44−42.9245N / 97−35−1.79W
2.19.6 Site Elevation: 1470.5 ft

General Remarks:
CALL FOR PUSHBACK NOT REQUIRED.

TWY L AND L1 CLSD TO ACFT WITH WINGSPAN MORE THAN 118FT.

TWY H CLSD TO ACFT WITH WINGSPAN MORE THAN 75 FT.TWY H CONGESTED AND NOT VISIBLE FROM ATCT; USE CAUTION.

NOTE: SEE SPECIAL NOTICES−CONTINUOUS POWER FACILITIES.

ACFT ENG RUNS ABV IDLE NOT APPROVED ON ACFT PRKG RAMPS.

TWYS F, G, H, J, P AND ALL PARKING RAMPS ARE NON−MOVEMENT AREAS.

PPR REQUIRED FOR ACFT CARRYING CLASS 1 − DIVISION 1.1; 1.2 OR 1.3 EXPLOSIVES AS DEFINED BY 49 CFR 173.50 OR AS AMENDED.

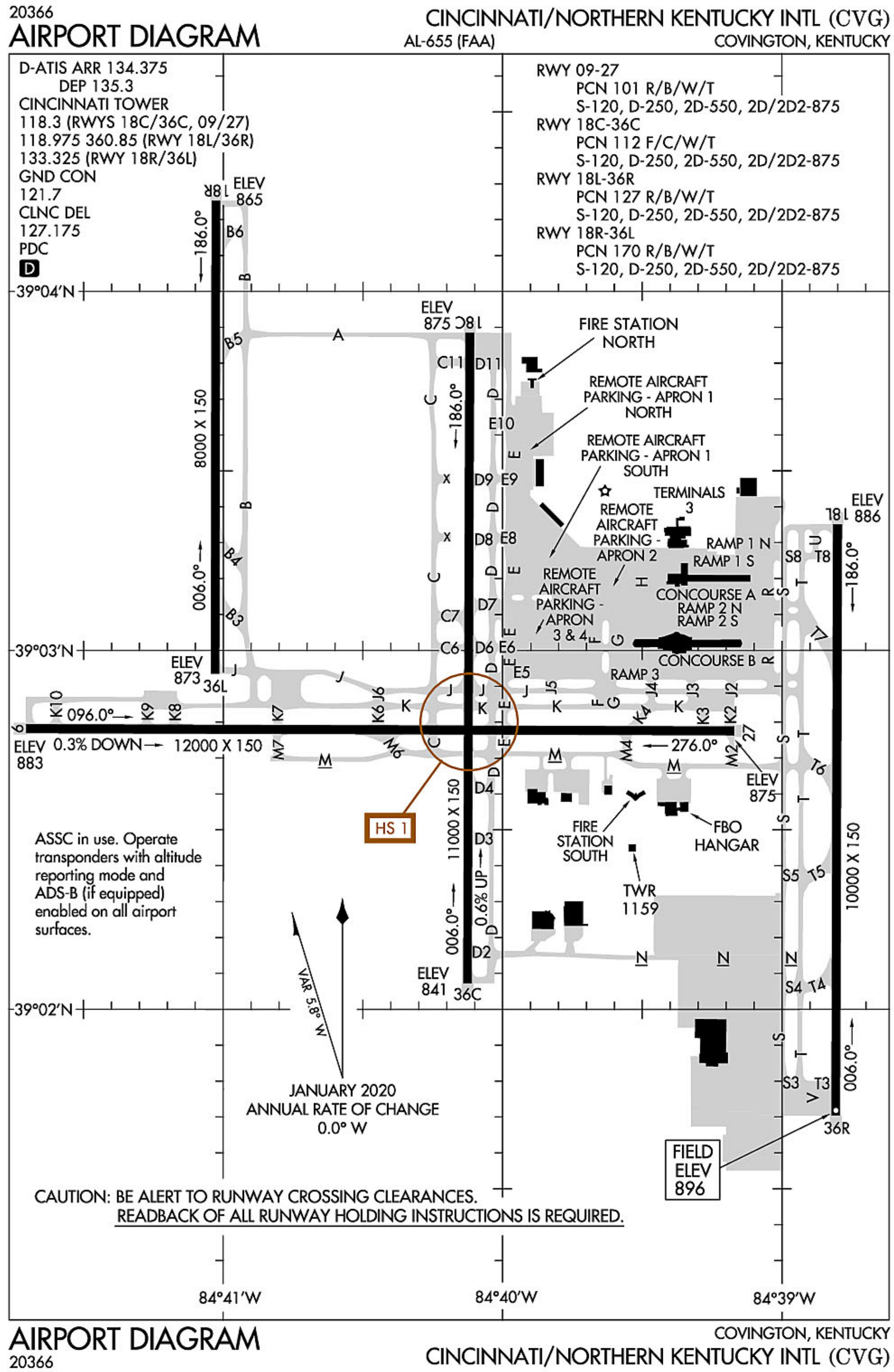
TWY P CLSD TO ACFT WITH WINGSPAN MORE THAN 79FT.

MIGRATORY BIRDS ON AND INVOF ARPT.

ATCT HAS LIMITED VISIBILITY OF TERMINAL GATES 1−8.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

Covington, Kentucky
Cincinnati/Northern Kentucky International
ICAO Identifier KCVG



Covington, KY
Cincinnati/Northern Kentucky Intl
ICAO Identifier KCVG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−2−55.812N / 84−40−4.16W
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 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN: 101 R/B/W/T
2.12.5 Coordinates: 39−2−46.9081N / 84−41−42.355W
2.12.6 Threshold Elevation: 883.3 ft
2.12.6 Touchdown Zone Elevation: 883.3 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: 39−2−46.5432N / 84−39−10.2575W
2.12.6 Threshold Elevation: 874.9 ft
2.12.6 Touchdown Zone Elevation: 874.9 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39−2−4.355N / 84−40−7.4726W
2.12.6 Threshold Elevation: 840.9 ft
2.12.6 Touchdown Zone Elevation: 850.6 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 112 F/C/W/T
2.12.5 Coordinates: 39−3−53.0727N / 84−40−7.0232W
2.12.6 Threshold Elevation: 874.6 ft
2.12.6 Touchdown Zone Elevation: 874.6 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39−3−21.078N / 84−38−48.002W
2.12.6 Threshold Elevation: 886.2 ft
2.12.6 Touchdown Zone Elevation: 889.2 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 127 R/B/W/T
2.12.5 Coordinates: 39−1−42.243N / 84−38−48.4558W
2.12.6 Threshold Elevation: 896.2 ft
2.12.6 Touchdown Zone Elevation: 896.2 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39−2−56.1061N / 84−41−1.7599W
2.12.6 Threshold Elevation: 873.4 ft
2.12.6 Touchdown Zone Elevation: 873.4 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 170 R/B/W/T
2.12.5 Coordinates: 39−4−15.1761N / 84−41−1.4563W
2.12.6 Threshold Elevation: 865.4 ft
2.12.6 Touchdown Zone Elevation: 868.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 09
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 36C
2.13.2 Take−off Run Available: 11000
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 11000
2.13.5 Landing Distance Available: 11000

2.13.1 Designation: 18C
2.13.2 Take−off Run Available: 11000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 36L
2.13.2 Take−off Run Available: 8000
2.13.3 Take−off Distance Available: 8000
2.13.4 Accelerate−Stop Distance Available: 8000
2.13.5 Landing Distance Available: 8000

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 8000
2.13.3 Take−off 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: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: APCH/P (090−269)
2.18.3 Channel: 119.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−089)
2.18.3 Channel: 123.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P
2.18.3 Channel: 363.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (001−180)
2.18.3 Channel: 121
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (181−360)
2.18.3 Channel: 128.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B
2.18.3 Channel: 254.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 134.375
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (001−180)
2.18.3 Channel: 126.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (181−360)
2.18.3 Channel: 128.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P
2.18.3 Channel: 254.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JAKIE STAR
2.18.3 Channel: 119.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JAKIE STAR
2.18.3 Channel: 254.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09/27, 18C/36C)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18L/36R)
2.18.3 Channel: 118.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18R/36L)
2.18.3 Channel: 133.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18L/36R)
2.18.3 Channel: 360.85
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 4W
2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39−2−43.95N / 84−39−1.77W
2.19.6 Site Elevation: 872 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 4W
2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39−2−42.9214N / 84−41−28.2651W
2.19.6 Site Elevation: 873.6 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 4W
2.19.2 ILS Identification: URN
2.19.5 Coordinates: 39−2−46.51N / 84−39−2.15W
2.19.6 Site Elevation: 873.7 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 6W
2.19.2 ILS Identification: JDP
2.19.5 Coordinates: 39−2−42.6285N / 84−39−25.1641W
2.19.6 Site Elevation: 866.8 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 6W
2.19.2 ILS Identification: JDP
2.19.5 Coordinates: 39−2−46.94N / 84−41−55.34W
2.19.6 Site Elevation: 884 ft

2.19.1 ILS Type: DME for runway 18C. Magnetic variation: 6W
2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39−1−54.15N / 84−40−8.21W
2.19.6 Site Elevation: 819 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 6W

2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39−3−42.6502N / 84−40−12.1375W
2.19.6 Site Elevation: 868 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 6W
2.19.2 ILS Identification: SIC
2.19.5 Coordinates: 39−1−54.18N / 84−40−7.51W
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: 39−4−3.9116N / 84−40−10.1714W
2.19.6 Site Elevation: 886 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39−2−15.4818N / 84−40−12.4941W
2.19.6 Site Elevation: 834.3 ft

2.19.1 ILS Type: Inner Marker for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39−1−54.0493N / 84−40−7.51W
2.19.6 Site Elevation: 818 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 6W
2.19.2 ILS Identification: CVG
2.19.5 Coordinates: 39−4−3.6988N / 84−40−6.98W
2.19.6 Site Elevation: 882.2 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 4W
2.19.2 ILS Identification: CIZ
2.19.5 Coordinates: 39−1−31.5754N / 84−38−45.4055W
2.19.6 Site Elevation: 915 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 4W
2.19.2 ILS Identification: CIZ
2.19.5 Coordinates: 39−3−10.8816N / 84−38−42.9759W
2.19.6 Site Elevation: 881.3 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 4W
2.19.2 ILS Identification: CIZ
2.19.5 Coordinates: 39−1−31.7864N / 84−38−48.5034W
2.19.6 Site Elevation: 899.1 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39−3−30.8783N / 84−38−51.1801W
2.19.6 Site Elevation: 905 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39−1−52.8046N / 84−38−43.3389W
2.19.6 Site Elevation: 889.9 ft

2.19.1 ILS Type: Inner Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39−1−33.5638N / 84−38−48.4956W
2.19.6 Site Elevation: 899 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39−3−31.4852N / 84−38−47.9546W
2.19.6 Site Elevation: 892.1 ft

2.19.1 ILS Type: Middle Marker for runway 36R. Magnetic variation: 6W
2.19.2 ILS Identification: EEI
2.19.5 Coordinates: 39−1−16.5412N / 84−38−48.5766W
2.19.6 Site Elevation: 915 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39−2−41.52N / 84−41−5.2W
2.19.6 Site Elevation: 869 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39−4−3.91N / 84−41−6.57W
2.19.6 Site Elevation: 860.5 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 6W
2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39−4−23.57N / 84−41−1.42W
2.19.6 Site Elevation: 856 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 6W

2.19.2 ILS Identification: CJN
2.19.5 Coordinates: 39−2−41.27N / 84−41−1.83W
2.19.6 Site Elevation: 871 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39−4−25.03N / 84−41−4.79W
2.19.6 Site Elevation: 848 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39−3−6.56N / 84−41−6.79W
2.19.6 Site Elevation: 866.5 ft

2.19.1 ILS Type: Inner Marker for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39−2−44.31N / 84−41−1.8W
2.19.6 Site Elevation:

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 6W
2.19.2 ILS Identification: VAC
2.19.5 Coordinates: 39−4−25.49N / 84−41−1.4W
2.19.6 Site Elevation: 854.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 4W
2.19.2 Navigation Aid Identification: CVG
2.19.5 Coordinates: 39−0−57.5317N / 84−42−12.0454W
2.19.6 Site Elevation: 879 ft

General Remarks:
RAMP CTL: PRI − 130.9, SRY − 130.375; DHL RAMP CTL: 129.475

CVG TWY'S, ALL TWY'S RESTRICTED TO 15 MPH OR LESS WITH WINGSPAN 214 FT AND GREATER.

LARGE FLOCKS OF BIRDS ON AND INVOF THE ARPT.

RY 09/27 WEST 4200 FT CONC; EAST 750 FT CONC; REMAINDER ASPHALT OVERLAY .

SUCCESSIVE OR SIMULTANEOUS DEPARTURES FROM RWY 36L AND RWY 36R ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FROM EOR DUE TO NOISE ABATEMENT RESTRICTIONS.

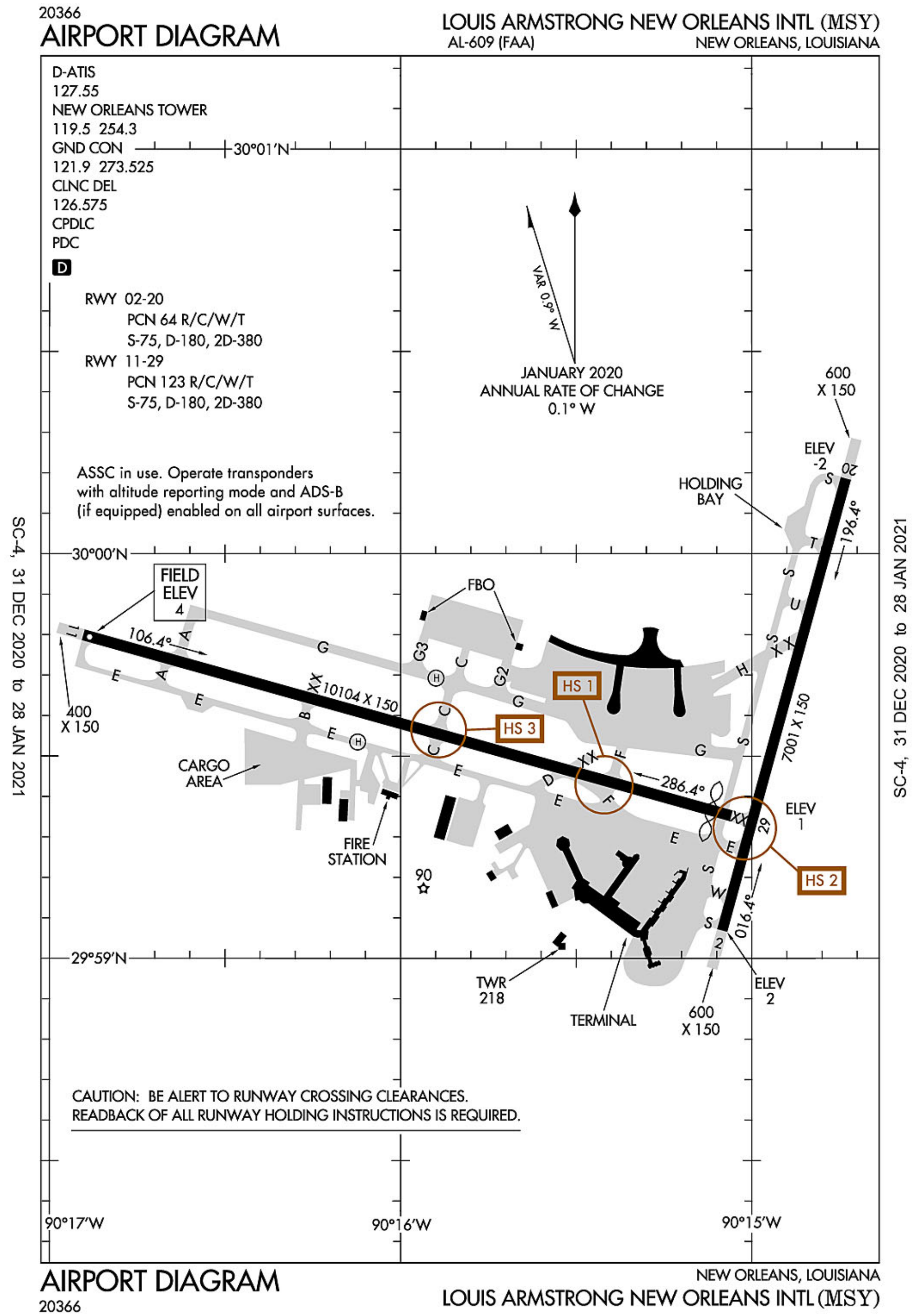
ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

SUCCESSIVE OR SIMULTANEOUS DEPS FM RY 36C & RY 36R ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FM EOR DUE TO NOISE ABATEMENT RESTRICTIONS.

NOISE SENSITIVE AREAS NORTH & SOUTH OF ARPT. RY ASSIGNMENTS BETWEEN 2200−0700 WILL BE PREDICATED ON NOISE ABATEMENT CONSIDERATIONS.

SUCCESSIVE OR SIMULTANEOUS DEPS FM RYS 18L AND RY 18C ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 2 MILES FM EOR DUE TO NOISE ABATEMENT RESTRICTIONS.

New Orleans, Louisiana
Louis Armstrong New Orleans International
ICAO Identifier KMSY



New Orleans, LA
Louis Armstrong New Orleans Intl
ICAO Identifier KMSY

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 29−59−35.8N / 90−15−32.5W
2.2.2 From City: 10 miles W of NEW ORLEANS, LA
2.2.3 Elevation: 3.7 ft
2.2.5 Magnetic Variation: 1W (2020)
2.2.6 Airport Contact: KEVIN DOLLIOLE
PO BOX 20007
NEW ORLEANS, LA 70141
((504) 303−7652)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02
2.12.2 True Bearing: 15
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 29−59−4.2055N / 90−15−5.094W
2.12.6 Threshold Elevation: 1.8 ft
2.12.6 Touchdown Zone Elevation: 2.1 ft

2.12.1 Designation: 20
2.12.2 True Bearing: 195
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 64 R/C/W/T
2.12.5 Coordinates: 30−0−10.9924N / 90−14−43.8363W
2.12.6 Threshold Elevation: −2.4 ft
2.12.6 Touchdown Zone Elevation: −0.6 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 105
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29−59−47.8556N / 90−16−54.2241W
2.12.6 Threshold Elevation: 3.7 ft
2.12.6 Touchdown Zone Elevation: 3.7 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 285
2.12.3 Dimensions: 10104 ft x 150 ft
2.12.4 PCN: 123 R/C/W/T
2.12.5 Coordinates: 29−59−21.1654N / 90−15−3.4894W
2.12.6 Threshold Elevation: 1.3 ft
2.12.6 Touchdown Zone Elevation: 2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 02
2.13.2 Take−off Run Available: 7001
2.13.3 Take−off 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 Take−off Run Available: 7001
2.13.3 Take−off 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 Take−off Run Available: 10104
2.13.3 Take−off Distance Available: 10104
2.13.4 Accelerate−Stop Distance Available: 9800
2.13.5 Landing Distance Available: 9800

2.13.1 Designation: 29
2.13.2 Take−off Run Available: 10104
2.13.3 Take−off 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
2.14.2 Approach Lighting System: RLLS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 20
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 29
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P (WEST)
2.18.3 Channel: 125.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (EAST)
2.18.3 Channel: 133.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (EAST)
2.18.3 Channel: 290.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (WEST)
2.18.3 Channel: 350.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 126.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE & SOUTH)
2.18.3 Channel: 123.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST)
2.18.3 Channel: 125.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NORTH & EAST)
2.18.3 Channel: 133.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE & SOUTH)
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NORTH & EAST)
2.18.3 Channel: 290.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST)
2.18.3 Channel: 350.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 127.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 273.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 254.3
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 02. Magnetic variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 30−0−21.6577N / 90−14−43.2465W
2.19.6 Site Elevation: 1.3 ft

2.19.1 ILS Type: Glide Slope for runway 02. Magnetic variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 29−59−13.6093N / 90−14−58.5588W
2.19.6 Site Elevation: −0.9 ft

2.19.1 ILS Type: Localizer for runway 02. Magnetic

variation: 1W
2.19.2 ILS Identification: JFI
2.19.5 Coordinates: 30−0−20.5102N / 90−14−40.8078W
2.19.6 Site Elevation: −4.2 ft

2.19.1 ILS Type: DME for runway 20. Magnetic variation: 1W
2.19.2 ILS Identification: ONW
2.19.5 Coordinates: 30−0−21.6577N / 90−14−43.2465W
2.19.6 Site Elevation: 1.3 ft

2.19.1 ILS Type: Localizer for runway 20. Magnetic variation: 1W
2.19.2 ILS Identification: ONW
2.19.5 Coordinates: 29−58−55.148N / 90−15−7.973W
2.19.6 Site Elevation: 2.3 ft

2.19.1 ILS Type: DME for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−17.2127N / 90−14−55.7209W
2.19.6 Site Elevation: 12.4 ft

2.19.1 ILS Type: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−48.6197N / 90−16−39.2497W
2.19.6 Site Elevation: −3.1 ft

2.19.1 ILS Type: Inner Marker for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−50.256N / 90−17−4.1742W
2.19.6 Site Elevation: 4.4 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: MSY
2.19.5 Coordinates: 29−59−19.3211N / 90−14−55.8537W
2.19.6 Site Elevation: −0.5 ft

2.19.1 ILS Type: DME for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−17.2127N / 90−14−55.7209W
2.19.6 Site Elevation: 12.4 ft

2.19.1 ILS Type: Glide Slope for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−27.9656N / 90−15−16.7865W
2.19.6 Site Elevation: 0.1 ft

2.19.1 ILS Type: Localizer for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: HOX
2.19.5 Coordinates: 29−59−50.5168N / 90−17−5.2703W
2.19.6 Site Elevation: 4.4 ft

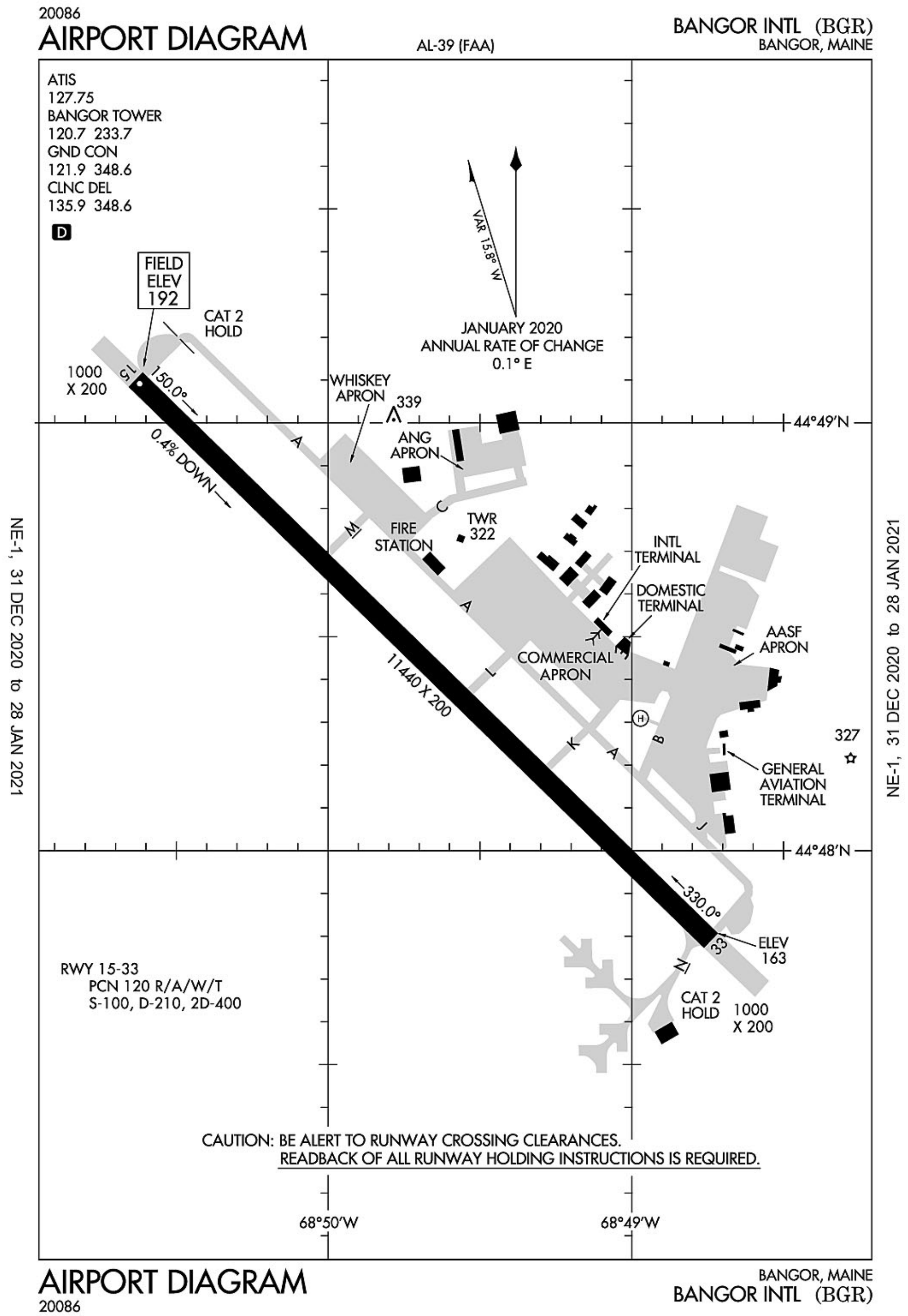
General Remarks:
180 DEG & LOCKED WHEEL TURNS PROHIBITED ON ASPH SFC ACFT 12500 LBS & OVER.

FLOCKS OF BIRDS ON & IN VICINITY OF ARPT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RY 11 NOISE SENSITIVE FOR DEP; AVBL FOR OPNL NECESSITY. ALL RYS NOISE SENSITIVE FOR ARR. ARRIVING TURBOJETS MUST MAKE 5 MILE FINAL APCH TO MINIMIZE NOISE.

Bangor, Maine
Bangor International
ICAO Identifier KBGR



Bangor, ME
Bangor Intl
ICAO Identifier KBGR

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 44−48−26.8N / 68−49−41.3W
2.2.2 From City: 3 miles W of BANGOR, ME
2.2.3 Elevation: 192.1 ft
2.2.5 Magnetic Variation: 16W (2020)
2.2.6 Airport Contact: TONY CARUSO
BANGOR INTERNATIONAL ARPT
BANGOR, ME 4401
(207−992−4600)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.4 PCN: 120 R/A/W/T
2.12.5 Coordinates: 44−49−6.1369N / 68−50−38.1522W
2.12.6 Threshold Elevation: 192.1 ft
2.12.6 Touchdown Zone Elevation: 192.1 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 11440 ft x 200 ft
2.12.4 PCN: 120 R/A/W/T
2.12.5 Coordinates: 44−47−47.4136N / 68−48−44.3618W
2.12.6 Threshold Elevation: 162.9 ft
2.12.6 Touchdown Zone Elevation: 162.9 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 100 ft x 100 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 15
2.13.2 Take−off Run Available: 11440
2.13.3 Take−off Distance Available: 11440
2.13.4 Accelerate−Stop Distance Available: 11440
2.13.5 Landing Distance Available: 11440

2.13.1 Designation: 33
2.13.2 Take−off Run Available: 11440
2.13.3 Take−off Distance Available: 11440
2.13.4 Accelerate−Stop Distance Available: 11440
2.13.5 Landing Distance Available: 11440

2.13.1 Designation: H1
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 15
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 118.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S

2.18.3 Channel: 124.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 127.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 135.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 118.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C/S
2.18.3 Channel: 124.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 233.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 41.2
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−47−42.4986N / 68−48−31.8082W
2.19.6 Site Elevation: 166.2 ft

2.19.1 ILS Type: Glide Slope for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−2.1756N / 68−50−22.4761W
2.19.6 Site Elevation: 187.7 ft

2.19.1 ILS Type: Inner Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−12.0633N / 68−50−46.7197W
2.19.6 Site Elevation: 184 ft

2.19.1 ILS Type: Localizer for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−47−40.3704N / 68−48−34.1931W
2.19.6 Site Elevation: 161.7 ft

2.19.1 ILS Type: Middle Marker for runway 15. Magnetic variation: 16W
2.19.2 ILS Identification: JVH
2.19.5 Coordinates: 44−49−23.6858N / 68−51−3.4639W
2.19.6 Site Elevation: 158 ft

2.19.1 ILS Type: DME for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−47−42.4986N / 68−48−31.8082W
2.19.6 Site Elevation: 166.2 ft

2.19.1 ILS Type: Glide Slope for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−47−53.7039N / 68−48−59.7081W

2.19.6 Site Elevation: 148.8 ft

2.19.1 ILS Type: Localizer for runway 33. Magnetic variation: 16W
2.19.2 ILS Identification: BGR
2.19.5 Coordinates: 44−49−13.6222N / 68−50−48.9786W
2.19.6 Site Elevation: 181.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 19W
2.19.2 Navigation Aid Identification: BGR
2.19.5 Coordinates: 44−50−30.4619N / 68−52−26.2752W
2.19.6 Site Elevation: 360.1 ft

General Remarks:
TRANSIENT ACFT MAY BE DIVERTED TO CIVILIAN SIDE DURING NON−DUTY HRS & WEEKENDS. FEE REQUIRED; NO ANG TRANSIENT ALERT.

ANG: PPR VALID +/− 1 HR UNLESS PRIOR CDN. 3 HR OUT CALL, 30 MIN OUT CALL 311.0 TO CFM CSTMS/AG AND TRAN SVC. COMMAND POST C207−404−7788 H24.

FUEL: A++ (MIL).

CAUTION: BASH PHASE II PERIOD SEP−NOV, APR−MAY. EXPECT INCREASED BIRD ACTIVITY. CONTACT BASE OPS/COMMAND POST/SOF FOR CURRENT BIRDWATCH COND.

ANG: OPR 1100−1930Z++ MON−FRI, CLSD WKEND AND HOL. PPR RQRD FOR ANG RAMP. CTC AFLD MGMT DSN 698−7232, C207−404−7232 FOR PPR DURG OPR HRS. PRE−COORD ALL TRNSPN RQMNTS AND HAZ CARGO WITH PPR REQ.

SVC TRAN ALERT: OPR 1130−0200Z++ MON−THU, 1130−1900Z++ FRI, CLSD WKEND AND HOL. UNAVBL OUTSIDE OF ANG TRAN ALERT OPR HRS WITHOUT PRIOR CDN.

SERVICE−FLUID: RMKS: FOREIGN MILITARY ONLY: ON BASE LOX SVC UNAVBL.

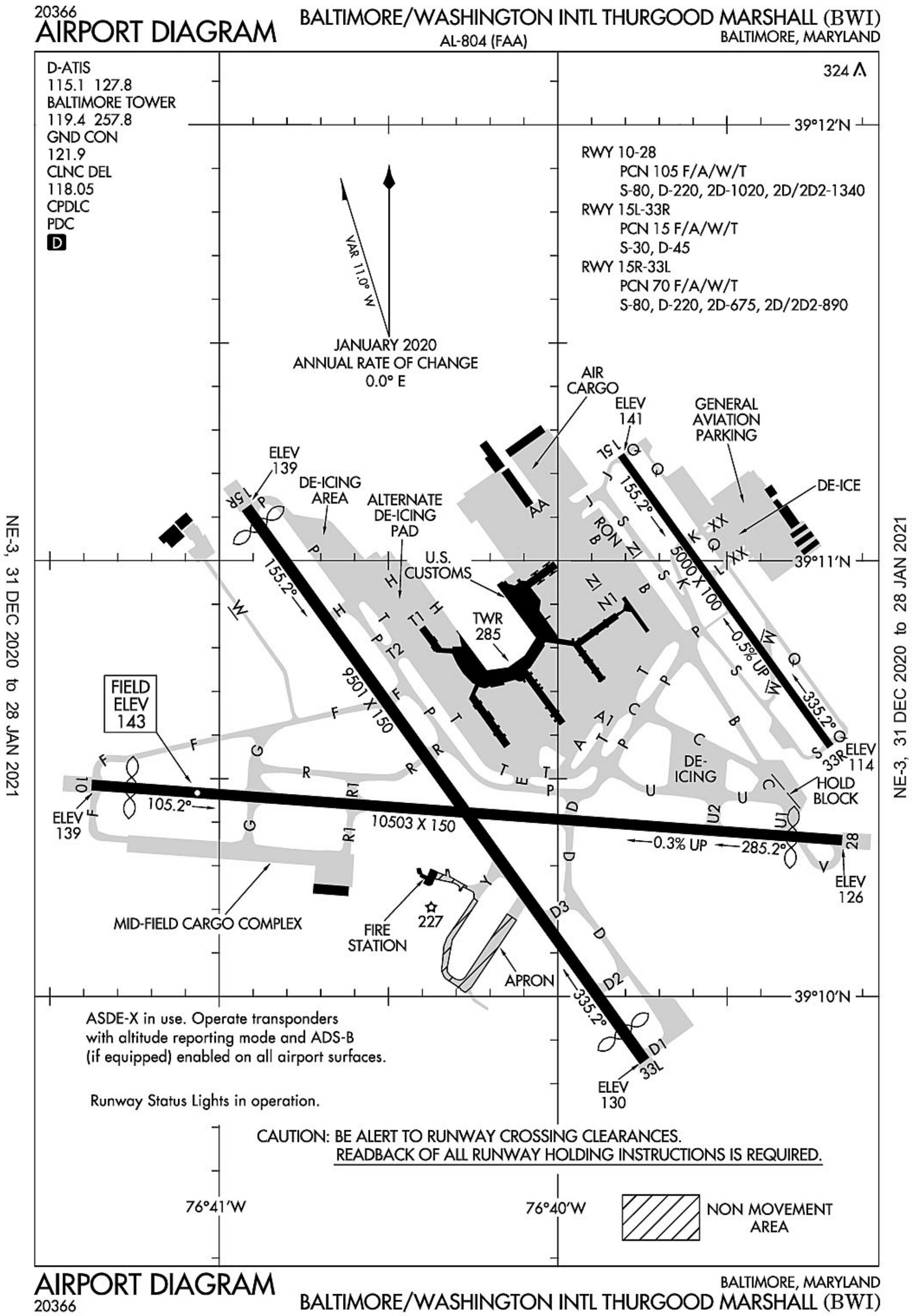
MISC: RWY 15−33 GROOVED.

SVC MIL−FLUID: OFF−BASE CONTRACTED LOX AVBL H24−RQR 24 HR NOTICE.

TFC PAT: RWY 33 LEFT TFC, TURBO JET TFC 2000’ MSL UNLESS OTHERWISE INSTR.

ARNG: OPR 1230−2100Z++ MON−FRI EXC HOL. LTDMAINT. J8. PPR MAY−OCT SVC DSN 626−1100.

Baltimore, Maryland
Baltimore−Washington International Thurgood Marshall
ICAO Identifier KBWI



Baltimore, MD
Baltimore/Washington Intl Thurgood Marshal
ICAO Identifier KBWI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−10−32.622N / 76−40−8.368W
2.2.2 From City: 9 miles S of BALTIMORE, MD
2.2.3 Elevation: 143.4 ft
2.2.5 Magnetic Variation: 11W (2000)
2.2.6 Airport Contact: JOHN STEWART
PO BOX 8766
BWI AIRPORT, MD 21240
(410−859−7018)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10503 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T
2.12.5 Coordinates: 39−10−29.0895N / 76−41−22.6248W
2.12.6 Threshold Elevation: 139 ft
2.12.6 Touchdown Zone Elevation: 143.4 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10503 ft x 150 ft
2.12.4 PCN: 105 F/A/W/T
2.12.5 Coordinates: 39−10−21.4754N / 76−39−9.6234W
2.12.6 Threshold Elevation: 126.4 ft
2.12.6 Touchdown Zone Elevation: 142.7 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 324
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39−10−34.4468N / 76−39−11.6307W
2.12.6 Threshold Elevation: 114 ft
2.12.6 Touchdown Zone Elevation: 124.4 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 144
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 15 F/A/W/T
2.12.5 Coordinates: 39−11−14.5431N / 76−39−48.7441W
2.12.6 Threshold Elevation: 141.4 ft
2.12.6 Touchdown Zone Elevation: 141.5 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 324
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39−9−51.1311N / 76−39−44.6134W
2.12.6 Threshold Elevation: 129.6 ft
2.12.6 Touchdown Zone Elevation: 142.7 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 144
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 70 F/A/W/T
2.12.5 Coordinates: 39−11−7.3007N / 76−40−55.1704W
2.12.6 Threshold Elevation: 139 ft
2.12.6 Touchdown Zone Elevation: 138.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10
2.13.2 Take−off Run Available: 10503
2.13.3 Take−off Distance Available: 10503
2.13.4 Accelerate−Stop Distance Available: 10503
2.13.5 Landing Distance Available: 9953

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 10503
2.13.3 Take−off Distance Available: 10503
2.13.4 Accelerate−Stop Distance Available: 10503
2.13.5 Landing Distance Available: 9803

2.13.1 Designation: 33R
2.13.2 Take−off Run Available: 5000
2.13.3 Take−off 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 Take−off Run Available: 5000
2.13.3 Take−off Distance Available: 5000
2.13.4 Accelerate−Stop Distance Available: 5000
2.13.5 Landing Distance Available: 5000

2.13.1 Designation: 33L
2.13.2 Take−off Run Available: 9501
2.13.3 Take−off Distance Available: 9501
2.13.4 Accelerate−Stop Distance Available: 8801
2.13.5 Landing Distance Available: 8301

2.13.1 Designation: 15R
2.13.2 Take−off Run Available: 9501
2.13.3 Take−off Distance Available: 9501
2.13.4 Accelerate−Stop Distance Available: 8601
2.13.5 Landing Distance Available: 8301

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 10
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 115.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 127.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 119.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: BAL
2.19.5 Coordinates: 39−10−23.557N / 76−41−3.233W
2.19.6 Site Elevation: 137.6 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: BAL
2.19.5 Coordinates: 39−10−20.5919N / 76−38−54.2857W
2.19.6 Site Elevation: 137.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 11W
2.19.2 ILS Identification: OEH
2.19.5 Coordinates: 39−10−18.64N / 76−39−31.024W
2.19.6 Site Elevation: 129.2 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 11W
2.19.2 ILS Identification: OEH

2.19.5 Coordinates: 39−10−29.82N / 76−41−35.417W
2.19.6 Site Elevation: 134 ft

2.19.1 ILS Type: Glide Slope for runway 15L. Magnetic variation: 11W
2.19.2 ILS Identification: UQC
2.19.5 Coordinates: 39−11−3.6746N / 76−39−44.2376W
2.19.6 Site Elevation: 138.1 ft

2.19.1 ILS Type: Localizer for runway 15L. Magnetic variation: 11W
2.19.2 ILS Identification: UQC
2.19.5 Coordinates: 39−10−29.3978N / 76−39−6.9539W
2.19.6 Site Elevation: 94 ft

2.19.1 ILS Type: DME for runway 33R. Magnetic variation: 11W
2.19.2 ILS Identification: BWI
2.19.5 Coordinates: 39−11−18.9N / 76−39−48.5W
2.19.6 Site Elevation: 128.7 ft

2.19.1 ILS Type: Glide Slope for runway 33R. Magnetic variation: 11W
2.19.2 ILS Identification: BWI
2.19.5 Coordinates: 39−10−40.0486N / 76−39−21.1916W
2.19.6 Site Elevation: 110.3 ft

2.19.1 ILS Type: Localizer for runway 33R. Magnetic variation: 11W
2.19.2 ILS Identification: BWI
2.19.5 Coordinates: 39−11−19.7555N / 76−39−53.5728W
2.19.6 Site Elevation: 133 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 11W
2.19.2 ILS Identification: FND
2.19.5 Coordinates: 39−10−53.6N / 76−40−48.9W
2.19.6 Site Elevation: 130 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 11W
2.19.2 ILS Identification: FND
2.19.5 Coordinates: 39−9−39.11N / 76−39−33.48W
2.19.6 Site Elevation: 116 ft

2.19.1 ILS Type: Glide Slope for runway 33L. Magnetic variation: 11W
2.19.2 ILS Identification: RUX
2.19.5 Coordinates: 39−10−0.53N / 76−39−59.72W
2.19.6 Site Elevation: 125 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

General Remarks:
ACFT ON VISUAL APCHS EXPECT TO MAINTAIN 3,000 FT UNTIL 10 DME FM BAL VORTAC; DEPART ACFT SHOULD EXPECT TURNS BASED ON BALTIMORE DME.

NO APRON PARKING FOR UNSKED ACR.

GENERAL AVIATION ACFT CTC UNICOM PRIOR TO ARRIVING AT GENERAL AVIATION RAMP FOR SECURITY PURPOSES.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RWY STATUS LGTS IN OPN.

MAJOR CONSTRUCTION ON ARPT DLY; ACFT MOVEMENT & PARKING AREAS SUBJECT TO SHORT NOTICE CHANGE/CLOSURE. FOR CURRENT INFORMATION PHONE BWI OPNS CENTER 410−859−7018.

TWY ”S”, SOUTH OF TWY ”P”, RESTRICTED TO AIRCRAFT 60,000 LBS. & LESS.

RY 28 DE−ICE PAD LANE 1 RSTD TO ACFT WITH WINGSPAN 171 FT OR LESS, LANE 2 RSTD TO ACFT WITH WINGSPAN 135 FT OR LESS, LANE 3 IS USED BY LARGE ACFT MAX WINGSPAN 215 FT AND WHEN IN USE− LANES 2 AND 4 ARE UNAVBL. LANES 4, 5 & 6 ARE RSTD TO ACFT WINGSPAN 135 FT OR LESS.

ACFT DEPARTING RWY 28 EXP DEP FM TWY U1.

DEER & BIRDS OCNLLY ON & INVOF ARPT.

PRACTICE LNDG & APCH BY TURBO−PWRD ACFT PROHIBITED 2200−0600; PRACTICE LNDG & TKOF BY B−747 ACFT PROHIBITED RY 15R/33L.

TWY T BTN TWY H AND TWY E RSTD TO GROUP IV ACFT WITH WINGSPAN LESS THAN 171'. TWY T BTN TWY E AND TWY B RSTD TO GROUP V ACFT WITH WINGSPAN LESS THAN 214'; WHEN GROUP V ACFT ARE ON TWY T, TWY A IS RSTD TO MAX WINGSPANS OF 110'.

TAXILANES 'T−1' & "H" RESTRICTED TO GROUP III ACFT WITH MAX WINGSPAN OF 118 FEET.

RWY LEN AVBL FOR RWY 28 DEPS FM TWY U1 IS 9802 FT.

TAXIING PROHIBITED BTN CONCOURSE C & ADJ BLDG STRUCTURE SW OF CONCOURSE C. ACCESS TO GATE C12 MUST BE VIA TWY A.

RY 15R DEICE PAD, POSITION # 1, RESTRICTED TO ACFT WITH WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS. PSN'S #2 & #3 ARE RSTD TO ACFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS, POSITION #3 IS RSTD TO ACFT WITH A WINGSPAN OF 156 FT 1 INCH OR LESS & LENGTH OF 180 FT 3 INCHES OR LESS; POSITION 4 RESTRICTED TO ACFT WITH WINGSPAN OF 213 FT OR LESS & LENGTH OF 229 FT 2 INCHES OR LESS.

TWY 'A' IS RSTD TO GROUP IV ACFT WINGSPAN 171 FT OR LESS.

NOISE ABATEMENT PROCEDURES IN EFFECT − RESTRICTION FOR RY 15L/33R EXCEPT FOR EMERGENCIES OR MERCY FLIGHTS CTC AMGR FOR INFORMATION.

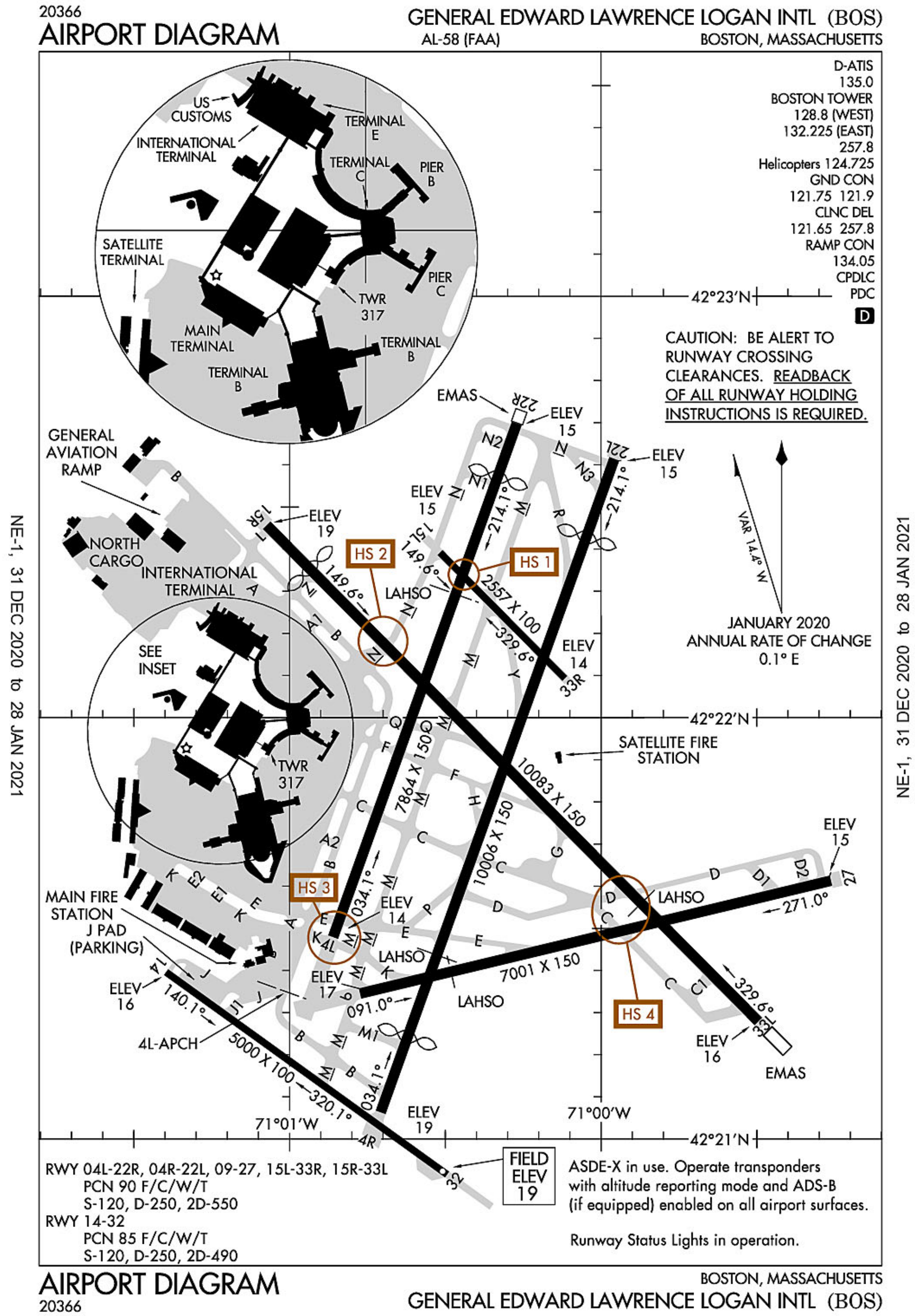
CONCOURSE A ALT DEICING AREA IS RSTD TO B737−800 SIZE ACFT WITH WINGLETS OR SMLR ON SPOTS 6, 7 AND 8.

DISTRACTING LGTS (GOLF DRIVING RANGE) RIGHT SIDE EXTDD CNTRLN RY 33L FM AER TO 1/4 MI FINAL.

CONT MOWING OPERATIONS ADJ ALL RYS & TXYS − APR THRU NOV.

DUAL PARALLEL TAXILANES HAVE BEEN ADDED TO THE 'D'/'E' ALLEYWAY; TAXILANE 'N' AND TAXILANE 'N1'. TAXILANE 'N' IS DESIGNATED A "GROUP V" TAXILANE WITH MAX WINGSPAN OF 213 FT. TAXILANE 'N1' IS DESIGNATED A "GROUP IV" TAXILANE WITH MAX WINGSPAN OF 170 FT.

Boston, Massachusetts
General Edward Lawrence Logan International
ICAO Identifier KBOS



Boston, MA
General Edward Lawrence Logan Intl
ICAO Identifier KBOS

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42−21−46.6N / 71−0−23W
2.2.2 From City: 1 miles E of BOSTON, MA
2.2.3 Elevation: 19.1 ft
2.2.5 Magnetic Variation: 15W (2020)
2.2.6 Airport Contact: EDWARD FRENI
LOGAN INTERNATIONAL AIRPORT
EAST BOSTON, MA 2128
(617−567−5400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 9/1/1972

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 20
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−28.7577N / 71−0−51.6187W
2.12.6 Threshold Elevation: 13.9 ft
2.12.6 Touchdown Zone Elevation: 13.9 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 200
2.12.3 Dimensions: 7864 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−41.8759N / 71−0−16.2499W
2.12.6 Threshold Elevation: 14.9 ft
2.12.6 Touchdown Zone Elevation: 15.2 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 20
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−3.8094N / 71−0−42.458W
2.12.6 Threshold Elevation: 18.8 ft
2.12.6 Touchdown Zone Elevation: 17.6 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 200
2.12.3 Dimensions: 10006 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−36.8399N / 70−59−57.4473W
2.12.6 Threshold Elevation: 14.5 ft
2.12.6 Touchdown Zone Elevation: 15.6 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 77
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−20.715N / 71−0−46.4187W
2.12.6 Threshold Elevation: 16.7 ft
2.12.6 Touchdown Zone Elevation: 16.8 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 257
2.12.3 Dimensions: 7001 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−36.7767N / 70−59−15.7276W
2.12.6 Threshold Elevation: 14.8 ft
2.12.6 Touchdown Zone Elevation: 17.2 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 125
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42−21−23.7521N / 71−1−23.7886W
2.12.6 Threshold Elevation: 16 ft
2.12.6 Touchdown Zone Elevation: 19.1 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 305
2.12.3 Dimensions: 5000 ft x 100 ft
2.12.4 PCN: 85 F/C/W/T
2.12.5 Coordinates: 42−20−54.9565N / 71−0−29.6841W
2.12.6 Threshold Elevation: 19.1 ft
2.12.6 Touchdown Zone Elevation: 19.1 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 2557 ft x 100 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−23.5008N / 71−0−31.0047W

2.12.6 Threshold Elevation: 14.8 ft
2.12.6 Touchdown Zone Elevation: 15.8 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 2557 ft x 100 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−5.5791N / 71−0−7.0008W
2.12.6 Threshold Elevation: 14 ft
2.12.6 Touchdown Zone Elevation: 15.8 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 135
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−22−27.3749N / 71−1−4.4117W
2.12.6 Threshold Elevation: 18.9 ft
2.12.6 Touchdown Zone Elevation: 17 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 315
2.12.3 Dimensions: 10083 ft x 150 ft
2.12.4 PCN: 90 F/C/W/T
2.12.5 Coordinates: 42−21−16.7428N / 70−59−29.7098W
2.12.6 Threshold Elevation: 15.7 ft
2.12.6 Touchdown Zone Elevation: 16.2 ft

AD 2.13 Declared Distances

2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 7864
2.13.3 Take−off Distance Available: 7864
2.13.4 Accelerate−Stop Distance Available: 7864
2.13.5 Landing Distance Available: 7864

2.13.1 Designation: 22R
2.13.2 Take−off Run Available: 7864
2.13.3 Take−off Distance Available: 7864
2.13.4 Accelerate−Stop Distance Available: 7864
2.13.5 Landing Distance Available: 7046

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 10006
2.13.3 Take−off Distance Available: 10006
2.13.4 Accelerate−Stop Distance Available: 10006
2.13.5 Landing Distance Available: 8851

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 10006
2.13.3 Take−off Distance Available: 10006
2.13.4 Accelerate−Stop Distance Available: 10006
2.13.5 Landing Distance Available: 8806

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 7001
2.13.3 Take−off Distance Available: 7001
2.13.4 Accelerate−Stop Distance Available: 7001
2.13.5 Landing Distance Available: 7001

2.13.1 Designation: 27
2.13.2 Take−off Run Available: 7001
2.13.3 Take−off Distance Available: 7001
2.13.4 Accelerate−Stop Distance Available: 7001
2.13.5 Landing Distance Available: 7001

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 5000
2.13.3 Take−off 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 Take−off Run Available: 5000
2.13.3 Take−off 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 Take−off Run Available: 2557
2.13.3 Take−off 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 Take−off Run Available: 2557
2.13.3 Take−off Distance Available: 2557
2.13.4 Accelerate−Stop Distance Available: 2557
2.13.5 Landing Distance Available: 2557

2.13.1 Designation: 15R
2.13.2 Take−off Run Available: 10083
2.13.3 Take−off 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 Take−off Run Available: 10083
2.13.3 Take−off Distance Available: 10083
2.13.4 Accelerate−Stop Distance Available: 10083
2.13.5 Landing Distance Available: 10083

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 33R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 135
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (HELICOPTERS)
2.18.3 Channel: 124.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (WEST)
2.18.3 Channel: 128.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (EAST)
2.18.3 Channel: 132.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL

2.18.3 Channel: 134.05
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42−22−57.4695N / 70−59−50.8873W
2.19.6 Site Elevation: 34.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42−21−21.8231N / 71−0−24.5483W
2.19.6 Site Elevation: 10.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 15W
2.19.2 ILS Identification: BOS
2.19.5 Coordinates: 42−22−55.9736N / 70−59−48.1884W
2.19.6 Site Elevation: 17.6 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42−22−57.4695N / 70−59−50.8873W
2.19.6 Site Elevation: 34.5 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42−22−17.0026N / 71−0−11.9878W
2.19.6 Site Elevation: 11.1 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 15W
2.19.2 ILS Identification: LQN
2.19.5 Coordinates: 42−21−0.0409N / 71−0−44.2844W
2.19.6 Site Elevation: 14.6 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42−21−15.6955N / 71−0−55.7791W
2.19.6 Site Elevation: 30.5 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42−21−31.2953N / 70−59−28.3545W
2.19.6 Site Elevation: 12.3 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 15W
2.19.2 ILS Identification: DGU
2.19.5 Coordinates: 42−21−18.4751N / 71−0−59.0489W
2.19.6 Site Elevation: 16.5 ft

2.19.1 ILS Type: DME for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42−21−26.5111N / 70−59−35.0574W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42−22−14.6947N / 71−0−42.4209W
2.19.6 Site Elevation: 11.2 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 15W
2.19.2 ILS Identification: MDC
2.19.5 Coordinates: 42−21−26.3592N / 70−59−37.052W
2.19.6 Site Elevation: 11.1 ft

2.19.1 ILS Type: DME for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42−21−26.5111N / 70−59−35.0574W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Glide Slope for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42−21−26.6446N / 70−59−34.7132W
2.19.6 Site Elevation: 11.3 ft

2.19.1 ILS Type: Localizer for runway 33L. Magnetic variation: 15W
2.19.2 ILS Identification: LIP
2.19.5 Coordinates: 42−22−37.5624N / 71−1−18.0895W
2.19.6 Site Elevation: 15.9 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 16W

2.19.2 Navigation Aid Identification: BOS
2.19.5 Coordinates: 42−21−26.8197N / 70−59−22.3742W
2.19.6 Site Elevation: 18.4 ft

General Remarks:
RWY STATUS LGTS IN OPN.

NOISE SENSITIVE AREA − HELS OPNG WITHIN THE CTZL ARE REQD TO MAINT THE HIGHEST POSSIBLE ALT.

NO RON PARKING FOR NON−TENANT CHARTER AIRCRAFT WITHOUT PRIOR MASSPORT PERMISSION.

PILOTS SHOULD COMPLETE ALL CALCULATIONS PRIOR TO PUSHBACK FROM GATE.

BTN 0000−0600 LCL − RY 15R IS PREFERENTIAL NGT RY FOR TKOF & RY 33L IS PREFERENTIAL NGT RY FOR LNDG.

RWY 14/32 UNIDIRECTIONAL; NO LDGS RWY 14; NO TKOFS RWY 32.

NMRS CRANES ON AND INVOF ARPT.

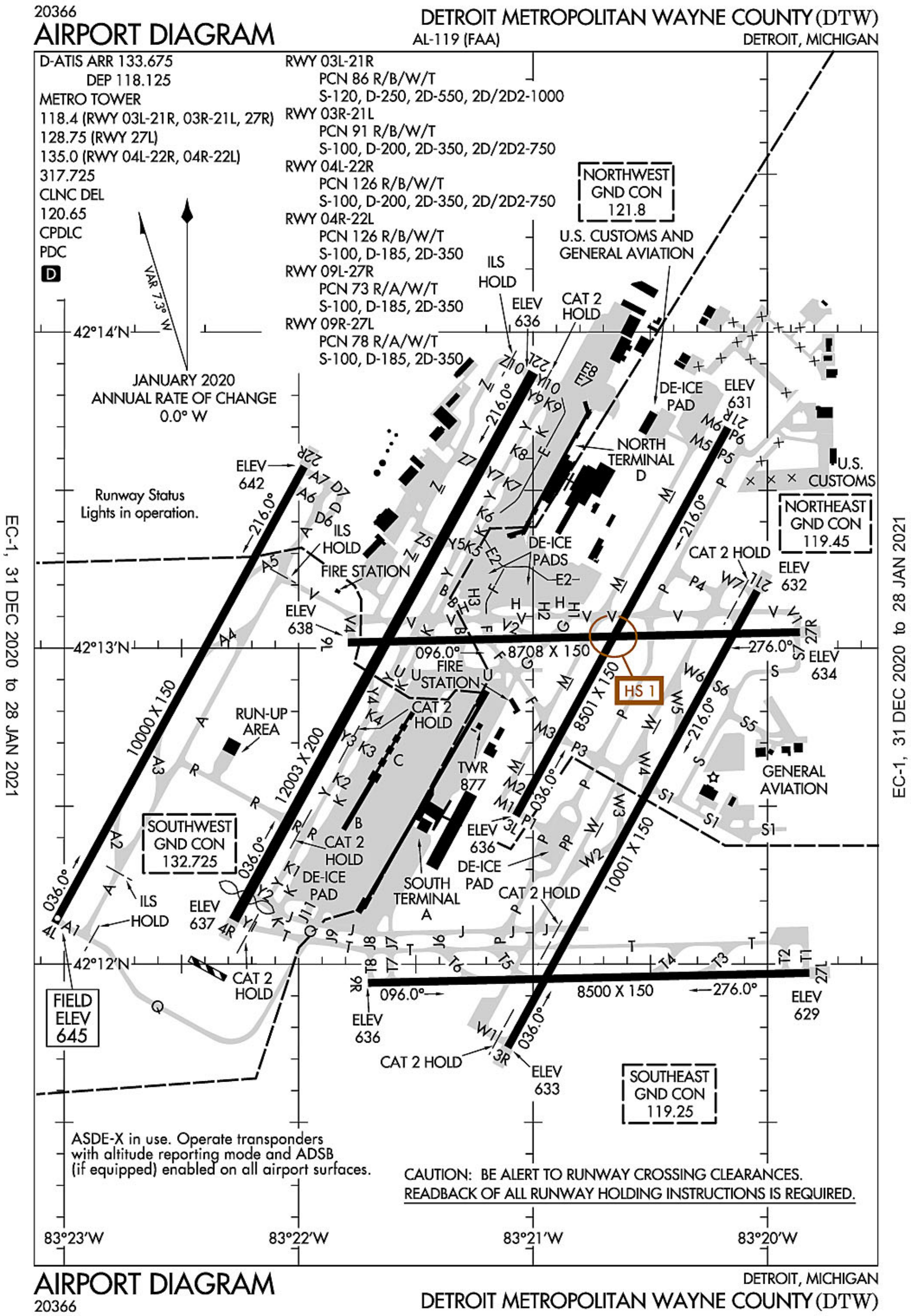
TERMINAL E; NORTH & SOUTH CARGO ARRIVALS CTC MASSPORT GATE CONTROL ON FREQ 131.1 BEFORE ENTERING/DEPARTING RAMP AREA.

FOR NOISE ABATEMENT PROCEDURES CALL 617−561−1636 0900−1700 MON−FRI.

