

**CHANGE**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

**JO 7110.10BB  
CHG 2**

**Air Traffic Organization Policy**

**Effective Date:**  
May 19, 2022

**SUBJ:** Flight Services

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- 1. Purpose of This Change.** This change transmits revised pages to Federal Aviation Administration Order JO 7110.10BB, Flight Services, and the Briefing Guide.
- 2. Audience.** This change applies to select offices in Washington headquarters, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, and to all air traffic field facilities, international aviation field offices, and the interested aviation public.
- 3. Where Can I Find This Change?** This change is available on the FAA website at [http://faa.gov/air\\_traffic/publications](http://faa.gov/air_traffic/publications) and [http://employees.faa.gov/tools\\_resources/orders\\_notices/](http://employees.faa.gov/tools_resources/orders_notices/).
- 4. Explanation of Policy Change.** See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures. The Briefing Guide lists only new or modified material, along with background.
- 5. Distribution.** This change is distributed to select offices in Washington headquarters, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, and to all air traffic field facilities, international aviation field offices, and the interested aviation public.
- 6. Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.
- 7. Page Control Chart.** See the page control chart attachment.

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# **Flight Services Explanation of Changes Change 2**

**Direct questions through appropriate facility/service center office staff  
to the Office of Primary Interest (OPI)**

**a. 3-4-3. AIRPORT ADVISORY/RAIS  
ELEMENTS AND PHRASEOLOGY**

This change instructs flight service specialists when issuing airport advisories to include information about known, observed, or pilot-reported unmanned aircraft (UA) activity when proximity warrants it.

**b. Editorial Changes**

The SATVOICE (Iridium) filing code M2 is replaced with M3 in TBL A-11 in Appendix A.

**c. Entire Publication**

Additional editorial/format changes were made where necessary. Revision bars were not used because of the insignificant nature of these changes.



## PAGE CONTROL CHART

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**PHRASEOLOGY–**

*ALTIMETER IN EXCESS OF THREE ONE ZERO ZERO. HIGH PRESSURE ALTIMETER SETTING PROCEDURES ARE IN EFFECT. RECOMMEND YOU SET ALTIMETER TO THREE ONE ZERO ZERO EN ROUTE.*

(b) RAIS. Do not provide the altimeter unless specifically requested. Then, provide the altimeter from the last official weather report.

4. Traffic. Information about observed or reported traffic, which may constitute a collision hazard. This may include positions of aircraft inflight and/or aircraft and vehicles operating on the airport.

**PHRASEOLOGY–**

*TRAFFIC (Aircraft type), (position), (minutes) AGO.*

5. Unmanned aircraft (UA) activity information. Issue UA advisory information for known, observed, or pilot-reported UA activity when, in your judgment, proximity warrants it. If known, include position, altitude, distance, course, and type of UA. For reported UA activity, continue to issue advisories to potentially impacted aircraft for at least 15 minutes following the last report.

**EXAMPLE–**

*“Unmanned aircraft activity, 2 miles east of Ketchikan airport, 300 feet and below.”*

*“Unmanned aircraft activity observed, approximately 1 mile east of Kenai airport, altitude unknown.”*

6. Braking action/NOTAM. Furnish braking action reports as received from pilots to all aircraft as follows:

(a) Describe braking action using the terms “good,” “good to medium,” “medium,” “medium to poor,” “poor,” or “nil.” If the pilot reports braking action in other than the approved terms, ask them to categorize braking action in these terms.

(b) When known, include the type of aircraft or vehicle from which the report is received.

**EXAMPLE–**

*“Braking action poor.”*

*“Braking action medium, reported by a Cessna Four-Twenty-One.”*

(c) If the braking action report affects only a portion of a runway, obtain enough information from

the pilot to describe braking action in terms easily understood by other pilots.

**EXAMPLE–**

*“Braking action poor first half of Runway Six, reported by a Gulfstream Two.”*

*“Braking action medium Runway Two–Seven, reported by a Boeing Seven Thirty–Seven.”*

**NOTE–**

*Descriptive terms, such as first/last half of the runway, should normally be used rather than landmark descriptions, such as opposite the fire station, south of a taxiway.*

7. NOTAM. NOTAMs concerning local NAVAIDs and local field conditions/airspace conditions pertinent to flight, for example, local NAVAIDs, TFRs.

**EXAMPLE–**

*“All runways covered by packed snow 6 inches deep.”*

8. Weather. When the pilot does not have the weather conditions, issue the last reported or known weather information as follows:

(a) Airport Advisory/RAIS:

(1) Wind direction and speed.

(2) Altimeter (except RAIS).

(3) Ceiling and visibility to VFR aircraft when less than basic VFR conditions exist.

(4) Visibility to VFR aircraft when it is less than three miles in any quadrant.

(5) Touchdown runway visual range (RVR)/runway visibility value (RVV) for the runway in use where RVR/RVV readout equipment is located at the workstation providing the service.

(6) To IFR aircraft executing an instrument approach or departure and to the appropriate control facility when visibility is less than 3 miles or when the ceiling is less than 1,000 feet or below the highest circling minimum, whichever is greater.

9. Weather advisory alert. Provide in accordance with subparagraph 3–3–5a.

**PHRASEOLOGY–**

*(Advisory description) IS CURRENT FOR (condition) OVER (area).*

10. Density Altitude.

(a) Facilities at airports with field elevations of 2,000 feet MSL or higher, transmit a density

altitude advisory to departing general aviation aircraft whenever the temperature reaches the criteria contained in TBL 3-4-1.

*TBL 3-4-1*  
**Density Altitude**

Field Elevation	Temperature (C)
2,000–2,999	29 degrees or higher
3,000–3,999	27 degrees or higher
4,000–4,999	24 degrees or higher
5,000–5,999	21 degrees or higher
6,000–6,999	18 degrees or higher
7,000–higher	16 degrees or higher

**PHRASEOLOGY–**

*CHECK DENSITY ALTITUDE.*

(b) Omit this advisory if pilot states the computation has been done or if the specialist is aware that a density altitude computation for that aircraft was included in the preflight briefing.

**11. Wake Turbulence.** Issue cautionary information to any aircraft if in your judgment wake turbulence may have an adverse effect on it.

**PHRASEOLOGY–**

*CAUTION, WAKE TURBULENCE (traffic information).*

**NOTE–**

*Wake turbulence may be encountered by aircraft in flight as well as when operating on the airport movement area. Because wake turbulence is unpredictable, air traffic personnel are not responsible for anticipating its existence or effect.*

**12. Final Guard** is a wind and altimeter monitoring service provided in conjunction with airport advisory during periods of significant and/or fast changing weather conditions that may affect landing and takeoff operations. The specialist must monitor the remote display of the current wind and altimeter. Provide Final Guard as follows:

(a) When the pilot reports “On final” or “Taking the active runway,” the specialist must provide the current wind direction, speed, and altimeter.

(b) If during the landing or takeoff operation conditions change and, in the specialist’s opinion, the changing information might be useful to the pilot, the specialist must broadcast the new wind and/or altimeter information in the blind.

(c) Pilots will not be required or expected to acknowledge the broadcast.

**EXAMPLE–**

*“N12RG, Wind (direction) at (speed).”*

**NOTE–**

*Final Guard is never provided with RAIS.*

**13.** Upon request, provide runway condition codes (RwyCC) as received from airport management to aircraft as follows: State the runway number followed by the runway condition code for each of the three runway zones and the time of the report in UTC. Issue FICON NOTAMs upon pilot request.

**EXAMPLE–**

*“Runway two seven, condition code two, two, one at one zero one eight ZULU.”*

(a) Issue the runway surface condition and/or the runway condition reading (RCR), if provided, to all U.S. Air Force (USAF) and Air National Guard (ANG) aircraft. Issue the RCR to other aircraft upon request.

**EXAMPLE–**

*“Ice on runway, R-C-R zero five, patchy.”*

**NOTE–**

*USAF has established RCR procedures for determining the average deceleration readings of runways under conditions of water, slush, ice, or snow. The use of RCR code is dependent upon the pilot’s having a “stopping capability chart” specifically applicable to his/her aircraft. USAF offices furnish RCR information at airports serving USAF and ANG aircraft.*

**3-4-4. CHARTS**

Keep charts depicting runways, local taxi routes, intersection takeoff information, airport traffic patterns, and instrument approach procedures convenient to the position that provides airport advisory service.

**3-4-5. AUTHORIZED FREQUENCIES**

**a. Airport Advisory:**

**1.** Provide airport advisory service on the appropriate discrete frequency at non-towered locations and on the tower local control frequency at an airport with a part-time tower when that facility is not operating.

**2.** If a pilot calls on another frequency, issue advisories on the frequency to which the pilot is listening, in addition to the appropriate Airport Advisory frequency.

**3.** Encourage the pilot to guard the airport advisory frequency or tower local control frequency within a 10-mile radius of the airport.

**NOTE-**

*In situations where the inflight position is split, advise pilot of appropriate frequency to obtain Airport Advisory/RAIS.*

**PHRASEOLOGY-**

*FOR FURTHER ADVISORY SERVICE AT (airport name), MONITOR (frequency) WITHIN ONE ZERO MILES.*

**b. RAIS:**

1. Provide RAIS on the existing discrete frequency located at the remote airport.
2. If a pilot calls and appears to be unaware that RAIS is available, offer the service.
3. If a pilot calls on another frequency, issue advisories on the frequency the pilot is listening, in addition to the appropriate airport advisory frequency.
4. If RAIS is requested when it is not offered, inform the pilot that the service is not available and follow paragraph 3-4-2c.

**NOTE-**

*This service is only provided at remote airports that have an existing discrete communications capability between the airport and the flight service station serving the airport and a NOTAM D announcing the availability of the service is in effect.*

**3-4-6. TRAFFIC CONTROL**

When there is no control tower in operation and a pilot appears unaware of this fact, inform him/her as follows:

**PHRASEOLOGY-**

*NO CONTROL TOWER IN OPERATION.*

**3-4-7. AIRCRAFT EQUIPMENT CHECKS**

When requested, provide observed information.

**EXAMPLE-**

*Landing gear appears to be down and in place.*



**(c) Transponder Capabilities (Item 10b)**

- For domestic flights, it is not necessary to indicate Mode S capability. It is acceptable to simply file one of the following codes in TBL A-8.

**TBL A-8  
Mode C**

Capability	Item 10b
Transponder with no Mode C	A
Transponder with Mode C	C

- International flights must file in accordance with relevant AIPs and regional supplements. Include one of the Mode S codes in TBL A-9, if appropriate.

**NOTE-**

*File only one transponder code.*

**TBL A-9  
Mode S**

Capability	Aircraft ID	Altitude Encod- ing	Item 10b
Mode S Transponder	No	No	X
Mode S Transponder	No	Yes	P
Mode S Transponder	Yes	No	I
Mode S Transponder	Yes	Yes	S
Mode S Transponder with Extended Squitter	Yes	Yes	E
Enhanced Mode S Transponder	Yes	Yes	H
Enhanced Mode S Transponder with Extended Squitter	Yes	Yes	L

**(d) ADS-B Capabilities (Item 10b, Item 18 SUR/ and Item 18 CODE/)**

- Indicate ADS-B capability as shown in TBL A-10. The accompanying entry in Item 18 indicates that the equipment is compliant with 14 CFR §91.227. Some ADS-B equipment used in other countries is based on an earlier standard and does not meet U.S. requirements.

- Do not file an ADS-B code for “in” capability only. There is currently no way to indicate that an aircraft has “in” capability but no “out” capability.

- For aircraft with ADS-B “out” on one frequency and “in” on another, include only the ADS-B “out” code. For example, B1 or U1, (See TBL A-10).

**TBL A-10  
ADS-B Capabilities**

Capability	Item 10b	Item 18 SUR/
1090 ES Out Capability	B1	260B
1090 ES Out and In Capability	B2	260B
UAT Out Capability	U1	282B
UAT Out and In Capability	U2	282B

**(e) Voice Communication Capabilities (Item 10a)**

The FAA does not require indication of voice communication capabilities in a flight plan for domestic flights, but it is permissible. For flights outside the domestic United States, all relevant capabilities must be indicated as follows (See TBL A-11):

*TBL A-11*  
**Voice Communication Capabilities**

Capability	Item 10a
VHF Radio	V
UHF Radio	U
HF Radio	H
VHF Radio (8.33 kHz Spacing)	Y
ATC SATVOICE (INMARSAT)	M1
ATC SATVOICE (Iridium)	M3

**(f) Approach Aid Capabilities (Item 10a).**

The FAA does not require filing of approach aid capability in order to request a specific type of approach, however any of the codes indicated in TBL A-12 in 10a are permissible.

- International flights may be required to indicate approach capability, based on instructions from relevant service providers.

*TBL A-12*  
**Approach Aid Capabilities**

Capability	Item 10a
ILS	L
MLS	K
LPV Approach (APV with SBAS ) (WAAS)	B
GBAS Landing System (LAAS)	A

**6. Performance-Based Navigation Routes (Item 10a, Item 18 PBN/, Item 18 NAV/)-** When planning to fly routes that require PBN capability, file the appropriate capability as shown in TBL A-13.

# PILOT/CONTROLLER GLOSSARY

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## PURPOSE

a. This Glossary was compiled to promote a common understanding of the terms used in the Air Traffic Control system. It includes those terms which are intended for pilot/controller communications. Those terms most frequently used in pilot/controller communications are printed in *bold italics*. The definitions are primarily defined in an operational sense applicable to both users and operators of the National Airspace System. Use of the Glossary will preclude any misunderstandings concerning the system's design, function, and purpose.

b. Because of the international nature of flying, terms used in the Lexicon, published by the International Civil Aviation Organization (ICAO), are included when they differ from FAA definitions. These terms are followed by "[ICAO]." For the reader's convenience, there are also cross references to related terms in other parts of the Glossary and to other documents, such as the Code of Federal Regulations (CFR) and the Aeronautical Information Manual (AIM).

c. This Glossary will be revised, as necessary, to maintain a common understanding of the system.

## EXPLANATION OF CHANGES

d. Terms Added:

ADAPTED ROUTES  
AIRSPACE RESERVATION  
DEBRIS RESPONSE AREA (DRA)  
EMBEDDED ROUTE TEXT  
HOT SPOT  
MOVING AIRSPACE RESERVATION  
MOVING ALTITUDE RESERVATION  
STATIONARY AIRSPACE RESERVATION

e. Terms Deleted:

PREFERENTIAL ROUTES

f. Terms Modified:

ALTITUDE RESERVATION (ALTRV)  
CLEARANCE VOID IF NOT OFF BY (TIME)  
MINIMUM SAFE ALTITUDE (MSA)  
OCEANIC ERROR REPORT  
PRECISION APPROACH RADAR  
PREFERRED IFR ROUTES  
STATIONARY ALTITUDE RESERVATION (STATIONARY ALTRV)

g. Editorial/format changes were made where necessary. Revision bars were not used due to the insignificant nature of the changes.





# A

## AAR–

(See AIRPORT ARRIVAL RATE.)

(See ADAPTED ROUTES.)

**ABBREVIATED IFR FLIGHT PLANS–** An authorization by ATC requiring pilots to submit only that information needed for the purpose of ATC. It includes only a small portion of the usual IFR flight plan information. In certain instances, this may be only aircraft identification, location, and pilot request. Other information may be requested if needed by ATC for separation/control purposes. It is frequently used by aircraft which are airborne and desire an instrument approach or by aircraft which are on the ground and desire a climb to VFR-on-top.

(See VFR-ON-TOP.)

(Refer to AIM.)

**ABEAM–** An aircraft is “abeam” a fix, point, or object when that fix, point, or object is approximately 90 degrees to the right or left of the aircraft track. Abeam indicates a general position rather than a precise point.

**ABORT–** To terminate a preplanned aircraft maneuver; e.g., an aborted takeoff.

## ABRR–

(See AIRBORNE REROUTE)

## ACC [ICAO]–

(See ICAO term AREA CONTROL CENTER.)

## ACCELERATE-STOP DISTANCE AVAILABLE–

The runway plus stopway length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff.

## ACCELERATE-STOP DISTANCE AVAILABLE

[ICAO]– The length of the take-off run available plus the length of the stopway if provided.

## ACDO–

(See AIR CARRIER DISTRICT OFFICE.)

**ACKNOWLEDGE–** Let me know that you have received and understood this message.

## ACL–

(See AIRCRAFT LIST.)

## ACLS–

(See AUTOMATIC CARRIER LANDING SYSTEM.)

**ACROBATIC FLIGHT–** An intentional maneuver involving an abrupt change in an aircraft’s attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight.

(See ICAO term ACROBATIC FLIGHT.)

(Refer to 14 CFR Part 91.)

**ACROBATIC FLIGHT [ICAO]–** Maneuvers intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

## ACTIVE RUNWAY–

(See RUNWAY IN USE/ACTIVE RUNWAY/DUTY RUNWAY.)

## ACTUAL NAVIGATION PERFORMANCE (ANP)–

(See REQUIRED NAVIGATION PERFORMANCE.)

**ADAPTED ROUTES–** Departure and/or arrival routes that are adapted in ARTCC ERAM computers to accomplish inter/intrafacility controller coordination and to ensure that flight data is posted at the proper control positions. Adapted routes are automatically applied to flight plans where appropriate. When the workload or traffic situation permits, controllers may provide radar vectors or assign requested routes to minimize circuitous routing. Adapted routes are usually confined to one ARTCC’s area and are referred to by the following names or abbreviations:

**a. Adapted Arrival Route (AAR).** A specific arrival route from an appropriate en route point to an airport or terminal area. It may be included in a Standard Terminal Arrival (STAR) or a Preferred IFR Route.

**b. Adapted Departure Route (ADR).** A specific departure route from an airport or terminal area to an en route point where there is no further need for flow control. It may be included in an Instrument Departure Procedure (DP) or a Preferred IFR Route.

**c. Adapted Departure and Arrival Route (ADAR).** A route between two terminals which are within or

immediately adjacent to one ARTCC's area. ADARs are similar to Preferred IFR Routes and may share components, but they are not synonymous.

(See PREFERRED IFR ROUTES.)

**ADAR-**

(See ADAPTED ROUTES.)

