

CHANGE

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

**JO 7110.10AA
CHG 1**

Air Traffic Organization Policy

Effective Date:
January 30, 2020

SUBJ: Flight Services

- 1. Purpose of This Change.** This change transmits revised pages to Federal Aviation Administration Order JO 7110.10AA, 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 and 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 Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.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.

Michael C. Artist
Vice President, System Operation Services
Air Traffic Organization

Date:

Flight Services Explanation of Changes Change 1

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

a. 2-1-1. TYPES OF BROADCASTS

2-4-1. GENERAL

2-4-2. PRIORITY

2-4-3. CONTENT

2-4-4. BROADCAST PROCEDURES

2-4-5. SUPERVISION

9-2-9. MEANS USED TO SOLICIT

PIREPs

This change deletes Hazardous Inflight Weather Advisory Service (HIWAS) as this continuous broadcast service is no longer provided by Flight Service. Flight Service will still advise pilots of hazardous weather conditions that may impact their operations during routine radio contacts. This change cancels and incorporates Notice JO 7110.769, Hazardous Inflight Weather Advisory Service (HIWAS), which was effective January 8, 2020.

b. 7-1-7. ORIGINATING MESSAGES

7-4-2. INBOUNDS FROM CANADA

7-4-3. OUTBOUNDS TO CANADA

This change reflects the implementation of the present day Canadian AIM policy in regards to

Round-Robin flights, into the 7110.10. NAVCANADA and Transport Canada regulations no longer allow Round Robin flight plans to be filed with a stop in Canadian territory.

c. 7-4-3. OUTBOUNDS TO CANADA

Canadian Airports of Entry do not have electronic flight notification capabilities and require telephonic notifications of estimated time of arrival (ETA) changes. This change removes mention of flight notification messages and adds notification via telephone.

d. Editorial Changes

Editorial changes include an update to the publications schedule, a deletion to a reference to Part 95 Revisions in paragraph 3-2-1, and a series of corrections of typos and other small errors, including updating reference numbers.

e. 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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Chapter 1. General

Section 1. Introduction

1-1-1. PURPOSE OF THIS ORDER

This order prescribes procedures and phraseology for use by air traffic personnel providing flight services. Flight service specialists are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered.

1-1-2. AUDIENCE

This order applies to all ATO personnel and anyone using ATO directives.

1-1-3. WHERE TO FIND THIS ORDER

This order is available on the FAA Web site at http://faa.gov/air_traffic/publications & https://employees.faa.gov/tools_resources/orders_notices/.

1-1-4. WHAT THIS ORDER CANCELS

FAA Order JO 7110.10Z, Flight Services, dated October 12, 2017, and all changes to it are canceled.

1-1-5. EXPLANATION OF CHANGES

The significant changes to this order are identified in the Explanation of Changes page(s). It is advisable to retain the page(s) throughout the duration of the basic order. If further information is desired, direct questions through the appropriate facility/service area office staff to Flight Services Safety and Operations Policy Group.

1-1-6. EFFECTIVE DATES AND SUBMISSIONS FOR CHANGES

a. This order and its changes are scheduled to be published to coincide with AIRAC dates, according to the table below.

b. The “Cutoff Date for Completion” in the table below refers to the deadline for a proposed change to be fully coordinated and signed. Change initiators

must submit their proposed changes well in advance of this cutoff date to meet the publication effective date. The process to review and coordinate changes often takes several months after the change is initially submitted.

Publication Schedule		
Basic or Change	Cutoff Date for Completion	Effective Date of Publication
JO 7110.10AA	2/28/19	8/15/19
Change 1	8/15/19	1/30/20
Change 2	1/30/20	7/16/20
Change 3	7/16/20	12/31/20
JO 7110.10BB	12/31/20	6/17/21

1-1-7. DELIVERY DATES

This order will be available on the FAA’s website 30 days prior to its effective date.

All organizations are responsible for viewing, downloading, and subscribing to receive electronic mail notifications when changes occur to this order. Subscriptions can be made at: https://www.faa.gov/air_traffic/publications/.

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

The responsibility associated with processing and coordinating revisions to this order is delegated to the Director, Policy, AJV-P.

a. Personnel should submit recommended changes in procedures to facility management.

b. Recommendations from other sources should be submitted through appropriate FAA, military, or industry/user channels.

c. Proposed changes must be submitted electronically to 9-AJV-8-HQ-Correspondence@faa.gov. The submission should include a description of the recommended change and the proposed language to be used in the order.

NOTE-

For details on the submission process as well as additional AJV-P processing responsibilities, please refer to FAA Order JO 7000.5, Procedures for Submitting Changes to Air Traffic Control Publications.

d. Procedural changes will not be made to this order until the operational system software has been adapted to accomplish the revised procedures.

1-1-9. SUBSCRIPTION INFORMATION

This publication may be purchased from the U.S. Government Printing Office. Address subscription inquiries to:

Superintendent of Documents
U.S. Government Publishing Office

P.O. Box 979050
St. Louis, MO 63197-9000
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FAA air traffic publications are also available on the FAA's web site at:

http://www.faa.gov/air_traffic/publications/

1-1-10. DISTRIBUTION

This order is available online and will be distributed electronically to all offices that subscribe to receive email notification/access to it through the FAA's website:

https://www.faa.gov/air_traffic/publications/

Chapter 2. Broadcast Procedures

Section 1. General

2-1-1. TYPES OF BROADCASTS

Weather and flight information must be broadcast/recorded by one or more of the following categories:

- a. Transcribed Weather Broadcast (TWEB). (Alaska only.)
- b. Telephone Information Briefing Service (TIBS). (Alaska only.)
- c. Automatic Flight Information Service (AFIS). (Alaska only.)

2-1-2. SPEECH RATE AND PHRASEOLOGY

- a. Data must be spoken such that:
 - 1. The speech rate is not excessive,
 - 2. The enunciation is of the highest quality, and;
 - 3. Each part of the message is easily understood.
- b. Standardized procedures and phraseology to be used by FSS personnel and automated equipment are to be conducted in accordance with Chapter 12 Phraseology.

2-1-3. REDUCING RECORDED WEATHER INFORMATION SERVICES

Recorded weather information services in Alaska (TWEB and TIBS) may be reduced during the hours of 1800–0600 local time only. Adjust full broadcast service times to coincide with daylight hours. When

a broadcast period is reduced, record the time the broadcast will be resumed, and advise users to contact flight service for weather briefings and other services.

PHRASEOLOGY–

THE TIBS RECORDING IS SUSPENDED. REGULAR RECORDED WEATHER SERVICE WILL BE RESUMED AT (time) ZULU/ (time) LOCAL. FOR PILOT WEATHER BRIEFINGS AND OTHER SERVICES, CONTACT FLIGHT SERVICE (phone number or additional telephone instructions, as appropriate).

THE TWEB RECORDING IS SUSPENDED. REGULAR RECORDED WEATHER SERVICE WILL BE RESUMED AT (time) ZULU/ (time) LOCAL. FOR PILOT WEATHER BRIEFING AND OTHER SERVICES CONTACT FLIGHT SERVICE (frequency or phone number, as appropriate)

2-1-4. CURRENT DATA

An aviation surface report is considered current for 1 hour beyond the standard time of observation (H+00) unless superseded by a special or local observation or by the next hourly report. Do not broadcast obsolete data.

2-1-5. AUTOMATED BROADCAST

Most broadcasts are automated products that are available 24 hours a day. The products must adhere to the requirements of this chapter. Specialists are responsible for monitoring the product for accuracy, speech rate, and proper enunciation before it is transmitted.

Section 4. Automatic Flight Information Service (AFIS) (Alaska Only)

2-4-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)

Use the AFIS to provide advance non-control airport, meteorological, and pertinent NOTAM information to aircraft. Specialists must provide local airport advisory (LAA) information when the AFIS is not available.

NOTE-

Use of the AFIS by pilots is not mandatory, but pilots who use two-way radio communication with the FSS are urged to use the service.

a. Begin each new AFIS message with the airport/facility name and a phonetic alphabet letter. The phonetic alphabet letter must also be spoken at the end of the message and be used sequentially, beginning with “Alpha,” ending with “Zulu.” Full-time facilities must repeat the letter without regard to the beginning of a new day. Part-time facilities must identify the first resumed broadcast message with “Alpha.”

b. The AFIS recording must be reviewed for completeness, accuracy, speech rate, and proper enunciation before being transmitted.

c. Maintain an AFIS message that reflects the most current local airport information.

1. Make a new AFIS recording when any of the following occur:

(a) Upon receipt of any new official weather, regardless of any change in values.

(b) When runway braking action reports are received that indicate runway braking is worse than that which was included in the current AFIS broadcast.

(c) When there is a change in any other pertinent data for the airport or surrounding area, such as change in favored runway, new or canceled NOTAMs, WAs, WSs, CWAs, PIREPs, or other information that facilitates the repetitive transmission of essential but routine information.

2. Omit rapidly changing data. When this occurs, the AFIS must contain a statement advising pilots whom to contact for the omitted data.

EXAMPLE-

“For latest ceiling/visibility/altimeter/wind/(other conditions) contact (facility and frequency).”

3. Broadcast, on the LAA frequency, the new airport AFIS phonetic alphabet identifier after each new recording.

4. After establishing two-way radio communication, if the pilot does not state that he/she has the current AFIS code, the specialist must either:

(a) Use LAA procedures to issue pertinent AFIS information, or

(b) Advise the pilot to return to the AFIS frequency.

5. AFIS broadcasts may be suspended within specified time periods. During these periods, the AFIS must contain a brief statement that the AFIS is suspended for the specified time and pilots should contact the FSS for LAA.

PHRASEOLOGY-

(Airport name) FLIGHT INFORMATION BROADCASTS ARE SUSPENDED UNTIL (time). CONTACT (facility name) RADIO ON (frequency) FOR AIRPORT INFORMATION.

6. Part-time and seasonal facilities must record a message with the appropriate frequency and facility contact information as well as known information regarding resumption of LAA.

PHRASEOLOGY-

(Name of FSS) HOURS OF OPERATION ARE (time) LOCAL TIME TO (time) LOCAL TIME. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency). PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).

(Name of FSS) IS CLOSED FOR THE WINTER SEASON. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency). PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).

7. Use the following format and include the following in AFIS broadcast as appropriate:

(a) (Airport/facility name) airport information.

(b) Phonetic alphabet designator.

(c) Special routing procedures in effect (when appropriate for the Ketchikan (KTN) area).

(d) Time of the AFIS preparation (UTC) followed by the word, "ZULU."

(e) Include the current weather observation and other pertinent remarks. The ceiling/sky conditions, visibility, and obstruction to vision maybe omitted if the ceiling is above 5,000 and the visibility is more than 5 miles.

EXAMPLE-

"The weather is better than five thousand and five."

(f) Favored runway and additional local information, as required.

(g) NOTAMs concerning local NAVAIDs and field conditions pertinent to flight.

EXAMPLE-

"Notice to Airmen, Iliamna NDB out of service."

"Transcribed weather broadcast out of service."

(h) Runway braking action or runway condition codes (RwyCC) when provided. Include the time of the report.

PHRASEOLOGY-

RUNWAY (number) condition code (first value, second value, third value) AT (time).

EXAMPLE-

Runway Three-Six condition code two, two, one at one zero one eight Zulu."

REFERENCE-

FAA Order JO 7110.10, Para 4-4-3, Airport Advisory/RAIS Elements and Phraseology.

(i) Low-level wind shear (LLWS) advisory, including those contained in the terminal aerodrome forecast (TAF) and in PIREPs. (Include PIREP information at least 20 minutes following the report).

EXAMPLE-

"Low level wind shear is forecast."

(j) Unauthorized Laser Illumination Events. When a laser event is reported, include reported unauthorized laser illumination events on the AFIS broadcast for one hour following the last report.

Include the time, location, altitude, color, and direction of the laser as reported by the pilot.

PHRASEOLOGY-

UNAUTHORIZED LASER ILLUMINATION EVENT, (UTC time), (location), (altitude), (color), (direction).

EXAMPLE-

"Unauthorized laser illumination event at zero one zero zero Zulu, eight-mile final runway one eight at three thousand feet, green laser from the southwest."

(k) Man-Portable Air Defense Systems (MANPADS) alert and advisory. Specify the nature and location of threat or incident, whether reported or observed and by whom, time (if known), and notification to pilots to advise ATC if they need to divert.

PHRASEOLOGY-

MANPADS ALERT. EXERCISE EXTREME CAUTION. MANPADS THREAT/ATTACK/POST-EVENT ACTIVITY OBSERVED/REPORTED BY (reporting agency) (location) AT (time, if known). (When transmitting to an individual aircraft) ADVISE ON INITIAL CONTACT IF YOU WANT TO DIVERT.

EXAMPLE-

"MANPADS alert. Exercise extreme caution. MANPADS threat reported by TSA, Anchorage area. Advise on initial contact if you want to divert."

"MANPADS alert. Exercise extreme caution. MANPADS attack observed by flight service station one-half mile northwest of airfield at one-two-five-zero Zulu. Advise on initial contact if you want to divert."

NOTE-

1. Upon receiving or observing an unauthorized MANPADS alert/advisory, contact the Alaska Flight Service Information Area Group (AFSIAG) through the Alaskan Region Regional Operations Center (ROC).

2. Continue broadcasting the MANPADS alert/advisory until advised by national headquarters the threat is no longer present. Coordination may be through the AFSIAG or the Alaskan ROC.

REFERENCE-

FAA Order JO 7210.3, Para 2-1-10, Handling MANPADS Incidents.

(l) Any other advisories applicable to the area covered by the LAA.

(m) Local frequency advisory.

PHRASEOLOGY-

CONTACT (facility name) RADIO ON (frequency) FOR TRAFFIC ADVISORIES.

(n) Instructions for the pilot to acknowledge receipt of the AFIS message on initial contact.

EXAMPLE-

“Dillingham airport information ALPHA. One six five five Zulu. Wind one three zero at eight; visibility one five; ceiling four thousand overcast; temperature four; dew point three; altimeter two niner niner zero. Favored runway one niner. Notice to Airmen, Dillingham V-O-R out of service. Contact Dillingham Radio on one two three point six for traffic advisories. Advise on initial contact you have ALPHA.”

“Kotzebue information ALPHA. One six five five Zulu. Wind, two one zero at five; visibility two, fog; ceiling one

hundred overcast; temperature minus one two, dew point minus one four; altimeter three one zero five. Altimeter in excess of three one zero zero, high pressure altimeter setting procedures are in effect. Favored runway two six. Weather in Kotzebue surface area is below V-F-R minima - an ATC clearance is required. Notice to Airmen, Hotham NDB out of service. Contact Kotzebue Radio on one two three point six for traffic advisories and advise intentions. Transcribed Weather Broadcast out of service. Advise on initial contact you have ALPHA.”

Section 2. Preflight Pilot Briefing

3-2-1. CONDUCT OF STANDARD BRIEFING

a. Brief by translating, interpreting, and summarizing available data for the intended flight. Do not read individual weather reports or forecasts unless, in your judgment, it is necessary to emphasize an important point or unless specifically requested to do so by the pilot. Obtain the following information if it is pertinent and not evident or already known:

1. Type of flight planned.
2. Aircraft identification or pilot's name.
3. Aircraft type.
4. Departure point.
5. Route of flight.
6. Destination.
7. Flight altitude(s).
8. Estimated time of departure (ETD) and estimated time en route (ETE).

b. The specialist must issue the following cautionary advisory to a pilot planning a flight outside of United States controlled airspace, unless the pilot advises they have the international cautionary advisory.

PHRASEOLOGY-
CHECK DATA AS SOON AS PRACTICAL AFTER ENTERING FOREIGN AIRSPACE, AS OUR INTERNATIONAL DATA MAY BE INACCURATE OR INCOMPLETE.

c. Using all sources of weather and aeronautical information, provide the following data when it is applicable to the proposed flight. Provide the information in subparagraphs c1 through c8 in the sequence listed except as noted.

1. *Adverse Conditions.* Include this element when meteorological or aeronautical conditions are reported or forecast that might influence the pilot to alter the proposed flight. Emphasize conditions that are particularly significant, such as low level wind shear, thunderstorms, reported icing, frontal zones along the route of flight, NOTAMs; for example, airport/runway closures, air traffic delays, TFRs etc. Weather advisories (WS, WA, WST, CWA, and

AWW) must be given by stating the type of advisory followed by the pertinent information.

EXAMPLE-

“An AIRMET is in effect until 1400Z for moderate turbulence below 10,000 feet over the mountainous area of southern California.”

“Palmer airport closed”

NOTE-

NOTAMs in this category may be provided with NOTAMs listed in subparagraph c8.

2. *VFR Flight Not Recommended (VNR).*

Include this statement when VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that in your judgment would make flight under visual flight rules doubtful. Describe the conditions, affected locations, and times.

PHRASEOLOGY-

VFR FLIGHT NOT RECOMMENDED

EXAMPLE-

“There are broken clouds along the entire route between niner and one one thousand feet. With the approach of a cold front, these clouds are forecast to become overcast and to lower to below seven thousand with mountains and passes becoming obscured. V-F-R flight not recommended between Salt Lake City and Grand Junction after two two zero zero ZULU.”

“V-F-R flight not recommended in the Seattle area until early afternoon. The current weather at Seattle is indefinite ceiling three hundred, visibility one, mist, and little improvement is expected before one eight zero zero ZULU.”

NOTE-

This recommendation is advisory in nature. The decision as to whether the flight can be conducted safely rests solely with the pilot.

3. *Synopsis.* Provide a brief statement describing the type, location, and movement of weather systems and/or air masses which might affect the proposed flight. This element may be combined with adverse conditions and/or the VNR element, in any order, when it will help to more clearly describe conditions.

4. *Current Conditions.* Summarize from all available sources reported weather conditions applicable to the flight. This element may be omitted if the proposed time of departure is beyond 2 hours, unless the information is requested by the pilot. If

AUTO appears after the date/time element and is presented as a singular report, follow the location with the word “AUTOMATED.”

5. En Route Forecast. Summarize forecast information that will affect the proposed flight; for example, area forecasts for the Gulf of Mexico, Caribbean, Alaska, and Hawaii; Static Graphical Forecast Images for the CONUS, TAFs, prognosis charts, weather advisories, etc. Provide the information in a logical order; for example, climb out, en route, and descent.

6. Destination Forecast. Provide the destination forecast including significant changes expected within 1 hour before and after the estimated time of arrival (ETA).