BIRDS ON & INVOF ARPT.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Detroit, Michigan
Detroit Metropolitan Wayne County
ICAO Identifier KDTW



Detroit, MI
Detroit Metropolitan Wayne County
ICAO Identifier KDTW

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42−12−44.8N / 83−21−12.2W
2.2.2 From City: 15 miles S of DETROIT, MI
2.2.3 Elevation: 645.2 ft
2.2.5 Magnetic Variation: 7W (2020)
2.2.6 Airport Contact: CHAD NEWTON, INTERIM AMGR
11050 ROGELL DR #602
DETROIT, MI 48242
(734−942−3685)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 8501 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 42−12−28.207N / 83−21−4.3869W
2.12.6 Threshold Elevation: 635.7 ft
2.12.6 Touchdown Zone Elevation: 636.8 ft

2.12.1 Designation: 21R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 8501 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 42−13−41.852N / 83−20−10.1125W
2.12.6 Threshold Elevation: 631.4 ft
2.12.6 Touchdown Zone Elevation: 634.4 ft

2.12.1 Designation: 03R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−11−44.2115N / 83−21−6.4868W
2.12.6 Threshold Elevation: 632.8 ft
2.12.6 Touchdown Zone Elevation: 633.1 ft

2.12.1 Designation: 21L
2.12.2 True Bearing: 209
2.12.3 Dimensions: 10001 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 42−13−10.8552N / 83−20−2.6517W
2.12.6 Threshold Elevation: 631.8 ft
2.12.6 Touchdown Zone Elevation: 632.3 ft

2.12.1 Designation: 04L
2.12.2 True Bearing: 29
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−12−7.8216N / 83−23−2.4003W
2.12.6 Threshold Elevation: 645.2 ft
2.12.6 Touchdown Zone Elevation: 645.2 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 209
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−13−34.4821N / 83−21−58.6115W
2.12.6 Threshold Elevation: 642.1 ft
2.12.6 Touchdown Zone Elevation: 642.1 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 209
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−13−52.3644N / 83−20−59.9655W
2.12.6 Threshold Elevation: 635.8 ft
2.12.6 Touchdown Zone Elevation: 637.4 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 29
2.12.3 Dimensions: 12003 ft x 200 ft
2.12.4 PCN: 126 R/B/W/T
2.12.5 Coordinates: 42−12−8.3656N / 83−22−16.5697W
2.12.6 Threshold Elevation: 637 ft
2.12.6 Touchdown Zone Elevation: 639.5 ft

2.12.1 Designation: 22X
2.12.2 True Bearing: 209
2.12.3 Dimensions: 0 ft x 0 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−

2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 04X
2.12.2 True Bearing: 29
2.12.3 Dimensions: 0 ft x 0 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−1.0821N / 83−21−47.4044W
2.12.6 Threshold Elevation: 638 ft
2.12.6 Touchdown Zone Elevation: 639.6 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8708 ft x 150 ft
2.12.4 PCN: 73 R/A/W/T
2.12.5 Coordinates: 42−13−3.0219N / 83−19−51.7146W
2.12.6 Threshold Elevation: 634.3 ft
2.12.6 Touchdown Zone Elevation: 634.7 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 89
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−56.4542N / 83−21−42.2248W
2.12.6 Threshold Elevation: 636 ft
2.12.6 Touchdown Zone Elevation: 636.1 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 269
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 78 R/A/W/T
2.12.5 Coordinates: 42−11−58.3372N / 83−19−49.3276W
2.12.6 Threshold Elevation: 629 ft
2.12.6 Touchdown Zone Elevation: 630.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03L
2.13.2 Take−off Run Available: 8501
2.13.3 Take−off 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 Take−off Run Available: 8501
2.13.3 Take−off Distance Available: 8501
2.13.4 Accelerate−Stop Distance Available: 8501
2.13.5 Landing Distance Available: 8501

2.13.1 Designation: 03R
2.13.2 Take−off Run Available: 10001
2.13.3 Take−off 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 Take−off Run Available: 10001
2.13.3 Take−off Distance Available: 10001
2.13.4 Accelerate−Stop Distance Available: 10001
2.13.5 Landing Distance Available: 10001

2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 12003
2.13.3 Take−off Distance Available: 12003
2.13.4 Accelerate−Stop Distance Available: 12003
2.13.5 Landing Distance Available: 12003

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 12003
2.13.3 Take−off Distance Available: 12003
2.13.4 Accelerate−Stop Distance Available: 12003
2.13.5 Landing Distance Available: 11494

2.13.1 Designation: 22X
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 04X

2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 8708
2.13.3 Take−off 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 Take−off Run Available: 8708
2.13.3 Take−off 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 Take−off Run Available: 8500
2.13.3 Take−off 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 Take−off Run Available: 8500
2.13.3 Take−off Distance Available: 8500
2.13.4 Accelerate−Stop Distance Available: 8500
2.13.5 Landing Distance Available: 8500

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 21R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 03R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 21L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 22X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 04X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P (RWY 04L/22R, 04R/22L, 27L)
2.18.3 Channel: 124.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (RWY 03R, 21L, 27R)
2.18.3 Channel: 125.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 284

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BARII DP (RWY 04L/22R, 04R/22L)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BARII DP (RWY 03L/21R, 03R/21L, 27L, 27R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BONZZ STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CCOBB DP (RWY 03L, 03R, 04L, 04R, 21L, 21R, 22L, 22R)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CCOBB DP (RWY 27L, 27R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 120.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SW)
2.18.3 Channel: 118.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NW/NE)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE)
2.18.3 Channel: 134.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLVIN DP (RWY 04L/22R, 04R/22L)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLVIN DP (RWY 03L/21R, 03R/21L, 27L, 27R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CRAKN STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CUUGR STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 118.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 133.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (PROPS/TURBO-PROPS−WEST)
2.18.3 Channel: 118.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (TURBOJETS−WEST)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (TURBOJETS−EAST)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (PROPS/TURBO-PROPS−EAST)
2.18.3 Channel: 134.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: FERRL STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GEMNI STAR
2.18.3 Channel: 126.225

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (SOUTHEAST)
2.18.3 Channel: 119.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (NORTHEAST)
2.18.3 Channel: 119.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (NORTHWEST)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (SOUTHWEST)
2.18.3 Channel: 132.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GRAYT STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HANBLSTAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HAYLL STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HHOWE DP (RWY 27L, 27R)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HHOWE DP (RWY 03L/21R, 03R/21L, 04L/22R, 04R/22L)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HTROD STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KAYLN DP
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KKISS STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KLYNK STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LAYKS STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (DEP, ARPT DIAG RWY 03L/21R, 03R/21L, 27R)
2.18.3 Channel: 118.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (ARRIVAL RWY 03R/21L, 27R)
2.18.3 Channel: 118.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (ARRIVAL RWY 04R/22L)
2.18.3 Channel: 128.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (DEP, ARPT DIAG RWY 27L)
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (ARRIVAL RWY 03L/21R, 27L)
2.18.3 Channel: 128.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (ARRIVAL RWY 04L/22R)
2.18.3 Channel: 135
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (DEP, ARPT DIAG RWY 04L/22R, 04R/22L)
2.18.3 Channel: 135
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 317.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LECTR STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LIDDS DP
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MEDEVAC
2.18.3 Channel: 259.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: METRO DP (WESTBOUND)
2.18.3 Channel: 118.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: METRO DP (EASTBOUND)
2.18.3 Channel: 134.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIGGY DP
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MIZAR STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PAVYL DP
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: POLAR STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 04L/22R)
2.18.3 Channel: 127.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 04R/22L)
2.18.3 Channel: 135.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RKCTY STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SNDRS DP (RWY 04L/22R, 04R/22L)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SNDRS DP (RWY 03L/21R, 03R/21L, 27L, 27R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SPICA STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TPGUN STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TRMML DP (RWY 22L, 22R, 27L, 27R)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TRMML DP (RWY 03L, 03R, 04L, 04R, 21L, 21R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: VCTRZ STAR
2.18.3 Channel: 124.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WEEDA STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WNGNT STAR
2.18.3 Channel: 126.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ZETTR DP (RWY 22L, 22R, 27L, 27R)
2.18.3 Channel: 125.525
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ZETTR DP (RWY 03L, 03R, 04L, 04R, 21L, 21R)
2.18.3 Channel: 132.025
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU

2.19.5 Coordinates: 42−11−34.2185N / 83−21−9.5792W
2.19.6 Site Elevation: 638.7 ft

2.19.1 ILS Type: Glide Slope for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−11−51.1266N / 83−20−54.979W
2.19.6 Site Elevation: 630.1 ft

2.19.1 ILS Type: Inner Marker for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−11−36.5551N / 83−21−12.137W
2.19.6 Site Elevation: 631.1 ft

2.19.1 ILS Type: Localizer for runway 03R. Magnetic variation: 7W
2.19.2 ILS Identification: HUU
2.19.5 Coordinates: 42−13−20.4082N / 83−19−55.609W
2.19.6 Site Elevation: 634 ft

2.19.1 ILS Type: DME for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42−11−34.2185N / 83−21−9.5792W
2.19.6 Site Elevation: 638.7 ft

2.19.1 ILS Type: Glide Slope for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42−12−58.4945N / 83−20−5.1867W
2.19.6 Site Elevation: 628.9 ft

2.19.1 ILS Type: Localizer for runway 21L. Magnetic variation: 7W
2.19.2 ILS Identification: EJR
2.19.5 Coordinates: 42−11−34.9459N / 83−21−13.3158W
2.19.6 Site Elevation: 631.1 ft

2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42−13−41.8988N / 83−21−48.7254W
2.19.6 Site Elevation: 649.7 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42−12−18.9498N / 83−23−0.2665W
2.19.6 Site Elevation: 640.6 ft

2.19.1 ILS Type: Inner Marker for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42−12−0.3838N / 83−23−7.8811W
2.19.6 Site Elevation: 645.2 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 7W
2.19.2 ILS Identification: HJT
2.19.5 Coordinates: 42−13−43.2279N / 83−21−52.161W
2.19.6 Site Elevation: 642 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42−13−41.8988N / 83−21−48.7254W
2.19.6 Site Elevation: 649.7 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42−13−27.2272N / 83−22−10.0062W
2.19.6 Site Elevation: 636.7 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 7W
2.19.2 ILS Identification: JKI
2.19.5 Coordinates: 42−11−59.0707N / 83−23−8.842W
2.19.6 Site Elevation: 644.6 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−13−59.7252N / 83−20−50.3339W
2.19.6 Site Elevation: 645.3 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−12−23.21N / 83−22−11.85W
2.19.6 Site Elevation: 633.1 ft

2.19.1 ILS Type: Inner Marker for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−12−4.547N / 83−22−19.3737W

2.19.6 Site Elevation: 637.1 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 7W
2.19.2 ILS Identification: DTW
2.19.5 Coordinates: 42−14−1.3028N / 83−20−53.3772W
2.19.6 Site Elevation: 636.5 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−13−59.7252N / 83−20−50.3339W
2.19.6 Site Elevation: 645.3 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−13−43.8552N / 83−21−12.2894W
2.19.6 Site Elevation: 635.6 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 7W
2.19.2 ILS Identification: DWC
2.19.5 Coordinates: 42−11−59.5406N / 83−22−23.0644W
2.19.6 Site Elevation: 636.1 ft

2.19.1 ILS Type: DME for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−11−57.1056N / 83−23−6.1821W
2.19.6 Site Elevation: 656.5 ft

2.19.1 ILS Type: Glide Slope for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−12−19.0378N / 83−23−0.5079W
2.19.6 Site Elevation: 640.7 ft

2.19.1 ILS Type: Localizer for runway 04X. Magnetic variation: 7W
2.19.2 ILS Identification: ALA
2.19.5 Coordinates: 42−13−33.4002N / 83−21−50.9401W
2.19.6 Site Elevation: 638.5 ft

2.19.1 ILS Type: DME for runway 22X. Magnetic variation: 7W
2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42−11−57.1056N / 83−23−6.1821W
2.19.6 Site Elevation: 656.6 ft

2.19.1 ILS Type: Glide Slope for runway 22X. Magnetic variation: 7W
2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42−13−27.3517N / 83−22−10.3013W
2.19.6 Site Elevation: 636.8 ft

2.19.1 ILS Type: Localizer for runway 22X. Magnetic variation: 7W
2.19.2 ILS Identification: BZB
2.19.5 Coordinates: 42−11−56.2259N / 83−23−1.9618W
2.19.6 Site Elevation: 646.3 ft

2.19.1 ILS Type: DME for runway 27R. Magnetic variation: 7W
2.19.2 ILS Identification: DMI
2.19.5 Coordinates: 42−12−47.2915N / 83−21−59.9856W
2.19.6 Site Elevation: 636.5 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 7W
2.19.2 ILS Identification: DMI
2.19.5 Coordinates: 42−12−58.3552N / 83−20−4.8574W
2.19.6 Site Elevation: 629 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 7W
2.19.2 ILS Identification: DMI
2.19.5 Coordinates: 42−13−0.7158N / 83−22−9.2988W
2.19.6 Site Elevation: 639.3 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA
2.19.5 Coordinates: 42−11−53.6723N / 83−21−55.0763W
2.19.6 Site Elevation: 634.8 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA
2.19.5 Coordinates: 42−11−54.6653N / 83−20−2.5117W
2.19.6 Site Elevation: 625.9 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 7W
2.19.2 ILS Identification: EPA

2.19.5 Coordinates: 42−11−56.2294N / 83−21−55.6348W

2.19.6 Site Elevation: 634.1 ft

General Remarks:
BRIGHTLY LIGHTED PARKING LOT 2.6 NM SW OF ARPT.

RWY VISUAL SCREEN 20 FT AGL 1150 FT S. AER 04R

TURNING RESTRICTION TWY B TO TWY K RESTRICTED TO AIRCRAFT WITH WINGSPAN 171 FT OR LESS.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

PPR FOR B747−8 OPRS DUE TO CONSTRAINTS ON RWYS, TWYS AND RAMPS CTC AIRFIELD OPRS AT 734−942−3685.

TAXI ON RWY 09L/27R LTD TO: EXITING FM RWY 04R/22L, 03L/21R, & 03R/21L EXC NO TAXI BTN RWY 03L/21R & TWY W; TWO−WAY TAXI BTN TWY Y & TWY M WHEN RED STOP BAR LGTS ARE LGTD AT RWY 04R/22L & 03L/21R OR WHEN BARRICADES ARE USED INSTEAD AT THE RESPECTIVE INTS. TAXI BTN SS−SR OR IN CONDS WITH VIS LESS THAN 1 SM RQRS GREEN CNTRLN LGT TO BE OPR.

BE ALERT BIRDS, WATERFOWL, ON & INVOF ARPT.

RY STATUS LGTS ARE IN OPN.

ACFT WITH WINGSPAN GTR THAN 171 FT ARE RSTRD FM USING TWY P BTN TWY J & TWY P3.

TURNING RSTRD TO WINGSPAN 135 FT OR LESS TWY G NORTH TO TWY V EAST.

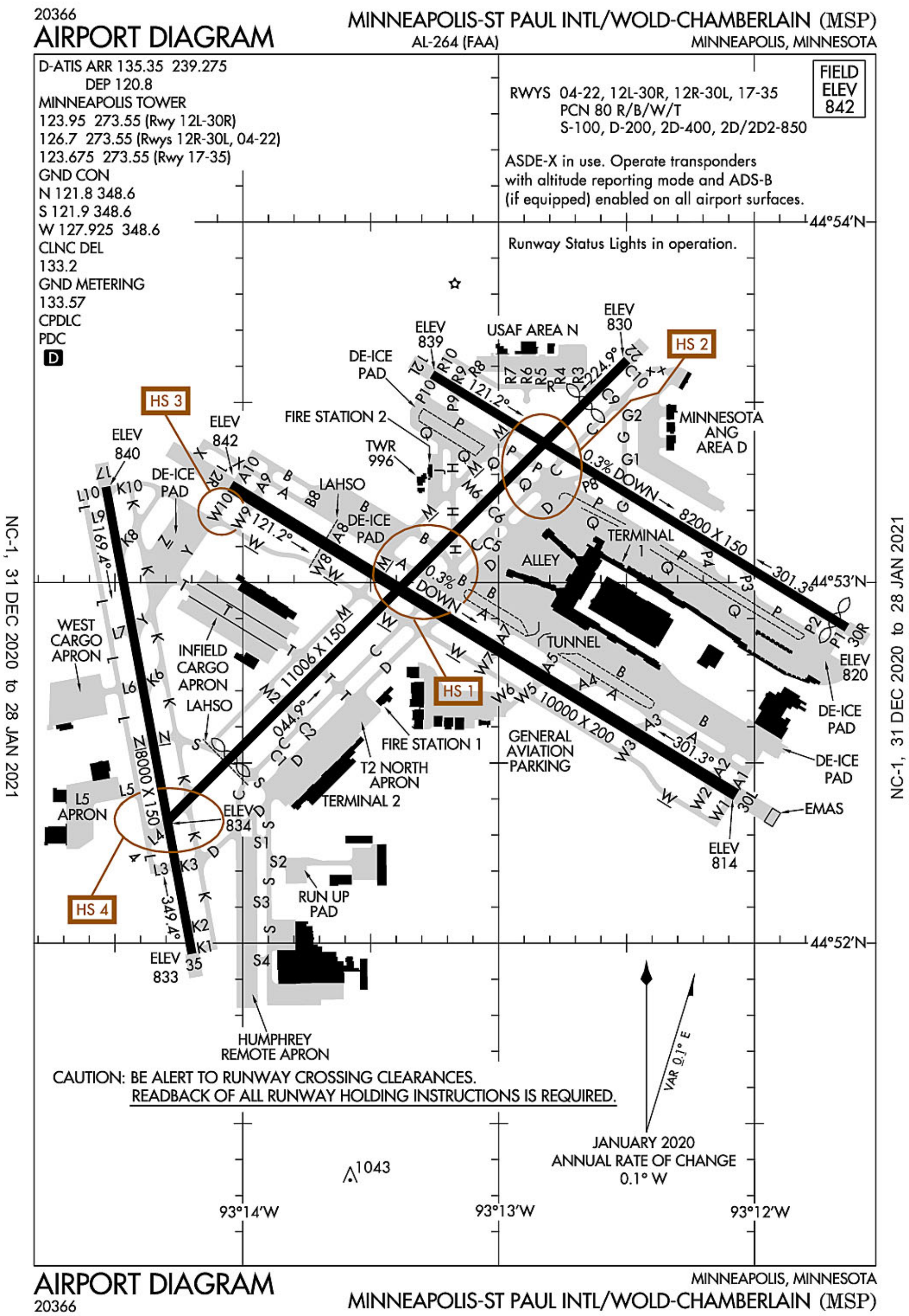
AIRCRAFT WITH WINGSPAN GREATER THAN 171 FT CANNOT PASS EACH OTHER ON TWYS Y AND K BETWEEN TWYS U AND K6 INSUFFICIENT WINGTIP CLEARANCE.

ACFT ON TWY 'F' AND TWY 'V' DO NOT BLOCK FIRE STATION EXITS.

DIVERSIONAIR CARRIERS WITHOUT A PRESENCE AT DTW SHOULD CTC AIRFIELD OPRS 734−942−3685 PRIOR TO DIVERTING TO THE EXTENT PRACTICAL AND PROVIDE COMPANY, FLT OPRS, CTC INFO, AIRCRAFT TYPE, PERSONS ONBOARD, INTERNATIONAL OR DOMESTIC, ANY GRND HANDLER AGGREEMENTS IN PLACE.

ACFT WITH WINGSPAN GTR THAN 171 FT ARE RSTRD FM USING TWY H BTN TWY K & TWY F.

Minneapolis, Minnesota
Minneapolis−St. Paul International (Wold−Chamberlain)
ICAO Identifier KMSP



Minneapolis, MN
Minneapolis−St Paul Intl/Wold−Chamberlain
ICAO Identifier KMSP

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 44−52−55.1N / 93−13−18.4W
2.2.2 From City: 6 miles SW of MINNEAPOLIS, MN
2.2.3 Elevation: 841.8 ft
2.2.5 Magnetic Variation: 0E (2015)
2.2.6 Airport Contact: BRIAN RYKS
6040 28TH AVE SOUTH
MINNEAPOLIS, MN 55450
((612) 726−6326)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−20.158N / 93−14−17.9427W
2.12.6 Threshold Elevation: 833.5 ft
2.12.6 Touchdown Zone Elevation: 831.7 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11006 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−36.9917N / 93−12−29.8434W
2.12.6 Threshold Elevation: 830.3 ft
2.12.6 Touchdown Zone Elevation: 828.3 ft

2.12.1 Designation: 30R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−52.5152N / 93−11−38.296W
2.12.6 Threshold Elevation: 819.5 ft
2.12.6 Touchdown Zone Elevation: 822.4 ft

2.12.1 Designation: 12L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 8200 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−34.6287N / 93−13−15.5666W
2.12.6 Threshold Elevation: 838.6 ft
2.12.6 Touchdown Zone Elevation: 840.7 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−16.0438N / 93−14−2.8731W
2.12.6 Threshold Elevation: 841.8 ft
2.12.6 Touchdown Zone Elevation: 841.8 ft

2.12.1 Designation: 30L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−52−24.68N / 93−12−4.2689W
2.12.6 Threshold Elevation: 814.4 ft
2.12.6 Touchdown Zone Elevation: 823 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 170
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−53−15.9127N / 93−14−32.1137W
2.12.6 Threshold Elevation: 840.4 ft
2.12.6 Touchdown Zone Elevation: 840.4 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 350
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 44−51−58.2366N / 93−14−11.9205W
2.12.6 Threshold Elevation: 833.3 ft
2.12.6 Touchdown Zone Elevation: 834.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 11006

2.13.3 Take−off 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 Take−off Run Available: 11006
2.13.3 Take−off Distance Available: 11006
2.13.4 Accelerate−Stop Distance Available: 11006
2.13.5 Landing Distance Available: 10006

2.13.1 Designation: 30R
2.13.2 Take−off Run Available: 8200
2.13.3 Take−off Distance Available: 8200
2.13.4 Accelerate−Stop Distance Available: 8200
2.13.5 Landing Distance Available: 8000

2.13.1 Designation: 12L
2.13.2 Take−off Run Available: 8200
2.13.3 Take−off Distance Available: 8200
2.13.4 Accelerate−Stop Distance Available: 7620
2.13.5 Landing Distance Available: 7620

2.13.1 Designation: 12R
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 8000
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off 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: 04
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30R
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 35
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 133.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 120.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 135.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 239.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND METERING
2.18.3 Channel: 133.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (N)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (S)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (W)
2.18.3 Channel: 127.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 17/35)
2.18.3 Channel: 123.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12L/30R)
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 04/22, 12R/30L)
2.18.3 Channel: 126.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 273.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PTD
2.18.3 Channel: 282.675
2.18.5 Hours of Operation:

2.18.1 Service Designation: PTD
2.18.3 Channel: 324.1
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 0E
2.19.2 ILS Identification: APL
2.19.5 Coordinates: 44−53−44.0038N / 93−12−19.9688W
2.19.6 Site Elevation: 832.1 ft

2.19.1 ILS Type: Localizer for runway 22. Magnetic variation: 0E
2.19.2 ILS Identification: SIJ
2.19.5 Coordinates: 44−52−12.792N / 93−14−28.3006W
2.19.6 Site Elevation: 831.4 ft

2.19.1 ILS Type: Outer Marker for runway 22. Magnetic variation: 0E
2.19.2 ILS Identification: SIJ
2.19.5 Coordinates: 44−57−9.6998N / 93−7−23.0143W
2.19.6 Site Elevation: 1021.9 ft

2.19.1 ILS Type: DME for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44−53−3.674N / 93−11−48.8687W
2.19.6 Site Elevation: 824 ft

2.19.1 ILS Type: Glide Slope for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44−53−31.1153N / 93−12−56.6941W
2.19.6 Site Elevation: 831 ft

2.19.1 ILS Type: Inner Marker for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44−53−39.694N / 93−13−25.8963W
2.19.6 Site Elevation: 845.3 ft

2.19.1 ILS Type: Localizer for runway 12L. Magnetic variation: 0E
2.19.2 ILS Identification: PJL
2.19.5 Coordinates: 44−52−50.3312N / 93−11−33.2418W
2.19.6 Site Elevation: 813 ft

2.19.1 ILS Type: DME for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44−53−3.674N / 93−11−48.8687W
2.19.6 Site Elevation: 824 ft

2.19.1 ILS Type: Glide Slope for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44−53−3.4471N / 93−11−48.8472W
2.19.6 Site Elevation: 813.2 ft

2.19.1 ILS Type: Localizer for runway 30R. Magnetic variation: 0E
2.19.2 ILS Identification: INN
2.19.5 Coordinates: 44−53−40.841N / 93−13−29.92W
2.19.6 Site Elevation: 843.1 ft

2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44−52−26.9244N / 93−12−20.5476W
2.19.6 Site Elevation: 825.4 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44−53−7.28N / 93−13−53.62W
2.19.6 Site Elevation: 835.1 ft

2.19.1 ILS Type: Inner Marker for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44−53−20.8698N / 93−14−12.7019W
2.19.6 Site Elevation: 840 ft

2.19.1 ILS Type: Localizer for runway 12R. Magnetic variation: 0E
2.19.2 ILS Identification: HKZ
2.19.5 Coordinates: 44−52−20.3796N / 93−11−54.3455W
2.19.6 Site Elevation: 812.8 ft

2.19.1 ILS Type: DME for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44−52−26.9244N / 93−12−20.5476W
2.19.6 Site Elevation: 825.4 ft

2.19.1 ILS Type: Glide Slope for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44−52−27.0021N / 93−12−20.2067W
2.19.6 Site Elevation: 812.1 ft

2.19.1 ILS Type: Inner Marker for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44−52−19.4377N / 93−11−52.1826W
2.19.6 Site Elevation: 808.1 ft

2.19.1 ILS Type: Localizer for runway 30L. Magnetic variation: 0E
2.19.2 ILS Identification: MSP
2.19.5 Coordinates: 44−53−22.4589N / 93−14−17.688W
2.19.6 Site Elevation: 840 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 0E
2.19.2 ILS Identification: TJZ
2.19.5 Coordinates: 44−53−24.6166N / 93−14−38.0356W
2.19.6 Site Elevation: 832.5 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 0E
2.19.2 ILS Identification: TJZ
2.19.5 Coordinates: 44−51−48.4327N / 93−14−9.3727W
2.19.6 Site Elevation: 830.4 ft

2.19.1 ILS Type: DME for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44−53−24.6166N / 93−14−38.0356W
2.19.6 Site Elevation: 832.5 ft

2.19.1 ILS Type: Glide Slope for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44−52−7.7086N / 93−14−20.1127W
2.19.6 Site Elevation: 829.9 ft

2.19.1 ILS Type: Inner Marker for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA
2.19.5 Coordinates: 44−51−49.9075N / 93−14−9.7433W
2.19.6 Site Elevation: 832.6 ft

2.19.1 ILS Type: Localizer for runway 35. Magnetic variation: 0E
2.19.2 ILS Identification: BMA

2.19.5 Coordinates: 44−53−25.7158N / 93−14−34.6512W
2.19.6 Site Elevation: 845.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 2E
2.19.2 Navigation Aid Identification: MSP
2.19.5 Coordinates: 44−53−47.3958N / 93−14−11.5137W
2.19.6 Site Elevation: 831.6 ft

General Remarks:
NOISE ABATEMENT PROCEDURES − 612−726−9411. NO STAGE 1 CAT CIVIL ACFT. NIGHT HR 2230−0600.

TRNG FLTS PROHIBITED. GA FLTS MUST TRMT AT THE FBO OR US CUSTOMS UNLESS APVD BY AMGR.

MILITARY RSTD: NO HAZ CL/DIV1.1 OR 1.2 EXPLOSIVES PERMITTED. LOADING OR UNLOADING OF HAZ CL/DIV 1.3, 1.4, 1.5 0R 1.6 MUST BE APV BY ARPT DRCT PRIOR TO FLT.

ASDE−X IN USE; OPR TRANSPONDERS WITH ALT RPRT MODE & ADS−B ENABLED ON ALL ARPT SFCS.

RWY STATUS LGTS IN OPRN.

TWY J CLSD TO ACFT WINGSPAN MORE THAN 85.5 FT.

133 AW AFLD MGMT − 324.1 REMARKS: CALL LIGHTHOUSE.

UNSKED ACFT AT TRML 2−HUMPHREY REQ TO CTC TRML 2 GATE CONTROL ON 122.95 OR CALL 612−726−5742 PRIOR TO ARR.

SIGNATURE FLIGHT SUPPORT 128.95

COMMUNICATIONS: MINNEAPOLIS AIR RESERVE STATION JOINT COMD POST − 252.1 REMARKS: CALL NORTHSTAR.

REMARKS: AFRC 934 AW CTC PTD VIKING OPS 20 MIN PRIOR LDG.

ALL GROUP VI ACFT WITH WINGSPAN GREATER THAN 214 FT PPR REQ PRIOR TO ARR − CTC AIRSIDE OPS 612−726−5111.

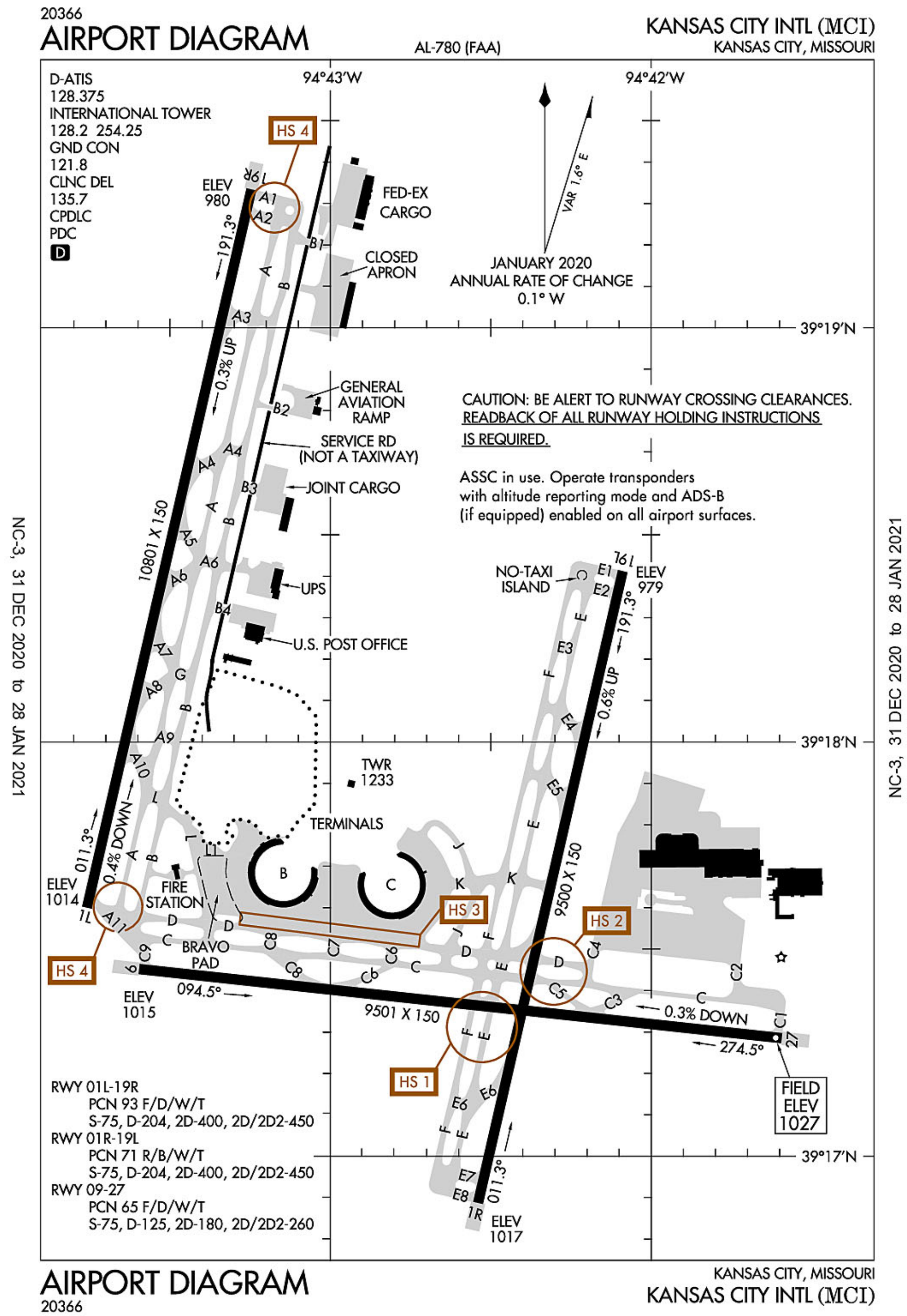
934 AW AFLD MGMT − PTD 282.675 REMARKS: CALL VIKING OPS.

BIRDS ON & INVOF ARPT.

ALL GA ACFT WITH LESS THAN 20 PAX THAT NEED TO CLEAR US CUSTOMS SHOULD CTC SIGNATURE FLT SUPPORT 128.95 OR 612−726−5700 PRIOR TO ARR.

MILITARY: ARFC 934 AW OPS 1300−0400Z++ MON−FRI; CLSD WKEND AND HOL. UNIT TRNG ASSEMBLY WKEND 1330−2300Z++. ALL TRANS ACFT MUST RECEIVE PPR 48 HR PRIOR TO ETA − CTC AIRFIELD MGMT.

Kansas City, Missouri
Kansas City International
ICAO Identifier KMCI



Kansas City, MO
Kansas City Intl
ICAO Identifier KMCI

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−17−51.4N / 94−42−50W
2.2.2 From City: 15 miles NW of KANSAS CITY, MO
2.2.3 Elevation: 1026.9 ft
2.2.5 Magnetic Variation: 2E (2015)
2.2.6 Airport Contact: MR. BOB JOHNSON
P.O. BOX 20047
KANSAS CITY, MO 64195
(816−243−5248)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 13
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: 93 F/D/W/T
2.12.5 Coordinates: 39−17−36.0029N / 94−43−45.5433W
2.12.6 Threshold Elevation: 1014.4 ft
2.12.6 Touchdown Zone Elevation: 1014.4 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 193
2.12.3 Dimensions: 10801 ft x 150 ft
2.12.4 PCN: 93 F/D/W/T
2.12.5 Coordinates: 39−19−20.0396N / 94−43−14.7835W
2.12.6 Threshold Elevation: 979.6 ft
2.12.6 Touchdown Zone Elevation: 990.5 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 193
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39−18−24.7369N / 94−42−5.3226W
2.12.6 Threshold Elevation: 978.5 ft
2.12.6 Touchdown Zone Elevation: 995.2 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 13
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 71 R/B/W/T
2.12.5 Coordinates: 39−16−53.2341N / 94−42−32.3935W
2.12.6 Threshold Elevation: 1017.2 ft
2.12.6 Touchdown Zone Elevation: 1017.4 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 276
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 65 F/D/W/T
2.12.5 Coordinates: 39−17−17.0716N / 94−41−35.5978W
2.12.6 Threshold Elevation: 1026.9 ft
2.12.6 Touchdown Zone Elevation: 1026.9 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 96
2.12.3 Dimensions: 9501 ft x 150 ft
2.12.4 PCN: 65 F/D/W/T
2.12.5 Coordinates: 39−17−27.099N / 94−43−35.7371W
2.12.6 Threshold Elevation: 1015.3 ft
2.12.6 Touchdown Zone Elevation: 1015.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 10801
2.13.3 Take−off 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 Take−off Run Available: 10801
2.13.3 Take−off Distance Available: 10801
2.13.4 Accelerate−Stop Distance Available: 10801
2.13.5 Landing Distance Available: 10801

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 9500
2.13.3 Take−off Distance Available: 9500
2.13.4 Accelerate−Stop Distance Available: 9500
2.13.5 Landing Distance Available: 9500

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 9500
2.13.3 Take−off Distance Available: 9500
2.13.4 Accelerate−Stop Distance Available: 9500
2.13.5 Landing Distance Available: 9500

2.13.1 Designation: 27
2.13.2 Take−off Run Available: 9501
2.13.3 Take−off Distance Available: 9501
2.13.4 Accelerate−Stop Distance Available: 9501
2.13.5 Landing Distance Available: 9501

2.13.1 Designation: 09
2.13.2 Take−off Run Available: 9501
2.13.3 Take−off Distance Available: 9501
2.13.4 Accelerate−Stop Distance Available: 9501
2.13.5 Landing Distance Available: 9501

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 19L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 01R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P
2.18.3 Channel: 120.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 135.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHIEF DP
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHIEF DP
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (EAST OF RWY 01/19)
2.18.3 Channel: 118.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (S OF A LINE FROM LWC ARPT TO 3GV ARPT)
2.18.3 Channel: 118.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST OF RWY 01/19)
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (EAST OF RWY 01−19)
2.18.3 Channel: 294.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (S OF A LINE FROM LWC ARPT TO 3GV ARPT)
2.18.3 Channel: 294.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST OF RWY 01/19)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 128.375
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (010−190)

2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (191−009)
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (191−009)
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (010−190)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LAKES DP
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LAKES DP
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 128.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 254.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 125.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RACER DP (BUTLER/SPRINGFIELD TRANSITION)
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RACER DP (DOSOA TRANSITION)
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RACER DP (DOSOA TRANSITION)
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RACER DP (BUTLER/SPRINGFIELD TRANSITION)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROYAL DP (ARENZ/BODYN TRANSITION)
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROYAL DP (TONCE TRANSITION)
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROYAL DP (TONCE TRANSITION)
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROYAL DP (ARENZ/BODYN TRANSITION)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TIFTO DP
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TIFTO DP
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WILDCAT DP
2.18.3 Channel: 124.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WILDCAT DP
2.18.3 Channel: 284.7
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39−19−30.0746N / 94−43−8.2388W
2.19.6 Site Elevation: 988.8 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39−17−48.2654N / 94−43−47.1321W
2.19.6 Site Elevation: 1002.8 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 2E
2.19.2 ILS Identification: DOT
2.19.5 Coordinates: 39−19−31.1181N / 94−43−11.5232W
2.19.6 Site Elevation: 972.3 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39−17−25.7846N / 94−43−51.9618W
2.19.6 Site Elevation: 1026 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39−19−11.0536N / 94−43−22.6772W
2.19.6 Site Elevation: 976.8 ft

2.19.1 ILS Type: Inner Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39−19−30.1157N / 94−43−11.8201W
2.19.6 Site Elevation: 972.4 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39−17−23.1222N / 94−43−49.3464W
2.19.6 Site Elevation: 1017.6 ft

2.19.1 ILS Type: Middle Marker for runway 19R. Magnetic variation: 2E
2.19.2 ILS Identification: PAJ
2.19.5 Coordinates: 39−19−49.2587N / 94−43−6.2032W
2.19.6 Site Elevation: 965.1 ft

2.19.1 ILS Type: DME for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39−18−35.6272N / 94−42−5.4664W
2.19.6 Site Elevation: 960 ft

2.19.1 ILS Type: Glide Slope for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39−17−3.1905N / 94−42−24.2292W
2.19.6 Site Elevation: 1010.8 ft

2.19.1 ILS Type: Inner Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39−16−45.0995N / 94−42−34.8009W
2.19.6 Site Elevation: 1011.1 ft

2.19.1 ILS Type: Localizer for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39−18−34.4013N / 94−42−2.4648W
2.19.6 Site Elevation: 963.3 ft

2.19.1 ILS Type: Middle Marker for runway 01R. Magnetic variation: 2E
2.19.2 ILS Identification: PVL
2.19.5 Coordinates: 39−16−27.6318N / 94−42−39.9693W
2.19.6 Site Elevation: 994.9 ft

2.19.1 ILS Type: DME for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39−16−43.6236N / 94−42−38.5532W
2.19.6 Site Elevation: 1017.5 ft

2.19.1 ILS Type: Glide Slope for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39−18−13.9534N / 94−42−3.2934W

2.19.6 Site Elevation: 977.9 ft

2.19.1 ILS Type: Localizer for runway 19L. Magnetic variation: 2E
2.19.2 ILS Identification: DYH
2.19.5 Coordinates: 39−16−43.575N / 94−42−35.2495W
2.19.6 Site Elevation: 1011.8 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39−17−18.904N / 94−41−21.7047W
2.19.6 Site Elevation: 1032.1 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39−17−21.0763N / 94−43−22.949W
2.19.6 Site Elevation: 1010.7 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 2E
2.19.2 ILS Identification: RNI
2.19.5 Coordinates: 39−17−16.0109N / 94−41−22.9272W
2.19.6 Site Elevation: 1020.2 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−25.6745N / 94−43−54.5943W
2.19.6 Site Elevation: 1024.3 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−15.7129N / 94−41−50.2717W
2.19.6 Site Elevation: 1021.4 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 2E
2.19.2 ILS Identification: UQY
2.19.5 Coordinates: 39−17−28.6283N / 94−43−54.0717W
2.19.6 Site Elevation: 1015.3 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 5E
2.19.2 Navigation Aid Identification: MCI
2.19.5 Coordinates: 39−17−7.02N / 94−44−13.42W
2.19.6 Site Elevation: 1017 ft

General Remarks:
PPR TO PARK AT AIRLINE GATES CTC RESPECTIVE AIRLINE.

WHEN USING HIGH−SPEED EXITS C5 & C6 CONTINUE UNTIL FIRST PARALLEL TWY, THEN USE EXTREME CARE WHEN TURNING IN EXCESS OF 90 DEGREES.

NOISE ABATEMENT PROCEDURES IN EFFECT 2200−0600 WITH LANDING ON RYS 01L & 19L; TAKEOFFS ON RYS 01R & 19R.

PUSHBACK CLNC RQRD AT GATES 43 THRU 57 IN TRML B AND GATES 68 THRU 77 IN TRML C, PUSHBACK FROM THESE GATES ENTERS TWY D.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

DESIGN GROUP V AND VI ACFT RQR AN ARPT ESCORT ON TWY DELTA BTN TWYS JULIET AND LIMA.

NO ACFT PARKING ON POSTAL APRON.

MIL ACFT MAY BE CHARGED RAMP/PARKING FEES.

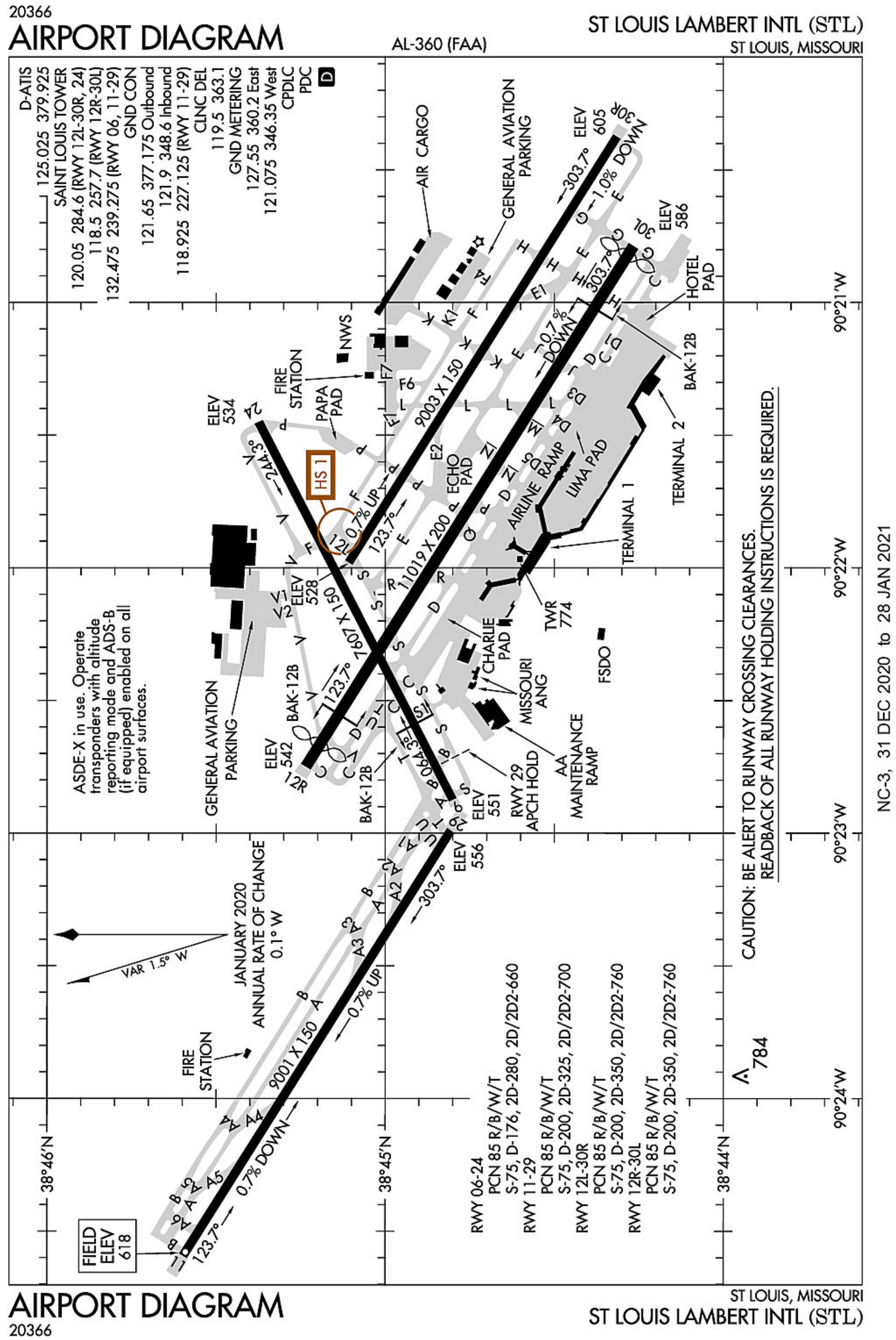
TWY B1 BTN TWY B AND FEDEX APN COCKPIT OVER CNTRLN STEERING RQRD

WINDSHEAR ALERT SYSTEM ON ARPT.

WATERFOWL ON AND INVOF ARPT.

FLIGHT NOTIFICATION SVC (ADCUS) AVBL AT GATE 90.

St. Louis, Missouri
Lambert−St. Louis International
ICAO Identifier KSTL



St Louis, MO
Lambert−St Louis Intl
ICAO Identifier KSTL

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 38−44−55.31N / 90−22−12.104W
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 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06
2.12.2 True Bearing: 63
2.12.3 Dimensions: 7607 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−44−48.041N / 90−22−52.4335W
2.12.6 Threshold Elevation: 550.9 ft
2.12.6 Touchdown Zone Elevation: 550.9 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 243
2.12.3 Dimensions: 7607 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−22.3823N / 90−21−27.0159W
2.12.6 Threshold Elevation: 533.7 ft
2.12.6 Touchdown Zone Elevation: 533.7 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9001 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−35.8293N / 90−24−35.549W
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: 38−44−48.456N / 90−22−59.3881W
2.12.6 Threshold Elevation: 556 ft
2.12.6 Touchdown Zone Elevation: 580 ft

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: 38−44−18.9854N / 90−20−22.5072W
2.12.6 Threshold Elevation: 604.5 ft
2.12.6 Touchdown Zone Elevation: 604.5 ft

2.12.1 Designation: 12L
2.12.2 True Bearing: 122
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−6.4062N / 90−21−58.6574W
2.12.6 Threshold Elevation: 528.3 ft
2.12.6 Touchdown Zone Elevation: 540.6 ft

2.12.1 Designation: 12R
2.12.2 True Bearing: 122
2.12.3 Dimensions: 11019 ft x 200 ft
2.12.4 PCN: 85 R/B/W/T
2.12.5 Coordinates: 38−45−14.0486N / 90−22−44.9667W
2.12.6 Threshold Elevation: 541.6 ft
2.12.6 Touchdown Zone Elevation: 539.8 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: 38−44−16.0148N / 90−20−47.2732W
2.12.6 Threshold Elevation: 585.8 ft
2.12.6 Touchdown Zone Elevation: 582.8 ft

2.12.1 Designation: 30X
2.12.2 True Bearing:
2.12.3 Dimensions: 0 ft x 0 ft

2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 06
2.13.2 Take−off Run Available: 7602
2.13.3 Take−off 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 Take−off Run Available: 7602
2.13.3 Take−off Distance Available: 7602
2.13.4 Accelerate−Stop Distance Available: 7602
2.13.5 Landing Distance Available: 7602

2.13.1 Designation: 11
2.13.2 Take−off Run Available: 9001
2.13.3 Take−off 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 Take−off Run Available: 9001
2.13.3 Take−off Distance Available: 9001
2.13.4 Accelerate−Stop Distance Available: 9001
2.13.5 Landing Distance Available: 9001

2.13.1 Designation: 30R
2.13.2 Take−off Run Available: 9003
2.13.3 Take−off Distance Available: 9003
2.13.4 Accelerate−Stop Distance Available: 9003
2.13.5 Landing Distance Available: 9003

2.13.1 Designation: 12L
2.13.2 Take−off Run Available: 9003
2.13.3 Take−off 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 Take−off Run Available: 11019
2.13.3 Take−off 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 Take−off Run Available: 11019
2.13.3 Take−off Distance Available: 11019
2.13.4 Accelerate−Stop Distance Available: 11019
2.13.5 Landing Distance Available: 10819

2.13.1 Designation: 30X
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 24
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 11
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 29
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 12L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 12R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 30L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 30X
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD/P
2.18.3 Channel: 119.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 363.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 125.025
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 379.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND METERING (WEST)
2.18.3 Channel: 121.075
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND METERING (EAST)
2.18.3 Channel: 127.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND METERING (WEST)
2.18.3 Channel: 346.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND METERING (EAST)
2.18.3 Channel: 360.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 11/29)
2.18.3 Channel: 118.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (OUTBOUND)
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (INBOUND)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 11/29)
2.18.3 Channel: 227.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (INBOUND)
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (OUTBOUND)
2.18.3 Channel: 377.175
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12R/30L)
2.18.3 Channel: 118.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12L/30R, 24)
2.18.3 Channel: 120.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 06, 11/29)
2.18.3 Channel: 132.475
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 06, 11/29)
2.18.3 Channel: 239.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12R/30L)
2.18.3 Channel: 257.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 12L/30R, 24)
2.18.3 Channel: 284.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 30R)
2.18.3 Channel: 278.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 30L)
2.18.3 Channel: 351.9
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06. Magnetic variation: 1W
2.19.2 ILS Identification: JAK
2.19.5 Coordinates: 38−44−39.67N / 90−23−0.61W

2.19.6 Site Elevation: 556.2 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: 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: DME for runway 24. Magnetic variation: 1W
2.19.2 ILS Identification: STL
2.19.5 Coordinates: 38−44−39.67N / 90−23−0.61W
2.19.6 Site Elevation: 556.2 ft

2.19.1 ILS Type: Glide Slope for runway 24. Magnetic variation: 1W
2.19.2 ILS Identification: STL
2.19.5 Coordinates: 38−45−13.621N / 90−21−37.587W
2.19.6 Site Elevation: 527.9 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 / 90−23−3.73W
2.19.6 Site Elevation: 545 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: Glide Slope for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38−45−26.0354N / 90−24−25.3798W
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: 38−45−40.3454N / 90−24−44.7433W
2.19.6 Site Elevation: 614 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 1W
2.19.2 ILS Identification: OGZ
2.19.5 Coordinates: 38−44−38.7157N / 90−22−39.6272W
2.19.6 Site Elevation: 544.7 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: 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: Localizer for runway 29. Magnetic variation: 1W
2.19.2 ILS Identification: RQN
2.19.5 Coordinates: 38−45−41.3541N / 90−24−46.7698W
2.19.6 Site Elevation: 612.7 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: Glide Slope for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38−44−58.2177N / 90−21−50.3421W
2.19.6 Site Elevation: 533.6 ft

2.19.1 ILS Type: Inner Marker for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38−45−11.9285N / 90−22−9.896W
2.19.6 Site Elevation: 530 ft

2.19.1 ILS Type: Localizer for runway 12L. Magnetic variation: 1W
2.19.2 ILS Identification: LDZ
2.19.5 Coordinates: 38−44−13.67N / 90−20−11.72W
2.19.6 Site Elevation: 602 ft

2.19.1 ILS Type: DME for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38−45−14.124N / 90−22−7.9128W
2.19.6 Site Elevation: 545.7 ft

2.19.1 ILS Type: Glide Slope for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38−44−21.9628N / 90−20−38.0158W
2.19.6 Site Elevation: 592.4 ft

2.19.1 ILS Type: Inner Marker for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38−44−14.6593N / 90−20−13.73W
2.19.6 Site Elevation: 602 ft

2.19.1 ILS Type: Localizer for runway 30R. Magnetic variation: 1W
2.19.2 ILS Identification: SJW
2.19.5 Coordinates: 38−45−12.1N / 90−22−10.2W
2.19.6 Site Elevation: 533 ft

2.19.1 ILS Type: DME for runway 12R. Magnetic variation: 1W
2.19.2 ILS Identification: LMR
2.19.5 Coordinates: 38−44−7.69N / 90−20−39.9W
2.19.6 Site Elevation: 592 ft

2.19.1 ILS Type: Glide Slope for runway 12R. Magnetic variation: 1W
2.19.2 ILS Identification: LMR
2.19.5 Coordinates: 38−45−8.96N / 90−22−24.9W
2.19.6 Site Elevation: 531.6 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: Glide Slope for runway 30L. Magnetic variation: 1W
2.19.2 ILS Identification: BKY
2.19.5 Coordinates: 38−44−28.1N / 90−21−1.81W
2.19.6 Site Elevation: 563.9 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 / 90−22−55.7W
2.19.6 Site Elevation: 551 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 1E
2.19.2 Navigation Aid Identification: STL
2.19.5 Coordinates: 38−51−38.4802N / 90−28−56.5247W
2.19.6 Site Elevation: 450 ft

General Remarks:
TWY DELTA OR TAXILANE CHARLIE FM TWY SIERRA TO TWY GOLF, B−747S ARE NOT AUTH TO PASS OR BE PASSED BY B767 OR OTR LRGR ACFT OPRG ON THE PARL TWY/TAXILANE.

TWY ALPHA EAST OF TWY TANGO, TWY SIERRA AND RWY 6/24 SOUTH OF TWY BRAVO, NO ACFT OR VEHICLE OPNS WHEN ARRIVING OR DEPG RWY 11 OR ARRIVING RWY 29.

TWY LIMA, NORTH OF RWY 12L/30R, ACFT LRGR THAN A GULFSTREAM VI TAX NBND ARE PROHIBITED FM MAKING A RIGHT TURN EBND ON TWY FOXTROT.

TWY KILO 1 IS UNAVBL TO B−767 OR LRGR ACFT (WINGSPAN 118 FT OR GTR).

WG TIP CLNC WITH GND VEH NOT ADEQUATE ALONG N SIDE OF MAIN TRML APN.

TWY VICTOR 2 IS UNAVBL TO B−767 OR LRGR ACFT (WINGSPAN 118 FT OR GTR).

WAIVER TO CONDUCT SIMULTANEOUS APCHS TO PARALLEL RYS SEPARATED BY 1,300 FT IN EFFECT.

TAXILANE CHARLIE, FM TWY SIERRA TO TWY ROMEO, RSTRD TO B−767 OR SMLR ACFT (156 FT AVBL) WHEN ACFT ARE PARKED IN THE CHARLIE PAD. RSTRN IS FOR TAX ACFT, LRGR ACFT MAY BE TOWED THRU THE AREA.

MISC: MIL ACFT PLANNING TO ARR WHEN WX IS ANTICIPATED TO BE LESS THAN 1200'/5 MUST FILE F;T PLAN BEFORE 0900Z++.

TWY VICTOR, UNDERLYING THE RWY 12L FNA CRS, IS RSTRD TO ACFT WITH A TAIL HGT OF 25 FT OR LESS (CRJ−700 OR SMLR) WHEN ACFT ARE LNDG ON RWY 12L.

TWY ECHO, BTN TWY PAPA AND TWY NOVEMBER, RSTRD TO B−767 OR SMLR ACFT (WINGSPAN LESS THAN 171 FT) WHEN ACFT ARE PARKED ON THE ECHO PAD.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

A−GEAR: A−G ARE KEPT IN RECESSED POSN TIL REQ FOR USE. TWR MUST BE NOTIFIED AT LEAST 5 SEC PRIOR TO ENGAGEMENT SO THAT CABLE MAY BE RAISED.

TWY PAPA, EAST OF THE PAPA PAD TO TWY FOXTROT, RSTRD TO ACFT WITH A WINGSPAN OF LESS THAN 79 FT (CRJ−900 OR SMLR), WHEN ACFT ARE PARKED ON THE PAPA PAD. THIS AREA IS RSTRD TO ALL OPNS WHEN ACFT ARE PERFORMING ENG RUN−UPS IN THE PAPA PAD

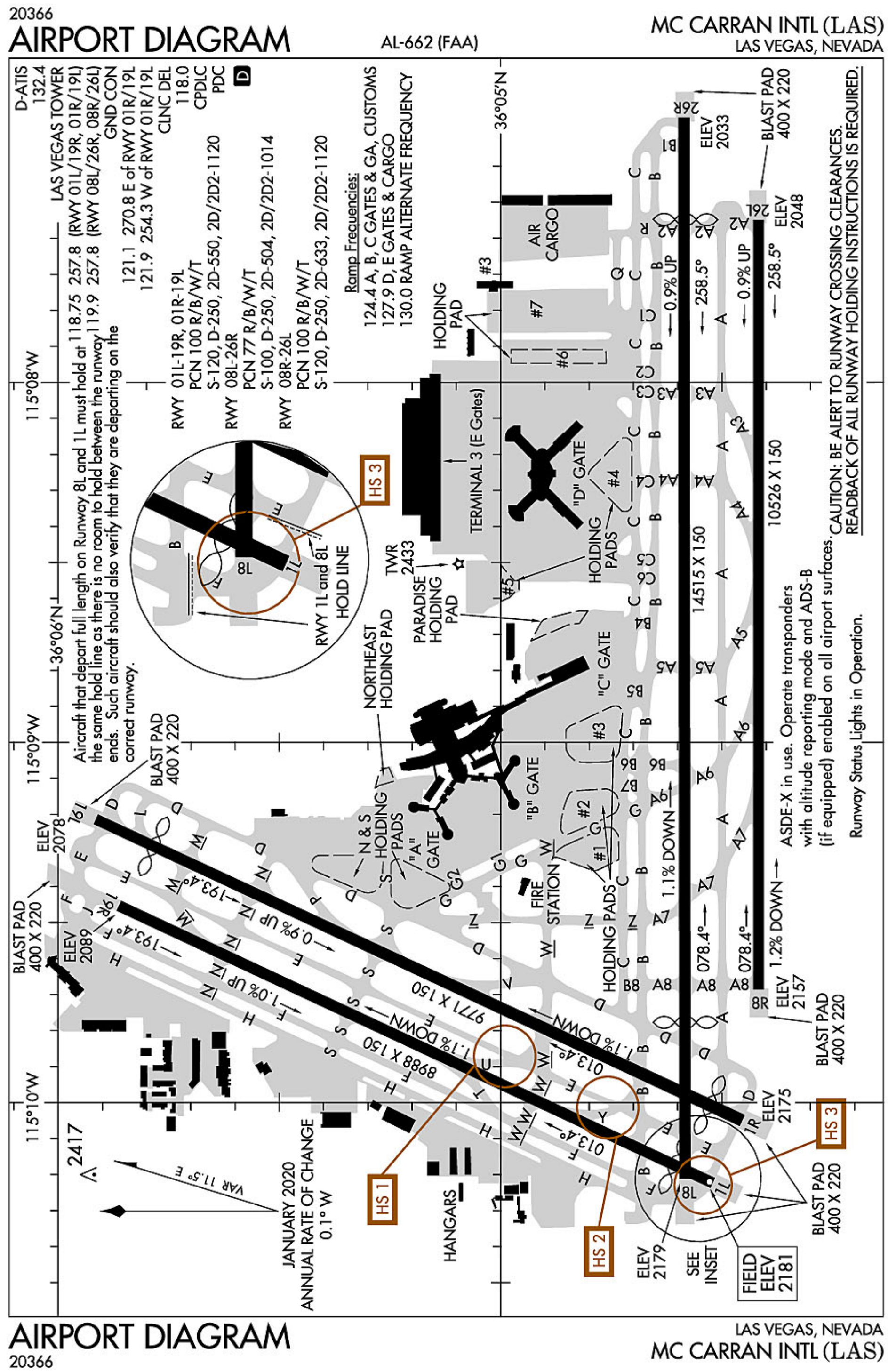
TAXILANE/TWY CHARLIE, EAST OF TWY DELTA ONE TO THE AER 30L, RSTRD TO B−737 OR SMLR ACFT (WINGSPAN LESS THAN 118 FT) WHEN ACFT ARE PARKED ON THE HOTEL PAD.

TAXILANE CHARLIE, FROM TWY PAPA TO TWY QUEBEC, RSTRD TO A B757−300 SERIES OR SMLR.

TAXILANE CHARLIE, FROM TWY PAPA TO TWY DELTA FOUR, RSTRD TO B757−300 SERIES OR SMLR WHEN PASSING BHND ACFT THAT HAVE MADE THE INITIAL 10 FT PUSHBACK.

TWY VICTOR 2, B−737 (WINGSPAN GTR THAN 79 FT BUT LESS THAN 118 FT) MUST PERFORM JUDGMENTAL OVERSTEERING INSTEAD OF COCKPIT OVR CNTRLN STEERING WHEN TAX.

Las Vegas, Nevada
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: 36−4−48.158N / 115−9−8.045W
2.2.2 From City: 5 miles S of LAS VEGAS, NV
2.2.3 Elevation: 2181.2 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: ROSEMARY A. VASSILIADIS
5757 WAYNE NEWTON BLVD
LAS VEGAS, NV 89119
((702) 261−4525)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 01L
2.12.2 True Bearing: 25
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−31.1684N / 115−10−13.3148W
2.12.6 Threshold Elevation: 2181.2 ft
2.12.6 Touchdown Zone Elevation: 2176.1 ft

2.12.1 Designation: 19R
2.12.2 True Bearing: 205
2.12.3 Dimensions: 8988 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−5−51.7658N / 115−9−27.1851W
2.12.6 Threshold Elevation: 2088.5 ft
2.12.6 Touchdown Zone Elevation: 2116.6 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 25
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−27.264N / 115−10−2.9581W
2.12.6 Threshold Elevation: 2175.1 ft
2.12.6 Touchdown Zone Elevation: 2169.8 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 205
2.12.3 Dimensions: 9771 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−5−54.8814N / 115−9−12.8055W
2.12.6 Threshold Elevation: 2077.6 ft
2.12.6 Touchdown Zone Elevation: 2112.1 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 14515 ft x 150 ft
2.12.4 PCN: 77 R/B/W/T
2.12.5 Coordinates: 36−4−34.9211N / 115−10−12.6889W
2.12.6 Threshold Elevation: 2179.2 ft
2.12.6 Touchdown Zone Elevation: 2154.9 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 14515 ft x 150 ft
2.12.4 PCN: 77 R/B/W/T
2.12.5 Coordinates: 36−4−35.0633N / 115−7−15.8989W
2.12.6 Threshold Elevation: 2033 ft
2.12.6 Touchdown Zone Elevation: 2067.1 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10526 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−25.0637N / 115−9−41.1617W
2.12.6 Threshold Elevation: 2156.9 ft
2.12.6 Touchdown Zone Elevation: 2156.9 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10526 ft x 150 ft
2.12.4 PCN: 100 R/B/W/T
2.12.5 Coordinates: 36−4−25.1671N / 115−7−32.9665W
2.12.6 Threshold Elevation: 2048.4 ft
2.12.6 Touchdown Zone Elevation: 2069 ft

AD 2.13 Declared Distances
2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 8988
2.13.3 Take−off 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 Take−off Run Available: 8988
2.13.3 Take−off Distance Available: 9400
2.13.4 Accelerate−Stop Distance Available: 8400
2.13.5 Landing Distance Available: 8400

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 9771
2.13.3 Take−off Distance Available: 10168
2.13.4 Accelerate−Stop Distance Available: 9273
2.13.5 Landing Distance Available: 8782

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 9771
2.13.3 Take−off Distance Available: 10171
2.13.4 Accelerate−Stop Distance Available: 9681
2.13.5 Landing Distance Available: 8803

2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 14512
2.13.3 Take−off Distance Available: 15098
2.13.4 Accelerate−Stop Distance Available: 14098
2.13.5 Landing Distance Available: 11960

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 14512
2.13.3 Take−off Distance Available: 15035
2.13.4 Accelerate−Stop Distance Available: 14035
2.13.5 Landing Distance Available: 12639

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 10525
2.13.3 Take−off 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 Take−off Run Available: 10525
2.13.3 Take−off Distance Available: 10525
2.13.4 Accelerate−Stop Distance Available: 10525
2.13.5 Landing Distance Available: 10525

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 01L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 19L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 118
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR/DEP)
2.18.3 Channel: 132.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (E OF RWY 01R/19L)
2.18.3 Channel: 121.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (W OF RWY

01R/19L)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (W OF RWY 01L/19R)
2.18.3 Channel: 254.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (E OF RWY 01R/19L)
2.18.3 Channel: 270.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 01L/19R, 01R/19L)
2.18.3 Channel: 118.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08L/26R, 08R/26L)
2.18.3 Channel: 119.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP ALTERNATE FREQUENCY
2.18.3 Channel: 130
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (A, B, C GATES & GA, CUSTOMS.)
2.18.3 Channel: 124.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (D, E GATES & CARGO.)
2.18.3 Channel: 127.9
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36−6−1.7244N / 115−9−25.0625W
2.19.6 Site Elevation: 2089.4 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36−4−49.142N / 115−10−6.5151W
2.19.6 Site Elevation: 2158.4 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 11E
2.19.2 ILS Identification: CUA
2.19.5 Coordinates: 36−6−0.8259N / 115−9−22W
2.19.6 Site Elevation: 2078.9 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36−4−30.5228N / 115−10−19.1659W
2.19.6 Site Elevation: 2201.5 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36−4−32.0826N / 115−7−46.6759W
2.19.6 Site Elevation: 2046.5 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 11E
2.19.2 ILS Identification: LAS
2.19.5 Coordinates: 36−4−34.9114N / 115−10−19.1797W
2.19.6 Site Elevation: 2186.3 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36−4−22.2517N / 115−9−53.2672W
2.19.6 Site Elevation: 2182.2 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36−4−21.996N / 115−7−46.6672W
2.19.6 Site Elevation: 2050.4 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 11E
2.19.2 ILS Identification: RLE
2.19.5 Coordinates: 36−4−25.0515N / 115−9−53.3413W
2.19.6 Site Elevation: 2168.2 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 15E

2.19.2 Navigation Aid Identification: LAS
2.19.5 Coordinates: 36−4−46.9253N / 115−9−35.2725W
2.19.6 Site Elevation: 2136 ft

General Remarks:
ACFT OPER NEAR THE INT OF TWYS S, D, G AND THE N END OF TWY Z SHOULD BE ALERT AS THERE ARE CLOSELY ALIGNED TWY CNTRLN AND RADIUS TURNS.