**ADDITIONAL SERVICES-** Advisory information provided by ATC which includes but is not limited to the following:

**a.** Traffic advisories.

**b.** Vectors, when requested by the pilot, to assist aircraft receiving traffic advisories to avoid observed traffic.

**c.** Altitude deviation information of 300 feet or more from an assigned altitude as observed on a verified (reading correctly) automatic altitude readout (Mode C).

**d.** Advisories that traffic is no longer a factor.

**e.** Weather and chaff information.

**f.** Weather assistance.

**g.** Bird activity information.

**h.** Holding pattern surveillance. Additional services are provided to the extent possible contingent only upon the controller's capability to fit them into the performance of higher priority duties and on the basis of limitations of the radar, volume of traffic, frequency congestion, and controller workload. The controller has complete discretion for determining if he/she is able to provide or continue to provide a service in a particular case. The controller's reason not to provide or continue to provide a service in a particular case is not subject to question by the pilot and need not be made known to him/her.

(See TRAFFIC ADVISORIES.)

(Refer to AIM.)

**ADF-**

(See AUTOMATIC DIRECTION FINDER.)

**ADIZ-**

(See AIR DEFENSE IDENTIFICATION ZONE.)

**ADLY-**

(See ARRIVAL DELAY.)

**ADMINISTRATOR-** The Federal Aviation Administrator or any person to whom he/she has delegated his/her authority in the matter concerned.

**ADR-**

(See ADAPTED ROUTES.)

(See AIRPORT DEPARTURE RATE.)

**ADS [ICAO]-**

(See ICAO term AUTOMATIC DEPENDENT SURVEILLANCE.)

**ADS-B-**

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

**ADS-C-**

(See AUTOMATIC DEPENDENT SURVEILLANCE-CONTRACT.)

**ADVISE INTENTIONS-** Tell me what you plan to do.

**ADVISORY-** Advice and information provided to assist pilots in the safe conduct of flight and aircraft movement.

(See ADVISORY SERVICE.)

**ADVISORY FREQUENCY-** The appropriate frequency to be used for Airport Advisory Service.

(See LOCAL AIRPORT ADVISORY.)

(See UNICOM.)

(Refer to ADVISORY CIRCULAR NO. 90-66.)

(Refer to AIM.)

**ADVISORY SERVICE-** Advice and information provided by a facility to assist pilots in the safe conduct of flight and aircraft movement.

(See ADDITIONAL SERVICES.)

(See LOCAL AIRPORT ADVISORY.)

(See RADAR ADVISORY.)

(See SAFETY ALERT.)

(See TRAFFIC ADVISORIES.)

(Refer to AIM.)

**ADW-**

(See ARRIVAL DEPARTURE WINDOW)

**AERIAL REFUELING-** A procedure used by the military to transfer fuel from one aircraft to another during flight.

(Refer to VFR/IFR Wall Planning Charts.)

**AERODROME-** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure, and movement of aircraft.

**AERODROME BEACON [ICAO]-** Aeronautical beacon used to indicate the location of an aerodrome from the air.

**AERODROME CONTROL SERVICE [ICAO]**– Air traffic control service for aerodrome traffic.

**AERODROME CONTROL TOWER [ICAO]**– A unit established to provide air traffic control service to aerodrome traffic.

**AERODROME ELEVATION [ICAO]**– The elevation of the highest point of the landing area.

**AERODROME TRAFFIC CIRCUIT [ICAO]**– The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

**AERONAUTICAL BEACON**– 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.

(See AIRPORT ROTATING BEACON.)

(Refer to AIM.)

**AERONAUTICAL CHART**– A map used in air navigation containing all or part of the following: topographic features, hazards and obstructions, navigation aids, navigation routes, designated airspace, and airports. Commonly used aeronautical charts are:

**a. Sectional Aeronautical Charts (1:500,000)**– Designed for visual navigation of slow or medium speed aircraft. Topographic information on these charts features the portrayal of relief and a judicious selection of visual check points for VFR flight. Aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, permanent special use airspace (SUA), obstructions, and related data.

**b. VFR Terminal Area Charts (1:250,000)**– Depict Class B airspace which provides for the control or segregation of all the aircraft within Class B airspace. The chart depicts topographic information and aeronautical information which includes visual and radio aids to navigation, airports, controlled airspace, permanent SUA, obstructions, and related data.

**c. En Route Low Altitude Charts**– Provide aeronautical information for en route instrument navigation (IFR) in the low altitude stratum. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, perma-

nent SUA, and related data. Area charts, which are a part of this series, furnish terminal data at a larger scale in congested areas.

**d. En Route High Altitude Charts**– Provide aeronautical information for en route instrument navigation (IFR) in the high altitude stratum. Information includes the portrayal of jet routes, identification and frequencies of radio aids, selected airports, distances, time zones, special use airspace, and related information.

**e. Instrument Approach Procedure (IAP) Charts**– Portray the aeronautical data which is required to execute an instrument approach to an airport. These charts depict the procedures, including all related data, and the airport diagram. Each procedure is designated for use with a specific type of electronic navigation system including NDB, TACAN, VOR, ILS RNAV and GLS. These charts are identified by the type of navigational aid(s)/equipment required to provide final approach guidance.

**f. Instrument Departure Procedure (DP) Charts**– Designed to expedite clearance delivery and to facilitate transition between takeoff and en route operations. Each DP is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

**g. Standard Terminal Arrival (STAR) Charts**– Designed to expedite air traffic control arrival procedures and to facilitate transition between en route and instrument approach operations. Each STAR procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

**h. Airport Taxi Charts**– Designed to expedite the efficient and safe flow of ground traffic at an airport. These charts are identified by the official airport name; e.g., Ronald Reagan Washington National Airport.

(See ICAO term AERONAUTICAL CHART.)

**AERONAUTICAL CHART [ICAO]**– A representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation.

**AERONAUTICAL INFORMATION MANUAL (AIM)**– A primary FAA publication whose purpose is to instruct airmen about operating in the National Airspace System of the U.S. It provides basic flight information, ATC Procedures and general instructional information concerning health, medical facts,

factors affecting flight safety, accident and hazard reporting, and types of aeronautical charts and their use.

**AERONAUTICAL INFORMATION PUBLICATION (AIP) [ICAO]**– A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

(See CHART SUPPLEMENT U.S.)

**AERONAUTICAL INFORMATION SERVICES (AIS)**– A facility in Silver Spring, MD, established by FAA to operate a central aeronautical information service for the collection, validation, and dissemination of aeronautical data in support of the activities of government, industry, and the aviation community. The information is published in the National Flight Data Digest.

(See NATIONAL FLIGHT DATA DIGEST.)

**AFFIRMATIVE**– Yes.

**AFIS**–

(See AUTOMATIC FLIGHT INFORMATION SERVICE – ALASKA FSSs ONLY.)

**AFP**–

(See AIRSPACE FLOW PROGRAM.)

**AHA**–

(See AIRCRAFT HAZARD AREA.)

**AIM**–

(See AERONAUTICAL INFORMATION MANUAL.)

**AIP [ICAO]**–

(See ICAO term AERONAUTICAL INFORMATION PUBLICATION.)

**AIR CARRIER DISTRICT OFFICE**– An FAA field office serving an assigned geographical area, staffed with Flight Standards personnel serving the aviation industry and the general public on matters related to the certification and operation of scheduled air carriers and other large aircraft operations.

**AIR DEFENSE EMERGENCY**– A military emergency condition declared by a designated authority. This condition exists when an attack upon the continental U.S., Alaska, Canada, or U.S. installations in Greenland by hostile aircraft or missiles is considered probable, is imminent, or is taking place.

(Refer to AIM.)

**AIR DEFENSE IDENTIFICATION ZONE (ADIZ)**– 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.

Note: ADIZ locations and operating and flight plan requirements for civil aircraft operations are specified in 14 CFR Part 99.

(Refer to AIM.)

**AIR NAVIGATION FACILITY**– Any facility used in, available for use in, or designed for use in, aid of air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio-directional finding, or for radio or other electrical communication, and any other structure or mechanism having a similar purpose for guiding or controlling flight in the air or the landing and takeoff of aircraft.

(See NAVIGATIONAL AID.)

**AIR ROUTE SURVEILLANCE RADAR**– Air route traffic control center (ARTCC) radar used primarily to detect and display an aircraft's position while en route between terminal areas. The ARSR enables controllers to provide radar air traffic control service when aircraft are within the ARSR coverage. In some instances, ARSR may enable an ARTCC to provide terminal radar services similar to but usually more limited than those provided by a radar approach control.

**AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC)**– A facility established to provide 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.

(See EN ROUTE AIR TRAFFIC CONTROL SERVICES.)

(Refer to AIM.)

**AIR TAXI**– Used to describe a helicopter/VTOL aircraft movement conducted above the surface but normally not above 100 feet AGL. The aircraft may proceed either via hover taxi or flight at speeds more than 20 knots. The pilot is solely responsible for selecting a safe airspeed/altitude for the operation being conducted.

(See HOVER TAXI.)

(Refer to AIM.)

**AIR TRAFFIC**– Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

(See ICAO term AIR TRAFFIC.)

**AIR TRAFFIC [ICAO]**– All aircraft in flight or operating on the maneuvering area of an aerodrome.

**AIR TRAFFIC CLEARANCE**– An authorization by air traffic control for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace. The pilot-in-command of an aircraft may not deviate from the provisions of a visual flight rules (VFR) or instrument flight rules (IFR) air traffic clearance except in an emergency or unless an amended clearance has been obtained. Additionally, the pilot may request a different clearance from that which has been issued by air traffic control (ATC) if information available to the pilot makes another course of action more practicable or if aircraft equipment limitations or company procedures forbid compliance with the clearance issued. Pilots may also request clarification or amendment, as appropriate, any time a clearance is not fully understood, or considered unacceptable because of safety of flight. Controllers should, in such instances and to the extent of operational practicality and safety, honor the pilot's request. 14 CFR Part 91.3(a) states: "The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft." **THE PILOT IS RESPONSIBLE TO REQUEST AN AMENDED CLEARANCE** if ATC issues a clearance that would cause a pilot to deviate from a rule or regulation, or in the pilot's opinion, would place the aircraft in jeopardy.

(See ATC INSTRUCTIONS.)

(See ICAO term AIR TRAFFIC CONTROL CLEARANCE.)

**AIR TRAFFIC CONTROL**– A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

(See ICAO term AIR TRAFFIC CONTROL SERVICE.)

**AIR TRAFFIC CONTROL CLEARANCE [ICAO]**– Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Note 1: For convenience, the term air traffic control clearance is frequently abbreviated to clearance when used in appropriate contexts.

Note 2: The abbreviated term clearance may be prefixed by the words taxi, takeoff, departure, en route, approach or landing to indicate the particular portion of flight to which the air traffic control clearance relates.

**AIR TRAFFIC CONTROL SERVICE**–

(See AIR TRAFFIC CONTROL.)

**AIR TRAFFIC CONTROL SERVICE [ICAO]**– A service provided for the purpose of:

**a.** Preventing collisions:

**1.** Between aircraft; and

**2.** On the maneuvering area between aircraft and obstructions.

**b.** Expediting and maintaining an orderly flow of air traffic.

**AIR TRAFFIC CONTROL SPECIALIST**– A person authorized to provide air traffic control service.

(See AIR TRAFFIC CONTROL.)

(See FLIGHT SERVICE STATION.)

(See ICAO term CONTROLLER.)

**AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER (ATCSCC)**– An Air Traffic Tactical Operations facility responsible for monitoring and managing the flow of air traffic throughout the NAS, producing a safe, orderly, and expeditious flow of traffic while minimizing delays. The following functions are located at the ATCSCC:

**a.** Central Altitude Reservation Function (CARF). Responsible for coordinating, planning, and approving special user requirements under the Altitude Reservation (ALTRV) concept.

(See ALTITUDE RESERVATION.)

**b.** Airport Reservation Office (ARO). Monitors the operation and allocation of reservations for unscheduled operations at airports designated by the Administrator as High Density Airports. These airports are generally known as slot controlled airports. The ARO allocates reservations on a first

come, first served basis determined by the time the request is received at the ARO.

(Refer to 14 CFR Part 93.)

(See CHART SUPPLEMENT U.S.)

**c. U.S. Notice to Air Missions (NOTAM) Office.** Responsible for collecting, maintaining, and distributing NOTAMs for the U.S. civilian and military, as well as international aviation communities.

(See NOTICE TO AIR MISSIONS.)

**d. Weather Unit.** Monitor all aspects of weather for the U.S. that might affect aviation including cloud cover, visibility, winds, precipitation, thunderstorms, icing, turbulence, and more. Provide forecasts based on observations and on discussions with meteorologists from various National Weather Service offices, FAA facilities, airlines, and private weather services.

**e. Air Traffic Organization (ATO) Space Operations and Unmanned Aircraft System (UAS); the Office of Primary Responsibility (OPR) for all space and upper class E tactical operations in the National Airspace System (NAS).**

**AIR TRAFFIC SERVICE–** A generic term meaning:

- a. Flight Information Service.**
- b. Alerting Service.**
- c. Air Traffic Advisory Service.**
- d. Air Traffic Control Service:**
  - 1. Area Control Service,**
  - 2. Approach Control Service, or**
  - 3. Airport Control Service.**

**AIR TRAFFIC SERVICE (ATS) ROUTES –** The term “ATS Route” is a generic term that includes “VOR Federal airways,” “colored Federal airways,” “jet routes,” and “RNAV routes.” The term “ATS route” does not replace these more familiar route names, but serves only as an overall title when listing the types of routes that comprise the United States route structure.

**AIRBORNE–** An aircraft is considered airborne when all parts of the aircraft are off the ground.

**AIRBORNE DELAY–** Amount of delay to be encountered in airborne holding.

**AIRBORNE REROUTE (ABRR)–** A capability within the Traffic Flow Management System used for the timely development and implementation of tactical reroutes for airborne aircraft. This capability

defines a set of aircraft-specific reroutes that address a certain traffic flow problem and then electronically transmits them to En Route Automation Modernization (ERAM) for execution by the appropriate sector controllers.

**AIRCRAFT–** Device(s) that are used or intended to be used for flight in the air, and when used in air traffic control terminology, may include the flight crew.

(See ICAO term AIRCRAFT.)

**AIRCRAFT [ICAO]–** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface.

**AIRCRAFT APPROACH CATEGORY–** A grouping of aircraft based on a speed of 1.3 times the stall speed in the landing configuration at maximum gross landing weight. An aircraft must fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimums for the category for that speed must be used. For example, an aircraft which falls in Category A, but is circling to land at a speed in excess of 91 knots, must use the approach Category B minimums when circling to land. The categories are as follows:

- a. Category A–** Speed less than 91 knots.
  - b. Category B–** Speed 91 knots or more but less than 121 knots.
  - c. Category C–** Speed 121 knots or more but less than 141 knots.
  - d. Category D–** Speed 141 knots or more but less than 166 knots.
  - e. Category E–** Speed 166 knots or more.
- (Refer to 14 CFR Part 97.)

**AIRCRAFT CLASSES–** For the purposes of Wake Turbulence Separation Minima, ATC classifies aircraft as Super, Heavy, Large, and Small as follows:

- a. Super.** The Airbus A-380-800 (A388) and the Antonov An-225 (A225) are classified as super.
- b. Heavy–** Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight.
- c. Large–** Aircraft of more than 41,000 pounds, maximum certificated takeoff weight, up to but not including 300,000 pounds.

**d. Small**– Aircraft of 41,000 pounds or less maximum certificated takeoff weight.

(Refer to AIM.)

**AIRCRAFT CONFLICT**– Predicted conflict, within EDST of two aircraft, or between aircraft and airspace. A Red alert is used for conflicts when the predicted minimum separation is 5 nautical miles or less. A Yellow alert is used when the predicted minimum separation is between 5 and approximately 12 nautical miles. A Blue alert is used for conflicts between an aircraft and predefined airspace.

(See EN ROUTE DECISION SUPPORT TOOL.)

**AIRCRAFT LIST (ACL)**– A view available with EDST that lists aircraft currently in or predicted to be in a particular sector’s airspace. The view contains textual flight data information in line format and may be sorted into various orders based on the specific needs of the sector team.

(See EN ROUTE DECISION SUPPORT TOOL.)

**AIRCRAFT SURGE LAUNCH AND RECOVERY**– Procedures used at USAF bases to provide increased launch and recovery rates in instrument flight rules conditions. ASLAR is based on:

**a.** Reduced separation between aircraft which is based on time or distance. Standard arrival separation applies between participants including multiple flights until the DRAG point. The DRAG point is a published location on an ASLAR approach where aircraft landing second in a formation slows to a predetermined airspeed. The DRAG point is the reference point at which MARSAs applies as expanding elements effect separation within a flight or between subsequent participating flights.

**b.** ASLAR procedures shall be covered in a Letter of Agreement between the responsible USAF military ATC facility and the concerned Federal Aviation Administration facility. Initial Approach Fix spacing requirements are normally addressed as a minimum.

**AIRCRAFT HAZARD AREA (AHA)**– Used by ATC to segregate air traffic from a launch vehicle, reentry vehicle, amateur rocket, jettisoned stages, hardware, or falling debris generated by failures associated with any of these activities. An AHA is designated via NOTAM as either a TFR or stationary

ALTRV. Unless otherwise specified, the vertical limits of an AHA are from the surface to unlimited.

(See CONTINGENCY HAZARD AREA.)

(See REFINED HAZARD AREA.)

(See TRANSITIONAL HAZARD AREA.)

**AIRCRAFT WAKE TURBULENCE CATEGORIES**– For the purpose of Wake Turbulence Recategorization (RECAT) Separation Minima, ATC groups aircraft into categories ranging from Category A through Category I, dependent upon the version of RECAT that is applied. Specific category assignments vary and are listed in the RECAT Orders.

**AIRMEN’S METEOROLOGICAL INFORMATION (AIRMET)**– In-flight weather advisories issued only to amend the Aviation Surface Forecast, Aviation Cloud Forecast, or 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 knots 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.

(See CONVECTIVE SIGMET.)

(See CWA.)

(See SAW.)

(See SIGMET.)

(Refer to AIM.)

**AIRPORT**– An area on land or water that is used or intended to be used for the landing and takeoff of aircraft and includes its buildings and facilities, if any.

**AIRPORT ADVISORY AREA**– The area within ten miles of an airport without a control tower or where the tower is not in operation, and on which a Flight Service Station is located.