7. Winds Aloft. Provide forecast winds aloft for the flight using degrees of the compass. Interpolate wind directions and speeds between levels and stations as necessary. Provide temperature information on request.

8. Notices to Airmen (NOTAM). Provide NOTAM information affecting the flight:

(a) NOTAM (D). All NOTAMs (D), including SUA NOTAMs for restricted areas, aerial refueling, and night vision goggles (NVG).

NOTE–

Other SUA NOTAMs (D) such as military operations area (MOA), military training route (MTR) and warning area NOTAMs, are considered “upon request” briefing items as indicated in paragraph 3–2–1c12(a).

(b) Combine this element with adverse conditions when it would be logical and advantageous to do so.

9. Prohibited Areas P-40, P-56, and the Special Flight Rules Area (SFRA) for Washington, DC. Include this element when pertinent to the route of flight. Advise the pilot that VFR flight within 60 miles of the DCA VOR/DME requires Special Awareness Training.

NOTE–

Refer to 14 CFR Part 93 for additional information such as special awareness for flights in and around SFRA and/or areas that require special air traffic rules.

10. ATC Delays. Inform the pilot of ATC delays and/or flow control advisories that might affect the proposed flight.

11. Request for PIREPs. Include this element when in your judgment, a report of actual inflight conditions is beneficial or when conditions meet criteria for solicitation of PIREPs (paragraph 9–2–5). Advise the pilot to contact Flight Service to report en route conditions.

12. Upon Request. Provide any information requested by the pilot, including, but not limited to:

(a) Special use airspace, except those listed in paragraph 3–2–1c8(a), SUA-related airspace (air traffic control assigned airspace (ATCAA)), and MTR activity. For all SUA and MTR data requests, advise the pilot that information may be updated periodically and to contact the appropriate ATC facility for additional information while in flight.

NOTE–

For the purpose of this paragraph, SUA and related airspace includes the following types of airspace: alert area, MOA, warning area and ATCAA. MTR data includes the following types of airspace: instrument flight rule (IFR) training routes (IR), VFR training routes (VR), and slow training routes (SR).

(b) Approximate density altitude data.

(c) Information regarding such items as air traffic service and rules, customs/immigration procedures, air defense identification zone (ADIZ) rules, SAR, etc.

(d) Military NOTAMs.

REFERENCE–

FAA Order JO 7930.2, Paragraph 8-3-1, Military NOTAM Availability.

(e) Special FDC instrument approach procedure changes.

(f) FDC NOTAMs containing amendments to airways, airport, and facility IFR procedures and General Information.

NOTE–

General FDC NOTAMs include Chart amendments, Special Security Instructions, and Special Advisory Notices.

(g) Information contained in the Notices to Airmen Publication (NTAP) to include International NOTAMs and Graphic Notices.

3–2–2. CONDUCT OF ABBREVIATED BRIEFING

a. Provide an abbreviated briefing when a pilot requests information to supplement mass-disseminated data; update a previous briefing; or when the

Section 4. Airport Advisory Services (Alaska Only)

4-4-1. TYPES OF AIRPORT ADVISORY SERVICES

Airport advisory services are provided at airports without an operating control tower that have certified automated weather reporting via voice capability. The types of service depend upon the location of the FSS and communications capabilities. There are three types:

a. Local airport advisory (LAA) is a service provided by facilities that are located on the landing airport.

b. Remote airport advisory (RAA) is a remote service which may be provided by facilities that are not located on the landing airport.

NOTE-
LAA/RAA both have:

1. Ground-to-air communication on the common traffic advisory frequency (CTAF).

2. Automated weather reporting with voice broadcasting.

3. A continuous automated weather data display.

4. Other continuous direct reading instruments, or manual observations available to the specialist.

c. Remote airport information service (RAIS) is a temporary service provided by facilities which are not located on the landing airport but have:

1. Communication capability.

2. Automated weather reporting available to the pilot at the landing airport.

NOTE-
FAA policy requires pilots to access the current automated weather prior to requesting any remote ATC services at non-towered airports. It is the pilot's responsibility to comply with the Federal Aviation Regulations (FARs) if landing clearance is required.

4-4-2. GENERAL

a. If a pilot asks for airport advisory services at an airport where the requested service is not available but one of the services is available, inform the pilot

about what service is available, and provide the appropriate service.

PHRASEOLOGY-

(Airport name) AIRPORT ADVISORY IS NOT AVAILABLE. REMOTE AIRPORT INFORMATION...

b. At airports with commissioned automated weather with continuous automated voice capability, instruct the pilot to monitor the automated broadcast and advise intentions.

PHRASEOLOGY-

MONITOR (location) AUTOMATED WEATHER (frequency). ADVISE INTENTIONS.

1. When the pilot indicates receipt of automated weather, provide the appropriate non-weather elements.

2. If the pilot reports the automated weather is out of service, provide the last reported weather available and the appropriate non-weather elements.

c. Advise the pilot that the requested airport advisory/RAIS service is not available. Provide CTAF frequency and/or the automated weather frequency, when available. When not available, issue the last known surface condition and altimeter.

PHRASEOLOGY-

(Airport name) AIRPORT ADVISORY or AIRPORT INFORMATION NOT AVAILABLE. CONTACT (airport name) CTAF (frequency).

d. During initial contact, if the pilot indicates receipt of automated weather, provide only the appropriate non-weather elements. Do not provide weather information unless specifically requested by the pilot or a special report is transmitted.

EXAMPLE-

RAIS:

Pilot - "Green Bay radio, Cessna 12RG, ten northeast, landing Eau Claire, request airport information, I have the automated weather."

FSS - "Cessna 12RG, Eau Claire airport information, your traffic is a Cessna 172 entering downwind and a Convair 660 reported on final, both one minute ago. There is an airport maintenance vehicle."

e. If additional pilots initiate contact a short time after airport advisory services were provided, determine if the new pilot(s) copied the information when it was provided.

1. If the new pilot responds in the affirmative, do not repeat the information.

2. If the new pilot acknowledges the airport advisory information and then requests specific information, provide only the information requested.

NOTE-

The intent is to reduce frequency clutter while insuring that the pilots are aware of the situation as it changes.

f. Final Guard is a service provided in conjunction with airport advisory only during periods of significant and fast changing weather conditions that may affect landing and takeoff operations.

g. Where AFIS is available, confirm receipt of the current AFIS information if the pilot does not initially state the appropriate AFIS code. Issue the current AFIS information to pilots who are unable to receive the AFIS or pilots that do not have the information.

EXAMPLE-

“Verify you have information ALPHA.”

h. If the pilot requests special VFR clearance, provide the appropriate elements and follow the procedures in Chapter 4, Section 5, Special VFR Operations.

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

a. State the airport name and the type of service being provided: airport advisory or airport information.

EXAMPLE-

(Airport name), AIRPORT ADVISORY . . .

Or

(Airport name), AIRPORT INFORMATION . . .

NOTE-

At FSS facilities with AFIS equipment, if an aircraft has acknowledged receipt of the AFIS message, traffic advisories and additional information need not be preceded by the phrase “(Airport name) AIRPORT ADVISORY.”

b. Provide the following information as needed to best serve the current traffic situation. Do not approve or disapprove simulated instrument approaches.

1. Wind direction and speed.

2. Favored or designated runway is a service provided in conjunction with an airport advisory. The specialist must check the current wind data and provide the favored or designated runway information as follows:

(a) For takeoff and landing operations state the runway most nearly aligned into the wind.

(b) Inform the pilot when the current wind direction is varying enough that the selection of the favored runway may be affected, when there is more than 10 knots between peaks and lulls, or the pilot has requested the information.

(c) If there is no wind, state the runway currently in use, the runway favored by a shorter taxiway, or other local consideration.

(d) When airport management has designated a runway to be used under certain wind or other conditions (and has informed the FSS in writing) issue runway information accordingly.

(e) If the majority of the traffic has been using a runway other than the favored or designated runway, advise the pilot.

EXAMPLE-

Landing airport has runways 27 (longer) and 32 with most pilots utilizing the shorter runway “WIND VARIABLE BETWEEN TWO EIGHT ZERO AND THREE FOUR ZERO AT ONE FIVE GUSTS TWO EIGHT, FAVORED RUNWAY THREE TWO.”

(f) When a pilot advises he/she will use a runway other than the favored or the designated runway, inform all known concerned traffic.

PHRASEOLOGY-

ATTENTION ALL AIRCRAFT. (Aircraft type) DEPARTING/LANDING RUNWAY (number).

(g) If a pilot requests the distance between an intersection and the runway end, furnish measured data from the local airport intersection takeoff diagram or other appropriate sources.

(h) The favored or designated runway is never provided with RAIS.

3. Altimeter Setting.

(a) Airport Advisory: Apply special procedures when the altimeter setting is more than 31.00 inches Hg. Stations with the capability of reading altimeter settings above 31.00 inches Hg must issue altimeter settings.

Section 2. Flight Plan Proposals

6-2-1. FLIGHT PLAN RECORDING

Record flight plans on FAA Form 7233-1, Flight Plan, or electronic equivalent. Completion of all blocks or fields is not required in every case, and all items filed are not always transmitted. Use authorized abbreviations where possible. The instructions below are for completion of FAA Form 7233-1. For electronic versions of flight plan forms, refer to that system’s operating instructions.

NOTE-

Use FAA Form 7233-4, *International Flight Plan*, for international flights as well as flights in domestic U.S. airspace in which automatic assignment of RNAV routes is desired. See para 6-2-3, *Flight Plans with Area Navigation (RNAV) Routes in Domestic U.S. Airspace*.

a. Item 1. Type of flight plan. Check the appropriate box.

b. Item 2. Aircraft Identification. Enter as follows, but do not exceed seven alphanumeric characters:

1. Civil Aircraft Including Air Carrier. Aircraft letter/digit registration including the letter “T” prefix for air taxi aircraft, the letter “L” for MEDEVAC aircraft, or the three-letter aircraft company designator specified in FAA Order JO 7340.2, Contractions, followed by the trip or the flight number.

EXAMPLE-

N12345
TN5552Q
AAL192
LN751B

NOTE-

The letter “L” must not be entered in Item 2 of the flight plan for air carrier or air taxi MEDEVAC aircraft. Include the word “MEDEVAC” in the remarks section of the flight plan.

2. U.S. Military Aircraft.

(a) Use the military abbreviation followed by the last five digits of the aircraft’s number. For certain tactical mission aircraft, enter the assigned three-to-six letter code word followed by a one-to-four digit number. (See TBL 6-2-1.)

**TBL 6-2-1
Military**

Abbreviation	Military Service
A	USAF
C	Coast Guard
E	Air Evacuation
G	Air/Army National Guard
L	LOGAIR (USAF contract)
R	Army
RCH	REACH (USAF Air Mobility Command)
S	Special Air Mission
VM	Marine Corps
VV	Navy

(b) Aircraft carrying the President, Vice President, and/or their family members will use the identifiers in the following tables. (See TBL 6-2-2 and TBL 6-2-3.)

**TBL 6-2-2
President and Family**

Service	President	Family
Air Force	AF1	EXEC1F
Marine	VM1	EXEC1F
Navy	VV1	EXEC1F
Army	RR1	EXEC1F
Coast Guard	C1	EXEC1F
Guard	G1	EXEC1F
Commercial	EXEC1	EXEC1F

**TBL 6-2-3
Vice President and Family**

Service	Vice President	Family
Air Force	AF2	EXEC2F
Marine	VM2	EXEC2F
Navy	VV2	EXEC2F
Army	RR2	EXEC2F
Coast Guard	C2	EXEC2F
Guard	G2	EXEC2F
Commercial	EXEC2	EXEC2F

3. Canadian Military Aircraft. The abbreviations must be followed by a number group not to exceed four digits. (See TBL 6-2-4.)

**TBL 6-2-4
Canadian Military**

Abbreviation	Military Service
CFC	Canadian Forces
CTG	Canadian Coast Guard

c. *Item 3.* Aircraft Type. Insert the standard aircraft type designator, in accordance with FAA Order JO 7360.1, Aircraft Type Designators.

1. Prefix to Aircraft Type (one-to-two alphanumeric characters). For IFR operations, if the aircraft’s weight class is heavy, indicate this with the prefix “H.” If a formation flight is planned, enter the number and type of aircraft; for example, 2H/B52.

2. Suffix to Aircraft Type (one alpha character). Indicate for IFR operations the aircraft’s radar transponder, DME, or RNAV (includes LORAN) capability by adding the appropriate symbol preceded by a slant (/). (See TBL 6–2–5.)

**TBL 6–2–5
Suffix to Aircraft Type**

	Navigation Capability	Transponder Capability	Suffix
RVSM	No GNSS, No RNAV	Transponder with Mode C	/W
	RNAV, No GNSS	Transponder with Mode C	/Z
	GNSS	Transponder with Mode C	/L

No RVSM	No DME	No transponder	/X
		Transponder with no Mode C	/T
		Transponder with Mode C	/U
	DME	No transponder	/D
		Transponder with no Mode C	/B
		Transponder with Mode C	/A
	TACAN	No transponder	/M
		Transponder with no Mode C	/N
		Transponder with Mode C	/P
	RNAV, No GNSS	No transponder	/Y
		Transponder with no Mode C	/C
		Transponder with Mode C	/I
	GNSS	No transponder	/V
		Transponder with no Mode C	/S
		Transponder with Mode C	/G

NOTE–
The /E and /F suffixes will only be used by aircraft operating to and from airports within the U.S., unless authorized by the controlling authority.

REFERENCE–
FAA Order JO 7110.65, Para 2-3-8 and TBL 2-3-10, Aircraft Equipment Suffixes.

d. *Item 4.* True Airspeed (TAS Knots). Enter two-to- four digits for TAS in knots; M followed by three digits for Mach number; or SC for “speed classified.”

e. *Item 5.* Departure Point. Enter two-to-twelve alphanumeric and slant characters for name or identifier of the departure airport or point over which the flight plan is activated.

f. *Item 6.* Departure Time. Enter departure time in UTC.

g. *Item 7.* Cruising Altitude. Proposed altitude or flight level using two-to-seven characters; for example, 80 or 080, OTP, OTP/125, VFR, ABV/060.

h. *Item 8.* Route of Flight. Enter identifiers for airways or jet routes to clearly indicate the proposed flight path. For direct flight, use names or identifiers of navigation aids, Navigation Reference System (NRS) waypoints, and geographical points or coordinates. If more than one airway or jet route is to be flown, clearly indicate the transition points.

NOTE–
1. On some direct flights beyond the departure center’s airspace, it may be necessary to include a fix in the adjacent center’s airspace or latitude/longitude coordinates, as appropriate, to facilitate computer acceptance. Local procedures should be applied to these special situations.
2. NRS waypoints consist of five alphanumeric characters, which include the ICAO Flight Information Region (FIR) identifier, followed by the letter corresponding to the FIR subset (ARTCC area for the contiguous U.S.), the latitude increment in single digit or group form, and the longitude increment.

EXAMPLE–
“KD34U”

i. *Item 9.* Destination. Enter two-to-twelve alphanumeric and/or slant characters for name or identifier of the destination airport or point over which the flight plan is to be canceled.

j. *Item 10.* Estimated Time En route. Enter in hours and minutes the total elapsed time between departure and destination in four-digit format, for example, 0215.

k. *Item 11.* Remarks. Information necessary for ATC, search and rescue operations, and any other data pertinent to the flight or provided by the pilot.

For RM: field only - Use 1-80 characters beginning with *, #, \$, or %. (See TBL 6-2-6.)

TBL 6-2-6

*	transmit remarks to all centers.
#	transmit remarks to departure centers only.
\$	transmit remarks only to those addresses in the CP field of the flight notification message.
%	for remarks not to be transmitted.

l. Item 12. Fuel on Board. Enter in hours and minutes in four-digit format; for example, 0330.

m. Item 13. Alternate Airport/s. Enter the location identifier if specified by the pilot.

n. Item 14. Pilot’s Name, Telephone Number, Aircraft’s Home Base. Self-explanatory.

NOTE-
Pilot’s name not required if BASEOPS/Aircraft Operators name and contact data is provided.

o. Item 15. Number Aboard. Self-explanatory.

p. Item 16. Color of Aircraft. Use authorized contractions when available. (See TBL 6-2-7.)

TBL 6-2-7
Code and Color

Code	Color	Code	Color
A	Amber	B	Blue
BE	Beige	BK	Black
BR	Brown	G	Green
GD	Gold	GY	Gray
M	Maroon	O	Orange
OD	Olive Drab	P	Purple
PK	Pink	R	Red
S	Silver	T	Tan
TQ	Turquoise	V	Violet
W	White	Y	Yellow

NOTE-
1. For ICAO flight plans, see Appendix A.
2. Local procedures may be developed for use on the reverse side of FAA Form 7233-1.

6-2-2. OUTBOUNDS DEPARTING FROM OUTSIDE FLIGHT PLAN AREA

For domestic flight plans, accept flight plans regardless of departure point within the NAS. Forward VFR flight plan proposals for aircraft proposing to depart from outside the facility’s flight plan area to the tie-in facility/sector for the departure point. Insert the originator of the flight plan into the “Remarks” field. Transmit the proposed flight plan in the following format:

- a. Type of flight.
- b. Aircraft identification.
- c. Aircraft type.
- d. Departure point.
- e. Destination.
- f. Proposed departure time/ETE.
- g. Remarks.

EXAMPLE-
FF PAENYFYX
DTG PAFAYFYX
VFR N1234 BE9L ENA FAI P1330/0130 \$FP PAFAYFYX

NOTE-
For civil flight movement messages with remarks, precede the remarks with a dollar symbol (\$).

6-2-3. FLIGHT PLANS WITH AREA NAVIGATION (RNAV) ROUTES IN DOMESTIC U.S. AIRSPACE

a. Use FAA Form 7233-4, International Flight Plan, and use the following guidelines for pilots filing flight plans in domestic U.S. airspace if automatic assignment of any of the following RNAV routes are desired:

- 1. RNAV standard instrument departure (SID);
- 2. RNAV standard terminal arrival route (STAR); and/or
- 3. RNAV point-to-point (PTP).

b. ICAO Flight Plan procedures are located in Appendix A.

Section 4. Flight Plan Handling

6-4-1. FLIGHT PLAN ACTIVATION

a. If a departure report has not been received within a predetermined time, but not less than 1 hour of the proposed departure time, and specific arrangements have not been made to activate the flight plan, cancel and store in the history file.

b. The FSS history file is used for statistical and historical purposes. Movement messages, pilot briefings, and aircraft contacts are stored in the history files automatically and retained for 15 days.

c. When a pilot reports an actual departure time of more than 2 hours prior to the current clock time, request an updated ETE based on the aircraft's present position. Amend the ETE in the existing flight plan and activate the flight plan using the current time as the time of departure and inform the pilot of the new ETA.