ACFT WITH WINGSPAN GTR THAN 135 FT PPR FM DEPT OF AVN TO USE TWY H.

ACFT THAT DEP FULL LENGTH OF RWYS 01L AND 08L MUST HOLD AT THE SAME HOLD LINE AS THERE IS NO ROOM TO HOLD BTN THE RWY ENDS AND SUCH ACFT SHOULD VERIFY THAT THEY ARE ON THE CORRECT RWY.

GA CUST AND IMG LCTD WEST SIDE OF AFLD BTWN FBO'S.

ACFT TAX WB ON TWY B NEAR TWY E USE CARE NOT TO ENTER THE RWY ON TWY Y, ACFT TAX WB ON TWY W NEAR TWY E USE CARE NOT TO ENTER THE RWY ON TWY U.

ACFT MAY EXPERIENCE REFLECTION OF SUN FM GLASS HOTELS LCTD NW OF ARPT. REFLECTION MAY OCCUR AT VARIOUS ALTS, HDGS, & DSTCS FM ARPT.

ALL NON−STD RWY OPNS PPR FM DEPT OF AVN.

RWY STS LGTS ARE IN OPN.

ACFT DEPG RWY 19R USE MINIMAL PWR UNTIL PASSING THE RWY THLD. RWY 19R THLD HAS STD RWY MARKINGS AND IS 780 FT S OF THE BLAST PAD.

LGTD GOLF RANGE 1400 FT S OF RWYS 01L/19R AND 01R/19L.

RWY 08L 589 FT CWY; RWY 26R 645 FT CWY.

ALL ACFT CTC RAMP CTL ON FREQ 124.4 FOR OPNS AT A,B, AND C GATES; CTC RAMP CTL ON 127.9 FOR OPNS AT D AND E GATES AND CARGO RAMP PRIOR TO ENTERING RAMP OR PUSHING BACK FROM GATE OR PRKG SPOT.

LRG NR OF BIRDS AND BATS INVOF OF ARPT BTWN SS AND SR.

TBJT DEPS NOT PMTD ON RWY 01R/19L OR RWY 01L/19R 2000−0800. XCPNS FOR WX OR OPNL NECESSITY.

EXTSV GLDR/SOARING OPNS WKENDS & HOLS; SR−SS; LAS R187/020; ALTS UP TO BUT NOT INCLG FL180. GLDRS RMN CLEAR OF THE TCA BUT OTHERWISE OPR WI THE ENTIRE SW QUAD OF THE TCA VEIL.

(E98) PLUS 64 SHELTERS & 24 SHEDS.

GA CBP RSVNS ARE RQRD TO BE SMTD A MIN OF 12 HOURS IN ADVN (OTHER CONDS APPLY). RSVNS MUST BE MADE ONLINE AT WWW.MCCARRAN.COM/GACBP . QNS CAN BE DCTD TO CBP559@MCCARRAN.COM. GA ACFT USING THE WEST SIDE CUST FAC MUST CTC RAMP CONTROL 124.4.

TIEDOWN FEE.

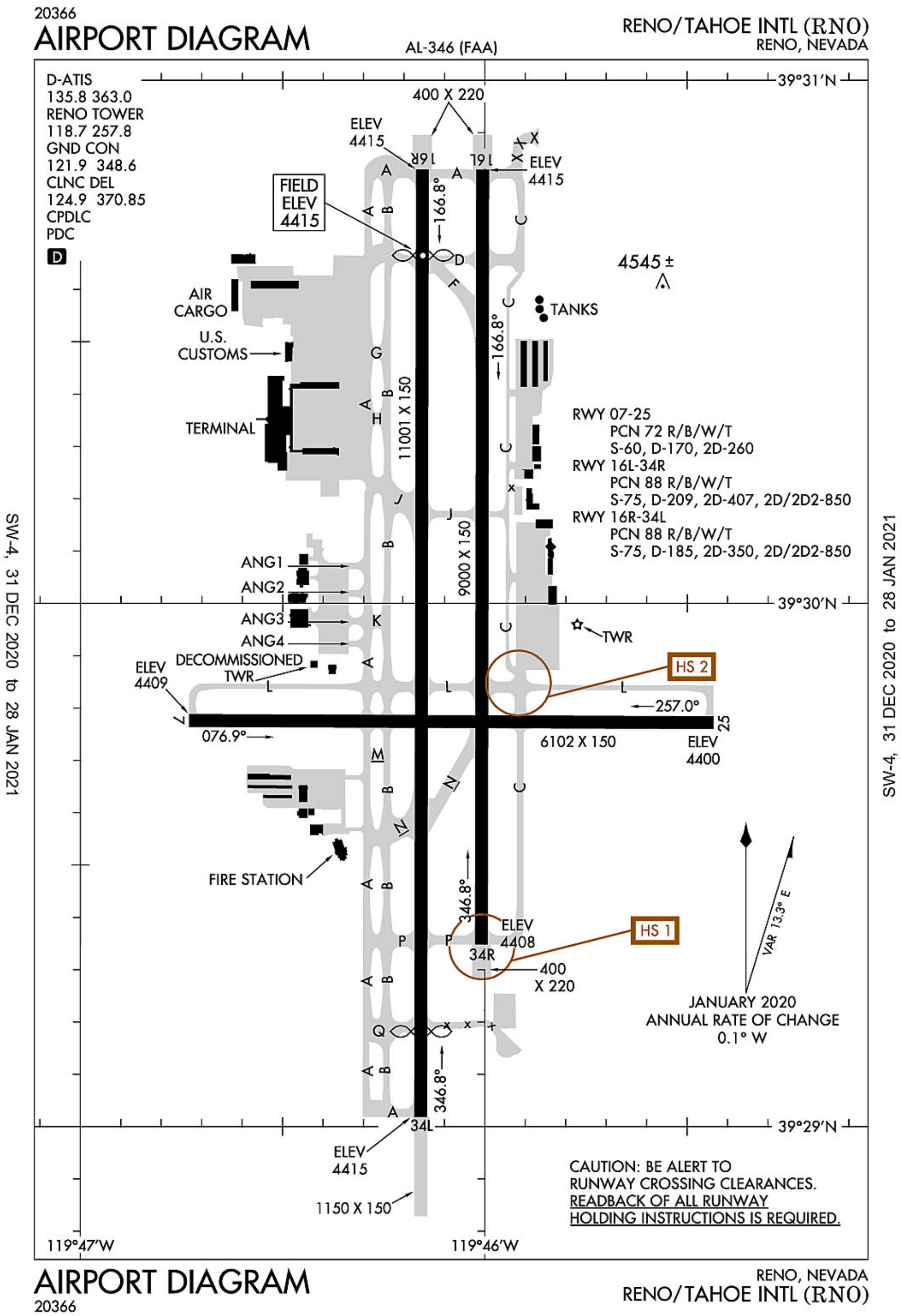
GA PRKG VERY LTD. FOR PRKG AVAILABILITY CTC EITHER FBO (702) 736−1830 OR (702) 739−1100.

ACFT USING FULL LEN DEP ON RWY 08L USE MINIMAL PWR TIL PASSING THE PWR−UP POINT ON RWY. PWR−UP POINT IS 348 FT EAST OF BLAST PAD AND MKD WITH SIGN AND STD MARKINGS FOR BGNG OF RWY.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

NMRS HOP ON WEST SIDE OF ARPT.

Reno, Nevada
Reno/Tahoe International
ICAO Identifier KRNO



Reno, NV
Reno/Tahoe Intl
ICAO Identifier KRNO

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−29−56.8N / 119−46−5.2W
2.2.2 From City: 3 miles SE of RENO, NV
2.2.3 Elevation: 4414.9 ft
2.2.5 Magnetic Variation: 16E (1985)
2.2.6 Airport Contact: DAREN GRIFFIN, A.A.E.
P O BOX 12490
RENO, NV 89510
(775−328−6400)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 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: 39−29−46.6299N / 119−46−43.822W
2.12.6 Threshold Elevation: 4409.2 ft
2.12.6 Touchdown Zone Elevation: 4409.3 ft

2.12.1 Designation: 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: 39−29−46.3739N / 119−45−25.9978W
2.12.6 Threshold Elevation: 4399.6 ft
2.12.6 Touchdown Zone Elevation: 4401.8 ft

2.12.1 Designation: 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: 39−30−49.8258N / 119−46−0.266W
2.12.6 Threshold Elevation: 4414.8 ft
2.12.6 Touchdown Zone Elevation: 4414.8 ft

2.12.1 Designation: 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: 39−29−20.8949N / 119−46−0.4971W
2.12.6 Threshold Elevation: 4408.3 ft
2.12.6 Touchdown Zone Elevation: 4408.3 ft

2.12.1 Designation: 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: 39−30−49.8381N / 119−46−9.1937W
2.12.6 Threshold Elevation: 4414.8 ft
2.12.6 Touchdown Zone Elevation: 4414.8 ft

2.12.1 Designation: 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: 39−29−1.1337N / 119−46−9.475W
2.12.6 Threshold Elevation: 4414.5 ft
2.12.6 Touchdown Zone Elevation: 4410.2 ft

AD 2.13 Declared Distances
2.13.1 Designation: 07
2.13.2 Take−off Run Available: 5854
2.13.3 Take−off 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 Take−off Run Available: 6102
2.13.3 Take−off Distance Available: 6102
2.13.4 Accelerate−Stop Distance Available: 6102
2.13.5 Landing Distance Available: 6102

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 34R
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 11001
2.13.3 Take−off Distance Available: 11001
2.13.4 Accelerate−Stop Distance Available: 11001
2.13.5 Landing Distance Available: 10001

2.13.1 Designation: 34L
2.13.2 Take−off Run Available: 11001
2.13.3 Take−off Distance Available: 11001
2.13.4 Accelerate−Stop Distance Available: 11001
2.13.5 Landing Distance Available: 10011

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 07
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG COMD POST (CALLSIGN−ROLLER OPS.)
2.18.3 Channel: 378.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG COMD POST (CALLSIGN−ROLLER OPS.)
2.18.3 Channel: 8780
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 280
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS (CALLSIGN−ROLLER OPS.)
2.18.3 Channel: 378.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS (CALLSIGN−ROLLER OPS.)
2.18.3 Channel: 8780
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD/P
2.18.3 Channel: 124.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 370.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 135.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 363
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: RNO
2.19.5 Coordinates: 39−28−48.3183N / 119−46−6.1675W
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: 39−30−28.0958N / 119−46−5.6655W
2.19.6 Site Elevation: 4408.4 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: RNO
2.19.5 Coordinates: 39−28−49.5342N / 119−46−9.505W
2.19.6 Site Elevation: 4419.7 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: AGY
2.19.5 Coordinates: 39−31−0.2724N / 119−46−12.5676W
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: 39−29−19.6039N / 119−46−5.3446W
2.19.6 Site Elevation: 4403.3 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: AGY
2.19.5 Coordinates: 39−30−59.9826N / 119−46−9.1647W
2.19.6 Site Elevation: 4433.1 ft

General Remarks:
INTENSIVE GLIDER ACTIVITY INVOF ARPT AND SURROUNDING AREAS UP TO 18000 FT.

MIL ACFT: TSNT ACFT EXECUTE STRAIGHT−IN FULL STOP APCH. OVERHEAD PAT NOT AUTH FOR TSNT ACFT.

MILITARY: ANG OPS 1500−0100Z++ MON−FRI EXC HOL, OTHER TIMES BY NOTAM; DSN 830−4709.

NOISE SENSITIVE AREA ALL QUADS. PILOTS OF TBJT ACFT USE RCMDD NOISE ABATEMENT PROCS; AVBL ON REQ.

TWY C BTN TWY L & TWY D RESTRICTED TO ACFT 100000 LBS OR LESS.

COLD TEMPERATURE RESTRICTED AIRPORT. ALTITUDE CORRECTION REQUIRED AT OR BELOW −15C.

WATERFOWL ALL QUADRANTS ALL SEASONS. CONCENTRATED NW OF RWY 16R AND E OF RWY 16L.

TWY A BETWEEN NORTH TWY B AND TWY D CLSD TO ACFT WITH WINGSPAN GREATER THAN 149 FT.

MIL ACFT: NOISE ABTMT CRITICAL TERMINATE AFTERBURNER ASAP THEN CLIMB TO 6500 FT MSL ASAP.

TWY M CLSD TO AIR CARRIER ACFT.

ALL COMMERCIAL AIRCRAFT CONTACT GROUND CONTROL FOR ADVISORIES PRIOR TO PUSH BACK ON THE TERMINAL RAMP.

NOISE NOTE CONT: PILOTS OF NON−TBJT ACFT USE BEST ABATEMENT PROCS AND SETTINGS. AVOID AS

MUCH AS FEASIBLE FLYING OVER POPULATED AREAS.

TWY J EAST OF RY 16L/34R CLSD TO AIR CARRIER ACFT.

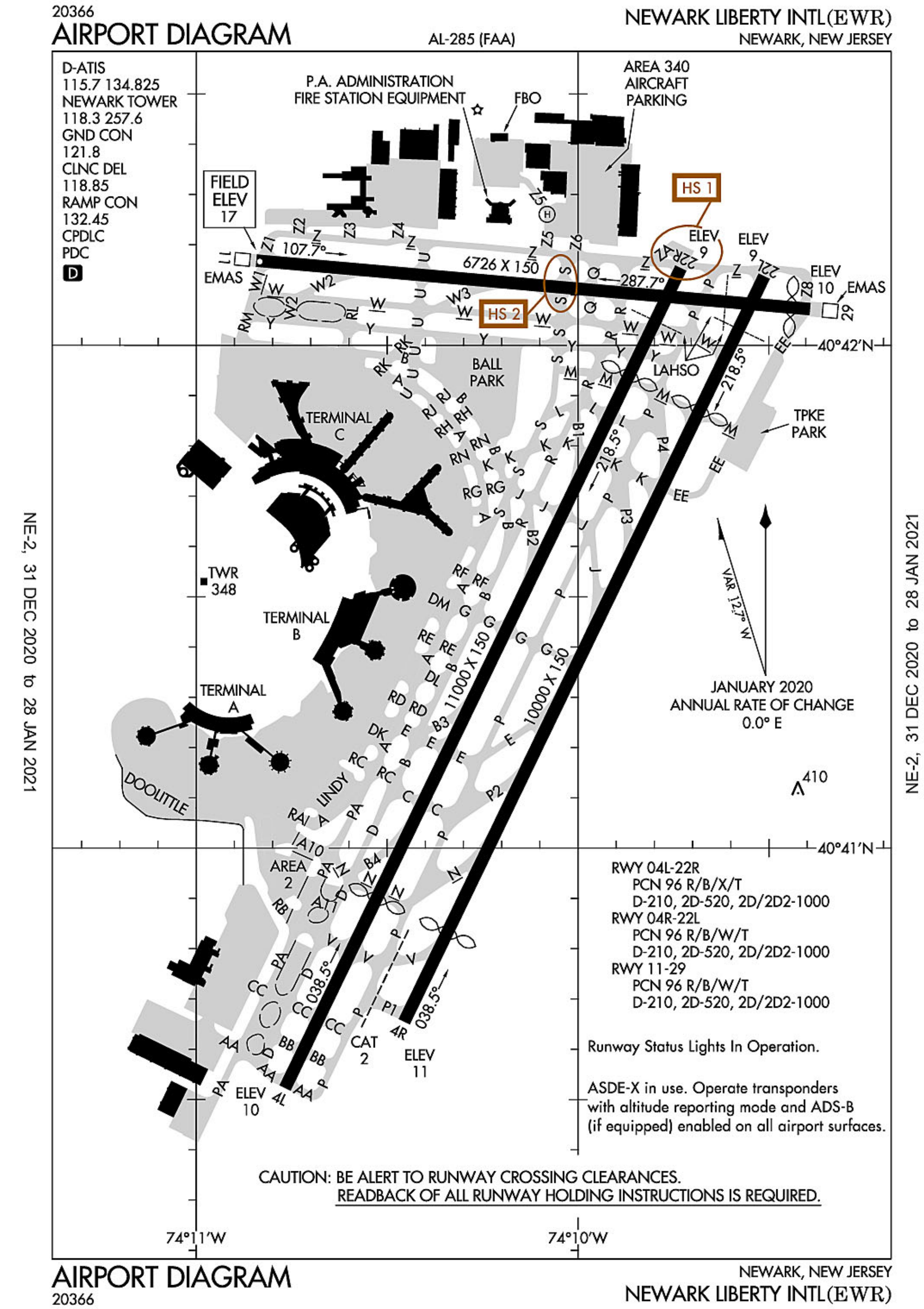
ACFT OVR 12500 LBS: WRITTEN PPR FOR TRG FLIGHTS; FOR FTHR INFO CTC ARPT OPS 1−877−736−6359.

TWY C BETWEEN TWY L AND TWY D CLSD TO AIR CARRIER ACFT.

24 HRS PPR FOR TSNT ACFT PARKING WITH WINGSPANS GREATER THAN 75 FT.

GLIDER/SOARING OPER 30−50 MILES SOUTH OF ARPT DURING VFR WEATHER & MOUNTAIN WAVE WIND CONDITIONS 1100 TO SS.

Newark, New Jersey
Newark Liberty International
ICAO Identifier KEWR



Newark, NJ
Newark Liberty Intl
ICAO Identifier KEWR

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 40−41−32.9274N / 74−10−7.2724W
2.2.2 From City: 3 miles S of NEWARK, NJ
2.2.3 Elevation: 17.4 ft
2.2.5 Magnetic Variation: 13W (1985)
2.2.6 Airport Contact: JAMES GILL
BUILDING #1− CONRAD ROAD
NEWARK, NJ 7114
(973−961−6161)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 04L
2.12.2 True Bearing: 26
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 96 R/B/X/T
2.12.5 Coordinates: 40−40−31.3716N / 74−10−46.0209W
2.12.6 Threshold Elevation: 10.1 ft
2.12.6 Touchdown Zone Elevation: 10.4 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 206
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 96 R/B/X/T
2.12.5 Coordinates: 40−42−9.2091N / 74−9−43.8255W
2.12.6 Threshold Elevation: 8.9 ft
2.12.6 Touchdown Zone Elevation: 10.4 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 206
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−8.2438N / 74−9−30.7308W
2.12.6 Threshold Elevation: 9.4 ft
2.12.6 Touchdown Zone Elevation: 10.7 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 26
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−40−39.2984N / 74−10−27.2835W
2.12.6 Threshold Elevation: 11.1 ft
2.12.6 Touchdown Zone Elevation: 11.3 ft

2.12.1 Designation: 29
2.12.2 True Bearing: 275
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−4.3181N / 74−9−23.5515W
2.12.6 Threshold Elevation: 9.7 ft
2.12.6 Touchdown Zone Elevation: 9.8 ft

2.12.1 Designation: 11
2.12.2 True Bearing: 95
2.12.3 Dimensions: 6726 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 40−42−10.0955N / 74−10−50.5467W
2.12.6 Threshold Elevation: 17.4 ft
2.12.6 Touchdown Zone Elevation: 17.4 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 54 ft x 54 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−42−15.85N / 74−10−5W
2.12.6 Threshold Elevation: 8 ft

2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances

2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 11000
2.13.3 Take−off 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 Take−off Run Available: 11000
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 11000
2.13.5 Landing Distance Available: 9560

2.13.1 Designation: 22L
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 8207

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 8810

2.13.1 Designation: 29
2.13.2 Take−off Run Available: 6726
2.13.3 Take−off Distance Available: 6726
2.13.4 Accelerate−Stop Distance Available: 6726
2.13.5 Landing Distance Available: 6502

2.13.1 Designation: 11
2.13.2 Take−off Run Available: 6726
2.13.3 Take−off Distance Available: 6726
2.13.4 Accelerate−Stop Distance Available: 6726
2.13.5 Landing Distance Available: 6726

2.13.1 Designation: H1
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 04L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 29
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 11
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 118.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WITHIN 6.5 NM ARE TWR CONTROLLED FREQS)
2.18.3 Channel: 127.85
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (WITHIN 6.5 NM ARE TWR CONTROLLED FREQS)
2.18.3 Channel: 257.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 115.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 134.825
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (WITHIN 6.5 NM ARE TWR CONTROLLED FREQS)
2.18.3 Channel: 257.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/S
2.18.3 Channel: 134.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL
2.18.3 Channel: 132.45
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−42−15.686N / 74−9−33.736W
2.19.6 Site Elevation: 34.3 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−41−2.167N / 74−10−22.759W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: EWR
2.19.5 Coordinates: 40−42−18.192N / 74−9−38.112W
2.19.6 Site Elevation: 8.7 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40−42−15.686N / 74−9−33.736W
2.19.6 Site Elevation: 34.3 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40−41−47.5592N / 74−9−53.883W
2.19.6 Site Elevation: 8 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JNN
2.19.5 Coordinates: 40−40−22.392N / 74−10−51.726W
2.19.6 Site Elevation: 9.1 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40−41−43.5471N / 74−9−41.6275W

2.19.6 Site Elevation: 33.5 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40−40−57.598N / 74−10−9.8776W
2.19.6 Site Elevation: 6 ft

2.19.1 ILS Type: Inner Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40−40−41.4774N / 74−10−23.1671W
2.19.6 Site Elevation: 9 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: EZA
2.19.5 Coordinates: 40−42−15.9432N / 74−9−25.8352W
2.19.6 Site Elevation: 8.1 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40−41−43.5471N / 74−9−41.6275W
2.19.6 Site Elevation: 33.5 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40−41−43.6732N / 74−9−41.7368W
2.19.6 Site Elevation: 7.4 ft

2.19.1 ILS Type: Inner Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40−42−1.3147N / 74−9−32.1813W
2.19.6 Site Elevation: 9.4 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: LSQ
2.19.5 Coordinates: 40−40−28.9529N / 74−10−33.8654W
2.19.6 Site Elevation: 9.4 ft

2.19.1 ILS Type: DME for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−9.5406N / 74−10−4.0694W
2.19.6 Site Elevation: 7.1 ft

2.19.1 ILS Type: Glide Slope for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−10.837N / 74−10−35.03W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: Localizer for runway 11. Magnetic variation: 13W
2.19.2 ILS Identification: GPR
2.19.5 Coordinates: 40−42−9.2938N / 74−10−4.9852W
2.19.6 Site Elevation: 7 ft

2.19.1 Navigation Aid Type: FAN MARKER. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: EWR
2.19.5 Coordinates: 40−42−12.1824N / 74−11−14.7211W
2.19.6 Site Elevation: 9.5 ft

General Remarks:
HIGH VOLUME OF LOW LEVEL HEL TFC ARR AND DEP HELO KEARNY HELI (65NJ) LCTD 3.5 MILES NE OF ARPT.

TWY Z5 CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 118 FT.

TWY Z BTN TWY Z2 & Z4 CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

ADG IV ACFT RSTR FM PSG TWY Z3 ON Z

TWY EE BTN RWY 4R−22L AND RWY 11−29 CLSD TO AFCT WITH WINGSPANS IN EXCESS OF 171 FT.

NOISE RSTR CALL 212−435−3784 DRG NML BUS HRS.

FLOCKS OF BIRDS ON & INVOF ARPT.

RWY STATUS LIGHTS IN OPR

TWY Y BTN RM AND TWY U, SPEED RESTRICTION OF 17KT (20MPH).

PARA−SAIL & BANNER TOWING OPS 1000 FT & BLO IN UPPER & LOWER NY BAYS INCLUDING ROCKAWAY INLET INDEF.

TWY PA BTN TWY AA AND RAMP CLSD TO ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

CPDLC DEPARTURE CLEARANCE SERVICE AVAILABLE.

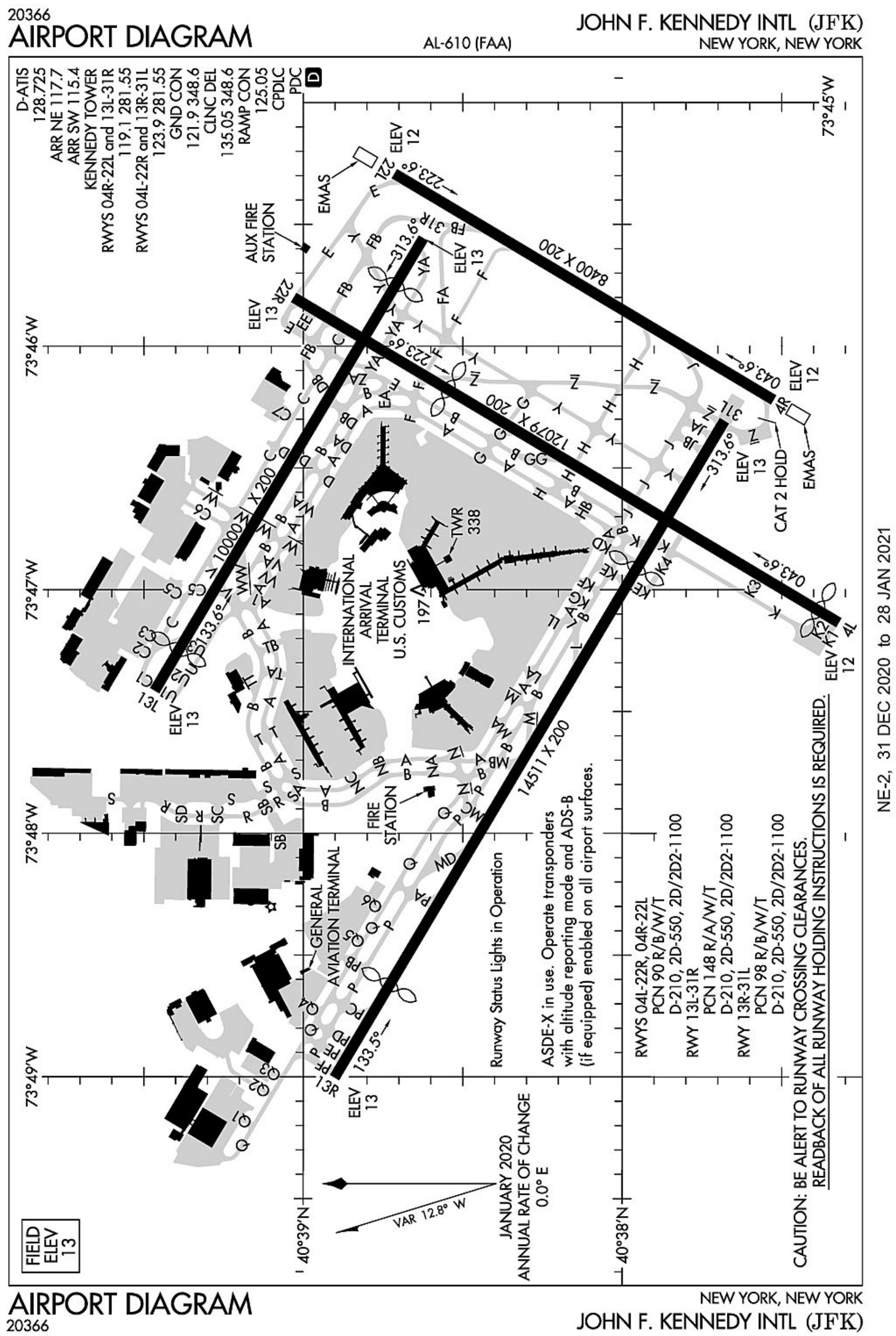
ALL TWYS SURROUNDING ”BALLPARK” PRKG AREA (TWY Y BTN TWY S AND TWY U, TWY S BTN TWY Y AND TWY K, TWAY K BTN TWY S AND TWY B, TWY B BTN TWY K AND TWY U, AND TWY U BTN TWY B AND TWY Y) ACFT SPEED RSTR OF 17KTS/20MPH FOR ALL AFCT WITH WINGSPANS IN EXCESS OF 171 FT.

RWY 4R & 4L DEP USE UPPER ANT FOR ATC COM.

ASDE−X IN USE. OPER TRANSPONDER WITH ALT REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL ARPT SFCS.

TWY Z EAST OF TWY U ACFT SPEED RSTR OF 17 KTS/20 MPH MAX FOR ALL ACFT WITH WINGSPANS IN EXCESS OF 171 FT.

New York, New York
John F. Kennedy International
ICAO Identifier KJFK



New York, NY
John F Kennedy Intl
ICAO Identifier KJFK

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−38−23.74N / 73−46−43.293W
2.2.2 From City: 13 miles SE of NEW YORK, NY
2.2.3 Elevation: 13 ft
2.2.5 Magnetic Variation: 13W (2020)
2.2.6 Airport Contact: CHARLES EVERETT
BLDG 14
JAMAICA, NY 11430
((718) 244−3501)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04L
2.12.2 True Bearing: 31
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40−37−19.2759N / 73−47−8.1038W
2.12.6 Threshold Elevation: 11.9 ft
2.12.6 Touchdown Zone Elevation: 12.7 ft

2.12.1 Designation: 22R
2.12.2 True Bearing: 211
2.12.3 Dimensions: 12079 ft x 200 ft
2.12.4 PCN: 90 R/B/W/T
2.12.5 Coordinates: 40−39−1.8337N / 73−45−47.9596W
2.12.6 Threshold Elevation: 12.7 ft
2.12.6 Touchdown Zone Elevation: 12.7 ft

2.12.1 Designation: 04R
2.12.2 True Bearing: 31
2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40−37−31.532N / 73−46−13.25W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 11.9 ft

2.12.1 Designation: 22L
2.12.2 True Bearing: 211
2.12.3 Dimensions: 8400 ft x 200 ft
2.12.4 PCN: 90 F/B/W/T
2.12.5 Coordinates: 40−38−42.849N / 73−45−17.509W
2.12.6 Threshold Elevation: 11.8 ft
2.12.6 Touchdown Zone Elevation: 11.9 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 121
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 148 R/A/W/T
2.12.5 Coordinates: 40−39−27.9533N / 73−47−24.86W
2.12.6 Threshold Elevation: 13 ft
2.12.6 Touchdown Zone Elevation: 13 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 301
2.12.3 Dimensions: 10000 ft x 200 ft
2.12.4 PCN: 148 R/A/W/T
2.12.5 Coordinates: 40−38−37.4079N / 73−45−33.3832W
2.12.6 Threshold Elevation: 12.7 ft
2.12.6 Touchdown Zone Elevation: 13 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 121
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−38−54.102N / 73−49−0.173W
2.12.6 Threshold Elevation: 12.5 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 301
2.12.3 Dimensions: 14511 ft x 200 ft
2.12.4 PCN: 98 R/B/W/T
2.12.5 Coordinates: 40−37−40.781N / 73−46−18.413W
2.12.6 Threshold Elevation: 12.5 ft
2.12.6 Touchdown Zone Elevation: 12.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04L
2.13.2 Take−off Run Available: 11351
2.13.3 Take−off 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 Take−off Run Available: 12079
2.13.3 Take−off Distance Available: 12079
2.13.4 Accelerate−Stop Distance Available: 11219
2.13.5 Landing Distance Available: 7795

2.13.1 Designation: 04R
2.13.2 Take−off Run Available: 8400
2.13.3 Take−off 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 Take−off Run Available: 8400
2.13.3 Take−off Distance Available: 8400
2.13.4 Accelerate−Stop Distance Available: 8400
2.13.5 Landing Distance Available: 8400

2.13.1 Designation: 13L
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 14511
2.13.3 Take−off 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 Take−off Run Available: 14511
2.13.3 Take−off Distance Available: 14511
2.13.4 Accelerate−Stop Distance Available: 14511
2.13.5 Landing Distance Available: 11248

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 04R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: RLLS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P
2.18.3 Channel: 125.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 135.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC (NORTH & SOUTH)
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (FREQS 2000 FT & BLW W/N 8 NM ARE TWR CNTRLD FREQS)
2.18.3 Channel: 125.25
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (FREQS 2000 FT & BLW W/N 8 NM ARE TWR CNTRLD FREQS)
2.18.3 Channel: 281.55
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS (ARR−SW)
2.18.3 Channel: 115.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR−NE)
2.18.3 Channel: 117.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR/DEP)
2.18.3 Channel: 128.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 04R/22L, 13L/31R)
2.18.3 Channel: 119.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 04L/22R, 13R/31L)
2.18.3 Channel: 123.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 04L/22R, 13R/31L)
2.18.3 Channel: 281.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 04R/22L, 13L/31R)
2.18.3 Channel: 281.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PARCH STAR
2.18.3 Channel: 125.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: RAMP CTL
2.18.3 Channel: 125.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROBER STAR
2.18.3 Channel: 125.7
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−37−43.82N / 73−46−40.578W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Glide Slope for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−37−31.0826N / 73−46−54.9123W
2.19.6 Site Elevation: 9.3 ft

2.19.1 ILS Type: Localizer for runway 04L. Magnetic variation: 13W
2.19.2 ILS Identification: HIQ
2.19.5 Coordinates: 40−39−6.9659N / 73−45−43.9469W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: DME for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC
2.19.5 Coordinates: 40−38−53.286N / 73−45−13.179W
2.19.6 Site Elevation: 29 ft

2.19.1 ILS Type: Glide Slope for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC
2.19.5 Coordinates: 40−38−21.2797N / 73−46−13.9085W
2.19.6 Site Elevation: 8.6 ft

2.19.1 ILS Type: Localizer for runway 22R. Magnetic variation: 13W
2.19.2 ILS Identification: JOC

2.19.5 Coordinates: 40−37−44.5024N / 73−46−43.0851W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: DME for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40−38−53.286N / 73−45−13.179W
2.19.6 Site Elevation: 29 ft

2.19.1 ILS Type: Glide Slope for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40−37−42.1007N / 73−46−11.0535W
2.19.6 Site Elevation: 12.2 ft

2.19.1 ILS Type: Inner Marker for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40−37−23.9N / 73−46−19.1W
2.19.6 Site Elevation: 12 ft

2.19.1 ILS Type: Localizer for runway 04R. Magnetic variation: 13W
2.19.2 ILS Identification: JFK
2.19.5 Coordinates: 40−38−51.57N / 73−45−10.684W
2.19.6 Site Elevation: 12.7 ft

2.19.1 ILS Type: DME for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40−37−43.82N / 73−46−40.578W
2.19.6 Site Elevation: 24 ft

2.19.1 ILS Type: Glide Slope for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40−38−32.9529N / 73−45−19.9899W
2.19.6 Site Elevation: 13.1 ft

2.19.1 ILS Type: Inner Marker for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40−38−51.13N / 73−45−11.04W
2.19.6 Site Elevation: 12 ft

2.19.1 ILS Type: Localizer for runway 22L. Magnetic variation: 13W
2.19.2 ILS Identification: IWY
2.19.5 Coordinates: 40−37−27.513N / 73−46−16.387W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: DME for runway 13L. Magnetic variation: 13W
2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40−38−33.543N / 73−45−18.237W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Glide Slope for runway 13L. Magnetic variation: 13W
2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40−39−14.7571N / 73−47−4.857W
2.19.6 Site Elevation: 10.5 ft

2.19.1 ILS Type: Localizer for runway 13L. Magnetic variation: 13W
2.19.2 ILS Identification: TLK
2.19.5 Coordinates: 40−38−30.687N / 73−45−18.566W
2.19.6 Site Elevation: 14.1 ft

2.19.1 ILS Type: DME for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40−38−33.543N / 73−45−18.237W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Glide Slope for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40−38−50.3237N / 73−45−51.0237W
2.19.6 Site Elevation: 9.5 ft

2.19.1 ILS Type: Localizer for runway 31R. Magnetic variation: 13W
2.19.2 ILS Identification: RTH
2.19.5 Coordinates: 40−39−30.778N / 73−47−31.088W
2.19.6 Site Elevation: 11.9 ft

2.19.1 ILS Type: Glide Slope for runway 31L. Magnetic variation: 13W
2.19.2 ILS Identification: MOH
2.19.5 Coordinates: 40−37−59.8702N / 73−47−9.4213W
2.19.6 Site Elevation: 8.7 ft

2.19.1 ILS Type: Localizer for runway 31L. Magnetic variation: 13W
2.19.2 ILS Identification: MOH
2.19.5 Coordinates: 40−38−59.645N / 73−49−12.422W
2.19.6 Site Elevation: 13.7 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 12W

2.19.2 Navigation Aid Identification: JFK
2.19.5 Coordinates: 40−37−58.4N / 73−46−17W
2.19.6 Site Elevation: 11 ft

General Remarks:
PERIODIC FIRE DEPT TRNG ADJACENT APCH END OF RWYS 22L & 22R.

CONTINUOUS TAXIWAY MAINTENANCE ACTIVITIES AT NUMEROUS LOCATIONS

NON−STD MARKINGS IN GA APN, CTC SHELTAIR/FBO ON UNICOM OR 347−566−6620 FOR WING WALKERS.

RY 13R HAS TWO (2) PAPI − P4L SYSTEMS. (RY 13R) OFFSET PAPI SUPPORTS VOR OR GPS RWY 13R & PARKWAY VISUAL RY 13R.

METERING PROCEDURES IN EFFECT− CONTACT RAMP CONTROL PRIOR TO PUSHBACK 1200Z−1500Z DAILY/1900Z−0300Z DAILY.

TWY 'H' CL LGTS BTN TWY 'A' & RY 4L/22R OTS.

FOR NOISE ABATEMENT RESTRICTIONS CALL 212−435−3747 DURING NORMAL BUSINESS HOURS.
TWY Q3 CNTRLN LGTS OTS.

ACFT ARE NOT PMTD TO STOP ON EITHER TWY A OR B BRIDGES.

CONVERGING OPNS ON RYS 13R AND 22L CONDUCTED VIA ARRIVAL DISTANCE WINDOW.

PARA−SAIL & BANNER TOWING OPNS 1000 FT & BLO IN UPPER & LOWER NEW YORK BAYS INCLUDING ROCKAWAY INLET INDEFLY.

FLOCKS OF BIRDS ON & INVOF ARPT.

NON−STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 393 FT IN LENGTH BY 226 FT IN WIDTH LCTD AT THE DER 4R.

NON−STANDARD ENGINEERED MATERIALS ARRESTING SYSTEM (EMAS) 405 FT IN LENGTH BY 226 FT IN WIDTH LCTD AT THE DER 22L.

GAT HELIPAD NON−STANDARD MARKINGS & LIGHTING.

HIGH VOLUME OF LOW LEVEL VFR TRAFFIC, 500 FT AND BLO, ALONG SHORELINE SOUTH OF JFK.

SPECIAL AIR TFC RULES−PART 93 HIGH DENSITY ARPT. PROR RESERVATION REQUIRED. SEE AERONAUTICAL INFORMATION MANUAL.

TWY 'H' CL LGTS BTN TERMINAL 4 RAMP AND TWY A OTS.

RY 31R HOLDING POSITION MARKINGS AT RY 4L/22R 'SE' SIDE OBSC.

TWY NB CLSD TO SB TURNS AT TWY A.

UFN TWY 'D' BTN TWY 'C' AND HANGAR 7 CLOSED.

OBST BLDG LGT OTS 6.3 NM ESE JFK 222 FT MSL (220 FT AGL).

RWY 31R 1000 FT DIST REMAINING SIGN MISG.

RWY STATUS LGTS IN OPS.

RLLS RY 13L USES 1000 FT LGT STN OF THE ALS ONLY WITH CRI VOR APCHS & IS ANGLED TOWARD AQUEDUCT; ALSO 5 SFL FM 1200−2000 FT & A 5 SFL GROUPING APROXLY 1 MI FM RY +1 ADJ FORMING APCH. APCH GATE ANGLED 35 DEGS S OF RY 13L CNTRLN DESIGNED TO PRVD EARLIER IDENT OF RY ENVI.

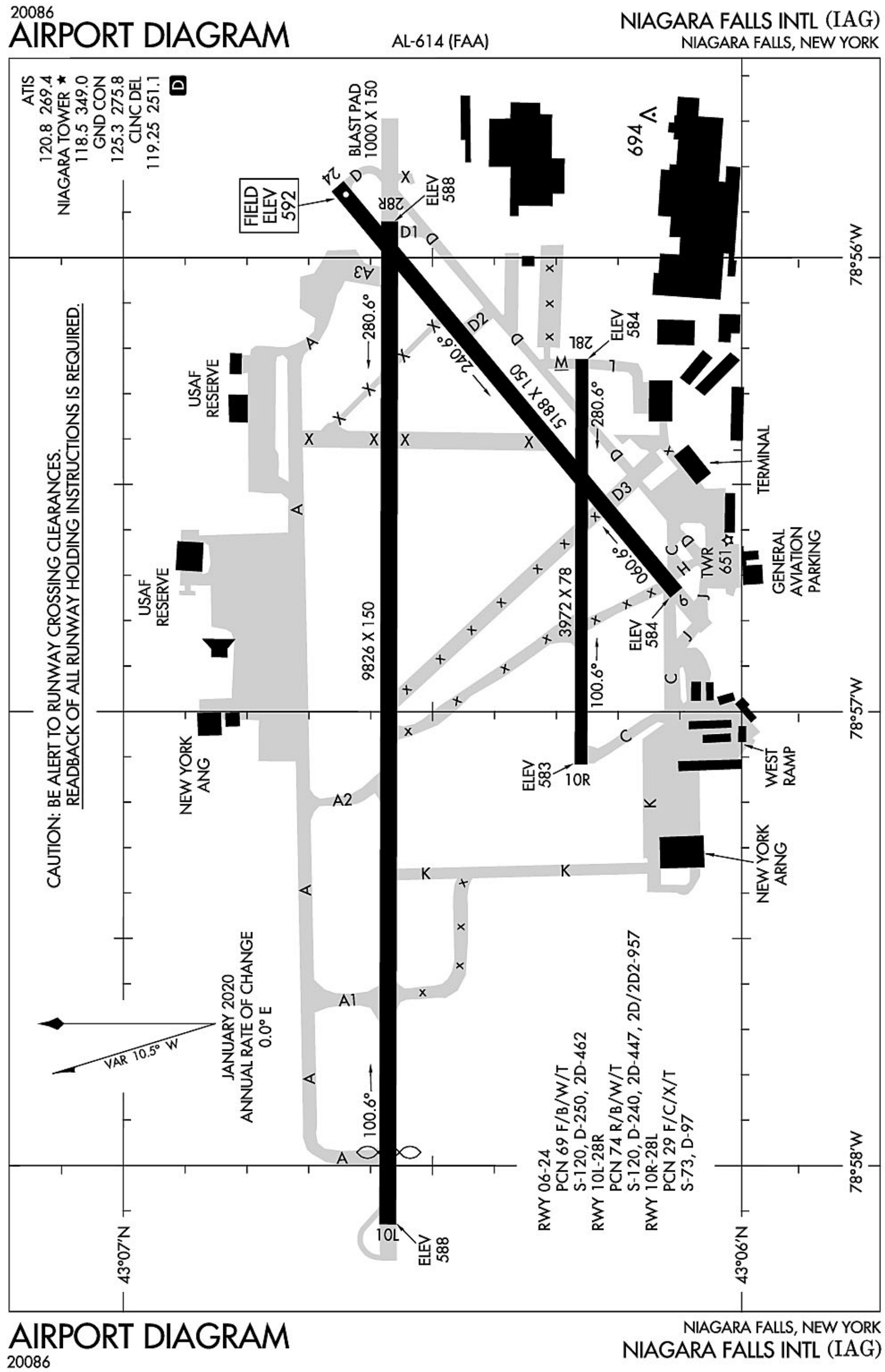
ACFT OPS & TWY RESTRICTIONS EXIST FOR A380, B747−800, B777−300ER, A340−600 AND A350−1000. PLEASE CTC JFK ARPT OPS FOR MORE INFO.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY 'A' BTN TWY 'NA' & TWY 'NB' ARCFT SPEED RESTRICTION OF 17KTS/20MPH MAXIMUM FOR A380, B747−800, B747−400, B777−300ER, B777−200, A340,A330, B787, AND A350

RY 13L HOLDING POSITION MARKINGS AT RY 4L/22R 'NW' SIDE OBSC.

Niagara Falls, New York
Niagara Falls International
ICAO Identifier KIAG



Niagara Falls, NY
Niagara Falls Intl
ICAO Identifier KIAG

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 43−6−27.2065N / 78−56−45.048W
2.2.2 From City: 4 miles E of NIAGARA FALLS, NY
2.2.3 Elevation: 592.3 ft
2.2.5 Magnetic Variation: 10W (1985)
2.2.6 Airport Contact: MR. ROBERT STONE
2035 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304
((716) 297−4494)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A+
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 7/1/1974

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 50
2.12.3 Dimensions: 5188 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 43−6−6.3587N / 78−56−44.2955W
2.12.6 Threshold Elevation: 584.3 ft
2.12.6 Touchdown Zone Elevation: 585.8 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 230
2.12.3 Dimensions: 5188 ft x 150 ft
2.12.4 PCN: 69 F/B/W/T
2.12.5 Coordinates: 43−6−39.1997N / 78−55−50.6072W
2.12.6 Threshold Elevation: 592.2 ft
2.12.6 Touchdown Zone Elevation: 592.3 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−6−34.3453N / 78−58−7.7703W
2.12.6 Threshold Elevation: 588.2 ft
2.12.6 Touchdown Zone Elevation: 588.8 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9826 ft x 150 ft
2.12.4 PCN: 74 R/B/W/T
2.12.5 Coordinates: 43−6−34.1594N / 78−55−55.3156W
2.12.6 Threshold Elevation: 587.9 ft
2.12.6 Touchdown Zone Elevation: 588.3 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43−6−15.6025N / 78−57−7.0063W
2.12.6 Threshold Elevation: 582.6 ft
2.12.6 Touchdown Zone Elevation: 584.1 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 3972 ft x 78 ft
2.12.4 PCN: 29 F/C/X/T
2.12.5 Coordinates: 43−6−15.507N / 78−56−13.4609W
2.12.6 Threshold Elevation: 584.2 ft
2.12.6 Touchdown Zone Elevation: 584.8 ft

AD 2.13 Declared Distances

2.13.1 Designation: 06
2.13.2 Take−off Run Available: 5188
2.13.3 Take−off 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 Take−off Run Available: 5188

2.13.3 Take−off Distance Available: 5188
2.13.4 Accelerate−Stop Distance Available: 5108
2.13.5 Landing Distance Available: 5108

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 9829
2.13.3 Take−off 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 Take−off Run Available: 9829
2.13.3 Take−off Distance Available: 10529
2.13.4 Accelerate−Stop Distance Available: 9129
2.13.5 Landing Distance Available: 9129

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 3973
2.13.3 Take−off 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 Take−off Run Available: 3973
2.13.3 Take−off Distance Available: 3973
2.13.4 Accelerate−Stop Distance Available: 3973
2.13.5 Landing Distance Available: 3973

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P2L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P2L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: AFRC OPS
2.18.3 Channel: 340.24
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 120.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 269.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 119.25
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: CD/P
2.18.3 Channel: 251.1
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: COMD POST (914 AW COMD POST/AFLD MGMT)
2.18.3 Channel: 340.025
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243

2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: GND/P
2.18.3 Channel: 275.8
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.5
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 349
2.18.5 Hours of Operation: 0700−2300

2.18.1 Service Designation: NG OPS
2.18.3 Channel: 41
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids

General Remarks:
CAUTION: HEAVY CONCENTRATIONS OF GULLS−BLACKBIRDS−STARLINGS UP TO 5000 AGL ON & INVOF ARPT. BASH PHASE II OPERATIONS AT KIAG MAR−MAY AND SEP−NOV.

FLUID: SP.

JASU: 2(A/M32A−86) 1(AM32A−60) 1(MA−1A).

FUEL: J8, A++ (MIL).

MISC: LOCAL MISSION AIRCRAFT HAVE PRIORITY FOR DEICING; FULL AIRCRAFT DEICING FOR C−17 AND C−5 AIRCRAFT NOT AVAILABLE.

ALL MIL ACFT ONLY MINIMAL CLASSIFIED MATERIALS AVBL; AIRCREWS SHOULD ARRIVE WITH APPROPRIATE AMOUNT TO COMPLETE THEIR MISSION.

EXTSV ACFT ACTIVITY OPERATING INVOF US/CANADIAN FALLS ALL ALTS.

RWY 28R 1000 FT BY 150 FT BLAST PAD

AFLD MGMT DOES NOT ISSUE OR STORE COMSEC, FOR COMSEC STORAGE CTC COMMAND POST DSN 238−2150, C716−236−2150.

TWY ”E” CLSD INDEFLY FM RY 10L/28R TO RY 06/24.

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43−6−30.0921N / 78−56−16.6451W
2.19.6 Site Elevation: 582.8 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43−6−34.3589N / 78−58−18.8146W
2.19.6 Site Elevation: 585.1 ft

2.19.1 ILS Type: Outer Marker for runway 28R. Magnetic variation: 10W
2.19.2 ILS Identification: IAG
2.19.5 Coordinates: 43−6−32.5184N / 78−50−18.2195W
2.19.6 Site Elevation: 614.9 ft

2.19.1 Navigation Aid Type: TACAN. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: IAG
2.19.5 Coordinates: 43−6−45.1638N / 78−57−36.8623W
2.19.6 Site Elevation: 591.5 ft

OIL: O−148(MIL).

BEARING STRENGTH RWY 06/24: ST110 TT145 SBTT281TDT415 TRT252.

REMARKS − MISC: FOR CURRENT MIL RY CONDITION READING (RCR) CALL OR CTC 914 AW COMD POST OR 914TH AW AFLD MGMT.

REMARKS: SEE FLIP AP/1 SUPPLEMENTARY ARPT RMK.

AFRC/ANG: NSTD OPS APN MRKS IDENTIFYING PRKG ROW AND PRKG LCTN. NSTD MAIN APN MRKS PRKG STOP BAR AND ACFT GND EQPT (AGE) BOX.

ALL MIL ACFT ONLY OPNS RESTRICTED DURING BIRD WATCH CONDITIONS. MODERATE − TKOF & LDG PERMISSION ONLY WNEN DEP/ARR RTE AVOIDS IDENTIFIED BIRD ACTIVITY; NO LCL IFR/VFR TFC PAT ACTIVITY. SEVERE − TKOF & LDG PHOHIBITED WO OG/CC APPROVAL; CTC COMMAND POST FOR CURRENT BIRD WATCH CONDITIONS.

TWY D3 RSTRD TO 12500 LBS OR LESS.

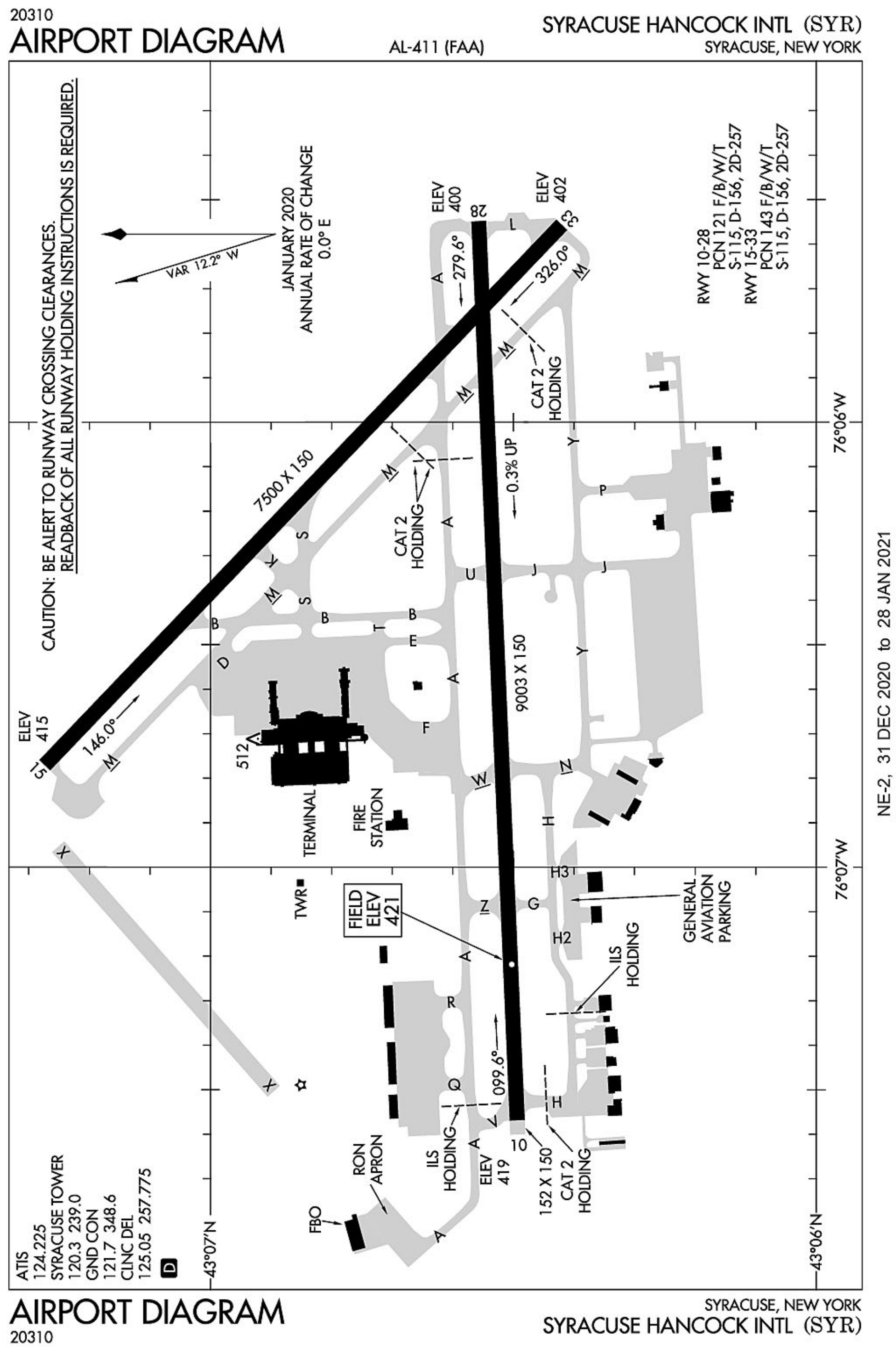
AFRC/ANG: CSTMS/AG/IMG SVC NOT LCTD ON NIAGARA FALLS ARS. RQR COORD 72 HR ADVANCE NTC TO ARRANGE U.S. CSTMS PERS FM ONE OF CROSSING BRIDGES TO PROVIDE SVC. SVC AVBL H24.

TWY ”E” CLSD PERMLY BETWEEN TWY’S ”C” AND ”D”.

PPR CTC AFLD MGT DSN: 238−2175, C716−236−2175.

MILITARY: AFRC/ANG: AIRFIELD OPS SVC 1200−0400Z++ MON−FRI EXC HOL.

Syracuse, New York
Syracuse Hancock International
ICAO Identifier KSYR



Syracuse, NY
Syracuse Hancock Intl
ICAO Identifier KSYR

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 43−6−40.3N / 76−6−22.7W
2.2.2 From City: 4 miles NE of SYRACUSE, NY
2.2.3 Elevation: 421.4 ft
2.2.5 Magnetic Variation: 13W (2000)
2.2.6 Airport Contact: JASON TERRERI
1000 COL EILEEN COLLINS BLVD
SYRACUSE, NY 13212
(315−454−3263)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10
2.12.2 True Bearing: 87
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43−6−29.5196N / 76−7−34.1499W
2.12.6 Threshold Elevation: 419.2 ft
2.12.6 Touchdown Zone Elevation: 421.4 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 267
2.12.3 Dimensions: 9003 ft x 150 ft
2.12.4 PCN: 121 F/B/W/T
2.12.5 Coordinates: 43−6−33.5075N / 76−5−32.9118W
2.12.6 Threshold Elevation: 400.4 ft
2.12.6 Touchdown Zone Elevation: 412.7 ft

2.12.1 Designation: 15
2.12.2 True Bearing: 134
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43−7−16.4186N / 76−6−46.2014W
2.12.6 Threshold Elevation: 415.4 ft
2.12.6 Touchdown Zone Elevation: 416.8 ft

2.12.1 Designation: 33
2.12.2 True Bearing: 314
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 143 F/B/W/T
2.12.5 Coordinates: 43−6−25.1093N / 76−5−33.2759W
2.12.6 Threshold Elevation: 401.7 ft
2.12.6 Touchdown Zone Elevation: 409.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10
2.13.2 Take−off Run Available: 9003
2.13.3 Take−off 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 Take−off Run Available: 9003
2.13.3 Take−off 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 Take−off Run Available: 7500
2.13.3 Take−off 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 Take−off Run Available: 7500
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 33
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 379.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 134.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 126.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 269.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: AR OPS
2.18.3 Channel: 245.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 124.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 125.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 257.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 126.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 269.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 239
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−31.27N / 76−5−20.92W
2.19.6 Site Elevation: 390.5 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−26.02N / 76−7−20.146W
2.19.6 Site Elevation: 422.6 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: MRZ
2.19.5 Coordinates: 43−6−33.96N / 76−5−19.01W
2.19.6 Site Elevation: 395.6 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−31.27N / 76−5−20.92W
2.19.6 Site Elevation: 390.5 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−39.474N / 76−5−46.433W
2.19.6 Site Elevation: 404.1 ft

2.19.1 ILS Type: Inner Marker for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−34.1N / 76−5−18.52W
2.19.6 Site Elevation: 395 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 13W
2.19.2 ILS Identification: SYR
2.19.5 Coordinates: 43−6−28.943N / 76−7−51.655W
2.19.6 Site Elevation: 416.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: SYR
2.19.5 Coordinates: 43−9−37.8684N / 76−12−16.4106W
2.19.6 Site Elevation: 453.2 ft

General Remarks:
DEER/COYOTE/BIRDS ON INVOF ARPT.

NON−STD MKG ON MIL RAMP.

ANG: HVY ACFT CTC ARPT COMMISSIONER FOR PRK AVBL AT C315−455−3666. ALL TRAN ACFT RQR NS ABTMT BRIEFING.

UAS OPS IN SYRACUSE APCH/DEP AIRSPACE WILL BE CONTROLLED BY SYR ATC AT ALL TIMES.

NO TSNT ACFT PARKING ON MAIN TERMINAL RAMP.

DIRECT CUSTOM NOTIFICATION IS REQUIRED. HOURS OF NOTIFICATION ARE MON−SAT 0800−1700. ARRIVALS OUTSIDE OF THESE HRS MUST MAKE ARRANGEMENTS DURING REGULAR WORK HRS; CALL 315−455−2271.

HVY ACFT CTC ARPT COMMISSIONER FOR PRK AVBL AT C315−455−3263. LIMITED METRO AVAIL AT DSN 243−2185. C315−233−2185 OR CTC OWS DSN 576−9755/9702. ALL TRAN ACFT REQ NOISE ABATEMENT BRIEFING.

NO CHARTER OPER THRU PASSENGER TERMINAL BLDG WITHOUT PRIOR PERMISSION.

RSTD: TWY J AND P SOUTH OF TWY Y CLSD TO CIV OPS.

NOISE ABATEMENT PROCEDURES IN EFFECT.

FIELD CONDITION REPORTS RECORDING AVAILABLE CALL 315−455−3444.

MILITARY: COMMUNICATIONS − ANG − OPS − 140.425 379.5 REMARKS: (COBRA OPS) CTC ANG OPS 15 MIN PRIOR TO ARR.

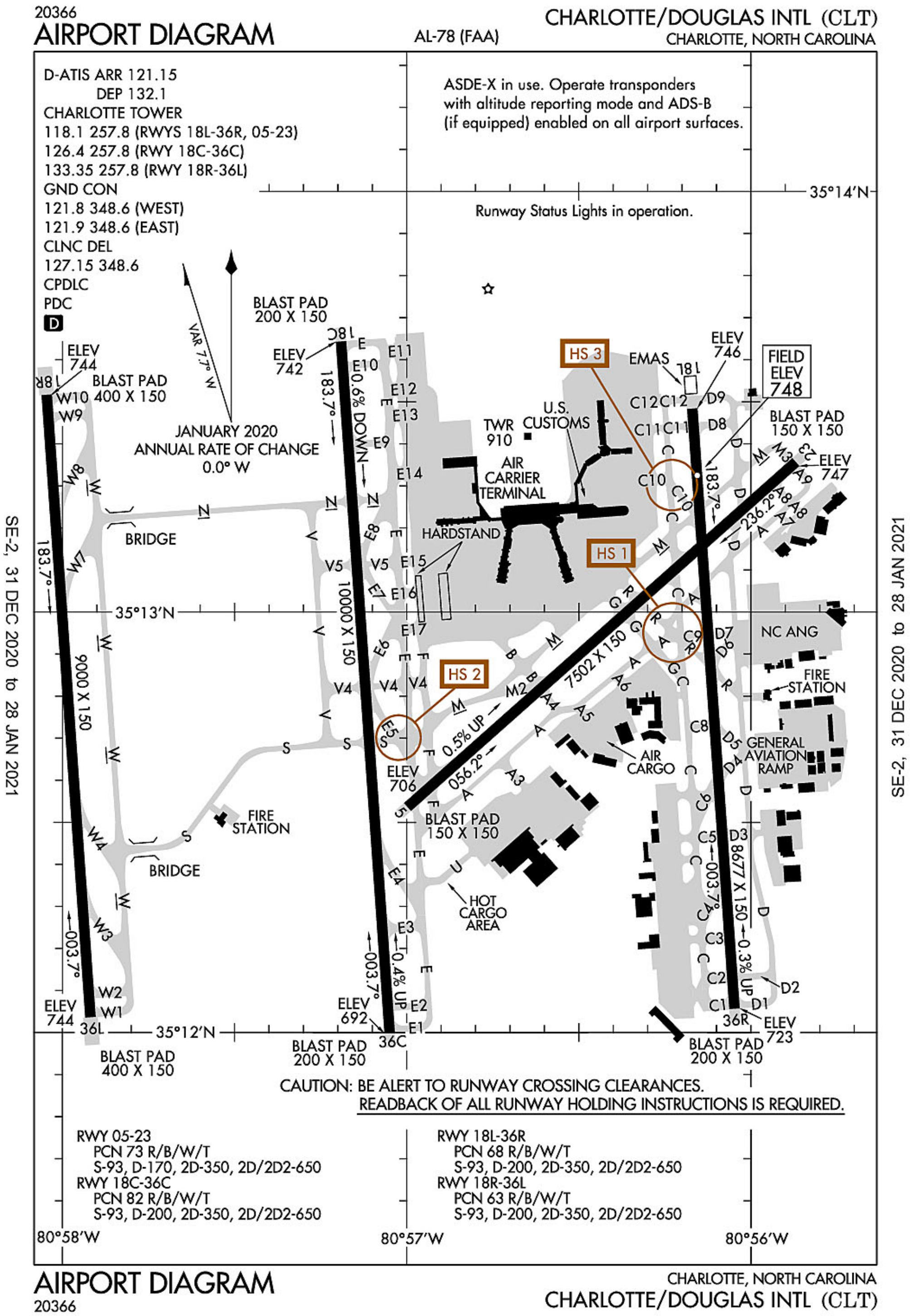
NO JET ENGINE MAINT RUNS ABOVE IDLE BTWN 2300−0600.