(See LOCAL AIRPORT ADVISORY.)

(Refer to AIM.)

**AIRPORT ARRIVAL RATE (AAR)**– A dynamic input parameter specifying the number of arriving aircraft which an airport or airspace can accept from the ARTCC per hour. The AAR is used to calculate the desired interval between successive arrival aircraft.

**AIRPORT DEPARTURE RATE (ADR)**– A dynamic parameter specifying the number of aircraft which can depart an airport and the airspace can accept per hour.

**AIRPORT ELEVATION**– The highest point of an airport’s usable runways measured in feet from mean sea level.

(See TOUCHDOWN ZONE ELEVATION.)

(See ICAO term AERODROME ELEVATION.)

**AIRPORT LIGHTING**– Various lighting aids that may be installed on an airport. Types of airport lighting include:

**a. Approach Light System (ALS)**– An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on his/her final approach for landing. Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with the ALS at some airports. Types of Approach Light Systems are:

**1. ALSF-1**– Approach Light System with Sequenced Flashing Lights in ILS Cat-I configuration.

**2. ALSF-2**– Approach Light System with Sequenced Flashing Lights in ILS Cat-II configuration. The ALSF-2 may operate as an SSALR when weather conditions permit.

**3. SSALF**– Simplified Short Approach Light System with Sequenced Flashing Lights.

**4. SSALR**– Simplified Short Approach Light System with Runway Alignment Indicator Lights.

**5. MALSF**– Medium Intensity Approach Light System with Sequenced Flashing Lights.

**6. MALSR**– Medium Intensity Approach Light System with Runway Alignment Indicator Lights.

**7. RLLS**– Runway Lead-in Light System Consists of one or more series of flashing lights installed at or near ground level that provides positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures.

**8. RAIL**– Runway Alignment Indicator Lights– Sequenced Flashing Lights which are installed only in combination with other light systems.

**9. ODALS**– Omnidirectional Approach Lighting System consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway. Five lights are located on the runway centerline extended with the first light located 300 feet from the threshold and extending at equal intervals up to 1,500 feet from the threshold. The other two lights are located, one on each side of the runway threshold, at a lateral distance of 40 feet from the runway edge, or 75 feet from the runway edge when installed on a runway equipped with a VASI.

(Refer to FAA Order JO 6850.2, VISUAL GUIDANCE LIGHTING SYSTEMS.)

**b. Runway Lights/Runway Edge Lights**– Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.

**c. Touchdown Zone Lighting**– Two rows of transverse light bars located symmetrically about the runway centerline normally at 100 foot intervals. The basic system extends 3,000 feet along the runway.

**d. Runway Centerline Lighting**– Flush centerline lights spaced at 50-foot intervals beginning 75 feet from the landing threshold and extending to within 75 feet of the opposite end of the runway.

**e. Threshold Lights**– Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.

**f. Runway End Identifier Lights (REIL)**– Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

**g. Visual Approach Slope Indicator (VASI)**– An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he/she is “on path” if he/she sees red/white, “above path” if white/white, and “below path” if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.

**h. Precision Approach Path Indicator (PAPI)**– An airport lighting facility, similar to VASI, providing vertical approach slope guidance to aircraft during approach to landing. PAPIs consist of a single row of either two or four lights, normally installed on the left



side of the runway, and have an effective visual range of about 5 miles during the day and up to 20 miles at night. PAPIs radiate a directional pattern of high intensity red and white focused light beams which indicate that the pilot is “on path” if the pilot sees an equal number of white lights and red lights, with white to the left of the red; “above path” if the pilot sees more white than red lights; and “below path” if the pilot sees more red than white lights.

**i. Boundary Lights**– Lights defining the perimeter of an airport or landing area.

(Refer to AIM.)

**AIRPORT MARKING AIDS**– Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as:

- a. Visual.**
- b. Nonprecision instrument.**
- c. Precision instrument.**

(Refer to AIM.)

**AIRPORT REFERENCE POINT (ARP)**– The approximate geometric center of all usable runway surfaces.

**AIRPORT RESERVATION OFFICE**– Office responsible for monitoring the operation of slot controlled airports. It receives and processes requests for unscheduled operations at slot controlled airports.

**AIRPORT ROTATING BEACON**– A visual NAVAID operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and green, but are differentiated from civil beacons by dualpeaked (two quick) white flashes between the green flashes.

(See INSTRUMENT FLIGHT RULES.)

(See SPECIAL VFR OPERATIONS.)

(See ICAO term AERODROME BEACON.)

(Refer to AIM.)

**AIRPORT SURFACE DETECTION EQUIPMENT (ASDE)**– Surveillance equipment specifically designed to detect aircraft, vehicular traffic, and other objects, on the surface of an airport, and to present the image on a tower display. Used to augment visual observation by tower personnel of aircraft and/or vehicular movements on runways and taxiways. There are three ASDE systems deployed in the NAS:

**a. ASDE-3**– a Surface Movement Radar.

**b. ASDE-X**– a system that uses an X-band Surface Movement Radar, multilateration, and ADS-B.

**c. Airport Surface Surveillance Capability (ASSC)**– A system that uses Surface Movement Radar, multilateration, and ADS-B.

**AIRPORT SURVEILLANCE RADAR**– Approach control radar used to detect and display an aircraft’s position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles.

**AIRPORT TAXI CHARTS**–

(See AERONAUTICAL CHART.)

**AIRPORT TRAFFIC CONTROL SERVICE**– A service provided by a control tower for aircraft operating on the movement area and in the vicinity of an airport.

(See MOVEMENT AREA.)

(See TOWER.)

(See ICAO term AERODROME CONTROL SERVICE.)

**AIRPORT TRAFFIC CONTROL TOWER**–

(See TOWER.)

**AIRSPACE CONFLICT**– Predicted conflict of an aircraft and active Special Activity Airspace (SAA).

**AIRSPACE FLOW PROGRAM (AFP)**– AFP is a Traffic Management (TM) process administered by the Air Traffic Control System Command Center (ATCSCC) where aircraft are assigned an Expect Departure Clearance Time (EDCT) in order to manage capacity and demand for a specific area of the National Airspace System (NAS). The purpose of the program is to mitigate the effects of en route constraints. It is a flexible program and may be implemented in various forms depending upon the needs of the air traffic system.

**AIRSPACE HIERARCHY**– Within the airspace classes, there is a hierarchy and, in the event of an overlap of airspace: Class A preempts Class B, Class B preempts Class C, Class C preempts Class D, Class D preempts Class E, and Class E preempts Class G.

**AIRSPEED**– The speed of an aircraft relative to its surrounding air mass. The unqualified term “airspeed” means one of the following:

**a. Indicated Airspeed**– The speed shown on the aircraft airspeed indicator. This is the speed used in

pilot/controller communications under the general term “airspeed.”

(Refer to 14 CFR Part 1.)

**b. True Airspeed**– The airspeed of an aircraft relative to undisturbed air. Used primarily in flight planning and en route portion of flight. When used in pilot/controller communications, it is referred to as “true airspeed” and not shortened to “airspeed.”

**AIRSPACE RESERVATION**– The term used in oceanic ATC for airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. Airspace reservations must be classified as either “moving” or “stationary.”

(See MOVING AIRSPACE RESERVATION)

(See STATIONARY AIRSPACE RESERVATION.)

(See ALTITUDE RESERVATION.)

**AIRSTART**– The starting of an aircraft engine while the aircraft is airborne, preceded by engine shutdown during training flights or by actual engine failure.

**AIRWAY**– A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids.

(See FEDERAL AIRWAYS.)

(See ICAO term AIRWAY.)

(Refer to 14 CFR Part 71.)

(Refer to AIM.)

**AIRWAY [ICAO]**– A control area or portion thereof established in the form of corridor equipped with radio navigational aids.

**AIRWAY BEACON**– Used to mark airway segments in remote mountain areas. The light flashes Morse Code to identify the beacon site.

(Refer to AIM.)

**AIS**–

(See AERONAUTICAL INFORMATION SERVICES.)

**AIT**–

(See AUTOMATED INFORMATION TRANSFER.)

**ALERFA (Alert Phase) [ICAO]**– A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

**ALERT**– A notification to a position that there is an aircraft-to-aircraft or aircraft-to-airspace

conflict, as detected by Automated Problem Detection (APD).

**ALERT AREA**–

(See SPECIAL USE AIRSPACE.)

**ALERT NOTICE (ALNOT)**– A request originated by a flight service station (FSS) or an air route traffic control center (ARTCC) for an extensive communication search for overdue, unreported, or missing aircraft.

**ALERTING SERVICE**– A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid and assist such organizations as required.

**ALNOT**–

(See ALERT NOTICE.)

**ALONG-TRACK DISTANCE (ATD)**– The horizontal distance between the aircraft’s current position and a fix measured by an area navigation system that is not subject to slant range errors.

**ALPHANUMERIC DISPLAY**– Letters and numerals used to show identification, altitude, beacon code, and other information concerning a target on a radar display.

(See AUTOMATED RADAR TERMINAL SYSTEMS.)

**ALTERNATE AERODROME [ICAO]**– An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing.

Note: The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for the flight.

**ALTERNATE AIRPORT**– An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

(See ICAO term ALTERNATE AERODROME.)

**ALTIMETER SETTING**– The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92).

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

**ALTITUDE**– The height of a level, point, or object measured in feet Above Ground Level (AGL) or from Mean Sea Level (MSL).

(See FLIGHT LEVEL.)

**a. MSL Altitude**– Altitude expressed in feet measured from mean sea level.

**b. AGL Altitude**– Altitude expressed in feet measured above ground level.

**c. Indicated Altitude**– The altitude as shown by an altimeter. On a pressure or barometric altimeter it is altitude as shown uncorrected for instrument error and uncompensated for variation from standard atmospheric conditions.

(See ICAO term ALTITUDE.)

**ALTITUDE [ICAO]**– The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

**ALTITUDE READOUT**– An aircraft’s altitude, transmitted via the Mode C transponder feature, that is visually displayed in 100-foot increments on a radar scope having readout capability.

(See ALPHANUMERIC DISPLAY.)

(See AUTOMATED RADAR TERMINAL SYSTEMS.)

(Refer to AIM.)

**ALTITUDE RESERVATION (ALTRV)**– Airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. ALTRVs are approved by the appropriate FAA facility. ALTRVs must be classified as either “moving” or “stationary.”

(See MOVING ALTITUDE RESERVATION.)

(See STATIONARY ALTITUDE RESERVATION.)

(See AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER.)

**ALTITUDE RESTRICTION**– An altitude or altitudes, stated in the order flown, which are to be maintained until reaching a specific point or time. Altitude restrictions may be issued by ATC due to traffic, terrain, or other airspace considerations.

**ALTITUDE RESTRICTIONS ARE CANCELED**– Adherence to previously imposed altitude restrictions is no longer required during a climb or descent.

**ALTRV**–

(See ALTITUDE RESERVATION.)

**AMVER**–

(See AUTOMATED MUTUAL-ASSISTANCE VESSEL RESCUE SYSTEM.)

**APB**–

(See AUTOMATED PROBLEM DETECTION BOUNDARY.)

**APD**–

(See AUTOMATED PROBLEM DETECTION.)

**APDIA**–

(See AUTOMATED PROBLEM DETECTION INHIBITED AREA.)

**APPROACH CLEARANCE**– Authorization by ATC for a pilot to conduct an instrument approach. The type of instrument approach for which a clearance and other pertinent information is provided in the approach clearance when required.

(See CLEARED APPROACH.)

(See INSTRUMENT APPROACH PROCEDURE.)

(Refer to AIM.)

(Refer to 14 CFR Part 91.)

**APPROACH CONTROL FACILITY**– A terminal ATC facility that provides approach control service in a terminal area.

(See APPROACH CONTROL SERVICE.)

(See RADAR APPROACH CONTROL FACILITY.)

**APPROACH CONTROL SERVICE**– Air traffic control service provided by an approach control facility for arriving and departing VFR/IFR aircraft and, on occasion, en route aircraft. At some airports not served by an approach control facility, the ARTCC provides limited approach control service.

(See ICAO term APPROACH CONTROL SERVICE.)

(Refer to AIM.)

**APPROACH CONTROL SERVICE [ICAO]**– Air traffic control service for arriving or departing controlled flights.

**APPROACH GATE**– An imaginary point used within ATC as a basis for vectoring aircraft to the final approach course. The gate will be established along the final approach course 1 mile from the final approach fix on the side away from the airport and will be no closer than 5 miles from the landing threshold.

**APPROACH/DEPARTURE HOLD AREA**– The locations on taxiways in the approach or departure areas of a runway designated to protect landing or departing aircraft. These locations are identified by signs and markings.

**APPROACH LIGHT SYSTEM**–

(See AIRPORT LIGHTING.)

**APPROACH SEQUENCE**– The order in which aircraft are positioned while on approach or awaiting approach clearance.

(See LANDING SEQUENCE.)

(See ICAO term APPROACH SEQUENCE.)

**APPROACH SEQUENCE [ICAO]**– The order in which two or more aircraft are cleared to approach to land at the aerodrome.

**APPROACH SPEED**– The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

**APPROACH WITH VERTICAL GUIDANCE (APV)**– A term used to describe RNAV approach procedures that provide lateral and vertical guidance but do not meet the requirements to be considered a precision approach.

**APPROPRIATE ATS AUTHORITY [ICAO]**– The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned. In the United States, the “appropriate ATS authority” is the Program Director for Air Traffic Planning and Procedures, ATP-1.

**APPROPRIATE AUTHORITY**–

- a. Regarding flight over the high seas: the relevant authority is the State of Registry.
- b. Regarding flight over other than the high seas: the relevant authority is the State having sovereignty over the territory being overflown.

**APPROPRIATE OBSTACLE CLEARANCE MINIMUM ALTITUDE**– Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

**APPROPRIATE TERRAIN CLEARANCE MINIMUM ALTITUDE**– Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

**APRON**– A defined area on an airport or heliport intended to accommodate aircraft for purposes of

loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

(See ICAO term APRON.)

**APRON [ICAO]**– A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, refueling, parking or maintenance.

**ARC**– The track over the ground of an aircraft flying at a constant distance from a navigational aid by reference to distance measuring equipment (DME).

**AREA CONTROL CENTER [ICAO]**– An air traffic control facility primarily responsible for ATC services being provided IFR aircraft during the en route phase of flight. The U.S. equivalent facility is an air route traffic control center (ARTCC).

**AREA NAVIGATION (RNAV)**– A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground– or space–based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note: Area navigation includes performance–based navigation as well as other operations that do not meet the definition of performance–based navigation.

**AREA NAVIGATION (RNAV) APPROACH CONFIGURATION:**

a. **STANDARD T**– An RNAV approach whose design allows direct flight to any one of three initial approach fixes (IAF) and eliminates the need for procedure turns. The standard design is to align the procedure on the extended centerline with the missed approach point (MAP) at the runway threshold, the final approach fix (FAF), and the initial approach/intermediate fix (IAF/IF). The other two IAFs will be established perpendicular to the IF.

b. **MODIFIED T**– An RNAV approach design for single or multiple runways where terrain or operational constraints do not allow for the standard T. The “T” may be modified by increasing or decreasing the angle from the corner IAF(s) to the IF or by eliminating one or both corner IAFs.

c. **STANDARD I**– An RNAV approach design for a single runway with both corner IAFs eliminated. Course reversal or radar vectoring may be required at busy terminals with multiple runways.

**d. TERMINAL ARRIVAL AREA (TAA)**– The TAA is controlled airspace established in conjunction with the Standard or Modified T and I RNAV approach configurations. In the standard TAA, there are three areas: straight-in, left base, and right base. The arc boundaries of the three areas of the TAA are published portions of the approach and allow aircraft to transition from the en route structure direct to the nearest IAF. TAAs will also eliminate or reduce feeder routes, departure extensions, and procedure turns or course reversal.

**1. STRAIGHT-IN AREA**– A 30 NM arc centered on the IF bounded by a straight line extending through the IF perpendicular to the intermediate course.

**2. LEFT BASE AREA**– A 30 NM arc centered on the right corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30 NM from the IAF and is bounded on the other side by a line extending from the IF through the FAF to the arc.

**3. RIGHT BASE AREA**– A 30 NM arc centered on the left corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30 NM from the IAF and is bounded on the other side by a line extending from the IF through the FAF to the arc.

**AREA NAVIGATION (RNAV) GLOBAL POSITIONING SYSTEM (GPS) PRECISION RUNWAY MONITORING (PRM) APPROACH**– A GPS approach, which requires vertical guidance, used in lieu of another type of PRM approach to conduct approaches to parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3,000 feet, where simultaneous close parallel approaches are permitted. Also used in lieu of an ILS PRM and/or LDA PRM approach to conduct Simultaneous Offset Instrument Approach (SOIA) operations.

**ARMY AVIATION FLIGHT INFORMATION BULLETIN**– A bulletin that provides air operation data covering Army, National Guard, and Army Reserve aviation activities.

**ARO**–  
(See AIRPORT RESERVATION OFFICE.)

**ARRESTING SYSTEM**– A safety device consisting of two major components, namely, engaging or

catching devices and energy absorption devices for the purpose of arresting both tailhook and/or nontailhook-equipped aircraft. It is used to prevent aircraft from overrunning runways when the aircraft cannot be stopped after landing or during aborted takeoff. Arresting systems have various names; e.g., arresting gear, hook device, wire barrier cable.

(See ABORT.)

(Refer to AIM.)

**ARRIVAL CENTER**– The ARTCC having jurisdiction for the impacted airport.

**ARRIVAL DELAY**– A parameter which specifies a period of time in which no aircraft will be metered for arrival at the specified airport.

**ARRIVAL/DEPARTURE WINDOW (ADW)**– A depiction presented on an air traffic control display, used by the controller to prevent possible conflicts between arrivals to, and departures from, a runway. The ADW identifies that point on the final approach course by which a departing aircraft must have begun takeoff.

**ARRIVAL SECTOR (En Route)**– An operational control sector containing one or more meter fixes on or near the TRACON boundary.