6-4-2. DEPARTURE REPORT MESSAGE

When a pilot activates a flight plan with other than the facility holding the flight plan, transmit a numbered message to the departure tie-in facility.

EXAMPLE-
 FF KRCAYYX
 DTG KHONYFYX
 HON001 RCA
 N98765 D1645 RCA ALW

6-4-3. ACKNOWLEDGING NUMBERED MESSAGES

Acknowledge a numbered message as soon as practical after receipt. Prefix the acknowledgement with the letter "R" followed by a space and then the 3-digit message number.

EXAMPLE-
 FF KMMVYFYX
 DTG KRNOYFYX
 R 001

6-4-4. FLIGHT NOTIFICATION MESSAGE

a. When a departure report is received or the pilot requests an assumed departure, transmit a flight notification message to the destination tie-in facility as specified in FAA Order JO 7350.9, Location

Identifiers. Telephone or interphone, when available, may be used for flights of 30 minutes or less. The flight notification message must contain the following information:

1. Type of flight plan (VFR or IFR).
2. Aircraft identification.
3. Aircraft type.
4. Departure point.
5. Destination.
6. ETA (If more than 24 hours, may use DTG).
7. Remarks, preceded by a \$ sign (as appropriate).

EXAMPLE-
 FF KBOIFYX
 DTG KCDCYFYX
 VFR N2346F AC11/U PVU BOI 1348 \$ASMD DEP

NOTE-
 The operational system will automatically format the required items and transmit the flight notification message when activated.

b. When the proposed flight plan is received from another FSS, base operations (BASOPS), or direct user access terminal (DUAT) vendor and the departure facility has only partial flight plan data, add a remark indicating the Service B address of the facility holding the complete flight plan. Operational systems will automatically add this to the "Remarks" section of the flight plan.

EXAMPLE-
 FF KBOIFYX
 DTG KCDCYFYX
 VFR N12345 C182/U PVU BOI 1958 \$FPKIADXCLX

c. If the pilot elects to close the flight plan with a facility other than the designated tie-in facility, send the flight notification message with remarks to both tie-in facilities; for example, FIRIV FAI. The designated tie-in facility must assume both destination and search and rescue responsibility

EXAMPLE-
 FF PAENYFYX PAFAYFYX
 DTG KJNUYFYX
 VFR N2346F AC11 JNU FAI 1303
 \$FIRIV ENA

NOTE-

The operational system will auto address to the tie-in facility. Because the pilot elected to FIRIV with ENA (a facility other than the tie-in facility), the message must also be manually addressed to ENA.

d. The facility with which the pilot elects to close the flight plan must forward a numbered closure message to the designated tie-in facility.

e. On civil flight plans, if the pilot advises of stopover points, show these in remarks.

EXAMPLE-

FF KBOIFYX
DTG KDCYFYX
VFR N12345 C182/U PVU BOI 1958 \$LNDG
TWF

f. On military flight plans, in remarks use coded data pertinent to services, passengers, or cargo. In the absence of remarks, enter the letter "N" (meaning none) in the remarks field.

REFERENCE-

DOD Flight Information Publication, General Planning Document.

1. Flight notification messages with remarks generate an alert at designated workstations.

2. When landing at a civil airport, if there are no remarks with the flight notification message, it is placed on the Inbound List with no alerts for notification purposes.

3. When landing at a military airport, all flight notification messages generate an alert.

EXAMPLE-

FF KRCAYYX
DTG KRIUYFYX
IFR DECAL01 T18/R SMF RCA 0135
\$AP3NP3S

FF KBOIFYX
DTG KDCYFYX
VFR R54321 2/UH1/U SLC BOI 1943 \$N

g. Address military stopover flight notification messages to and obtain acknowledgements from the destination tie-in facility serving all destinations.

1. For the first leg, transmit the items in subparas 6-4-4a and 6-4-4f.

2. For each subsequent leg, transmit the destination, ETE, and remarks applicable to that leg only, prior to (/). Remarks pertaining to the entire flight are entered in the "Remarks" section of the

original flight plan and are transmitted to all addressees.

3. Separate stopover legs by inserting a slant (/) at the end of each leg except the last. Begin each leg on a new line.

EXAMPLE-

FF KANDYFYX KGNVYFYX KMIAYFYX
DTG KDCYFYX
IFR VV12345 P3 ADW CHS 1300/
NIP 01+30 A5 BALL DP10 AP5 S/
MIA 02+30 NO DE-ICING EQUIPMENT

4. For composite flights, specify type flight plan as the first item of each leg.

5. When en route delays are involved, include delay time in ETE.

h. Apply military flight plan procedures to all civil aircraft landing at military bases.

NOTE-

It is the civil pilot's responsibility to obtain permission (from military authorities) to land at a military base.

i. Apply civil flight plan procedure to civil aircraft departing military bases and en route to civil airports.

6-4-5. SUSPENDING FLIGHT NOTIFICATION MESSAGES

a. Suspend the flight notification message or proposal message until acknowledgment is received from the addressee, then store in the history file.

b. If an acknowledgment is not received within the following time period, use the telephone or interphone to assure delivery.

1. Thirty minutes after departure if ETE is between 30 minutes and 2 hours.

2. One hour before ETA if ETE is 2 hours or more.

3. Thirty minutes after departure if remaining overnight (RON)/VIP information is contained in remarks of a military flight notification.

c. When an acknowledgment for a message is required and has not been received in accordance with the procedure described above, retransmit the complete message to the addressee.

d. Messages awaiting acknowledgment are suspended on the Suspense List. It contains a list of all numbered Service B messages and those messages

transmitted from the flight plan mask not acknowledged by all the addressees.

1. The message identification is the aircraft identification for flight notifications and/or the message number for all other message types.

2. Acknowledgments received via NADIN will be automatically processed if they are in the proper format.

3. Improperly formatted acknowledgments will be directed to a list for manual processing and will generate an alert at designated workstations for editing.

4. The Suspense List will display the aircraft identification and message numbers in chronological order of transmission times and the addressees for each message with an indication of those that have not acknowledged.

5. If a transmission has not been acknowledged by all addressees within 30 minutes, an alert will be generated by the operational system.

6. Upon receipt of a Suspense alert, retransmit the message to addressees who have not acknowledged the message.

7. When an acknowledgment message is received from any other source, such as interphone/telephone or facility guarding for the addressee, the specialist must manually acknowledge the message.

6-4-6. ACKNOWLEDGING FLIGHT NOTIFICATION MESSAGES

Acknowledge a flight notification message or proposal as soon as practical after receipt. Prefix the acknowledgment with the letter "R" followed by a space and then the full aircraft identification.

EXAMPLE-
 FF KRCAYXX
 DTG KRIUYFYX
 R DECAL01

NOTE-
The operational system will automatically acknowledge flight notification messages which are received in or have been edited into the correct format.

6-4-7. ACTION BY ADDRESSEES

In addition to acknowledging receipt of flight notification, addressees must take the following actions:

a. Military IFR flights.

1. Notify BASOPS, if applicable, of the inbound flight.

2. Upon request, deliver flight plan amendments to the ARTCC.

3. File the flight notification message in the operational system history files or with the daily traffic.

4. Forward the actual departure time to the destination tie-in facility for the next destination.

b. Military VFR flights.

1. Notify BASOPS, if applicable, of the inbound flight.

2. Suspend the message, await closure/cancellation/departure and assume destination station responsibility.

3. Forward the departure time to the destination tie-in facility and assume departure station responsibility.

4. All flight notification messages are suspended on the Inbound List. An entry on the list will remain there until the flight plan is closed. Thirty minutes after the ETA, if the flight plan has not been closed, it is considered overdue and will generate an alert at designated workstations.

c. If no information is received (for example, departure time, revised ETA) indicating that the flight is still active prior to the void time, close the flight plan and note this on the flight notification message and file.

6-4-8. MAJOR FLIGHT PLAN CHANGES FROM EN ROUTE AIRCRAFT

a. Change of Destination.

1. When a civil aircraft on a VFR flight plan or a military aircraft on any flight plan changes destination, obtain, as a minimum, the following information if not already known:

(a) Type of flight plan.

(b) Aircraft identification.

- (c) Aircraft type.
- (d) Departure point.
- (e) Old destination.
- (f) Present position.
- (g) Altitude and route.
- (h) New destination.
- (i) Estimated time en route.

2. Transmit a revised flight notification message to the departure, original, and new destination tie-in facilities containing the type of flight, aircraft identification, aircraft type, departure point, new destination, new ETA, and in Remarks, aircraft position and time, the words “ORIG DESTN” followed by the identifier of the original destination.

EXAMPLE–

VFR Change of Destination:
 FF KBOIFYX KSEAYFYX
 DTG KCDCYFYX
 VFR N98789 C182/U PVU GEG 2230 \$0VR SLC 1900
 ORIG DESTN BOI

IFR Change of Destination:

FF KRCAYYX KTIKYXYX KRIUYFYX
 DTG KCDCYFYX
 IFR DECAL01 T43/R SMF TIK 0230 \$AP3NP3S OVR
 SLC 2330 ORIG DESTN RCA

b. Change from IFR to VFR. When a civil aircraft changes from an IFR to a VFR flight plan, obtain all flight plan information and send a flight notification message to the destination tie-in facility. Include the type of flight plan, aircraft identification and type, departure point, destination, ETA, and pertinent remarks.

EXAMPLE–

FF KABQYFYX
 DTG KOAKYFYX
 VFR N87690 C182/U SFO ELP 2100 \$CNLD
 IFR OVER BFL

NOTE–

Obtaining the name of the original flight plan source may provide additional information if the aircraft becomes overdue.

c. Military Change from IFR to VFR or VFR to IFR. When a military aircraft changes from IFR to VFR, or VFR to IFR, or requests that other significant information be forwarded, transmit this information to the destination station.

EXAMPLE–

FF KTIKYXYX
 DTG KDENYFYX
 DECAL01 CHGD TO VFR RON

6–4–9. CHANGE IN ETA

When an aircraft wants to change its ETE, obtain a new ETA, and forward the information to the destination tie-in facility as a numbered message. The destination tie-in facility must acknowledge and, thereafter, use the new ETA as the standard for any necessary follow-up action; for example, QALQ message.

EXAMPLE–

FF KENAYFYX
 DTG KSEAYFYX
 SEA001 ENA
 N34567 E2140

REFERENCE–

FAA Order JO 7210.3, Para 14-1-3, Flight Plan Area, Subpara c. ■

6–4–10. FLIGHT PLAN CLOSURE

Do not transmit arrival reports except under unusual circumstances or in the following cases:

a. Transmit arrival or other information involving FAA or Canadian MOT aircraft by a numbered message to any facility requested by the pilot.

EXAMPLE–

FF KDCAYFYX
 DTG KHHRYFYX
 HHR002 DCA
 N2 A0839 (Remarks, as appropriate)

b. For U.S. military aircraft, transmit arrival reports to the departure station only when:

1. Requested by BASOPS.
2. Special military flights arrive.

c. When a pilot closes a flight plan with a station that has not received a flight notification message, obtain as a minimum, the departure point, the flight planned destination point, and the station with which the flight plan was filed.

1. If the station receiving the closure is the tie-in station for the planned destination, transmit a numbered arrival message to the departure station with the remark “FPNO” and the departure point and destination identifiers. The departure station must relay the arrival information to the station holding the flight plan notification message in the active file.

- (a) Priority. Two-character precedence field.
- (b) Addressee(s). Not to exceed 69 characters or seven addressees, each addressee separated by a space.
- (c) End of Line (EOL) new line key.
- (d) End of Text (EOT) (enter function).

7-1-6. TRANSMISSION OF ATS MESSAGES

a. Air traffic service messages are interchanged in the international air traffic control system in the following modes:

1. The preferred step-by-step mode wherein each ACC/ARTCC sends forward the full current (updated) flight plan information as the flight progresses.

2. The simultaneous mode wherein information extracted from the filed flight plan (FPL) is sent simultaneously to all ATS units along the route of flight. In this mode, only amendments to the FPL, plus necessary control information, are forwarded from center to center as the flight progresses.

b. Prepare and transmit ATS messages as described below. Address these messages as follows:

1. Include an eight-character addressee indicator for each addressee. When the number of addressees required is more than the operational system parameters allow, two or more transmissions of the message must be made. The eight-letter combination addressee indicators are composed as follows:

(a) The four-letter ICAO location indicator; for example, MPTO. Use only those listed in ICAO DOC 7910 (Location Indicators). Some ICAO eight-character addressees for Mexico and Canada are listed in FAA Order JO 7350.9, Location Identifiers.

(b) A four-letter designator for the facility type/office, or if no designator has been assigned, affix YXYX for military, ZZZX for aircraft in flight, or YYYYX for all other cases; for example, MTPPYXYX. (See Note.)

REFERENCE-
ICAO DOC 8585, *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.*

NOTE-

The most frequently used and authorized designators are: YAYX Government Civil Aviation Authority (FAA Regional Office or Headquarters).

YCYX Rescue Coordination Center (RCC).

YDYX Authority Supervising the Aerodrome.

YFYX Aeronautical Fixed Station FSS/IATSC).

YMYX Meteorological Office (NWS).

YNYX International NOTAM Office (NOF).

YTYX Telecommunications Authority.

YWYX Military Flight Operational Control Center (ACP)

YXYX Military Organization (BASOPS).

YYYY Organization not allocated a two-letter designator.

ZOZX Oceanic Air Traffic Control Center.

ZPZX Air Traffic Service Reporting Office.

ZQZX Computer Facility at ACC/ARTCC.

ZRZX ACC/ARTCC. (Center in charge of a FIR/UIR when the message is relevant to a VFR flight (AMIS)).

ZTZX Aerodrome Control Tower.

ZZZX Aircraft in flight.

(c) A one-letter designator will appear following an air carrier designator to indicate the department or division of the organization addressed.

2. Filing time. A six-digit date/time group indicating the time the message is filed with the FSS for transmission.

c. Originator Indicator. Consists of an eight-letter sequence similar to an address indicator, identifying the place of origin and the organization originating the message.

d. Supplementary Address and Origin Information. When the four-letter designators YXYX, ZZZX, or YYYYX are used, identify the aircraft operator or organization at the beginning of the text preceding the start-of-ATS data symbol (- -), in the same order as in the addressee(s) and/or originator indicator(s). Where there is more than one such insertion, the last should be followed by the word "stop." Where there are one or more insertions in respect to addressee indicators plus an insertion in respect to the originator indicator, the word "from" is to appear before that relating to the originator.

e. When addressing flight plan messages or related amendments and flight plan cancellation messages to centers, use one of the four-letter designators as follows:

1. If message is relevant to IFR and:

(a) The ARTCC is computer-equipped (U.S. ARTCCs), use ZQZX.

(b) The center is not computer-equipped, use ZRZX.

(c) Relevant to oceanic operations, use ZOZX.

NOTE-

Some centers may request specific addressing different from above. ZTZX and ZPZX are used internationally, but are not used in internal U.S. application.

2. If message is VFR (AMIS), use ZRZX.

3. If SVC or administrative, use ZRZX.

7-1-7. ORIGINATING MESSAGES

a. Messages for ATS purposes may be originated with ATS units by aircraft in flight, or, through local arrangements, a pilot, the operator, or their designated representative.

b. Accept airfiled flight plans or changes in destination information from aircraft inbound from foreign locations and, if requested by the pilot, enter Customs notification service.

c. Do not accept round-robin flight plans to international locations.

NOTE-

FSS must log a double (2) count for round-robin flight plans.

d. Do not accept assumed departure flight plans when the destination is in a foreign country other than Canada.

e. Aircraft movement, control, and flight information messages for purposes other than ATS, such as operational control, must be originated by the pilot, the operator, or their designated representative.

7-1-8. ADDRESSING MESSAGES

a. Addressing the flight plan is determined by the point of departure, the destination, and the FIR boundaries to be penetrated during the course of the flight.

b. Address IFR FPL messages to the ARTCC serving the airport of departure and to all ATS units (including oceanic) providing air traffic control service or concerned with flight along part or the whole of the route to be flown except FAA ATCTs and other conterminous U.S. ARTCCs.

NOTE-

Within the North Atlantic (NAT) Region, FPLs on turbo jet aircraft transiting the control areas of Gander Oceanic, New York Oceanic, Reykjavik, Santa Maria Oceanic, Shanwick Oceanic and Sondrestrom (south of 70 degrees) within 90 nautical miles of the control area boundary, must be addressed to the adjacent ACC to provide lateral separation. For all other aircraft, a 120 nautical mile proximity limit must apply.

c. Transmit all IFR FPLs to ARTCCs not less than 1 hour prior to the proposed departure time. Do not hold FPLs until after departure time and transmit as a combined FPL and departure message (DEP). Separate FPL and DEP messages must be transmitted.

NOTE-

ICAO flight plans do not require an acknowledgment to the transmitting facility.

d. Address aircraft movement messages only to those ATS units responsible for the provision of relevant service, except when requested by the operator concerned, these messages, when transmitted via the AFTN, may also be routed, as specified by the operator or a representative to:

1. One addressee at the point of intended landing or point of departure.

2. Not more than two operational control units concerned.

e. The ARTCC serving the departure airport must transmit the DEP message on IFR aircraft to all known recipients of the FPL message. Flights between conterminous U.S. and Canada (excluding Gander Oceanic), Alaska, Hawaii and Puerto Rico do not require DEP messages. Discontinuance of DEP messages affecting the route of flight can only be accomplished by ICAO Regional Air Navigation Agreement.

7-1-9. FLIGHT PLAN FORMS AND INSTRUCTIONS

a. All IFR flights that depart U.S. domestic airspace and enter international airspace must use FAA Form 7233-4, International Flight Plan (see Appendix A), the ICAO Model Flight Plan Form in ICAO DOC 4444, or an electronic equivalent. The flight plan filer is responsible for providing the information required in items 3 through 19.

1. The procedure described in paragraph a. above also applies to IFR flight plans originating

within or transiting Pacific Flight Information Regions (FIR) and flying to or from FIRs beyond the Pacific Region including the North American (NAM) Region.

NOTE-

The NAM Region encompasses the conterminous U.S., Alaska, and Canada to the North Pole.