CAUTION: TWY J AND P SOUTH OF TWY Y AND ANG RAMP HAVE UNCTL VEH AND EQPT TFC.

UAS OPERATE WITHIN THE CONFINES OF THE SYRACUSE CLASS C, TIMES VARY.

MILITARY: ANG: OPR 1030−2100Z++ MON−THUR EXC HOL. PPR TRANS ACFT OFFL BUS ONLY. AFLD MGR DSN 243−2398, C315−233−2398, AFT DUTY HR CTC C315−233−2398. PPR REQ FOR ALL TRAN ACFT DUE LTD TRANS SVC. NTFY AFLD MGR OF ETA DELAY OVER 30 MIN OR MSN CNL IS RQR.

Charlotte, North Carolina
Charlotte/Douglas International
ICAO Identifier KCLT



Charlotte, NC
Charlotte/Douglas Intl
ICAO Identifier KCLT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−12−49.5N / 80−56−56.6W
2.2.2 From City: 5 miles W of CHARLOTTE, NC
2.2.3 Elevation: 747.9 ft
2.2.5 Magnetic Variation: 7W (2000)
2.2.6 Airport Contact: BRENT CAGLE
5601 WILKINSON BLVD.
CHARLOTTE, NC 28208
(704−359−4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 23
2.12.2 True Bearing: 228
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35−13−21.4183N / 80−55−52.1235W
2.12.6 Threshold Elevation: 746.7 ft
2.12.6 Touchdown Zone Elevation: 746.7 ft

2.12.1 Designation: 05
2.12.2 True Bearing: 48
2.12.3 Dimensions: 7502 ft x 150 ft
2.12.4 PCN: 73 R/B/W/T
2.12.5 Coordinates: 35−12−32.2287N / 80−56−59.8045W
2.12.6 Threshold Elevation: 705.9 ft
2.12.6 Touchdown Zone Elevation: 715.6 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 176
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 35−13−38.6269N / 80−57−11.4094W
2.12.6 Threshold Elevation: 742 ft
2.12.6 Touchdown Zone Elevation: 742 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 356
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 82 R/B/W/T
2.12.5 Coordinates: 35−11−59.9721N / 80−57−2.9217W
2.12.6 Threshold Elevation: 692.2 ft
2.12.6 Touchdown Zone Elevation: 706.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 176
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35−13−29.0474N / 80−56−10.1652W
2.12.6 Threshold Elevation: 746 ft
2.12.6 Touchdown Zone Elevation: 747.9 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 356
2.12.3 Dimensions: 8677 ft x 150 ft
2.12.4 PCN: 68 R/B/W/T
2.12.5 Coordinates: 35−12−3.4456N / 80−56−2.822W
2.12.6 Threshold Elevation: 723.4 ft
2.12.6 Touchdown Zone Elevation: 726.9 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 176
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 35−13−31.0182N / 80−58−2.707W
2.12.6 Threshold Elevation: 744 ft
2.12.6 Touchdown Zone Elevation: 744 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 356
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 35−12−2.2277N / 80−57−55.0671W
2.12.6 Threshold Elevation: 743.9 ft
2.12.6 Touchdown Zone Elevation: 743.9 ft

AD 2.13 Declared Distances
2.13.1 Designation: 23
2.13.2 Take−off Run Available: 7502

2.13.3 Take−off Distance Available: 7502
2.13.4 Accelerate−Stop Distance Available: 7502
2.13.5 Landing Distance Available: 7502

2.13.1 Designation: 05
2.13.2 Take−off Run Available: 7502
2.13.3 Take−off Distance Available: 7502
2.13.4 Accelerate−Stop Distance Available: 7092
2.13.5 Landing Distance Available: 7092

2.13.1 Designation: 18C
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 8676
2.13.3 Take−off 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 Take−off Run Available: 8676
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off 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: 23
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 05
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ALCP
2.18.3 Channel: 292.25
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (120−295 8000 FT & BLW)
2.18.3 Channel: 120.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (246−074 ABV 8000 FT)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC

(075−245 ABV 8000 FT)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (001−119 8000 FT & BLW)
2.18.3 Channel: 128.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (296−360 8000 FT & BLW)
2.18.3 Channel: 134.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (180−359)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (360−179)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BANKR STAR
2.18.3 Channel: 135.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BANKR STAR
2.18.3 Channel: 377.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BARMY DP
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BARMY DP
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEAVY DP (RWY 36L, 36C)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEAVY DP (RWY 05, 18L, 18R, 18C, 23, 36R)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEAVY DP (RWY 36L, 36C)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEAVY DP (RWY 05, 18R, 18L, 18C, 23, 36R)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOBZY DP
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOBZY DP
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BTSEY STAR
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (BUCKL, HARAY & PITTY TRANSITIONS. RWY 36L, 36C)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (RWY 05, 18L, 18R, 18C, 23, 36R)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (BUCKL, GANTS, LILLS & RUNIE TRANSITIONS.)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (BUCKL, HARAY & PITTY TRANSITION. RWY 36L, 36C)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (GANTS, LILLS & RUNIE TRANSITIONS)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHARLOTTE DP (BUCKL TRANSITION, RWY 05, 18L, 18R, 18C, 23, 36R)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHPTR STAR
2.18.3 Channel: 135.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHPTR STAR
2.18.3 Channel: 377.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHSLY STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CHSLY STAR
2.18.3 Channel: 282.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (120−295 8000 FT & BLW)
2.18.3 Channel: 120.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (246−074 ABV 8000 FT)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (075−245 ABV 8000 FT)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (001−119 8000 FT & BLW)
2.18.3 Channel: 128.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (296−360 8000 FT & BLW)
2.18.3 Channel: 134.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (180−359)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (360−179)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 121.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 132.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: ESTRR DP
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ESTRR DP
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FILPZ STAR
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FILPZ STAR
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (EAST)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ICONS DP (RWY 36L, 36C)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ICONS DP (RWY 05, 18L, 18R, 18C, 23, 36R)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ICONS DP (RWY 36L, 36C)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ICONS DP (RWY 05, 18R, 18L, 18C, 23, 36R)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JOJJO DP
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JOJJO DP
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JONZE STAR
2.18.3 Channel: 135.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JONZE STAR
2.18.3 Channel: 377.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KABEE STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KABEE STAR
2.18.3 Channel: 282.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KERMIT DP (235−055)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KERMIT DP (055−235)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KERMIT DP (235−055)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KERMIT DP (055−235)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KILNS DP
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KILNS DP
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (DEBIE, NEANO TRANSITIONS)
2.18.3 Channel: 120.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (FLYYN, CEGAL TRANSITIONS, RWY 23, 18L, 18C, 18R)
2.18.3 Channel: 120.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (FLYYN, CEGAL TRANSITIONS RWY 05, 36L, 36C, 36R)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (055−235)
2.18.3 Channel: 128.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (PEKNN, LILLS, HAMLN, ANDYS TRANSITIONS)
2.18.3 Channel: 128.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (235−055)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KNIGHTS DP (055−235)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KRITR DP

2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KRITR DP
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KWEEN DP (RWY 36L, 36C)
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KWEEN DP (RWY 05, 18L, 18R, 18C, 23, 36R)
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KWEEN DP (RWY 36L, 36C)
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KWEEN DP (RWY 05, 18R, 18L, 18C, 23, 36R)
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 05/23, 18L/36R)
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18C/36C)
2.18.3 Channel: 126.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18R/36L)
2.18.3 Channel: 133.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LIILS DP
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LIINN STAR
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LIINN STAR
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LILLS DP
2.18.3 Channel: 307.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MAJIC STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MAJIC STAR
2.18.3 Channel: 282.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MLLET STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MLLET STAR
2.18.3 Channel: 282.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PARQR STAR
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PARQR STAR
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RASLN STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: STOCR STAR
2.18.3 Channel: 126.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: STOCR STAR
2.18.3 Channel: 282.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: UNARM STAR
2.18.3 Channel: 135.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: UNARM STAR
2.18.3 Channel: 377.15

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WEAZL DP
2.18.3 Channel: 120.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: WEAZL DP
2.18.3 Channel: 257.2
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 05. Magnetic variation: 7W
2.19.2 ILS Identification: CLT
2.19.5 Coordinates: 35−12−43.05N / 80−56−52.18W
2.19.6 Site Elevation: 695.1 ft

2.19.1 ILS Type: Localizer for runway 05. Magnetic variation: 7W
2.19.2 ILS Identification: CLT
2.19.5 Coordinates: 35−13−26.34N / 80−55−45.36W
2.19.6 Site Elevation: 738.2 ft

2.19.1 ILS Type: DME for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−12−21.2833N / 80−57−10.052W
2.19.6 Site Elevation: 699.4 ft

2.19.1 ILS Type: Glide Slope for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−13−12.1531N / 80−56−0.0758W
2.19.6 Site Elevation: 737.7 ft

2.19.1 ILS Type: Localizer for runway 23. Magnetic variation: 7W
2.19.2 ILS Identification: APU
2.19.5 Coordinates: 35−12−23.38N / 80−57−11.99W
2.19.6 Site Elevation: 704 ft

2.19.1 ILS Type: DME for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP
2.19.5 Coordinates: 35−11−50.2369N / 80−56−58.6363W
2.19.6 Site Elevation: 684.4 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP
2.19.5 Coordinates: 35−13−26.9102N / 80−57−15.2356W
2.19.6 Site Elevation: 731.4 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 7W
2.19.2 ILS Identification: PEP
2.19.5 Coordinates: 35−11−48.5979N / 80−57−1.9439W
2.19.6 Site Elevation: 683.3 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−12−9.1687N / 80−57−8.5431W
2.19.6 Site Elevation: 691.1 ft

2.19.1 ILS Type: Inner Marker for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−11−48.7253N / 80−57−1.9507W
2.19.6 Site Elevation: 682.9 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 7W
2.19.2 ILS Identification: DQG
2.19.5 Coordinates: 35−13−53.9477N / 80−57−12.7316W
2.19.6 Site Elevation: 749.4 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−11−50.25N / 80−56−4.63W
2.19.6 Site Elevation: 710 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−13−19.2609N / 80−56−5.097W
2.19.6 Site Elevation: 743.5 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 7W
2.19.2 ILS Identification: VKQ
2.19.5 Coordinates: 35−11−50.5994N / 80−56−1.7186W
2.19.6 Site Elevation: 719.2 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC

2.19.5 Coordinates: 35−13−33.1089N / 80−56−6.903W
2.19.6 Site Elevation: 752.3 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC
2.19.5 Coordinates: 35−12−14.0034N / 80−55−58.8923W
2.19.6 Site Elevation: 717.3 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 7W
2.19.2 ILS Identification: BQC
2.19.5 Coordinates: 35−13−33.7034N / 80−56−10.5664W
2.19.6 Site Elevation: 741.2 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35−12−13.2565N / 80−58−1.0908W
2.19.6 Site Elevation: 743.8 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35−13−20.0955N / 80−58−6.7207W
2.19.6 Site Elevation: 733.9 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35−13−38.8124N / 80−58−3.3825W
2.19.6 Site Elevation: 738.6 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 7W
2.19.2 ILS Identification: RGS
2.19.5 Coordinates: 35−11−51.8431N / 80−57−54.1735W
2.19.6 Site Elevation: 738.1 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35−13−19.8318N / 80−58−6.8193W
2.19.6 Site Elevation: 738.9 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35−12−12.9817N / 80−58−0.9403W
2.19.6 Site Elevation: 732.3 ft

2.19.1 ILS Type: Inner Marker for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35−11−54.4339N / 80−57−54.3965W
2.19.6 Site Elevation: 738.8 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 7W
2.19.2 ILS Identification: XUU
2.19.5 Coordinates: 35−13−41.4048N / 80−58−3.6016W
2.19.6 Site Elevation: 737.3 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 5W
2.19.2 Navigation Aid Identification: CLT
2.19.5 Coordinates: 35−11−25.0392N / 80−57−6.3124W
2.19.6 Site Elevation: 731.7 ft

General Remarks:
TWY C10 RSTRD TO ACFT WITH WINGSPAN LESS THAN 171 FT WHEN EXITING RWY.

CLT RAMP, NON−MOVMT AREA, IS CTLD RAMP; CTC RAMP CTL PRIOR TO ENTERING.

TWY C10 UNUSBL FOR TXG ONTO RWY 18L/36R.

SUCCESSIVE OR SIMULTANEOUS DEPARTURES FROM RWY 18L AND RWY 18C ARE APPROVED WITH COURSE DIVERGENCE BEGINNING NO FURTHER THAN 4 MILES FROM END OF RWY.

TWY 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.

DUAL TAXI BTN DEP CALL SPOTS 11/12 AND 13N/13S RSTRD TO ONE ACFT LESS THAN 214 FT AND ONE ACFT LESS THAN 118 FT OR TWO ACFT LESS THAN 171 FT.

NOISE ABATEMENT PROCEDURE IN EFFECT 2300−0700; LAND ON RY 05 TKOF RY 23.

DUAL TAXI BTN DEP CALL SPOTS 22/23 AND 24N/24S RSTRD TO ACFT WITH WINGSPANS LESS THAN 118 FT.

RY SFC COND INFO DURG DUTY HRS PHONE ANG OPS V583−9177/9144 OR AIRBORNE 292.2.

GROUP V ACFT WITH A WINGSPAN GTR THAN 171 FT ARE PROHIBITED FM EXITING RWY 18L/36R AT TWY C10.

RWY STATUS LGTS IN OPR.

TWY D, RESTRICTED TO 15 MPH OR LESS WITH WINGSPAN 171 FT AND GREATER.

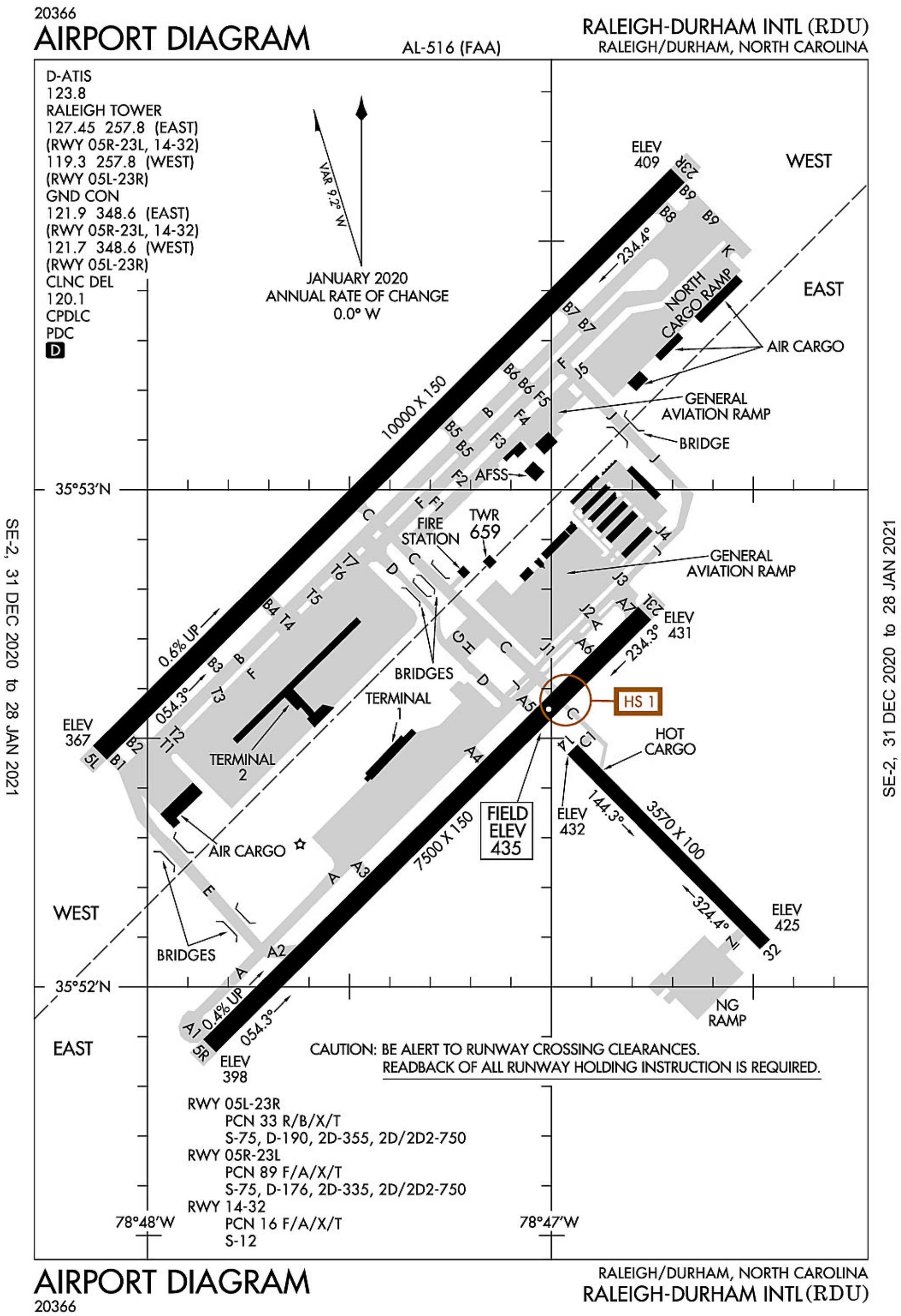
ANG: CTC NEWSREEL 292.25 30 MIN PRIOR LDG. AMOPS/COMD POST − 292.25 (CALL NEWSREEL).

GROUP III ACFT WITH A WINGSPAN GTR THAN 79 FT ARE PROHIBITED FM MAKING A NBND TURN ONTO TWY C WHEN TAXIING WB ON TWY A.

BE ALERT FOR FLOCKS OF MIGRATORY BIRDS ON & INVOF ARPT.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

Raleigh−Durham, North Carolina
Raleigh−Durham International
ICAO Identifier KRDU



Raleigh/Durham, NC
Raleigh−Durham Intl
ICAO Identifier KRDU

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−52−39.5N / 78−47−14.9W
2.2.2 From City: 9 miles NW of RALEIGH/DURHAM, NC
2.2.3 Elevation: 435.2 ft
2.2.5 Magnetic Variation: 9W (2020)
2.2.6 Airport Contact: MICHAEL LANDGUTH
RALEIGH−DURHAM ARPT AUTH
RDU AIRPORT, NC 27623
((919) 840−7701)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 05L
2.12.2 True Bearing: 45
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35−52−28.016N / 78−48−7.069W
2.12.6 Threshold Elevation: 366.8 ft
2.12.6 Touchdown Zone Elevation: 384.3 ft

2.12.1 Designation: 23R
2.12.2 True Bearing: 225
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 33 R/B/X/T
2.12.5 Coordinates: 35−53−37.7657N / 78−46−40.9198W
2.12.6 Threshold Elevation: 408.6 ft
2.12.6 Touchdown Zone Elevation: 408.6 ft

2.12.1 Designation: 05R
2.12.2 True Bearing: 45
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35−51−52.6684N / 78−47−50.4174W
2.12.6 Threshold Elevation: 397.5 ft
2.12.6 Touchdown Zone Elevation: 419.8 ft

2.12.1 Designation: 23L
2.12.2 True Bearing: 225
2.12.3 Dimensions: 7500 ft x 150 ft
2.12.4 PCN: 89 F/A/X/T
2.12.5 Coordinates: 35−52−44.9832N / 78−46−45.8171W
2.12.6 Threshold Elevation: 430.7 ft
2.12.6 Touchdown Zone Elevation: 435.2 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 135
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35−52−30.1119N / 78−46−57.6427W
2.12.6 Threshold Elevation: 432.1 ft
2.12.6 Touchdown Zone Elevation: 432.1 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 315
2.12.3 Dimensions: 3570 ft x 100 ft
2.12.4 PCN: 16 F/A/X/T
2.12.5 Coordinates: 35−52−5.0792N / 78−46−27.0499W
2.12.6 Threshold Elevation: 424.7 ft
2.12.6 Touchdown Zone Elevation: 428.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 05L
2.13.2 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 7500
2.13.3 Take−off 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 Take−off Run Available: 7500
2.13.3 Take−off Distance Available: 7500
2.13.4 Accelerate−Stop Distance Available: 7500
2.13.5 Landing Distance Available: 7500

2.13.1 Designation: 14
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: 32
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 05L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 05R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 23L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ALDAN STAR
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALDAN STAR
2.18.3 Channel: 307.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (055−229)
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (055−229)
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (230−054)
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (230−054)
2.18.3 Channel: 307.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ARGAL STAR
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ARGAL STAR
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEXGO DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BEXGO DP
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLOGS STAR
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLOGS STAR
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUE DEVIL DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BLUE DEVIL DP
2.18.3 Channel: 256.9

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRADE STAR
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRADE STAR
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUZZY STAR
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUZZY STAR
2.18.3 Channel: 307.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (055−229)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (230−054)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (230−054)
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (055−229)
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 123.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (055−229)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (230−054)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (230−054)
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (SOUTH)
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (055−229)
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: FAYETTEVILLE DP
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FAYETTEVILLE DP
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FINAL (EAST)
2.18.3 Channel: 285.425
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: FINAL CTL
2.18.3 Channel: 124.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (WEST, RWY 05L/23R)
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (EAST, RWY 05R/23L, 14/32)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HOOKZ DP
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HOOKZ DP
2.18.3 Channel: 353.675

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HURIC DP
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: HURIC DP
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KAROO STAR
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KAROO STAR
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (WEST, RWY 05L/23R)
2.18.3 Channel: 119.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (EAST, RWY 05R/23L, 14/32)
2.18.3 Channel: 127.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LWOOD DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LWOOD DP
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MALNR STAR
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MALNR STAR
2.18.3 Channel: 307.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OXFRD DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OXFRD DP
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PACKK DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PACKK DP
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RALEIGH DP (055−229)
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RALEIGH DP (230−054)
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RALEIGH DP (230−054)
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RALEIGH DP (055−229)
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROZBO DP
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ROZBO DP
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SHPRD DP
2.18.3 Channel: 132.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SHPRD DP
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SOUTH BOSTON STAR
2.18.3 Channel: 127.675
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SOUTH BOSTON STAR
2.18.3 Channel: 307.9

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAQLE STAR
2.18.3 Channel: 124.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAQLE STAR
2.18.3 Channel: 318.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAR HEEL DP
2.18.3 Channel: 125.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: TAR HEEL DP
2.18.3 Channel: 353.675
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−53−46.25N / 78−46−25.87W
2.19.6 Site Elevation: 403 ft

2.19.1 ILS Type: Glide Slope for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−52−37.7972N / 78−48−1.884W
2.19.6 Site Elevation: 365.5 ft

2.19.1 ILS Type: Localizer for runway 05L. Magnetic variation: 9W
2.19.2 ILS Identification: GKK
2.19.5 Coordinates: 35−53−48.0693N / 78−46−28.1855W
2.19.6 Site Elevation: 408.6 ft

2.19.1 ILS Type: DME for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−52−20.25N / 78−48−15.21W
2.19.6 Site Elevation: 358 ft

2.19.1 ILS Type: Glide Slope for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−53−32.4744N / 78−46−54.3483W
2.19.6 Site Elevation: 396.2 ft

2.19.1 ILS Type: Inner Marker for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−53−43.7552N / 78−46−33.5065W
2.19.6 Site Elevation: 402.1 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: Middle Marker for runway 23R. Magnetic variation: 9W
2.19.2 ILS Identification: DMP
2.19.5 Coordinates: 35−53−54.7234N / 78−46−19.9522W
2.19.6 Site Elevation: 410 ft

2.19.1 ILS Type: DME for runway 05R. Magnetic variation: 9W
2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−52−54.38N / 78−46−41.19W
2.19.6 Site Elevation: 412 ft

2.19.1 ILS Type: Glide Slope for runway 05R. Magnetic variation: 9W
2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−51−57.0189N / 78−47−38.1689W
2.19.6 Site Elevation: 400.1 ft

2.19.1 ILS Type: Localizer for runway 05R. Magnetic variation: 9W
2.19.2 ILS Identification: RDU
2.19.5 Coordinates: 35−52−52.1055N / 78−46−37.0152W
2.19.6 Site Elevation: 423.6 ft

2.19.1 ILS Type: DME for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−51−43.52N / 78−47−54.49W
2.19.6 Site Elevation: 386 ft

2.19.1 ILS Type: Glide Slope for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−52−36.18N / 78−46−52.21W

2.19.6 Site Elevation: 430.2 ft

2.19.1 ILS Type: Localizer for runway 23L. Magnetic variation: 9W
2.19.2 ILS Identification: LEI
2.19.5 Coordinates: 35−51−45.6108N / 78−47−59.1266W

2.19.6 Site Elevation: 381 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 9W
2.19.2 Navigation Aid Identification: RDU
2.19.5 Coordinates: 35−52−21.0761N / 78−47−0.0316W
2.19.6 Site Elevation: 429.2 ft

General Remarks:
NO APPROVAL REQUIRED FOR PUSHBACK AT TERMINAL GATES UNLESS ACFT REQUIRES USE OF TWY. CTC ATC PRIOR TO PUSHING ONTO TWY.

TWY B BTN TWY C AND TWY B5 CLSD.

TWY F2 AND F5 CLOSED UNTIL FURTHER NOTICE.

ALL TDG V AIRCRAFT TXG ON TWY A ARE RSTD TO TAXI SPD OF 15 MPH

NG 24 HR PPR FOR JET ACFT & TRANS MIL ACFT − 919−840−7510.

TWY E BEHIND SOUTH CARGO 4 & TWY J BEHIND CORPORATE HANGARS NOT VSBL FM ATCT.

RSTD: PPR FOR ALL MILITARY AIRCRAFT F/W − R/W & UNSCHEDULED CHARTER FLIGHTS WITH 30 OR MORE PASSENGERS. 24 HR PN RQR FOR MIL PRACTICE APCH. CTC ARPT OPS 919−840−7510 OR RDU APP C919−380−3125. 24 HR PPR FOR ALL F/W AND R/W MIL ACFT GOING TO ARNG RAMP. POC DSN 582−9000, EXTN 16200, C919−804−5300, EXTN 16200. OSACOM FLT DET DSN 582−9000, EXTN 16202, C919−804−5300, EXTN 16202.

NO JET ENGINE MAINTENANCE RUNS BETWEEN 0000−0600.

ARPT CLSD TO AIRSHIPS.

NG PPR FOR LDG CTC V582−9181 C(919)664−9181.

TAXIWAY F1 IS CLOSED UNTIL FURTHER NOTICE.

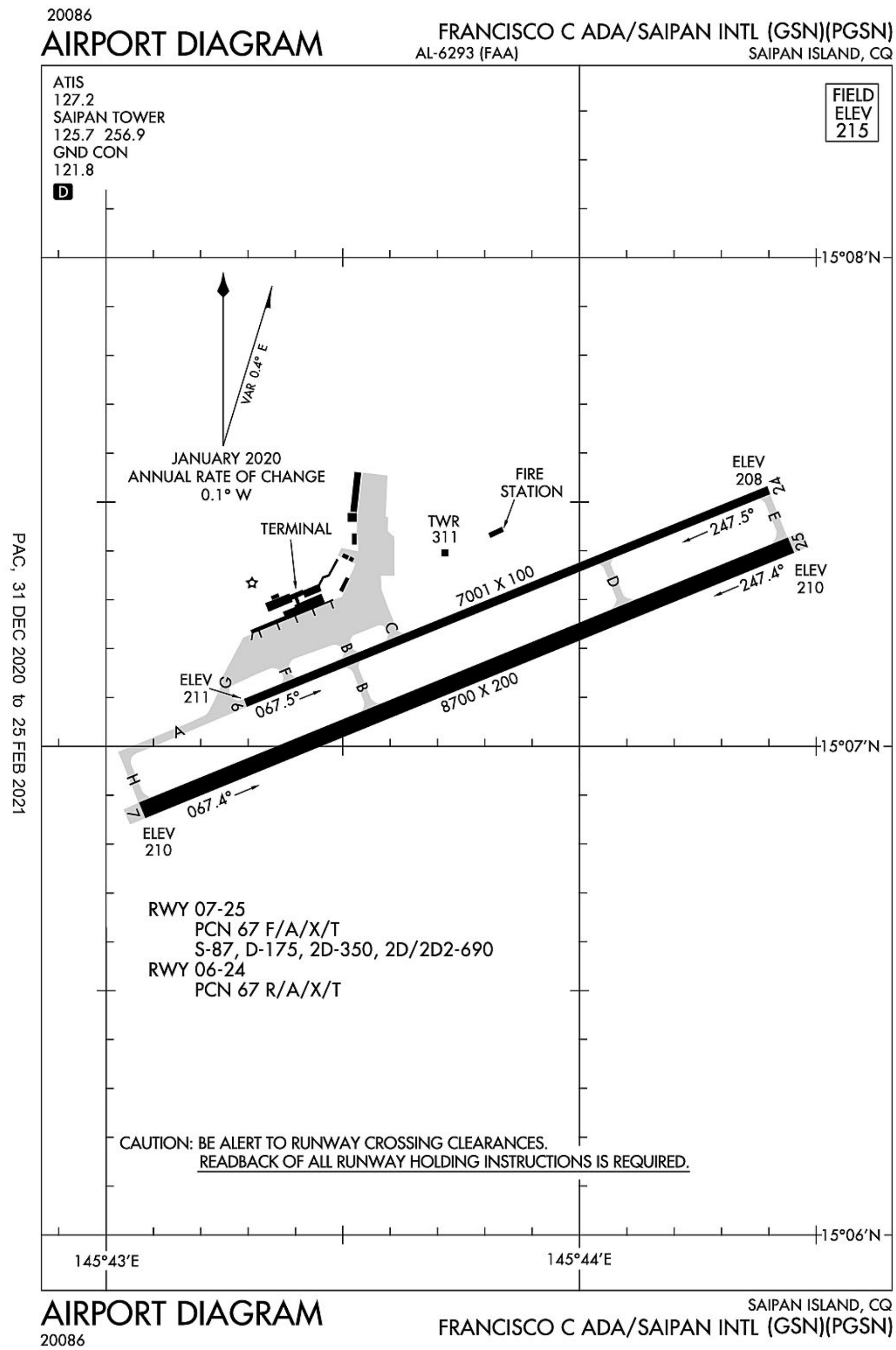
ARNG: LTD PRK. ARNG OPS DSN 582−9000, EXTN 16200, C919−804−5300 EXTN 16200, DSN 582−9000,X16200, C919−804−5300,X16200 CTC FORECAST BASE 10 MIN PRIOR LDG. RAMP CLSD TO ALL F/W EXCEPT ARMY & MIL TRANSPORT WITH PPR, FACILITY HRS 1300−2130Z++ MON−FRI EXC HOL. MAKE APPT FOR AFTER DUTY HRS. NO FUEL EXCARNG FERRY ACFT. OSACOM FLT DET DSN 582−9248, C919−664−6248.
TWY D CLSD TO ACFT WITH WINGSPAN MORE THAN 171 FT WHEN TWY G AND H ARE OCCUPIED.

CRAN 75 FT AGL .76 NM FM AER 05R.

APN TXL F BTN TWY T1 AND TWY T7 CLSD TO ACFT WITH WINGSPAN MORE THAN 171 FT.

TWY C BTN TWY G AND TWY F CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

North Mariana Islands, Saipan Island
Francisco C. Ada/Saipan International
ICAO Identifier PGSN



Saipan Island, CQ
Francisco C. Ada/Saipan Intl
ICAO Identifier PGSN

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 15−7−12.918N / 145−43−47.9427E

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: CHRISTOPHER S. TENORIO
PO BOX 501055
SAIPAN, MP 96950
((670) 483−2447)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100,100LL,A1+

2.4.5 Hangar Space:

2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 1/1/1978

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 06
2.12.2 True Bearing: 68
2.12.3 Dimensions: 7001 ft x 100 ft
2.12.4 PCN: 67 R/A/X/T
2.12.5 Coordinates: 15−7−5.4841N / 145−43−17.6384E
2.12.6 Threshold Elevation: 210.9 ft
2.12.6 Touchdown Zone Elevation: 210.9 ft

2.12.1 Designation: 24
2.12.2 True Bearing: 248
2.12.3 Dimensions: 7001 ft x 100 ft
2.12.4 PCN: 67 R/A/X/T
2.12.5 Coordinates: 15−7−31.5709N / 145−44−23.8646E
2.12.6 Threshold Elevation: 207.6 ft
2.12.6 Touchdown Zone Elevation: 207.8 ft

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: 15−6−52.106N / 145−43−4.571E
2.12.6 Threshold Elevation: 210 ft
2.12.6 Touchdown Zone Elevation: 215.1 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: 15−7−24.702N / 145−44−26.794E
2.12.6 Threshold Elevation: 210 ft
2.12.6 Touchdown Zone Elevation: 210.1 ft

AD 2.13 Declared Distances

2.13.1 Designation: 06
2.13.2 Take−off Run Available: 7000
2.13.3 Take−off Distance Available: 6800
2.13.4 Accelerate−Stop Distance Available: 6645
2.13.5 Landing Distance Available:

2.13.1 Designation: 24
2.13.2 Take−off Run Available: 6400
2.13.3 Take−off Distance Available: 7000
2.13.4 Accelerate−Stop Distance Available: 6302
2.13.5 Landing Distance Available:

2.13.1 Designation: 07
2.13.2 Take−off Run Available: 8700
2.13.3 Take−off Distance Available: 8700
2.13.4 Accelerate−Stop Distance Available: 8520
2.13.5 Landing Distance Available: 8700

2.13.1 Designation: 25
2.13.2 Take−off Run Available: 8500
2.13.3 Take−off Distance Available: 8500
2.13.4 Accelerate−Stop Distance Available: 8250
2.13.5 Landing Distance Available: 8700

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 24
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 07
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: PSIL

2.14.1 Designation: 25
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 127.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 256.9
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 07. Magnetic variation: 2E
2.19.2 ILS Identification: GSN
2.19.5 Coordinates: 15−7−30.4928N / 145−44−34.108E
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: 15−6−58.69N / 145−43−13.05E
2.19.6 Site Elevation: 207.6 ft

2.19.1 ILS Type: Localizer for runway 07. Magnetic variation: 2E
2.19.2 ILS Identification: GSN
2.19.5 Coordinates: 15−7−28.4671N / 145−44−36.2932E
2.19.6 Site Elevation: 207 ft

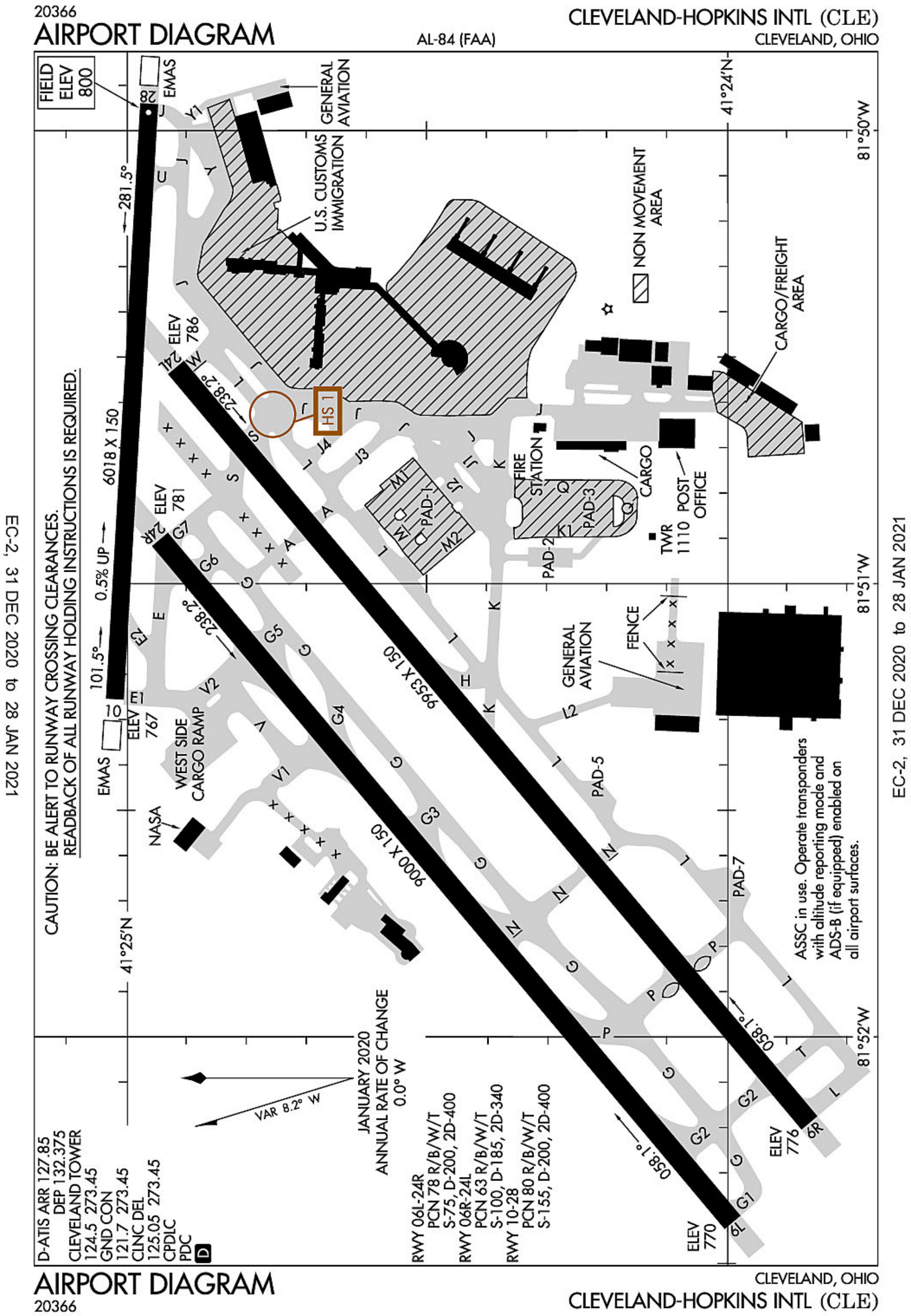
General Remarks:
FOR ARPT SECURITY CALL (670) 237−6529.

RWY 06/24 OPEN FOR TAXIING ONLY (NOT AVBL FOR LDG AND TKOF). OPEN FOR LDG AND TKOF WHEN RWY 7/25 CLSD.

PPR FM EXECUTIVE DIRECTOR COMMONWEALTH PORTS AUTHORITY SAIPAN CALL (670) 237−6500 MON−FRI 0730−1630 OTHER TIMES CALL (670) 237−6535.

IMMIGRATION & CUSTOMS AVBL DURG SCHEDULED OPNS. OTHER TIMES PRIOR ARRANGEMENTS MUST BE MADE WITH CBP PORT DIRECTOR CALL (670)288−0025/26.

Cleveland, Ohio
Cleveland−Hopkins International
ICAO Identifier KCLE



Cleveland, OH
Cleveland−Hopkins Intl
ICAO Identifier KCLE

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 41−24−33.865N / 81−51−16.888W
2.2.2 From City: 9 miles SW of CLEVELAND, OH
2.2.3 Elevation: 799.5 ft
2.2.5 Magnetic Variation: 8W (2020)
2.2.6 Airport Contact: KHALID BAHHUR
PO BOX 81009
CLEVELAND, OH 44181
(216−265−5030)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 06L
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41−23−59.5393N / 81−52−24.5622W
2.12.6 Threshold Elevation: 770.1 ft
2.12.6 Touchdown Zone Elevation: 772.6 ft

2.12.1 Designation: 24R
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 78 R/B/W/T
2.12.5 Coordinates: 41−24−56.7503N / 81−50−54.1515W
2.12.6 Threshold Elevation: 781.1 ft
2.12.6 Touchdown Zone Elevation: 781.1 ft

2.12.1 Designation: 06R
2.12.2 True Bearing: 50
2.12.3 Dimensions: 9953 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41−23−51.8742N / 81−52−11.3519W
2.12.6 Threshold Elevation: 775.5 ft
2.12.6 Touchdown Zone Elevation: 776.5 ft

2.12.1 Designation: 24L
2.12.2 True Bearing: 230
2.12.3 Dimensions: 9953 ft x 150 ft
2.12.4 PCN: 63 R/B/W/T
2.12.5 Coordinates: 41−24−55.141N / 81−50−31.3701W
2.12.6 Threshold Elevation: 785.7 ft
2.12.6 Touchdown Zone Elevation: 785.8 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 93
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41−25−1.2562N / 81−51−15.2842W
2.12.6 Threshold Elevation: 767.1 ft
2.12.6 Touchdown Zone Elevation: 782.8 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 273
2.12.3 Dimensions: 6018 ft x 150 ft
2.12.4 PCN: 80 R/B/W/T
2.12.5 Coordinates: 41−24−57.8208N / 81−49−56.4392W
2.12.6 Threshold Elevation: 799.5 ft
2.12.6 Touchdown Zone Elevation: 799.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 06L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 06R
2.13.2 Take−off Run Available: 9956
2.13.3 Take−off Distance Available: 9956
2.13.4 Accelerate−Stop Distance Available: 9956
2.13.5 Landing Distance Available: 8029

2.13.1 Designation: 24L
2.13.2 Take−off Run Available: 9956
2.13.3 Take−off Distance Available: 9956
2.13.4 Accelerate−Stop Distance Available: 9956
2.13.5 Landing Distance Available: 9956

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 6018
2.13.3 Take−off Distance Available: 6018
2.13.4 Accelerate−Stop Distance Available: 6018
2.13.5 Landing Distance Available: 6018

2.13.1 Designation: 28
2.13.2 Take−off Run Available: 6018
2.13.3 Take−off Distance Available: 6018
2.13.4 Accelerate−Stop Distance Available: 6018
2.13.5 Landing Distance Available: 6018

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 06L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 06R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 24L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P
2.18.3 Channel: 124
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 346.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CAVVS DP
2.18.3 Channel: 135.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 125.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 273.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (340−200)
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (201−339)
2.18.3 Channel: 126.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 127.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 132.375
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P
2.18.3 Channel: 128.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P
2.18.3 Channel: 135.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 273.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GTLKE DP
2.18.3 Channel: 128.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: KKIDS DP
2.18.3 Channel: 135.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 124.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 273.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PFLYD DP
2.18.3 Channel: 128.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ZAAPA DP
2.18.3 Channel: 128.25
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41−25−11.9443N / 81−50−35.682W
2.19.6 Site Elevation: 783.4 ft

2.19.1 ILS Type: Glide Slope for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41−24−9.1461N / 81−52−17.5279W
2.19.6 Site Elevation: 764.3 ft

2.19.1 ILS Type: Inner Marker for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41−23−53.9363N / 81−52−33.3994W
2.19.6 Site Elevation: 761.5 ft

2.19.1 ILS Type: Localizer for runway 06L. Magnetic variation: 8W
2.19.2 ILS Identification: LIZ
2.19.5 Coordinates: 41−25−10.1943N / 81−50−32.8939W
2.19.6 Site Elevation: 778.7 ft

2.19.1 ILS Type: DME for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41−25−11.9443N / 81−50−35.682W
2.19.6 Site Elevation: 783.4 ft

2.19.1 ILS Type: Glide Slope for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41−24−53.0116N / 81−51−8.214W
2.19.6 Site Elevation: 768.4 ft

2.19.1 ILS Type: Inner Marker for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41−25−3.7844N / 81−50−47.3046W
2.19.6 Site Elevation: 777.9 ft

2.19.1 ILS Type: Localizer for runway 24R. Magnetic variation: 8W
2.19.2 ILS Identification: PVY
2.19.5 Coordinates: 41−23−53.0789N / 81−52−34.7494W
2.19.6 Site Elevation: 760.6 ft

2.19.1 ILS Type: DME for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41−25−4.0601N / 81−50−11.0982W
2.19.6 Site Elevation: 794.1 ft

2.19.1 ILS Type: Glide Slope for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41−24−13.6551N / 81−51−45.2101W
2.19.6 Site Elevation: 766 ft

2.19.1 ILS Type: Localizer for runway 06R. Magnetic variation: 8W
2.19.2 ILS Identification: CLE
2.19.5 Coordinates: 41−25−5.1773N / 81−50−15.5025W
2.19.6 Site Elevation: 785.5 ft

2.19.1 ILS Type: DME for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41−23−44.3404N / 81−52−18.0729W
2.19.6 Site Elevation: 778.9 ft

2.19.1 ILS Type: Glide Slope for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41−24−51.9504N / 81−50−45.3186W
2.19.6 Site Elevation: 782.2 ft

2.19.1 ILS Type: Localizer for runway 24L. Magnetic variation: 8W
2.19.2 ILS Identification: HPI
2.19.5 Coordinates: 41−23−45.4329N / 81−52−21.5252W
2.19.6 Site Elevation: 771.7 ft

2.19.1 ILS Type: DME for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41−24−58.7198N / 81−51−23.8351W
2.19.6 Site Elevation: 766.3 ft

2.19.1 ILS Type: Glide Slope for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41−25−3.4337N / 81−50−9.415W
2.19.6 Site Elevation: 786.3 ft

2.19.1 ILS Type: Localizer for runway 28. Magnetic variation: 8W
2.19.2 ILS Identification: PXP
2.19.5 Coordinates: 41−25−1.5177N / 81−51−21.2475W
2.19.6 Site Elevation: 756.3 ft

General Remarks:
NASA GLENN RESEARCH CENTER; NASA RAMP PPR CALL 216−433−2031; 0800−1730 MON−FRI. CONTACT NASA OPNS ON FREQ 122.925 WITHIN 50 NM.

RAMP AREA CONCOURSE D BTN GATES D1, D28 CLSD EXC ACFT WINGSPAN LESS THAN 86 FT.

DEER & BIRDS INCLUDING WATERFOWL ON & INVOF ARPT.

PAD 3 BAYS 1−5 CLOSED TO ACFT WITH WINGSPAN OVER 134 FT.

PAD 2 AND TAXILANE Y1 RSTRD TO GROUP II ACFT LESS THAN 79 FT WINGSPAN.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

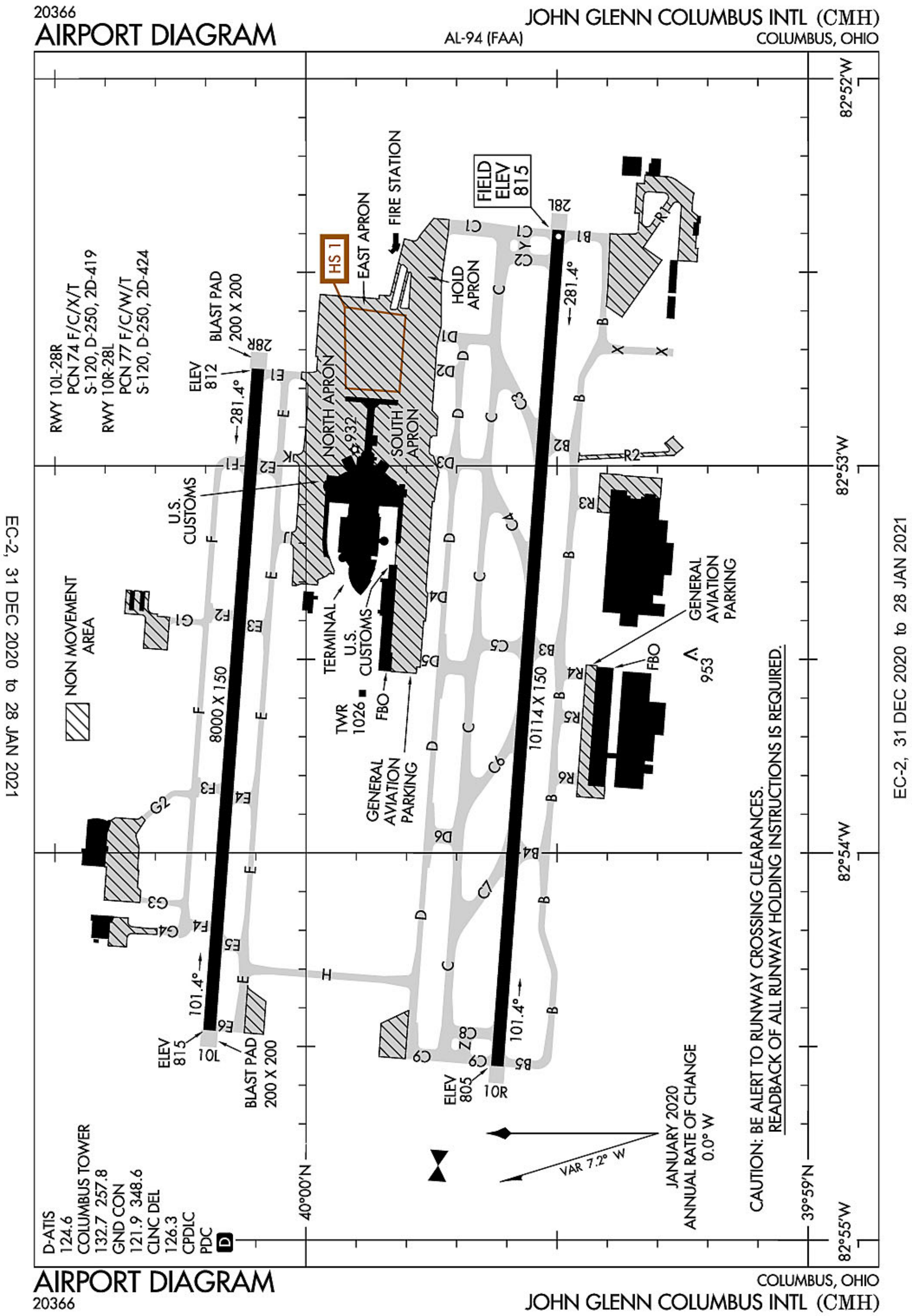
PAD 3 BAY 6 CLOSED TO ACFT WITH WINGSPAN OVER 94 FT.

ALL APCHS ARE OVR NOISE SENSITIVE AREAS. ARPT LATE NGT NOISE ABATEMENT PROCEDURES ARE IN EFFECT 2300−0600. ADDITIONAL NOISE ABATEMENT PROCEDURES ARE IN EFFECT CALL AMGR NORMAL BUSINESS HRS AT 216−265−6090.

ADCUS AVBL MON−SUN 0800−1800; ALL REQ FOR SVC MUST BE MADE WITH THE U.S. CUST SVC OFC LCTD AT GATE A−14 CALL (216) 267−3600 DURG LISTED HRS.

TWY M; TWY M1 BTN TWY L & TWY J1; TWY M2 BTN TWY L & TWY J1; TWY J2 BTN TWY J3 & TWY K: CLSD FM 15 OCT THRU 15 APR FOR DEICING OPNS.

Columbus, Ohio
Port Columbus International
ICAO Identifier KCMH



Columbus, OH
Port Columbus Intl
ICAO Identifier KCMH

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 39−59−49.008N / 82−53−31.773W
2.2.2 From City: 6 miles E of COLUMBUS, OH
2.2.3 Elevation: 815 ft
2.2.5 Magnetic Variation: 7W (2015)
2.2.6 Airport Contact: JOE NARDONE
COLUMBUS REGIONAL
AIRPORT AUTHORITY
COLUMBUS, OH 43219
(614−239−4000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 10L
2.12.2 True Bearing: 94
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 F/C/X/T
2.12.5 Coordinates: 40−0−11.5307N / 82−54−27.4941W
2.12.6 Threshold Elevation: 814.7 ft
2.12.6 Touchdown Zone Elevation: 814.8 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 274
2.12.3 Dimensions: 8000 ft x 150 ft
2.12.4 PCN: 74 F/C/X/T
2.12.5 Coordinates: 40−0−5.7308N / 82−52−44.9692W
2.12.6 Threshold Elevation: 812.3 ft
2.12.6 Touchdown Zone Elevation: 813.1 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 94
2.12.3 Dimensions: 10114 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39−59−37.1453N / 82−54−33.0422W
2.12.6 Threshold Elevation: 804.9 ft
2.12.6 Touchdown Zone Elevation: 809.2 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 274
2.12.3 Dimensions: 10114 ft x 150 ft
2.12.4 PCN: 77 F/C/W/T
2.12.5 Coordinates: 39−59−29.8102N / 82−52−23.4543W
2.12.6 Threshold Elevation: 815 ft
2.12.6 Touchdown Zone Elevation: 815 ft

AD 2.13 Declared Distances
2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 8000
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off 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 Take−off Run Available: 10113
2.13.3 Take−off 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 Take−off Run Available: 10113
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 129.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (100−279)
2.18.3 Channel: 134
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (100−279)
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (280−099)
2.18.3 Channel: 317.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (100−279)
2.18.3 Channel: 338.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (280−099)
2.18.3 Channel: 125.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (280−099)
2.18.3 Channel: 371.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 118.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 119.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S
2.18.3 Channel: 353.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 118
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S (100−279)
2.18.3 Channel: 132.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 324.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 353.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 126.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (280−099)
2.18.3 Channel: 125.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (100−279)
2.18.3 Channel: 134
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (100−279)
2.18.3 Channel: 279.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (280−099)
2.18.3 Channel: 317.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 124.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: FINAL

2.18.3 Channel: 327.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 132.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS (DEICE PAD CONTROL)
2.18.3 Channel: 122.775
2.18.5 Hours of Operation:

2.18.1 Service Designation: RADAR
2.18.3 Channel: 294.7
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−9.698N / 82−54−41.0247W
2.19.6 Site Elevation: 822.2 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−14.2837N / 82−54−14.862W
2.19.6 Site Elevation: 809.9 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 7W
2.19.2 ILS Identification: CBP
2.19.5 Coordinates: 40−0−4.9978N / 82−52−32.0266W
2.19.6 Site Elevation: 799.2 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−9.698N / 82−54−41.0247W
2.19.6 Site Elevation: 822.2 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−9.1363N / 82−52−56.9903W
2.19.6 Site Elevation: 808.4 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 7W
2.19.2 ILS Identification: ONB
2.19.5 Coordinates: 40−0−12.2661N / 82−54−40.558W
2.19.6 Site Elevation: 811.7 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI
2.19.5 Coordinates: 39−59−33.7337N / 82−54−45.9278W
2.19.6 Site Elevation: 814.8 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI
2.19.5 Coordinates: 39−59−32.3813N / 82−54−20.6176W
2.19.6 Site Elevation: 802.7 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 7W
2.19.2 ILS Identification: AQI
2.19.5 Coordinates: 39−59−29.072N / 82−52−10.4143W
2.19.6 Site Elevation: 814.1 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 7W
2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−33.7337N / 82−54−45.9278W
2.19.6 Site Elevation: 814.8 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 7W
2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−26.4974N / 82−52−36.6536W
2.19.6 Site Elevation: 810.7 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 7W

2.19.2 ILS Identification: CMH
2.19.5 Coordinates: 39−59−37.8812N / 82−54−46.0853W
2.19.6 Site Elevation: 806 ft

General Remarks:
TWY D−5 PAVEMENT (NORTH OF TWY D) IS RSTRD TO ACFT WITH WINGSPAN LESS THAN 79 FT.

TAXILANE CONCOURSE A BTN TWY D3 AND TWY D4 CLSD TO ACFT WINGSPAN MORE THAN 130 FT.

ALL SURFACES AROUND TERMINAL; NORTH OF TWY 'D' & SOUTH OF TWY 'E' ARE NON−MOVEMENT AREAS.

TO REQ LDG RIGHTS CTC US CUSTOMS BETWEEN 1230−0300Z, MON−FRI AT 614−497−1865.

BIRDS INVOF ARPT.

TWYS R2, R3, R4, R5 AND R6 RSTRD TO WINGSPAN LESS THAN 118 FT.

TWY F1 RSTRD TO AIRCRAFT WITH WINGSPAN LESS THAN 120 FT.

HOLD PAD FOR RWY 28L RSTRD TO ACFT WITH WINGSPAN LESS THAN 118 FT.

NOISE BARRIER LOCATED AT SE SIDE OF AIRFIELD RESTRICTED TO ACFT WITH WINGSPAN LESS THAN 79 FT.

BE ALERT: RY 10L/28R RESTRICTIONS ON STAGE I & II TURBOJET ACFT 2200−0800 & ON STAGE III TURBOJET ACFT 2200−0700. PRACTICE APCHS FOR HIGH NOISE LEVEL TYPE ACFT INCLUDING NON−STAGE III MIL JET ACFT SHALL NOT BE APPROVED UNLESS RY 10R/28L IS IN USE & THE APCH TERMINATES IN A FULL STOP TAXI−BACK OPN.

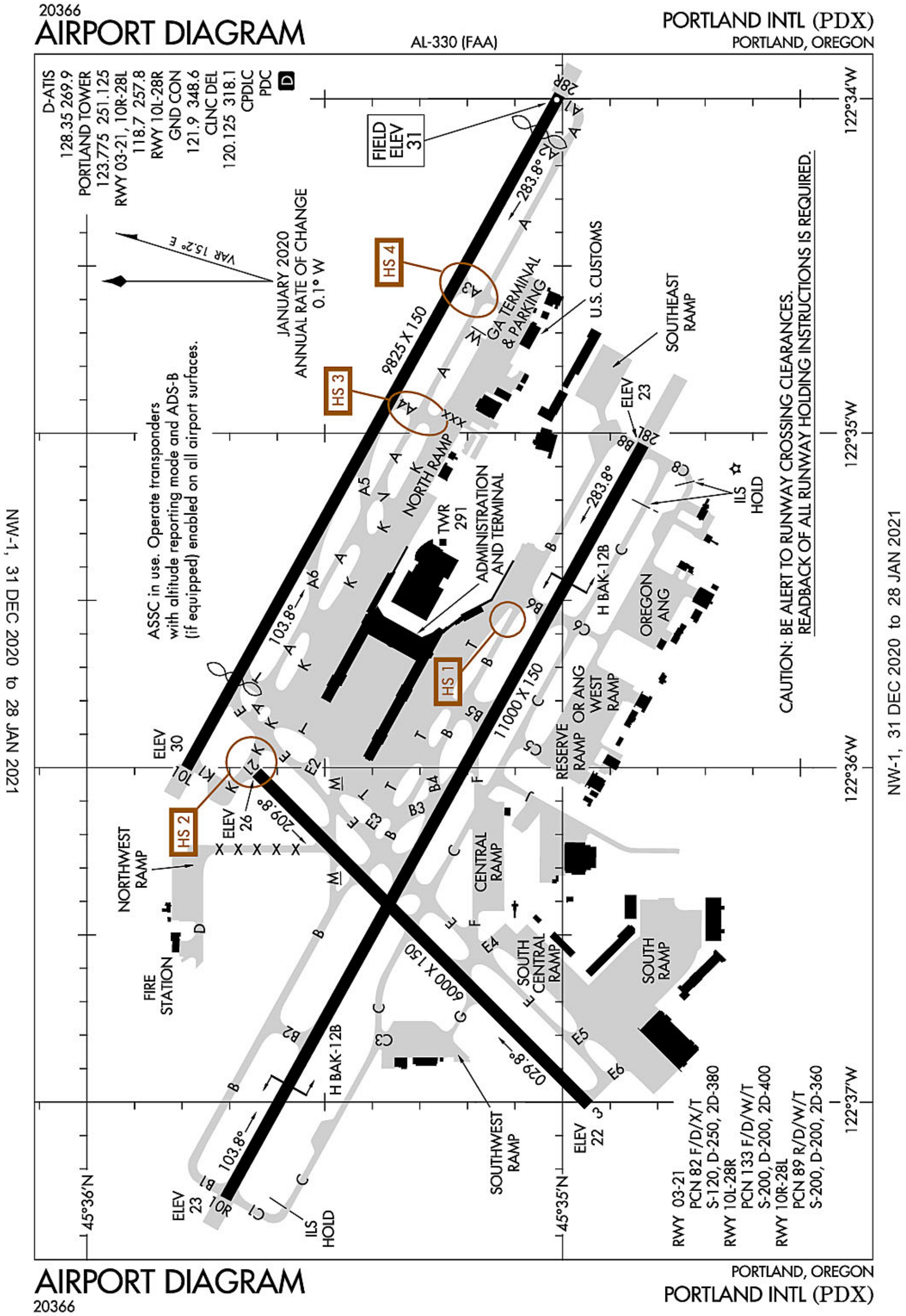
MODEL ACFT TFC WITHIN A 1 NM RDS OF A POINT 8 NM ON A 010 DEG BRG FM THE ARPT; SFC − 5000 FT AGL; SR−SS DLY.

TAXILANE CONCOURSE C BTN TWY J AND TWY K CLSD TO ACFT WINGSPAN MORE THAN 135 FT.

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

TWY R1 RSTRD TO ACFT WITH WINGSPAN LESS THAN 79 FT.