**ARRIVAL TIME**– The time an aircraft touches down on arrival.

**ARSR**–  
(See AIR ROUTE SURVEILLANCE RADAR.)

**ARTCC**–  
(See AIR ROUTE TRAFFIC CONTROL CENTER.)

**ASDA**–  
(See ACCELERATE-STOP DISTANCE AVAILABLE.)

**ASDA [ICAO]**–  
(See ICAO Term ACCELERATE-STOP DISTANCE AVAILABLE.)

**ASDE**–  
(See AIRPORT SURFACE DETECTION EQUIPMENT.)

**ASLAR**–  
(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

**ASR**–  
(See AIRPORT SURVEILLANCE RADAR.)

**ASR APPROACH–**

(See SURVEILLANCE APPROACH.)

**ASSOCIATED–** A radar target displaying a data block with flight identification and altitude information.

(See UNASSOCIATED.)

**ATC–**

(See AIR TRAFFIC CONTROL.)

**ATC ADVISES–** Used to prefix a message of noncontrol information when it is relayed to an aircraft by other than an air traffic controller.

(See ADVISORY.)

**ATC ASSIGNED AIRSPACE–** Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.

(See SPECIAL USE AIRSPACE.)

**ATC CLEARANCE–**

(See AIR TRAFFIC CLEARANCE.)

**ATC CLEARS–** Used to prefix an ATC clearance when it is relayed to an aircraft by other than an air traffic controller.

**ATC INSTRUCTIONS–** Directives issued by air traffic control for the purpose of requiring a pilot to take specific actions; e.g., “Turn left heading two five zero,” “Go around,” “Clear the runway.”

(Refer to 14 CFR Part 91.)

**ATC PREFERRED ROUTE NOTIFICATION–** EDST notification to the appropriate controller of the need to determine if an ATC preferred route needs to be applied, based on destination airport.

(See ROUTE ACTION NOTIFICATION.)

(See EN ROUTE DECISION SUPPORT TOOL.)

**ATC PREFERRED ROUTES–** Preferred routes that are not automatically applied by Host.

**ATC REQUESTS–** Used to prefix an ATC request when it is relayed to an aircraft by other than an air traffic controller.

**ATC SECURITY SERVICES–** Communications and security tracking provided by an ATC facility in support of the DHS, the DOD, or other Federal security elements in the interest of national security. Such security services are only applicable within

designated areas. ATC security services do not include ATC basic radar services or flight following.

**ATC SECURITY SERVICES POSITION–** The position responsible for providing ATC security services as defined. This position does not provide ATC, IFR separation, or VFR flight following services, but is responsible for providing security services in an area comprising airspace assigned to one or more ATC operating sectors. This position may be combined with control positions.

**ATC SECURITY TRACKING–** The continuous tracking of aircraft movement by an ATC facility in support of the DHS, the DOD, or other security elements for national security using radar (i.e., radar tracking) or other means (e.g., manual tracking) without providing basic radar services (including traffic advisories) or other ATC services not defined in this section.

**ATS SURVEILLANCE SERVICE [ICAO]–** A term used to indicate a service provided directly by means of an ATS surveillance system.

**ATC SURVEILLANCE SOURCE–** Used by ATC for establishing identification, control and separation using a target depicted on an air traffic control facility’s video display that has met the relevant safety standards for operational use and received from one, or a combination, of the following surveillance sources:

- a. Radar (See RADAR.)
- b. ADS-B (See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST.)
- c. WAM (See WIDE AREA MULTILATERATION.)
  - (See INTERROGATOR.)
  - (See TRANSPONDER.)
  - (See ICAO term RADAR.)
  - (Refer to AIM.)

**ATS SURVEILLANCE SYSTEM [ICAO]–** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

**Note:** A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.

**ATCAA–**

(See ATC ASSIGNED AIRSPACE.)

**ATCRBS–**

(See RADAR.)

**ATCSCC–**

(See AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER.)

**ATCT–**

(See TOWER.)

**ATD–**

(See ALONG–TRACK DISTANCE.)

**ATIS–**

(See AUTOMATIC TERMINAL INFORMATION SERVICE.)

**ATIS [ICAO]–**

(See ICAO Term AUTOMATIC TERMINAL INFORMATION SERVICE.)

**ATPA–**

(See AUTOMATED TERMINAL PROXIMITY ALERT.)

**ATS ROUTE [ICAO]–** A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

Note: The term “ATS Route” is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure, etc.

**ATTENTION ALL USERS PAGE (AAUP)–** The AAUP provides the pilot with additional information relative to conducting a specific operation, for example, PRM approaches and RNAV departures.

**AUTOLAND APPROACH–**An autoland system aids by providing control of aircraft systems during a precision instrument approach to at least decision altitude and possibly all the way to touchdown, as well as in some cases, through the landing rollout. The autoland system is a sub-system of the autopilot system from which control surface management occurs. The aircraft autopilot sends instructions to the autoland system and monitors the autoland system performance and integrity during its execution.

**AUTOMATED EMERGENCY DESCENT–**

(See EMERGENCY DESCENT MODE.)

**AUTOMATED INFORMATION TRANSFER (AIT)–** A precoordinated process, specifically defined in facility directives, during which a transfer of altitude control and/or radar identification is accomplished without verbal coordination between controllers using information communicated in a full data block.

**AUTOMATED MUTUAL-ASSISTANCE VESSEL RESCUE SYSTEM–** A facility which can deliver, in a matter of minutes, a surface picture (SURPIC) of vessels in the area of a potential or actual search and rescue incident, including their predicted positions and their characteristics.

(See FAA Order JO 7110.65, Para 10–6–4, INFLIGHT CONTINGENCIES.)

**AUTOMATED PROBLEM DETECTION (APD)–** An Automation Processing capability that compares trajectories in order to predict conflicts.

**AUTOMATED PROBLEM DETECTION BOUNDARY (APB)–** The adapted distance beyond a facilities boundary defining the airspace within which EDST performs conflict detection.

(See EN ROUTE DECISION SUPPORT TOOL.)

**AUTOMATED PROBLEM DETECTION INHIBITED AREA (APDIA)–** Airspace surrounding a terminal area within which APD is inhibited for all flights within that airspace.

**AUTOMATED TERMINAL PROXIMITY ALERT (ATPA)–** Monitors the separation of aircraft on the Final Approach Course (FAC), displaying a graphical notification (cone and/or mileage) when a potential loss of separation is detected. The warning cone (Yellow) will display at 45 seconds and the alert cone (Red) will display at 24 seconds prior to predicted loss of separation. Current distance between two aircraft on final will be displayed in line 3 of the full data block of the trailing aircraft in corresponding colors.

**AUTOMATED WEATHER SYSTEM–** Any of the automated weather sensor platforms that collect weather data at airports and disseminate the weather information via radio and/or landline. The systems currently consist of the Automated Surface Observing System (ASOS) and Automated Weather Observation System (AWOS).

**AUTOMATED UNICOM–** Provides completely automated weather, radio check capability and airport advisory information on an Automated UNICOM system. These systems offer a variety of features, typically selectable by microphone clicks, on the UNICOM frequency. Availability will be published in the Chart Supplement U.S. and approach charts.

**AUTOMATIC ALTITUDE REPORT–**

(See ALTITUDE READOUT.)

**AUTOMATIC ALTITUDE REPORTING**– That function of a transponder which responds to Mode C interrogations by transmitting the aircraft’s altitude in 100-foot increments.

**AUTOMATIC CARRIER LANDING SYSTEM**– U.S. Navy final approach equipment consisting of precision tracking radar coupled to a computer data link to provide continuous information to the aircraft, monitoring capability to the pilot, and a backup approach system.

**AUTOMATIC DEPENDENT SURVEILLANCE (ADS) [ICAO]**– A surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position fixing systems, including aircraft identification, four dimensional position and additional data as appropriate.

**AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B)**– A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter. The aircraft or vehicle periodically broadcasts its GNSS-derived position and other required information such as identity and velocity, which is then received by a ground-based or space-based receiver for processing and display at an air traffic control facility, as well as by suitably equipped aircraft.

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST IN.)

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST OUT.)

(See COOPERATIVE SURVEILLANCE.)

(See GLOBAL POSITIONING SYSTEM.)

(See SPACE-BASED ADS-B.)

**AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST IN (ADS-B In)**– Aircraft avionics capable of receiving ADS-B Out transmissions directly from other aircraft, as well as traffic or weather information transmitted from ground stations.

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST OUT.)

(See AUTOMATIC DEPENDENT SURVEILLANCE-REBROADCAST.)

(See FLIGHT INFORMATION SERVICE-BROADCAST.)

(See TRAFFIC INFORMATION SERVICE-BROADCAST.)

**AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST OUT (ADS-B Out)**– The transmitter onboard an aircraft or ground vehicle that periodically broadcasts its GNSS-derived position along with other required information, such as identity, altitude, and velocity.

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST IN.)

**AUTOMATIC DEPENDENT SURVEILLANCE-CONTRACT (ADS-C)**– A data link position reporting system, controlled by a ground station, that establishes contracts with an aircraft’s avionics that occur automatically whenever specific events occur, or specific time intervals are reached.

**AUTOMATIC DEPENDENT SURVEILLANCE-REBROADCAST (ADS-R)**– A datalink translation function of the ADS-B ground system required to accommodate the two separate operating frequencies (978 MHz and 1090 MHz). The ADS-B system receives the ADS-B messages transmitted on one frequency and ADS-R translates and reformats the information for rebroadcast and use on the other frequency. This allows ADS-B In equipped aircraft to see nearby ADS-B Out traffic regardless of the operating link of the other aircraft. Aircraft operating on the same ADS-B frequency exchange information directly and do not require the ADS-R translation function.

**AUTOMATIC DIRECTION FINDER**– An aircraft radio navigation system which senses and indicates the direction to a L/MF nondirectional radio beacon (NDB) ground transmitter. Direction is indicated to the pilot as a magnetic bearing or as a relative bearing to the longitudinal axis of the aircraft depending on the type of indicator installed in the aircraft. In certain applications, such as military, ADF operations may be based on airborne and ground transmitters in the VHF/UHF frequency spectrum.

(See BEARING.)

(See NONDIRECTIONAL BEACON.)

**AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS) – ALASKA FSSs ONLY**– The continuous broadcast of recorded non-control information at airports in Alaska where a FSS provides local airport advisory service. The AFIS broadcast automates the repetitive transmission of essential but routine information such as weather, wind, altimeter, favored runway, braking action,



airport NOTAMs, and other applicable information. The information is continuously broadcast over a discrete VHF radio frequency (usually the ASOS/AWOS frequency).

**AUTOMATIC TERMINAL INFORMATION SERVICE**– The continuous broadcast of recorded noncontrol information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information; e.g., “Los Angeles information Alfa. One three zero zero Coordinated Universal Time. Weather, measured ceiling two thousand overcast, visibility three, haze, smoke, temperature seven one, dew point five seven, wind two five zero at five, altimeter two niner niner six. I-L-S Runway Two Five Left approach in use, Runway Two Five Right closed, advise you have Alfa.”

(See ICAO term **AUTOMATIC TERMINAL INFORMATION SERVICE**.)

(Refer to AIM.)

**AUTOMATIC TERMINAL INFORMATION SERVICE [ICAO]**– The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts throughout the day or a specified portion of the day.

**AUTOROTATION**– A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.

**a. Autorotative Landing/Touchdown Autorotation.** Used by a pilot to indicate that the landing will be made without applying power to the rotor.

**b. Low Level Autorotation.** Commences at an altitude well below the traffic pattern, usually below

100 feet AGL and is used primarily for tactical military training.

**c. 180 degrees Autorotation.** Initiated from a downwind heading and is commenced well inside the normal traffic pattern. “Go around” may not be possible during the latter part of this maneuver.

**AVAILABLE LANDING DISTANCE (ALD)**– The portion of a runway available for landing and roll-out for aircraft cleared for LAHSO. This distance is measured from the landing threshold to the hold-short point.

**AVIATION WATCH NOTIFICATION MESSAGE**– The Storm Prediction Center (SPC) issues Aviation Watch Notification Messages (SAW) to provide an area threat alert for the aviation meteorology community to forecast organized severe thunderstorms that may produce tornadoes, large hail, and/or convective damaging winds as indicated in Public Watch Notification Messages within the Continental U.S. A SAW message provides a description of the type of watch issued by SPC, a valid time, an approximation of the area in a watch, and primary hazard(s).

**AVIATION WEATHER SERVICE**– A service provided by the National Weather Service (NWS) and FAA which collects and disseminates pertinent weather information for pilots, aircraft operators, and ATC. Available aviation weather reports and forecasts are displayed at each NWS office and FAA FSS.

(See **TRANSCRIBED WEATHER BROADCAST**.)

(See **WEATHER ADVISORY**.)

(Refer to AIM.)



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.

**CLEARANCE-**

(See AIR TRAFFIC CLEARANCE.)

**CLEARANCE LIMIT-** The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance.

(See ICAO term CLEARANCE LIMIT.)

**CLEARANCE LIMIT [ICAO]-** The point to which an aircraft is granted an air traffic control clearance.

**CLEARANCE VOID IF NOT OFF BY (TIME)-**

Used by ATC to advise an aircraft that the departure release is automatically canceled if takeoff is not made prior to a specified time. The expiration of a clearance void time does not cancel the departure clearance or IFR flight plan. It withdraws the pilot's authority to depart IFR until a new departure release/release time has been issued by ATC. Pilots who choose to depart VFR after their clearance void time has expired should not depart using the previously assigned IFR transponder code.

(See ICAO term CLEARANCE VOID TIME.)

**CLEARANCE VOID TIME [ICAO]-** A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

**CLEARED APPROACH-** ATC authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure.

(See CLEARED (Type of) APPROACH.)

(See INSTRUMENT APPROACH PROCEDURE.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

**CLEARED (Type of) APPROACH-** ATC authorization for an aircraft to execute a specific instrument

approach procedure to an airport; e.g., "Cleared ILS Runway Three Six Approach."

(See APPROACH CLEARANCE.)

(See INSTRUMENT APPROACH PROCEDURE.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

**CLEARED AS FILED-** Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include the altitude, DP, or DP Transition.

(See REQUEST FULL ROUTE CLEARANCE.)

(Refer to AIM.)

**CLEARED FOR TAKEOFF-** ATC authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

**CLEARED FOR THE OPTION-** ATC authorization for an aircraft to make a touch-and-go, low approach, missed approach, stop and go, or full stop landing at the discretion of the pilot. It is normally used in training so that an instructor can evaluate a student's performance under changing situations. Pilots should advise ATC if they decide to remain on the runway, of any delay in their stop and go, delay clearing the runway, or are unable to comply with the instruction(s).

(See OPTION APPROACH.)

(Refer to AIM.)

**CLEARED THROUGH-** ATC authorization for an aircraft to make intermediate stops at specified airports without refiling a flight plan while en route to the clearance limit.

**CLEARED TO LAND-** ATC authorization for an aircraft to land. It is predicated on known traffic and known physical airport conditions.

**CLEARWAY-** An area beyond the takeoff runway under the control of airport authorities within which terrain or fixed obstacles may not extend above specified limits. These areas may be required for certain turbine-powered operations and the size and upward slope of the clearway will differ depending on when the aircraft was certificated.

(Refer to 14 CFR Part 1.)

**CLIMB TO VFR-** ATC authorization for an aircraft to climb to VFR conditions within Class B, C, D, and E surface areas when the only weather limitation is

restricted visibility. The aircraft must remain clear of clouds while climbing to VFR.

(See SPECIAL VFR CONDITIONS.)

(Refer to AIM.)

**CLIMBOUT**– That portion of flight operation between takeoff and the initial cruising altitude.

**CLIMB VIA**– An abbreviated ATC clearance that requires compliance with the procedure lateral path, associated speed restrictions, and altitude restrictions along the cleared route or procedure.

**CLOSE PARALLEL RUNWAYS**– Two parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3000 feet (750 feet for SOIA operations) for which ATC is authorized to conduct simultaneous independent approach operations. PRM and simultaneous close parallel appear in approach title. Dual communications, special pilot training, an Attention All Users Page (AAUP), NTZ monitoring by displays that have aural and visual alerting algorithms are required. A high update rate surveillance sensor is required for certain runway or approach course spacing.

**CLOSED LOOP CLEARANCE**– A vector or reroute clearance that includes a return to route point and updates ERAM to accurately reflect the anticipated route (e.g., a QU route pick that anticipates length of vector and includes the next fix that ties into the route of flight.)

**CLOSED RUNWAY**– A runway that is unusable for aircraft operations. Only the airport management/military operations office can close a runway.

**CLOSED TRAFFIC**– Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.

**CLOUD**– A cloud is a visible accumulation of minute water droplets and/or ice particles in the atmosphere above the Earth's surface. Cloud differs from ground fog, fog, or ice fog only in that the latter are, by definition, in contact with the Earth's surface.

**CLT**–

(See CALCULATED LANDING TIME.)

**CLUTTER**– In radar operations, clutter refers to the reception and visual display of radar returns caused by precipitation, chaff, terrain, numerous aircraft targets, or other phenomena. Such returns may limit

or preclude ATC from providing services based on radar.

(See CHAFF.)

(See GROUND CLUTTER.)

(See PRECIPITATION.)

(See TARGET.)

(See ICAO term RADAR CLUTTER.)

**CMNPS**–

(See CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE.)

**COA**–

(See CERTIFICATE OF WAIVER OR AUTHORIZATION.)

**COASTAL FIX**– A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

**CODES**– The number assigned to a particular multiple pulse reply signal transmitted by a transponder.

(See DISCRETE CODE.)

**COLD TEMPERATURE CORRECTION**– A correction in feet, based on height above airport and temperature, that is added to the aircraft's indicated altitude to offset the effect of cold temperature on true altitude.

**COLLABORATIVE TRAJECTORY OPTIONS PROGRAM (CTOP)**– CTOP is a traffic management program administered by the Air Traffic Control System Command Center (ATCSCC) that manages demand through constrained airspace, while considering operator preference with regard to both route and delay as defined in a Trajectory Options Set (TOS).

**COMBINED CENTER-RAPCON**– An air traffic facility which combines the functions of an ARTCC and a radar approach control facility.

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

(See RADAR APPROACH CONTROL FACILITY.)

**COMMON POINT**– A significant point over which two or more aircraft will report passing or have reported passing before proceeding on the same or diverging tracks. To establish/maintain longitudinal separation, a controller may determine a common point not originally in the aircraft's flight plan and then clear the aircraft to fly over the point.