2. VFR flights within the conterminous U.S., Canada, Mexico, Honolulu, Alaska, and San Juan domestic control areas may use FAA Form 7233-1, Flight Plan, or an electronic equivalent.

b. When paper forms are used, record on the form the time the flight plan was filed. This time will constitute evidence of the pilot's intention to comply with Customs, Immigration, and Public Health requirements and will be made available upon request from these authorities.

7-1-10. ICAO ATS MESSAGE FORMAT

The following are examples of ICAO message types most likely to appear on AFTN/NADIN circuits. The number above the data corresponds to the field type numbers on the flight plan form (FAA Form 7233-4) and on the chart of Standard ATS Messages and Their Composition, Appendix A.

a. Departure Message (DEP). ARTCCs are the designated ATS unit responsible for originating and transmitting DEP messages on all IFR aircraft departing airports within their center boundaries. IFR flight plans must be transmitted to ARTCCs at least 1 hour before departure. This allows ARTCCs to determine recipients of DEP message when domestic portions are transmitted to ARTCCs in an automated format. Do not hold FPLs and combine with DEP into a single message.

b. Delay Message (DLA). Transmitted when departure of an aircraft, for which an FPL message has been transmitted, is postponed or delayed more than 30 minutes after the estimated time of departure contained in the FPL.

c. Alerting Message (ALR). Relating to an overdue situation on an aircraft.

d. Supplementary Flight Plan (SPL). Information must be sent to ATS units that transmit Request Supplementary Flight Plan (RQS) messages.

e. Arrival Message (ARR). Sent only on Canadian MOT, U.S. DOT, or FAA aircraft or upon request.

f. Current Flight Plan (CPL) Message. Originated by and transmitted in a step-by-step mode between successive ACCs and between the last ACC to the control at the airport of intended landing. CPLs contain only information relevant to that portion of the route of flight which extends from the point of entry into the next control area or FIR to the airport of intended landing.

g. Acceptance (ACP) Message. Transmitted when the data contained in a CPL message are found to be acceptable to the receiving ACC.

h. Flight Plan Cancellation (CNL) Message. Transmitted when a current (CPL) or filed flight plan (FPL) message was transmitted and the flight is canceled.

7-1-11. FLIGHT PLAN CHANGES AND CANCELLATIONS

a. Assume departure station duties when a flight plan change is received from an aircraft en route to a foreign location.

REFERENCE-

FAA Order JO 7110.10, Para 6-4-8, Major Flight Plan Changes from En Route Aircraft

FAA Order JO 7110.10, Para 6-4-9, Change in ETA.

b. An FSS receiving a VFR flight plan cancellation report from aircraft en route to a foreign location must transmit a cancellation message to the appropriate foreign tie-in facility.

REFERENCE-

FAA Order JO 7110.10, Para 6-4-10, Flight Plan Closure.

7-1-12. AIR MOBILE SERVICE (AMS)

a. Air Mobile Service (AMS) is an international air/ground communications network. It provides service to en route aircraft primarily in support of ATC and company operations, and collects meteorological data for dissemination. Although in the U.S. this service is provided via contract (ARINC), FAA flight service facilities may be required to relay information on a case-by-case basis.

b. The AMS network is composed of individual units geographically limited to areas where effective coordination and cooperation between ground stations are possible.

c. For any individual route segment, the AMS communication requirements will normally be met by two or more network stations serving the flights on that route segment. In general, these primary stations

serve the ACC serving the FIRs and the points of takeoff and landing. In some cases, additional suitably located stations are required to complete the communications coverage.

d. Each of these stations may be required at some stage of the flight to exchange communications with the aircraft, and when not so engaged, to intercept, as required, communications exchanged between the aircraft and any one of the other stations.

e. Stations providing regular network service to aircraft operation along route segments in an ACC's FIR are termed regular stations. Other network stations will only be required to assist communications for that FIR in the event of communications failure.

f. When communications permit, aircraft should transmit their messages to the primary station of the network from which they can most readily be delivered to their ultimate destination. In particular, aircraft reports required by ATC should be transmitted to the network station serving the ATC center in whose area the aircraft is flying. Conversely, messages to aircraft in flight should be transmitted direct to the aircraft by the network station serving the location of the originator.

g. Messages passed from aircraft to a network station should be intercepted and acknowledged by other stations which serve locations where the information is also required. Such intercepts provide instantaneous delivery of information and eliminates the transmission of messages over the AFTN. Networks may not be used for transmission of aircraft reports except under the intercept principle. Acknowledgments of intercept must be made immediately after the acknowledgment of receipt by the station to which the message was passed. In the absence of acknowledgment of intercept within 1 minute, the station accepting the message from the aircraft must forward the message via the AFTN to the ultimate destination.

h. In areas or on routes where radio operations, lengths of flights, or distance between stations require additional measures to ensure continuity of communications throughout the route segment, the stations must share the responsibility of primary guard whereby each station will provide the primary guard for that portion of the flight during which the

messages from the aircraft can be handled most effectively by that station.

i. During its tenure of primary guard, each station will:

1. Be responsible for designating primary and secondary frequencies for communications with aircraft.

2. Receive all position reports and handle other messages from and to the aircraft essential to the safe conduct of the flight.

3. Be responsible for the action required in case of failure of communication.

j. Transfer of primary guard from one primary station to the next will normally take place at the time of traversing FIR or control area boundaries. When communications conditions so demand, a station may be required to retain primary guard beyond geographical boundaries or release its guard before the aircraft reaches a boundary.

7-1-13. AIREPs (POSITION REPORTS)

a. AIREPs are messages from an aircraft to a ground station. AIREPs are normally comprised of the aircraft's position, time, flight level, ETA over its next reporting point, destination ETA, fuel remaining, and meteorological information. When recording an AIREP on data terminals or written copy, the following procedures must be used.

1. Each line must begin at the left margin.

2. A new line must be used for each transmission.

3. If communications allow, each report must contain the following items in the order shown:

(a) Message type aerodrome reference point (ARP).

(b) Call sign of the calling station (aircraft).

(c) Text of the message.

(d) Call sign of the station called or receiving station followed by the appropriate abbreviation to indicate received, readback, or no reply heard.

(e) Call sign of station(s) acknowledging intercept followed by appropriate abbreviation to indicate received.

(f) Designation of frequency used.

EXAMPLE-

*2866QM 8903VO 13300YH
 2932QI *5631TY 11384XM
 2998QL 6532UA 13294YF
 5628TO 10048WH 17904ZC
 *For Alaskan domestic use only.

(g) Time in UTC of the communication.

4. Missing parts of the message text must be indicated by the letter "M."

EXAMPLE-

ARP CPC583 KBRO 2100 F330 MMTM 2128
 ETA XMMMX 2248 FUEL 0324
 KNEW RB
 MMMX R
 TO2103

b. AIREPs may be filed from any aircraft inflight within World Meteorological Organization (WMO) areas of responsibility in conformity with ICAO requirements for position, operational, or meteorological reporting in AIREP format. AIREP information must be disseminated to ATC, company, and meteorological offices as required. AIREPs consist of three sections comprised of 12 items. AIREPs may be filed in one, two, or three sections as follows:

1. Section 1, Routine report. A position report (PSNRP) comprising the Message Type Designator -ARP and the following items:

(a) Item 1, Aircraft identification.

(b) Item 2, Position. Record position in latitude (degrees as two numerics, or degrees and minutes as four numerics, followed without a space by N or S) and longitude (degrees as three numerics, or degrees and minutes as five numerics, followed without a space by E or W) or as a significant point identified by a coded designator (two-to-five characters) or as a significant point followed by a magnetic bearing (three numerics) and a distance in nautical miles (three numerics) from the point, such as 4620N07805W, 4620N078W, 46N078W, LN, MAY or DUB180040. Precede significant point by ABM (abeam), if applicable.

(c) Item 3, Time. Record time in hours and minutes UTC (four numerics). The time recorded must be the actual time of the aircraft at the position and not the time of origination or transmission of the report.

(d) Item 4, Flight level or altitude. Record flight level as "F" followed by three numerics when on standard pressure altimeter setting, such as F370. Record altitude in meters followed by M, or in feet followed by FT, when on QNH. Record ASC (level) when climbing, or DES (level) when descending to a new level after passing the significant point.

(e) Item 5, Next position and time over. Record the next reporting point and the estimated time over such reporting point, or record the estimated position that will be reached 1 hour later, according to the position reporting procedures in effect. Use the data conventions specified in subpara 7-1-13b1(b), Item 2, Position, for position. Record time in minutes past the hour (two numerics) or in hours and minutes UTC (four numerics) when necessary.

EXAMPLE-

PSNRP portion of AIREP prepared by De Ridder and addressed to Canadian Pacific Airlines (CPC) in Toronto and Mexico City:
 FF CYYZCPCX MMMXXMZT
 122105 KDRIYFYX
 ARP CPC583 KBRO 2100 F370 MMTM28
 KNEW RB
 MMMM R
 TO2103J

2. Section 2. When reported by the pilot:

(a) Item 6, Estimated Time of Arrival (ETA). Record ETA by the four-letter location indicator of the airport of first intended landing, or if no location indicator exists, the name of the airport followed by the estimated time of arrival at this aerodrome in hours and minutes UTC (four numerics).

(b) Item 7, Endurance. Record fuel in hours and minutes (four numerics).

3. Section 3. A full AIREP comprising a PSNRP, company information, and en route meteorological information.

(a) Item 8, Air temperature. Record PS (plus) or MS (minus), no space, followed by the temperature in degrees centigrade corrected for instrument error and airspeed, such as MS05.

(b) Item 9, Spot wind or mean wind and position. Spot wind is used whenever practical and normally refers to the position given in subpara 7-1-13b1(b), Item 2, Position. When a spot wind is given for any other location, record its position. Whenever it is not practical to record spot wind,

record the mean wind between two fixes, followed by the word "mean," and the position of the midpoint between the two fixes. Record wind direction in degrees true (three numerics) and wind speed in knots (two or three numerics), separated by an oblique stroke, such as 345/55. Record the direction of variable winds of a given strength as VRB, such as VRB/10. Record light and variable winds or calm as LV. If wind position is required, record latitude and longitude to the nearest whole degree, using the data convention specified in Item 2, such as 22N180W.

EXAMPLE-

AIREP comprised of PSNRP and aircraft operator information:

*FF CYYZCPCX MMMXXMZT
122105 KDRIYFYX
ARP CPC583 KBRO 2100 F370 MMTM28
MMMXX 2248 FUEL 0324
KNEW RB
MMMXX R
TO2103*

(c) Item 10, Turbulence (TURB). Record severe turbulence as TURB SEV and moderate turbulence as TURB MOD. If turbulence is experienced in cloud, add INC (in cloud). If in subsonic flight, report severe turbulence as soon as possible after occurrence. This requires AIREP SPECIAL. Record and report moderate turbulence only if encountered within last 10 minutes prior to reaching position in subpara 7-1-13b1(b), Item 2, Position. If in transonic or supersonic flight, report severe or moderate turbulence as soon as possible after occurrence. This requires AIREP SPECIAL.

(d) Item 11, Icing. Record severe icing as ICE SEV, moderate icing as ICE MOD. Report severe icing as soon as possible after occurrence. This requires AIREP SPECIAL. Record and report moderate icing only if encountered within last 10 minutes prior to reaching position in subpara 7-1-13b1(b), Item 2, Position.

(e) Item 12, Supplementary Information. Record data which in the opinion of the pilot-in-command are of aeronautical interest.

(1) Present Weather. Rain (RA), Snow (SN), Freezing rain (FZRA), Funnel cloud (FC) Waterspout or tornado (+FC), Thunderstorm (TS) on or near flight path, Front (FRONT).

(2) Clouds. If heights of cloud bases and/or tops can be accurately ascertained, amount of clouds

scattered (SCT) if clear intervals predominate, broken (BKN) if cloud masses predominate, or continuous (CNS) type of clouds only if cumulonimbus (CB), and an indication of the bases (BASE) and/or the tops (TOP) together with the respective height indication F (number) or (number) or (number) M/ or (number) FT.

(3) Turbulence and Icing. Moderate turbulence (TURB MOD) if in subsonic flight, or moderate aircraft icing (ICE MOD) observed prior to the last 10 minutes.

(4) D-Value. Reading or radio altimeter minus reading of pressure altimeter set to 1013.2 mb and corrected for calibration and position error; record differences as PS (plus) or MS (minus), no space, followed by the number of meters or feet.

EXAMPLE-

Full AIREP:

*FF CYYZCPCX MMMXXMZT KMIAYMYX
162215 TJSJFYX
ARP CPC583 2709N05415W 2212 F330
23N056W 59 0035 FUEL 0324 M534 310/60
MEAN 2543N05532W TURB MOD ICE MOD SCT
CB TOP F280
TJSJ RB
TO2214*

NOTE-

Transmit to the WMO office serving the FIR where the report is made.

(5) Operationally Significant Weather Radar Echoes (echo or echo line). True bearing of center of echo or line and distance from aircraft in nautical miles; if appropriate, indicate weather intensifying or weakening and whether no gaps, some gaps, or frequent gaps are observed.

(6) Significant differences between conditions encountered and those forecast for the flight, such as forecast thunderstorms not observed or freezing rain not forecast.

(7) If the position of the phenomenon reported is not the same as the position given under subpara 7-1-13b1(b), Item 2, Position, report it after the phenomenon.

7-1-14. AIREP SPECIALS (ARS)

a. Turbulence. TURB SEV encountered while in subsonic flight is reported as soon as possible after occurrence and requires AIREP SPECIAL. TURB MOD is reported only if encountered within

10 minutes prior to reaching reporting position. If in transonic or supersonic flight, TURB MOD and SEV is reported as soon as possible and requires AIREP SPECIAL.

b. Icing. ICE SEV is reported as soon as possible after occurrence and requires AIREP SPECIAL. ICE MOD is reported only if encountered within last 10 minutes prior to reaching reporting position.

EXAMPLE-
FF KMIAYMYX
211538 TJSJYFYX

ARS PAA101 5045N02015W 1536 F310 ASC
F350 51N030W 21 FUEL 0900 ICE SEV

7-1-15. ARTCC RELAY OF VFR MESSAGES

ARTCC operators must relay all international VFR flight movement messages to the adjacent FSS unless that facility is also an addressee.

NOTE-

If an overseas unit erroneously routes a VFR movement message to an ARTCC, the automatic NADIN switch will not divert it to an FSS.

Section 2. Customs Notification and ADIZ Requirements

7-2-1. FLIGHT PLAN/CUSTOMS REQUIREMENTS

a. U.S. Customs and Border Protection (CBP) requirements for Advance Passenger Information System (APIS) authorizations are contained in 19 CFR 122 and apply to both inbound and outbound aircraft. Do not include ADCUS in flight plan remarks; pilots are required to coordinate directly with CBP.

b. Flight plan and customs requirements for other countries are usually contained in that country's Aeronautical Information Publication (AIP).

7-2-2. CUSTOMS REQUIREMENTS FOR INBOUND AND OUTBOUND AIRCRAFT

19 CFR Part 122 contains Advance Passenger Information System (APIS) regulations which require APIS manifests to be submitted to U.S. Customs and Border Protection (CBP) for all private aircraft arriving from or departing for a foreign port or place. APIS regulations also require that electronic notices of arrival and departure as well as electronic manifests relative to travelers (passengers and crew) be submitted to CBP within specific timeframes. For detailed information on the APIS regulations, see Advance Information on Private Aircraft Arriving and Departing the United States, 73 Fed. Reg. 68,295 (Nov. 18, 2008) (19 CFR 122.22). This publication, along with other resources, is available at <http://www.cbp.gov>.

a. All aircraft entering U.S. airspace from a foreign port or departing U.S. airspace for a foreign port must provide at least 1 hour advance notice to the U.S. Customs and Border Protection (CBP) via the Electronic APIS (eAPIS).

b. Pilots of aircraft inbound to the U.S. from a foreign port are required to notify CBP of any changes to their ETA which are 15 minutes or greater. Upon pilot request, relay changes in ETA to CBP.

7-2-3. ADIZ REQUIREMENTS FOR INBOUND AND OUTBOUND AIRCRAFT

a. Unless otherwise authorized by ATC, no person may operate an aircraft into, within, or across an ADIZ unless that person has filed a flight plan with an appropriate aeronautical facility.

b. Unless otherwise authorized by ATC, no person may operate an aircraft into, within, or across an ADIZ unless that aircraft is equipped with a coded radar beacon transponder and automatic pressure altitude reporting equipment having altitude reporting capability that automatically replies to interrogations by transmitting pressure altitude information in 100-foot increments.

NOTE-

This paragraph does not apply to the operation of an aircraft which was not originally certificated with an engine-driven electrical system and which has not subsequently been certified with such a system installed; for example, a balloon or glider.

c. A person who operates a civil aircraft into an ADIZ must have a functioning two-way radio, and the pilot must maintain a continuous listening watch on the appropriate aeronautical facility's frequency.

d. Pilots of aircraft entering or departing the United States through an ADIZ, or operating within an ADIZ, are required to comply with the provisions of 14 CFR 99.

e. Forward information on DVFR aircraft inbound to the U.S. to NORAD via Service B or by telephone. Forward the following information:

1. Aircraft call sign.
2. Number and type of aircraft.
3. Altitude (within ADIZ).
4. True airspeed.
5. Time of departure.
6. Point of departure.
7. Destination.
8. ETA.
9. Remarks: DVFR discrete transponder code; estimated first point of penetration of ADIZ

(latitude/longitude or fix-radial-distance); estimated time of penetration of ADIZ.

EXAMPLE-
1210 135 3442/09345 1446

NOTE-
See Para 6-3-3, IFR Flight Plan Control Messages.

Section 3. Alerting Service

7-3-1. GENERAL

- a.** Alerting service must be provided:
- 1.** For all aircraft provided with ATC service.
 - 2.** Insofar as practical, to all other aircraft having filed a flight plan or otherwise known to an air traffic service.
 - 3.** To any aircraft known or believed to be the subject of unlawful interference.
- b.** Additional information related to ICAO Search and Rescue procedures can be found in ICAO ANNEX 11, Chapter 5, Alerting Service.
- c.** Apply domestic SAR procedures for the U.S. portion of the flight.

7-3-2. ALERTING PHASES

- a.** Air traffic services units must notify rescue coordination centers immediately when an aircraft is considered to be in a state of emergency in accordance with the following:
- 1.** Uncertainty phase when:
 - (a)** No communication has been received from an aircraft within a period of 30 minutes after the time a communication should have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier.
 - (b)** An aircraft fails to arrive within 30 minutes of the estimated time of arrival last notified to or estimated by air traffic services units, whichever is later, except when no doubt exists as to the safety of the aircraft and its occupants.
 - 2.** Alert phase when:
 - (a)** Following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft.
 - (b)** An aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been reestablished with the aircraft.