Portland, Oregon
Portland International
ICAO Identifier KPDX



Portland, OR
Portland Intl
ICAO Identifier KPDX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 45−35−19.3519N / 122−35−48.7299W
2.2.2 From City: 4 miles NE of PORTLAND, OR
2.2.3 Elevation: 30.8 ft
2.2.5 Magnetic Variation: 16E (2010)
2.2.6 Airport Contact: DAREN GRIFFIN
7200 NE AIRPORT WAY
PORTLAND, OR 97218
(503−415−6195)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 82 F/D/X/T
2.12.5 Coordinates: 45−34−56.73N / 122−37−0.5188W
2.12.6 Threshold Elevation: 22.2 ft
2.12.6 Touchdown Zone Elevation: 22.9 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 6000 ft x 150 ft
2.12.4 PCN: 82 F/D/X/T
2.12.5 Coordinates: 45−35−38.605N / 122−36−0.8463W
2.12.6 Threshold Elevation: 26.4 ft
2.12.6 Touchdown Zone Elevation: 26.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 119
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−47.454N / 122−36−0.0581W
2.12.6 Threshold Elevation: 29.5 ft
2.12.6 Touchdown Zone Elevation: 30.2 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 299
2.12.3 Dimensions: 9825 ft x 150 ft
2.12.4 PCN: 133 F/D/W/T
2.12.5 Coordinates: 45−35−0.3785N / 122−33−59.2636W
2.12.6 Threshold Elevation: 30.8 ft
2.12.6 Touchdown Zone Elevation: 30.8 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 119
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−35−42.5347N / 122−37−17.3022W
2.12.6 Threshold Elevation: 22.7 ft
2.12.6 Touchdown Zone Elevation: 23.7 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 299
2.12.3 Dimensions: 11000 ft x 150 ft
2.12.4 PCN: 89 R/D/W/T
2.12.5 Coordinates: 45−34−49.8531N / 122−35−2.0463W
2.12.6 Threshold Elevation: 22.7 ft
2.12.6 Touchdown Zone Elevation: 22.7 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 6000
2.13.3 Take−off 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 Take−off Run Available: 6000
2.13.3 Take−off Distance Available: 6000
2.13.4 Accelerate−Stop Distance Available: 6000
2.13.5 Landing Distance Available: 6000

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 9825
2.13.3 Take−off 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 Take−off Run Available: 9825
2.13.3 Take−off Distance Available: 9825
2.13.4 Accelerate−Stop Distance Available: 9825
2.13.5 Landing Distance Available: 9290

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 11000
2.13.3 Take−off 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 Take−off Run Available: 11000
2.13.3 Take−off Distance Available: 11000
2.13.4 Accelerate−Stop Distance Available: 11000
2.13.5 Landing Distance Available: 11000

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: AFRC OPS
2.18.3 Channel: 138.45
2.18.5 Hours of Operation:

2.18.1 Service Designation: AFRC OPS
2.18.3 Channel: 252.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG COMD POST (CALL STUMP TOWN)
2.18.3 Channel: 288.9
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 280.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 281.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 128.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 269.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 132.275

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 10L/28R)
2.18.3 Channel: 118.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 03/21, 10R/28L)
2.18.3 Channel: 123.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 03/21, 10R/28L)
2.18.3 Channel: 251.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 10L/28R)
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 21. Magnetic variation: 16E
2.19.2 ILS Identification: GPO
2.19.5 Coordinates: 45−34−47.97N / 122−37−7.94W
2.19.6 Site Elevation: 31 ft

2.19.1 ILS Type: Localizer for runway 21. Magnetic variation: 16E
2.19.2 ILS Identification: GPO
2.19.5 Coordinates: 45−34−49.75N / 122−37−10.47W
2.19.6 Site Elevation: 11.4 ft

2.19.1 ILS Type: DME for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−35−47.9502N / 122−36−13.551W
2.19.6 Site Elevation: 25.5 ft

2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−35−39.7602N / 122−35−30.1707W
2.19.6 Site Elevation: 30.8 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 16E
2.19.2 ILS Identification: VDG
2.19.5 Coordinates: 45−34−55.53N / 122−33−46.85W
2.19.6 Site Elevation: 28.9 ft

2.19.1 ILS Type: DME for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−47.95N / 122−36−13.551W
2.19.6 Site Elevation: 25.5 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−10.93N / 122−34−16.4W
2.19.6 Site Elevation: 30.1 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 16E
2.19.2 ILS Identification: IAP
2.19.5 Coordinates: 45−35−52.3N / 122−36−12.47W
2.19.6 Site Elevation: 25.6 ft

2.19.1 ILS Type: DME for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−34−46.7386N / 122−34−45.2294W
2.19.6 Site Elevation: 36 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−35−33.9026N / 122−37−7.2471W
2.19.6 Site Elevation: 16.1 ft

2.19.1 ILS Type: Inner Marker for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−35−46.7091N / 122−37−28.0266W
2.19.6 Site Elevation: 17 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 16E
2.19.2 ILS Identification: PDX
2.19.5 Coordinates: 45−34−43.5268N / 122−34−45.8188W
2.19.6 Site Elevation: 19.5 ft

2.19.1 ILS Type: DME for runway 28L. Magnetic variation: 16E

2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45−34−46.7386N / 122−34−45.2294W
2.19.6 Site Elevation: 36 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 16E
2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45−34−52.6331N / 122−35−16.7121W
2.19.6 Site Elevation: 19.9 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 16E
2.19.2 ILS Identification: JMJ
2.19.5 Coordinates: 45−35−50.5155N / 122−37−37.8096W
2.19.6 Site Elevation: 24.8 ft

General Remarks:
FUEL − A (AIR BP − ATLANTIC AVIATION SVCS. C503−331−4220) J8(MIL) (NC−100LL, A)

BEARING STRENGTH: RWY 03−21 ST 175, RY 10L−28R ST175, RY 10R−28L ST175.

ACFT WITH WINGSPAN GREATER THAN 118 FEET ARE PROHIBITED FROM TURNING EASTBOUND ON TWY C FROM SOUTHWESTBOUND ON TWY F UNLESS UNDER TOW.

NOISE ABATEMENT PROCEDURES IN EFFECT; CALL NOISE OFFICE AT 503−460−4100. RY 28L ARRIVALS ARE NOISE SENSITIVE, EXPECT APCH TO 28R WITH TRANSITION TO 28L.

TWY T BTN EXITS B5 & B6 CLSD TO ACFT WITH WINGSPAN GTR THAN 118 FT.

OIL − O−128−133−148(MIL).

MISC: FLT NOTIFICATION SVC, ADCUS, AVBL.

AREA OF TWY T BTN M & E3 NOT VSB FM TWR.

MIGRATORY & WINTERING FLOCKS OF LRG WATERFOWL ON & INVOF APRT. HEAVY SEAGULL ACTIVITY SEP THRU APR; EXPECT HIGH NMBR OF BIRDS YEAR AROUND; CK LCL ADVISORIES.

ANG: SEE FLIP AP/1 FOR SUPPLEMENTARY ARPT INFO. HAZARDOUS BIRD COND EXIST. PHASE 1 MAY−OCT, PHASE II NOV−APR. CURRENT BIRD WATCH CONDITIONS ARE NOT REPORTED ON ATIS.

ACFT AUTHORIZED TO UTILIZE THE NORTHWEST RAMP WILL BE TOWED TO/FROM THIS RAMP.

TWY T BTN TWY E3 & TWY B5 CLSD TO ACFT WITH WINGSPAN GTR THAN 198 FT.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

TWY K BTN TWY V & TWY A4 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

180 DEGREE TURNS BY ACFT WEIGHING IN EXCESS OF 12500 LBS PROHIBITED ON RY 10L/28R, RY 03/21 AND ALL TWYS.

ANG : PPR/OFFL BUS ONLY. BASE OPS OPR 1500−2300Z++ MON−FRI EXC HOL.; DSN 638−4390, C503−335−4390. CTC BASE OPS 15 MIN PRIOR TO LDG AND AFTER DEP ON 281.2. TRAN QUARTERS NOT AVBL. CAUTION: OBST LIGHTING IS NOT NVD COMPATIBLE. NVD NOT AUTHORIZED WHILE AIRBORNE IN VCNTY OF AFLD.

TWY K BTN TWY A5 & TWY V CLSD TO ACFT WINGSPAN MORE THAN 168 FT.

JASU − 4(A/M32A−86) (MC−11) 1(MA−1A).

FLUID − LHOXRB.

(E94) WSFO/WSO/FW/RFC.

TWY V CLSD TO ACFT WITH WINGSPAN GREATER THAN 168 FT. ACFT WITH WINGSPAN GREATER THAN 118 FT PROHIBITED FM TURNING WB ONTO TWY A FM TWY V UNLESS UNDER TOW.

TWY M BTN TWY E & TWY T CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

TWY C BTN TWY C6 AND TWY C8 CLSD TO ACFT WITH WINGSPAN GTR THAN 180 FEET.

TWY A3 BTN TWY A & THE GA RAMP CLSD TO ACFT WITH WINGSPAN GTR THAN 135 FEET UNLESS UNDER TOW.

UNCONTROLLED TFC AT PEARSON FIELD VANCOUVER WA 3 NM W OF RY 10L THLD ON EXTDD CNTRLN.

ARPT CLSD TO NON−POWERED ACFT EXCP IN EMERG.

AT THE WEST END ARM/DEARM AREA ON TWY C NO ACFT OF ANY TYPE MAY TAXI PAST THE ARM/DEARM AREA WHILE IT IS BEING USED.

TWY C3 CLSD TO ACFT WITH WINGSPAN EQUAL TO OR GTR THAN 79 FT.

TWY T BTN TWY E2 & TWY E3 CLSD TO ACFT WINGSPAN MORE THAN 118 FT.

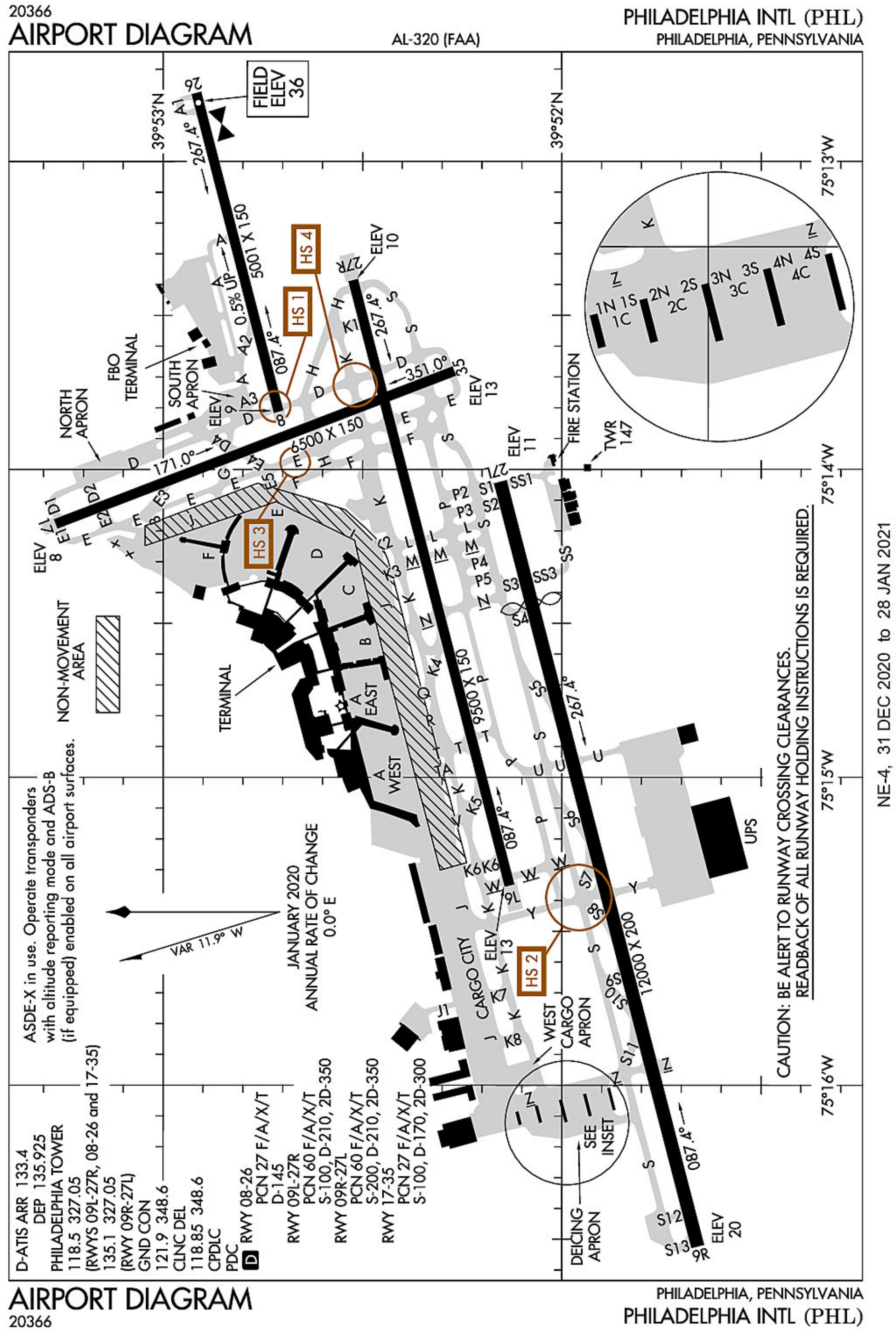
TWY W CLSD TO ACFT WITH WINGSPAN GTR THAN 118 FT UNLESS UNDER TOW.

TWY E3 CLSD TO ACFT WITH WINGSPAN GTR THAN 198 FEET.

PDX HAS FAC CONSTRAINTS THAT LMT ITS ABILITY TO ACCOMMODATE DIVD FLTS & MNTN THE ARPT SAFE OPN DUR IREG OPS. ACFT OPRS SHUD CTC THE ARPT DUTY MGR AT (503) 460−4236 TO COORD DIVD FLTS EXC IN THE CASE OF A DECLARED IN−FLT EMERG.

NSTD YELLOW PRK SPOT DESIGNATORS AND EQPT TOOL BOX LCTN PAINTED ON RAMP. PLEASE CTC BASE OPS OR REQ FOLLOW ME IF NOT FAMILIAR WITH PANGB PRK PROCEDURES.

Philadelphia, Pennsylvania
Philadelphia International
ICAO Identifier KPHL



Philadelphia, PA
Philadelphia Intl
ICAO Identifier KPHL

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 39−52−19.502N / 75−14−26.387W
2.2.2 From City: 5 miles SW of PHILADELPHIA, PA
2.2.3 Elevation: 35.9 ft
2.2.5 Magnetic Variation: 12W (2020)
2.2.6 Airport Contact: ROCHELLE CAMERON
DIV OF AVIATION TERMINAL E
PHILADELPHIA, PA 19153
(215−937−6914)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 75
2.12.3 Dimensions: 5001 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−42.0147N / 75−13−48.05W
2.12.6 Threshold Elevation: 9.3 ft
2.12.6 Touchdown Zone Elevation: 20.3 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 256
2.12.3 Dimensions: 5001 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−54.3825N / 75−12−45.9478W
2.12.6 Threshold Elevation: 35.9 ft
2.12.6 Touchdown Zone Elevation: 35.9 ft

2.12.1 Designation: 27R
2.12.2 True Bearing: 255
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−30.7933N / 75−13−22.4291W
2.12.6 Threshold Elevation: 10.4 ft
2.12.6 Touchdown Zone Elevation: 10.5 ft

2.12.1 Designation: 09L
2.12.2 True Bearing: 75
2.12.3 Dimensions: 9500 ft x 150 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−7.2582N / 75−15−20.3809W
2.12.6 Threshold Elevation: 13.2 ft
2.12.6 Touchdown Zone Elevation: 13.3 ft

2.12.1 Designation: 09R
2.12.2 True Bearing: 75
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−51−38.9141N / 75−16−30.7061W
2.12.6 Threshold Elevation: 20.3 ft
2.12.6 Touchdown Zone Elevation: 20.6 ft

2.12.1 Designation: 27L
2.12.2 True Bearing: 255
2.12.3 Dimensions: 12000 ft x 200 ft
2.12.4 PCN: 60 F/A/X/T
2.12.5 Coordinates: 39−52−8.65N / 75−14−1.72W
2.12.6 Threshold Elevation: 10.6 ft
2.12.6 Touchdown Zone Elevation: 10.2 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 159
2.12.3 Dimensions: 6500 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−53−15.5714N / 75−14−9.9268W
2.12.6 Threshold Elevation: 8.2 ft
2.12.6 Touchdown Zone Elevation: 10.5 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 339
2.12.3 Dimensions: 6500 ft x 150 ft
2.12.4 PCN: 27 F/A/X/T
2.12.5 Coordinates: 39−52−15.5777N / 75−13−40.1314W
2.12.6 Threshold Elevation: 12.9 ft
2.12.6 Touchdown Zone Elevation: 12.9 ft

AD 2.13 Declared Distances

2.13.1 Designation: 08

2.13.2 Take−off Run Available: 5001
2.13.3 Take−off Distance Available: 5001
2.13.4 Accelerate−Stop Distance Available: 5001
2.13.5 Landing Distance Available: 5001

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 5001
2.13.3 Take−off Distance Available: 5001
2.13.4 Accelerate−Stop Distance Available: 5001
2.13.5 Landing Distance Available: 5001

2.13.1 Designation: 27R
2.13.2 Take−off Run Available: 9500
2.13.3 Take−off Distance Available: 9500
2.13.4 Accelerate−Stop Distance Available: 9500
2.13.5 Landing Distance Available: 8864

2.13.1 Designation: 09L
2.13.2 Take−off Run Available: 9500
2.13.3 Take−off Distance Available: 9500
2.13.4 Accelerate−Stop Distance Available: 9500
2.13.5 Landing Distance Available: 9500

2.13.1 Designation: 09R
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 27L
2.13.2 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 11825
2.13.5 Landing Distance Available: 9912

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 6500
2.13.3 Take−off Distance Available: 6500
2.13.4 Accelerate−Stop Distance Available: 6500
2.13.5 Landing Distance Available: 6500

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 6500
2.13.3 Take−off Distance Available: 6500
2.13.4 Accelerate−Stop Distance Available: 6500
2.13.5 Landing Distance Available: 6500

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 08
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 09R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: 5500 & BLO (NORTH)
2.18.3 Channel: 123.8
2.18.5 Hours of Operation:

2.18.1 Service Designation: 5500 & BLO (NORTH)
2.18.3 Channel: 291.7
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P (001−089, 5000 FT & BLW)
2.18.3 Channel: 123.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−360, 5000 FT & BLW)
2.18.3 Channel: 126.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (090−269, 5000 FT & BLW)
2.18.3 Channel: 127.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (090−269, 6000−8000 FT)
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−360, 5000 FT & BLW)
2.18.3 Channel: 263.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.18.3 Channel: 272.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−089, ABV 5000 FT)
2.18.3 Channel: 273.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (001−089, 5000 FT & BLW)
2.18.3 Channel: 291.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (090−269 6000−8000 FT)
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (090−269, 5000 FT & BLW)
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUNTS STAR
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BUNTS STAR
2.18.3 Channel: 272.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 118.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CEDAR LAKE STAR
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CEDAR LAKE STAR
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SW 6000 FT & BLW)
2.18.3 Channel: 118.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE RWY 09 ACTIVE 10000 FT & BLW)
2.18.3 Channel: 119.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE RWY 27 ACTIVE 8500−10000 FT)
2.18.3 Channel: 119.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SOUTH/SOUTHWEST RWY 27 8500−10000 FT)
2.18.3 Channel: 119.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NE 6500 FT & BLW)
2.18.3 Channel: 123.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (W RWY 09 ACTIVE 8500−10000 FT)
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (W RWY 27 ACTIVE 10000 FT & BLW)
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NW 8000−10000 FT)
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NE 7000−10000 FT)
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (5500 FT & BLW)
2.18.3 Channel: 126.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE−SW 5000 FT & BLW)
2.18.3 Channel: 127.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NORTH 6500−7500)
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8000 FT & BLW)
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (6000−8000 FT)
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SOUTHEAST RWY 27 5500−7500)
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (5500 FT & BLW)
2.18.3 Channel: 263.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE RWY 27 ACTIVE 8500−10000 FT)
2.18.3 Channel: 269.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE RWY 09 ACTIVE 10000 FT & BLW)
2.18.3 Channel: 269.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SOUTH/SOUTHWEST RWY 27 8500−10000 FT)
2.18.3 Channel: 269.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8000 FT & BLW)
2.18.3 Channel: 272.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NORTH 6500−7500)
2.18.3 Channel: 272.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (N NE 6500−7500)
2.18.3 Channel: 273.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (W RWY 09 ACTIVE 8000 FT & BLW)
2.18.3 Channel: 273.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NE RWY 27 ACTIVE 5000 FT & BLW)
2.18.3 Channel: 291.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (RWY 27, 5500−7500 FT)
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SE−SW 5000 FT & BLW)
2.18.3 Channel: 317.55

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (6000−8000 FT)
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NE 7000−10000 FT)
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (WEST RWY 09 ACTIVE 8500−10000 FT)
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NW 8000−10000 FT)
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (SW 6000 FT & BLW)
2.18.3 Channel: 323.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 133.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 119.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (270−089)
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 269.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (270−089)
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: FINAL APCH
2.18.3 Channel: 125.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/S
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JIIMS STAR
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: JIIMS STAR
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08/26, 09L/27R, 17/35)
2.18.3 Channel: 118.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09R/27L)
2.18.3 Channel: 135.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 327.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PAATS STAR
2.18.3 Channel: 133.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PAATS STAR
2.18.3 Channel: 317.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PHL ONE DP
2.18.3 Channel: 124.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PHL ONE DP
2.18.3 Channel: 319.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 27L)
2.18.3 Channel: 120.425
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: PRM (RWY 26)
2.18.3 Channel: 123.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RADAR
2.18.3 Channel: 126.6
2.18.5 Hours of Operation:

2.18.1 Service Designation: SPUDS STAR
2.18.3 Channel: 128.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: SPUDS STAR
2.18.3 Channel: 272.575
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39−52−42.2207N / 75−13−32.3765W
2.19.6 Site Elevation: 28.9 ft

2.19.1 ILS Type: Glide Slope for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39−52−49.3706N / 75−12−58.3473W
2.19.6 Site Elevation: 21.3 ft

2.19.1 ILS Type: Localizer for runway 26. Magnetic variation: 12W
2.19.2 ILS Identification: LLH
2.19.5 Coordinates: 39−52−42.383N / 75−13−31.8279W
2.19.6 Site Elevation: 5.4 ft

2.19.1 ILS Type: DME for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39−52−35.4715N / 75−13−11.5053W
2.19.6 Site Elevation: 19.4 ft

2.19.1 ILS Type: Glide Slope for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39−52−6.03N / 75−15−6.06W
2.19.6 Site Elevation: 8.9 ft

2.19.1 ILS Type: Localizer for runway 09L. Magnetic variation: 12W
2.19.2 ILS Identification: VII
2.19.5 Coordinates: 39−52−33.52N / 75−13−8.777W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: DME for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39−52−35.4715N / 75−13−11.5053W
2.19.6 Site Elevation: 19.4 ft

2.19.1 ILS Type: Glide Slope for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39−52−24.0466N / 75−13−35.8144W
2.19.6 Site Elevation: 7.5 ft

2.19.1 ILS Type: Localizer for runway 27R. Magnetic variation: 12W
2.19.2 ILS Identification: PDP
2.19.5 Coordinates: 39−52−4.7498N / 75−15−32.9263W
2.19.6 Site Elevation: 8.8 ft

2.19.1 ILS Type: DME for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39−52−7.3027N / 75−13−47.0541W
2.19.6 Site Elevation: 23.5 ft

2.19.1 ILS Type: Glide Slope for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39−51−37.8234N / 75−16−15.7274W
2.19.6 Site Elevation: 13.3 ft

2.19.1 ILS Type: Inner Marker for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39−51−36.7356N / 75−16−41.589W
2.19.6 Site Elevation: 7.2 ft

2.19.1 ILS Type: Localizer for runway 09R. Magnetic variation: 12W
2.19.2 ILS Identification: PHL
2.19.5 Coordinates: 39−52−11.1563N / 75−13−49.1425W
2.19.6 Site Elevation: 9 ft

2.19.1 ILS Type: DME for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39−52−7.3027N / 75−13−47.0541W
2.19.6 Site Elevation: 23.5 ft

2.19.1 ILS Type: Glide Slope for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39−51−57.2838N / 75−14−37.7318W
2.19.6 Site Elevation: 8.4 ft

2.19.1 ILS Type: Localizer for runway 27L. Magnetic variation: 12W
2.19.2 ILS Identification: GLC
2.19.5 Coordinates: 39−51−36.2572N / 75−16−43.9517W
2.19.6 Site Elevation: 6.8 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39−52−6.7468N / 75−13−39.3372W
2.19.6 Site Elevation: 24.5 ft

2.19.1 ILS Type: Glide Slope for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39−53−5.9004N / 75−14−8.6899W
2.19.6 Site Elevation: 6.2 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 12W
2.19.2 ILS Identification: MYY
2.19.5 Coordinates: 39−52−6.3204N / 75−13−35.5323W
2.19.6 Site Elevation: 12 ft

General Remarks:

ARPT IS LCTD IN A NOISE SENSITIVE AREA. AIRPORT NOISE ABATEMENT TAKEOFF PROCEDURES ARE TO BE USED.

ONLY NOSE−IN PRKG PERMITTED ON NORTH REMOTE APNS. PPR FM ARPT OPS FOR ALL ACFT PRKG ON REMOTE APNS; CTC 215−937−6914/6800.

RY 09R ROLLOUT RVR USED FOR RY 09L MIDPOINT RVR.

RYS 27L, 27R & 35 SHIP CHNL (DELAWARE RIVER) MAX HEIGHT OF SHIPS 189 FT. RY 26 SHIP CHNL (SCHUYLKILL) MAX HEIGHT OF SHIPS 149 FT.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

ALL ACFT TRAVELING ON TWY J MUST USE MINIMUM POWER WHEN TURNING SOUTH DUE TO JETBLAST CONCERNS.

UNLGTD STACK 288 FT MSL (271 FT AGL) 2.3 NM SW OF ARPT.

TCAS EQUIPPED ACFT−TCAS ALERT MAY BE CAUSED BY TRANSPONDER EQUIPPED SHIPS LCTD PHL NAVAL BASE 3 NM E.

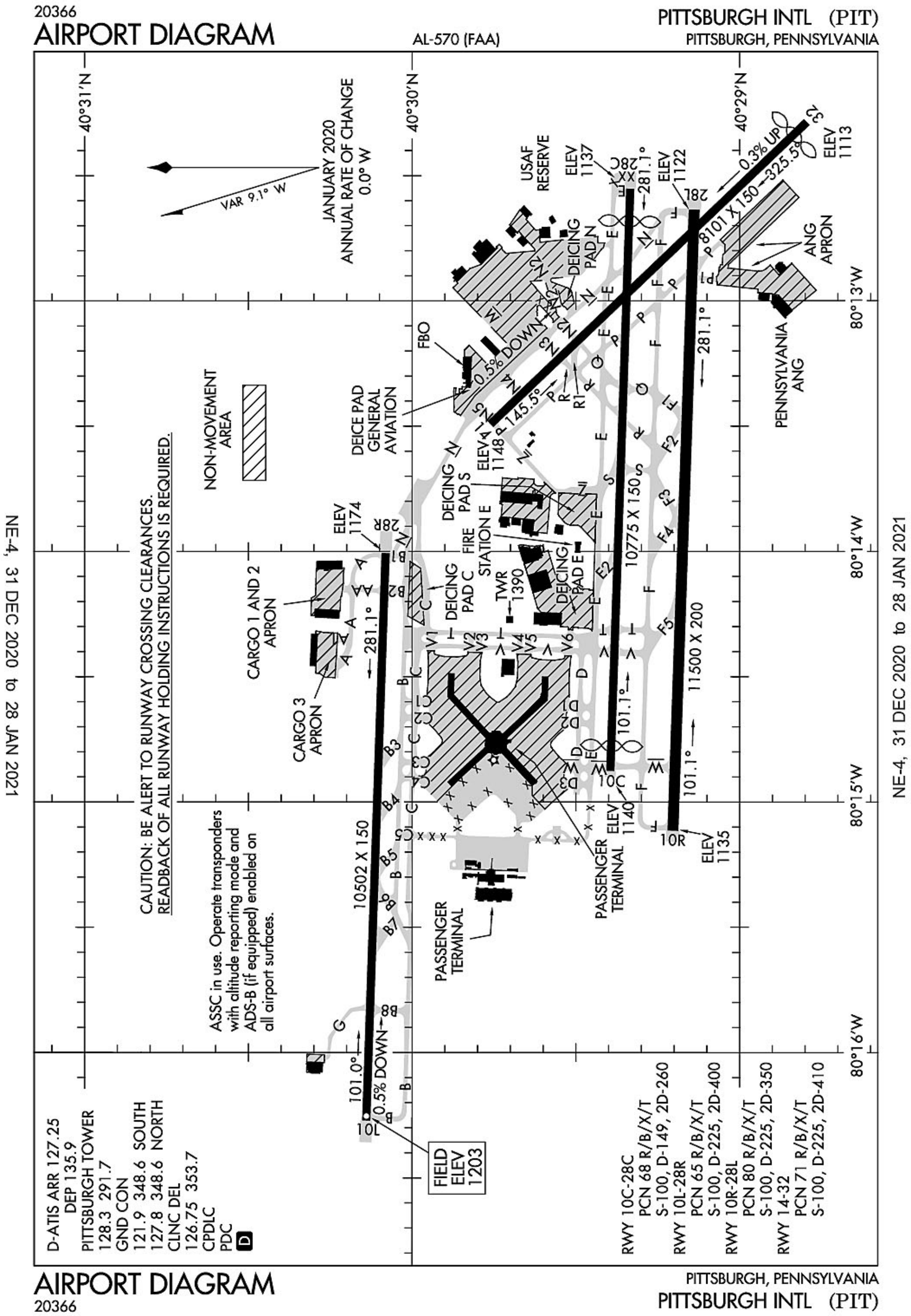
TWY J BTN TWYS K3 AND Q RESTRICTED TO ACFT WITH WINGSPANS 171 FT AND LESS.

ALL ENGINE RUNUPS REQUIRE PPR FM DUTY OPNS OFFICER AT 937−6914/6800; RUNUPS 20 MIN MAXIMUM.

POSSIBLE UNMARKED SHIP OBSTRUCTION TRANSITING EAST OR WESTBOUND ALONG THE DELAWARE RIVER REACHING HEIGHTS OF 189’ − BE ALERT WHEN APPROACHING PHL RUNWAY 35 AND WHENEVER CIRCLING OR VISUALLY APPROACHING ALL OTHER RUNWAYS.

BIRDS ON & INVOF ARPT.

Pittsburgh, Pennsylvania
Pittsburgh International
ICAO Identifier KPIT



Pittsburgh, PA
Pittsburgh Intl
ICAO Identifier KPIT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−29−29.1N / 80−13−57.7W
2.2.2 From City: 12 miles NW of PITTSBURGH, PA
2.2.3 Elevation: 1202.9 ft
2.2.5 Magnetic Variation: 9W (2020)
2.2.6 Airport Contact: CHRISTINA A. CASSOTIS
PO BOX 12370, SUITE 4000
PITTSBURGH, PA 15231
((412) 472−3509)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28C
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−20.0419N / 80−12−33.1754W
2.12.6 Threshold Elevation: 1136.6 ft
2.12.6 Touchdown Zone Elevation: 1133.5 ft

2.12.1 Designation: 10C
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10775 ft x 150 ft
2.12.4 PCN: 68 R/B/X/T
2.12.5 Coordinates: 40−29−23.6989N / 80−14−52.5475W
2.12.6 Threshold Elevation: 1140.2 ft
2.12.6 Touchdown Zone Elevation: 1141.4 ft

2.12.1 Designation: 10L
2.12.2 True Bearing: 92
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40−30−8.4012N / 80−16−16.2687W
2.12.6 Threshold Elevation: 1202.9 ft
2.12.6 Touchdown Zone Elevation: 1202.9 ft

2.12.1 Designation: 28R
2.12.2 True Bearing: 272
2.12.3 Dimensions: 10502 ft x 150 ft
2.12.4 PCN: 65 R/B/X/T
2.12.5 Coordinates: 40−30−4.8667N / 80−14−0.4048W
2.12.6 Threshold Elevation: 1174.1 ft
2.12.6 Touchdown Zone Elevation: 1174.1 ft

2.12.1 Designation: 28L
2.12.2 True Bearing: 272
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40−29−8.3238N / 80−12−38.1249W
2.12.6 Threshold Elevation: 1121.9 ft
2.12.6 Touchdown Zone Elevation: 1125 ft

2.12.1 Designation: 10R
2.12.2 True Bearing: 92
2.12.3 Dimensions: 11500 ft x 200 ft
2.12.4 PCN: 80 R/B/X/T
2.12.5 Coordinates: 40−29−12.2249N / 80−15−6.8568W
2.12.6 Threshold Elevation: 1134.8 ft
2.12.6 Touchdown Zone Elevation: 1134.8 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 136
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−29−45.6544N / 80−13−29.5187W
2.12.6 Threshold Elevation: 1147.6 ft
2.12.6 Touchdown Zone Elevation: 1147.6 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 316
2.12.3 Dimensions: 8101 ft x 150 ft
2.12.4 PCN: 71 R/B/X/T
2.12.5 Coordinates: 40−28−47.69N / 80−12−17.2183W
2.12.6 Threshold Elevation: 1113.4 ft
2.12.6 Touchdown Zone Elevation: 1123.6 ft

2.12.1 Designation: H1
2.12.2 True Bearing:
2.12.3 Dimensions: 53 ft x 53 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−

2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances
2.13.1 Designation: 28C
2.13.2 Take−off Run Available: 10775
2.13.3 Take−off Distance Available: 10775
2.13.4 Accelerate−Stop Distance Available: 10310
2.13.5 Landing Distance Available: 9708

2.13.1 Designation: 10C
2.13.2 Take−off Run Available: 10775
2.13.3 Take−off Distance Available: 10775
2.13.4 Accelerate−Stop Distance Available: 10173
2.13.5 Landing Distance Available: 9708

2.13.1 Designation: 10L
2.13.2 Take−off Run Available: 10502
2.13.3 Take−off 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 Take−off Run Available: 10502
2.13.3 Take−off Distance Available: 10502
2.13.4 Accelerate−Stop Distance Available: 10102
2.13.5 Landing Distance Available: 10102

2.13.1 Designation: 28L
2.13.2 Take−off Run Available: 11500
2.13.3 Take−off Distance Available: 11500
2.13.4 Accelerate−Stop Distance Available: 11500
2.13.5 Landing Distance Available: 11500

2.13.1 Designation: 10R
2.13.2 Take−off Run Available: 11500
2.13.3 Take−off Distance Available: 11500
2.13.4 Accelerate−Stop Distance Available: 11492
2.13.5 Landing Distance Available: 11492

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 8101
2.13.3 Take−off 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 Take−off Run Available: 8101
2.13.3 Take−off Distance Available: 8101
2.13.4 Accelerate−Stop Distance Available: 7801
2.13.5 Landing Distance Available: 7466

2.13.1 Designation: H1
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: H1
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG OPS
2.18.3 Channel: 311

2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P (271−360)
2.18.3 Channel: 121.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (001−090)
2.18.3 Channel: 124.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (181−270)
2.18.3 Channel: 133.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (270−089)
2.18.3 Channel: 279.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (090−269)
2.18.3 Channel: 360.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P
2.18.3 Channel: 336.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (091−180)
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 126.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 353.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (271−360)
2.18.3 Channel: 121.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (091−180)
2.18.3 Channel: 123.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (001−090)
2.18.3 Channel: 124.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (181−270)
2.18.3 Channel: 133.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (270−089)
2.18.3 Channel: 279.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (090−269)
2.18.3 Channel: 360.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: COMD POST
2.18.3 Channel: 252.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 127.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (SOUTH)
2.18.3 Channel: 119.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (NORTH)
2.18.3 Channel: 124.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (090−269)
2.18.3 Channel: 285.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (NORTH)
2.18.3 Channel: 338.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/S
2.18.3 Channel: 125.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (SOUTH)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (NORTH)
2.18.3 Channel: 127.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 128.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 291.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS
2.18.3 Channel: 36.35
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−11.9236N / 80−15−59.9044W
2.19.6 Site Elevation: 1195 ft

2.19.1 ILS Type: Inner Marker for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−8.7927N / 80−16−27.004W
2.19.6 Site Elevation: 1175.5 ft

2.19.1 ILS Type: Localizer for runway 10L. Magnetic variation: 9W
2.19.2 ILS Identification: LXB
2.19.5 Coordinates: 40−30−4.5231N / 80−13−47.1428W
2.19.6 Site Elevation: 1160.8 ft

2.19.1 ILS Type: Glide Slope for runway 28R. Magnetic variation: 9W
2.19.2 ILS Identification: HFE
2.19.5 Coordinates: 40−30−8.7192N / 80−14−14.6252W
2.19.6 Site Elevation: 1170.6 ft

2.19.1 ILS Type: Localizer for runway 28R. Magnetic variation: 9W
2.19.2 ILS Identification: HFE
2.19.5 Coordinates: 40−30−8.7888N / 80−16−31.3335W
2.19.6 Site Elevation: 1214.2 ft

2.19.1 ILS Type: Glide Slope for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−15.3464N / 80−14−53.775W
2.19.6 Site Elevation: 1129.2 ft

2.19.1 ILS Type: Inner Marker for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−12.5381N / 80−15−18.8824W
2.19.6 Site Elevation: 1144.8 ft

2.19.1 ILS Type: Localizer for runway 10R. Magnetic variation: 9W
2.19.2 ILS Identification: GUT
2.19.5 Coordinates: 40−29−8.2188N / 80−12−34.1165W
2.19.6 Site Elevation: 1116.6 ft

2.19.1 ILS Type: Glide Slope for runway 28L. Magnetic variation: 9W
2.19.2 ILS Identification: PFS
2.19.5 Coordinates: 40−29−4.7301N / 80−12−51.2688W
2.19.6 Site Elevation: 1120.3 ft

2.19.1 ILS Type: Localizer for runway 28L. Magnetic variation: 9W
2.19.2 ILS Identification: PFS
2.19.5 Coordinates: 40−29−12.6437N / 80−15−23.0275W
2.19.6 Site Elevation: 1141.2 ft

2.19.1 ILS Type: DME for runway 32. Magnetic variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−29−48.847N / 80−13−37.583W
2.19.6 Site Elevation: 1134 ft

2.19.1 ILS Type: Glide Slope for runway 32. Magnetic variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−28−52.663N / 80−12−29.1403W
2.19.6 Site Elevation: 1112.2 ft

2.19.1 ILS Type: Localizer for runway 32. Magnetic

variation: 9W
2.19.2 ILS Identification: TQW
2.19.5 Coordinates: 40−29−50.4118N /
80−13−35.4629W
2.19.6 Site Elevation: 1139.1 ft

General Remarks:
TWY AA NO TURN−OFF ONTO TWY A FOR ACFT WINGSPAN 171 FT OR GREATER EXC PPR (412) 472−5630.

[MILITARY]: CAUTION: BASH PHASE II OPS IN EFFECT 1 JUL − 31 AUG ANNUALLY. UNLESS MSN REQUIREMENTS DIRECT OTHERWISE, FLIGHTS SHOULD NOT BE SKED WITHIN +/−1HR OF SS/SR. TRAN AIRCREW SHOULD REQ BIRD WATCH COND FR AFRC (PITT OPS) ON 252.1 OR ANG OPS (STEEL CTL) ON 311.0. AIRCREW WILL BE INFORMED BY STEEL CONTROL OR PITT OPS (AS APPLICABLE) IF CURRENT BWC IS OTHER THAN LOW REGARDLESS OF BASH PHASE.

SERVICE−OIL: O−156.

TERML TAXILANES E OF CONCOURSES A & B RESTRD TO GROUP 3 ACFT & SMALLER.

ACFT USING TWY 'N' PROHIBITED TO STOP ON OVERPASS AREA DUE TO POSSIBLE EMERGENCY EVACUATION HAZARD.

ALL JETS DEPARTING RY 28R MUST BE ALIGNED WI RY PRIOR TO APPLYING TKOF POWER.

DEER & BIRDS ON & INVOF ARPT.

ANG: OPR 1130−2030Z++MON−FRI EXCP HOL. (CLSD EV OTH MON.)

ANG ACFT MUST CTC TANKER 303.0/FTR OPNS 293.7 BEFORE CROSSING RWY 28L TO OBTAIN CLNC TO ENTER.

ASSC IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

SERVICE−TRAN ALERT: NO PRIORITY BASIS.

FUEL: A++ PROVIDED BY ANG AND AFRC.(MIL).

PPR/OFFL BUS MIN 48 HR CTC AFLD MGMT DSN 277 8163, C412 474 8163. LTD TRAN SVC. AFLD MGT NML DUTY HRS 1300 0100++ MON, WED, FRI, 1300−0500++ TUE, THU, EXC HOL. UNIT TRAINING ASSEMBLY 1300 2100Z++SAT SUN.TRAN ACFT MUST HAVE APPVL OF 911OG/CC FOR PPR DUR OFF DUTY HR. NO SVC AVBL FOR SPACE AVBL PAX DUR OFF DUTY HR. CALL PITT COMD POST (IRON CITY) BY RDO PRIOR TO ENTRY TO AFRC RAMP. ALFD MGMT DOES NOT ISSUE OR STOR COMSEC. COMSEC STOR CTC COMD POST DSN 277 8146.

LDG FEE.

TRML APN UNCONTROLLED. PUSHBACK PILOT DESCRETION. DO NOT EXIT TRML APN AT TWY C1, C4, V3, V4, D1, W. CTC GC WHEN HLDG AT TWY C2, C3, V1, V2, V5, V6, D2, D3.

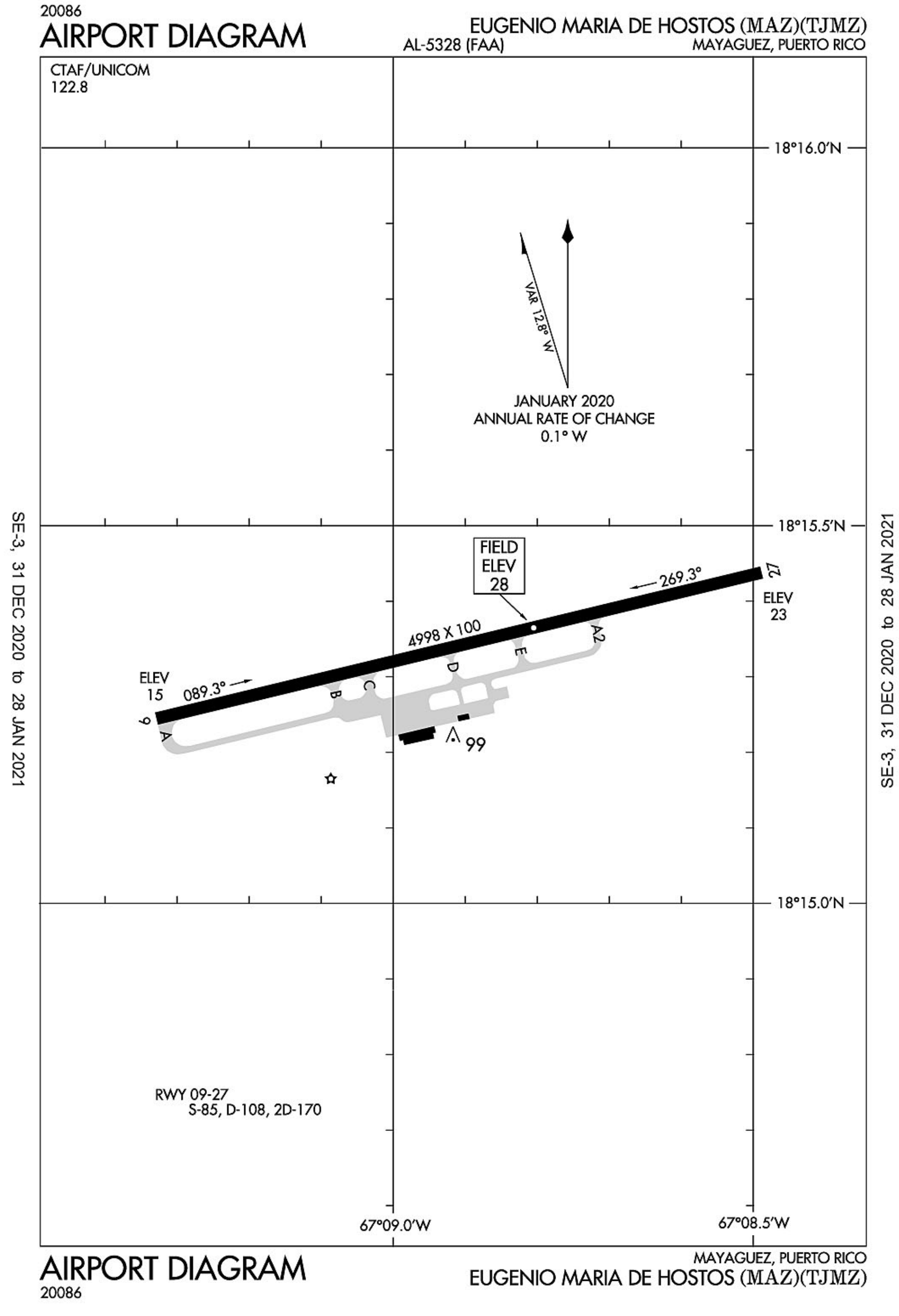
SERVICE−JASU: (ANG) (A/M32A−86) (AM 32−95; (AFRC − 2(A/M32−86 (AM32−95).

SERVICE−FLUID: LPOX LHNIT.

ATCT IS AUTHORIZED TO HAVE ACFT LINE−UP & WAIT ON RYS 28L AT TWY 'P' DURG HRS OF DARKNESS. THE SPECIFIC RY SHALL BE USED ONLY FOR DEPARTURES & THE INTXN MUST BE VSB FM ATCT.

TWY G INTXN AT RY 10L/28R RIGHT TURN NA.

Mayaguez, Puerto Rico
Eugenio Maria De Hostos
ICAO Identifier TJMZ



Mayaguez, PR
Eugenio Maria De Hostos
ICAO Identifier TJMZ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−15−20.5N / 67−8−54.5W

2.2.2 From City: 3 miles N of MAYAGUEZ, PR

2.2.3 Elevation: 27.7 ft

2.2.5 Magnetic Variation: 10W (1985)

2.2.6 Airport Contact: EDGAR SIERRA
BOX 710
MAYAGUEZ, PR 709
(787−832−3390)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, MON−FRI Days, 0730−1600 Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: NO

2.4.2 Fuel Types:

2.4.5 Hangar Space: NO

2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: None

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 27

2.12.2 True Bearing: 256

2.12.3 Dimensions: 4998 ft x 100 ft

2.12.4 PCN:

2.12.5 Coordinates: 18−15−26.2517N / 67−8−29.2981W

2.12.6 Threshold Elevation: 23.2 ft

2.12.6 Touchdown Zone Elevation: 27.7 ft

2.12.1 Designation: 09

2.12.2 True Bearing: 76

2.12.3 Dimensions: 4998 ft x 100 ft

2.12.4 PCN:

2.12.5 Coordinates: 18−15−14.6817N / 67−9−19.728W

2.12.6 Threshold Elevation: 15.3 ft

2.12.6 Touchdown Zone Elevation: 27.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 27

2.13.2 Take−off Run Available:

2.13.3 Take−off Distance Available:

2.13.4 Accelerate−Stop Distance Available:

2.13.5 Landing Distance Available:

2.13.1 Designation: 09

2.13.2 Take−off Run Available:

2.13.3 Take−off Distance Available:

2.13.4 Accelerate−Stop Distance Available:

2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 27

2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 09

2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

AD 2.19 Radio Navigation and Landing Aids

2.19.1 Navigation Aid Type: NDB. Magnetic variation: 10W

2.19.2 Navigation Aid Identification: MAZ

2.19.5 Coordinates: 18−15−13.529N / 67−9−8.947W

2.19.6 Site Elevation:

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 10W

2.19.2 Navigation Aid Identification: MAZ

2.19.5 Coordinates: 18−15−23.2293N / 67−9−3.7215W

2.19.6 Site Elevation: 18 ft

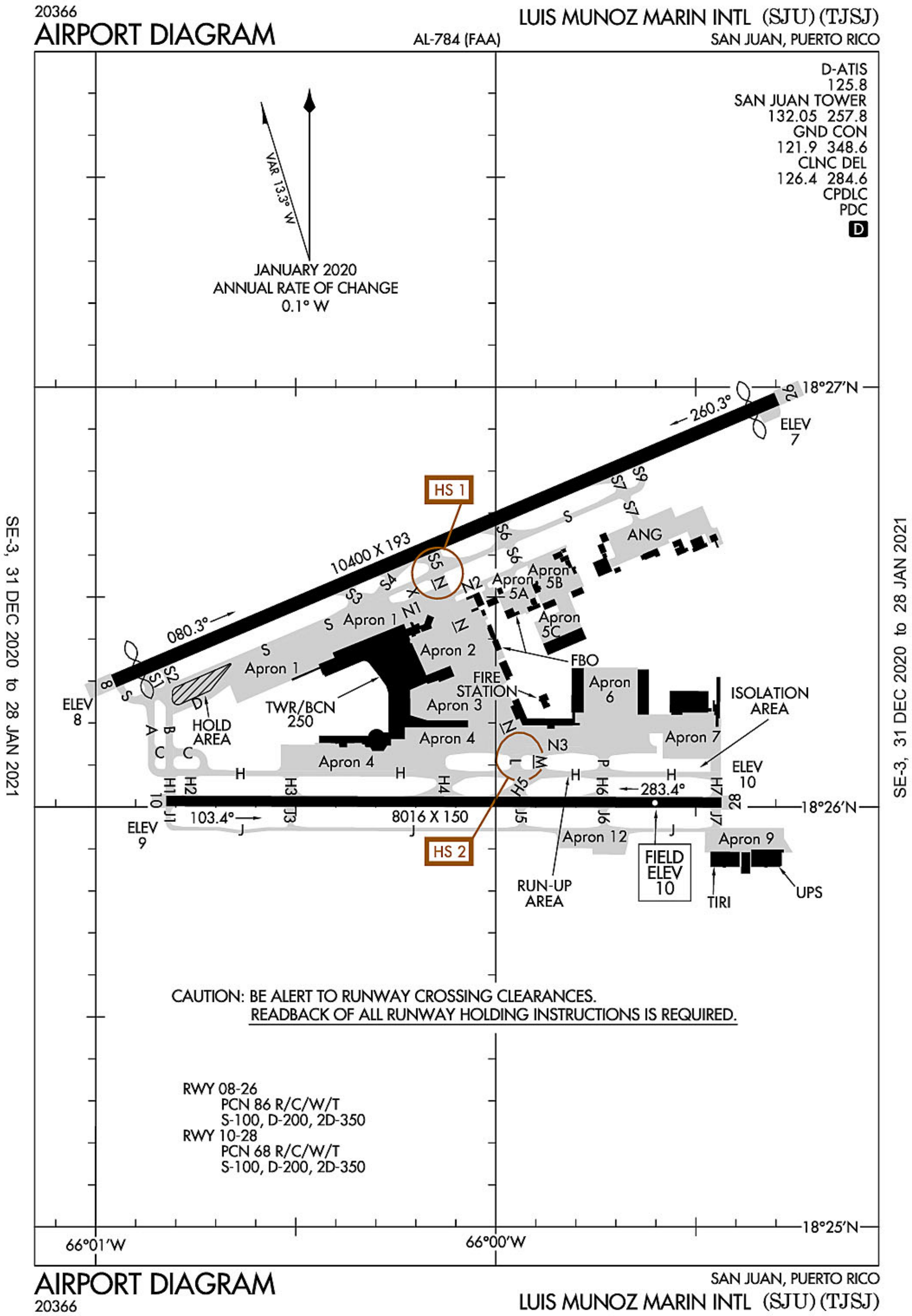
General Remarks:

1200’ TWR /1207’ MSL/ 9 NM NNW.

FOR CD IF FREQ ARE OTS CTC SAN JUAN CERAP AT 787−253−8664/8667

BIRDS ON AND INVOF ARPT.

San Juan, Puerto Rico
Luis Munoz Marin International
ICAO Identifier TJSJ



San Juan, PR
Luis Munoz Marin Intl
ICAO Identifier TJSJ

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−26−21.837N / 66−0−7.68W
2.2.2 From City: 3 miles SE of SAN JUAN, PR
2.2.3 Elevation: 9.6 ft
2.2.5 Magnetic Variation: 11W (1985)
2.2.6 Airport Contact: MR. JORGE HERNANDEZ
P. O. BOX 38085
SAN JUAN, PR 937
((787) 289−7240)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,115,A+,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I D certified on 5/1/2005

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 08
2.12.2 True Bearing: 67
2.12.3 Dimensions: 10400 ft x 193 ft
2.12.4 PCN: 86 R/C/W/T
2.12.5 Coordinates: 18−26−17.9673N / 66−0−57.3115W
2.12.6 Threshold Elevation: 8.2 ft
2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 247
2.12.3 Dimensions: 10400 ft x 193 ft
2.12.4 PCN: 86 R/C/W/T
2.12.5 Coordinates: 18−26−58.2684N / 65−59−17.8783W
2.12.6 Threshold Elevation: 6.9 ft
2.12.6 Touchdown Zone Elevation: 7.4 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−0.8092N / 66−0−49.4179W
2.12.6 Threshold Elevation: 9.3 ft
2.12.6 Touchdown Zone Elevation: 9.3 ft

2.12.1 Designation: 28
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8016 ft x 150 ft
2.12.4 PCN: 68 R/C/W/T
2.12.5 Coordinates: 18−26−0.6107N / 65−59−26.159W
2.12.6 Threshold Elevation: 9.5 ft
2.12.6 Touchdown Zone Elevation: 9.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 9784
2.13.3 Take−off 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 Take−off Run Available: 8128
2.13.3 Take−off 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 Take−off Run Available: 8016
2.13.3 Take−off 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 Take−off Run Available: 8016
2.13.3 Take−off 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
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: APCH/P DEP/P (WEST & SW)
2.18.3 Channel: 119.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (NORTH & EAST)
2.18.3 Channel: 120.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (WEST & SW)
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (NORTH & EAST)
2.18.3 Channel: 290.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 126.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 284.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (WEST & SW)
2.18.3 Channel: 119.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH & EAST)
2.18.3 Channel: 120.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (WEST & SW)
2.18.3 Channel: 269.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH & EAST)
2.18.3 Channel: 290.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 125.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 132.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P

2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU
2.19.5 Coordinates: 18−26−27.0397N / 66−0−45.5699W
2.19.6 Site Elevation: 4.2 ft

2.19.1 ILS Type: Localizer for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU
2.19.5 Coordinates: 18−26−59.7947N / 65−59−14.1228W
2.19.6 Site Elevation: 5.6 ft

2.19.1 ILS Type: Outer Marker for runway 08. Magnetic variation: 11W
2.19.2 ILS Identification: SJU
2.19.5 Coordinates: 18−24−31.8227N / 66−5−21.8301W
2.19.6 Site Elevation: 66.5 ft

2.19.1 ILS Type: DME for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−26−2.5352N / 65−59−15.6282W
2.19.6 Site Elevation: 18.2 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−25−57.5628N / 66−0−39.041W
2.19.6 Site Elevation: 4.5 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 11W
2.19.2 ILS Identification: CLA
2.19.5 Coordinates: 18−26−0.5899N / 65−59−15.5192W
2.19.6 Site Elevation: 9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 11W
2.19.2 Navigation Aid Identification: SJU
2.19.5 Coordinates: 18−26−46.6101N / 65−59−22.2272W
2.19.6 Site Elevation: 5.7 ft

General Remarks:
MILITARY: ANG: CAUTION − MUNIZ ANG APN HGR OBST LGTS PARTIALLY OTS.

TWY J BTN J1 AND J5 (NOT INCLUDING J5) CLSD TO ACFT WITH GREATER THAN 118 FT WINGSPAN.

ACFT 180 TURNS ON TWYS REQUIRES OPS COORDINATIONS.

FBO/GROUND HANDLER MUST SUBMIT 72 HRS PPR FOR ALL MIL ACFT TO: CCO@AEROSTARAIRPORTS.-COM OR BY PHONE TO: 787−253−0979

MILITARY: ANG: RSTD − RDCD WINGTIP CLNC FOR WIDE BODY ACFT SW SIDE OF MUNIZ ANGB APN DUE TO TEMPO MOBILE OBST.

MILITARY: ANG: INBD ACFT ORIGINATING FR OCONUS WITH A PPR FOR MUNIZ ANGB APN MUST CLEAR CUSTOMS AND BORDER PROTECTION AT CIV SIDE. PRIOR COORD MUST BE MADE WITH ANG AMOPS, FONE 740−9629 AT LEAST ONE BUS DAY PRIOR TO ARRIVAL.

ALL PVT AND CORPORATE AIRCRAFT MUST CONTACT ARPT OPS, BEFORE ARRIVAL, FOR FBOS & GROUND HANDLING INFO AT 787−253−0979.

MILITARY: ANG: CAUTION − UNLGTD ROLLING GATE AT ENTRANCE OF MUNIZ ANGB APN; GATE MUST BE FULLY EXTDD PRIOR TO ACFT TRSN INTO ANG APN.

ENGINE RUNUPS PROHIBITED ON GATES AREA.

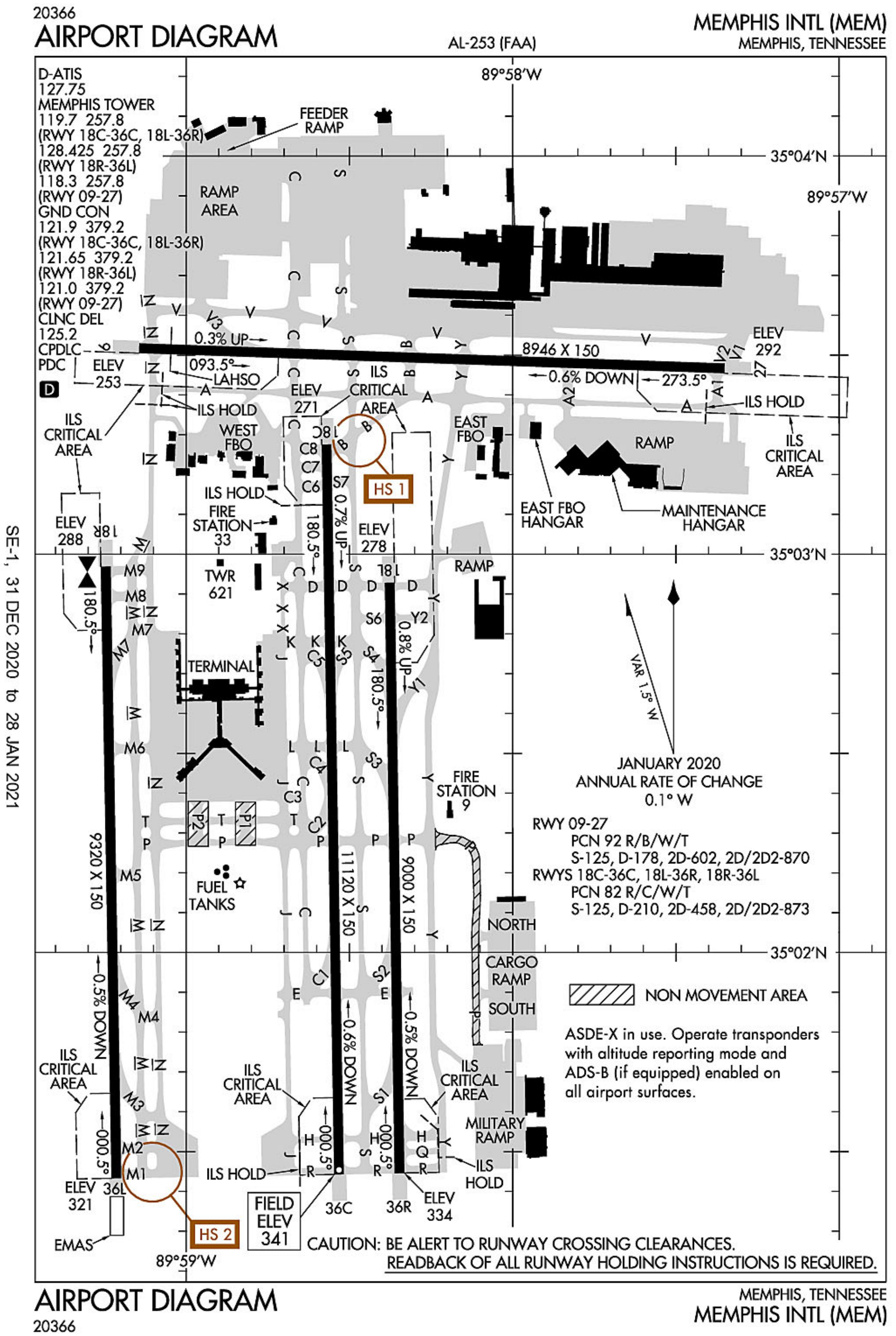
APRON 12 AVBL FOR GA ACFT ONLY.

BASE OPS 1130−2000Z MON−FRI, CLSD WKEND AND HOL.

TWY N IS UNDER CONSTRUCTION. PLEASE, CONTACT ARPT OPS AT 787−253−0979 FOR FURTHER DETAILS AND RESTRICTIONS.

TWY S BTN TWY S2 AND TWY S5 CLSD LGTD AND BARRICADED.