(See SIGNIFICANT POINT.)

# D

## D-ATIS-

(See DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE.)

## D-ATIS [ICAO]-

(See ICAO Term DATA LINK AUTOMATIC TERMINAL INFORMATION SERVICE.)

## DA [ICAO]-

(See ICAO Term DECISION ALTITUDE/DECISION HEIGHT.)

## DAIR-

(See DIRECT ALTITUDE AND IDENTITY READOUT.)

**DANGER AREA [ICAO]-** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

Note: The term "Danger Area" is not used in reference to areas within the United States or any of its possessions or territories.

## DAS-

(See DELAY ASSIGNMENT.)

## DATA BLOCK-

(See ALPHANUMERIC DISPLAY.)

**DATA LINK AUTOMATIC TERMINAL INFORMATION SERVICE (D-ATIS) [ICAO]-** The provision of ATIS via data link.

## DCT-

(See DELAY COUNTDOWN TIMER.)

**DEAD RECKONING-** Dead reckoning, as applied to flying, is the navigation of an airplane solely by means of computations based on airspeed, course, heading, wind direction, and speed, groundspeed, and elapsed time.

**DEBRIS RESPONSE AREA (DRA)-** Used by ATC. Areas of airspace that may be activated in response to unplanned falling debris in the NAS.

**DECISION ALTITUDE/DECISION HEIGHT [ICAO Annex 6]-** A specified altitude or height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

1. Decision altitude (DA) is referenced to mean sea

level and decision height (DH) is referenced to the threshold elevation.

2. Category II and III minima are expressed as a DH and not a DA. Minima is assessed by reference to a radio altimeter and not a barometric altimeter, which makes the minima a DH.

3. The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

**DECISION ALTITUDE (DA)-** A specified altitude (mean sea level (MSL)) on an instrument approach procedure (ILS, GLS, vertically guided RNAV) at which the pilot must decide whether to continue the approach or initiate an immediate missed approach if the pilot does not see the required visual references.

**DECISION HEIGHT (DH)-** With respect to the operation of aircraft, means the height at which a decision must be made during an ILS or PAR instrument approach to either continue the approach or to execute a missed approach.

(See ICAO term DECISION ALTITUDE/DECISION HEIGHT.)

**DECODER-** The device used to decipher signals received from ATRBS transponders to effect their display as select codes.

(See CODES.)

(See RADAR.)

**DEFENSE AREA-** Any airspace of the contiguous United States that is not an ADIZ in which the control of aircraft is required for reasons of national security.

**DEFENSE VISUAL FLIGHT RULES-** Rules applicable to flights within an ADIZ conducted under the visual flight rules in 14 CFR Part 91.

(See AIR DEFENSE IDENTIFICATION ZONE.)

(Refer to 14 CFR Part 91.)

(Refer to 14 CFR Part 99.)

**DELAY ASSIGNMENT (DAS)-** Delays are distributed to aircraft based on the traffic management program parameters. The delay assignment is calculated in 15-minute increments and appears as a table in Traffic Flow Management System (TFMS).

**DELAY COUNTDOWN TIMER (DCT)**– The display of the delay that must be absorbed by a flight prior to crossing a Meter Reference Element (MRE) to meet the TBFM Scheduled Time of Arrival (STA). It is calculated by taking the difference between the frozen STA and the Estimated Time of Arrival (ETA).

***DELAY INDEFINITE (REASON IF KNOWN) EXPECT FURTHER CLEARANCE (TIME)***– Used by ATC to inform a pilot when an accurate estimate of the delay time and the reason for the delay cannot immediately be determined; e.g., a disabled aircraft on the runway, terminal or center area saturation, weather below landing minimums, etc.

(See **EXPECT FURTHER CLEARANCE (TIME)**.)

**DEPARTURE CENTER**– The ARTCC having jurisdiction for the airspace that generates a flight to the impacted airport.

**DEPARTURE CONTROL**– A function of an approach control facility providing air traffic control service for departing IFR and, under certain conditions, VFR aircraft.

(See **APPROACH CONTROL FACILITY**.)

(Refer to AIM.)

**DEPARTURE SEQUENCING PROGRAM**– A program designed to assist in achieving a specified interval over a common point for departures.

**DEPARTURE TIME**– The time an aircraft becomes airborne.

**DEPARTURE VIEWER**– A capability within the Traffic Flow Management System (TFMS) that provides combined displays for monitoring departure by fixes and departure airports. Traffic management personnel can customize the displays by selecting the departure airports and fixes of interest. The information displayed is the demand for the resource (fix or departure airport) in time bins with the flight list and a flight history for one flight at a time. From the display, flights can be selected for route amendment, one or more at a time, and the Route Amendment Dialogue (RAD) screen automatically opens for easy route selection and execution. Reroute options are based on Coded Departure Route (CDR) database and Trajectory Options Set (TOS) (when available).

**DESCEND VIA**– An abbreviated ATC clearance that requires compliance with a published procedure lateral path and associated speed restrictions and

provides a pilot-discretion descent to comply with published altitude restrictions.

**DESCENT SPEED ADJUSTMENTS**– Speed deceleration calculations made to determine an accurate VTA. These calculations start at the transition point and use arrival speed segments to the vertex.

**DESIGNATED COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) AREA**– In Alaska, in addition to being designated for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating airport traffic control tower, a CTAF may also be designated for the purpose of carrying out advisory practices for operations in and through areas with a high volume of VFR traffic.

**DESIRED COURSE**–

**a. True**– A predetermined desired course direction to be followed (measured in degrees from true north).

**b. Magnetic**– A predetermined desired course direction to be followed (measured in degrees from local magnetic north).

**DESIRED TRACK**– The planned or intended track between two waypoints. It is measured in degrees from either magnetic or true north. The instantaneous angle may change from point to point along the great circle track between waypoints.

**DETRESFA (DISTRESS PHASE) [ICAO]**– The code word used to designate an emergency phase wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.

**DEVIATIONS**–

**a.** A departure from a current clearance, such as an off course maneuver to avoid weather or turbulence.

**b.** Where specifically authorized in the CFRs and requested by the pilot, ATC may permit pilots to deviate from certain regulations.

**DH**–

(See **DECISION HEIGHT**.)

**DH [ICAO]**–

(See ICAO Term **DECISION ALTITUDE/DECISION HEIGHT**.)

**DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE (D-ATIS)**– The service provides text messages to aircraft, airlines, and other users outside the standard reception range of conventional

ATIS via landline and data link communications to the cockpit. Also, the service provides a computer-synthesized voice message that can be transmitted to all aircraft within range of existing transmitters. The Terminal Data Link System (TDLS) D-ATIS application uses weather inputs from local automated weather sources or manually entered meteorological data together with preprogrammed menus to provide standard information to users. Airports with D-ATIS capability are listed in the Chart Supplement U.S.

**DIGITAL TARGET**– A computer-generated symbol representing an aircraft's position, based on a primary return or radar beacon reply, shown on a digital display.

**DIGITAL TERMINAL AUTOMATION SYSTEM (DTAS)**– A system where digital radar and beacon data is presented on digital displays and the operational program monitors the system performance on a real-time basis.

**DIGITIZED TARGET**– A computer-generated indication shown on an analog radar display resulting from a primary radar return or a radar beacon reply.

***DIRECT***– Straight line flight between two navigational aids, fixes, points, or any combination thereof. When used by pilots in describing off-airway routes, points defining direct route segments become compulsory reporting points unless the aircraft is under radar contact.

**DIRECTLY BEHIND**– An aircraft is considered to be operating directly behind when it is following the actual flight path of the lead aircraft over the surface of the earth except when applying wake turbulence separation criteria.

**DISCRETE BEACON CODE**–  
(See **DISCRETE CODE**.)

**DISCRETE CODE**– As used in the Air Traffic Control Radar Beacon System (ATCRBS), any one of the 4096 selectable Mode 3/A aircraft transponder codes except those ending in zero zero; e.g., discrete codes: 0010, 1201, 2317, 7777; nondiscrete codes: 0100, 1200, 7700. Nondiscrete codes are normally reserved for radar facilities that are not equipped with

discrete decoding capability and for other purposes such as emergencies (7700), VFR aircraft (1200), etc.  
(See **RADAR**.)  
(Refer to **AIM**.)

**DISCRETE FREQUENCY**– A separate radio frequency for use in direct pilot-controller communications in air traffic control which reduces frequency congestion by controlling the number of aircraft operating on a particular frequency at one time. Discrete frequencies are normally designated for each control sector in en route/terminal ATC facilities. Discrete frequencies are listed in the Chart Supplement U.S. and the DOD FLIP IFR En Route Supplement.  
(See **CONTROL SECTOR**.)

**DISPLACED THRESHOLD**– A threshold that is located at a point on the runway other than the designated beginning of the runway.  
(See **THRESHOLD**.)  
(Refer to **AIM**.)

**DISTANCE MEASURING EQUIPMENT (DME)**– Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid.  
(See **TACAN**.)  
(See **VORTAC**.)

**DISTRESS**– A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.

**DIVE BRAKES**–  
(See **SPEED BRAKES**.)

**DIVERSE VECTOR AREA**– In a radar environment, that area in which a prescribed departure route is not required as the only suitable route to avoid obstacles. The area in which random radar vectors below the MVA/MIA, established in accordance with the TERPS criteria for diverse departures, obstacles and terrain avoidance, may be issued to departing aircraft.

**DIVERSION (DVRSN)**– Flights that are required to land at other than their original destination for reasons beyond the control of the pilot/company, e.g. periods of significant weather.

**DME**–  
(See **DISTANCE MEASURING EQUIPMENT**.)

**DME FIX**– A geographical position determined by reference to a navigational aid which provides distance and azimuth information. It is defined by a specific distance in nautical miles and a radial, azimuth, or course (i.e., localizer) in degrees magnetic from that aid.

(See **DISTANCE MEASURING EQUIPMENT**.)

(See **FIX**.)

**DME SEPARATION**– Spacing of aircraft in terms of distances (nautical miles) determined by reference to distance measuring equipment (DME).

(See **DISTANCE MEASURING EQUIPMENT**.)

**DOD FLIP**– Department of Defense Flight Information Publications used for flight planning, en route, and terminal operations. FLIP is produced by the National Geospatial–Intelligence Agency (NGA) for world-wide use. United States Government Flight Information Publications (en route charts and instrument approach procedure charts) are incorporated in DOD FLIP for use in the National Airspace System (NAS).

**DOMESTIC AIRSPACE**– Airspace which overlies the continental land mass of the United States plus Hawaii and U.S. possessions. Domestic airspace extends to 12 miles offshore.

**DOMESTIC NOTICE**– A special notice or notice containing graphics or plain language text pertaining to almost every aspect of aviation, such as military training areas, large scale sporting events, air show information, Special Traffic Management Programs (STMPs), and airport–specific information. These notices are applicable to operations within the United States and can be found on the Domestic Notices website.

**DOWNBURST**– A strong downdraft which induces an outburst of damaging winds on or near the ground. Damaging winds, either straight or curved, are highly divergent. The sizes of downbursts vary from 1/2 mile or less to more than 10 miles. An intense downburst often causes widespread damage. Damaging winds, lasting 5 to 30 minutes, could reach speeds as high as 120 knots.

**DOWNWIND LEG**–

(See **TRAFFIC PATTERN**.)

**DP**–

(See **INSTRUMENT DEPARTURE PROCEDURE**.)

**DRA**–

(See **DEBRIS RESPONSE AREA**.)

**DRAG CHUTE**– A parachute device installed on certain aircraft which is deployed on landing roll to assist in deceleration of the aircraft.

**DROP ZONE**– Any pre-determined area upon which parachutists or objects land after making an intentional parachute jump or drop.

(Refer to 14 CFR §105.3, Definitions)

**DSP**–

(See **DEPARTURE SEQUENCING PROGRAM**.)

**DTAS**–

(See **DIGITAL TERMINAL AUTOMATION SYSTEM**.)

**DUE REGARD**– A phase of flight wherein an aircraft commander of a State-operated aircraft assumes responsibility to separate his/her aircraft from all other aircraft.

(See also FAA Order JO 7110.65, Para 1–2–1, **WORD MEANINGS**.)

**DUTY RUNWAY**–

(See **RUNWAY IN USE/ACTIVE RUNWAY/DUTY RUNWAY**.)

**DVA**–

(See **DIVERSE VECTOR AREA**.)

**DVFR**–

(See **DEFENSE VISUAL FLIGHT RULES**.)

**DVFR FLIGHT PLAN**– A flight plan filed for a VFR aircraft which intends to operate in airspace within which the ready identification, location, and control of aircraft are required in the interest of national security.

**DVRSN**–

(See **DIVERSION**.)

**DYNAMIC**– Continuous review, evaluation, and change to meet demands.

**DYNAMIC RESTRICTIONS**– Those restrictions imposed by the local facility on an “as needed” basis to manage unpredictable fluctuations in traffic demands.



# E

## EAS–

(See EN ROUTE AUTOMATION SYSTEM.)

## EDCT–

(See EXPECT DEPARTURE CLEARANCE TIME.)

## EDST–

(See EN ROUTE DECISION SUPPORT TOOL)

## EFC–

(See EXPECT FURTHER CLEARANCE (TIME).)

## ELT–

(See EMERGENCY LOCATOR TRANSMITTER.)

**EMBEDDED ROUTE TEXT–** An EDST notification that an ADR/ADAR/AAR has been applied to the flight plan. Within the route field, sub-fields consisting of an adapted route or an embedded change in the route are color-coded in cyan with cyan brackets around the sub-field.

(See EN ROUTE DECISION SUPPORT TOOL.)

**EMERGENCY–** A distress or an urgency condition.

**EMERGENCY AUTOLAND SYSTEM–** This system, if activated, will determine an optimal airport, plot a course, broadcast the aircraft's intentions, fly to the airport, land, and (depending on the model) shut down the engines. Though the system will broadcast the aircraft's intentions, the controller should assume that transmissions to the aircraft will not be acknowledged.

**EMERGENCY DESCENT MODE–** This automated system senses conditions conducive to hypoxia (cabin depressurization). If an aircraft is equipped and the system is activated, it is designed to turn the aircraft up to 90 degrees, then descend to a lower altitude and level off, giving the pilot(s) time to recover.

**EMERGENCY LOCATOR TRANSMITTER (ELT)–** A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243.0 MHz. It aids in locating downed aircraft by radiating a downward sweeping audio tone, 2-4 times per second. It is designed to function without human action after an accident.

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

## E-MSAW–

(See EN ROUTE MINIMUM SAFE ALTITUDE WARNING.)

**ENHANCED FLIGHT VISION SYSTEM (EFVS)–** An EFVS is an installed aircraft system which uses an electronic means to provide a display of the forward external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors, including but not limited to forward-looking infrared, millimeter wave radiometry, millimeter wave radar, or low-light level image intensification. An EFVS includes the display element, sensors, computers and power supplies, indications, and controls. An operator's authorization to conduct an EFVS operation may have provisions which allow pilots to conduct IAPs when the reported weather is below minimums prescribed on the IAP to be flown.

**EN ROUTE AIR TRAFFIC CONTROL SERVICES–** Air traffic control service provided aircraft on IFR flight plans, generally by centers, when these aircraft are operating between departure and destination terminal areas. When equipment, capabilities, and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

(Refer to AIM.)

**EN ROUTE AUTOMATION SYSTEM (EAS)–** The complex integrated environment consisting of situation display systems, surveillance systems and flight data processing, remote devices, decision support tools, and the related communications equipment that form the heart of the automated IFR air traffic control system. It interfaces with automated terminal systems and is used in the control of en route IFR aircraft.

(Refer to AIM.)

## EN ROUTE CHARTS–

(See AERONAUTICAL CHART.)

**EN ROUTE DECISION SUPPORT TOOL (EDST)–** An automated tool provided at each Radar Associate position in selected En Route facilities. This tool utilizes flight and radar data to determine present and

future trajectories for all active and proposal aircraft and provides enhanced automated flight data management.

**EN ROUTE DESCENT**– Descent from the en route cruising altitude which takes place along the route of flight.

**EN ROUTE HIGH ALTITUDE CHARTS**–  
(See AERONAUTICAL CHART.)

**EN ROUTE LOW ALTITUDE CHARTS**–  
(See AERONAUTICAL CHART.)

**EN ROUTE MINIMUM SAFE ALTITUDE WARNING (E-MSAW)**– A function of the EAS that aids the controller by providing an alert when a tracked aircraft is below or predicted by the computer to go below a predetermined minimum IFR altitude (MIA).

**EN ROUTE TRANSITION**–  
(See SEGMENTS OF A SID/STAR.)

**EN ROUTE TRANSITION WAYPOINT**  
(See SEGMENTS OF A SID/STAR.)

**EST**–  
(See ESTIMATED.)

**ESTABLISHED**– To be stable or fixed at an altitude or on a course, route, route segment, heading, instrument approach or departure procedure, etc.

**ESTABLISHED ON RNP (EoR) CONCEPT**– A system of authorized instrument approaches, ATC procedures, surveillance, and communication requirements that allow aircraft operations to be safely conducted with approved reduced separation criteria once aircraft are established on a PBN segment of a published instrument flight procedure.

**ESTIMATED (EST)**–When used in NOTAMs “EST” is a contraction that is used by the issuing authority only when the condition is expected to return to service prior to the expiration time. Using “EST” lets the user know that this NOTAM has the possibility of returning to service earlier than the expiration time. Any NOTAM which includes an “EST” will be auto-expired at the designated expiration time.

**ESTIMATED ELAPSED TIME [ICAO]**– The estimated time required to proceed from one significant point to another.

(See ICAO Term TOTAL ESTIMATED ELAPSED TIME.)

**ESTIMATED OFF-BLOCK TIME [ICAO]**– The estimated time at which the aircraft will commence movement associated with departure.

**ESTIMATED POSITION ERROR (EPE)**–  
(See Required Navigation Performance)

**ESTIMATED TIME OF ARRIVAL**– The time the flight is estimated to arrive at the gate (scheduled operators) or the actual runway on times for nonscheduled operators.