(c) Information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely.

(d) An aircraft is known or believed to be the subject of unlawful interference.

3. Distress phase when:

(a) Following the alert phase further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress.

(b) The fuel on board is considered to be exhausted or thought to be insufficient to enable the aircraft to reach safety.

(c) Information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely.

(d) Information is received and it is reasonably certain that the aircraft is about to make or has made a forced landing.

b. In addition to the initial notification, the Rescue Coordination Center (RCC) must, without delay, be furnished with:

- 1.** Any useful additional information, especially on the development of the state of emergency through subsequent phases.
- 2.** Information that the emergency situation no longer exists.

7-3-3. ALERTING MESSAGE CONTENTS

a. The notification must contain as much of the following information as is available in the order listed:

NOTE-

- 1.** For supplemental flight plan information, transmit an "RQS" Message. This information is used in the transmission of the INCERFA.
- 2.** See Paragraph 1-2-7, Operational System Instructions, for message formats.

EXAMPLE-

FF SVZMZRZX
231247 KMIAYFYX
(RQS-N1234-SVMI-KMIA)

1. INCERFA, ALERFA, DETRESFA, as appropriate to the phase of the emergency.

2. Agency and person calling.

3. Nature of the emergency.

4. Significant information from the flight plan.

5. Unit which made last contact, time, and frequency used.

6. Last position report and how determined.

7. Color and distinctive marks of aircraft.

8. Any action taken by reporting office.

9. Other pertinent remarks.

EXAMPLE-

(INCERFA)

SS MMMXYAYX

DTG KSANYFYX

(ALR-INCERFA/KSAN/OVERDUE

-N1234S-VG

-C172

-KRNO2000

-MMLP0130

-REQ ACK OR ARR ACFT OVERDUE YOUR
STN)

(ALERFA)

SS MMMXYAYX

TEXT:(ALR-ALERFA/KSAN/OVERDUE)

(text remains same except for remarks information).

(DETRESFA)

SS MMMXYAYX

TEXT:(ALR-DETRESFA/KSAN/OVERDUE

(text remains same except for remarks information).

b. The cancellation of action initiated by the RCC is the responsibility of that center.

EXAMPLE-

(CANCELLATION)

SS MMMXYAYX

020618 KMIAYFYX

(ALR-ALERFA/KMIAYFYX/CNLD

N1234 LOCATED)

NOTE-

Transmit cancellation messages for INCERFA and DETRESFA using same format as above.

Section 4. Canadian Movement and Control Messages (Transborder Flights Only)

7-4-1. GENERAL

Except as indicated in this section, handle Transborder Canadian movement and control messages as described in Sections 1, 2, and 3. Do not include ADCUS in flight plan remarks for flight plans to Canada because NAV CANADA no longer alerts Canadian Customs. CANPASS authorizations are the obligation of the pilot, at the number in subpara 7-4-3a. Do not include ADCUS in flight plan remarks for flights plans from Canada to the United States because U.S. flight service no longer alerts U.S. Customs and Border Patrol (CBP). U.S. Advance Passenger Information System (APIS) authorizations are the obligation of the pilot for flights departing and entering the U.S., as stated in 19 CFR 122. APIS resources for pilots are available at <http://www.cbp.gov>.

7-4-2. INBOUNDS FROM CANADA

a. Do not accept VFR flight plans other than air filed flight plans for aircraft departing from Canada. Refer individuals to the appropriate NAVCANADA facility to file flight plans out of Canada.

b. The operational system should automatically format the required items of the flight notification message when activated. U.S. CBP authorizations for flights inbound to the U.S. from Canada are the obligation of the pilot and must be obtained via the APIS process. APIS resources for pilots are available at <http://www.cbp.gov>.

c. Facilities acknowledge receipt of flight notification messages as soon as practical by transmitting the letter "R" followed by the full aircraft identification; for example, R N711VR. Suspend VFR flight notification messages until arrival or closure information is received. Remove IFR messages from the inbound list after delivery.

7-4-3. OUTBOUNDS TO CANADA

a. When Customs notification service is requested, advise the pilot to contact Canada's Private Aircraft Program for Customs (CANPASS) at 888-226-7277 and include CANPASS in the

remarks section of the flight plan. If the pilot informs that he/she has contacted CANPASS, place CANPASS in the remarks section of the flight plan.

NOTE-

U.S. CBP authorizations for flights outbound from the U.S. to Canada are the obligation of the pilot and must be obtained via the APIS process. APIS resources for pilots are available at <http://www.cbp.gov>.

b. Accept Customs notification requests from inflight aircraft for relay via telephone notification to CANPASS at 888-226-7277 for airports of entry when proposed ETA is during Customs service hours.

c. Upon notification of departure of VFR flights, transmit a flight notification message directly to the destination Canadian relay facility. Include CANPASS in the remarks.

NOTE-

1. The operational system will automatically format the required items and transmit the flight notification message when activated if the proposed flight plan was filed in accordance with subparas 7-4-3d and 7-4-3e.

2. Facilities address messages to the destination relay facility listed in FAA Order JO 7350.9, Location Identifiers. Facilities transmit flight notification messages for VFR flights in accordance with Paragraph 6-4-4, Flight Notification Message. Flight notification messages included the type of flight plan as the first item of the notification message. CANPASS is required in the remarks, as appropriate.

EXAMPLE-

FF CZZZZFZX

DTG KBUFYFYX

VFR N711VR C182 BUF YYZ 1735 CANPASS

d. IFR Flight Plans

1. CANPASS Flight Plans.

NOTE-

The operational system should automatically format the required items and transmit the flight notification message.

EXAMPLE-

FR:I AI:N1234 AT:C421/R TS:280

DD:DSM TM:P1800 AE:200

RT:DSM..CYYZ

AD:CYYZ TE:0300 RM:\$CANPASS

FB:0400 AA:

PD:JOE PILOT

*HB:DSM NB:2 CR:R/W TL:
OP:
CP:
TA:2100*

*FR:I AI:N1234 AT:C421/R TS:280 DD:DSM
TM:P1800 AE:200
RT:DSM..CYYZ
AD:CYYZ TE:0300 RM:\$CANPASS
FB:0400 AA:
PD:JOE PILOT
HB:DSM NB:2 CR:R/W TL:
OP:&C
CP:CZYZZFZX
TA:2100*

2. Send a flight notification message on airfile IFR aircraft that has requested Customs notification. Place CANPASS (if prior notification) in the remarks section of the flight notification message. If the pilot files a flight plan, but gives no indication that CANPASS procedures have been implemented, or prefers to leave the notification off of the flight plan, leave the remarks section blank and allow the NAV CANADA specialists to handle the situation upon arrival.

e. VFR Flight Plans.

NOTE-

The operational system will automatically format the required items and transmit the flight notification message.

EXAMPLE-

AIRFILED
*FR:V AI:N1234 AT:C150 TS:90 DD:BUF
TM:D1800 AE:045 RT:BUF..CYYZ
AD:CYYZ TE:0030 RM:\$CANPASS 2 FB:0330 AA:
PD:JOE PILOT
HB:DSM NB:2 CR:5/W TL:
OP:&C
CP:CZYZZFZX
TA:1830*

CANPASS

*FR:V AI:N1234 AT:C150 TS:90 DD:BUF
TM:P1800 AE:045 RT:BUF..CYYZ
AD:CYYZ TE:0030 RM:\$CANPASS
FB:0330 AA:
PD:JOE PILOT
HB:DSM NB:2 CR:5/W TL:
OP:&C
CP:CZYZZFZX
TA:1830*

f. Refer to the Canada and North Atlantic IFR and VFR supplements to determine Customs hours of service, availability of Customs flight notification service (CANPASS), and the relay facility for infrequently used Airports of Entry not listed in FAA Order JO 7350.9, Location Identifiers.

g. Suspend VFR message until acknowledgment is received.

REFERENCE-

FAA Order JO 7110.10, Para 8-5-1, Canadian Transborder.

1. If an acknowledgment is not received within 30 minutes after departure, retransmit the message. AISR facilities transmit the contraction "REQ ACP" (request acceptance) and the complete aircraft identification.

EXAMPLE-

*FF CZYZZFZX
DTG KBUFYFYX
REQ ACP N711VR*

2. If acknowledgment is not received within 1 hour after departure, use interphone or telephone to deliver. In any event, assure delivery prior to ETA.

3. Refer to Section B of the Canada and North Atlantic IFR Supplements for Canadian FSS and Area Control Center (ACC) telephone numbers.

h. When correcting or revising a message, retransmit the complete message preceded by the contraction CHG (change).

EXAMPLE-

*FF CZYZZFZX
DTG KBUFYFYX
CHG VFR N711VR C182 BUF YYZ 1845
CANPASS*

FF CZYZZFZX

*DTG KBUFYFYX
CHG VFR N711VR C182 BUF YYZ 1845 CANPASS*

i. Do not transmit IFR flight notification messages except for military aircraft or Customs notification purposes.

NOTE-

Canada will not acknowledge receipt of these messages.

j. When available, use interphone or telephone for flights of 30 minutes or less.

k. Do not accept round-robin flight plans to Canada.

7-4-4. OUTBOUNDS TO CANADA DEPARTING FROM OUTSIDE FLIGHT PLAN AREA

Accept flight plans regardless of departure point within the NAS. (See para 7-4-1 and subpara 7-4-3a for CANPASS guidance.)

a. Forward VFR flight plan information for aircraft departing from outside the facility's flight plan area to the tie-in SECTOR/FSS for the departure point in the following format:

1. Aircraft identification.
2. Aircraft type.
3. Departure point.
4. Destination.
5. Proposed departure time/ETE.
6. Remarks.

EXAMPLE-

*FF PAKTYFYX
DTG KSEAYFYX
N711VR C182 KTN YYJ P1630/0330 CANPASS*

NOTE-

U.S. CBP authorizations for flights outbound from the U.S. to Canada are the obligation of the pilot and must be obtained via the APIS process. APIS resources for pilots are available at <http://www.cbp.gov>.

b. Forward IFR flight plan information for aircraft proposing to depart from outside the facility's flight plan area in accordance with Para 6-3-1, Domestic IFR Flight Plans. If Customs flight notification service (ADCUS) is requested, advise the pilot to contact CANPASS at 888-226-7277; include CANPASS information as an intrafacility remark, and transmit the proposal message to both the ARTCC and the tie-in SECTOR/FSS. Enter the ARTCC computer address last.

EXAMPLE-

*FF KAOOYFYX KZOBZQZX
DTG KDCAYFYX
DCA2010001 FP N1234P P28R/A 150 PIT P0200
150 PIT..CIP..DKK..BUF..YYZ/0130 CANPASS*

NOTE-

The operational system will automatically format the

required items and transmit the flight notification message.

c. Identify the tie-in SECTOR/FSS, and advise the pilot to report departure time directly to that facility.

NOTE-

While the report may be relayed through another facility, it is the pilot's responsibility to notify the tie-in SECTOR/FSS of the departure time.

d. Upon receipt of the departure report, the tie-in SECTOR/FSS is responsible for delivery of the flight notification message to Canada.

1. Transmit a flight notification message in accordance with Paragraph 6-4-4, Flight Notification Message.

NOTE-

If a departure report has not been received within 1 hour of the proposed departure time, cancel and file the proposed flight plan.

2. The operational system changed should automatically format the required items and transmit the flight notification message.

e. Acknowledgment from the departure point tie-in SECTOR/FSS is required for both VFR and IFR proposals.

7-4-5. IFR FLIGHT PLANS DEPARTING CANADIAN AIRPORTS

a. Accept IFR flight plans departing from Canadian airports and destined to the U.S. Transmit a proposal message in ARTCC HOST computer format to the associated Canadian ACC. Address messages to the ACC listed in FAA Order JO 7350.9, Location Identifiers.

NOTE-

FSSs in Alaska will still accept Canada to Canada IFR flight plans.

b. Canada does not acknowledge for proposal messages. Do not expect or request acknowledgment.

7-4-6. SEARCH AND RESCUE MESSAGES

Provide Search and Rescue for flights inbound from Canada in accordance with Chapter 8.

Section 5. Mexican Movement and Control Messages (Transborder Flights Only)

7-5-1. GENERAL

a. Except as outlined in this section, handle transborder Mexican movement and control messages as described in Sections 1, 2, and 3. IFR flight plans to Mexico require the ICAO flight plan form.

b. Do not include ADCUS in flight plan remarks for flight plans to Mexico; Mexican Customs authorizations are the obligation of the pilot. Do not include ADCUS in flight plan remarks for flights from Mexico to the United States because U.S. flight service no longer alerts U.S. Customs and Border Patrol (CBP). U.S. APIS authorizations are the obligation of the pilot for flights departing and entering the U.S., as stated in 19 CFR 122. APIS resources for pilots are available at <http://www.cbp.gov>.

7-5-2. INBOUNDS FROM MEXICO

a. Flight notification messages.

1. When received in the proper format, VFR flight notification messages are automatically acknowledged and suspended by the operational system.

2. Acknowledge receipt of a flight notification message as soon as practical by transmitting the letter R followed by the full ACID; e.g., R N711VR. Suspend VFR flight notification messages until arrival or closure information is received. File IFR messages.

b. Search and Rescue. Provide search and rescue service in accordance with standard format/time increments listed in Section 3, Alerting Service, and Chapter 8, Search and Rescue (SAR) Procedures. The departure station in Mexico is responsible for initiating SAR action until an acknowledgment of the flight notification message is received.

7-5-3. OUTBOUNDS TO MEXICO

a. Mexican customs notification is the obligation of the pilot. U.S. CBP authorizations for flights outbound from the U.S. to Mexico are also the obligation of the pilot and must be obtained via the

APIS process. APIS resources for pilots are available at <http://www.cbp.gov>.

NOTE-

Mexican customs regulations require that only international airports-of-entry may be used for first landing.

REFERENCE-

FAA Order JO 7350.9, Location Identifiers.

1. If the pilot still intends to land at a destination other than an airport-of-entry, advise the pilot that the flight plan will not be used for Customs or search and rescue service in Mexico.

2. Transmit the flight notification message to the Regional Flight Dispatch Office, not the destination tie-in station.

NOTE-

If the correct addressee cannot be determined, transmit to the nearest border Regional Flight Dispatch Office.

b. VFR Flight Plans.

1. Upon notification of departure of VFR flights, transmit a flight notification message. Address messages to the ICAO addressee for the appropriate destination location.

2. If a VFR flight plan is filed with a destination other than an airport-of-entry, transmit the flight notification message to the Regional Flight Dispatch Office, not the destination tie-in station. If the correct addressee cannot be determined, transmit to the nearest border Regional Flight Dispatch Office.

NOTE-

Facilities with interphone/telephone capability may relay flight notification messages by this method.

REFERENCE-

FAA Order JO 7350.9, Location Identifiers.

3. Address messages to the ICAO addressee for the appropriate destination location. Transmit the following information:

- (a) Type of flight.
- (b) Aircraft identification.
- (c) Aircraft type.
- (d) Departure point.
- (e) Destination.

- (f) ETA.
- (g) Remarks.

EXAMPLE-
FF MMCUXMXO
DTG KSJTYFYX
VFR N1234S C182 SJT MMCU 1400 4ZUCHERMANN

c. If acknowledgment is not received within 30 minutes after departure, transmit a “request acceptance” message to the destination station tie-in addressee and to the Regional Flight Dispatch Office. Manually address the message to the designated Regional Flight Dispatch Office.

REFERENCE-
FAA Order JO 7350.9, Location Identifiers.

EXAMPLE-
FF MMCUXMXO MMMYXMXO
REQ ACP N1234S

d. The Regional Flight Dispatch Office involved will then normally send an acknowledgment to the departure station and assume responsibility for the flight notification message.

e. If acknowledgment/acceptance is not received within 1 hour of the departure, use interphone/telephone or other available means to deliver the message to the appropriate Regional Flight Dispatch Office. See TBL 7-5-1 for telephone numbers. For a complete address, add *xmxo* to the identifier.

TBL 7-5-1

Mexican Regional Flight Dispatch Office Phone Numbers

<i>REGION</i>	<i>IDENTIFIER</i>	<i>TELEPHONE NUMBER</i>
CENTRO (Central)	MMMX	01152 5 762-7062 01152 5 784-40-99 ext. 153 01152 5 762-58-77 ext. 153
NORESTE (Northeast)	MMMY	01152 83 454-020 ext. 141
NOROESTE (Northwest)	MMMZ	01152 67 23-114 01152 67 22-075 ext. 140
OCCIDENTE (West)	MMGL	01152 36 890-121 ext. 32 and 167
SURESTE (Southeast)	MMMD	01152 99 231-186 ext. 149

f. Do not accept round-robin flight plans to Mexico.

Section 4. Alert Notices (ALNOTs)

8-4-1. ALNOT

a. If the replies to the INREQ are negative, or if the aircraft is not located within 1 hour after transmission of the INREQ, whichever occurs first, the destination station must transmit an ALNOT addressed to:

1. Flight Plan Originator (If other than AISR).
2. KSARYCYX (Includes RCC and AISR).
3. KxxxYAYX (appropriate Regional Operations Center (ROC)).
4. Add ARTCCs 50NM either side of route.
5. BASOPS if destination or departure tie-in facility, or the home base of the aircraft.
6. Other addresses deemed beneficial to the search by the specialist.

b. Expand the communications search area to that area extending 50 miles on either side of the proposed route of flight from the last reported position to the destination. The search area may be expanded to the maximum range of the aircraft at the request of the RCC or by the destination station.

c. If the departure airport, route of flight, destination airport, or alternate airports are within 50 miles of the Great Lakes, notify Cleveland RCC via recorded telecommunications line.

d. Include all information from the INREQ, plus any additional information received that could assist in search activities. Provide the aircraft's last known position as the final item in the message. The message text must begin with the contraction "ALNOT," followed by the aircraft identification.

EXAMPLE-

ALNOT N12345

[flight plan information]

[additional pertinent information]

e. Ten minutes after the ALNOT is issued, call the RCC to ensure delivery of the ALNOT and to answer any inquiries.

NOTE-

1. Alaska: Joint Base Elmendorf Richardson, RCC at 907-551-7230, 800-420-7230, or DSN 317-551-7230.

2. RCC (Tyndall AFB) phone numbers are: 800-851-3051 or 850-283-5955.

f. If additional pertinent information is received, transmit the information, as necessary, to all original addressees.