Memphis, Tennessee
Memphis International
ICAO Identifier KMEM



Memphis, TN
Memphis Intl
ICAO Identifier KMEM

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 35−2−32.681N / 89−58−36.045W
2.2.2 From City: 3 miles S of MEMPHIS, TN
2.2.3 Elevation: 340.9 ft
2.2.5 Magnetic Variation: 1W (2020)
2.2.6 Airport Contact: SCOTT A BROCKMAN
2491 WINCHESTER RD.
MEMPHIS, TN 38116
(901−922−8000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A,A+,A++
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/21/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 09
2.12.2 True Bearing: 92
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−3−31.046N / 89−59−8.6536W
2.12.6 Threshold Elevation: 253.2 ft
2.12.6 Touchdown Zone Elevation: 258.7 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 272
2.12.3 Dimensions: 8946 ft x 150 ft
2.12.4 PCN: 92 R/B/W/T
2.12.5 Coordinates: 35−3−28.0128N / 89−57−21.0816W
2.12.6 Threshold Elevation: 292 ft
2.12.6 Touchdown Zone Elevation: 292 ft

2.12.1 Designation: 18C
2.12.2 True Bearing: 179
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−3−16.5411N / 89−58−34.2156W
2.12.6 Threshold Elevation: 270.6 ft
2.12.6 Touchdown Zone Elevation: 290.1 ft

2.12.1 Designation: 36C
2.12.2 True Bearing: 359
2.12.3 Dimensions: 11120 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−26.5803N / 89−58−31.8977W
2.12.6 Threshold Elevation: 340.9 ft
2.12.6 Touchdown Zone Elevation: 340.9 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−26.7376N / 89−58−20.7544W
2.12.6 Threshold Elevation: 334.3 ft
2.12.6 Touchdown Zone Elevation: 334.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−2−55.7402N / 89−58−22.6229W
2.12.6 Threshold Elevation: 277.6 ft
2.12.6 Touchdown Zone Elevation: 300.9 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−2−58.1489N / 89−59−14.7913W
2.12.6 Threshold Elevation: 288.4 ft
2.12.6 Touchdown Zone Elevation: 294.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 359
2.12.3 Dimensions: 9320 ft x 150 ft
2.12.4 PCN: 82 R/C/W/T
2.12.5 Coordinates: 35−1−25.9852N / 89−59−12.8121W
2.12.6 Threshold Elevation: 320.8 ft
2.12.6 Touchdown Zone Elevation: 320.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 09
2.13.2 Take−off Run Available: 8946
2.13.3 Take−off 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 Take−off Run Available: 8946
2.13.3 Take−off Distance Available: 8946
2.13.4 Accelerate−Stop Distance Available: 8946
2.13.5 Landing Distance Available: 8946

2.13.1 Designation: 18C
2.13.2 Take−off Run Available: 11120
2.13.3 Take−off 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 Take−off Run Available: 11120
2.13.3 Take−off Distance Available: 11120
2.13.4 Accelerate−Stop Distance Available: 10715
2.13.5 Landing Distance Available: 10715

2.13.1 Designation: 36R
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 9000

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 9320
2.13.3 Take−off 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 Take−off Run Available: 9320
2.13.3 Take−off Distance Available: 9320
2.13.4 Accelerate−Stop Distance Available: 9320
2.13.5 Landing Distance Available: 9320

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 27
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ANG COMD POST
2.18.3 Channel: 138.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG COMD POST
2.18.3 Channel: 353.45
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 125.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 127.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (RWY 09/27)
2.18.3 Channel: 121
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 18R/36L)
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 18L/36R, 18C/36C)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 379.2
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09/27)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18L/36R, 18C/36C)
2.18.3 Channel: 119.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 18R/36L)
2.18.3 Channel: 128.425
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 1W
2.19.2 ILS Identification: MEM
2.19.5 Coordinates: 35−3−27.2174N / 89−58−56.2128W
2.19.6 Site Elevation: 252.5 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 1W
2.19.2 ILS Identification: MEM
2.19.5 Coordinates: 35−3−27.6511N / 89−57−7.9461W
2.19.6 Site Elevation: 296.5 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 1W
2.19.2 ILS Identification: JIM
2.19.5 Coordinates: 35−3−24.4908N / 89−57−36.2529W
2.19.6 Site Elevation: 277.2 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 1W
2.19.2 ILS Identification: JIM
2.19.5 Coordinates: 35−3−31.3982N / 89−59−20.811W
2.19.6 Site Elevation: 252.2 ft

2.19.1 ILS Type: Glide Slope for runway 18C. Magnetic variation: 1W
2.19.2 ILS Identification: SDU
2.19.5 Coordinates: 35−3−7.6024N / 89−58−37.5142W
2.19.6 Site Elevation: 273.1 ft

2.19.1 ILS Type: Localizer for runway 18C. Magnetic variation: 1W
2.19.2 ILS Identification: SDU
2.19.5 Coordinates: 35−1−10.2462N / 89−58−31.5613W
2.19.6 Site Elevation: 345.5 ft

2.19.1 ILS Type: DME for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35−3−22.0479N / 89−58−37.3452W
2.19.6 Site Elevation: 268.9 ft

2.19.1 ILS Type: Glide Slope for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35−1−38.095N / 89−58−36.9423W
2.19.6 Site Elevation: 329.5 ft

2.19.1 ILS Type: Localizer for runway 36C. Magnetic variation: 1W
2.19.2 ILS Identification: TSE
2.19.5 Coordinates: 35−3−22.514N / 89−58−34.3391W
2.19.6 Site Elevation: 261.2 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35−1−16.8761N / 89−58−19.3033W
2.19.6 Site Elevation: 328.2 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35−2−46.7849N / 89−58−17.6254W
2.19.6 Site Elevation: 278.6 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 1W
2.19.2 ILS Identification: EXS
2.19.5 Coordinates: 35−1−16.6952N / 89−58−20.5424W
2.19.6 Site Elevation: 344.5 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35−3−5.9229N / 89−58−19.6804W
2.19.6 Site Elevation: 282.5 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35−1−38.0016N / 89−58−16.1795W
2.19.6 Site Elevation: 324.2 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 1W
2.19.2 ILS Identification: MYO
2.19.5 Coordinates: 35−3−6.1649N / 89−58−22.8431W
2.19.6 Site Elevation: 278.7 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 1W
2.19.2 ILS Identification: OOI
2.19.5 Coordinates: 35−2−48.6497N / 89−59−18.4713W
2.19.6 Site Elevation: 287.1 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 1W
2.19.2 ILS Identification: OOI
2.19.5 Coordinates: 35−1−17.2969N / 89−59−12.6028W
2.19.6 Site Elevation: 321.4 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−3−6.901N / 89−59−10.0928W
2.19.6 Site Elevation: 285.7 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−1−38.7288N / 89−59−17.8741W
2.19.6 Site Elevation: 308.9 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 1W
2.19.2 ILS Identification: OHN
2.19.5 Coordinates: 35−3−8.5885N / 89−59−14.9936W
2.19.6 Site Elevation: 277.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 1E
2.19.2 Navigation Aid Identification: MEM
2.19.5 Coordinates: 35−0−54.3808N / 89−58−59.5258W
2.19.6 Site Elevation: 363.4 ft

General Remarks:
TWY P1, TWY P2, TWY N NORTH OF TWY V, TWY C NORTH OF TWY V & TWY S NORTH OF TWY V DESIGNATED NON−MOVEMENT AREA.

ANG: PPR 24 HR PN RQR; OFFL BUS ONLY.

COMMUNICATIONS−ANG COMD POST: RADIO CALL GRACELAND OPS.

HELI OPS TO/FROM TRML BLDG NA.

ANG−PPR DSN 726−7131/7505, C901−291−7131/7505. MIL RAMP OPS 1230−0430Z++ MON−FRI; CLSD ALTN MON & HOL. MIL RAMP CLSD OUTSIDE OF PUB HR WITHOUT OG/CC APVL DSN 726−7557, C901−291−7557. TSNT ACFT MAINT NOT AVBL. REFUEL SVC FOR OTR THAN C17 ACFT RQR QUALIFIED CREW CHIEF OR CREWMEMBERS. NON−C17 ACFT SUPPORT PRVDD BY CONTRACT FBO ON FLD. SECURITY AVBL 24 HRS, DSN 726−7101, C901−291−7101. COMD POST DSN 726−7148/7311/7312, C901−291−7148/7311/7312. OPR 1230−0430Z++ MON−FRI, CLSD ALTN MON AND HOL DUE TO ALTN WORK SCHED. AFLD MGR DOES NOT ISSUE OR STORE COMSEC FOR TRAN CRES. TMPRY STOR OF CLASSIFIED MATERIALS UP TO TOP SECRET AT COMD POST.

CONDUCT GND OPS WITH TRANSPONDERS ON.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF

EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

BASH PHASE II APR−MAY & AUG−OCT; CURRENT BIRD WATCH COND NOT ON ATIS.

MILITARY: MIL RAMP OPS AT REDUCED ARFF, DOWNGRADED TO YELLOW.

BIRDS INVOF ARPT.

APRON J & N RUNUP PAD CLSD.

TWY V BTN TWY S & Y RSTR TO ACFT WITH TAIL HEIGHT 65 FT 10 IN OR LESS.

TWY P1 BTN TWY T & TRML RAMP & TWY P2 BTN TWY T & TRML RAMP CLSD.

ACFT WITH WINGSPAN MORE THAN 118 FT RSTR FM TAXI ON TWY J NORTH OF C3.

HOLD SHORT INSTRUCTION READ BACK RQR.

NOISE ABATEMENT PROCEDURES IN EFFECT. SUCCESSIVE AND/OR SIMULTANEOUS DEP APVD ON RWY 36L−18R & RWY 36C−18C OR RWY 36L−18R & WRY 36R−18L WITH COURSE DIVERGENCE NO LATER THAN 2.27 NM FROM RWY END.

LARGE & HEAVY EASTBOUND ACFT ON TWY V FOR RWY 27 HOLD SHORT AT MINIMUM THRUST AREA SIGN.

ANG RAMP OFFICIAL BUSINESS ONLY; PPR − V966−8131. TRANSIENT ACFT RQR FOLLOW ME ASSIST ENTERING ANG RAMP.

TWY J BTN TWY P & R RSTR TO 15 MPH FOR ACFT WITH WINGSPAN MORE THAN 171 FT.

TWY V BTN SPOT 7W & RWY 27 RSTR TO ACFT WITH WINGSPAN OF 171 FT 6 IN OR LESS.

ACFT WITH WINGSPAN MORE THAN 171 FT 6 IN RSTR FM TAXI ON TWY N BTN TWY M7 & T.

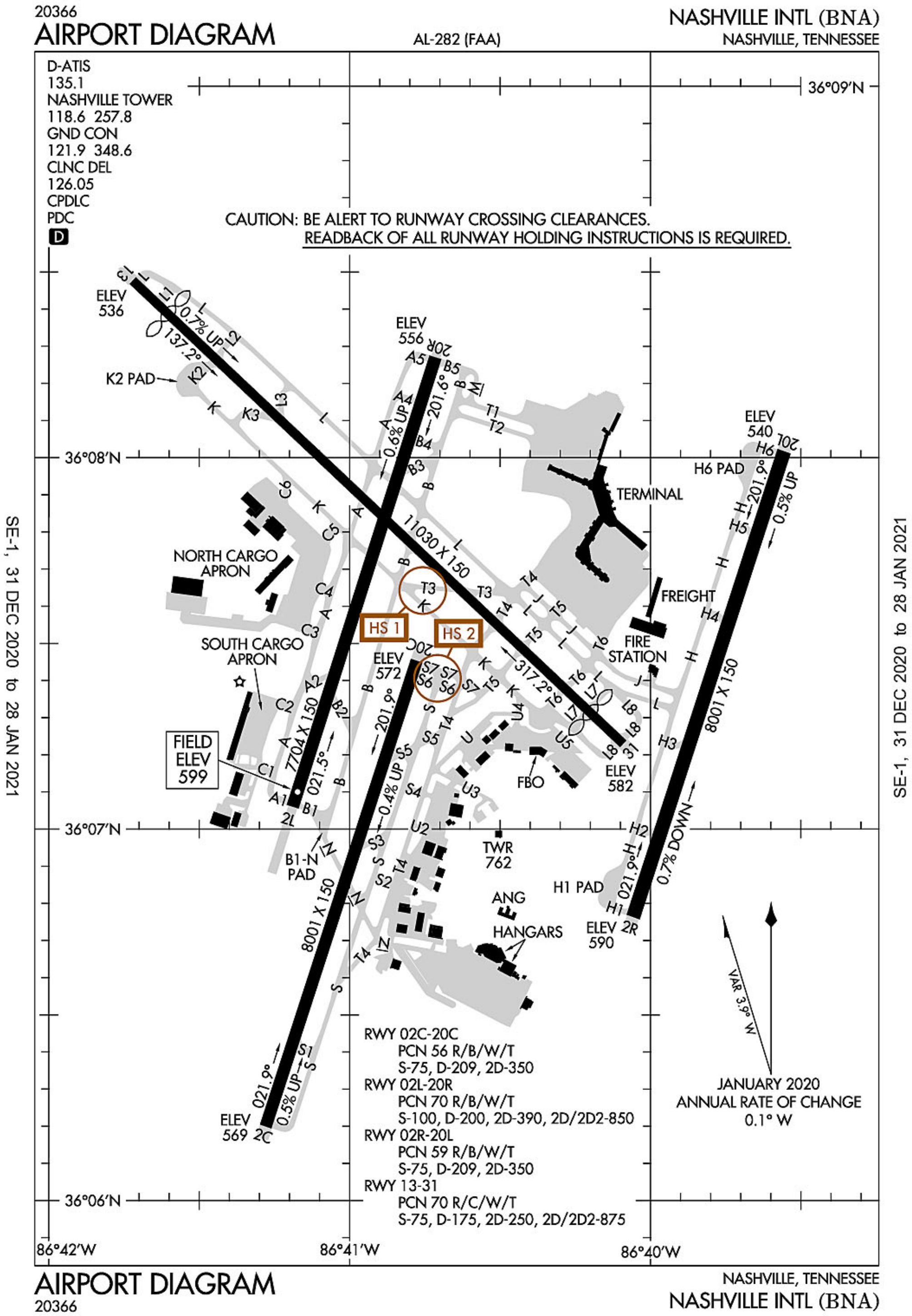
ANG−ATIS INFO REPORTS BIRD ACT H24 IN AREA

PPR RQR FOR TAXI CLNC ON TWY N NORTH OF TWY V, TWY S NORTH TWY V & AND TWY C NORTH OF TWY V − FEDEX RAMP ATCT 131.5.

CTC RAMP CONTROL 121.8 FOR ENTRY ON ANG RAMP. ANG FREQS 138.95 353.45. AFT HR CTC COMMAND POST − DSN 726−7148; C901−291−7311/7312 OR SECURITY FORCES − DSN 726−7101; C901−291−7101/7133.

PPR FOR TAXI CLNC FM N & S CARGO RAMP PRKG − 121.9.

Nashville, Tennessee
Nashville International
ICAO Identifier KBNA



Nashville, TN
Nashville Intl
ICAO Identifier KBNA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 36−7−28.11N / 86−40−41.45W
2.2.2 From City: 5 miles SE of NASHVILLE, TN
2.2.3 Elevation: 599 ft
2.2.5 Magnetic Variation: 3W (2010)
2.2.6 Airport Contact: DOUG KREULEN
ONE TERMINAL DR.
SUITE 501
NASHVILLE, TN 37214
(615−275−1668)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 02C
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 56 R/B/W/T
2.12.5 Coordinates: 36−6−11.9899N / 86−41−16.6591W
2.12.6 Threshold Elevation: 569.1 ft
2.12.6 Touchdown Zone Elevation: 586.7 ft

2.12.1 Designation: 20C
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 56 R/B/W/T
2.12.5 Coordinates: 36−7−27.2406N / 86−40−46.55W
2.12.6 Threshold Elevation: 571.8 ft
2.12.6 Touchdown Zone Elevation: 587.7 ft

2.12.1 Designation: 02L
2.12.2 True Bearing: 18
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 36−7−3.6342N / 86−41−11.3105W
2.12.6 Threshold Elevation: 598.7 ft
2.12.6 Touchdown Zone Elevation: 599 ft

2.12.1 Designation: 20R
2.12.2 True Bearing: 198
2.12.3 Dimensions: 7704 ft x 150 ft
2.12.4 PCN: 70 R/B/W/T
2.12.5 Coordinates: 36−8−16.2324N / 86−40−42.8335W
2.12.6 Threshold Elevation: 555.6 ft
2.12.6 Touchdown Zone Elevation: 578 ft

2.12.1 Designation: 02R
2.12.2 True Bearing: 18
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 59 R/B/W/T
2.12.5 Coordinates: 36−6−45.767N / 86−40−3.5138W
2.12.6 Threshold Elevation: 589.8 ft
2.12.6 Touchdown Zone Elevation: 589.8 ft

2.12.1 Designation: 20L
2.12.2 True Bearing: 198
2.12.3 Dimensions: 8001 ft x 150 ft
2.12.4 PCN: 59 R/B/W/T
2.12.5 Coordinates: 36−8−1.0116N / 86−39−33.3955W
2.12.6 Threshold Elevation: 540 ft
2.12.6 Touchdown Zone Elevation: 550.6 ft

2.12.1 Designation: 13
2.12.2 True Bearing: 133
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 70 R/C/W/T
2.12.5 Coordinates: 36−8−28.5991N / 86−41−43.2788W
2.12.6 Threshold Elevation: 535.9 ft
2.12.6 Touchdown Zone Elevation: 567.5 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 313
2.12.3 Dimensions: 11030 ft x 150 ft
2.12.4 PCN: 70 R/C/W/T
2.12.5 Coordinates: 36−7−13.7852N / 86−40−5.4384W
2.12.6 Threshold Elevation: 582.3 ft
2.12.6 Touchdown Zone Elevation: 577.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 02C
2.13.2 Take−off Run Available: 8001
2.13.3 Take−off Distance Available: 8001
2.13.4 Accelerate−Stop Distance Available: 7601
2.13.5 Landing Distance Available: 7601

2.13.1 Designation: 20C
2.13.2 Take−off Run Available: 8001
2.13.3 Take−off Distance Available: 8001
2.13.4 Accelerate−Stop Distance Available: 8001
2.13.5 Landing Distance Available: 8001

2.13.1 Designation: 02L
2.13.2 Take−off Run Available: 7702
2.13.3 Take−off 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 Take−off Run Available: 7702
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off 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 Take−off Run Available: 8000
2.13.3 Take−off Distance Available: 8000
2.13.4 Accelerate−Stop Distance Available: 8000
2.13.5 Landing Distance Available: 8000

2.13.1 Designation: 13
2.13.2 Take−off Run Available: 10288
2.13.3 Take−off 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 Take−off Run Available: 10228
2.13.3 Take−off Distance Available: 11029
2.13.4 Accelerate−Stop Distance Available: 10228
2.13.5 Landing Distance Available: 9487

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 02C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20C
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 02L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20R
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 02R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 20L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 13
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 31
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ALCP
2.18.3 Channel: 314.4
2.18.5 Hours of Operation:

2.18.1 Service Designation: APCH/P (WEST)
2.18.3 Channel: 372
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (EAST)
2.18.3 Channel: 118.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (EAST)
2.18.3 Channel: 360.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 126.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (EAST)
2.18.3 Channel: 118.4

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (WEST)
2.18.3 Channel: 119.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (EAST)
2.18.3 Channel: 360.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (WEST)
2.18.3 Channel: 372
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 135.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (EAST)
2.18.3 Channel: 118.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (WEST)
2.18.3 Channel: 119.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (EAST)
2.18.3 Channel: 360.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (WEST)
2.18.3 Channel: 372
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 02C. Magnetic variation: 3W
2.19.2 ILS Identification: EZN
2.19.5 Coordinates: 36−6−22.6382N / 86−41−16.8861W
2.19.6 Site Elevation: 570.5 ft

2.19.1 ILS Type: Localizer for runway 02C. Magnetic variation: 3W
2.19.2 ILS Identification: EZN
2.19.5 Coordinates: 36−7−32.9571N / 86−40−44.2611W
2.19.6 Site Elevation: 574.3 ft

2.19.1 ILS Type: DME for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36−8−26.4864N / 86−40−42.3692W
2.19.6 Site Elevation: 554 ft

2.19.1 ILS Type: Glide Slope for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36−7−12.9535N / 86−41−2.539W
2.19.6 Site Elevation: 589.7 ft

2.19.1 ILS Type: Inner Marker for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36−6−54.829N / 86−41−14.7612W
2.19.6 Site Elevation: 594.5 ft

2.19.1 ILS Type: Localizer for runway 02L. Magnetic variation: 3W
2.19.2 ILS Identification: BNA
2.19.5 Coordinates: 36−8−25.7779N / 86−40−39.0927W
2.19.6 Site Elevation: 545.4 ft

2.19.1 ILS Type: Glide Slope for runway 20R. Magnetic variation: 3W
2.19.2 ILS Identification: VIY
2.19.5 Coordinates: 36−8−5.8196N / 86−40−42.7621W
2.19.6 Site Elevation: 554.9 ft

2.19.1 ILS Type: Localizer for runway 20R. Magnetic variation: 3W
2.19.2 ILS Identification: VIY
2.19.5 Coordinates: 36−6−49.6756N / 86−41−16.7814W
2.19.6 Site Elevation: 598.1 ft

2.19.1 ILS Type: DME for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36−8−9.8916N / 86−39−35.7867W
2.19.6 Site Elevation: 537.1 ft

2.19.1 ILS Type: Glide Slope for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36−6−56.0152N / 86−39−54.7364W
2.19.6 Site Elevation: 576.7 ft

2.19.1 ILS Type: Inner Marker for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36−6−37.6961N / 86−40−6.7484W
2.19.6 Site Elevation: 569 ft

2.19.1 ILS Type: Localizer for runway 02R. Magnetic variation: 3W
2.19.2 ILS Identification: UQU
2.19.5 Coordinates: 36−8−10.5404N / 86−39−29.5803W
2.19.6 Site Elevation: 531 ft

2.19.1 ILS Type: DME for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36−6−30.9674N / 86−40−12.8854W
2.19.6 Site Elevation: 622.2 ft

2.19.1 ILS Type: Glide Slope for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36−7−50.0286N / 86−39−33.1134W
2.19.6 Site Elevation: 534.5 ft

2.19.1 ILS Type: Localizer for runway 20L. Magnetic variation: 3W
2.19.2 ILS Identification: SSX
2.19.5 Coordinates: 36−6−30.0253N / 86−40−9.8136W
2.19.6 Site Elevation: 613.4 ft

2.19.1 ILS Type: Glide Slope for runway 31. Magnetic variation: 3W
2.19.2 ILS Identification: PNO
2.19.5 Coordinates: 36−7−28.2722N / 86−40−18.5978W
2.19.6 Site Elevation: 566.4 ft

2.19.1 ILS Type: Localizer for runway 31. Magnetic variation: 3W
2.19.2 ILS Identification: PNO
2.19.5 Coordinates: 36−8−30.6518N / 86−41−45.9626W
2.19.6 Site Elevation: 539.6 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 2W
2.19.2 Navigation Aid Identification: BNA
2.19.5 Coordinates: 36−8−13.0573N / 86−41−5.1762W
2.19.6 Site Elevation: 566.4 ft

General Remarks:
DO NOT CONFUSE 150 FT WIDE TWY S FOR RWY 20C.

BIRD ACTIVITY ON & INVOF ARPT.

READ BACK OF ALL RWY HLDG INSTRUCTIONS RQR.

NO FLIGHT OVER MAIN TERMINAL BLDG PERMITTED.

ARNG: PPR CTC 615−367−5579.

NO UNAUTHORIZED 180 DEG TURNS FOR ACFT OVR 12500 LBS ON ASPH SFCS.

ALL TURBOJET RWYS HAVE NOISE ABATEMENT PROC. MIL FIGHTER/ATTACK/TRAINER TURBOJETS USE RWY 13/31 FOR ARR & DEP.

ANG: CALL SIGN MUSIC CITY OPS.

C CONCOURSE TAXILANES ARE INNER TAXILANE FOR OUBD TFC & OUTER TAXILANE FOR INBD TFC.

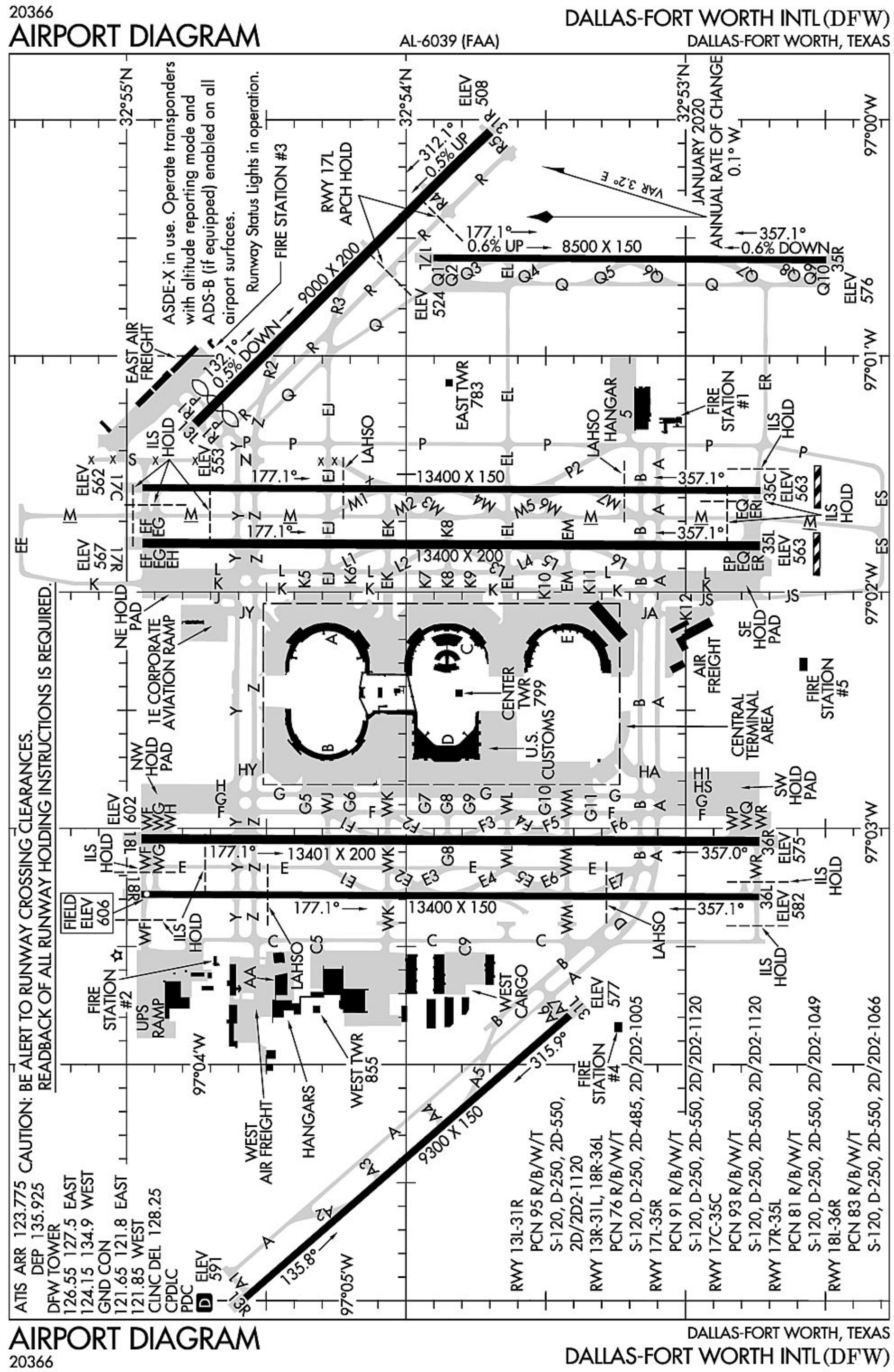
PILOTS COMPLY WITH ALL HOLD SHORT INSTRUCTIONS PARTICULARLY AT TWY K & RWY 20 C APCH; TWY L AT RWY 13 APCH; AND TWY H AT RWY 31 APCH.

LGTD JET BLAST FENCE 568 FT MSL 1167 FT NW RWY 13 THR; 598 MSL 1100 FT SE OF RWY 31 THR.

FLT NOTIFICATION SVC (ADCUS) AVBL.

TERMINAL RAMP UNCONTROLLED. MONITOR 122.95 FOR RAMP ADVISORIES.

Dallas, Texas
Dallas−Fort Worth International
ICAO Identifier KDFW



Dallas−Fort Worth, TX
Dallas/Fort Worth Intl
ICAO Identifier KDFW

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 32−53−50.039N / 97−2−15.701W
2.2.2 From City: 12 miles NW of DALLAS−FORT WORTH, TX
2.2.3 Elevation: 606.4 ft
2.2.5 Magnetic Variation: 4E (2015)
2.2.6 Airport Contact: SEAN DONOHUE
PO BOX 619428
DALLAS−FT WORTH, TX 75261
(972−973−3112)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space:
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 7/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 31R
2.12.2 True Bearing: 315
2.12.3 Dimensions: 9000 ft x 200 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 32−53−41.932N / 97−0−3.0376W
2.12.6 Threshold Elevation: 508.4 ft
2.12.6 Touchdown Zone Elevation: 523.4 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 135
2.12.3 Dimensions: 9000 ft x 200 ft
2.12.4 PCN: 95 R/B/W/T
2.12.5 Coordinates: 32−54−45.197N / 97−1−17.3221W
2.12.6 Threshold Elevation: 553.1 ft
2.12.6 Touchdown Zone Elevation: 550 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 139
2.12.3 Dimensions: 9300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32−54−34.4723N / 97−4−59.276W
2.12.6 Threshold Elevation: 591 ft
2.12.6 Touchdown Zone Elevation: 591 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 319
2.12.3 Dimensions: 9300 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32−53−24.9716N / 97−3−47.7953W
2.12.6 Threshold Elevation: 577.2 ft
2.12.6 Touchdown Zone Elevation: 581.4 ft

2.12.1 Designation: 17C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 32−54−56.5441N / 97−1−33.5097W
2.12.6 Threshold Elevation: 562.2 ft
2.12.6 Touchdown Zone Elevation: 563.2 ft

2.12.1 Designation: 35C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 93 R/B/W/T
2.12.5 Coordinates: 32−52−43.9636N / 97−1−34.218W
2.12.6 Threshold Elevation: 563.1 ft
2.12.6 Touchdown Zone Elevation: 563.2 ft

2.12.1 Designation: 35R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 32−52−29.8535N / 97−0−35.6686W
2.12.6 Threshold Elevation: 575.6 ft
2.12.6 Touchdown Zone Elevation: 575.6 ft

2.12.1 Designation: 17L
2.12.2 True Bearing: 180

2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 32−53−53.9534N / 97−0−35.203W
2.12.6 Threshold Elevation: 524.3 ft
2.12.6 Touchdown Zone Elevation: 545.2 ft

2.12.1 Designation: 35L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−52−44.0203N / 97−1−48.2888W
2.12.6 Threshold Elevation: 563.4 ft
2.12.6 Touchdown Zone Elevation: 564 ft

2.12.1 Designation: 17R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 200 ft
2.12.4 PCN: 81 R/B/W/T
2.12.5 Coordinates: 32−54−56.5996N / 97−1−47.5806W
2.12.6 Threshold Elevation: 566.6 ft
2.12.6 Touchdown Zone Elevation: 566.7 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32−54−56.8785N / 97−3−2.6511W
2.12.6 Threshold Elevation: 601.5 ft
2.12.6 Touchdown Zone Elevation: 601.6 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13401 ft x 200 ft
2.12.4 PCN: 83 R/B/W/T
2.12.5 Coordinates: 32−52−44.2972N / 97−3−3.3332W
2.12.6 Threshold Elevation: 575.3 ft
2.12.6 Touchdown Zone Elevation: 580.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32−52−44.3493N / 97−3−17.4003W
2.12.6 Threshold Elevation: 582.2 ft
2.12.6 Touchdown Zone Elevation: 587.6 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 13400 ft x 150 ft
2.12.4 PCN: 76 R/B/W/T
2.12.5 Coordinates: 32−54−56.9275N / 97−3−16.7239W
2.12.6 Threshold Elevation: 606.4 ft
2.12.6 Touchdown Zone Elevation: 606.4 ft

AD 2.13 Declared Distances
2.13.1 Designation: 31R
2.13.2 Take−off Run Available: 8373
2.13.3 Take−off Distance Available: 8373
2.13.4 Accelerate−Stop Distance Available: 8373
2.13.5 Landing Distance Available: 8373

2.13.1 Designation: 13L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off Distance Available: 9000
2.13.4 Accelerate−Stop Distance Available: 9000
2.13.5 Landing Distance Available: 8373

2.13.1 Designation: 13R
2.13.2 Take−off Run Available: 9300
2.13.3 Take−off Distance Available: 9300
2.13.4 Accelerate−Stop Distance Available: 9300
2.13.5 Landing Distance Available: 9300

2.13.1 Designation: 31L
2.13.2 Take−off Run Available: 9300
2.13.3 Take−off Distance Available: 9300
2.13.4 Accelerate−Stop Distance Available: 9300
2.13.5 Landing Distance Available: 9300

2.13.1 Designation: 17C
2.13.2 Take−off Run Available: 13400
2.13.3 Take−off Distance Available: 13400
2.13.4 Accelerate−Stop Distance Available: 13400
2.13.5 Landing Distance Available: 13400

2.13.1 Designation: 35C
2.13.2 Take−off Run Available: 13400

2.13.3 Take−off Distance Available: 13400
2.13.4 Accelerate−Stop Distance Available: 13400
2.13.5 Landing Distance Available: 13400

2.13.1 Designation: 35R
2.13.2 Take−off Run Available: 8500
2.13.3 Take−off Distance Available: 8500
2.13.4 Accelerate−Stop Distance Available: 8500
2.13.5 Landing Distance Available: 8500

2.13.1 Designation: 17L
2.13.2 Take−off Run Available: 8500
2.13.3 Take−off Distance Available: 8500
2.13.4 Accelerate−Stop Distance Available: 8500
2.13.5 Landing Distance Available: 8500

2.13.1 Designation: 35L
2.13.2 Take−off Run Available: 13400
2.13.3 Take−off Distance Available: 13400
2.13.4 Accelerate−Stop Distance Available: 13400
2.13.5 Landing Distance Available: 13400

2.13.1 Designation: 17R
2.13.2 Take−off Run Available: 13400
2.13.3 Take−off Distance Available: 13400
2.13.4 Accelerate−Stop Distance Available: 13400
2.13.5 Landing Distance Available: 13400

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 13401
2.13.3 Take−off Distance Available: 13401
2.13.4 Accelerate−Stop Distance Available: 13401
2.13.5 Landing Distance Available: 13401

2.13.1 Designation: 36R
2.13.2 Take−off Run Available: 13401
2.13.3 Take−off Distance Available: 13401
2.13.4 Accelerate−Stop Distance Available: 13401
2.13.5 Landing Distance Available: 13401

2.13.1 Designation: 36L
2.13.2 Take−off Run Available: 13400
2.13.3 Take−off 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 Take−off Run Available: 13400
2.13.3 Take−off Distance Available: 13400
2.13.4 Accelerate−Stop Distance Available: 13400
2.13.5 Landing Distance Available: 13400

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 31R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 17L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35L
2.14.2 Approach Lighting System: MALSR

2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: CD/P
2.18.3 Channel: 128.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS B (NW)
2.18.3 Channel: 118.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (NE)
2.18.3 Channel: 124.3
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (SE)
2.18.3 Channel: 125.2
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (SW)
2.18.3 Channel: 135.975
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (NE)
2.18.3 Channel: 282.275
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (NW)
2.18.3 Channel: 306.95
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (SE)
2.18.3 Channel: 343.65
2.18.5 Hours of Operation:

2.18.1 Service Designation: CLASS B (SW)
2.18.3 Channel: 379.9
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS (ARR)
2.18.3 Channel: 123.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS (DEP)
2.18.3 Channel: 135.925
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (WEST)
2.18.3 Channel: 121.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (EAST)
2.18.3 Channel: 121.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P IC (EAST)
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (WEST)
2.18.3 Channel: 124.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (EAST)
2.18.3 Channel: 126.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (EAST)
2.18.3 Channel: 127.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P IC (WEST)
2.18.3 Channel: 134.9
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−54−49.6375N / 97−1−18.3123W
2.19.6 Site Elevation: 558.1 ft

2.19.1 ILS Type: Glide Slope for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−53−51.7482N / 97−0−7.9558W
2.19.6 Site Elevation: 509 ft

2.19.1 ILS Type: Localizer for runway 31R. Magnetic variation: 4E
2.19.2 ILS Identification: RRA
2.19.5 Coordinates: 32−54−48.1182N / 97−1−20.7551W
2.19.6 Site Elevation: 551.5 ft

2.19.1 ILS Type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN
2.19.5 Coordinates: 32−53−16.0647N / 97−3−42.7672W
2.19.6 Site Elevation: 588.7 ft

2.19.1 ILS Type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN
2.19.5 Coordinates: 32−54−24.1329N / 97−4−54.0746W
2.19.6 Site Elevation: 587.6 ft

2.19.1 ILS Type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: LWN
2.19.5 Coordinates: 32−53−17.4371N / 97−3−40.0471W
2.19.6 Site Elevation: 575 ft

2.19.1 ILS Type: DME for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32−52−34.123N / 97−1−39.6491W
2.19.6 Site Elevation: 573.6 ft

2.19.1 ILS Type: Glide Slope for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32−54−45.6425N / 97−1−28.781W
2.19.6 Site Elevation: 555.8 ft

2.19.1 ILS Type: Inner Marker for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32−55−4.09N / 97−1−33.46W
2.19.6 Site Elevation: 562 ft

2.19.1 ILS Type: Localizer for runway 17C. Magnetic variation: 4E
2.19.2 ILS Identification: FLQ
2.19.5 Coordinates: 32−52−33.1505N / 97−1−34.2781W
2.19.6 Site Elevation: 562.7 ft

2.19.1 ILS Type: DME for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32−52−34.123N / 97−1−39.6491W
2.19.6 Site Elevation: 573.6 ft

2.19.1 ILS Type: Glide Slope for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32−52−54.3357N / 97−1−29.4713W
2.19.6 Site Elevation: 557.2 ft

2.19.1 ILS Type: Inner Marker for runway 35C. Magnet-

ic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32−52−35.3015N / 97−1−34.258W
2.19.6 Site Elevation: 562.5 ft

2.19.1 ILS Type: Localizer for runway 35C. Magnetic variation: 4E
2.19.2 ILS Identification: PKQ
2.19.5 Coordinates: 32−55−7.0371N / 97−1−33.452W
2.19.6 Site Elevation: 561.2 ft

2.19.1 ILS Type: DME for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32−52−18.7175N / 97−0−40.2982W
2.19.6 Site Elevation: 591.2 ft

2.19.1 ILS Type: Glide Slope for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32−53−45.2247N / 97−0−31.1329W
2.19.6 Site Elevation: 526.4 ft

2.19.1 ILS Type: Inner Marker for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32−54−5.3333N / 97−0−35.2536W
2.19.6 Site Elevation: 521.7 ft

2.19.1 ILS Type: Localizer for runway 17L. Magnetic variation: 4E
2.19.2 ILS Identification: PPZ
2.19.5 Coordinates: 32−52−19.4359N / 97−0−35.7267W
2.19.6 Site Elevation: 584.2 ft

2.19.1 ILS Type: DME for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32−52−18.7175N / 97−0−40.2982W
2.19.6 Site Elevation: 591.2 ft

2.19.1 ILS Type: Glide Slope for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32−52−43.4402N / 97−0−30.9032W
2.19.6 Site Elevation: 559.2 ft

2.19.1 ILS Type: Inner Marker for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32−52−22.6082N / 97−0−35.7029W
2.19.6 Site Elevation: 581.2 ft

2.19.1 ILS Type: Localizer for runway 35R. Magnetic variation: 4E
2.19.2 ILS Identification: AJQ
2.19.5 Coordinates: 32−54−4.1916N / 97−0−35.1492W
2.19.6 Site Elevation: 519.5 ft

2.19.1 ILS Type: DME for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32−52−33.6523N / 97−1−53.6029W
2.19.6 Site Elevation: 556.9 ft

2.19.1 ILS Type: Glide Slope for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32−54−45.8213N / 97−1−43.0635W
2.19.6 Site Elevation: 561.3 ft

2.19.1 ILS Type: Localizer for runway 17R. Magnetic variation: 4E
2.19.2 ILS Identification: JHZ
2.19.5 Coordinates: 32−52−33.207N / 97−1−48.3488W
2.19.6 Site Elevation: 558.2 ft

2.19.1 ILS Type: DME for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32−52−33.6523N / 97−1−53.6029W
2.19.6 Site Elevation: 556.9 ft

2.19.1 ILS Type: Glide Slope for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32−52−54.9854N / 97−1−43.5413W
2.19.6 Site Elevation: 559 ft

2.19.1 ILS Type: Localizer for runway 35L. Magnetic variation: 4E
2.19.2 ILS Identification: UWX
2.19.5 Coordinates: 32−55−7.3142N / 97−1−47.5225W
2.19.6 Site Elevation: 567.6 ft

2.19.1 ILS Type: DME for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32−55−8.6708N / 97−3−7.2741W
2.19.6 Site Elevation: 594.7 ft

2.19.1 ILS Type: Glide Slope for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32−54−45.2198N / 97−3−6.8173W
2.19.6 Site Elevation: 594.3 ft

2.19.1 ILS Type: Localizer for runway 18L. Magnetic variation: 4E
2.19.2 ILS Identification: CIX
2.19.5 Coordinates: 32−52−33.5835N / 97−3−3.3873W
2.19.6 Site Elevation: 570.1 ft

2.19.1 ILS Type: DME for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32−55−8.6708N / 97−3−7.2741W
2.19.6 Site Elevation: 594.7 ft

2.19.1 ILS Type: Glide Slope for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32−52−54.8518N / 97−3−7.9662W
2.19.6 Site Elevation: 577.2 ft

2.19.1 ILS Type: Localizer for runway 36R. Magnetic variation: 4E
2.19.2 ILS Identification: FJN
2.19.5 Coordinates: 32−55−6.8486N / 97−3−2.5997W
2.19.6 Site Elevation: 597.2 ft

2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32−52−34.0875N / 97−3−12.5854W
2.19.6 Site Elevation: 582.3 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32−54−45.4683N / 97−3−21.5693W
2.19.6 Site Elevation: 598.5 ft

2.19.1 ILS Type: Inner Marker for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32−55−4.5483N / 97−3−16.6916W
2.19.6 Site Elevation: 602.6 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 4E
2.19.2 ILS Identification: VYN
2.19.5 Coordinates: 32−52−33.9326N / 97−3−17.4526W
2.19.6 Site Elevation: 580.4 ft

2.19.1 ILS Type: DME for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32−52−34.0875N / 97−3−12.5854W
2.19.6 Site Elevation: 582.3 ft

2.19.1 ILS Type: Glide Slope for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32−52−54.4087N / 97−3−22.0405W
2.19.6 Site Elevation: 579.9 ft

2.19.1 ILS Type: Localizer for runway 36L. Magnetic variation: 4E
2.19.2 ILS Identification: BXN
2.19.5 Coordinates: 32−55−6.9002N / 97−3−16.6717W
2.19.6 Site Elevation: 601.9 ft

General Remarks:
TKOF DSTC FOR RY 35L FM TWY EQ IS 13084 FT & FM TWY EP IS 12811 FT.

ARPT UNDER CONSTRUCTION; PAEW IN MOVEMENT AREAS.

PPR ACFT WITH WINGSPAN 215 FT OR GREATER (GROUP VI) CALL ARPT OPNS 972−973−3112 FOR FOLLOW−ME SERVICES WHILE TAXIING TO & FROM RAMP & RYS.

TWY A6 CLSD TO ACFT WITH WINGSPAN 171 FT AND GREATER.

TKOF DSTC FOR RY 18R FM TWY WG IS 13,082 FT.

RY VISUAL SCREEN 20 FT AGL 1180 FT S AER 35C.

ACFT AT EAST AIR FREIGHT MUST CONTACT DFW TWR AT 127.5 PRIOR TO TAXI OUT.

APRON ENTRANCE/EXIT POINTS 22, 24, 105, AND 107 CLSD TO ACFT WITH WINGSPAN GREATER THAN 125 FT.

TKOF DSTC FOR RY 17L FM TWY Q2 IS 8196 FT.

PPR GA OPERATIONS 0000−0500; CALL ARPT OPNS 972−973−3112.

APRON ENTRANCE/EXIT POINT 124 CLSD TO ACFT WITH WINGSPAN GREATER THAN 213 FT.

RY STATUS LGTS IN OPN.

TKOF DSTC FOR RY 35R FM TWY Q9 IS 8196 FT.

ACFT USING TERMINAL D GATES OR APRON ENTRANCE/EXIT POINTS 122 THRU 150 MUST OBTAIN APPROVAL FROM DFW RAMP TOWER 129.825 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

TERMINAL B APRON TAXILANE BTN APRON ENTRANCE/EXIT POINT TAXILANES 107 & 117 CLSD TO ACFT WITH WINGSPAN 94 FT AND GREATER.

TKOF DSTC FOR RY 17C FM TWY EG IS 13,082 FT.

APRON ENTRANCE/EXIT POINTS 110, 111, 112, 113, 114, 115, AND 116 CLSD TO ACFT WITH WINGSPAN GREATER THAN 94 FT.

TKOF DSTC FOR RY 18L FM TWY WG IS 13,082; FM TWY WH IS 12,815.

UNLESS OTHERWISE SPECIFIED, ALL APRON ENTRANCE/EXIT POINTS CLSD TO ACFT WITH WINGSPAN GREATER THAN 214 FT EXCEPT PPR.

PPR FROM ARPT OPNS FOR GEN AVN ACFT TO PROCD TO AIRLINE TRML GATE EXCP GEN AVN FAC.

PPR FM THE PRIMARY TENANT AIRLINES TO OPERATE WITHIN THE CENTRAL TERMINAL AREA. PROPER MINIMUM OBJECT FREE AREA DISTANCES MAY NOT BE MAINTAINED FOR RAMP/APRON TAXILANES.

TWY EDGE REFLECTORS ALONG ALL TWYS.

APRON ENTRANCE/EXIT POINTS 1 AND 2 CLSD TO ACFT WITH WINGSPAN GREATER THAN 89’ EXCEPT PPR.

APRON ENTRANCE/EXIT POINTS 3 AND 4 CLSD TO ACFT WITH WINGSPAN GREATER THAN 118 FT EXCEPT PPR.

TKOF DSTC FOR RY 36R FM TWY WP IS 12,815 FT; FM TWY WQ IS 13,082 FT.

TKOF DSTC FOR RY 17R FM TWY EG IS 13082 FT & FM TWY EH IS 12816 FT.

LAND & HOLD SHORT SIGNS ON RY 17C AT TWY 'B' 10,460 FT S OF RY 17C THLD; RY 18R AT TWY 'B' 10,100 FT S OF RY 18R THLD; RY 35C AT TWY 'EJ' 9050 FT N OF RY 35C THLD; RY 36L AT TWY 'Z' 10,650 FT N OF RY 36L THLD; LGTD & MKD WITH IN−PAVEMENT PULSATING WHITE LGTS.

APRON ENTRANCE/EXIT POINTS 9, 32, 33, 34, 35, 36, 37, 38, & 53 CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT.

APRON ENTRANCE/EXIT POINTS 5, 7, 42, 44, 48, 49, 51, 52, 117, 118 AND 122 CLSD TO ACFT WITH WINGSPAN GREATER THAN 118 FT.

APRON ENTRANCE/EXIT POINTS 31 AND 39 CLSD TO ACFT WITH WINGSPAN GREATER THAN 167 FT.

TWYS MAY REQUIRE JUDGMENTAL OVERSTEERING FOR LARGE ACFT.

STD SAWED GROOVING 160 FT WIDE FULL LENGTH RYS 13L/31R; 18L/36R & 17R/35L. STD GROOVING 130 FTWIDE FULL LENGTH RYS 17L/35R; 18R/36L; 13R/31L & 17C/35C.

BIRDS ON & INVOF ARPT.

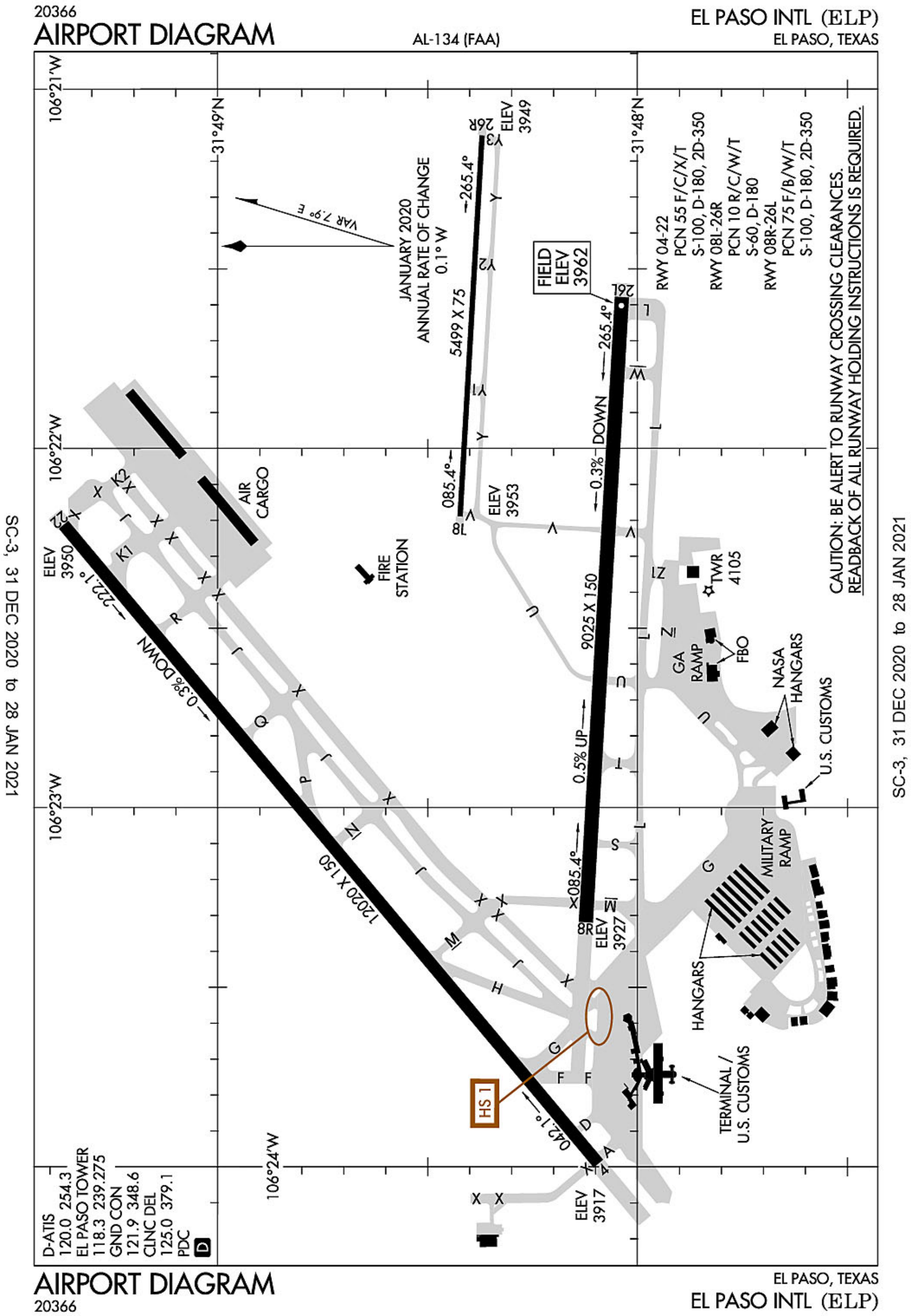
ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

RY VISUAL SCREEN 22 FT AGL 1179 FT S AER 35L.

ACFT USING TERMINAL E GATES E2−E17 MUST OBTAIN APPROVAL FROM RAMP 131.0 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK. ACFT USING TERMINAL E GATES E−18−E38 MUST OBTAIN APPROVAL FROM RAMP 128.825 PRIOR TO ENTERING RAMP AND PRIOR TO PUSHBACK.

A380 OPNS ONLY AUZD ON RWYS 18R/36L AND 18L/36R. B747−8 OPNS ONLY AUZD ON RWYS 18R/36L, 18L/36R AND 17R/35L. CTC ARPT OPNS FOR ADDNL INFO.

El Paso, Texas
El Paso International
ICAO Identifier KELP



El Paso, TX
El Paso Intl
ICAO Identifier KELP

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 31−48−26.4N / 106−22−34.9W
2.2.2 From City: 4 miles NE of EL PASO, TX
2.2.3 Elevation: 3961.6 ft
2.2.5 Magnetic Variation: 8E (2015)
2.2.6 Airport Contact: SAM RODRIGUEZ
6701 CONVAIR RD
EL PASO, TX 79925
(915−212−0333)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+,B+
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: 31−48−5.5605N / 106−23−59.4625W
2.12.6 Threshold Elevation: 3916.9 ft
2.12.6 Touchdown Zone Elevation: 3923.2 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 230
2.12.3 Dimensions: 12020 ft x 150 ft
2.12.4 PCN: 55 F/C/X/T
2.12.5 Coordinates: 31−49−22.0112N / 106−22−12.7821W
2.12.6 Threshold Elevation: 3949.5 ft
2.12.6 Touchdown Zone Elevation: 3949.5 ft

2.12.1 Designation: 08L
2.12.2 True Bearing: 93
2.12.3 Dimensions: 5499 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31−48−25.3326N / 106−22−11.3796W
2.12.6 Threshold Elevation: 3952.6 ft
2.12.6 Touchdown Zone Elevation: 3952.7 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 273
2.12.3 Dimensions: 5499 ft x 75 ft
2.12.4 PCN: 10 R/C/W/T
2.12.5 Coordinates: 31−48−22.1849N / 106−21−7.7768W
2.12.6 Threshold Elevation: 3949.2 ft
2.12.6 Touchdown Zone Elevation: 3949.5 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 93
2.12.3 Dimensions: 9025 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31−48−7.3509N / 106−23−19.1333W
2.12.6 Threshold Elevation: 3927.1 ft
2.12.6 Touchdown Zone Elevation: 3940.3 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 273
2.12.3 Dimensions: 9025 ft x 150 ft
2.12.4 PCN: 75 F/B/W/T
2.12.5 Coordinates: 31−48−2.195N / 106−21−34.7505W
2.12.6 Threshold Elevation: 3961.6 ft
2.12.6 Touchdown Zone Elevation: 3961.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 12020
2.13.3 Take−off 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 Take−off Run Available: 12020
2.13.3 Take−off Distance Available: 12020
2.13.4 Accelerate−Stop Distance Available: 12020
2.13.5 Landing Distance Available: 12020

2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 5499
2.13.3 Take−off Distance Available: 5499
2.13.4 Accelerate−Stop Distance Available: 5499
2.13.5 Landing Distance Available: 5499

2.13.1 Designation: 26R
2.13.2 Take−off Run Available: 5499
2.13.3 Take−off Distance Available: 5499
2.13.4 Accelerate−Stop Distance Available: 5499
2.13.5 Landing Distance Available: 5499

2.13.1 Designation: 08R
2.13.2 Take−off Run Available: 9025
2.13.3 Take−off 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 Take−off Run Available: 9025
2.13.3 Take−off Distance Available: 9025
2.13.4 Accelerate−Stop Distance Available: 9025
2.13.5 Landing Distance Available: 9025

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 22
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 08L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P (SOUTH−V16)
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (SOUTH−V16)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (NORTH−V16)
2.18.3 Channel: 124.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (NORTH−V16)
2.18.3 Channel: 298.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 379.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (SOUTH−V16)
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH−V16)
2.18.3 Channel: 124.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (NORTH−V16)
2.18.3 Channel: 298.85
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (SOUTH−V16)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 120
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 254.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P
2.18.3 Channel: 119.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P
2.18.3 Channel: 263
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 239.275
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 04. Magnetic variation: 8E
2.19.2 ILS Identification: ETF
2.19.5 Coordinates: 31−47−58.7232N / 106−24−13.5201W
2.19.6 Site Elevation: 3926 ft

2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 8E
2.19.2 ILS Identification: ETF
2.19.5 Coordinates: 31−49−28.4448N / 106−22−3.7979W
2.19.6 Site Elevation: 3950.4 ft

2.19.1 ILS Type: DME for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31−47−58.7232N / 106−24−13.5201W
2.19.6 Site Elevation: 3926 ft

2.19.1 ILS Type: Glide Slope for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31−49−17.2839N / 106−22−26.5917W
2.19.6 Site Elevation: 3940.3 ft

2.19.1 ILS Type: Localizer for runway 22. Magnetic

variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31−47−55.923N / 106−24−12.9005W
2.19.6 Site Elevation: 3910.9 ft

2.19.1 ILS Type: Outer Marker for runway 22. Magnetic variation: 8E
2.19.2 ILS Identification: ELP
2.19.5 Coordinates: 31−51−37.0342N / 106−19−4.2497W
2.19.6 Site Elevation: 3992.8 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 12E
2.19.2 Navigation Aid Identification: ELP
2.19.5 Coordinates: 31−48−57.277N / 106−16−54.7782W
2.19.6 Site Elevation: 4023 ft

General Remarks:
COMPASS ROSE CLSD INDEFLY.

ENGINE POWER IS RSTRD TO IDLE POWER ON ONE ENGINE AT A TIME FOR MAX 5 MIN ON ANY TERMINAL OR PARKING APRONS, CROSS−BLEED STARTS OR OTHER PRE DEP ACTIVITY ON MOVEMENT AREAS ONLY, MAINT OR OTR RQRMT NEEDING LONGER OR HIGHER POWER CTC TWR FOR DIRECTIONS TO DESIGNATED RUNUP AREAS.

CTN: BIGGS AAF 2NM NW RWY 21 CAN BE MISTAKEN FOR ELP RWY 22.

TWY J NE OF TWY K1; TWY K NE OF TWY K1 BTN TWY J & NORTH CARGO RAMP; TWYS U & V SOUTH OF TWY L; & TWY K2 NOT VISIBLE FM ATCT.

NOISE ABATEMENT PROCEDURES IN EFFECT, CTC ATCT FOR DETAILS.

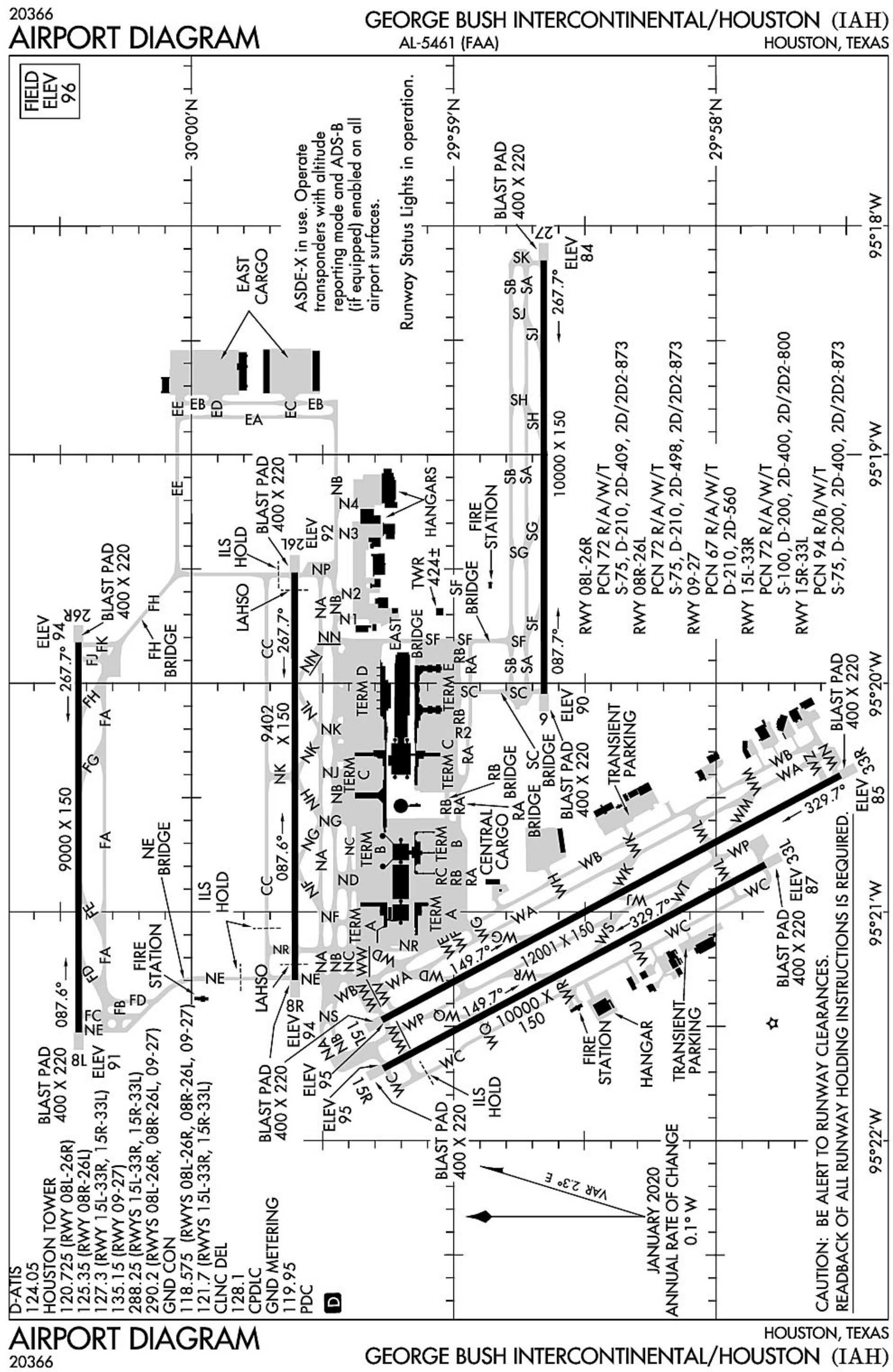
HOLDING POSITION MARKINGS FOR RUNWAY 8R APPROACH AND RUNWAY 4/22 ARE IN CLOSE PROXIMITY TO THE TERMINAL APRON; REVIEW AIRPORT DIAGRAM PRIOR TO PUSHBACK FROM THE GATE.

MILITARY USERS SHOULD REVIEW NOISE ABATEMENT PROCEDURES LISTED FOR BIGGS AAF.

NORTH BOUND TFC PROHIBITED ON TWY F SOUTH OF APCH END RWY 08R.