**ESTIMATED TIME EN ROUTE**– The estimated flying time from departure point to destination (lift-off to touchdown).

**ETA**–  
(See ESTIMATED TIME OF ARRIVAL.)

**ETE**–  
(See ESTIMATED TIME EN ROUTE.)

**EXECUTE MISSED APPROACH**– Instructions issued to a pilot making an instrument approach which means continue inbound to the missed approach point and execute the missed approach procedure as described on the Instrument Approach Procedure Chart or as previously assigned by ATC. The pilot may climb immediately to the altitude specified in the missed approach procedure upon making a missed approach. No turns should be initiated prior to reaching the missed approach point. When conducting an ASR or PAR approach, execute the assigned missed approach procedure immediately upon receiving instructions to “execute missed approach.”

(Refer to AIM.)

**EXPECT (ALTITUDE) AT (TIME) or (FIX)**– Used under certain conditions to provide a pilot with an altitude to be used in the event of two-way communications failure. It also provides altitude information to assist the pilot in planning.

(Refer to AIM.)

**EXPECT DEPARTURE CLEARANCE TIME (EDCT)**– The runway release time assigned to an aircraft in a traffic management program and shown on the flight progress strip as an EDCT.

(See GROUND DELAY PROGRAM.)

**EXPECT FURTHER CLEARANCE (TIME)**– The time a pilot can expect to receive clearance beyond a clearance limit.

**EXPECT FURTHER CLEARANCE VIA (AIRWAYS, ROUTES OR FIXES)**– Used to inform a

pilot of the routing he/she can expect if any part of the route beyond a short range clearance limit differs from that filed.

***EXPEDITE***– Used 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.



# H

## HAA–

(See HEIGHT ABOVE AIRPORT.)

## HAL–

(See HEIGHT ABOVE LANDING.)

**HANDOFF**– An action taken to transfer the radar identification of an aircraft from one controller to another if the aircraft will enter the receiving controller’s airspace and radio communications with the aircraft will be transferred.

## HAT–

(See HEIGHT ABOVE TOUCHDOWN.)

**HAVE NUMBERS**– Used by pilots to inform ATC that they have received runway, wind, and altimeter information only.

**HAZARDOUS WEATHER INFORMATION**– Summary of significant meteorological information (SIGMET/WS), convective significant meteorological information (convective SIGMET/WST), urgent pilot weather reports (urgent PIREP/UUA), center weather advisories (CWA), airmen’s meteorological information (AIRMET/WA) and any other weather such as isolated thunderstorms that are rapidly developing and increasing in intensity, or low ceilings and visibilities that are becoming widespread which is considered significant and are not included in a current hazardous weather advisory.

## **HEAVY (AIRCRAFT)**–

(See AIRCRAFT CLASSES.)

**HEIGHT ABOVE AIRPORT (HAA)**– The height of the Minimum Descent Altitude above the published airport elevation. This is published in conjunction with circling minimums.

(See MINIMUM DESCENT ALTITUDE.)

**HEIGHT ABOVE LANDING (HAL)**– The height above a designated helicopter landing area used for helicopter instrument approach procedures.

(Refer to 14 CFR Part 97.)

**HEIGHT ABOVE TOUCHDOWN (HAT)**– The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone (first 3,000 feet of the runway). HAT

is published on instrument approach charts in conjunction with all straight-in minimums.

(See DECISION HEIGHT.)

(See MINIMUM DESCENT ALTITUDE.)

**HELICOPTER**– A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

**HELIPAD**– A small, designated area, usually with a prepared surface, on a heliport, airport, landing/take-off area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

**HELIPORT**– An area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters and includes its buildings and facilities if any.

**HELIPORT REFERENCE POINT (HRP)**– The geographic center of a heliport.

**HERTZ**– The standard radio equivalent of frequency in cycles per second of an electromagnetic wave. Kiloherz (kHz) is a frequency of one thousand cycles per second. Megahertz (MHz) is a frequency of one million cycles per second.

## HF–

(See HIGH FREQUENCY.)

## HF COMMUNICATIONS–

(See HIGH FREQUENCY COMMUNICATIONS.)

**HIGH FREQUENCY**– The frequency band between 3 and 30 MHz.

(See HIGH FREQUENCY COMMUNICATIONS.)

**HIGH FREQUENCY COMMUNICATIONS**– High radio frequencies (HF) between 3 and 30 MHz used for air-to-ground voice communication in overseas operations.

## HIGH SPEED EXIT–

(See HIGH SPEED TAXIWAY.)

**HIGH SPEED TAXIWAY**– A long radius taxiway designed and provided with lighting or marking to define the path of aircraft, traveling at high speed (up to 60 knots), from the runway center to a point on the center of a taxiway. Also referred to as long radius exit or turn-off taxiway. The high speed taxiway is

designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

**HIGH SPEED TURNOFF–**

(See HIGH SPEED TAXIWAY.)

**HIGH UPDATE RATE SURVEILLANCE–** A surveillance system that provides a sensor update rate of less than 4.8 seconds.

**HOLD FOR RELEASE–** Used by ATC to delay an aircraft for traffic management reasons; i.e., weather, traffic volume, etc. Hold for release instructions (including departure delay information) are used to inform a pilot or a controller (either directly or through an authorized relay) that an IFR departure clearance is not valid until a release time or additional instructions have been received.

(See ICAO term HOLDING POINT.)

**HOLD-IN-LIEU OF PROCEDURE TURN–** A hold-in-lieu of procedure turn shall be established over a final or intermediate fix when an approach can be made from a properly aligned holding pattern. The hold-in-lieu of procedure turn permits the pilot to align with the final or intermediate segment of the approach and/or descend in the holding pattern to an altitude that will permit a normal descent to the final approach fix altitude. The hold-in-lieu of procedure turn is a required maneuver (the same as a procedure turn) unless the aircraft is being radar vectored to the final approach course, when “NoPT” is shown on the approach chart, or when the pilot requests or the controller advises the pilot to make a “straight-in” approach.

**HOLD PROCEDURE–** A predetermined maneuver which keeps aircraft within a specified airspace while awaiting further clearance from air traffic control. 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.

(See HOLDING FIX.)

(Refer to AIM.)

**HOLDING FIX–** A specified fix identifiable to a pilot by NAVAIDs or visual reference to the ground used as a reference point in establishing and maintaining the position of an aircraft while holding.

(See FIX.)

(See VISUAL HOLDING.)

(Refer to AIM.)

**HOLDING POINT [ICAO]–** A specified location, identified by visual or other means, in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control clearances.

**HOLDING PROCEDURE–**

(See HOLD PROCEDURE.)

**HOLD-SHORT POINT–** A point on the runway beyond which a landing aircraft with a LAHSO clearance is not authorized to proceed. This point may be located prior to an intersecting runway, taxiway, predetermined point, or approach/departure flight path.

**HOLD-SHORT POSITION LIGHTS–** Flashing in-pavement white lights located at specified hold-short points.

**HOLD-SHORT POSITION MARKING–** The painted runway marking located at the hold-short point on all LAHSO runways.

**HOLD-SHORT POSITION SIGNS–** Red and white holding position signs located alongside the hold-short point.

**HOMING–** Flight toward a NAVAID, without correcting for wind, by adjusting the aircraft heading to maintain a relative bearing of zero degrees.

(See BEARING.)

(See ICAO term HOMING.)

**HOMING [ICAO]–** The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.

**HOT SPOT–** A location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

**HOVER CHECK–** Used to describe when a helicopter/VTOL aircraft requires a stabilized hover to conduct a performance/power check prior to hover taxi, air taxi, or takeoff. Altitude of the hover will vary based on the purpose of the check.

**HOVER TAXI–** Used to describe a helicopter/VTOL aircraft movement conducted above the surface and in ground effect at airspeeds less than approximately 20 knots. The actual height may vary, and some helicopters may require hover taxi above 25 feet AGL

to reduce ground effect turbulence or provide clearance for cargo slingloads.

(See AIR TAXI.)

(See HOVER CHECK.)

(Refer to AIM.)

***HOW DO YOU HEAR ME?***– A question relating to the quality of the transmission or to determine how well the transmission is being received.

HZ–

(See HERTZ.)





**MILITARY OPERATIONS AREA–**

(See SPECIAL USE AIRSPACE.)

**MILITARY TRAINING ROUTES–** Airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots IAS.

(See IFR MILITARY TRAINING ROUTES.)

(See VFR MILITARY TRAINING ROUTES.)

**MINIMA–**

(See MINIMUMS.)

**MINIMUM CROSSING ALTITUDE (MCA)–** The lowest altitude at certain fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en route IFR altitude (MEA).

(See MINIMUM EN ROUTE IFR ALTITUDE.)

**MINIMUM DESCENT ALTITUDE (MDA)–** The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glideslope is provided.

(See NONPRECISION APPROACH PROCEDURE.)

**MINIMUM EN ROUTE IFR ALTITUDE (MEA)–** The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

(Refer to 14 CFR Part 91.)

(Refer to 14 CFR Part 95.)

(Refer to AIM.)

**MINIMUM FRICTION LEVEL–** The friction level specified in AC 150/5320-12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces, that represents the minimum recommended wet pavement surface friction value for any turbojet aircraft engaged in LAHSO. This value will vary with the particular friction measurement equipment used.

**MINIMUM FUEL–** Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not

an emergency situation but merely indicates an emergency situation is possible should any undue delay occur.

(Refer to AIM.)

**MINIMUM HOLDING ALTITUDE–** The lowest altitude prescribed for a holding pattern which assures navigational signal coverage, communications, and meets obstacle clearance requirements.

**MINIMUM IFR ALTITUDES (MIA)–** Minimum altitudes for IFR operations as prescribed in 14 CFR Part 91. These altitudes are published on aeronautical charts and prescribed in 14 CFR Part 95 for airways and routes, and in 14 CFR Part 97 for standard instrument approach procedures. If no applicable minimum altitude is prescribed in 14 CFR Part 95 or 14 CFR Part 97, the following minimum IFR altitude applies:

**a.** In designated mountainous areas, 2,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or

**b.** Other than mountainous areas, 1,000 feet above the highest obstacle within a horizontal distance of 4 nautical miles from the course to be flown; or

**c.** As otherwise authorized by the Administrator or assigned by ATC.

(See MINIMUM CROSSING ALTITUDE.)

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM SAFE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

(Refer to 14 CFR Part 91.)

**MINIMUM OBSTRUCTION CLEARANCE ALTITUDE (MOCA)–** The lowest published altitude in effect between radio fixes on VOR airways, off-airway routes, or route segments which meets obstacle clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only within 25 statute (22 nautical) miles of a VOR.

(Refer to 14 CFR Part 91.)

(Refer to 14 CFR Part 95.)

**MINIMUM RECEPTION ALTITUDE (MRA)–** The lowest altitude at which an intersection can be determined.

(Refer to 14 CFR Part 95.)

**MINIMUM SAFE ALTITUDE (MSA)–**

**a.** The Minimum Safe Altitude (MSA) specified in 14 CFR Part 91 for various aircraft operations.

**b.** Altitudes depicted on approach charts or departure procedure (DP) graphic charts which provide at least 1,000 feet of obstacle clearance for emergency use. These altitudes will be identified as Minimum Safe Altitudes or Emergency Safe Altitudes and are established as follows:

**1. Minimum Safe Altitude (MSA).** Altitudes depicted on approach charts or on a DP graphic chart which provide at least 1,000 feet of obstacle clearance within a 25-mile radius of the navigation facility, waypoint, or airport reference point upon which the MSA is predicated. MSAs are for emergency use only and do not necessarily assure acceptable navigational signal coverage.

(See ICAO term Minimum Sector Altitude.)

**2. Emergency Safe Altitude (ESA).** Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance in nonmountainous areas and 2,000 feet of obstacle clearance in designated mountainous areas within a 100-mile radius of the navigation facility or waypoint used as the ESA center. These altitudes are normally used only in military procedures and are identified on published procedures as “Emergency Safe Altitudes.”

**MINIMUM SAFE ALTITUDE WARNING (MSAW)**– A function of the EAS and STARS computer that aids the controller by alerting him/her when a tracked Mode C equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude.

(Refer to AIM.)

**MINIMUM SECTOR ALTITUDE [ICAO]**– The lowest altitude which may be used under emergency conditions which will provide a minimum clearance of 300 m (1,000 feet) above all obstacles located in an area contained within a sector of a circle of 46 km (25 NM) radius centered on a radio aid to navigation.

**MINIMUMS**– Weather condition requirements established for a particular operation or type of

operation; e.g., IFR takeoff or landing, alternate airport for IFR flight plans, VFR flight, etc.

(See IFR CONDITIONS.)

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See LANDING MINIMUMS.)

(See VFR CONDITIONS.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

**MINIMUM VECTORING ALTITUDE (MVA)**– The lowest MSL altitude at which an IFR aircraft will be vectored by a radar controller, except as otherwise authorized for radar approaches, departures, and missed approaches. The altitude meets IFR obstacle clearance criteria. It may be lower than the published MEA along an airway or J-route segment. It may be utilized for radar vectoring only upon the controller’s determination that an adequate radar return is being received from the aircraft being controlled. Charts depicting minimum vectoring altitudes are normally available only to the controllers and not to pilots.

(Refer to AIM.)

**MINUTES-IN-TRAIL**– A specified interval between aircraft expressed in time. This method would more likely be utilized regardless of altitude.

**MIS**–

(See METEOROLOGICAL IMPACT STATEMENT.)

**MISSED APPROACH**–

**a.** A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP.

**b.** A term used by the pilot to inform ATC that he/she is executing the missed approach.

**c.** At locations where ATC radar service is provided, the pilot should conform to radar vectors when provided by ATC in lieu of the published missed approach procedure.

(See MISSED APPROACH POINT.)

(Refer to AIM.)

**MISSED APPROACH POINT (MAP)**– A point prescribed in each instrument approach procedure at

which a missed approach procedure shall be executed if the required visual reference does not exist.

(See MISSED APPROACH.)

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

**MISSED APPROACH PROCEDURE [ICAO]**– The procedure to be followed if the approach cannot be continued.

**MISSED APPROACH SEGMENT**–

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

**MM**–

(See MIDDLE MARKER.)

**MOA**–

(See MILITARY OPERATIONS AREA.)

**MOCA**–

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

**MODE**– The letter or number assigned to a specific pulse spacing of radio signals transmitted or received by ground interrogator or airborne transponder components of the Air Traffic Control Radar Beacon System (ATCRBS). Mode A (military Mode 3) and Mode C (altitude reporting) are used in air traffic control.

(See INTERROGATOR.)

(See RADAR.)

(See TRANSPONDER.)

(See ICAO term MODE.)

(Refer to AIM.)

**MODE (SSR MODE) [ICAO]**– The letter or number assigned to a specific pulse spacing of the interrogation signals transmitted by an interrogator. There are 4 modes, A, B, C and D specified in Annex 10, corresponding to four different interrogation pulse spacings.

**MODE C INTRUDER ALERT**– A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between a tracked target (known IFR or VFR aircraft) and an untracked target (unknown IFR or VFR aircraft) that requires immediate attention/action.

(See CONFLICT ALERT.)

**MODEL AIRCRAFT**– An unmanned aircraft that is: (1) capable of sustained flight in the atmosphere; (2)

flown within visual line of sight of the person operating the aircraft; and (3) flown for hobby or recreational purposes.

**MONITOR**– (When used with communication transfer) listen on a specific frequency and stand by for instructions. Under normal circumstances do not establish communications.

**MONITOR ALERT (MA)**– A function of the TFMS that provides traffic management personnel with a tool for predicting potential capacity problems in individual operational sectors. The MA is an indication that traffic management personnel need to analyze a particular sector for actual activity and to determine the required action(s), if any, needed to control the demand.

**MONITOR ALERT PARAMETER (MAP)**– The number designated for use in monitor alert processing by the TFMS. The MAP is designated for each operational sector for increments of 15 minutes.

**MOSAIC/MULTI-SENSOR MODE**– Accepts positional data from multiple radar or ADS-B sites. Targets are displayed from a single source within a radar sort box according to the hierarchy of the sources assigned.

**MOUNTAIN WAVE**– Mountain waves occur when air is being blown over a mountain range or even the ridge of a sharp bluff area. As the air hits the upwind side of the range, it starts to climb, thus creating what is generally a smooth updraft which turns into a turbulent downdraft as the air passes the crest of the ridge. Mountain waves can cause significant fluctuations in airspeed and altitude with or without associated turbulence.

(Refer to AIM.)

**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.

(See ICAO term MOVEMENT AREA.)

**MOVEMENT AREA [ICAO]**– That part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, consisting of the maneuvering area and the apron(s).

**MOVING AIRSPACE RESERVATION**– The term used in oceanic ATC for airspace that encompasses

oceanic activities and advances with the mission progress; i.e., the reservation moves with the aircraft or flight.

(See MOVING ALTITUDE RESERVATION.)

**MOVING ALTITUDE RESERVATION**– An altitude reservation which encompasses en route activities and advances with the mission progress; i.e., the reservation moves with the aircraft or flight.

**MOVING TARGET INDICATOR**– An electronic device which will permit radar scope presentation only from targets which are in motion. A partial remedy for ground clutter.

**MRA**–

(See MINIMUM RECEPTION ALTITUDE.)

**MRE**–

(See METER REFERENCE ELEMENT.)

**MRP**

(See METER REFERENCE POINT LIST.)

**MSA**–

(See MINIMUM SAFE ALTITUDE.)

**MSAW**–

(See MINIMUM SAFE ALTITUDE WARNING.)

**MTI**–

(See MOVING TARGET INDICATOR.)

**MTR**–

(See MILITARY TRAINING ROUTES.)

**MULTICOM**– A mobile service not open to public correspondence used to provide communications essential to conduct the activities being performed by or directed from private aircraft.

**MULTIPLE RUNWAYS**– The utilization of a dedicated arrival runway(s) for departures and a dedicated departure runway(s) for arrivals when feasible to reduce delays and enhance capacity.

**MVA**–

(See MINIMUM VECTORING ALTITUDE.)

# O

**OBSTACLE**– An existing object, object of natural growth, or terrain at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.

**OBSTACLE DEPARTURE PROCEDURE (ODP)**– A preplanned instrument flight rule (IFR) departure procedure printed for pilot use in textual or graphic form to provide obstruction clearance via the least onerous route from the terminal area to the appropriate en route structure. ODPs are recommended for obstruction clearance and may be flown without ATC clearance unless an alternate departure procedure (SID or radar vector) has been specifically assigned by ATC.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See STANDARD INSTRUMENT DEPARTURES.)