8-4-2. ACTION UPON RECEIPT OF ALNOT

Upon receipt of an ALNOT, including those received from other ATC facilities, each station whose flight plan area extends into the ALNOT search area must:

a. Immediately conduct an expanded communications search of those airports which fall within the ALNOT search area that could accommodate the aircraft and that were not checked during the INREQ search. Notify the appropriate ATC facilities. Request the appropriate law enforcement agency to check airports which cannot be contacted otherwise.

b. For ARTCC issued ALNOTS, coordinate with the issuing facility to determine the extent of communications already completed prior to contacting airports and other ATC facilities whose flight plan area extends into the ALNOT search area.

c. Within 1 hour after receipt of the ALNOT, notify the originator of the results or status of the communications search. Transmit pertinent information, such as aircraft location or position report, to the destination station.

EXAMPLE-

ALNOT N1234A [status report]

ALNOT N1234A [final report]

d. Alaska. FSSs within the ALNOT search area must broadcast the ALNOT. (See Para 2-2-2i, ALNOT Alert Announcement)

e. Request search assistance from aircraft traversing the search area.

8-4-3. REPORTING ALNOT STATUS TO RCC

If the expanded communications search fails to locate the aircraft, or if 1 hour has elapsed since ALNOT transmission, whichever occurs first, the destination station must call the RCC with a status update. When appropriate, update Cleveland RCC. Provide RCC with all pertinent information about the overdue aircraft not already provided in the ALNOT which may include:

- a. Agency and the person calling.
- b. Details of the flight plan. If the aircraft was not on a flight plan, include all the facts about the source of the report.
- c. Time the last radio transmission was received, by whom, and the frequency used.
- d. Last position report.
- e. Whether an ELT signal was heard or reported along the route of flight.
- f. Action taken and the proposed action by the reporting FSS.

- g. Furnish positions of other aircraft known to be along or near the route of flight of the missing aircraft.

8-4-4. CANCELLATION OF ALNOT

The ALNOT remains current until the aircraft is located and/or the search is suspended by the RCC. In either case, the ALNOT originator must transmit a cancellation message with the location of the aircraft, if known, addressed to all recipients of the original ALNOT. Each facility must notify all previously alerted facilities and agencies of the cancellation.

EXAMPLE-

ALNOT N12345 CNLD ACFT LCTD JAX

ALNOT N1513B CNLD SEARCH SUSPENDED

- a. During preflight weather briefings.
- b. On post-flight contacts.
- c. During regular air-ground contacts.
- d. Broadcast a request on NAVAID frequencies.
- e. Append a request on TIBS, VOR-TWEB, or TWEB broadcasts.
- f. Request PIREPs from air carrier and military operations offices, military pilot-to-forecaster units, and local aircraft operators.
- g. Solicit from other air traffic facilities.

9-2-10. PIREP CLASSIFICATION

Categorize PIREPs as follows:

a. **URGENT.** The following weather phenomena must be classified as an URGENT (UUA) PIREP:

- 1. Tornadoes, funnel clouds, or waterspouts.
- 2. Severe or extreme turbulence (including clear air turbulence).
- 3. Severe icing.
- 4. Hail.
- 5. Low level wind shear. Classify LLWS PIREPs as UUA if the pilot reports air speed fluctuations of 10 knots or more. Classify reports of LLWS with air speed fluctuations less than 10 knots as routine. If airspeed fluctuation is not reported, classify PIREP as UUA.

NOTE-

LLWS defined as windshear within 2,000 feet of the surface.

6. Volcanic eruption, ash clouds, and/or detection of sulfur gases (H₂S or SO₂) in the cabin.

(a) If a pilot only reported the smell of H₂S or SO₂ in the cabin and confirmed no volcanic ash clouds were present, classify the report as a ROUTINE PIREP.

(b) The smell of sulfur gases in the cockpit may indicate volcanic activity that has not yet been detected or reported and/or possible entry into an ash-bearing cloud. H₂S, also known as sewer gas, has the odor of rotten eggs. SO₂ is identifiable as the sharp, acrid odor of a freshly struck match.

7. Any other weather phenomena reported which are considered by the specialist as being hazardous, or potentially hazardous, to flight operations.

b. **ROUTINE.** Classify as ROUTINE (UA) all PIREPs received except those listed above.

9-2-11. PIREP HANDLING

Upon receipt of a PIREP, accomplish the following:

- a. **Urgent.**
 - 1. Deliver to the ARTCC Weather Coordinator as soon as possible.
 - 2. Enter on Service A at the first opportunity.
 - 3. Use in weather briefings, as appropriate.
- b. **Routine.**
 - 1. Transmit on Service A as soon as practical.
 - 2. Broadcast in accordance with established procedures in Chapter 2.
 - 3. Use in weather briefings, as appropriate.

9-2-12. OFFSHORE COASTAL ROUTES

When your station has been given responsibility for collecting offshore coastal route PIREPs:

a. Include the coastal water area when soliciting PIREPs. At least one PIREP is required hourly regardless of weather conditions.

b. The following flight plan sectors are responsible for collecting offshore coastal routes in the contiguous 48 states, Hawaii, and Puerto Rico: HNL, SJU, SAN, HHR, OAK, MMV, SEA, BGR,BDR, MIV, DCA, RDU, MCN, GNV, PIE, MIA, ANB, GWO, DRI, CXO, and SJT.

NOTE-

The Flight Services Safety and Operations Policy Group assigns PIREP responsibility for an offshore coastal area, route, or route segment to a specific station. The area assigned will be within the same ARTCC area as the station, and the station must have adequate air-ground communications coverage over its assigned offshore area.

9-2-13. PIREP PREPARATION

To assure proper dissemination of PIREPs to all system users, the encoding procedures listed below must be followed:

a. Identify each element by a Text Element Indicator (TEI).

b. Ensure each report includes TEIs for message type, location, time, altitude/flight level, aircraft type, and at least one other to describe the reported phenomena.

c. Precede each TEI, except message type, with a space and a solidus (/).

d. Follow each TEI, except altitude/flight level, with a space.

e. Insert zeros in reported values when the number of digits in the report is less than the number required by the format.

f. Use only authorized aircraft designators and contractions.

g. In the location TEI, include any three character alphanumeric identifier to describe locations or routes. Use only authorized identifiers from FAA Order JO 7350.9, Location Identifiers.

h. Omit entries of TEIs, except as listed in subpara 9-2-13b, for which no data was reported.

9-2-14. PIREP FORMAT

Using TEIs as described below, prepare PIREPs for system entry in the following format:

a. UUA or UA. Message type - Urgent or Routine PIREP.

b. /OV.

1. Location in reference to a VHF NAVAID or an airport, using the three or four alphanumeric identifier. If appropriate, encode the identifier, then three digits to define a radial and three digits to define the distance in nautical miles.

EXAMPLE-

/OV KJFK
/OV KJFK107080
/OV KFMG233016/RM RNO 10SW

2. Route segment. Two or more fixes to describe a route.

EXAMPLE-

/OV KSTL-KMKC
/OV KSTL090030-KMKC045015

c. /TM. Time that the reported phenomenon occurred or was encountered. Report time in four digits UTC.

EXAMPLE-

/TM 1315

d. /FL. Altitude/flight level. Enter the altitude in hundreds of feet (MSL) where the phenomenon was first encountered. If not known, enter UNKN. If the aircraft was climbing or descending, enter the appropriate contraction (DURC or DURD) in the remarks/RM TEI. If the condition was encountered within a layer, enter the altitude range within the appropriate TEI describing the condition.

EXAMPLE-

/FL093
/FL310
/FLUNKN /RM DURC

e. /TP. Type aircraft. Enter aircraft type. If not known, enter UNKN. Icing and turbulence reports must always include the aircraft type. Do not consolidate observations from numerous aircraft types into one PIREP.

EXAMPLE-

/TP AEST
/TP C150
/TP P28R
/TP UNKN

f. /SK. Sky condition. Report height of cloud bases, tops, and cloud coverage as follows:

1. Enter the height of the base of a layer of clouds in hundreds of feet (MSL) using three digits. Enter the top of a layer in hundreds of feet (MSL) preceded by the word "-TOP." If reported as clear above the highest cloud layer, enter a space and "SKC" following the reported level.

EXAMPLE-

/SK OVC100-TOP110/ SKC
/SK OVC015-TOP035/OVC230
/SK OVC-TOP085

2. Use authorized contractions for cloud cover.

EXAMPLE-

SKC
FEW
SCT
BKN
OVC

3. Cloud cover amount ranges will be entered with a hyphen and no spaces separating the amounts; i.e., BKN-OVC.

EXAMPLE-

*/IC LGT-MOD MX 085
/IC LGT RIME
/IC MOD RIME BLO 095
/IC SEV CLR 035-062*

4. When icing is reported always report temperature in the /TA TEI.

I. /RM. Remarks. Use this TEI to report a phenomenon which is considered important but does not fit in any of the other TEIs. This includes, but is not limited to, low level wind shear (LLWS) reports, thunderstorm lines, coverage and movement, size of hail (1/4" increments), lightning, clouds observed but not encountered, geographical or local description of where the phenomenon occurred, International Standard Atmospheric (ISA) reports and contrails. Report hazardous weather first. Describe LLWS to the extent possible.

1. Wind Shear. +/- 10 Kts or more fluctuations in airspeed, within 2,000 Ft of the surface, requires an UUA report. When Low Level Wind Shear is entered in a pilot report enter LLWS as the first remark in the /RM TEI. LLWS may be reported as -, +, or +/- depending on how it effects the aircraft. If the location is different than the /OV or /FL fields, include the location in the remarks.

EXAMPLE-

/RM LLWS +/-15 KT SFC-008 DURC RY22 JFK

2. FUNNEL, CLOUD, TORNADO, and WATERSPOUT are entered with the direction of movement if reported.

EXAMPLE-

/RM TORNADO E MOV E

3. Thunderstorm. Enter coverage (ISOL, FEW, SCT, NMRS) and description (LN,BKN LN,SLD LN) if reported. Follow with "TS," the location and movement, and the type of lightning if reported.

EXAMPLE-

/RM NMRS TS S MOV E GR1/2

4. Lightning. Enter frequency (OCNL, FRQ, CONS), followed by type (LTGIC, LTGCC, LTGCG, LTGCA, or combinations), if reported.

EXAMPLE-

/RM OCNL LTGICCG

5. Electric Discharge. Enter DISCHARGE followed by the altitude.

EXAMPLE-

/RM DISCHARGE 120

6. Clouds. Use remarks when clouds can be seen but were not encountered and reported in /SK.

EXAMPLE-

*/RM CB E MOV N
/RM OVC BLO*

7. Plain Language. If specific phraseology is not adequate, use plain language to describe the phenomena or local geographic locations. Include remarks that do not fit in other TEIs like DURC, DURD, RCA, TOP, TOC, or CONTRAILS.

EXAMPLE-

*/RM BUMPY VERY ROUGH RIDE
/RM CONTRAILS
/UA/OV BIS270030/TM 1445/FL060/TP CVLT/TB
LGT /RM Donner Summit Pass*

8. Volcanic Activity. Volcanic eruption, ash clouds, and/or sulfur gases are Urgent PIREPs. Reports of volcanic activity must include as much information as possible; for example, the name of the mountain, ash clouds observed and their movement, the height of the top and bottom of the ash clouds, etc.

(a) If a pilot detected the smell of sulfur gases (H₂S or SO₂) in the cabin and reported volcanic ash clouds, include "VA" in Weather and "H₂S," "SO₂," or "SULFUR SMELL" in Remarks.

NOTE-

The smell of sulfur gases in the cockpit may indicate volcanic activity that has not yet been detected or reported and/or possible entry into an ash-bearing cloud. H₂S, also known as sewer gas, has the odor of rotten eggs. SO₂ is identifiable as the sharp, acrid odor of a freshly struck match.

EXAMPLE-

*UUA /OV PANC240075 /TM 2010 /FL370/TP DC10 /WX
VA /RM VOLCANIC ERUPTION 2008Z MT AU-
GUSTINE ASH 40S MOV SSE SO2*

(b) If a pilot only detected the smell of sulfur gases (H₂S or SO₂) in the cabin and confirmed there were no volcanic ash clouds, classify the PIREP as Routine and include "VA" in Weather and "H₂S NO ASH," "SO₂ NO ASH," or "SULFUR SMELL NO ASH" in Remarks.

EXAMPLE-

*UA /OV PANC240075 /TM 2010 /FL370/TP DC10 /WX
VA /RM SULFUR SMELL NO ASH*

(c) If a volcanic activity report is received from other than a pilot, enter Aircraft "UNKN,"

Flight Level “UNKN,” and in Remarks “UNOFFICIAL.”

9. The “SKYSPOTTER” program is a result of a recommendation from the Safer Skies FAA/INDUSTRY Joint Safety Analysis and Implementation Teams. The term “SKYSPOTTER” indicates that a pilot has received specialized training in observing and reporting inflight weather phenomenon, pilot weather reports, or PIREPs. When a PIREP from a pilot identifying themselves as a “SKYSPOTTER” aircraft is received, the additional comment “/AWC” must be added at the end of the remarks section of the PIREP.

EXAMPLE-
PIREP Text/RM Text/AWC

10. If ISA is reported.

EXAMPLE-
/RM ISA -10C

9-2-15. PIREP ENCODING

PIREPs must be coded to ensure the PIREP is stored and subsequently distributed with the surface observation location nearest the condition being reported. If more than one METAR location is appropriate, select the location that provides the greatest distribution and/or prominence, such as a major hub airport.

Section 3. Wind and Temperature Aloft Forecast (FB)

9-3-1. GENERAL

Wind and temperature aloft forecasts (FB) are computer-prepared and issued by the National Centers for Environmental Prediction (NCEP) at Suitland, Maryland. The forecasts are valid 6 (FB1/8), 12 (FB2/9), and 24 (FB 3/10) hours after the observation date/times of 0000Z, 0600Z, 1200Z, and 1800Z upon which they are based. See TBL 9-3-1 for wind/temperature aloft forecast schedules.

TBL 9-3-1

Wind/Temperature Aloft Forecast Schedules

<i>Type</i>	<i>Base Data Time</i>	<i>Valid for</i>	<i>For use (period)</i>
FB1/8	0000Z	0600Z	0200-0900Z
FB2/9	0000Z	1200Z	0900-1800Z
FB3/10	0000Z	0000Z	1800-0600Z
FB1/8	0600Z	1200Z	0800-1500Z
FB2/9	0600Z	1800Z	1500-0000Z
FB3/10	0600Z	0600Z	0000-1200Z
FB1/8	1200Z	1800Z	1400-2100Z
FB2/9	1200Z	0000Z	2100-0600Z
FB3/10	1200Z	1200Z	0600-1800Z
FB1/8	1800Z	0000Z	2000-0300Z
FB2/9	1800Z	0600Z	0300-1200Z
FB3/10	1800Z	1800Z	1200-0000Z

9-3-2. LEVELS FORECAST

Dependent upon station elevation, FB1/2/3 wind forecasts are issued for the following levels: 3, 6, 9, 12, 18, 24, 30, 34, and 39 thousand foot levels. The first level for which a wind forecast is issued is 1,500 feet or more above the station elevation. Temperature is forecast for all wind levels that are 2,500 feet or more above the station. No temperature is forecast for the 3,000 foot level. The minus signs are deleted preceding the temperatures at the 30, 34, and 39 thousand foot levels. FB8/9/10 are for the 45,000 and 53,000 foot levels. They are not normally disseminated on Service A, but are available on request/reply.

9-3-3. DISTRIBUTION

All FBs are transmitted to the WMSCR by NCEP. Distribution by the WMSCR is accomplished in accordance with established program requirements.

Section 7. Flight Advisories (SIGMET/WS–Airmet/WA–Convective SIGMET/WST)

9–7–1. GENERAL

Flight advisories are issued by the AWC in Kansas City, Missouri, the AAWU in Anchorage, Alaska, and the WFO in Honolulu, Hawaii, for the occurrence or expected occurrence of specified en route weather phenomena which may affect the safety of aircraft operations. The report type designator WS for SIGMETs, WST for Convective SIGMETs, and WA for AIRMETs is used to effect selective distribution

For the contiguous U.S., WSTs are issued hourly at 55 minutes past every hour. WAs are issued as described in TBL 9–7–1.

9–7–2. DISTRIBUTION

WSs are distributed at unscheduled times to all Service A circuits. WAs and WSTs bulletins are distributed as scheduled products. Updates or amendments issued will completely replace the previously issued advisory.

TBL 9–7–1
(Effective 09/18/14)

	1st Scheduled Issuance (UTC)	2nd Scheduled Issuance (UTC)	3rd Scheduled Issuance (UTC)	4th Scheduled Issuance (UTC)
CONUS	0255	0855	1455	2055
Alaska	0415 (DT)/ 0515 (ST)	1215 (DT)/ 1315 (ST)	2015 (DT)/ 2115 (ST)	None
Hawaii	0400	1000	1600	2200
Note: DT – Daylight Time, ST – Standard Time				

Chapter 10. Airport Lighting and Visibility Aids (Alaska Only)

Section 1. General

10-1-1. AIRPORT LIGHTING

a. General Lighting. Operate airport lighting in accordance with associated tables except:

1. As requested by the pilot.
2. As required by facility directives or letters of agreement to meet local conditions or requirements.
3. As specialist deems necessary if not contrary to pilot's request or local directives.

b. Emergency Lighting. When it appears that an emergency has or will occur, provide for the operation of all appropriate airport lighting aids in accordance with local procedures and/or as required.

10-1-2. OBSTRUCTION LIGHTS

If controls are provided, operate the lights between sunset and sunrise.

10-1-3. ROTATING BEACON

If controls are provided, turn on the rotating beacon:

- a. Between sunset and sunrise.
- b. Between sunrise and sunset when the reported ceiling or visibility is below basic VFR minima.

10-1-4. APPROACH LIGHTS

Operate approach lights:

a. Between sunset and sunrise when one of the following conditions exists:

1. They serve the landing runway.
2. They serve a runway to which an approach is being made but aircraft will land on another runway.
- b. Between sunrise and sunset when the ceiling is less than 1,000 feet or the prevailing visibility is 5 miles or less and approaches are being made to:
 1. A landing runway served by the lights.

2. A runway served by the lights but aircraft are landing on another runway.

3. The airport, but landing will be made on a runway served by the lights.

- c. As requested by the pilot.
- d. As you deem necessary, if not contrary to pilot's request.