24 HR PPR CLASS A EXPLOSIVES CTC 915−212−0333.

Houston, Texas
George Bush Intercontinental/Houston
ICAO Identifier KIAH



Houston, TX
George Bush Intercontinental/Houston
ICAO Identifier KIAH

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 29−59−3.967N / 95−20−29.193W
2.2.2 From City: 15 miles N of HOUSTON, TX
2.2.3 Elevation: 95.8 ft
2.2.5 Magnetic Variation: 3E (2015)
2.2.6 Airport Contact: STEVEN HENNIGAN
PO BOX 60106
HOUSTON, TX 77205
(281−230−3100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 08L
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30−0−25.7816N / 95−21−31.6473W
2.12.6 Threshold Elevation: 90.6 ft
2.12.6 Touchdown Zone Elevation: 94 ft

2.12.1 Designation: 26R
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9000 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 30−0−25.8612N / 95−19−49.2891W
2.12.6 Threshold Elevation: 94.2 ft
2.12.6 Touchdown Zone Elevation: 95.3 ft

2.12.1 Designation: 08R
2.12.2 True Bearing: 90
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−36.3028N / 95−21−17.8703W
2.12.6 Threshold Elevation: 94.3 ft
2.12.6 Touchdown Zone Elevation: 95.3 ft

2.12.1 Designation: 26L
2.12.2 True Bearing: 270
2.12.3 Dimensions: 9402 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−36.3817N / 95−19−30.9539W
2.12.6 Threshold Elevation: 92.3 ft
2.12.6 Touchdown Zone Elevation: 94.6 ft

2.12.1 Designation: 09
2.12.2 True Bearing: 90
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29−58−39.3363N / 95−20−2.7891W
2.12.6 Threshold Elevation: 89.9 ft
2.12.6 Touchdown Zone Elevation: 90.1 ft

2.12.1 Designation: 27
2.12.2 True Bearing: 270
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 67 R/A/W/T
2.12.5 Coordinates: 29−58−39.4071N / 95−18−9.0948W
2.12.6 Threshold Elevation: 84.3 ft
2.12.6 Touchdown Zone Elevation: 86.2 ft

2.12.1 Designation: 33R
2.12.2 True Bearing: 332
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−57−31.5505N / 95−20−24.189W
2.12.6 Threshold Elevation: 84.9 ft
2.12.6 Touchdown Zone Elevation: 88 ft

2.12.1 Designation: 15L
2.12.2 True Bearing: 152
2.12.3 Dimensions: 12001 ft x 150 ft
2.12.4 PCN: 72 R/A/W/T
2.12.5 Coordinates: 29−59−16.4026N / 95−21−28.3335W
2.12.6 Threshold Elevation: 94.6 ft
2.12.6 Touchdown Zone Elevation: 95.2 ft

2.12.1 Designation: 33L
2.12.2 True Bearing: 332
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29−57−48.7474N /

95−20−47.5811W
2.12.6 Threshold Elevation: 86.5 ft
2.12.6 Touchdown Zone Elevation: 89.3 ft

2.12.1 Designation: 15R
2.12.2 True Bearing: 152
2.12.3 Dimensions: 10000 ft x 150 ft
2.12.4 PCN: 94 R/B/W/T
2.12.5 Coordinates: 29−59−16.1082N / 95−21−41.0384W
2.12.6 Threshold Elevation: 94.8 ft
2.12.6 Touchdown Zone Elevation: 94.8 ft

AD 2.13 Declared Distances
2.13.1 Designation: 08L
2.13.2 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9000
2.13.3 Take−off 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 Take−off Run Available: 9402
2.13.3 Take−off 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 Take−off Run Available: 9402
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off 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 Take−off Run Available: 10000
2.13.3 Take−off Distance Available: 10000
2.13.4 Accelerate−Stop Distance Available: 10000
2.13.5 Landing Distance Available: 10000

2.13.1 Designation: 33R
2.13.2 Take−off Run Available: 12001
2.13.3 Take−off Distance Available: 12001
2.13.4 Accelerate−Stop Distance Available: 12001
2.13.5 Landing Distance Available: 12001

2.13.1 Designation: 15L
2.13.2 Take−off Run Available: 12001
2.13.3 Take−off Distance Available: 12001
2.13.4 Accelerate−Stop Distance Available: 12001
2.13.5 Landing Distance Available: 12001

2.13.1 Designation: 33L
2.13.2 Take−off Run Available: 9999
2.13.3 Take−off Distance Available: 9999
2.13.4 Accelerate−Stop Distance Available: 9999
2.13.5 Landing Distance Available: 9999

2.13.1 Designation: 15R
2.13.2 Take−off Run Available: 9999
2.13.3 Take−off 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: 08L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 26R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 08R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 26L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 09
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 27
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 33R

2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 15L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 33L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 15R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 128.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 124.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND METERING
2.18.3 Channel: 119.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 08L/26R, 08R/26L, 09/27)
2.18.3 Channel: 118.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 15L/33R, 15R/33L)
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08L/26R)
2.18.3 Channel: 120.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08R/26L)
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 15L/33R, 15R/33L)
2.18.3 Channel: 127.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 09/27)
2.18.3 Channel: 135.15
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 15L/33R, 15R/33L)
2.18.3 Channel: 288.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 08L/26R, 08R/26L, 09/27)
2.18.3 Channel: 290.2
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30−0−21.9187N / 95−21−44.0405W
2.19.6 Site Elevation: 87.5 ft

2.19.1 ILS Type: Glide Slope for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30−0−29.7528N / 95−21−18.6875W
2.19.6 Site Elevation: 86 ft

2.19.1 ILS Type: Inner Marker for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30−0−25.764N / 95−21−40.8592W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: Localizer for runway 08L. Magnetic variation: 3E
2.19.2 ILS Identification: BZU
2.19.5 Coordinates: 30−0−25.8701N / 95−19−36.9727W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: DME for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30−0−21.9187N / 95−21−44.0405W
2.19.6 Site Elevation: 87.5 ft

2.19.1 ILS Type: Glide Slope for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30−0−29.8117N / 95−20−2.26W
2.19.6 Site Elevation: 89.7 ft

2.19.1 ILS Type: Inner Marker for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30−0−25.8755N / 95−19−40.4195W
2.19.6 Site Elevation: 94.4 ft

2.19.1 ILS Type: Localizer for runway 26R. Magnetic variation: 3E
2.19.2 ILS Identification: OND
2.19.5 Coordinates: 30−0−25.7696N / 95−21−43.9647W
2.19.6 Site Elevation: 90.8 ft

2.19.1 ILS Type: DME for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29−59−38.9211N / 95−21−31.3127W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: Glide Slope for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29−59−40.3184N / 95−21−6.0476W
2.19.6 Site Elevation: 88.8 ft

2.19.1 ILS Type: Localizer for runway 08R. Magnetic variation: 3E
2.19.2 ILS Identification: IAH
2.19.5 Coordinates: 29−59−36.3913N / 95−19−19.5749W
2.19.6 Site Elevation: 89.6 ft

2.19.1 ILS Type: DME for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29−59−38.9211N / 95−21−31.3127W
2.19.6 Site Elevation: 92.5 ft

2.19.1 ILS Type: Glide Slope for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29−59−39.5388N / 95−19−42.8056W
2.19.6 Site Elevation: 86.8 ft

2.19.1 ILS Type: Inner Marker for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29−59−36.3841N / 95−19−20.5992W
2.19.6 Site Elevation: 89.2 ft

2.19.1 ILS Type: Localizer for runway 26L. Magnetic variation: 3E
2.19.2 ILS Identification: JYV
2.19.5 Coordinates: 29−59−36.2865N / 95−21−31.2791W
2.19.6 Site Elevation: 92.2 ft

2.19.1 ILS Type: DME for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29−58−35.3774N / 95−20−13.5882W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Glide Slope for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29−58−35.3875N / 95−19−50.679W
2.19.6 Site Elevation: 85.3 ft

2.19.1 ILS Type: Localizer for runway 09. Magnetic variation: 3E
2.19.2 ILS Identification: UYO
2.19.5 Coordinates: 29−58−39.4132N / 95−17−57.578W
2.19.6 Site Elevation: 81 ft

2.19.1 ILS Type: DME for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29−58−35.3774N / 95−20−13.5882W
2.19.6 Site Elevation: 87.3 ft

2.19.1 ILS Type: Glide Slope for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29−58−35.4434N / 95−18−20.8578W
2.19.6 Site Elevation: 80 ft

2.19.1 ILS Type: Inner Marker for runway 27. Magnetic variation: 3E

2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29−58−39.4166N / 95−17−59.1664W
2.19.6 Site Elevation: 81.1 ft

2.19.1 ILS Type: Localizer for runway 27. Magnetic variation: 3E
2.19.2 ILS Identification: GHI
2.19.5 Coordinates: 29−58−39.3268N / 95−20−15.3338W
2.19.6 Site Elevation: 87.4 ft

2.19.1 ILS Type: Glide Slope for runway 33R. Magnetic variation: 3E
2.19.2 ILS Identification: CDG
2.19.5 Coordinates: 29−57−38.8144N / 95−20−33.4594W
2.19.6 Site Elevation: 80.4 ft

2.19.1 ILS Type: Localizer for runway 33R. Magnetic variation: 3E
2.19.2 ILS Identification: CDG
2.19.5 Coordinates: 29−59−31.6238N / 95−21−37.6444W
2.19.6 Site Elevation: 91.9 ft

2.19.1 ILS Type: Glide Slope for runway 15R. Magnetic variation: 3E
2.19.2 ILS Identification: LKM
2.19.5 Coordinates: 29−59−4.4118N / 95−21−39.0331W
2.19.6 Site Elevation: 89.9 ft

2.19.1 ILS Type: Localizer for runway 15R. Magnetic variation: 3E
2.19.2 ILS Identification: LKM
2.19.5 Coordinates: 29−57−39.3739N / 95−20−41.8496W
2.19.6 Site Elevation: 82.7 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 5E
2.19.2 Navigation Aid Identification: IAH
2.19.5 Coordinates: 29−57−24.9013N / 95−20−44.5885W
2.19.6 Site Elevation: 80.6 ft

General Remarks:
TWY WC WEST OF RY 15R/33L RSTRD TO ACFT WITH 118 FT WING SPAN AND BLO.

RY 09/27 CLSD TO ACFT WITH WINGSPAN 215 FT & ABOVE.

TXLN ’RA’, ’RB’, ’RC’, ’R2’, AND TWY ’SC’ NORTH OF TWY ’SB’ ARE DSGND NON−MOVEMENT AREAS OPERD BY UAL RAMP CTL.

DUAL TWY OPNS TWY NK BTN TWY NB & NORTH RAMP; WEST CNTRLN RSTRD TO ACFT MAX WING SPANS 125 FT & EAST CNTRLN MAX WING SPANS 214 FT.

NORTH RAMP TAXILANE BTN TWYS NF & NR RSTRD TO ACFT WITH WING SPAN 125 FT & BLO.

TWY WW BTN TWY NR AND TWY WB CLSD TO ACFT WINGSPAN MORE THAN 214 FT.

BIRDS ON & IN VCNTY OF ARPT.

GBAS APCH SVC VOL 20NM FR THLD, ALL GLS APCHS.

TWY ’NR’ CLSD TO ACFT WITH WING SPANS GREATER THAN 125 FT BTN TWY ’WD’ & TWY ’WB’.

RY 15L/33R MAGNETIC ANOMALIES MAY AFFECT COMPASS HDG FOR TKOF.

HELICOPTER HOVER/TAXI RSTRD TO HARD SFC MOVEMENT AREAS ONLY.

TWY SF BTN RY 09/27 UP TO AND INCLUDING THE EAST BRIDGE CLSD TO ACFT WITH WINGSPAN 215 FT & OVER.

TWY NR BTN TWY NC AND TWY WW CLSD TO ACFT WINGSPAN MORE THAN 214 FT.

TWY NR BTN WW AND TWY WB DSGND NON−MOVEMENT AREA.

HEL HOVER/TAXI RSTRD TO HARD SFC MOVEMENT AREAS ONLY.

TWY NA LGT ALL BTN TWY WP AND TWY NP NOT STD

TWY ’SF’ BTN TWY ’NB’ AND TXLN ’RA’ IS DSGND NON−MOVEMENT AREA.

9 FT AGL UNMKD SECURITY FENCE ADJ TO FBO & CORPORATE BASE OPERATOR RAMPS AND NONMOVEMENT AREA TAXILANES.

PILOTS & CREWS SHOULD BE AWARE OF DEP TURNS ON CRS IN EXCESS OF 180 DEGS. PILOT READ BACK OF DRCTN OF TURN IS HIGHLY ENCOURAGED.

TWYS WA & WB MAGNETIC ANOMALIES MAY AFFECT COMPASS HDG.

RY STATUS LGTS ARE IN OPN.

THE FLWG MOVEMENT AREAS ARE NOT VSB FM THE ATCT: PORTIONS OF TWYS ’WA’ & ’WB’ FM TWY ’WH’ TO THE AER 33R; TWYS ’WA’ & ’WB’ FM TWY ’WD’ NORTH FOR 400 FT; TWY ’WD’ FM TWY ’WA’ TO TWY ’NR’; TWY ’NR’; TWY ’WL’ FM RY 15L TO TWY ’WB’ & TWY ’WM’.

NORTH RAMP NORTH & SOUTH TAXI LANES CLSD TO ACFT WITH WING SPANS GREATER THAN 125 FT.

TXLN RC CLSD TO ACFT WITH WINGSPAN GREATER THAN 135 FT.

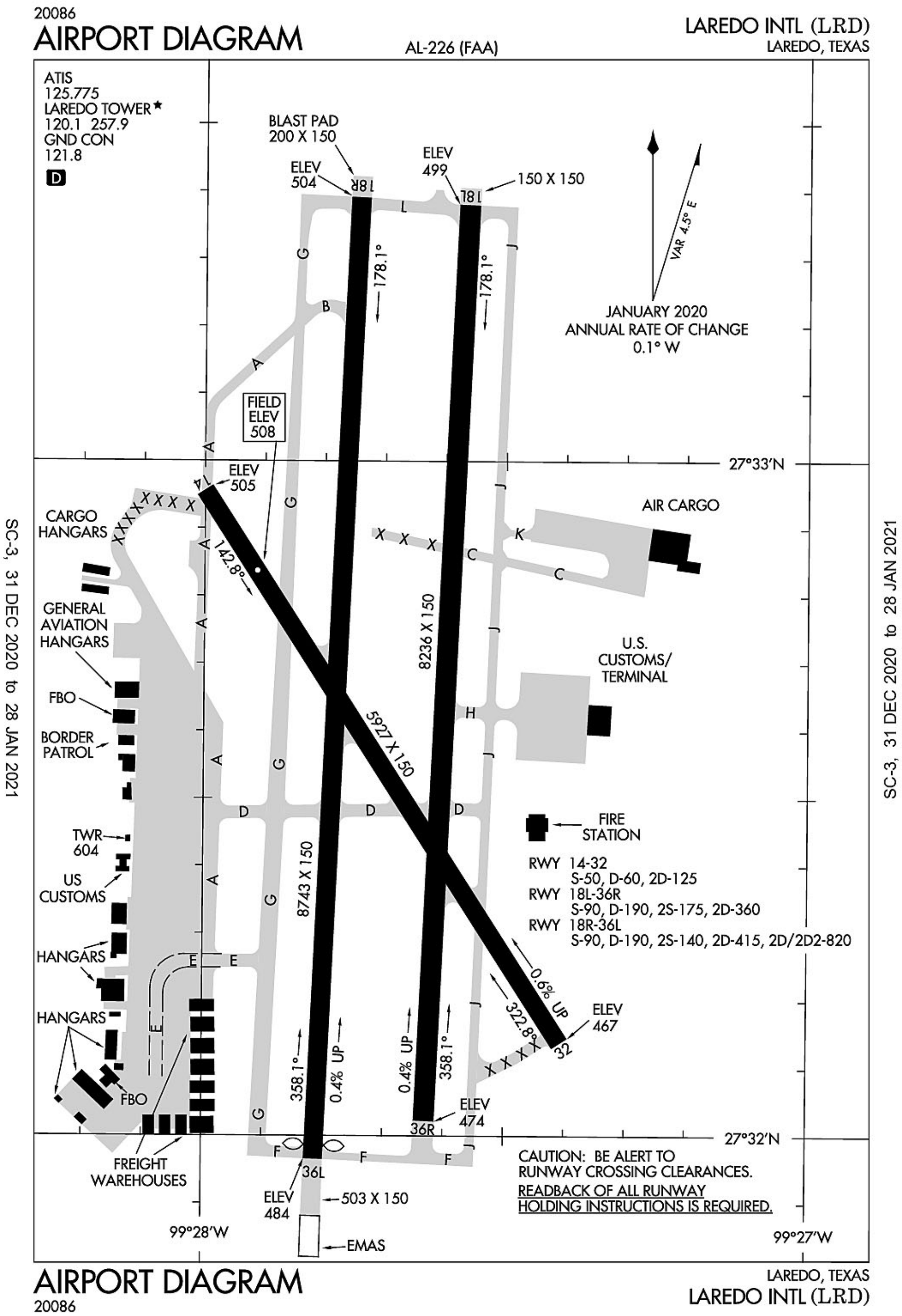
ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

NOISE SENSITIVE AREA N, E AND W OF ARPT.

TWY WW RUN UP PAD FOR RY 15L CLSD TO ACFT WITH WINGSPAN 135 FT & OVER.

TWY NK BTN TWY NB AND TERMINAL D RAMP SIMULTANEOUS ACFT OPS PROHIBITED WHEN MIDDLE TAXILANE IN USE.

Laredo, Texas
Laredo International
ICAO Identifier KLRD



Laredo, TX
Laredo Intl
ICAO Identifier KLRD

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 27−32−39.1N / 99−27−41.7W
2.2.2 From City: 3 miles NE of LAREDO, TX
2.2.3 Elevation: 508 ft
2.2.5 Magnetic Variation: 5E (2020)
2.2.6 Airport Contact: JEFF MILLER
5210 BOB BULLOCK LOOP
LAREDO, TX 78041
(956−795−2000)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: None

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 7/1/1975

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 32
2.12.2 True Bearing: 327
2.12.3 Dimensions: 5927 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−32−8.635N / 99−27−24.668W
2.12.6 Threshold Elevation: 467.4 ft
2.12.6 Touchdown Zone Elevation: 493.6 ft

2.12.1 Designation: 14
2.12.2 True Bearing: 147
2.12.3 Dimensions: 5927 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−32−58.0248N / 99−28−0.2242W
2.12.6 Threshold Elevation: 505.4 ft
2.12.6 Touchdown Zone Elevation: 508 ft

2.12.1 Designation: 18L
2.12.2 True Bearing: 183
2.12.3 Dimensions: 8236 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−33−22.9267N / 99−27−33.5988W
2.12.6 Threshold Elevation: 499.2 ft
2.12.6 Touchdown Zone Elevation: 499.2 ft

2.12.1 Designation: 36R
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8236 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−32−1.4547N / 99−27−37.6934W
2.12.6 Threshold Elevation: 474.2 ft
2.12.6 Touchdown Zone Elevation: 486.7 ft

2.12.1 Designation: 36L
2.12.2 True Bearing: 3
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−31−56.8817N / 99−27−49.0449W
2.12.6 Threshold Elevation: 483.7 ft
2.12.6 Touchdown Zone Elevation: 497 ft

2.12.1 Designation: 18R
2.12.2 True Bearing: 183
2.12.3 Dimensions: 8743 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 27−33−23.3681N / 99−27−44.7128W
2.12.6 Threshold Elevation: 503.7 ft
2.12.6 Touchdown Zone Elevation: 503.7 ft

AD 2.13 Declared Distances

2.13.1 Designation: 32
2.13.2 Take−off Run Available: 5927
2.13.3 Take−off Distance Available: 5927
2.13.4 Accelerate−Stop Distance Available: 5927
2.13.5 Landing Distance Available: 5927

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 5927
2.13.3 Take−off Distance Available: 5927

2.13.4 Accelerate−Stop Distance Available: 5927
2.13.5 Landing Distance Available: 5927

2.13.1 Designation: 18L
2.13.2 Take−off Run Available: 8236
2.13.3 Take−off Distance Available: 8236
2.13.4 Accelerate−Stop Distance Available: 8236
2.13.5 Landing Distance Available: 8236

2.13.1 Designation: 36R
2.13.2 Take−off Run Available: 8236
2.13.3 Take−off Distance Available: 8236
2.13.4 Accelerate−Stop Distance Available: 8236
2.13.5 Landing Distance Available: 8236

2.13.1 Designation: 36L
2.13.2 Take−off Run Available: 8743
2.13.3 Take−off Distance Available: 8743
2.13.4 Accelerate−Stop Distance Available: 8743
2.13.5 Landing Distance Available: 8623

2.13.1 Designation: 18R
2.13.2 Take−off Run Available: 8743
2.13.3 Take−off Distance Available: 8743
2.13.4 Accelerate−Stop Distance Available: 8743
2.13.5 Landing Distance Available: 8743

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: V4L

2.14.1 Designation: 18L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 36R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 36L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 18R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 125.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 0600−2400

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 120.1
2.18.5 Hours of Operation: 0600−2400

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.9
2.18.5 Hours of Operation: 0600−2400

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−31−50.8814N / 99−27−46.6673W
2.19.6 Site Elevation: 477 ft

2.19.1 ILS Type: Glide Slope for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−33−12.4993N / 99−27−40.6967W
2.19.6 Site Elevation: 497 ft

2.19.1 ILS Type: Localizer for runway 18R. Magnetic variation: 5E
2.19.2 ILS Identification: LRD
2.19.5 Coordinates: 27−31−51.7421N / 99−27−49.3028W
2.19.6 Site Elevation: 477 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 9E
2.19.2 Navigation Aid Identification: LRD
2.19.5 Coordinates: 27−28−43.4544N / 99−25−3.6441W
2.19.6 Site Elevation: 583 ft

General Remarks:
RWY 14/32 RSTRD TO ACFT LESS THAN 60000 LBS DTW.

BIRDS ON AND INVOF ARPT.

FEDERAL INSPECTION STATION FEE.

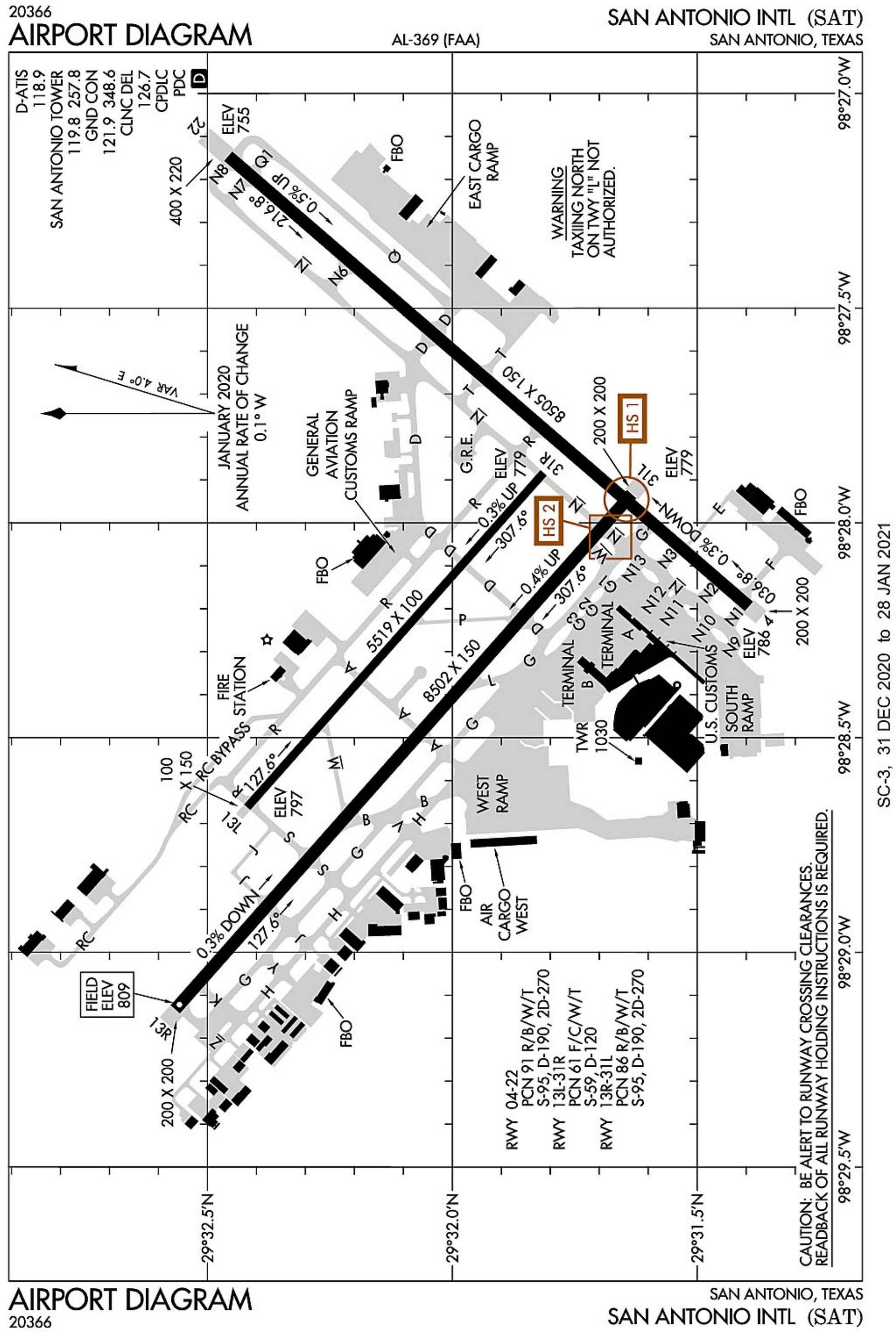
FOR CD IF UNA TO CTC ON FSS FREQ, CTC HOUSTON ARTCC AT 281−230−5622.

TWY C CLSD BTN RWY 18L/36R & RWY 18R INDEFLY.

FEDERAL INSPECTION STATION IS LCTD ON THE WEST GENERAL AVIATION/CARGO APRON.

LNDG FEE ASSESSED FOR ANY ”FOR HIRE” ACFT.

San Antonio, Texas
San Antonio International
ICAO Identifier KSAT



San Antonio, TX
San Antonio Intl
ICAO Identifier KSAT

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 29−32−2.25N / 98−28−8.605W
2.2.2 From City: 7 miles N of SAN ANTONIO, TX
2.2.3 Elevation: 809.1 ft
2.2.5 Magnetic Variation: 4E (2020)
2.2.6 Airport Contact: JESUS H. SAENZ, JR.
9800 AIRPORT BLVD
SAN ANTONIO, TX 78216
(210−207−3444)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 04
2.12.2 True Bearing: 41
2.12.3 Dimensions: 8505 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 29−31−23.6409N / 98−28−11.6562W
2.12.6 Threshold Elevation: 786 ft
2.12.6 Touchdown Zone Elevation: 786 ft

2.12.1 Designation: 22
2.12.2 True Bearing: 221
2.12.3 Dimensions: 8505 ft x 150 ft
2.12.4 PCN: 91 R/B/W/T
2.12.5 Coordinates: 29−32−27.3928N / 98−27−8.7715W
2.12.6 Threshold Elevation: 754.5 ft
2.12.6 Touchdown Zone Elevation: 770 ft

2.12.1 Designation: 31R
2.12.2 True Bearing: 312
2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−31−48.7812N / 98−27−53.0202W
2.12.6 Threshold Elevation: 779.2 ft
2.12.6 Touchdown Zone Elevation: 788.1 ft

2.12.1 Designation: 13L
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5519 ft x 100 ft
2.12.4 PCN: 61 F/C/W/T
2.12.5 Coordinates: 29−32−25.0764N / 98−28−39.714W
2.12.6 Threshold Elevation: 797.3 ft
2.12.6 Touchdown Zone Elevation: 797.3 ft

2.12.1 Designation: 31L
2.12.2 True Bearing: 312
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−31−38.0038N / 98−27−55.9932W
2.12.6 Threshold Elevation: 778.5 ft
2.12.6 Touchdown Zone Elevation: 790 ft

2.12.1 Designation: 13R
2.12.2 True Bearing: 132
2.12.3 Dimensions: 8502 ft x 150 ft
2.12.4 PCN: 86 R/B/W/T
2.12.5 Coordinates: 29−32−33.8853N / 98−29−7.9481W
2.12.6 Threshold Elevation: 809.1 ft
2.12.6 Touchdown Zone Elevation: 809.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 04
2.13.2 Take−off Run Available: 8505
2.13.3 Take−off 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 Take−off Run Available: 8505
2.13.3 Take−off Distance Available: 8505
2.13.4 Accelerate−Stop Distance Available: 8505
2.13.5 Landing Distance Available: 8505

2.13.1 Designation: 31R
2.13.2 Take−off Run Available: 5519
2.13.3 Take−off Distance Available: 5519
2.13.4 Accelerate−Stop Distance Available: 5519
2.13.5 Landing Distance Available: 5519

2.13.1 Designation: 13L
2.13.2 Take−off Run Available: 5519
2.13.3 Take−off Distance Available: 5519
2.13.4 Accelerate−Stop Distance Available: 5519
2.13.5 Landing Distance Available: 5519

2.13.1 Designation: 31L
2.13.2 Take−off Run Available: 8502
2.13.3 Take−off Distance Available: 8502
2.13.4 Accelerate−Stop Distance Available: 8502
2.13.5 Landing Distance Available: 8502

2.13.1 Designation: 13R
2.13.2 Take−off Run Available: 8502
2.13.3 Take−off Distance Available: 8502
2.13.4 Accelerate−Stop Distance Available: 8502
2.13.5 Landing Distance Available: 8502

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 04
2.14.2 Approach Lighting System: MALS
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 22
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ALAMO DP (RWY 04, 22, 31)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALAMO DP (RWY 13)
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALAMO DP (RWY 13)
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALAMO DP (RWY 04, 22, 31)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALISS DP (RWY 04, 22, 31)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALISS DP (RWY 13)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ALISS DP (RWY 13)
2.18.3 Channel: 290.225

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P
2.18.3 Channel: 121.375
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P (SAT 115R−154R 35−56 DME)
2.18.3 Channel: 257.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (141−270)
2.18.3 Channel: 118.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (360−090)
2.18.3 Channel: 124.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (091−140)
2.18.3 Channel: 128.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (091−140)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (360−090)
2.18.3 Channel: 335.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (141−270)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (271−359)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (271−359)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 251.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 04 LRD TRANSITION)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 13, 22, 31)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 04 CRP TRANSITION)
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 04 CRP TRANSITION)
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 04, 13, 31)
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BOWIE DP (RWY 04 LRD TRANSITION)

2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRAUN STAR
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: BRAUN STAR
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 126.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CENTERPOINT STAR (RWY 13R, 22)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CENTERPOINT STAR (RWY 04, 31L)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CENTERPOINT STAR (RWY 04, 31L)
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CENTERPOINT STAR (RWY 13R, 22)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (141−270)
2.18.3 Channel: 118.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (360−090)
2.18.3 Channel: 124.45
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (271−359)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (091−140)
2.18.3 Channel: 128.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (271−359)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (091−140)
2.18.3 Channel: 318.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (360−090)
2.18.3 Channel: 335.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (141−270)
2.18.3 Channel: 353.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 118.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P

2.18.3 Channel: 119.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEJON DP (RWY 04, 22, 31)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEJON DP (RWY 13)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEJON DP (RWY 12)
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEJON DP (RWY 13)
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEJON DP (RWY 04, 22, 31)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEMIG STAR
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LEMIG STAR
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MARCS STAR
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MARCS STAR
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MILET DP (RWY 04)
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MILET DP (RWY 13, 22, 31)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MILET DP (RWY 13, 22, 31)
2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: MILET DP (RWY 04)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: STONEWALL STAR
2.18.3 Channel: 125.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: STONEWALL STAR
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: THREE RIVERS DP (RWY 13, 22, 31)
2.18.3 Channel: 125.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: THREE RIVERS DP (RWY 04)
2.18.3 Channel: 127.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: THREE RIVERS DP (RWY 04)
2.18.3 Channel: 269.1
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: THREE RIVERS DP (RWY 13, 22, 31)

2.18.3 Channel: 290.225
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−32−32.9486N / 98−26−58.6881W
2.19.6 Site Elevation: 746.3 ft

2.19.1 ILS Type: Glide Slope for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−31−30.2202N / 98−27−58.0715W
2.19.6 Site Elevation: 774.8 ft

2.19.1 ILS Type: Localizer for runway 04. Magnetic variation: 4E
2.19.2 ILS Identification: SAT
2.19.5 Coordinates: 29−32−35.0937N / 98−27−1.1714W
2.19.6 Site Elevation: 748.9 ft

2.19.1 ILS Type: DME for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−31−29.0932N / 98−27−49.9584W
2.19.6 Site Elevation: 790.7 ft

2.19.1 ILS Type: Glide Slope for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−32−28.9928N / 98−28−54.8202W
2.19.6 Site Elevation: 801.3 ft

2.19.1 ILS Type: Inner Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−32−39.0383N / 98−29−14.595W
2.19.6 Site Elevation: 807.6 ft

2.19.1 ILS Type: Localizer for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−31−31.3122N / 98−27−47.3799W
2.19.6 Site Elevation: 771 ft

2.19.1 ILS Type: Outer Marker for runway 13R. Magnetic variation: 4E
2.19.2 ILS Identification: ANT
2.19.5 Coordinates: 29−36−27.2991N / 98−34−11.0119W
2.19.6 Site Elevation: 1054.4 ft

2.19.1 ILS Type: DME for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29−31−29.0932N / 98−27−49.9584W
2.19.6 Site Elevation: 790.7 ft

2.19.1 ILS Type: Glide Slope for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29−31−47.9039N / 98−28−1.9173W
2.19.6 Site Elevation: 777.5 ft

2.19.1 ILS Type: Localizer for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29−32−43.1182N / 98−29−19.835W
2.19.6 Site Elevation: 813.4 ft

2.19.1 ILS Type: Outer Marker for runway 31L. Magnetic variation: 4E
2.19.2 ILS Identification: IZR
2.19.5 Coordinates: 29−28−6.3844N / 98−23−19.119W
2.19.6 Site Elevation: 693.9 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 8E
2.19.2 Navigation Aid Identification: SAT
2.19.5 Coordinates: 29−38−38.508N / 98−27−40.7369W
2.19.6 Site Elevation: 1158.8 ft

General Remarks:

TWY L CLSD NORTHBOUND.

FREQUENT RUBBER ACCUMULATION NW 2500 RY 13R/31L.

GLIDER/SOARING OPNS APRXLY 17 MILES NW OF ARPT DURG VFR.

ARPT RSTD TO ACFT WITH WINGSPAN GTR THAN 171 FT, PPR WITH 24HR OPS 210−207−3433. RQRD FOR AUTH.

ALL INTL GENERAL AVIATION CLEAR U.S. CSTMS AT NORTH FIXED BASE OPERATOR RAMP EAST SIDE, CALL U.S. CSTMS 210−821−6965 UPON ARR.

TWY S BTN APCH END RWY 13L AND RWY 13R/31L CLSD TO ACFT WITH WINGSPAN MORE THAN 100 FT. TWY R BTN APCH END RWY 13L AND TWY D CLSD TO ACFT WINGSPAN MORE THAN 100 FT.

NOISE SENSITIVE AREAS EXIST ON ALL SIDES OF ARPT, AT PILOTS DISCRETION CLIMB AS QUICKLY AND QUIETLY AS SAFELY POSSIBLE ON DEPARTURE AND USE CONSIDERATION WHEN FLYING OVER POPULATED AREAS BY MINIMIZING FLT AND HIGH PWR SETTINGS. MILITARY AIRCRAFT: DEPARTING AND ARRIVING AIRCRAFT WILL USE MINIMUM POWER SETTINGS CONSISTENT WITH AIRCRAFT FLIGHT MANUALS, AFTERBURNER TAKEOFF IS PROHIBITED UNLESS REQUIRED FOR SAFETY OF FLIGHT. ENGINE−UPS ARE PERMITTED BTN 0600−2300.

ACFT TAXIING ON RY 04 NE BOUND LOOK FOR HOLD SHORT TO RY 31L.

INNER RAMP TAXILANE NORTH OF TRML A AND B IS CLSD TO ACFT WITH WINGSPAN GTR THAN 135 FT.

TWY D NON−MOVEMENT AREA FM TWY N TO 500 FT W OF TWY N.

PPR WITH ARPT OPNS FOR ACFT POWERING BACK FM TERMINAL GATES.

COMPASS DEVIATION MAY OCCUR AT THE NW PORTION OF TWY R DUE TO REBAR RE−ENFORCED CONC BRIDGE LCTD UNDER THE TWY.

WORK IN PROGRESS SCHEDULED MAINTENANCE ON & ALONG TWYS AND RAMPS AREAS AT VARIOUS TIMES.

GROUND RUN−UP ENCLOSURE AVBL 24 HRS.

A BARRICADED PAVEMENT ELEVATION CHANGE EXISTS ALONG THE EASTERN SIDE OF THE WEST RAMP.

NUMEROUS FLOCKS OF BIRDS INVOF ARPT.

FOREIGN MIL ACFT WITH WINGSPAN LESS THAN 100 FT MUST REP TO GA RAMP FED INSPECTION STATION FOR CUST PROCESSING, CTC AP MANAGEMENT AT 210−207−3433.

RY 13L/31R NOT AVBL FOR PART 121 ACR OPNS.

TERMINAL GATES A1, A5, A6, A7 & A8 USE ONLY WITH PPR CALL OPNS 210−207−3433.

ALL ACFT AFTER LDG ON RWY 13R/31L EXITING SOUTHWEST BOUND ON TWY DELTA TO MAKE 90 DEG TURN ON TWY GOLF TO AVOID UNUSBL SFC.

C130 AND C17 TYPE ACFT MUST PARK ON WEST RAMP TO CLR CUST.

ACFT TAXIING ON TWY N SW BOUND LOOK FOR HOLD SHORT TO RY 31R.

TWY Z CLSD TO ACFT WITH WINGSPAN GREATER THAN 118 FT.

AERODROME ALL SFC WIP CONST FOR CURRENT INFO CTC OPS. 210−207−3433.

APRON EAST CARGO RAMP INT OF RWY 04/22 AND TWY DELTA ACFT ARE REQ TO APPLY THE MNM THRUST WHEN XNG THE RWY TO AVOID DMG DUE TO JET BLAST.

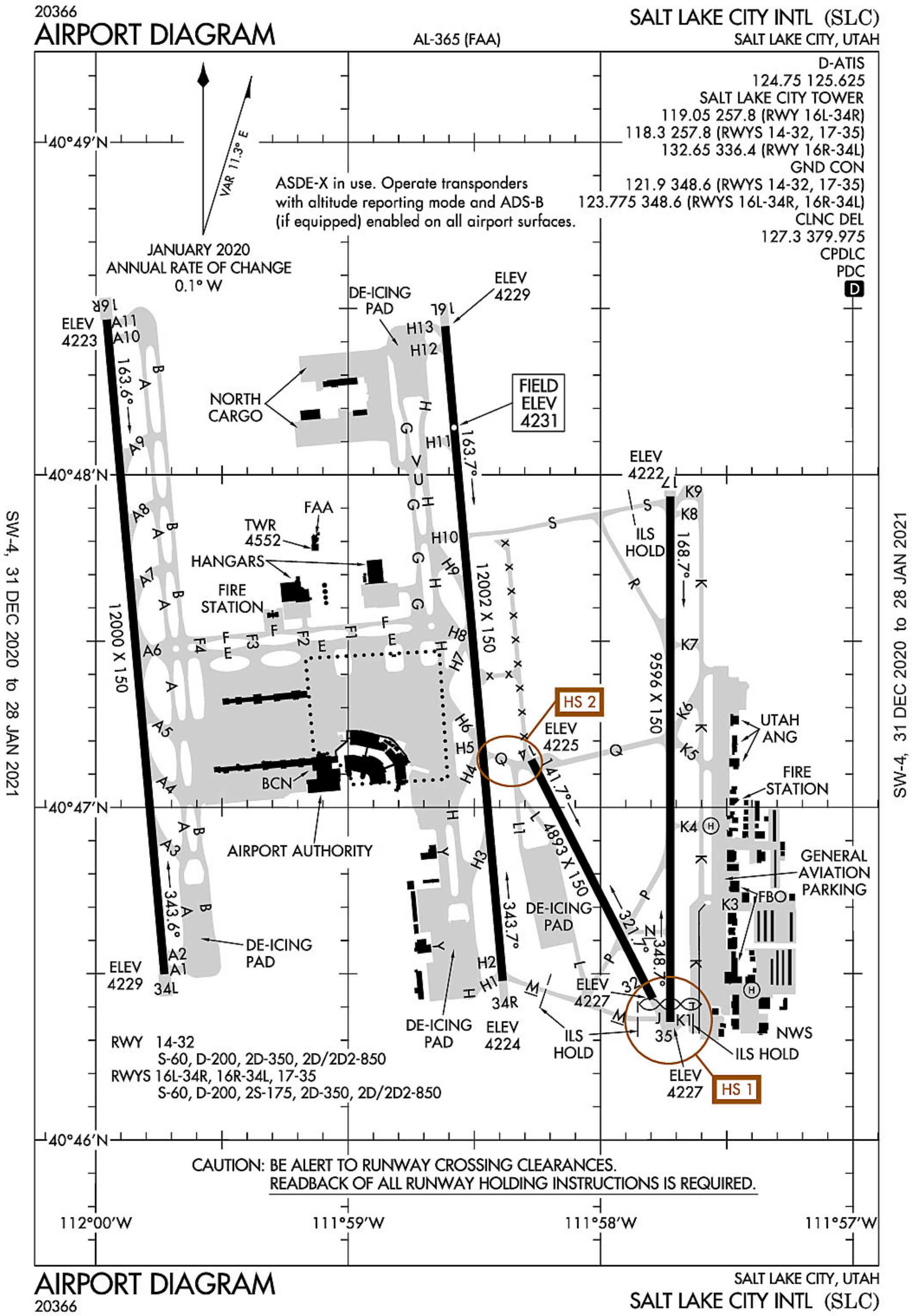
THE FOLLOWING TWYS ARE NOT AVBL FOR ACFT 59,000 LBS OR OVER: TWY A & TWY J NORTH OF RY 13R−31L, TWY M & TWY P, TWY H NORTHWEST OF TWY Z AND TWY E EAST OF RY 04/22.

SAT TWY R BTN APCH END RWY 13L AND TWY D CLSD TO ACFT MORE THAN 99600 LB.

TWYS L & B CLSD TO ACFT WITH WINGSPANS GREATER THAN 118 FT EXITING RY 31L.

ACFT AT TERMINAL A & B ADVISE GND CTL PRIOR TO PUSH.

Salt Lake City, Utah
Salt Lake City International
ICAO Identifier KSLC



Salt Lake City, UT
Salt Lake City Intl
ICAO Identifier KSLC

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 40−47−18.216N / 111−58−39.984W
2.2.2 From City: 3 miles W of SALT LAKE CITY, UT
2.2.3 Elevation: 4230.9 ft
2.2.5 Magnetic Variation: 11E (2020)
2.2.6 Airport Contact: BILL WYATT
P.O. BOX 145550
SALT LAKE CITY, UT 84114
((801) 575−2408)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 14
2.12.2 True Bearing: 153
2.12.3 Dimensions: 4893 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−47−8.5848N / 111−58−16.4661W
2.12.6 Threshold Elevation: 4224.7 ft
2.12.6 Touchdown Zone Elevation: 4224.8 ft

2.12.1 Designation: 32
2.12.2 True Bearing: 333
2.12.3 Dimensions: 4893 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−46−25.5192N / 111−57−47.5915W
2.12.6 Threshold Elevation: 4226.8 ft
2.12.6 Touchdown Zone Elevation: 4226.8 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−46−28.7185N / 111−58−23.2566W
2.12.6 Threshold Elevation: 4224.3 ft
2.12.6 Touchdown Zone Elevation: 4224.7 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12002 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−48−26.8298N / 111−58−36.9557W
2.12.6 Threshold Elevation: 4229.1 ft
2.12.6 Touchdown Zone Elevation: 4230.9 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 175
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−48−28.0035N / 111−59−57.4282W
2.12.6 Threshold Elevation: 4223.4 ft
2.12.6 Touchdown Zone Elevation: 4225.8 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 355
2.12.3 Dimensions: 12000 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−46−29.9171N / 111−59−43.6913W
2.12.6 Threshold Elevation: 4228.8 ft
2.12.6 Touchdown Zone Elevation: 4228.8 ft

2.12.1 Designation: 35
2.12.2 True Bearing: 360
2.12.3 Dimensions: 9596 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−46−21.3022N / 111−57−43.4496W
2.12.6 Threshold Elevation: 4226.8 ft
2.12.6 Touchdown Zone Elevation: 4226.9 ft

2.12.1 Designation: 17
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9596 ft x 150 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−47−56.1043N / 111−57−43.4552W
2.12.6 Threshold Elevation: 4221.7 ft
2.12.6 Touchdown Zone Elevation: 4222.2 ft

2.12.1 Designation: HB
2.12.2 True Bearing:
2.12.3 Dimensions: 60 ft x 60 ft
2.12.4 PCN:
2.12.5 Coordinates: 40−46−27.0827N / 111−57−24.0562W
2.12.6 Threshold Elevation: 4220.4 ft
2.12.6 Touchdown Zone Elevation: ft

2.12.1 Designation: HF
2.12.2 True Bearing:
2.12.3 Dimensions: 60 ft x 60 ft
2.12.4 PCN:
2.12.5 Coordinates: −− / −−
2.12.6 Threshold Elevation: ft
2.12.6 Touchdown Zone Elevation: ft

AD 2.13 Declared Distances

2.13.1 Designation: 14
2.13.2 Take−off Run Available: 4892
2.13.3 Take−off 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 Take−off Run Available: 4892
2.13.3 Take−off Distance Available: 4892
2.13.4 Accelerate−Stop Distance Available: 4892
2.13.5 Landing Distance Available: 4892

2.13.1 Designation: 34R
2.13.2 Take−off Run Available: 12002
2.13.3 Take−off Distance Available: 12002
2.13.4 Accelerate−Stop Distance Available: 12002
2.13.5 Landing Distance Available: 12002

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 12002
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off 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 Take−off Run Available: 12000
2.13.3 Take−off Distance Available: 12000
2.13.4 Accelerate−Stop Distance Available: 12000
2.13.5 Landing Distance Available: 12000

2.13.1 Designation: 35
2.13.2 Take−off Run Available: 9597
2.13.3 Take−off Distance Available: 9597
2.13.4 Accelerate−Stop Distance Available: 9597
2.13.5 Landing Distance Available: 9273

2.13.1 Designation: 17
2.13.2 Take−off Run Available: 9597
2.13.3 Take−off Distance Available: 9597
2.13.4 Accelerate−Stop Distance Available: 9597
2.13.5 Landing Distance Available: 9597

2.13.1 Designation: HB
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

2.13.1 Designation: HF
2.13.2 Take−off Run Available:
2.13.3 Take−off Distance Available:
2.13.4 Accelerate−Stop Distance Available:
2.13.5 Landing Distance Available:

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 14
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 32
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34L

2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 35
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 17
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: HB
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: HF
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ANG COMD POST
2.18.3 Channel: 303.15
2.18.5 Hours of Operation:

2.18.1 Service Designation: ANG COMD POST
2.18.3 Channel: 311
2.18.5 Hours of Operation:

2.18.1 Service Designation: CD PRE DEP CLNC
2.18.3 Channel: 127.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD PRE TAXI CLNC
2.18.3 Channel: 127.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 379.975
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 124.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 125.625
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P (RWY 14/32, 17/35)
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P (RWY 16L/34R, 16R/34L)
2.18.3 Channel: 123.775
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 14/32, 17/35)
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R)
2.18.3 Channel: 119.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16R/34L)
2.18.3 Channel: 132.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 14/32, 16L/34R, 17/35)
2.18.3 Channel: 257.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16R/34L)
2.18.3 Channel: 336.4
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40−46−18.724N / 111−58−18.1254W
2.19.6 Site Elevation: 4239.9 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 11E

2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40−48−17.0756N / 111−58−30.6172W
2.19.6 Site Elevation: 4225 ft

2.19.1 ILS Type: Inner Marker for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40−48−35.7038N / 111−58−38.0115W
2.19.6 Site Elevation: 4222.8 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 11E
2.19.2 ILS Identification: MOY
2.19.5 Coordinates: 40−46−18.5061N / 111−58−22.0717W
2.19.6 Site Elevation: 4226.5 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40−46−18.724N / 111−58−18.1254W
2.19.6 Site Elevation: 4239.9 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40−46−39.3436N / 111−58−19.2908W
2.19.6 Site Elevation: 4220 ft

2.19.1 ILS Type: Inner Marker for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40−46−20.3855N / 111−58−22.2947W
2.19.6 Site Elevation: 4225.1 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 11E
2.19.2 ILS Identification: SLC
2.19.5 Coordinates: 40−48−37.6811N / 111−58−38.2145W
2.19.6 Site Elevation: 4224.5 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40−46−19.627N / 111−59−46.3581W
2.19.6 Site Elevation: 4233.6 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40−48−17.3028N / 112−0−1.6005W
2.19.6 Site Elevation: 4218.7 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 11E
2.19.2 ILS Identification: UAT
2.19.5 Coordinates: 40−46−19.9476N / 111−59−42.5324W
2.19.6 Site Elevation: 4227.2 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40−46−19.627N / 111−59−46.3581W
2.19.6 Site Elevation: 4233.6 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40−46−39.8998N / 111−59−50.2673W
2.19.6 Site Elevation: 4222.6 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 11E
2.19.2 ILS Identification: UUH
2.19.5 Coordinates: 40−48−37.9731N / 111−59−58.5893W
2.19.6 Site Elevation: 4220 ft

2.19.1 ILS Type: DME for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40−46−9.7838N / 111−57−47.5356W
2.19.6 Site Elevation: 4242.7 ft

2.19.1 ILS Type: Glide Slope for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40−47−45.7497N / 111−57−50.0372W
2.19.6 Site Elevation: 4216.4 ft

2.19.1 ILS Type: Localizer for runway 17. Magnetic variation: 11E
2.19.2 ILS Identification: BNT
2.19.5 Coordinates: 40−46−10.0541N /

111−57−43.4502W
2.19.6 Site Elevation: 4227.9 ft

2.19.1 ILS Type: DME for runway 35. Magnetic variation: 11E
2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40−46−9.7838N / 111−57−47.5356W
2.19.6 Site Elevation: 4242.7 ft

2.19.1 ILS Type: Glide Slope for runway 35. Magnetic variation: 11E
2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40−46−35.1583N / 111−57−48.6413W
2.19.6 Site Elevation: 4229.2 ft

2.19.1 ILS Type: Localizer for runway 35. Magnetic variation: 11E
2.19.2 ILS Identification: UTJ
2.19.5 Coordinates: 40−47−8.3329N / 111−57−51.5557W
2.19.6 Site Elevation: 4220.8 ft

General Remarks:

SEE CURRENT NOTAMS FOR DATES AND ADDITIONAL INFO.

MILITARY: ANG RAMP: NSTD PAVEMENT MARK ON RAMP.

SVFR IS NOT RCMD AT THE ARPT, IF REQD, EXPT DLAS.

TWY Y RSTD TO WINGSPANS LESS THAN 171 FT BTWN TWY H3 AND H4.

MILITARY: ANG RAMP: OPR 1430−2230Z++ MON−THU. CLSD FRI−SUN AND HOL. OFFL BUS ONLY. PPR REQ 48 HR ALL ACFT, VALID 1 HR +/− ETA. TRAN PRK/SVC EXTREMELY LTD. BASE OPS DSN 245−2274, C801−245−2274. MIL ALT HILL AFB (KHIF) 25 NM N. ALL ACFT CTC UTAH CTL (COMD POST) 20 MIN OUT WITH ETA AND REQ.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

SPOTS 22 AND 23 TO BE RENAMED 1WEST ON 15 SEP 2020.

SURFACE MOVEMENT GUIDANCE CONTROL SYSTEM & LOW VISIBILITY TAXI PROCEDURES.

HELIPADS B AND F LOCATED ON GENERAL AVIATION APRONS.

USE CAUTION FOR EXTENSIVE PARAGLIDING OPS INVOF POINT OF THE MOUNTAIN.

SEE FLIP AP/1 SUPPLEMENTARY ARPT INFO.

MILITARY: COMMUNICATIONS: ANG COMD POST − CALL UTAH CONTROL.

USE MINIMUM THRUST IN CONSTRUCTION AREAS.

CONTACT GROUND ON 123.775 BEFORE TAXIING OUT OF NORTH CARGO.

DUE TO TFC VOL, LCL DEPARTURE AND ARR OPNS ARE DISCOURAGED AND DLAS CAN BE EXPCD BTN 1500−1730Z++ AND 0130−0300Z++.

MILITARY: SVC: FUEL A++.

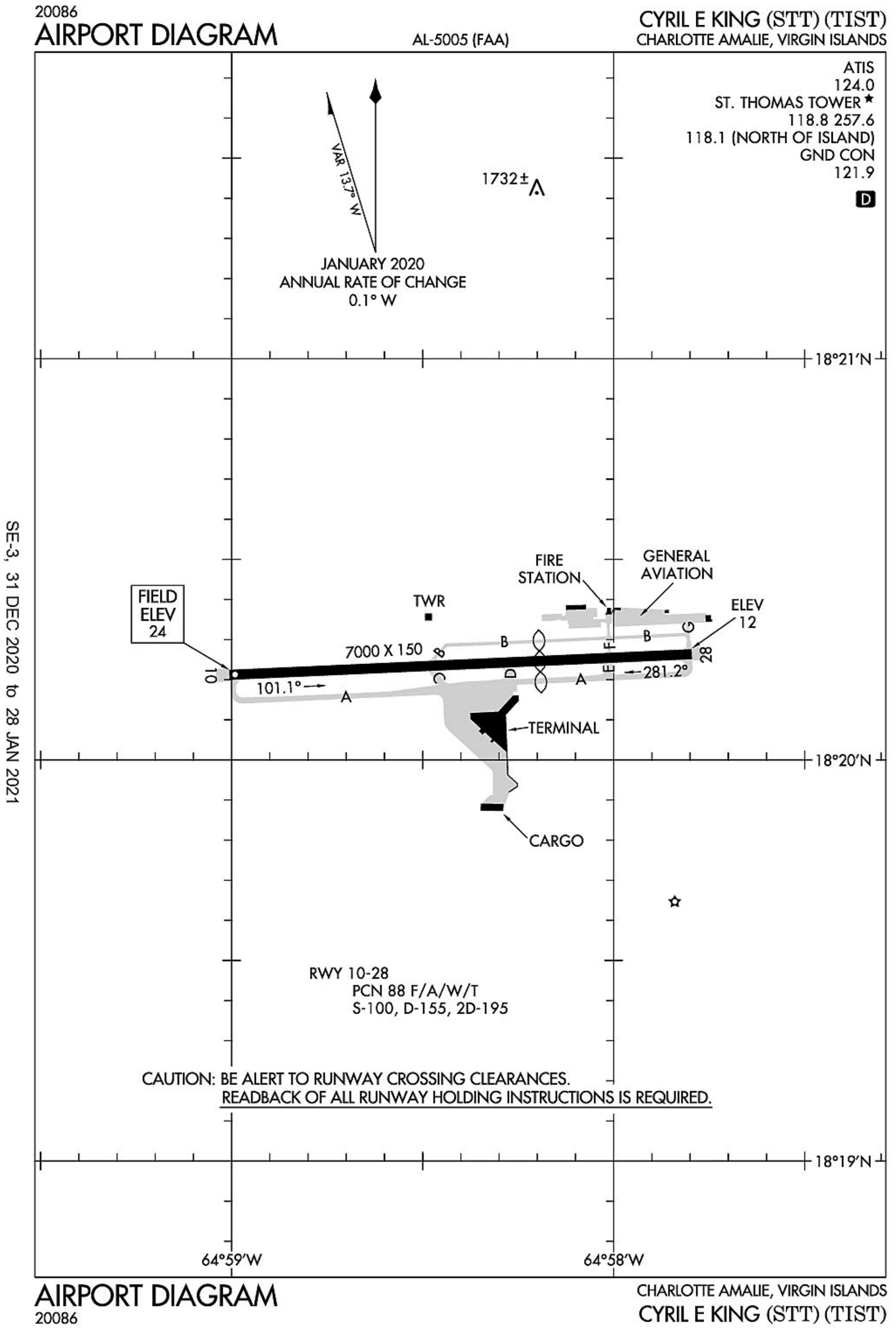
FLOCK OF BIRDS ON AND IN VICINITY OF ARPT.

SPOTS 20 AND 21 TO BE RENAMED 2WEST ON 15 SEP 2020.

MILITARY: ANG RAMP: ALL ACFT CTC UTAH CONTROL WITH LDG & DEP TIMES. COMD POST DSN:

245−2416/2417; C801−245−2416/2417. PHASE II WILDLIFE ACT DURING MIGRATION/MORNING/EVENING HRS FR OCT−APR. CTC UTAH CTL FOR CURRENT BIRD−WATCH COND.

Charlotte Amalie St. Thomas, Virgin Islands
Cyril E King
ICAO Identifier TIST



Charlotte Amalie, VI
Cyril E King
ICAO Identifier TIST

AD 2.2 Aerodrome geographical and administrative data

2.2.1 Reference Point: 18−20−14.3N / 64−58−24W

2.2.2 From City: 2 miles W of CHARLOTTE AMALIE, VI

2.2.3 Elevation: 23.6 ft

2.2.5 Magnetic Variation: 13W (2000)

2.2.6 Airport Contact: JEROME SHERIDAN
CYRIL E. KING AIRPORT
ST THOMAS, VI 802
((340) 714−6667)

2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 All Months, All Days, 0700−2300 Hours

AD 2.4 Handling Services and Facilities

2.4.1 Cargo Handling Facilities: YES

2.4.2 Fuel Types: 100LL,A

2.4.5 Hangar Space: YES

2.4.6 Repair Facilities: MINOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics

2.12.1 Designation: 28

2.12.2 True Bearing: 267

2.12.3 Dimensions: 7000 ft x 150 ft

2.12.4 PCN: 88 F/A/W/T

2.12.5 Coordinates: 18−20−15.8124N / 64−57−47.7382W

2.12.6 Threshold Elevation: 11.7 ft

2.12.6 Touchdown Zone Elevation: 16.5 ft

2.12.1 Designation: 10

2.12.2 True Bearing: 87

2.12.3 Dimensions: 7000 ft x 150 ft

2.12.4 PCN: 88 F/A/W/T

2.12.5 Coordinates: 18−20−12.7247N / 64−59−0.3371W

2.12.6 Threshold Elevation: 23.5 ft

2.12.6 Touchdown Zone Elevation: 23.6 ft

AD 2.13 Declared Distances

2.13.1 Designation: 28

2.13.2 Take−off Run Available: 7000

2.13.3 Take−off Distance Available: 7000

2.13.4 Accelerate−Stop Distance Available: 6000

2.13.5 Landing Distance Available: 3700

2.13.1 Designation: 10

2.13.2 Take−off Run Available: 7000

2.13.3 Take−off Distance Available: 7000

2.13.4 Accelerate−Stop Distance Available: 7000

2.13.5 Landing Distance Available: 7000

AD 2.14 Approach and Runway Lighting

2.14.1 Designation: 28

2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 10

2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities

2.18.1 Service Designation: ATIS

2.18.3 Channel: 124

2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG

2.18.3 Channel: 121.5

2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG

2.18.3 Channel: 243

2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P

2.18.3 Channel: 121.9

2.18.5 Hours of Operation: 0700−2230, ATCT CLOSES 1 HR EARLIER DRG DALGT SAVINGS TIME.

2.18.1 Service Designation: LCL/P (NORTH OF ISLAND)
2.18.3 Channel: 118.1
2.18.5 Hours of Operation: 0700−2230, ATCT CLOSES 1 HR EARLIER DRG DALGT SAVINGS TIME.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.8
2.18.5 Hours of Operation: 0700−2230, ATCT CLOSES 1 HR EARLIER DRG DALGT SAVINGS TIME.

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 257.6
2.18.5 Hours of Operation: 0700−2230, ATCT CLOSES 1 HR EARLIER DRG DALGT SAVINGS TIME.

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−18.78N / 64−57−39.88W
2.19.6 Site Elevation: 22.6 ft

2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−10.62N / 64−58−48.29W
2.19.6 Site Elevation: 15.1 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: TMN
2.19.5 Coordinates: 18−20−16.26N / 64−57−37.22W
2.19.6 Site Elevation: 17 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 10W
2.19.2 Navigation Aid Identification: STT
2.19.5 Coordinates: 18−21−20.9431N / 65−1−28.3968W
2.19.6 Site Elevation: 679.2 ft

General Remarks:

LGTS ON HILL 4 NM SE OF ARPT MAY BE MISTAKEN FOR RY 10/28 WHEN MAKING A VISUAL APCH FROM THE SOUTH.

ACFT THAT BACK TAXI FOR DEP ON RY 28 SHALL MAKE THEIR 180 DEG TURN CCLKWS.

NOISE SENSITIVE AREA: AVOID OVERFLIGHTS OF WATER ISLAND LOCATED 2 MI SE OF ARPT.

ARFF UNAVBL 2300−0630.

RY 10 DEPS MAINTAIN RY HDG UNTIL REACHING DEP END OF RY BFR TURNING ON COURSE OR ASSIGNED HDG UNLESS OTRW AUZD BY ATCT.

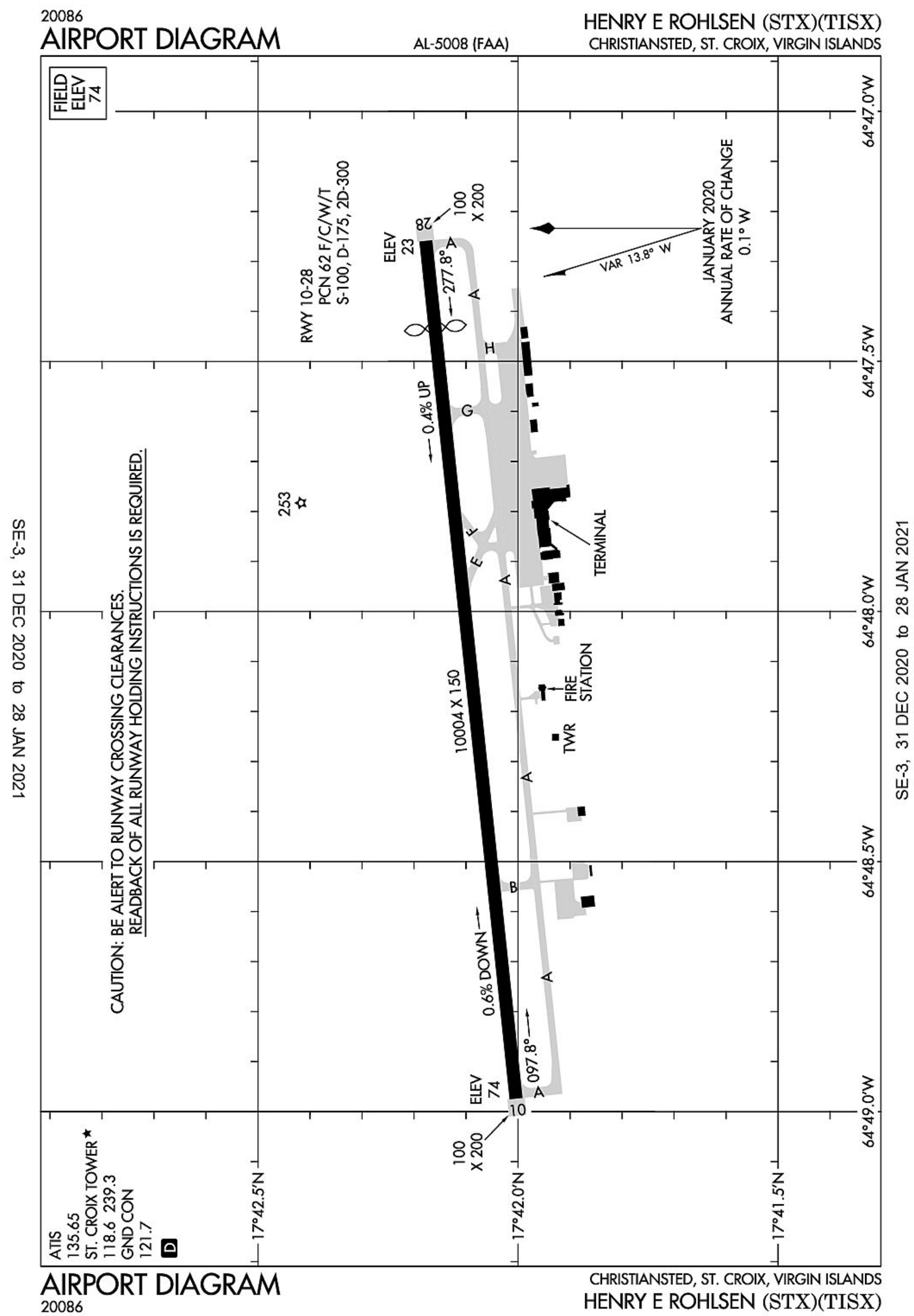
WHEN TWR CLSD CTC SAN JUAN CERAP AT 787−253−8664/8665

PILOTS CTC GND CTL PRIOR TO PUSHBACK.

PILOTS MAY ENCTR FALSE ILLUSORY INDICATIONS DURG NGT VISUAL APCHS TO RY 10 WHEN USING VISUAL CUES FOR VERTICAL GUIDANCE; RCMD USE OF THE ILS GS & FQT CROSS REF WITH THE ACFT ALTM TO MAINT THE PROPER APCH PROFILE.