(Refer to AIM.)

**OBSTACLE FREE ZONE**– The OFZ is a three-dimensional volume of airspace which protects the transition of aircraft to and from the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible NAVAID locations that are fixed by function. Additionally, vehicles, equipment, and personnel may be authorized by air traffic control to enter the area using the provisions of FAA Order JO 7110.65, paragraph 3–1–5, Vehicles/Equipment/Personnel Near/On Runways. The runway OFZ and when applicable, the inner-approach OFZ, and the inner-transitional OFZ, comprise the OFZ.

**a. Runway OFZ.** The runway OFZ is a defined volume of airspace centered above the runway. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet beyond each end of the runway. The width is as follows:

**1.** For runways serving large airplanes, the greater of:

**(a)** 400 feet, or

**(b)** 180 feet, plus the wingspan of the most demanding airplane, plus 20 feet per 1,000 feet of airport elevation.

**2.** For runways serving only small airplanes:

**(a)** 300 feet for precision instrument runways.

**(b)** 250 feet for other runways serving small airplanes with approach speeds of 50 knots, or more.

**(c)** 120 feet for other runways serving small airplanes with approach speeds of less than 50 knots.

**b. Inner-approach OFZ.** The inner-approach OFZ is a defined volume of airspace centered on the approach area. The inner-approach OFZ applies only to runways with an approach lighting system. The inner-approach OFZ begins 200 feet from the runway threshold at the same elevation as the runway threshold and extends 200 feet beyond the last light unit in the approach lighting system. The width of the inner-approach OFZ is the same as the runway OFZ and rises at a slope of 50 (horizontal) to 1 (vertical) from the beginning.

**c. Inner-transitional OFZ.** The inner transitional surface OFZ is a defined volume of airspace along the sides of the runway and inner-approach OFZ and applies only to precision instrument runways. The inner-transitional surface OFZ slopes 3 (horizontal) to 1 (vertical) out from the edges of the runway OFZ and inner-approach OFZ to a height of 150 feet above the established airport elevation.

(Refer to AC 150/5300-13, Chapter 3.)

(Refer to FAA Order JO 7110.65, Para 3–1–5, Vehicles/Equipment/Personnel Near/On Runways.)

**OBSTRUCTION**– Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, Subpart C.

**OBSTRUCTION LIGHT**– A light or one of a group of lights, usually red or white, frequently mounted on a surface structure or natural terrain to warn pilots of the presence of an obstruction.

**OCEANIC AIRSPACE**– Airspace over the oceans of the world, considered international airspace, where oceanic separation and procedures per the International Civil Aviation Organization are applied. Responsibility for the provisions of air traffic control

service in this airspace is delegated to various countries, based generally upon geographic proximity and the availability of the required resources.

**OCEANIC ERROR REPORT**– A report filed when ATC observes an Oceanic Error as defined by FAA Order JO 7210.632, Air Traffic Organization Occurrence Reporting.

**OCEANIC PUBLISHED ROUTE**– A route established in international airspace and charted or described in flight information publications, such as Route Charts, DOD En route Charts, Chart Supplements, NOTAMs, and Track Messages.

**OCEANIC TRANSITION ROUTE**– An ATS route established for the purpose of transitioning aircraft to/from an organized track system.

**ODP**–  
(See **OBSTACLE DEPARTURE PROCEDURE**.)

**OFF COURSE**– A term used to describe a situation where an aircraft has reported a position fix or is observed on radar at a point not on the ATC-approved route of flight.

**OFF-ROUTE OBSTRUCTION CLEARANCE ALTITUDE (OROCA)**– A published altitude which provides terrain and obstruction clearance with a 1,000 foot buffer in non-mountainous areas and a 2,000 foot buffer in designated mountainous areas within the United States, and a 3,000 foot buffer outside the US ADIZ. These altitudes are not assessed for NAVAID signal coverage, air traffic control surveillance, or communications coverage, and are published for general situational awareness, flight planning, and in-flight contingency use.

**OFF-ROUTE VECTOR**– A vector by ATC which takes an aircraft off a previously assigned route. Altitudes assigned by ATC during such vectors provide required obstacle clearance.

**OFFSET PARALLEL RUNWAYS**– Staggered runways having centerlines which are parallel.

**OFFSHORE/CONTROL AIRSPACE AREA**– That portion of airspace between the U.S. 12 NM limit and the oceanic CTA/FIR boundary within which air traffic control is exercised. These areas are established to provide air traffic control services. Offshore/Control Airspace Areas may be classified as either Class A airspace or Class E airspace.

**OFT**–  
(See **OUTER FIX TIME**.)

**OM**–  
(See **OUTER MARKER**.)

**ON COURSE**–

a. Used to indicate that an aircraft is established on the route centerline.

b. Used by ATC to advise a pilot making a radar approach that his/her aircraft is lined up on the final approach course.

(See **ON-COURSE INDICATION**.)

**ON-COURSE INDICATION**– An indication on an instrument, which provides the pilot a visual means of determining that the aircraft is located on the centerline of a given navigational track, or an indication on a radar scope that an aircraft is on a given track.

**ONE-MINUTE WEATHER**– The most recent one minute updated weather broadcast received by a pilot from an uncontrolled airport ASOS/AWOS.

**ONER**–  
(See **OCEANIC NAVIGATIONAL ERROR REPORT**.)

**OPEN LOOP CLEARANCE**– Provides a lateral vector solution that does not include a return to route point.

**OPERATIONAL**–  
(See **DUE REGARD**.)

**OPERATIONS SPECIFICATIONS [ICAO]**– The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

**OPPOSITE DIRECTION AIRCRAFT**– Aircraft are operating in opposite directions when:

a. They are following the same track in reciprocal directions; or

b. Their tracks are parallel and the aircraft are flying in reciprocal directions; or

c. Their tracks intersect at an angle of more than 135°.

**OPTION APPROACH**– An approach requested and conducted by a pilot which will result in either a touch-and-go, missed approach, low approach, stop-and-go, or full stop landing. Pilots should advise ATC if they decide to remain on the runway, of any

**PRECIPITATION**– Any or all forms of water particles (rain, sleet, hail, or snow) that fall from the atmosphere and reach the surface.

**PRECIPITATION RADAR WEATHER DESCRIPTIONS**– Existing radar systems cannot detect turbulence. However, there is a direct correlation between the degree of turbulence and other weather features associated with thunderstorms and the weather radar precipitation intensity. Controllers will issue (where capable) precipitation intensity as observed by radar when using weather and radar processor (WARP) or NAS ground-based digital radars with weather capabilities. When precipitation intensity information is not available, the intensity will be described as UNKNOWN. When intensity levels can be determined, they shall be described as:

- a. LIGHT (< 26 dBZ)
  - b. MODERATE (26 to 40 dBZ)
  - c. HEAVY (> 40 to 50 dBZ)
  - d. EXTREME (> 50 dBZ)
- (Refer to AC 00–45, Aviation Weather Services.)

**PRECISION APPROACH**–

(See PRECISION APPROACH PROCEDURE.)

**PRECISION APPROACH PROCEDURE**– A standard instrument approach procedure in which an electronic glideslope or other type of glidepath is provided; e.g., ILS, PAR, and GLS.

(See INSTRUMENT LANDING SYSTEM.)

(See PRECISION APPROACH RADAR.)

**PRECISION APPROACH RADAR**– Radar equipment in some ATC facilities operated by the FAA and/or the military services at joint-use civil/military locations and separate military installations to detect and display azimuth, elevation, and range of aircraft on the final approach course to a runway. This equipment may be used to monitor certain non-radar approaches, but is primarily used to conduct a precision instrument approach (PAR) wherein the controller issues guidance instructions to the pilot based on the aircraft's position in relation to the final approach course (azimuth), the glidepath (elevation), and the distance (range) from the touchdown point on the runway as displayed on the radar scope.

(See GLIDEPATH.)

(See PAR.)

(See ICAO term PRECISION APPROACH RADAR.)

(Refer to AIM.)

**PRECISION APPROACH RADAR [ICAO]**– Primary radar equipment used to determine the position of an aircraft during final approach, in terms of lateral and vertical deviations relative to a nominal approach path, and in range relative to touchdown.

**PRECISION OBSTACLE FREE ZONE (POFZ)**– An 800 foot wide by 200 foot long area centered on the runway centerline adjacent to the threshold designed to protect aircraft flying precision approaches from ground vehicles and other aircraft when ceiling is less than 250 feet or visibility is less than 3/4 statute mile (or runway visual range below 4,000 feet.)

**PRECISION RUNWAY MONITOR (PRM) SYSTEM**– Provides air traffic controllers monitoring the NTZ during simultaneous close parallel PRM approaches with precision, high update rate secondary surveillance data. The high update rate surveillance sensor component of the PRM system is only required for specific runway or approach course separation. The high resolution color monitoring display, Final Monitor Aid (FMA) of the PRM system, or other FMA with the same capability, presents NTZ surveillance track data to controllers along with detailed maps depicting approaches and no transgression zone and is required for all simultaneous close parallel PRM NTZ monitoring operations.

(Refer to AIM)

**PREDICTIVE WIND SHEAR ALERT SYSTEM (PWS)**– A self-contained system used on board some aircraft to alert the flight crew to the presence of a potential wind shear. PWS systems typically monitor 3 miles ahead and 25 degrees left and right of the aircraft's heading at or below 1200' AGL. Departing flights may receive a wind shear alert after they start the takeoff roll and may elect to abort the takeoff. Aircraft on approach receiving an alert may elect to go around or perform a wind shear escape maneuver.

**PREFERRED IFR ROUTES**– Routes established between busier airports to increase system efficiency and capacity. They normally extend through one or more ARTCC areas and are designed to achieve balanced traffic flows among high density terminals. IFR clearances are issued on the basis of these routes except when severe weather avoidance procedures or other factors dictate otherwise. Preferred IFR Routes are listed in the Chart Supplement U.S., and are also available at [https://www.fly.faa.gov/rmt/nfdc\\_preferred\\_routes\\_database.jsp](https://www.fly.faa.gov/rmt/nfdc_preferred_routes_database.jsp). If a flight is planned to or

from an area having such routes but the departure or arrival point is not listed in the Chart Supplement U.S., pilots may use that part of a Preferred IFR Route which is appropriate for the departure or arrival point that is listed. Preferred IFR Routes may be defined by DPs, SIDs, or STARs; NAVAIDs, Waypoints, etc.; high or low altitude airways; or any combinations thereof. Because they often share elements with adapted routes, pilots' use of preferred IFR routes can minimize flight plan route amendments.

(See ADAPTED ROUTES.)

(See CENTER'S AREA.)

(See INSTRUMENT APPROACH PROCEDURE.)

(See INSTRUMENT DEPARTURE PROCEDURE.)

(See STANDARD TERMINAL ARRIVAL.)

(Refer to CHART SUPPLEMENT U.S.)

PRE-FLIGHT PILOT BRIEFING–

(See PILOT BRIEFING.)

PREVAILING VISIBILITY–

(See VISIBILITY.)

PRIMARY RADAR TARGET– An analog or digital target, exclusive of a secondary radar target, presented on a radar display.

PRM–

(See AREA NAVIGATION (RNAV) GLOBAL POSITIONING SYSTEM (GPS) PRECISION RUNWAY MONITORING (PRM) APPROACH.)

(See PRM APPROACH.)

(See PRECISION RUNWAY MONITOR SYSTEM.)

PRM APPROACH– An instrument approach procedure titled ILS PRM, RNAV PRM, LDA PRM, or GLS PRM conducted to parallel runways separated by less than 4,300 feet and at least 3,000 feet where independent closely spaced approaches are permitted. Use of an enhanced display with alerting, a No Transgression Zone (NTZ), secondary monitor frequency, pilot PRM training, and publication of an Attention All Users Page are required for all PRM approaches. Depending on the runway spacing, the approach courses may be parallel or one approach course must be offset. PRM procedures are also used to conduct Simultaneous Offset Instrument Approach (SOIA) operations. In SOIA, one straight-in ILS PRM, RNAV PRM, GLS PRM, and one offset LDA PRM, RNAV PRM or GLS PRM approach are utilized. PRM procedures

are terminated and a visual segment begins at the offset approach missed approach point where the minimum distance between the approach courses is 3000 feet. Runway spacing can be as close as 750 feet.

(Refer to AIM.)

PROCEDURAL CONTROL [ICAO]– Term used to indicate that information derived from an ATS surveillance system is not required for the provision of air traffic control service.

PROCEDURAL SEPARATION [ICAO]– The separation used when providing procedural control.

PROCEDURE TURN– The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, unless otherwise restricted, the point at which the turn may be commenced and the type and rate of turn are left to the discretion of the pilot.

(See ICAO term PROCEDURE TURN.)

PROCEDURE TURN [ICAO]– A maneuver in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

Note 1: Procedure turns are designated “left” or “right” according to the direction of the initial turn.

Note 2: Procedure turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual approach procedure.

PROCEDURE TURN INBOUND– That point of a procedure turn maneuver where course reversal has been completed and an aircraft is established inbound on the intermediate approach segment or final approach course. A report of “procedure turn inbound” is normally used by ATC as a position report for separation purposes.

(See FINAL APPROACH COURSE.)

(See PROCEDURE TURN.)

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

PROFILE DESCENT– An uninterrupted descent (except where level flight is required for speed adjustment; e.g., 250 knots at 10,000 feet MSL) from cruising altitude/level to interception of a glideslope



or to a minimum altitude specified for the initial or intermediate approach segment of a nonprecision instrument approach. The profile descent normally terminates at the approach gate or where the glideslope or other appropriate minimum altitude is intercepted.

**PROGRESS REPORT-**

(See POSITION REPORT.)

**PROGRESSIVE TAXI-** Precise taxi instructions given to a pilot unfamiliar with the airport or issued in stages as the aircraft proceeds along the taxi route.

**PROHIBITED AREA-**

(See SPECIAL USE AIRSPACE.)

(See ICAO term PROHIBITED AREA.)

**PROHIBITED AREA [ICAO]-** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

**PROMINENT OBSTACLE-** An obstacle that meets one or more of the following conditions:

**a.** An obstacle which stands out beyond the adjacent surface of surrounding terrain and immediately projects a noticeable hazard to aircraft in flight.

**b.** An obstacle, not characterized as low and close in, whose height is no less than 300 feet above the departure end of takeoff runway (DER) elevation, is within 10 NM from the DER, and that penetrates that airport/heliport's diverse departure obstacle clearance surface (OCS).

**c.** An obstacle beyond 10 NM from an airport/heliport that requires an obstacle departure procedure (ODP) to ensure obstacle avoidance.

(See OBSTACLE.)

(See OBSTRUCTION.)

**PROPELLER (PROP) WASH (PROP BLAST)-** The disturbed mass of air generated by the motion of a propeller.

**PROPOSED BOUNDARY CROSSING TIME-** Each center has a PBCT parameter for each internal

airport. Proposed internal flight plans are transmitted to the adjacent center if the flight time along the proposed route from the departure airport to the center boundary is less than or equal to the value of PBCT or if airport adaptation specifies transmission regardless of PBCT.

**PROPOSED DEPARTURE TIME-** The time that the aircraft expects to become airborne.

**PROTECTED AIRSPACE-** The airspace on either side of an oceanic route/track that is equal to one-half the lateral separation minimum except where reduction of protected airspace has been authorized.

**PROTECTED SEGMENT-** The protected segment is a segment on the amended TFM route that is to be inhibited from automatic adapted route alteration by ERAM.

**PT-**

(See PROCEDURE TURN.)

**PTP-**

(See POINT-TO-POINT.)

**PTS-**

(See POLAR TRACK STRUCTURE.)

**PUBLISHED INSTRUMENT APPROACH PROCEDURE VISUAL SEGMENT-** A segment on an IAP chart annotated as "Fly Visual to Airport" or "Fly Visual." A dashed arrow will indicate the visual flight path on the profile and plan view with an associated note on the approximate heading and distance. The visual segment should be flown as a dead reckoning course while maintaining visual conditions.

**PUBLISHED ROUTE-** A route for which an IFR altitude has been established and published; e.g., Federal Airways, Jet Routes, Area Navigation Routes, Specified Direct Routes.

**PWS-**

(See PREDICTIVE WIND SHEAR ALERT SYSTEM.)



potential danger. A warning area may be located over domestic or international waters or both.

**SPECIAL VFR CONDITIONS**– Meteorological conditions that are less than those required for basic VFR flight in Class B, C, D, or E surface areas and in which some aircraft are permitted flight under visual flight rules.

(See SPECIAL VFR OPERATIONS.)

(Refer to 14 CFR Part 91.)

**SPECIAL VFR FLIGHT [ICAO]**– A VFR flight cleared by air traffic control to operate within Class B, C, D, and E surface areas in meteorological conditions below VMC.

**SPECIAL VFR OPERATIONS**– Aircraft operating in accordance with clearances within Class B, C, D, and E surface areas in weather conditions less than the basic VFR weather minima. Such operations must be requested by the pilot and approved by ATC.

(See SPECIAL VFR CONDITIONS.)

(See ICAO term SPECIAL VFR FLIGHT.)

**SPEED**–

(See AIRSPEED.)

(See GROUND SPEED.)

**SPEED ADJUSTMENT**– An ATC procedure used to request pilots to adjust aircraft speed to a specific value for the purpose of providing desired spacing. Pilots are expected to maintain a speed of plus or minus 10 knots or 0.02 Mach number of the specified speed. Examples of speed adjustments are:

a. “Increase/reduce speed to Mach point (number).”

b. “Increase/reduce speed to (speed in knots)” or “Increase/reduce speed (number of knots) knots.”

**SPEED BRAKES**– Moveable aerodynamic devices on aircraft that reduce airspeed during descent and landing.

**SPEED SEGMENTS**– Portions of the arrival route between the transition point and the vertex along the optimum flight path for which speeds and altitudes are specified. There is one set of arrival speed segments adapted from each transition point to each vertex. Each set may contain up to six segments.