NOTE-
In the interest of energy conservation, the approach lighting system should be turned off when not needed for aircraft operations.

10-1-5. APPROACH LIGHTING SYSTEM INTENSITY SETTINGS (ALS)

Operate intensity controls in accordance with the values depicted. (See TBL 10-1-1)

TBL 10-1-1
ALS Intensity Setting

Step	Visibility (Applicable to runway served by lights)	
	Day	Night
5	Less than 1 mile.*	When requested.
4	1 to but not including 3 miles.	When requested.
3	3 to but not including 5 miles.	Less than 1 mile.*
2	5 to but not including 7 miles.	1 to 3 miles inclusive.
1	When requested.	Greater than 3 miles.
* and/or 6,000 feet or less of RVR on the runway served by the ALS and RVR.		
Note.- Daylight steps 2 and 3 provide recommended settings applicable to conditions in ALS Intensity Settings.		

10-1-6. SEQUENCED FLASHING LIGHTS (SFL)

Operate sequenced flashing lights when the visibility is less than 3 miles and instrument approaches are being made to the runway served by the associated ALS.

NOTE-

SFLs are a component of the ALS and cannot be operated when the ALS is off.

10-1-7. RUNWAY EDGE LIGHTS

Operate the runway edge light system(s) serving the runway(s) in use as follows:

- a. Between sunset and sunrise.

1. For departures when an aircraft calls for airport advisory or requests the lights be turned on until the aircraft reports departing the airport area or 15 minutes after the last contact with the aircraft.

2. For arrivals when an aircraft calls for airport advisory or when the associated approach control advises that an aircraft is on approach until the aircraft reports/is observed clear of the runway or 15 minutes after last radio contact or arrival time.

b. Between sunrise and sunset, turn the lights on when the surface visibility is less than 2 miles as described in subparagraphs 10-1-7a1 and a2.

c. The specialist considers it necessary, or it is requested by a pilot and no other known aircraft will be adversely affected.

d. Do not turn on the runway edge lights when a NOTAM closing the runway is in effect.

e. Alaska. The runway lights should remain on from the end of civil twilight to the beginning of civil twilight. If the runway lights are operated part-time in this period, broadcast a warning over the airport advisory frequency 2 minutes before turning the lights off.

10-1-8. CHANGING LIGHTED RUNWAYS

- a. To switch lights:

1. Advise all known aircraft that the lights are to be changed, specifying the runway to be lighted.

2. Turn on the lights for the new runway 30 seconds before turning off the other runway lights, equipment permitting.

b. When a pilot requests that other than the favored runway be lighted and two runways cannot be lighted simultaneously, comply with the request if you have no knowledge of the lighted runway being in use. Advise all known aircraft.

10-1-9. MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS (MALSR)/OMNIDIRECTIONAL APPROACH LIGHTING SYSTEM (ODALS)

Operate MALSR/ODALS that have separate on-off and intensity setting controls in accordance with TBL 10-1-2 and TBL 10-1-3.

NOTE-

Application concerns use for takeoffs/landings/approaches and does not preclude turning lights on for use of unaffected portions of a runway for taxiing aircraft, surface vehicles, maintenance, repair, etc.

TBL 10-1-2

Two-Step MALSR/One-Step RAIL

Setting	Visibility	
	Day	Night
MALSR HI-RAIL ON	Less than 3 miles.	Less than 3 miles.*
MALSR LOW	When requested.	3 miles or more.

*At locations providing part-time flight service, the MALSR must be set to low intensity during the hours of darkness when the station is unmanned.

TBL 10-1-3

Three-Step MALSR/Three-Step RAIL

Setting	Visibility	
	Day	Night
3	Less than 2 miles.	Less than 1 mile.
2	2 to 5 miles inclusive.	1 to but not including 3 miles.*
1	When requested.	3 miles or more.

*At locations providing part-time flight service, the air-to-ground radio link must be activated during the hours of darkness when the station is unmanned. If there is no radio air-to-ground control, the MALSR must be set on intensity step #2 during the hours of darkness when the station is unmanned. (Reference- FAA Order JO 7210.3, Para 10-6-4, Approach Light Systems.)

10-1-10. HIGH INTENSITY RUNWAY LIGHTS (HIRL) ASSOCIATED WITH MALSR

Operate HIRL that controls the associated MALSR in accordance with the intensity setting in TBL 10-1-4.

TBL 10-1-4

HIRL Associated with MALSR

Step	Visibility	
	Day	Night
5	Less than 1 mile.	When requested.
4	1 to but not including 2 miles.	Less than 1 mile.

3	2 to but not including 3 miles.	1 to but not including 3 miles.
2	When requested.	3 to 5 miles inclusive.
1	When requested.	More than 5 miles.

NOTE-

When switching from a given brightness step setting to a lower setting, rotation of the brightness control to a point below the intended step setting and then back to the appropriate step setting will ensure that the MALSRL will operate at the appropriate brightness.

10-1-11. MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)

Operate MIRL or MIRL which control the associated MALSRL in accordance with the TBL 10-1-5.

TBL 10-1-5
MIRL Intensity Setting

Step	Visibility	
	Day	Night
3	Less than 2 miles.	Less than 1 mile.
2	2 to 3 miles.	1 to 3 miles.
1	When requested.	More than 3 miles.

REFERENCE-

FAA Order JO 7110.10, Para 10-1-10 Note.

10-1-12. HIGH INTENSITY RUNWAY, RUNWAY CENTERLINE (RCLS), AND TOUCHDOWN ZONE LIGHTS (TDZL)

Operate high intensity runway and associated runway centerline and touch-down zone lights in accordance with TBL 10-1-6.

TBL 10-1-6
HIRL, RCLS, TDZL Intensity Setting

Step	Visibility	
	Day	Night
5	Less than 1 mile.*	When requested.
4	1 to but not including 2 miles.	Less than 1 mile.
3	2 to but not including 3 miles.	1 to but not including 3 miles.
2	When requested.	3 to 5 miles inclusive.
1	When requested.	More than 5 miles.

* and/or appropriate RVR/RVV equivalent.

10-1-13. HIRL CHANGES AFFECTING RVR

Keep the appropriate approach controller or Precision Approach Radar (PAR) controller informed, in advance if possible, of HIRL changes that affect RVR.

10-1-14. HIGH SPEED TURNOFF LIGHTS

Operate high speed turnoff lights whenever the associated runway lights are used for arriving aircraft. Leave them on until the aircraft has either entered a taxiway or passed the last light.

10-1-15. RUNWAY END IDENTIFIER LIGHTS (REIL)

When separate on-off controls are provided, operate runway end identifier lights when the associated runway lights are lighted. Turn the REIL off after:

- a. An arriving aircraft has landed.
- b. A departing aircraft has left the traffic pattern area.
- c. It is determined that the lights are of no further use to the pilot.
- d. Operate intensity setting in accordance with the values in TBL 10-1-7 except as prescribed in subparas b and c above.

TBL 10-1-7
REIL Intensity Setting, Two-Step System

Step	Visibility	
	Day	Night
3	Less than 2 miles.	Less than 1 mile.
2	2 to 5 miles.	1 to but not including 3 miles.
1	When requested.	3 miles or more

10-1-16. TAXIWAY LIGHTS

Operate taxiway lights serving the taxiways, or portions thereof, in use between sunset and sunrise before an aircraft taxis onto the taxiway (normally at the time taxi information is issued) and until it taxis off it. Operate taxiway lights in accordance with TBL 10-1-8, TBL 10-1-9, or TBL 10-1-10.

**TBL 10-1-8
Three Step Taxiway Lights**

Step	Visibility	
	Day	Night
3	Less than 1 mile.	When requested.
2	When requested.	Less than 1 mile.
1	When requested.	1 mile or more

**TBL 10-1-9
Five Step Taxiway Lights**

Step	Visibility	
	Day	Night
5	Less than 1 mile.	When requested.
4	When requested.	Less than 1 mile.
3	When requested.	1 mile or more.
1 & 2	When requested.	When requested.

**TBL 10-1-10
One Step Taxiway Lights**

Day	Night
Less than 1 mile.	On

10-1-17. VISUAL APPROACH SLOPE INDICATORS (VASIs)

The VASI system with remote on-off switching must be operated when it serves the runway in use and where intensities are controlled in accordance with TBL 10-1-11 and TBL 10-1-12.

**TBL 10-1-11
VASI Intensity Setting, Two-Step System**

Step	Period	Condition
High	Day	Sunrise to sunset
Low	Night	Sunrise to sunset

**TBL 10-1-12
VASI Intensity Setting, Three-Step System**

Step	Period	Condition
High	Day	Sunrise to sunset
Medium	Twilight	From sunset to 30 minutes after sunset and from 30 minutes before sunrise to sunrise, *and during twilight in Alaska.
Low	Night	Sunset to sunrise.

NOTE-

1. During a 1-year period, twilight may vary 26 to 43 minutes between 25 and 49 degrees N latitude.
2. The basic FAA standard for VASI systems permits independent operation by means of photoelectric device. This system has no on-off control feature and is intended for continuous operation. Other VASI systems in use include those that are operated remotely from the control tower. These systems may consist of either a photoelectric intensity control with only an on-off switch, a two-step intensity system, or a three-step intensity system.

REFERENCE-

FAA Order JO 7210.3, Para 10-6-5, Visual Approach Slope Indicator (VASI) Systems.

10-1-18. VISIBILITY AIDS - GENERAL

a. Where RVR/ RVV equipment is operational, irrespective of subsequent operation or nonoperation of navigational or visual aids for the application of RVR/RVV as a takeoff or landing minima, furnish the values for the runway in use in accordance with Paragraph 10-1-19, RVR/RVV.

b. Issue current touchdown RVR/RVV for the runway(s) in use:

1. When prevailing visibility is 1 mile or less regardless of the value indicated.
2. When RVR/RVV indicates a reportable value regardless of the prevailing visibility.

NOTE-

Reportable values are: RVR 6,000 feet or less; RVV 1-1/2 miles or less.

3. When it is determined from a reliable source that the indicated RVR value differs by more than 400 feet from the actual conditions within the area of the transmissometer, the RVR data is not acceptable and must not be reported.

NOTE-

A reliable source is considered to be a certified weather observer, air traffic controller, or pilot.

4. When the observer has reliable reports, or has otherwise determined that the instrument values are not representative of the associated runway, the data must not be used.

10-1-19. RVR/RVV

a. Provide RVR/RVV information by stating the runway, the abbreviation RVR/RVV, and the indicated value. When issued along with other weather elements, transmit these values in the normal sequence used for weather reporting.

**TBL 12-1-8
Ceiling and Sky Coverage**

<i>Designator</i>	<i>Phraseology</i>
BKN000 ¹	SKY PARTIALLY OBSCURED
BKN000 ²	CEILING LESS THAN FIVE ZERO BROKEN
FEW000 ¹	SKY PARTIALLY OBSCURED
FEW000 ²	FEW CLOUDS AT LESS THAN FIVE ZERO
(lowest layer aloft) BKN/OVC	(precede with) CEILING
SCT000 ¹	SKY PARTIALLY OBSCURED
SCT000 ²	LESS THAN FIVE ZERO SCATTERED
VV	INDEFINITE CEILING

¹ Surface-based obscurations. Requires remarks, i.e. RMK FG SCT000, FU BKN000, etc.
² No remark means the layer is aloft.

2. State cloud heights in tens, hundreds and/or thousands of feet. (See TBL 12-1-9.)

**TBL 12-1-9
Cloud Heights**

<i>Number</i>	<i>Phraseology</i>
000 ¹	ZERO
003	THREE HUNDRED
018	ONE THOUSAND EIGHT HUNDRED
200	TWO ZERO THOUSAND

¹ Spoken as zero only when used with VV.

NOTE-

1. When the ceiling is less than 3,000 feet and variable, the variable limits will be reported in the remarks.

2. When communicating weather information on the TIBS broadcast or telephone, specialist may announce cloud heights in either group form or in hundreds or thousands of feet, such as seventeen thousand or one seven thousand.

3. "Group form" is the pronunciation of a series of numbers as the whole number, or pairs of numbers they represent rather than pronouncing each separate digit. The use of group form may, however, be negated by four-digit identifiers or the placement of zeros in the identifier.

3. Announce sky conditions as indicated below. (See TBL 12-1-10.)

**TBL 12-1-10
Sky Conditions**

<i>Contraction</i>	<i>Phraseology</i>
BKN	(height) BROKEN
CLR ¹	CLEAR BELOW ONE TWO THOUSAND
FEW	FEW CLOUDS AT (height)
OVC	(height) OVERCAST
SCT	(height) SCATTERED
SKC	CLEAR

¹ Automated weather reports.

4. TBL 12-1-11 contains examples of broadcast phraseology of sky and ceiling conditions.

**TBL 12-1-11
Sky and Ceiling Conditions**

<i>Condition</i>	<i>Phraseology</i>
BKN000 BKN010 BKN050 RMK FG BKN000	SKY PARTIALLY OBSCURED, CEILING ONE THOUSAND BROKEN, FIVE THOUSAND BROKEN. FOG OBSCURING FIVE TO SEVEN EIGHTS OF THE SKY.
BKN010	CEILING ONE THOUSAND BROKEN.
SCT000 SCT020 OVC035 RMK FG SCT000	SKY PARTIALLY OBSCURED, TWO THOUSAND SCATTERED, CEILING THREE THOUSAND FIVE HUNDRED OVERCAST. FOG OBSCURING THREE TO FOUR EIGHTS OF THE SKY.
SCT020 OVC250	TWO THOUSAND SCATTERED, CEILING TWO FIVE THOUSAND OVERCAST.
VV000	INDEFINITE CEILING ZERO.
VV012	INDEFINITE CEILING ONE THOUSAND TWO HUNDRED.

j. Announce surface temperature and dew point by stating the words "temperature" or "dew point," as appropriate, followed by the temperature in degrees Celsius. Temperatures below zero are announced by prefixing the word "minus" before the values. (See TBL 12-1-12.)

**TBL 12-1-12
Temperature/Dewpoint**

<i>Reading</i>	<i>Phraseology</i>
02/M01	"Temperature two, dew point minus one."
04/02	"Temperature four, dew point two."
18/13	"Temperature one eight, dew point one three."

k. Altimeter Setting.

1. State the word “altimeter” followed by the four digits of the altimeter setting. (See TBL 12-1-13.)

**TBL 12-1-13
Altimeter Setting**

<i>Altimeter Setting</i>	<i>Phraseology</i>
A2989	“Altimeter two niner eight niner.”
A3001	“Altimeter three zero zero one.”
A3025	“Altimeter three zero two five.”

2. Identify the source of all altimeter settings when issued, if not given as part of an identified surface observation. Provide the time of the report if more than one hour old.

PHRASEOLOGY-

(airport name) (time of report if more than one hour old)
ALTIMETER (setting).

3. If a request for the altimeter setting in MBs is received, announce the separate digits of the MB equivalent value, using the MB conversion chart, followed by the word “Mbs.” If the MB setting is not a whole number, always round down. (See TBL 12-1-14.)

REFERENCE-

FAA Order JO 7110.10, Para 4-3-5e, Routine Radio Contacts.

**TBL 12-1-14
Millibar Conversion**

<i>Millibar Conversion</i>	<i>Phraseology</i>
956.3	“Altimeter niner five six millibars.”
1002.0	“Altimeter one zero zero two millibars.”
1058.9	“Altimeter one zero five eight millibars.”

4. When altimeter is in excess of 31.00:

(a) Advise all aircraft.

PHRASEOLOGY-

ALTIMETER GREATER THAN THREE ONE ZERO ZERO. HIGH PRESSURE ALTIMETER PROCEDURES ARE IN EFFECT.

(b) Advise VFR aircraft to set altimeter to 31.00 en route.

PHRASEOLOGY-

RECOMMEND YOU SET ALTIMETER THREE ONE ZERO ZERO EN ROUTE.

12-1-9. WEATHER REMARKS

Announce pertinent remarks from surface weather observations in accordance with FAA Order JO 7340.2, Contractions, and as shown in the following tables. Do not state additive data or other information intended for NWS analysis or processing that does not contribute to the description of the conditions occurring at the station.

a. Sky and Ceiling (See TBL 12-1-15.)

**TBL 12-1-15
Sky and Ceiling**

<i>Contraction</i>	<i>Phraseology</i>
CIG 005V010	“Ceiling variable between five hundred and one thousand.”
CIG 020 RY11	“Ceiling two thousand at runway one one.”
CB N MOV E	“Cumulonimbus north moving east.”
CBMAM DSNT S	“Cumulonimbus mammatus distant south.”
CLDS TPG MT SW	“Clouds topping mountain southwest.”
CONTRAILS N FL420	“Condensation trails north at flight level four two zero.”
FRQ LTCIC VC	“Frequent lightning in cloud in the vicinity.”
LWR CLDS NE	“Lower clouds northeast.”
OCNL LTGICCG NW	“Occasional lightning in cloud and cloud to ground northwest.”
RDGS OBSCD W-N	“Ridges obscured west through north.”

b. Obscuring Phenomena. (See TBL 12-1-16.)

**TBL 12-1-16
Obscuring Phenomena**

<i>Contraction</i>	<i>Phraseology</i>
BLSN SCT000	“Blowing snow obscuring three to four-eighths of the sky.”
DU BKN000	“Dust obscuring five to seven-eighths of the sky.”
FG FU FEW000	“Fog and smoke obscuring one to two-eighths of the sky.”
FU SCT020	“Smoke layer two thousand scattered.”
SN BKN000	“Snow obscuring five to seven-eighths of the sky.”

**TBL 12-1-35
Heading/Degrees**

Heading	Phraseology
5 degrees	“Heading, zero zero five.”
30 degrees	“Heading, zero three zero.”
360 degrees	“Heading, three six zero.”

g. Radar beacon codes. The word squawk followed by the separate digits of the four-digit code. (See TBL 12-1-36.)

**TBL 12-1-36
Radar Beacon**

Code	Phraseology
1000	“Squawk one zero zero zero.”
2100	“Squawk two one zero zero.”

h. Runways. The word “runway” followed by the separate digits of the runway designation. For a parallel runway, state the word “left,” “right,” or “center” if the letter “L,” “R,” or “C” is included in the designation. (See TBL 12-1-37.)

**TBL 12-1-37
Runway Designation**

Designation	Phraseology
3	“Runway three.”
8L	“Runway eight left.”
27R	“Runway two seven right.”

i. Frequencies.

1. The separate digits of the frequency, inserting the word “point” where the decimal occurs. When the frequency is in the L/MF or HF band, include the word “kilohertz.” (See TBL 12-1-38.)