OBSTRUCTION SAILBOAT MAST 100FT WEST OF APPROACH END OF RWY 10 50FT AGL

Christiansted St. Croix
Henry E Rohlsen
ICAO Identifier TISX



Christiansted, VI
Henry E Rohlsen
ICAO Identifier TISX

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 17−42−5.416N / 64−48−6.9945W
2.2.2 From City: 6 miles SW of CHRISTIANSTED, VI
2.2.3 Elevation: 74.1 ft
2.2.5 Magnetic Variation: 13W (2000)
2.2.6 Airport Contact: JEROME SHERIDAN
P.O. BOX 1134
ST CROIX, VI 821
((340) 719−6207)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, 0500−2300 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A1+
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 28
2.12.2 True Bearing: 264
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−10.62N / 64−47−15.544W
2.12.6 Threshold Elevation: 22.5 ft
2.12.6 Touchdown Zone Elevation: 40 ft

2.12.1 Designation: 10
2.12.2 True Bearing: 84
2.12.3 Dimensions: 10004 ft x 150 ft
2.12.4 PCN: 62 F/C/W/T
2.12.5 Coordinates: 17−42−0.212N / 64−48−58.445W
2.12.6 Threshold Elevation: 73.7 ft
2.12.6 Touchdown Zone Elevation: 74.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 28
2.13.2 Take−off Run Available: 10004
2.13.3 Take−off Distance Available: 10004
2.13.4 Accelerate−Stop Distance Available: 10004
2.13.5 Landing Distance Available: 9003

2.13.1 Designation: 10
2.13.2 Take−off Run Available: 10004
2.13.3 Take−off Distance Available: 10004
2.13.4 Accelerate−Stop Distance Available: 9003
2.13.5 Landing Distance Available: 9003

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 28
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 10
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: ATIS
2.18.3 Channel: 135.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 0700−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.6
2.18.5 Hours of Operation: 0700−2200

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 0700−2200

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX

2.19.5 Coordinates: 17−41−58.77N / 64−48−45.5W
2.19.6 Site Elevation: 63.5 ft

2.19.1 ILS Type: Localizer for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX
2.19.5 Coordinates: 17−42−11.36N / 64−47−8.28W
2.19.6 Site Elevation: 26.4 ft

2.19.1 ILS Type: Outer Marker for runway 10. Magnetic variation: 13W
2.19.2 ILS Identification: STX
2.19.5 Coordinates: 17−41−30.92N / 64−53−4.74W
2.19.6 Site Elevation: 40 ft

General Remarks:
APCH TO RY 28 SMTMS OBSCD BY SMOKE FM LANDFILL LCTD E OF ARPT.

TAXI INTO POSITION AND HOLD PROCEDURES NO LONGER IN EFFECT.

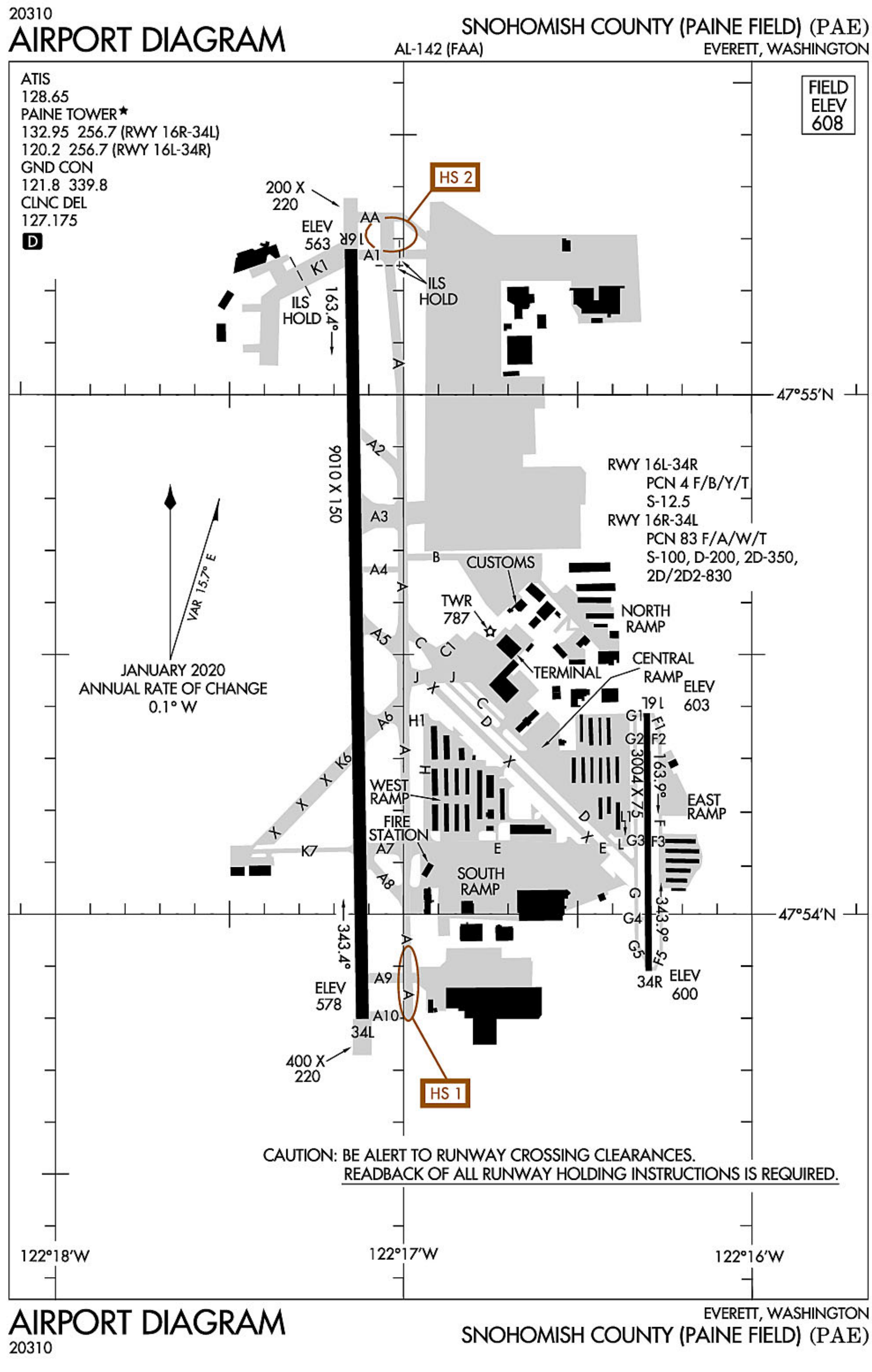
BIRDS & WILDLIFE ON & INVOF ARPT.

AP SFC COND UNMON DLY 2300 − 0600 AST.

WHEN TWR CLSD CTC SAN JUAN CERAP AT 787−253−8664/8665

RY 10 AND 28 100’ X 200’ BLAST PAD.

Everett, Washington
Snohomish County (Paine Field)
ICAO Identifier KPAE



Everett, WA
Snohomish County (Paine Fld)
ICAO Identifier KPAE

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 47−54−26.3425N / 122−16−55.5384W
2.2.2 From City: 6 miles SW of EVERETT, WA
2.2.3 Elevation: 607.5 ft
2.2.5 Magnetic Variation: 16E (2020)
2.2.6 Airport Contact: ARIF GHOUSE
3220 100TH ST SW
EVERETT, WA 98204
((425) 388−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 NOV−APR Months, All Days, 0700−2100 Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: NO
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I B certified on 11/1/1974

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−54−23.1294N / 122−16−18.0937W
2.12.6 Threshold Elevation: 602.8 ft
2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 360
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−53−53.4884N / 122−16−17.7654W
2.12.6 Threshold Elevation: 599.7 ft
2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T
2.12.5 Coordinates: 47−55−16.8075N / 122−17−9.0638W
2.12.6 Threshold Elevation: 562.6 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: 47−53−47.9027N / 122−17−7.0912W
2.12.6 Threshold Elevation: 577.7 ft
2.12.6 Touchdown Zone Elevation: 583.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 3004
2.13.3 Take−off 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 Take−off Run Available: 3004
2.13.3 Take−off Distance Available: 3004
2.13.4 Accelerate−Stop Distance Available: 3004
2.13.5 Landing Distance Available: 3004

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 9010
2.13.3 Take−off 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 Take−off Run Available: 9010

2.13.3 Take−off Distance Available: 9010
2.13.4 Accelerate−Stop Distance Available: 9010
2.13.5 Landing Distance Available: 9010

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 16L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 34R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: AR OPS
2.18.3 Channel: 34.1
2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 128.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.175
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: GND/P
2.18.3 Channel: 339.8
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P (RWY 16L/34R)
2.18.3 Channel: 120.2
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 256.7
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P IC (RWY 16R/34L)
2.18.3 Channel: 132.95
2.18.5 Hours of Operation: 0700−2100

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−55−7.3457N / 122−17−13.6176W
2.19.6 Site Elevation: 566.6 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−53−34.0274N / 122−17−6.7862W
2.19.6 Site Elevation: 569.6 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 20E
2.19.2 Navigation Aid Identification: PAE
2.19.5 Coordinates: 47−55−11.4015N / 122−16−40.0844W
2.19.6 Site Elevation: 669.2 ft

General Remarks
RWY 16L/34R LTD TO HEL 8000 LBS OR LESS.
AVOID INT DEPS FM RWY 16L/34R
IT IS REQ THAT PILOTS ADHERE TO THE FLW NOISE ABATEMENT PROC UNLESS OTRW INSTRD BY ATCT, ITNRNT ARR AND LOW APCH OF SML ACFT OVER 250 HORSEPOWER AUZ ON

RWYS 16L AND 34R.
NOISE SENSITIVE ARPT; FOR NOISE ABATEMENT PROC & TFC PROC CALL ARPT OPS 425−388−5125.
TSNT HEL EXP LNDG/TKOF ON TWY B.
RWY 16R/34 TGL PROHIBITED MON−FRI FM 0700−0900.
ITNRNT DEP OF SML ACFT OVER 250 HORSEPOWER ON RWY 34R.
TRNG FLTS DISCOURAGED AFT 2200.
FOR NOISE ABATEMENT FROM 0500−1500Z++ IF ACFT PERFORMANCE/WIND ALLOWS, USE RY 16R FOR ARRIVALS AND RY 34L FOR DEPARTURES.
TWY C BTN TRML RAMP AND CNTRL RAMP RSTRD TO WINGSPAN OF 68 FT OR LESS. TWY D, F, G AND L RSTRD TO WINGSPAN LESS THAN 49 FT. TWY A4, A5, K7 & B RSTRD TO WINGSPAN LESS THAN 118 FT. TAXILANE H RSTRD TO WINGSPAN LESS THAN 49 FT.
LRG ACFT FLY W PAT OVR WTR; SML ACFT FLY E PAT OVR ARPT.
AVOID LOW LVL OVRFLT OF BOEING RAMP; NE CORNER OF ARPT DUE TO JET BLAST.
AIRFIELD COND NOT MNT AFT BUS HRS OF 05:30 TO 0000.
FLOCKS OF LRG & SML BIRDS INVOF ARPT.
BE ALERT TO CNVG TFC ON BASE TO FINAL LEGS RWY 16R/34L 2100−0700.
FOR CD WHEN ATCT IS CLSD CTC SEATTLE APCH AT 206−214−4722.
PAE HAS FAC CONSTRAINTS THAT LMT ITS ABILITY TO ACCOMMODATE DIVD FLTS AND MNTN THE ARPTS SAFE OPN DUR IREG OPS. ACFT OPR SHOULD CTCT THE ON−DUTY ARPT OPS PSNL (425−388−5125) TO COORD DIVD FLTS EXC IN THE CASE OF A DECLARED IN−FLT EMERG.
PPR RQRD FOR ACES ON BOEING RAMP. CTC BOEING FLT DISPATCH 206−544−5900 FOR APVL. PRIOR TO TAXI ONTO BOEING RAMP CTC BOEING RADIO TWR 123.475 OR CALL 425−342−5900.
TWY K1 CLSD TO ACFT UNDER 30000 LBS.
TKOF CLNC RWY 16R FULL LEN; ENT RWY VIA TWY A1 UNLESS TWY AA SPECIFIED.
USE CTN FOR 80 FT AGL LGT POLES SW EDGE OF BRAVO RAMP.
RWY 16L/34R CLSD BTN 0500−1500Z.
TWY A−2 RSTRD TO 30000 LBS.
EMERG FREQ 121.5 NOT MNT AT TWR. SEATTLE APP CON−TRACON MNT 121.5 FOR EVERETT (PAE).
AREAS NOT VSB FM ATCT INCL E EDGE OF S 1200 FT OF TWY A, TAXILANE E FM SE CORNER OF W HNGRS TO TWY A, TAXILANE H FROM NW EDGE OF W HNGRS TO TAXILANE E.
TAXILANE E RSTD TO WINGSPAN LESS THAN 171 FT. ACFT WINGSPAN OF 171 FT OR GREATER ON TAXILANE E, TUG OPS ONLY. EAST 500 FT OF TAXILANE E RSTD TO WINGSPAN LESS THAN 49 FT.
EVERETT, WA
SNOHOMISH COUNTY (PAINE FLD)
ICAO Identifier: KPAE

AD 2.2 Aerodrome Geographical and Administrative Data

2.2.1 Reference Point: 47−54−26.3425N / 122−16−55.5384W
2.2.2 From City: 6 miles SW of EVERETT, WA
2.2.3 Elevation: 607.5 ft
2.2.5 Magnetic Variation: 16E (2020)
2.2.6 Airport Contact: ARIF GHOUSE
3220 100TH ST SW
EVERETT, WA 98204 ((425) 388−5100)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule

2.3.1 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: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services

2.6.1 Aerodrome Category for Firefighting: ARFF Index

I B certified on 11/1/1974

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−54−23.1294N / 122−16−18.0937W
2.12.6 Threshold Elevation: 602.8 ft
2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 360
2.12.3 Dimensions: 3004 ft x 75 ft
2.12.4 PCN: 4 F/B/Y/T
2.12.5 Coordinates: 47−53−53.4884N / 122−16−17.7654W
2.12.6 Threshold Elevation: 599.7 ft
2.12.6 Touchdown Zone Elevation: 606.9 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 179
2.12.3 Dimensions: 9010 ft x 150 ft
2.12.4 PCN: 83 F/A/W/T
2.12.5 Coordinates: 47−55−16.8075N / 122−17−9.0638W
2.12.6 Threshold Elevation: 562.6 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: 47−53−47.9027N / 122−17−7.0912W
2.12.6 Threshold Elevation: 577.7 ft
2.12.6 Touchdown Zone Elevation: 583.6 ft

AD 2.13 Declared Distances
2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 3004
2.13.3 Take−off 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 Take−off Run Available: 3004
2.13.3 Take−off Distance Available: 3004
2.13.4 Accelerate−Stop Distance Available: 3004
2.13.5 Landing Distance Available: 3004

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 9010
2.13.3 Take−off 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 Take−off Run Available: 9010
2.13.3 Take−off Distance Available: 9010
2.13.4 Accelerate−Stop Distance Available: 9010
2.13.5 Landing Distance Available: 9010

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 16L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 34R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSF
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: AR OPS
2.18.3 Channel: 34.1

2.18.5 Hours of Operation:

2.18.1 Service Designation: ATIS
2.18.3 Channel: 128.65
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.175
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: GND/P
2.18.3 Channel: 339.8
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P (RWY 16L/34R)
2.18.3 Channel: 120.2
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 256.7
2.18.5 Hours of Operation: 0700−2100

2.18.1 Service Designation: LCL/P IC (RWY 16R/34L)
2.18.3 Channel: 132.95
2.18.5 Hours of Operation: 0700−2100

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−55−7.3457N / 122−17−13.6176W
2.19.6 Site Elevation: 566.6 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: PAE
2.19.5 Coordinates: 47−53−34.0274N / 122−17−6.7862W
2.19.6 Site Elevation: 569.6 ft

2.19.1 Navigation Aid Type: VOR/DME. Magnetic variation: 20E
2.19.2 Navigation Aid Identification: PAE
2.19.5 Coordinates: 47−55−11.4015N / 122−16−40.0844W
2.19.6 Site Elevation: 669.2 ft

General Remarks:
RWY 16L/34R LTD TO HEL 8000 LBS OR LESS.

AVOID INT DEPS FM RWY 16L/34R

IT IS REQ THAT PILOTS ADHERE TO THE FLW NOISE ABATEMENT PROC UNLESS OTRW INSTRD BY ATCT, ITNRNT ARR AND LOW APCH OF SML ACFT OVER 250 HORSEPOWER AUZ ON RWYS 16L AND 34R.

NOISE SENSITIVE ARPT; FOR NOISE ABATEMENT PROC & TFC PROC CALL ARPT OPS 425−388−5125.

TSNT HEL EXP LNDG/TKOF ON TWY B.

RWY 16R/34 TGL PROHIBITED MON−FRI FM 0700−0900.

ITNRNT DEP OF SML ACFT OVER 250 HORSEPOWER ON RWY 34R.

TRNG FLTS DISCOURAGED AFT 2200.

FOR NOISE ABATEMENT FROM 0500−1500Z++ IF ACFT PERFORMANCE/WIND ALLOWS, USE RY 16R FOR ARRIVALS AND RY 34L FOR DEPARTURES.

TWY C BTN TRML RAMP AND CNTRL RAMP RSTRD TO WINGSPAN OF 68 FT OR LESS. TWY D, F, G AND L

RSTRD TO WINGSPAN LESS THAN 49 FT. TWY A4, A5, K7 & B RSTRD TO WINGSPAN LESS THAN 118 FT. TAXILANE H RSTRD TO WINGSPAN LESS THAN 49 FT.

LRG ACFT FLY W PAT OVR WTR; SML ACFT FLY E PAT OVR ARPT.

AVOID LOW LVL OVRFLT OF BOEING RAMP; NE CORNER OF ARPT DUE TO JET BLAST.

AIRFIELD COND NOT MNT AFT BUS HRS OF 05:30 TO 0000.

FLOCKS OF LRG & SML BIRDS INVOF ARPT.

BE ALERT TO CNVG TFC ON BASE TO FINAL LEGS RWY 16R/34L 2100−0700.

FOR CD WHEN ATCT IS CLSD CTC SEATTLE APCH AT 206−214−4722.

PAE HAS FAC CONSTRAINTS THAT LMT ITS ABILITY TO ACCOMMODATE DIVD FLTS AND MNTN THE ARPTS SAFE OPN DUR IREG OPS. ACFT OPR SHOULD CTCT THE ON−DUTY ARPT OPS PSNL (425−388−5125) TO COORD DIVD FLTS EXC IN THE CASE OF A DECLARED IN−FLT EMERG.

PPR RQRD FOR ACES ON BOEING RAMP. CTC BOEING FLT DISPATCH 206−544−5900 FOR APVL. PRIOR TO TAXI ONTO BOEING RAMP CTC BOEING RADIO TWR 123.475 OR CALL 425−342−5900.

TWY K1 CLSD TO ACFT UNDER 30000 LBS.

TKOF CLNC RWY 16R FULL LEN; ENT RWY VIA TWY A1 UNLESS TWY AA SPECIFIED.

USE CTN FOR 80 FT AGL LGT POLES SW EDGE OF BRAVO RAMP.

RWY 16L/34R CLSD BTN 0500−1500Z.

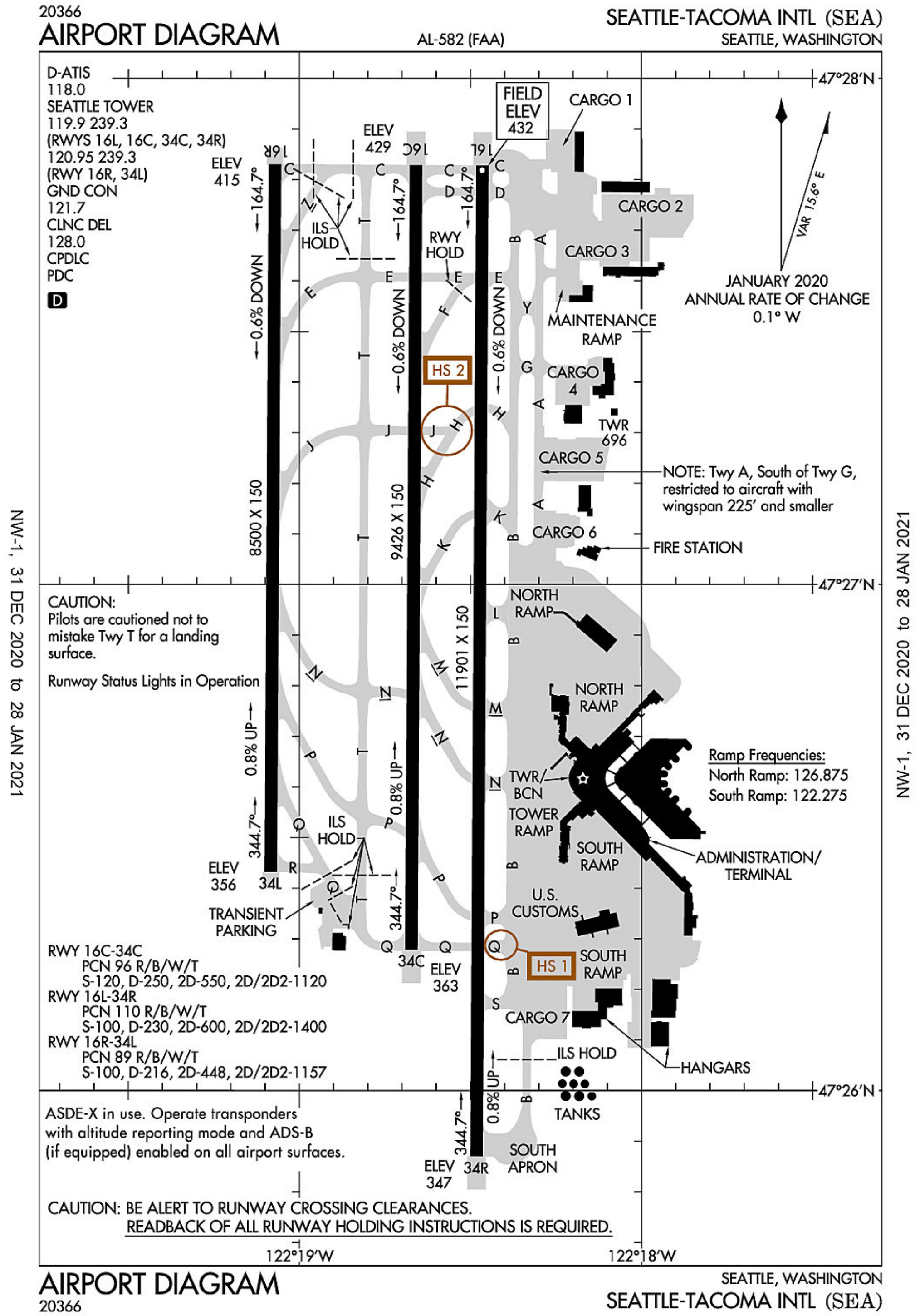
TWY A−2 RSTRD TO 30000 LBS.

EMERG FREQ 121.5 NOT MNT AT TWR. SEATTLE APP CON−TRACON MNT 121.5 FOR EVERETT (PAE).

AREAS NOT VSB FM ATCT INCL E EDGE OF S 1200 FT OF TWY A, TAXILANE E FM SE CORNER OF W HNGRS TO TWY A, TAXILANE H FROM NW EDGE OF W HNGRS TO TAXILANE E.

TAXILANE E RSTD TO WINGSPAN LESS THAN 171 FT. ACFT WINGSPAN OF 171 FT OR GREATER ON TAXILANE E, TUG OPS ONLY. EAST 500 FT OF TAXILANE E RSTD TO WINGSPAN LESS THAN 49 FT.

Seattle, Washington
Seattle−Tacoma International
ICAO Identifier KSEA



Seattle, WA
Seattle−Tacoma Intl
ICAO Identifier KSEA

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 47−26−59.6N / 122−18−42.4W
2.2.2 From City: 10 miles S of SEATTLE, WA
2.2.3 Elevation: 432.3 ft
2.2.5 Magnetic Variation: 16E (2020)
2.2.6 Airport Contact: LANCE LYTTLE
BOX 68727
SEATTLE, WA 98168
((206) 787−5229)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: A,A1
2.4.5 Hangar Space:
2.4.6 Repair Facilities: NONE

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I E certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 16C
2.12.2 True Bearing: 180
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47−27−49.7155N / 122−18−39.5415W
2.12.6 Threshold Elevation: 429.4 ft
2.12.6 Touchdown Zone Elevation: 429.5 ft

2.12.1 Designation: 34C
2.12.2 True Bearing: 0
2.12.3 Dimensions: 9426 ft x 150 ft
2.12.4 PCN: 96 R/B/W/T
2.12.5 Coordinates: 47−26−16.6966N / 122−18−40.3554W
2.12.6 Threshold Elevation: 362.9 ft
2.12.6 Touchdown Zone Elevation: 387 ft

2.12.1 Designation: 16L
2.12.2 True Bearing: 180
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47−27−49.6628N / 122−18−27.9008W
2.12.6 Threshold Elevation: 432.3 ft
2.12.6 Touchdown Zone Elevation: 432.3 ft

2.12.1 Designation: 34R
2.12.2 True Bearing: 0
2.12.3 Dimensions: 11901 ft x 150 ft
2.12.4 PCN: 110 R/B/W/T
2.12.5 Coordinates: 47−25−52.2202N / 122−18−28.9377W
2.12.6 Threshold Elevation: 346.7 ft
2.12.6 Touchdown Zone Elevation: 371.5 ft

2.12.1 Designation: 16R
2.12.2 True Bearing: 180
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−27−49.8109N / 122−19−4.2846W
2.12.6 Threshold Elevation: 414.8 ft
2.12.6 Touchdown Zone Elevation: 414.8 ft

2.12.1 Designation: 34L
2.12.2 True Bearing: 0
2.12.3 Dimensions: 8500 ft x 150 ft
2.12.4 PCN: 89 R/B/W/T
2.12.5 Coordinates: 47−26−25.9217N / 122−19−5.009W
2.12.6 Threshold Elevation: 356.2 ft
2.12.6 Touchdown Zone Elevation: 379.3 ft

AD 2.13 Declared Distances
2.13.1 Designation: 16C
2.13.2 Take−off Run Available: 9426
2.13.3 Take−off 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 Take−off Run Available: 9426
2.13.3 Take−off Distance Available: 9426
2.13.4 Accelerate−Stop Distance Available: 9426
2.13.5 Landing Distance Available: 9426

2.13.1 Designation: 16L
2.13.2 Take−off Run Available: 11901
2.13.3 Take−off 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 Take−off Run Available: 11901
2.13.3 Take−off Distance Available: 11901
2.13.4 Accelerate−Stop Distance Available: 11901
2.13.5 Landing Distance Available: 11901

2.13.1 Designation: 16R
2.13.2 Take−off Run Available: 8500
2.13.3 Take−off 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 Take−off Run Available: 8500
2.13.3 Take−off Distance Available: 8500
2.13.4 Accelerate−Stop Distance Available: 8500
2.13.5 Landing Distance Available: 8500

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 16C
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34C
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 34R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 16R
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 34L
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: CD/P
2.18.3 Channel: 128
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 118
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.7
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16C/34C)
2.18.3 Channel: 119.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16R/34L)
2.18.3 Channel: 120.95
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16L/34R, 16C/34C)
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P (RWY 16R/34L)
2.18.3 Channel: 239.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (SOUTH RAMP)
2.18.3 Channel: 122.275
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (GATE HOLD)
2.18.3 Channel: 126.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: RAMP CTL (NORTH RAMP)
2.18.3 Channel: 126.875
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids

2.19.1 ILS Type: DME for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47−26−6.28N / 122−18−39.51W
2.19.6 Site Elevation: 359 ft

2.19.1 ILS Type: Glide Slope for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47−27−38.687N / 122−18−45.462W
2.19.6 Site Elevation: 417.6 ft

2.19.1 ILS Type: Localizer for runway 16C. Magnetic variation: 16E
2.19.2 ILS Identification: SZI
2.19.5 Coordinates: 47−26−6.703N / 122−18−40.4438W
2.19.6 Site Elevation: 355.7 ft

2.19.1 ILS Type: DME for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47−26−6.28N / 122−18−39.51W
2.19.6 Site Elevation: 359 ft

2.19.1 ILS Type: Glide Slope for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47−26−25.6028N / 122−18−46.1679W
2.19.6 Site Elevation: 366.8 ft

2.19.1 ILS Type: Localizer for runway 34C. Magnetic variation: 16E
2.19.2 ILS Identification: TUC
2.19.5 Coordinates: 47−27−54.3525N / 122−18−39.5018W
2.19.6 Site Elevation: 421.8 ft

2.19.1 ILS Type: DME for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47−26−3.5974N / 122−18−22.6779W
2.19.6 Site Elevation: 369.4 ft

2.19.1 ILS Type: Glide Slope for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47−27−38.9362N / 122−18−33.8193W
2.19.6 Site Elevation: 425.2 ft

2.19.1 ILS Type: Localizer for runway 16L. Magnetic variation: 16E
2.19.2 ILS Identification: SNQ
2.19.5 Coordinates: 47−25−42.224N / 122−18−29.0263W
2.19.6 Site Elevation: 335.5 ft

2.19.1 ILS Type: DME for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47−26−3.5974N / 122−18−22.6779W
2.19.6 Site Elevation: 369.4 ft

2.19.1 ILS Type: Glide Slope for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47−26−3.3996N / 122−18−23.0248W
2.19.6 Site Elevation: 355.1 ft

2.19.1 ILS Type: Localizer for runway 34R. Magnetic variation: 16E
2.19.2 ILS Identification: SEA
2.19.5 Coordinates: 47−27−54.2762N / 122−18−27.8613W
2.19.6 Site Elevation: 428.1 ft

2.19.1 ILS Type: DME for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−26−15.6195N / 122−18−59.9408W
2.19.6 Site Elevation: 344.8 ft

2.19.1 ILS Type: Glide Slope for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−27−38.4647N / 122−19−0.5973W
2.19.6 Site Elevation: 405.5 ft

2.19.1 ILS Type: Localizer for runway 16R. Magnetic variation: 16E
2.19.2 ILS Identification: CJL
2.19.5 Coordinates: 47−26−15.9249N / 122−19−5.0962W
2.19.6 Site Elevation: 343.7 ft

2.19.1 ILS Type: DME for runway 34L. Magnetic varia-

tion: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−26−15.6195N / 122−18−59.9408W
2.19.6 Site Elevation: 344.8 ft

2.19.1 ILS Type: Glide Slope for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−26−34.9351N / 122−18−59.9836W
2.19.6 Site Elevation: 358.5 ft

2.19.1 ILS Type: Localizer for runway 34L. Magnetic variation: 16E
2.19.2 ILS Identification: BEJ
2.19.5 Coordinates: 47−27−59.7764N / 122−19−4.1986W
2.19.6 Site Elevation: 409.5 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 19E
2.19.2 Navigation Aid Identification: SEA
2.19.5 Coordinates: 47−26−7.3434N / 122−18−34.618W
2.19.6 Site Elevation: 348.4 ft

General Remarks:
(E94) WSO/WSFO.

TAXILANE W RSTRD TO WINGSPAN OF 135 FT OR LESS NORTH OF TWY N AND 167 FT OR LESS SOUTH TO TWX N . SEATTLE RAMP TWR PRVDS ADVSY CTL ONLY.

BTN THE HRS OF 2200−0700 THE USE OF EXTDD REVERSE THRUST IS DISCOURAGED BYD WHAT IS NECCESSARY FOR OPNL OR SAFETY REASONS. NOISE ABATEMENT PROCEDURES IN EFFECT BTN 2200−0600. FOR FURTHER INFO CONTACT SEA NOISE ABATEMENT OFFICE AT 206−787−7496.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

HELICOPTERS LANDING & DEPARTING AVOID OVERFLYING FUEL FARM LCTD AT THE SE CORNER OF THE ARPT.

DO NOT MISTAKE TWY T FOR LNDG SFC.

(E110) CONTINUOUS POWER ARPT.

TWY A SOUTH OF TWY G RSTRD TO ACFT WITH WINGSPAN 225 FT AND SMALLER.

TWY FOR CORPORATE HANGAR RAMP LTD TO ACFT WITH 62 FT OR LESS WINGSPAN FOR TAXI OPS. GA CUSTOMS PARKING IS VERY LIMITED.

TAXILANE ON NORTH SIDE OF NORTH SATELLITE RESTRICTED TO WINGSPAN OF LESS THAN 118 FT. TRI−TAXILANES AT NORTH SATELLITE: CENTER (GREEN) TAXILANE RESTRICTED TO WINGSPAN OF 135 FT. OR LESS. WHEN AN AIRCRAFT IS ON THE CENTER (GREEN) OR OTHER (ORANGE/BLUE) TAXILANES, NO OTHER AIRCRAFT CAN SIMUL USE THE ADJACENT TAXILANE(S). ORANGE AND BLUE TAXILANES ARE RESTRICTED TO WINGSPANS LESS THAN 118 FT. TWO AIRCRAFT CAN SIMUL USE THE OUTER TAXILANES.

RY STATUS LGTS ARE IN OPN.

ACCESS TO AIR CARGO 4 PARKING AND CARGO AREAS RSTD TO ACFT WITH WINGSPANS OF 170 FT OR LESS.

BIRD FLOCKS WITHIN ARPT VCNTY − CHECK LCL ADZYS.

GA LANDING FEES PAYABLE BY MAJOR CREDIT CARDS ONLY.

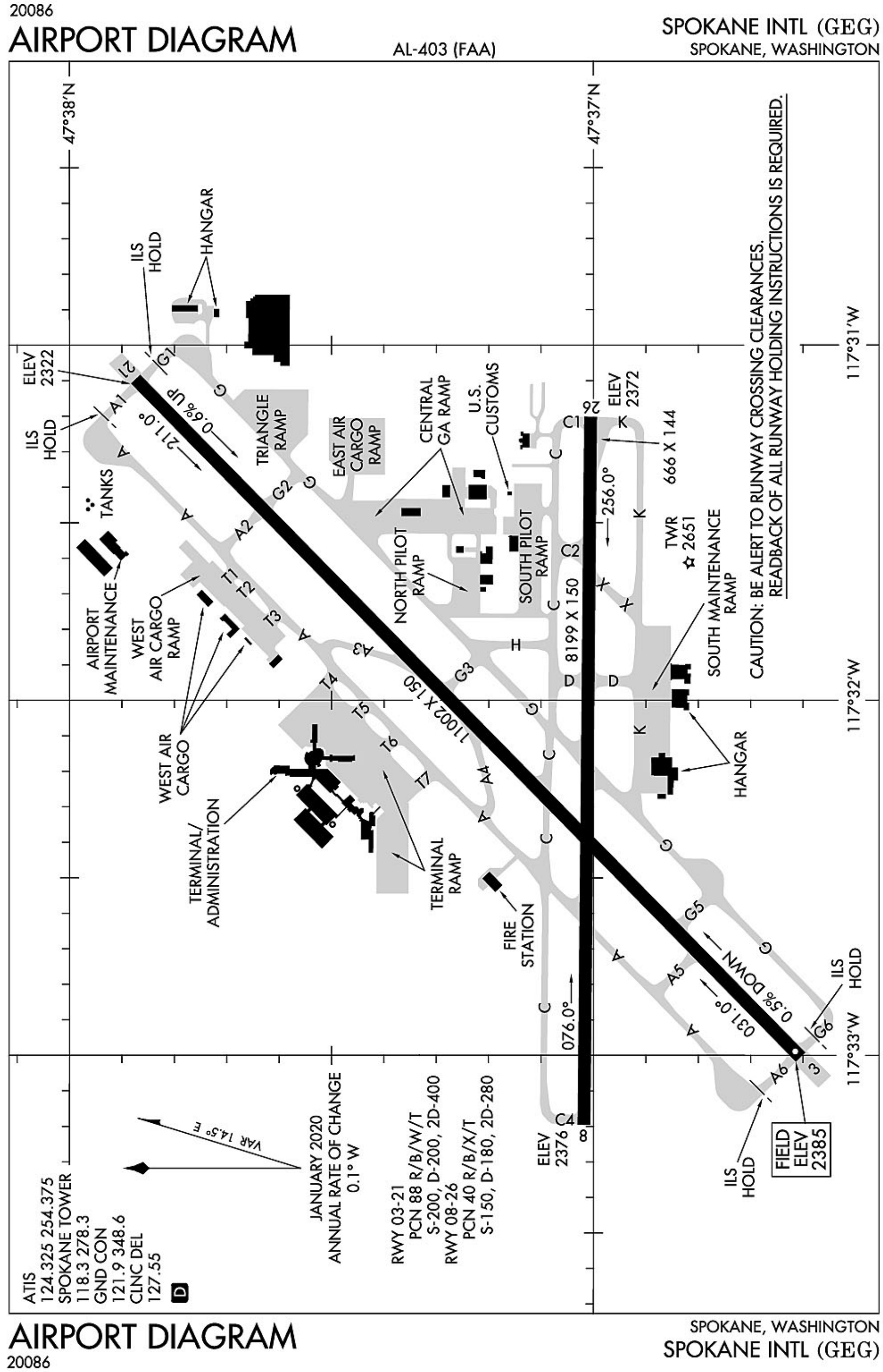
ACFT WITH WINGSPANS OF 171 FT. OR MORE PARKED AT PAX GATES OR CARGO 7 MUST PROVIDE 30 MIN PPR PRIOR TO PUSHBACK TO SEATTLE RAMP TWR WHEN VSBY LESS THAN 2400 RVR

FLIGHT NOTIFICATION SERVICE (ADCUS) AVBL.

PPR FOR ALL GA PRKG AND SVC. CTC 206−433−5481. OPR HRS 0530L − 2300L, WITH A CALL OUT AVBL UPON REQ.

TWY H BTN RWY 16L/34R AND TWY B PERM CLSD TO ACFT WINGSPAN MORE THAN 150 FT.

Spokane, Washington
Spokane International
ICAO Identifier KGEG



Spokane, WA
Spokane Intl
ICAO Identifier KGEG

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 47−37−8.5N / 117−32−6.8W
2.2.2 From City: 5 miles SW of SPOKANE, WA
2.2.3 Elevation: 2385 ft
2.2.5 Magnetic Variation: 14E (2020)
2.2.6 Airport Contact: LAWRENCE J KRAUTER
9000 W AIRPORT DR.
SPOKANE, WA 99224
((509) 455−6418)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100,100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 03
2.12.2 True Bearing: 45
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47−36−36.2909N / 117−33−0.2876W
2.12.6 Threshold Elevation: 2385 ft
2.12.6 Touchdown Zone Elevation: 2385 ft

2.12.1 Designation: 21
2.12.2 True Bearing: 225
2.12.3 Dimensions: 11002 ft x 150 ft
2.12.4 PCN: 88 R/B/W/T
2.12.5 Coordinates: 47−37−52.3811N / 117−31−5.7573W
2.12.6 Threshold Elevation: 2322.4 ft
2.12.6 Touchdown Zone Elevation: 2346.1 ft

2.12.1 Designation: 08
2.12.2 True Bearing: 90
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47−37−1.0687N / 117−33−11.7639W
2.12.6 Threshold Elevation: 2376.2 ft
2.12.6 Touchdown Zone Elevation: 2376.2 ft

2.12.1 Designation: 26
2.12.2 True Bearing: 270
2.12.3 Dimensions: 8199 ft x 150 ft
2.12.4 PCN: 40 R/B/X/T
2.12.5 Coordinates: 47−37−0.3642N / 117−31−12.1045W
2.12.6 Threshold Elevation: 2371.5 ft
2.12.6 Touchdown Zone Elevation: 2371.5 ft

AD 2.13 Declared Distances
2.13.1 Designation: 03
2.13.2 Take−off Run Available: 11002
2.13.3 Take−off 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 Take−off Run Available: 11002
2.13.3 Take−off Distance Available: 11002
2.13.4 Accelerate−Stop Distance Available: 11002
2.13.5 Landing Distance Available: 11002

2.13.1 Designation: 08
2.13.2 Take−off Run Available: 8199
2.13.3 Take−off Distance Available: 8199
2.13.4 Accelerate−Stop Distance Available: 8199
2.13.5 Landing Distance Available: 8199

2.13.1 Designation: 26
2.13.2 Take−off Run Available: 8199
2.13.3 Take−off Distance Available: 8199
2.13.4 Accelerate−Stop Distance Available: 8199
2.13.5 Landing Distance Available: 8199

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 03
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 21
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 08
2.14.2 Approach Lighting System:

2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 26
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P DEP/P IC (205−025)
2.18.3 Channel: 123.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (026−204)
2.18.3 Channel: 133.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (026−204)
2.18.3 Channel: 263
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (205−025)
2.18.3 Channel: 282.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/S DEP/S
2.18.3 Channel: 372.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 124.325
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: ATIS
2.18.3 Channel: 254.375
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 127.55
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (205−025)
2.18.3 Channel: 123.75
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (026−204)
2.18.3 Channel: 133.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (026−204)
2.18.3 Channel: 263
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (205−025)
2.18.3 Channel: 282.25
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.9
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 348.6
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 118.3
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 278.3
2.18.5 Hours of Operation: 24

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−36−32.05N / 117−33−15.1W
2.19.6 Site Elevation: 2380.2 ft

2.19.1 ILS Type: Glide Slope for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−36−47.5569N / 117−32−51.8755W
2.19.6 Site Elevation: 2372 ft

2.19.1 ILS Type: Inner Marker for runway 03. Magnetic variation: 14E

2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−36−30.0643N / 117−33−9.6536W
2.19.6 Site Elevation: 2380.5 ft

2.19.1 ILS Type: Localizer for runway 03. Magnetic variation: 14E
2.19.2 ILS Identification: OLJ
2.19.5 Coordinates: 47−37−59.6757N / 117−30−54.7682W
2.19.6 Site Elevation: 2315.7 ft

2.19.1 ILS Type: DME for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47−36−32.05N / 117−33−15.1W
2.19.6 Site Elevation: 2380.2 ft

2.19.1 ILS Type: Glide Slope for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47−37−48.959N / 117−31−19.4519W
2.19.6 Site Elevation: 2324.3 ft

2.19.1 ILS Type: Localizer for runway 21. Magnetic variation: 14E
2.19.2 ILS Identification: GEG
2.19.5 Coordinates: 47−36−29.2008N / 117−33−10.9524W
2.19.6 Site Elevation: 2380.1 ft

2.19.1 Navigation Aid Type: VORTAC. Magnetic variation: 21E
2.19.2 Navigation Aid Identification: GEG
2.19.5 Coordinates: 47−33−53.805N / 117−37−36.789W
2.19.6 Site Elevation: 2756.3 ft

General Remarks:

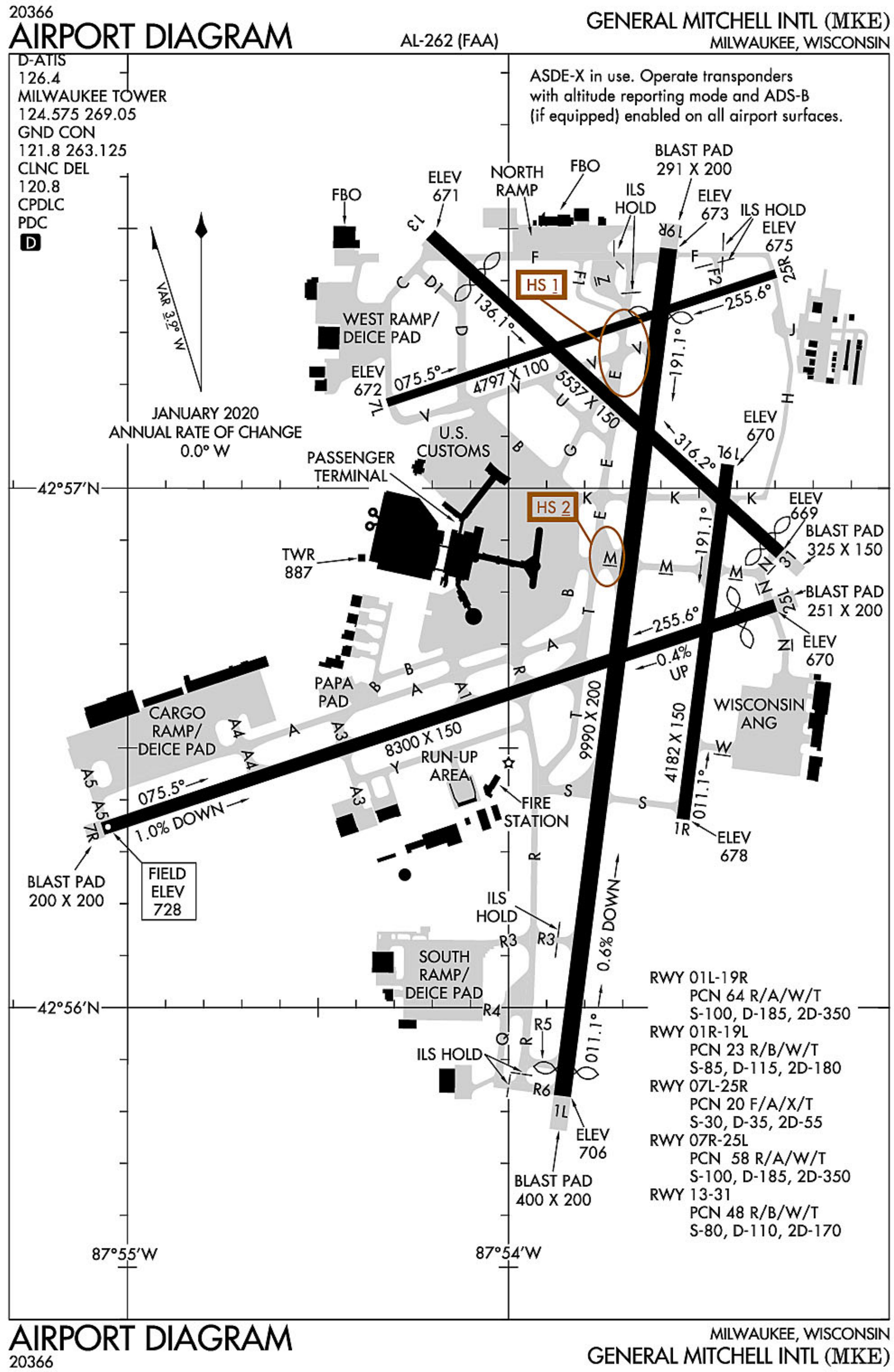
PORTIONS OF TWY K NOT VISIBLE FM ATCT.

TWY K UNLGTD ON RAMP SIDE ALONG MAINTENANCE RAMP AND IS UNAVBL BELOW 1200 RVR UNLESS UNDER ESCORT BY ”FOLLOW ME”.

BE ALERT TO TURBULENCE OVER SMOKE STACKS 1 MILE EAST OF ARPT.

WATERFOWL & BIRDS ON & INVOF ARPT.

Milwaukee, Wisconsin
General Mitchell International
ICAO Identifier KMKE



Milwaukee, WI
General Mitchell Intl
ICAO Identifier KMKE

AD 2.2 Aerodrome geographical and administrative data
2.2.1 Reference Point: 42−56−48.955N / 87−53−49.432W
2.2.2 From City: 5 miles S of MILWAUKEE, WI
2.2.3 Elevation: 728.4 ft
2.2.5 Magnetic Variation: 4W (2020)
2.2.6 Airport Contact: BRIAN DRANZIK
5300 S HOWELL AVE
MILWAUKEE, WI 53207
(414−747−5300)
2.2.7 Traffic: IFR/VFR

AD 2.3 Attendance Schedule
2.3.1 All Months, All Days, All Hours

AD 2.4 Handling Services and Facilities
2.4.1 Cargo Handling Facilities: YES
2.4.2 Fuel Types: 100LL,A
2.4.5 Hangar Space: YES
2.4.6 Repair Facilities: MAJOR

AD 2.6 Rescue and Firefighting Services
2.6.1 Aerodrome Category for Firefighting: ARFF Index I C certified on 5/1/1973

AD 2.12 Runway Physical Characteristics
2.12.1 Designation: 19R
2.12.2 True Bearing: 187
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42−57−27.699N / 87−53−34.7753W
2.12.6 Threshold Elevation: 672.7 ft
2.12.6 Touchdown Zone Elevation: 671.9 ft

2.12.1 Designation: 01L
2.12.2 True Bearing: 7
2.12.3 Dimensions: 9990 ft x 200 ft
2.12.4 PCN: 64 R/A/W/T
2.12.5 Coordinates: 42−55−49.7963N / 87−53−51.516W
2.12.6 Threshold Elevation: 705.8 ft
2.12.6 Touchdown Zone Elevation: 703.5 ft

2.12.1 Designation: 01R
2.12.2 True Bearing: 7
2.12.3 Dimensions: 4182 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42−56−21.766N / 87−53−32.5016W
2.12.6 Threshold Elevation: 677.7 ft
2.12.6 Touchdown Zone Elevation: 677.7 ft

2.12.1 Designation: 19L
2.12.2 True Bearing: 187
2.12.3 Dimensions: 4182 ft x 150 ft
2.12.4 PCN: 23 R/B/W/T
2.12.5 Coordinates: 42−57−2.7448N / 87−53−25.4878W
2.12.6 Threshold Elevation: 669.6 ft
2.12.6 Touchdown Zone Elevation: 674.2 ft

2.12.1 Designation: 07L
2.12.2 True Bearing: 72
2.12.3 Dimensions: 4797 ft x 100 ft
2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42−57−9.8896N / 87−54−19.1101W
2.12.6 Threshold Elevation: 671.5 ft
2.12.6 Touchdown Zone Elevation: 672 ft

2.12.1 Designation: 25R
2.12.2 True Bearing: 252
2.12.3 Dimensions: 4797 ft x 100 ft
2.12.4 PCN: 20 F/A/X/T
2.12.5 Coordinates: 42−57−24.8031N / 87−53−17.893W
2.12.6 Threshold Elevation: 674.6 ft
2.12.6 Touchdown Zone Elevation: 674.6 ft

2.12.1 Designation: 25L
2.12.2 True Bearing: 252
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42−56−46.473N / 87−53−18.0003W
2.12.6 Threshold Elevation: 669.9 ft
2.12.6 Touchdown Zone Elevation: 683.1 ft

2.12.1 Designation: 07R
2.12.2 True Bearing: 72
2.12.3 Dimensions: 8300 ft x 150 ft
2.12.4 PCN: 58 R/A/W/T
2.12.5 Coordinates: 42−56−20.6652N / 87−55−3.9117W
2.12.6 Threshold Elevation: 728.4 ft
2.12.6 Touchdown Zone Elevation: 728.4 ft

2.12.1 Designation: 13
2.12.2 True Bearing: 132
2.12.3 Dimensions: 5537 ft x 150 ft
2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42−57−29.2767N / 87−54−12.2946W
2.12.6 Threshold Elevation: 671.4 ft

2.12.6 Touchdown Zone Elevation: 670.5 ft

2.12.1 Designation: 31
2.12.2 True Bearing: 312
2.12.3 Dimensions: 5537 ft x 150 ft
2.12.4 PCN: 48 R/B/W/T
2.12.5 Coordinates: 42−56−52.5074N / 87−53−17.1839W
2.12.6 Threshold Elevation: 668.6 ft
2.12.6 Touchdown Zone Elevation: 670.1 ft

AD 2.13 Declared Distances
2.13.1 Designation: 19R
2.13.2 Take−off Run Available: 9990
2.13.3 Take−off Distance Available: 9990
2.13.4 Accelerate−Stop Distance Available: 9990
2.13.5 Landing Distance Available: 9205

2.13.1 Designation: 01L
2.13.2 Take−off Run Available: 9990
2.13.3 Take−off Distance Available: 9990
2.13.4 Accelerate−Stop Distance Available: 9380
2.13.5 Landing Distance Available: 9080

2.13.1 Designation: 01R
2.13.2 Take−off Run Available: 4182
2.13.3 Take−off Distance Available: 4182
2.13.4 Accelerate−Stop Distance Available: 4182
2.13.5 Landing Distance Available: 4182

2.13.1 Designation: 19L
2.13.2 Take−off Run Available: 4182
2.13.3 Take−off Distance Available: 4182
2.13.4 Accelerate−Stop Distance Available: 4182
2.13.5 Landing Distance Available: 4182

2.13.1 Designation: 07L
2.13.2 Take−off Run Available: 4797
2.13.3 Take−off Distance Available: 4797
2.13.4 Accelerate−Stop Distance Available: 4797
2.13.5 Landing Distance Available: 4797

2.13.1 Designation: 25R
2.13.2 Take−off Run Available: 4797
2.13.3 Take−off Distance Available: 4797
2.13.4 Accelerate−Stop Distance Available: 4797
2.13.5 Landing Distance Available: 4797

2.13.1 Designation: 25L
2.13.2 Take−off Run Available: 8300
2.13.3 Take−off Distance Available: 8300
2.13.4 Accelerate−Stop Distance Available: 8300
2.13.5 Landing Distance Available: 7867

2.13.1 Designation: 07R
2.13.2 Take−off Run Available: 8300
2.13.3 Take−off Distance Available: 8300
2.13.4 Accelerate−Stop Distance Available: 8012
2.13.5 Landing Distance Available: 8012

2.13.1 Designation: 13
2.13.2 Take−off Run Available: 5537
2.13.3 Take−off Distance Available: 5537
2.13.4 Accelerate−Stop Distance Available: 5537
2.13.5 Landing Distance Available: 4797

2.13.1 Designation: 31
2.13.2 Take−off Run Available: 5537
2.13.3 Take−off Distance Available: 5537
2.13.4 Accelerate−Stop Distance Available: 5537
2.13.5 Landing Distance Available: 5152

AD 2.14 Approach and Runway Lighting
2.14.1 Designation: 19R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01L
2.14.2 Approach Lighting System: ALSF2
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 01R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 19L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System:

2.14.1 Designation: 07L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 25R
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

2.14.1 Designation: 25L
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 07R
2.14.2 Approach Lighting System: MALSR
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 13
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4L

2.14.1 Designation: 31
2.14.2 Approach Lighting System:
2.14.4 Visual Approach Slope Indicator System: P4R

AD 2.18 Air Traffic Services Communication Facilities
2.18.1 Service Designation: APCH/P (B SE)
2.18.3 Channel: 118
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P (B SE)
2.18.3 Channel: 317.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P DEP/P IC (A NW)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: APCH/P IC (A NW)
2.18.3 Channel: 126.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CD/P
2.18.3 Channel: 120.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (B SE)
2.18.3 Channel: 118
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (A NW)
2.18.3 Channel: 126.5
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (A NW)
2.18.3 Channel: 307
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: CLASS C (B SE)
2.18.3 Channel: 317.725
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: COMD POST (128 ARW ANG UPSET CTL)
2.18.3 Channel: 321
2.18.5 Hours of Operation:

2.18.1 Service Designation: COMD POST (28 ARW ANG UPSET CON)
2.18.3 Channel: 6761
2.18.5 Hours of Operation:

2.18.1 Service Designation: D−ATIS
2.18.3 Channel: 126.4
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (A NW)
2.18.3 Channel: 125.35
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: DEP/P (B SE)
2.18.3 Channel: 135.875
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: EMERG
2.18.3 Channel: 121.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: EMERG
2.18.3 Channel: 243
2.18.5 Hours of Operation:

2.18.1 Service Designation: GND/P
2.18.3 Channel: 121.8
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: GND/P
2.18.3 Channel: 263.125
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 124.575
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: LCL/P
2.18.3 Channel: 269.05
2.18.5 Hours of Operation: 24

2.18.1 Service Designation: OPS
2.18.3 Channel: 139.5
2.18.5 Hours of Operation:

2.18.1 Service Designation: OPS
2.18.3 Channel: 311
2.18.5 Hours of Operation:

AD 2.19 Radio Navigation and Landing Aids
2.19.1 ILS Type: DME for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42−57−50.9407N / 87−53−27.4465W
2.19.6 Site Elevation: 725 ft

2.19.1 ILS Type: Glide Slope for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42−56−4.4522N / 87−53−43.0463W
2.19.6 Site Elevation: 691.4 ft

2.19.1 ILS Type: Inner Marker for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42−55−44.6539N / 87−53−52.3948W
2.19.6 Site Elevation: 706 ft

2.19.1 ILS Type: Localizer for runway 01L. Magnetic variation: 4W
2.19.2 ILS Identification: MKE
2.19.5 Coordinates: 42−57−49.9549N / 87−53−30.968W
2.19.6 Site Elevation: 713 ft

2.19.1 ILS Type: DME for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42−57−50.9407N / 87−53−27.4465W
2.19.6 Site Elevation: 725 ft

2.19.1 ILS Type: Glide Slope for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42−57−9.1784N / 87−53−32.5226W
2.19.6 Site Elevation: 666.4 ft

2.19.1 ILS Type: Localizer for runway 19R. Magnetic variation: 4W
2.19.2 ILS Identification: BLY
2.19.5 Coordinates: 42−55−38.3041N / 87−53−53.4819W
2.19.6 Site Elevation: 709.2 ft

2.19.1 ILS Type: DME for runway 07R. Magnetic variation: 4W
2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42−56−18.5074N / 87−55−23.6562W
2.19.6 Site Elevation: 743.1 ft

2.19.1 ILS Type: Glide Slope for runway 07R. Magnetic variation: 4W
2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42−56−20.4949N / 87−54−47.122W
2.19.6 Site Elevation: 707.3 ft

2.19.1 ILS Type: Localizer for runway 07R. Magnetic variation: 4W
2.19.2 ILS Identification: GMF
2.19.5 Coordinates: 42−56−49.0939N / 87−53−7.2369W
2.19.6 Site Elevation: 668.3 ft

2.19.1 ILS Type: DME for runway 25L. Magnetic variation: 4W
2.19.2 ILS Identification: PXY
2.19.5 Coordinates: 42−56−18.5074N / 87−55−23.6562W
2.19.6 Site Elevation: 743.1 ft

2.19.1 ILS Type: Localizer for runway 25L. Magnetic variation: 4W
2.19.2 ILS Identification: PXY
2.19.5 Coordinates: 42−56−16.0665N / 87−55−22.7833W
2.19.6 Site Elevation: 728 ft

General Remarks:
TWY B BTN TWY V AND TWY P CLSD TO AFCT WITH WINGSPAN GREATER THAN 170 FT.

ANG: PPR ALL ACFT, 48HR PN, CTC AFLD OPS DSN 580−8241, C414−944−8241. 128 ARW IS A FULLY OPERATIONAL KC−135R BASE WITH HRS OF OPERATION MON−FRI 1200Z−1930Z++ TUE−FRI, CLSD HOL, SAT−SUN EXC UNIT TMG, CALL FOR AVBL.

RY 19R TODA 8,750 FT FROM INT TWY V.

RY 07L/25R NO ACFT 65,000 LBS OR GREATER ALLOWED TO TAXI BTN TWY D & RY 13/31 AND EAST OF RY 19R.

TWY C CLSD BTWN APCH END OF RWY 7L AND TWY D1 TO ACFT WITH WINGSPAN GTR THAN OR EQUAL TO 118 FT UNLESS PMSN FM ARPT MGR 414−747−5325.

ANG: END OF RUNWAY FACILITIES, AIRCRAFT SHELTERS/REVETMENTS, AND ALERT FACILITIES ARE NOT AVAILABLE. AFLD/ACFT PARKING CONCERNS INCLUDE: LIMITED STATIC GROUNDING POINTS AND NO AIRCRAFT TIE DOWN POINTS.

TWY A CLSD BTN TWY A4 AND TWY A5 TO ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 214' UNLESS PERMISSION FROM ARPT MGR 414−747−5325

ALL AIRCRAFT PUSHBACKS FROM GATES C20, C21, C22, C23, D39 D41 D43, D45, D48, D51, D53, D54, D55, E65, E66, & E67 REQUIRE CLEARANCE FROM GROUND CONTROL. PUSHBACKS FROM ALL OTHER GATES ARE AT RAMP/ PILOT DISCRETION; CONTACT GROUND CONTROL WHEN READY TO TAXI.

TWY S & TWY T BTN TWY R & RY 07R/25L AND RY 07R/25L BTN RY 1R/19L & TWY R CLSD DURG CAT II & III OPNS.

ANG: ANY MDS'S (OTHER THAN KC−135) IS LIMITED TO STANDARD TRANSIENT MARSHALLING AND PARKING. NO TECHNICAL DATA AVAILABLE FOR TRANSIENT MAINTENANCE. FUEL AND AGE EQUIPMENT SUPPORT AVAILABLE FOR SELF−SERVICE. THERE ARE NO ADDITIONAL CONFIGURATION ITEMS SUPPORTED SUCH AS LANTIRN PODS, EDM PODS, ETC.

HOLDING BAY AT RY 01L CLSD EXCP ACFT WITH WINGSPAN LESS THAN 118 FT.

PREFERRED USAGE BY ACFT BTN 2200−0600 IS TKOF RY 19R & LNDG RY 01L.

RY 07L/25R CLSD TO ALL JET ACFT.

DEICE PAD FOR RWY 07R NOT AUTH FOR THRU TAXI.

TRNG FLGTS INVOLVING SUCCESSIVE USE OF ANY RY PROHIBITED 2200−0600.

ANG: NSTD MRK ON PRK APRON FOR WINGTIP CLNC; SEE AFLD MGT FOR DETAILED MAP.

ACFT WITH WINGSPAN GREATER THAN 175 FT CANNOT PASS SIMULTANEOUSLY ON TWY 'E' & TWY 'Z'.

HOLDING BAY AT RY 19R WHEN IN USE, TWY Z ADJACENT TO BAY IS LIMITED TO ACFT WITH WINGSPAN UP TO 170 FT.

RY 13/31 CLSD JET ACFT, UNLESS PMSN FROM TWR OR AMGR 414−747−5325.

TWY A CLSD FROM TWY R TO TWY E AND TWY E CLSD FROM TWY T TO TWY M AND TWY T NORTH OF RWY 07R−25L CLSD TO ACFT WITH TAIL HEIGHT GREATER THAN 54.5 FT DURING CAT II AND CAT III OPS.

RY 01R−19L AVAILABLE TO AIR CARRIERS FOR TAXI ONLY.

TWYS D1, F2, H, J, F1, P AND F (EAST OF RWY 19R) AND TWY K (EAST OF RWY 19L) CLSD TO ACFT WTIH WINGSPAN GREATER THAN 78 FT.

TWY F (WEST OF TWY Z) CLSD TO ACFT WITH WINGSPAN GREATER THAN OR EQUAL TO 118 FT UNLESS PERMISSION FROM ARPT DIR AT 414−747−5325.

ANG: NO FLEET SVC/HOT CARGO PARKING AVAILABLE. CTC UPSET CTRL 20 MIN PRIOR TO ARR TO RCV

CURRENT BIRD WATCH COND AND PARKING INFO.

ALL APCHS ARE OVER NOISE SENSITIVE AREAS; ALL TURBOJET ACFT SHOULD REFRAIN FM CONDUCTING MULTI VFR TFC PATTERN APCHS & DEPS WO PRIOR APVL FM AMGR CALL C414−747−5325.

BIRDS ON & INVOF ARPT.

RYS 13/31 & 01R/19L & 07L/25R CLSD EXCP LGT WT SINGLE ENG ACFT 0400−1200Z DLY.

TWY V BTN TWY D AND RY 7L/25R CLSD TO ACFT WITH WINGSPAN GREATER THAN 170 FT WHEN RY 7L/25R IN USE.

ASDE−X IN USE. OPERATE TRANSPONDERS WITH ALTITUDE REPORTING MODE AND ADS−B (IF EQUIPPED) ENABLED ON ALL AIRPORT SURFACES.

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.

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