**SPOOFING**– Denotes emissions of GNSS-like signals that may be acquired and tracked in combination with or instead of the intended signals

by civil receivers. The onset of spoofing effects can be instantaneous or delayed, and effects can persist after the spoofing has ended. Spoofing can result in false and potentially confusing, or hazardously misleading, position, navigation, and/or date/time information in addition to loss of GNSS use.

**SPEED ADVISORY**– Speed advisories that are generated within Time-Based Flow Management to assist controllers to meet the Scheduled Time of Arrival (STA) at the meter fix/meter arc. See also Ground-Based Interval Management–Spacing (GIM–S) Speed Advisory.

**SQUAWK (Mode, Code, Function)**– Used by ATC to instruct a pilot to activate the aircraft transponder and ADS–B Out with altitude reporting enabled, or (military) to activate only specific modes, codes, or functions. Examples: “Squawk five seven zero seven;” “Squawk three/alpha, two one zero five.”

(See TRANSPONDER.)

**STA**–

(See SCHEDULED TIME OF ARRIVAL.)

**STAGING/QUEUING**– The placement, integration, and segregation of departure aircraft in designated movement areas of an airport by departure fix, EDCT, and/or restriction.

**STAND BY**– Means 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.

**STANDARD INSTRUMENT APPROACH PROCEDURE (SIAP)**–

(See INSTRUMENT APPROACH PROCEDURE.)

**STANDARD INSTRUMENT DEPARTURE (SID)**– A preplanned instrument flight rule (IFR) air traffic control (ATC) departure procedure printed for pilot/controller use in graphic form to provide obstacle clearance and a transition from the terminal area to the appropriate en route structure. SIDs are primarily designed for system enhancement to expedite traffic flow and to reduce pilot/controller workload. ATC clearance must always be received prior to flying a SID.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See OBSTACLE DEPARTURE PROCEDURE.)

(Refer to AIM.)

**STANDARD RATE TURN**– A turn of three degrees per second.

**STANDARD TERMINAL ARRIVAL (STAR)**– A preplanned instrument flight rule (IFR) air traffic control arrival procedure published for pilot use in graphic and/or textual form. STARs provide transition from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area.

**STANDARD TERMINAL ARRIVAL CHARTS**–  
(See AERONAUTICAL CHART.)

**STANDARD TERMINAL AUTOMATION REPLACEMENT SYSTEM (STARS)**–  
(See DTAS.)

**STAR**–  
(See STANDARD TERMINAL ARRIVAL.)

**STATE AIRCRAFT**– Aircraft used in military, customs and police service, in the exclusive service of any government or of any political subdivision thereof, including the government of any state, territory, or possession of the United States or the District of Columbia, but not including any government-owned aircraft engaged in carrying persons or property for commercial purposes.

**STATIC RESTRICTIONS**– Those restrictions that are usually not subject to change, fixed, in place, and/or published.

**STATIONARY AIRSPACE RESERVATION**– The term used in oceanic ATC for airspace that encompasses activities in a fixed volume of airspace to be occupied for a specified time period. Stationary Airspace Reservations may include activities such as special tests of weapons systems or equipment; certain U.S. Navy carrier, fleet, and anti-submarine operations; rocket, missile, and drone operations; and certain aerial refueling or similar operations.  
(See STATIONARY ALTITUDE RESERVATION.)

**STATIONARY ALTITUDE RESERVATION (STATIONARY ALTRV)**– An altitude reservation which encompasses activities in a fixed volume of airspace to be occupied for a specified time period. Stationary ALTRVs may include activities such as special tests of weapons systems or equipment; certain U.S. Navy carrier, fleet, and anti-submarine operations; rocket, missile, and drone operations; and certain aerial refueling or similar operations.

**STEP TAXI**– To taxi a float plane at full power or high RPM.

**STEP TURN**– A maneuver used to put a float plane in a planing configuration prior to entering an active sea lane for takeoff. The STEP TURN maneuver should only be used upon pilot request.

**STEPDOWN FIX**– A fix permitting additional descent within a segment of an instrument approach procedure by identifying a point at which a controlling obstacle has been safely overflown.

**STEREO ROUTE**– A routinely used route of flight established by users and ARTCCs identified by a coded name; e.g., ALPHA 2. These routes minimize flight plan handling and communications.

**STNR ALT RESERVATION**– An abbreviation for Stationary Altitude Reservation commonly used in NOTAMs.

(See STATIONARY ALTITUDE RESERVATION.)

**STOL AIRCRAFT**–  
(See SHORT TAKEOFF AND LANDING AIRCRAFT.)

**STOP ALTITUDE SQUAWK**– Used by ATC to instruct a pilot to turn off the automatic altitude reporting feature of the aircraft transponder and ADS-B Out. It is issued when a verbally reported altitude varies by 300 feet or more from the automatic altitude report.

(See ALTITUDE READOUT.)

(See TRANSPONDER.)

**STOP AND GO**– A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point.

(See LOW APPROACH.)

(See OPTION APPROACH.)

**STOP BURST**–  
(See STOP STREAM.)

**STOP BUZZER**–  
(See STOP STREAM.)

**STOP SQUAWK (Mode or Code)**– Used by ATC to instruct a pilot to stop transponder and ADS-B transmissions, or to turn off only specified functions of the aircraft transponder (military).

(See STOP ALTITUDE SQUAWK.)

(See TRANSPONDER.)

**STOP STREAM**– Used by ATC to request a pilot to suspend electronic attack activity.

(See JAMMING.)

**STOPOVER FLIGHT PLAN**– A flight plan format which permits in a single submission the filing of a sequence of flight plans through interim full-stop destinations to a final destination.

**STOPWAY**– An area beyond the takeoff runway no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff.

**STRAIGHT-IN APPROACH IFR**– An instrument approach wherein final approach is begun without first having executed a procedure turn, not necessarily completed with a straight-in landing or made to straight-in landing minimums.

(See **LANDING MINIMUMS**.)

(See **STRAIGHT-IN APPROACH VFR**.)

(See **STRAIGHT-IN LANDING**.)

**STRAIGHT-IN APPROACH VFR**– Entry into the traffic pattern by interception of the extended runway centerline (final approach course) without executing any other portion of the traffic pattern.

(See **TRAFFIC PATTERN**.)

**STRAIGHT-IN LANDING**– A landing made on a runway aligned within 30° of the final approach course following completion of an instrument approach.

(See **STRAIGHT-IN APPROACH IFR**.)

**STRAIGHT-IN LANDING MINIMUMS**–

(See **LANDING MINIMUMS**.)

**STRAIGHT-IN MINIMUMS**–

(See **STRAIGHT-IN LANDING MINIMUMS**.)

**STRATEGIC PLANNING**– Planning whereby solutions are sought to resolve potential conflicts.

**sUAS**–

(See **SMALL UNMANNED AIRCRAFT SYSTEM**.)

**SUBSTITUTE ROUTE**– A route assigned to pilots when any part of an airway or route is unusable because of NAVAID status. These routes consist of:

**a.** Substitute routes which are shown on U.S. Government charts.

**b.** Routes defined by ATC as specific NAVAID radials or courses.

**c.** Routes defined by ATC as direct to or between NAVAIDs.

**SUNSET AND SUNRISE**– The mean solar times of sunset and sunrise as published in the Nautical Almanac, converted to local standard time for the locality concerned. Within Alaska, the end of evening civil twilight and the beginning of morning civil twilight, as defined for each locality.

**SUPPLEMENTAL WEATHER SERVICE LOCATION**– Airport facilities staffed with contract personnel who take weather observations and provide current local weather to pilots via telephone or radio. (All other services are provided by the parent FSS.)

**SUPPS**– Refers to ICAO Document 7030 Regional Supplementary Procedures. SUPPS contain procedures for each ICAO Region which are unique to that Region and are not covered in the worldwide provisions identified in the ICAO Air Navigation Plan. Procedures contained in Chapter 8 are based in part on those published in SUPPS.

**SURFACE AREA**– 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.

**SURFACE METERING PROGRAM**– A capability within Terminal Flight Data Manager that provides the user with the ability to tactically manage surface traffic flows through adjusting desired minimum and maximum departure queue lengths to balance surface demand with capacity. When a demand/capacity imbalance for a surface resource is predicted, a metering procedure is recommended.

**SURFACE VIEWER**– A capability within the Traffic Flow Management System that provides situational awareness for a user–selected airport. The Surface Viewer displays a top–down view of an airport depicting runways, taxiways, gate areas, ramps, and buildings. The display also includes icons representing aircraft and vehicles currently on the surface, with identifying information. In addition, the display includes current airport configuration information such as departure/arrival runways and airport departure/arrival rates.

**SURPIC**– A description of surface vessels in the area of a Search and Rescue incident including their predicted positions and their characteristics.

(Refer to FAA Order JO 7110.65, Para 10–6–4, **INFLIGHT CONTINGENCIES**.)

**SURVEILLANCE APPROACH**– An instrument approach wherein the air traffic controller issues instructions, for pilot compliance, based on aircraft position in relation to the final approach course (azimuth), and the distance (range) from the end of the runway as displayed on the controller’s radar scope. The controller will provide recommended altitudes on final approach if requested by the pilot.

(Refer to AIM.)

**SUSPICIOUS UAS**– Suspicious UAS operations may include operating without authorization, loitering in the vicinity of sensitive locations, (e.g., national security, law enforcement facilities, and critical infrastructure), or disrupting normal air traffic operations resulting in runway changes, ground stops, pilot evasive action, etc. The report of a UAS operation alone does not constitute suspicious activity. Development of a comprehensive list of

suspicious activities is not possible due to the vast number of situations that could be considered suspicious. ATC must exercise sound judgment when identifying situations that could constitute or indicate a suspicious activity.

**SWAP**–

(See SEVERE WEATHER AVOIDANCE PLAN.)

**SWSL**–

(See SUPPLEMENTAL WEATHER SERVICE LOCATION.)

**SYSTEM STRATEGIC NAVIGATION**– Military activity accomplished by navigating along a preplanned route using internal aircraft systems to maintain a desired track. This activity normally requires a lateral route width of 10 NM and altitude range of 1,000 feet to 6,000 feet AGL with some route segments that permit terrain following.

# T

TACAN–

(See TACTICAL AIR NAVIGATION.)

TACAN-ONLY AIRCRAFT– An aircraft, normally military, possessing TACAN with DME but no VOR navigational system capability. Clearances must specify TACAN or VORTAC fixes and approaches.

**TACTICAL AIR NAVIGATION (TACAN)**– An ultra-high frequency electronic rho-theta air navigation aid which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station.

(See VORTAC.)

(Refer to AIM.)

TAILWIND– Any wind more than 90 degrees to the longitudinal axis of the runway. The magnetic direction of the runway shall be used as the basis for determining the longitudinal axis.

TAKEOFF AREA–

(See LANDING AREA.)

TAKEOFF DISTANCE AVAILABLE (TODA)– The takeoff run available plus the length of any remaining runway or clearway beyond the far end of the takeoff run available.

(See ICAO term TAKEOFF DISTANCE AVAILABLE.)

TAKEOFF DISTANCE AVAILABLE [ICAO]– The length of the takeoff run available plus the length of the clearway, if provided.

TAKEOFF HOLD LIGHTS (THL)– The THL system is composed of in-pavement lighting in a double, longitudinal row of lights aligned either side of the runway centerline. The lights are focused toward the arrival end of the runway at the “line up and wait” point, and they extend for 1,500 feet in front of the holding aircraft. Illuminated red lights indicate 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 an aircraft or vehicle.

TAKEOFF ROLL – The process whereby an aircraft is aligned with the runway centerline and the aircraft is moving with the intent to take off. For helicopters,

this pertains to the act of becoming airborne after departing a takeoff area.

TAKEOFF RUN AVAILABLE (TORA) – The runway length declared available and suitable for the ground run of an airplane taking off.

(See ICAO term TAKEOFF RUN AVAILABLE.)

TAKEOFF RUN AVAILABLE [ICAO]– The length of runway declared available and suitable for the ground run of an aeroplane take-off.

TARGET– The indication shown on a display resulting from a primary radar return, a radar beacon reply, or an ADS–B report. The specific target symbol presented to ATC may vary based on the surveillance source and automation platform.

(See ASSOCIATED.)

(See DIGITAL TARGET.)

(See DIGITIZED RADAR TARGET.)

(See FUSED TARGET.)

(See PRIMARY RADAR TARGET.)

(See RADAR.)

(See SECONDARY RADAR TARGET.)

(See ICAO term TARGET.)

(See UNASSOCIATED.)

TARGET [ICAO]– In radar:

a. Generally, any discrete object which reflects or retransmits energy back to the radar equipment.

b. Specifically, an object of radar search or surveillance.

TARGET RESOLUTION– A process to ensure that correlated radar targets do not touch. Target resolution must be applied as follows:

a. Between the edges of two primary targets or the edges of the ASR-9/11 primary target symbol.

b. Between the end of the beacon control slash and the edge of a primary target.

c. Between the ends of two beacon control slashes.

Note 1: Mandatory traffic advisories and safety alerts must be issued when this procedure is used.

Note 2: This procedure must not be used when utilizing mosaic radar systems or multi-sensor mode.

TARGET SYMBOL–

(See TARGET.)

(See ICAO term TARGET.)

**TARMAC DELAY**– The holding of an aircraft on the ground either before departure or after landing with no opportunity for its passengers to deplane.

**TARMAC DELAY AIRCRAFT**– An aircraft whose pilot-in-command has requested to taxi to the ramp, gate, or alternate deplaning area to comply with the Three-hour Tarmac Rule.

**TARMAC DELAY REQUEST**– A request by the pilot-in-command to taxi to the ramp, gate, or alternate deplaning location to comply with the Three-hour Tarmac Rule.

**TAS**–

(See **TERMINAL AUTOMATION SYSTEMS**.)

**TAWS**–

(See **TERRAIN AWARENESS WARNING SYSTEM**.)

**TAXI**– The movement of an airplane under its own power on the surface of an airport (14 CFR Section 135.100 [Note]). Also, it describes the surface movement of helicopters equipped with wheels.

(See **AIR TAXI**.)

(See **HOVER TAXI**.)

(Refer to 14 CFR Section 135.100.)

(Refer to **AIM**.)

**TAXI PATTERNS**– Patterns established to illustrate the desired flow of ground traffic for the different runways or airport areas available for use.

**TBM**–

(See **TIME-BASED MANAGEMENT**.)

**TBO**–

(See **TRAJECTORY-BASED OPERATIONS**.)

**TCAS**–

(See **TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM**.)

**TCH**–

(See **THRESHOLD CROSSING HEIGHT**.)

**TDLS**–

(See **TERMINAL DATA LINK SYSTEM**.)

**TDZE**–

(See **TOUCHDOWN ZONE ELEVATION**.)

**TEMPORARY FLIGHT RESTRICTION (TFR)**– A TFR is a regulatory action issued by the FAA via the U.S. NOTAM System, under the authority of United States Code, Title 49. TFRs are issued within the

sovereign airspace of the United States and its territories to restrict certain aircraft from operating within a defined area on a temporary basis to protect persons or property in the air or on the ground. While not all inclusive, TFRs may be issued for disaster or hazard situations such as: toxic gas leaks or spills, fumes from flammable agents, aircraft accident/incident sites, aviation or ground resources engaged in wildfire suppression, or aircraft relief activities following a disaster. TFRs may also be issued in support of VIP movements, for reasons of national security; or when determined necessary for the management of air traffic in the vicinity of aerial demonstrations or major sporting events. NAS users or other interested parties should contact a FSS for TFR information. Additionally, TFR information can be found in automated briefings, NOTAM publications, and on the internet at <http://www.faa.gov>. The FAA also distributes TFR information to aviation user groups for further dissemination.

**TERMINAL AREA**– A general term used to describe airspace in which approach control service or airport traffic control service is provided.

**TERMINAL AREA FACILITY**– A facility providing air traffic control service for arriving and departing IFR, VFR, Special VFR, and on occasion en route aircraft.

(See **APPROACH CONTROL FACILITY**.)

(See **TOWER**.)

**TERMINAL AUTOMATION SYSTEMS (TAS)**– TAS is used to identify the numerous automated tracking systems including STARS and MEARTS.

**TERMINAL DATA LINK SYSTEM (TDLS)**– A system that provides Digital Automatic Terminal Information Service (D-ATIS) both on a specified radio frequency and also, for subscribers, in a text message via data link to the cockpit or to a gate printer. TDLS also provides Pre-departure Clearances (PDC), at selected airports, to subscribers, through a service provider, in text to the cockpit or to a gate printer. In addition, TDLS will emulate the Flight Data Input/Output (FDIO) information within the control tower.

**TERMINAL FLIGHT DATA MANAGER (TFDM)**– An integrated tower flight data automation system to provide improved airport surface and terminal airspace management. TFDM enhances traffic flow management data integration with Time-Based Flow Management (TBFM) and Traffic



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# BRIEFING GUIDE



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

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Initiated By: AJR-0  
Vice President, System Operations Services

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**1. PARAGRAPH NUMBER AND TITLE:**

3-4-3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY

**2. BACKGROUND:** Instructions for ATC providing unmanned aircraft (UA) activity information advisories to pilots, and instructions for reporting the UA activity, were provided last year. It is important that Flight Service specialists also provide pertinent known, observed, or reported UA activity advisory information to impacted pilots. This is also important for reporting, in a manner similar to advisories that ATC provides and reports.

**3. CHANGE:**

OLD	NEW
<p><b>3-4-3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY</b></p> <p>Title through <b>b4 PHRASEOLOGY</b></p> <p>Add</p> <p>Add</p> <p><b>b5</b> through <b>b12</b></p>	<p><b>3-4-3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY</b></p> <p>No Change</p> <p><b><u>5. Unmanned aircraft (UA) activity information. Issue UA advisory information for known, observed, or pilot-reported UA activity when, in your judgment, proximity warrants it. If known, include position, altitude, distance, course, and type of UA. For reported UA activity, continue to issue advisories to potentially impacted aircraft for at least 15 minutes following the last report.</u></b></p> <p><b><u>EXAMPLE-</u></b>  <b><u>“Unmanned aircraft activity, 2 miles east of Ketchikan airport, 300 feet and below.”</u></b></p> <p><b><u>“Unmanned aircraft activity observed, approximately 1 mile east of Kenai airport, altitude unknown.”</u></b></p> <p>Renumber <b>b6</b> through <b>b13</b></p>