**TBL 12-1-38
Frequencies**

Frequency	Phraseology
302 kHz	“Three zero two kilohertz.”
5631 kHz	“Five six three one kilohertz.”
126.55 MHz	“One two six point five five.”
135.275 MHz	“One three five point two seven.”

2. Issue MLS/TACAN frequencies by stating the assigned two- or three- digit channel number.

EXAMPLE-

“M-L-S channel five three zero.”
“TACAN channel niner seven.”

j. Speeds.

1. The separate digits of the speed followed by the word knots. (See TBL 12-1-39.)

**TBL 12-1-39
Speed**

Speed	Phraseology
95	“Niner five knots.”
185	“One eight five knots.”
250	“Two five zero knots.”

2. For Mach speeds, the word “mach,” followed by the separate digits of the Mach number inserting the word “point” where the decimal occurs. (See TBL 12-1-40.)

**TBL 12-1-40
Speed**

Mach Number	Phraseology
0.64	“Mach point six four.”
0.7	“Mach point seven.”
1.5	“Mach one point five.”

k. Miles. The separate digits of the mileage followed by the word mile(s). (See TBL 12-1-41.)

**TBL 12-1-41
Miles**

Miles	Phraseology
30	“Three zero miles.”

12-1-14. FACILITY IDENTIFICATION

Identify facilities as follows:

a. Airport traffic control towers. State the name of the facility followed by the word “tower.” Where military and civil airports are located in the same general area and have similar names, state the name of the military service followed by the name of the military facility and the word “tower.”

EXAMPLE-

“Barksdale Tower.”
“Columbus Tower.”
“Navy Jacksonville Tower.”

b. Function within a terminal facility. State the name of the facility followed by the name of the function.

EXAMPLE-

“Boston Departure.”
“LaGuardia Clearance Delivery.”
“O’Hare Ground.”

c. Approach control facilities, including TRACONS, RAPCONS, RATCFs, and ARACs. State the name of the facility followed by the word approach. Where military and civil facilities are located in the same general area and have similar

names, state the name of the military service followed by the name of the military facility and the word “approach”.

EXAMPLE-

“Denver Approach.”

“Griffiss Approach.”

“Navy Jacksonville Approach.”

d. Air route traffic control centers. State the name of the facility followed by the word “center.”

e. When calling or replying on an interphone line which connects only two facilities, you may omit the facility’s name.

EXAMPLE-

“Flight Data.”

“Inflight, clearance request.”

f. Flight service stations.

1. Inflight position. State the name of the FSS followed by the word “radio,” and position if appropriate.

EXAMPLE-

“Fairbanks Radio.”

“Miami Radio, Inflight.”

2. When calling or replying on interphone lines connecting more than one facility, state the name of the FSS followed by the word “radio.”

EXAMPLE-

“Cleveland Radio.”

3. When answering public access telephone lines, state the geographical name of the FSS and the words “Flight Service.” Contract facilities must answer public access lines by stating the name of the service provider and type.

EXAMPLE-

“Juneau Flight Service.”

“(Service Provider Name) Flight Service.”

g. Radar facilities having ASR or PAR but not providing approach control service. State the name of the facility followed by the letters “G-C-A.”

EXAMPLE-

“Chanute G-C-A.”

“Corpus Christi G-C-A.”

“Davison G-C-A.”

12-1-15. AIRCRAFT IDENTIFICATION

a. Civil. State the aircraft type, the model, the manufacturer’s name, or the prefix “November,”

followed by the numbers/letters of the aircraft registration.

EXAMPLE-

“Bonanza One Two Three Four Tango.”

“Douglas Three Zero Five Romeo.”

“Jet Commander One Four Two Four.”

“November One Two Three Four Golf.”

NOTE-

The prefix November denotes a U.S. aircraft registry.

1. Air carrier and other civil aircraft having FAA authorized call signs. State the call sign, in accordance with FAA Order JO 7340.2, Contractions, followed by the flight number in group form.

EXAMPLE-

“American Five Twenty-One.”

“United One Zero One.”

“General Motors Thirty-Fifteen.”

“Delta One Hundred.”

2. If aircraft identification becomes a problem, the call sign must be restated after the flight number of the aircraft involved.

EXAMPLE-

“American Five Twenty-One American.”

“Commuter Six Eleven Commuter.”

“General Motors Thirty-Seven General Motors.”

REFERENCE-

FAA Order JO 7210.3, Para 2-1-14, Aircraft Identification Problems

3. Air taxi and commercial operators not having FAA-authorized call signs. State the prefix “TANGO” on initial contact, if used by the pilot, followed by the registration number. The prefix may be dropped in subsequent communications.

EXAMPLE-

On initial contact.

“Tango Mooney Five Five Five Two Quebec.”

or

“Tango November Five Five Five Two Quebec.”

On subsequent contacts.

“Mooney Five Two Quebec.”

or

“November Five Two Quebec.”

b. MEDEVAC aircraft.

1. Air carrier/taxi/ambulance. State the prefix “MEDEVAC” if used by the pilot, followed by the call sign and flight number in group form.

EXAMPLE-

“MEDEVAC Delta Fifty-One.”

NOTE-

Use of "MEDEVAC" call sign indicates that operational priority is requested.

2. Civilian airborne ambulance. State the word "MEDEVAC," followed by the numbers/letters of the registration number.

EXAMPLE-

"MEDEVAC Two Six Four Six X-Ray."

c. U.S. Military. State one of the following:

1. The service name followed by the word "copter," when appropriate, and the last 5 digits of the serial number.

EXAMPLE-

"Guard Two Six Three."

"Army Copter Three Two One Seven Six."

"Coast Guard Six One Three Two Seven."

"Navy Five Six Seven One Three."

2. If aircraft identification becomes a problem when the above procedures are used, the call sign must be restated after the flight number of the aircraft involved in accordance with FAA Order JO 7210.3, Para. 2-1-14, Aircraft Identification Problems, will apply.

EXAMPLE-

"Army Copter Three Two One Seven Six Army Copter."

"Coast Guard Six One Three Two Seven Coast Guard."

3. Special military operations. State one of the following followed the last 5 digits of the serial number:

(a) Air evacuation flights. "AIR EVAC," "MARINE AIR EVAC," or "NAVY AIR EVAC."

EXAMPLE-

"AIR EVAC One Seven Six Five Two."

(b) Rescue flights. (Service name) "RESCUE."

EXAMPLE-

"Air Force Rescue Six One Five Seven Niner."

(c) Air Mobility Command. "REACH."

EXAMPLE-

"Reach Seven Eight Five Six Two."

(d) Special Air Mission. "SAM."

EXAMPLE-

"Sam Niner One Five Six Two."

(e) USAF Contract Aircraft. "LOGAIR."

EXAMPLE-

"Logair Seven Five Eight Two Six."

4. Military tactical and training.

(a) U.S. Air Force, Air National Guard, Military District of Washington priority aircraft, and USAF civil disturbance aircraft. Pronounceable words of 3 to 6 letters followed by a 1 to 4 digit number.

EXAMPLE-

"Paul Two Zero."

"Pat One Five Seven."

"Graydog Four."

NOTE-

Then the "Z" suffix described in para 6-5-3, USAF/USN Undergraduate Pilots, is added to identify aircraft piloted by USAF/USN undergraduate pilots, the call sign will be limited to a combination of six characters. Do not use this suffix, however, in ground-to-air communication.

(b) Navy or Marine fleet and training command aircraft. The service name and 2 letters or a digit and a letter (use letter phonetic equivalents) followed by 2 or 3 digits.

EXAMPLE-

"Marine Four Charlie Two Three Six."

"Navy Golf Alpha Two One."

(c) NORAD interceptors. An assigned double-letter two-digit flight number.

EXAMPLE-

"Alpha Kilo One Five."

(d) Navy Fleet Support Missions. When handling Navy Fleet Support Mission aircraft, use the words "Special Flight Number," followed by the number as given by the pilot.

d. Foreign registry. State one of the following:

1. Civil. State the aircraft type or the manufacturer's name followed by the letters/numbers of the aircraft registration, or state the letters or digits of the aircraft registration or call sign.

EXAMPLE-

"Stationair F-L-R-B."

"C-F-L-R-B."

"Canadian Foxtrot Lima Romeo Bravo."

NOTE-

Letters may be spoken individually or phonetically.

2. Air carrier. The abbreviated name of the operating company followed by:

(a) The letters or digits of the registration or call sign.

EXAMPLE-

"Air France F-L-R-L-G."

NOTE-

Letters may be spoken individually or phonetically in accordance with the format used by the pilot.

(b) The flight number in group form, or separate digits may be used if that is the format used by the pilot.

EXAMPLE-

“Scandinavian Six Eight.”

“Scandinavian Sixty-eight.”

3. Foreign Military.

(a) Except for military services identified in FAA Order JO 7340.2, Contractions, state the name of the country and the military service followed by the separate digits or letters of the registration or call sign.

EXAMPLE-

“Brazilian Air Force Five Three Two Seven Six.”

“Canforce Five Six Two Seven.”

e. Presidential aircraft and Presidential family aircraft.

1. When the President is aboard a military aircraft, state the name of the military service followed by the word “One.”

EXAMPLE-

“Air Force One.”

“Army One.”

“Marine One.”

2. When the President is aboard a civil aircraft, state the words “Executive One.”

3. When a member of the President’s family is aboard any aircraft, if the U.S. Secret Service or the White House Staff determines it is necessary, state the words “Executive One Foxtrot.”

f. Vice Presidential aircraft.

1. When the Vice President is aboard a military aircraft, state the name of the military service followed by the word “Two.”

EXAMPLE-

“Air Force Two.”

“Army Two.”

“Marine Two.”

2. When the Vice President is aboard a civil aircraft, state the words “Executive Two.”

3. When a member of the Vice President’s family is aboard any aircraft, if the U.S. Secret

Service or the White House Staff determines it is necessary, state the words “Executive Two Foxtrot.”

g. DOT and FAA flights. The following alphanumeric identifiers and radio/ interphone call signs are for use in air/ground communications when the Secretary of Transportation, Deputy Secretary of Transportation, FAA Administrator, or FAA Deputy Administrator have a requirement to identify themselves:

1. Department of Transportation.

(a) Secretary:

(1) Identifier - DOT-1.

(2) Call Sign - Transport-1.

(b) Deputy Secretary:

(1) Identifier - DOT-2.

(2) Call Sign - Transport-2

2. Federal Aviation Administration.

(a) Administrator:

(1) Identifier - FAA-1.

(2) Call Sign - Safe Air-1.

(b) Deputy Administrator:

(1) Identifier - FAA-2

(2) Call Sign - Safe Air-2.

PHRASEOLOGY-

Grand Forks Radio, Transport Two, (message).

Miami Radio, Safe Air One, (message).

h. Other special flights.

1. Department of Energy flights. State the letters “R-A-C” (use phonetic alphabet equivalents), followed by the last 4 separate digits of the aircraft registration number.

EXAMPLE-

“Romeo Alfa Charlie One Six Five Three.”

2. Semiautomatic Flight Inspections. State the code name “SAFI,” followed by the separate digits of the grid number as filed.

EXAMPLE-

“SAFI Five Two Seven.”

3. Flight Inspection of navigational aids. State the call sign “Flight Check,” followed by the digits of the registration number.

EXAMPLE-

“Flight check Three Niner Six Five Four.”

4. USAF aircraft engaged in aerial sampling missions. State the call sign “SAMP,” followed by the last three digits of the serial number.

EXAMPLE–

“SAMP Three One Six.”

5. United States governmental Departments or Agencies, with a demonstrated and approved need, have been granted special domestic/ICAO telephonics (call signs). These items are contained in FAA Order JO 7110.67, Special Aircraft Operations by Federal, State Law Enforcement, Military Organizations, and Special Activities.

i. Use a pilot’s name in identification of an aircraft only in special or emergency situations.

12–1–16. DESCRIPTION OF AIRCRAFT TYPES

Except for heavy aircraft, describe aircraft as follows:

a. Military.

1. Military designator with number spoken in group form; or

2. Service and type; or

3. Type only if no confusion or misidentification is likely.

EXAMPLE–

“Air Force Bomber.”

“B-One.”

“Bomber.”

“F-Fifteen.”

“Fighter.”

“Navy Fighter.”

b. Air Carrier.

1. Manufacturer’s name or model.

2. Add the manufacturer’s name, company name or other identifying features when confusion or misunderstanding is likely.

EXAMPLE–

“American M-D Eighty Seven-Thirty-Seven.”

“Boeing Seven-Fifty-Seven.”

“L-Ten-Eleven.”

c. General Aviation and Air Taxi.

1. Manufacturer’s model, name, or designator.

2. Manufacturer’s name, or add color when considered advantageous.

EXAMPLE–

“Airliner.”

“Blue and White King Air.”

“Cessna Four-Oh-One.”

“Cessna Three Ten.”

“Green Apache.”

“P-A Twenty-Two.”

“Tri-Pacer.”

12–1–17. AIRCRAFT EQUIPMENT CODES

When communicating this information (aircraft equipment suffixes) state the aircraft type, the word “slant,” and the appropriate phonetic letter equivalent of the suffix.

EXAMPLE–

“Boeing Seven-Oh-Seven slant Romeo.”

“D-C Six slant Tango.”

“F-Eight-E slant Papa.”

“F-Four-C slant November.”

12–1–18. AIRWAYS AND ROUTES

Describe airways, routes, or jet routes as follows:

a. VOR/VORTAC/TACAN airways or jet routes. State the word “Victor” or the letter “J,” followed by the number of the airway or route in group form. For RNAV routes, add the word “Romeo.”

EXAMPLE–

“J Eight Thirty Romeo.”

“J Five Thirty-Three.”

“Offset one zero miles right of J Eight Thirty Romeo.”

“Victor Seven Ten Romeo.”

“Victor Twelve.”

b. VOR/VORTAC/TACAN alternate airways. State the word “Victor,” followed by the number of the airway in group form and the alternate direction.

EXAMPLE–

“Victor Twelve South.”

c. Colored/L/MF airways. State the color of the airway followed by the number in group form.

EXAMPLE–

“Blue Eighty-One.”

d. Named Routes. State the words “North American Route” or “Bahama Route,” followed by the number of the route in group form.

EXAMPLE–

“North American Route Fifty.”

“Bahama Route Fifty-Five Victor.”

e. Military Training Routes (MTRs). State the letters “I-R” or “V-R,” followed by the number of the route in group form.

EXAMPLE-
 “I-R Five Thirty-One.”
 “V-R Fifty-two.”

12-1-19. NAVAID TERMS

a. Announce NAVAIDs as follows in TBL 12-1-42:

TBL 12-1-42
NAVAID Terms

Contraction	Phraseology
DME	D-M-E
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
ILS	I-L-S
LOM	Outer compass locator
MLS	M-L-S
NDB	Nondirectional radio beacon
RNAV	Area Navigation System
TACAN	TACK-AN
VOR	V-O-R
VORTAC	VOR- (as in “vortex”) TACK
WAAS	Wide Area Augmentation System

b. Describe radials, arcs, courses, bearings, and quadrants of NAVAIDs as follows:

1. VOR/VORTAC/TACAN/MLS NAVAIDs. State the name of the NAVAID followed by the separate digits of the radial/azimuth (omitting the word degrees) and the word “radial/azimuth.”

EXAMPLE-
 “Appleton Zero Five Zero Radial.”
 “Lindburg Runway Two Seven MLS two six zero azimuth.”

2. Arcs about VOR-DME/VORTAC/TACAN/MLS NAVAIDs. State the distance in miles from the NAVAID followed by the words “mile arc,” the direction from the NAVAID in terms of the eight principal points of the compass, the word “of,” and the name of the NAVAID.

EXAMPLE-
 “Two zero mile arc southwest of O’Hare Runway Two Seven Left M-L-S.”

3. Quadrant within a radius of NAVAID. State direction from NAVAID in terms of the quadrant; e.g.

NE, SE, SW, NW, followed by the distance in miles from the NAVAID.

EXAMPLE-
 “Cleared to fly northeast quadrant of Philipsburg VORTAC within four zero mile radius.”

REFERENCE-
 P/CG Term, QUADRANT.

4. Nondirectional beacons. State the course to or the bearing from the radio beacon, omitting the word “degree,” followed by the words “course to” or “bearing from,” the name of the radio beacon, and the words “radio beacon”.

EXAMPLE-
 “Three four zero bearing from Randolph Radio Beacon.”

12-1-20. NAVAID FIXES

Describe fixes determined by reference to a radial/localizer/azimuth and distance from a VOR-DME/VORTAC/TACAN/ILS-DME or MLS as follows:

a. When a fix is not named, state the name of the NAVAID, followed by a specified radial/localizer/azimuth, and state the distance in miles followed by the phrase “mile fix.”

EXAMPLE-
 “Appleton zero five zero radial three seven mile fix.”
 “Reno localizer back course four mile fix.”
 “Hobby Runway One Two M-L-S zero niner zero azimuth one two mile fix.”

b. When a fix is charted on a SID, STAR, en route chart, or approach plate, state the name of the fix followed by the phrase “D-M-E fix” or “waypoint,” as appropriate.

EXAMPLE-
 “Shaum D-M-E Fix.”
 “Shaum Waypoint.”

c. Use specific terms to describe a fix. Do not use expressions such as “passing Victor Twelve” or “passing J Eleven.”

12-1-21. RUNWAY CONDITIONS

a. State factual information as reported by airport management concerning the condition of the runway surface and describing the accumulation of precipitation. Furnish quality of braking action as received from pilots to all aircraft as follows:

1. Describe the quality of 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.

2. Include the type of aircraft from which the report is received.

EXAMPLE–

*“All runways covered by packed snow six inches deep.”
“Braking action poor reported by a Boeing Seven Thirty-Seven.”*

3. 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, reported by a Gulfstream Two.”
“Braking action poor beyond the intersection of 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; for example, opposite the fire station, south of a taxiway.

b. State runway friction measurement readings/values as received from airport management to aircraft as follows:

1. At airports with friction measuring devices, provide runway friction reports, as received from airport management, to pilots on request. State the runway number followed by the MU number for each of the three runway zones, the time of the report in UTC, and a word describing the cause of the runway friction problem.

EXAMPLE–

“Runway Two Seven, MU forty-two, forty-one, twenty-eight at one zero one eight ZULU, ice.”

2. Issue the runway surface condition and/or the runway condition reading (RCR), if provided, to all USAF and 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 a 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.

Chapter 13. Data Communication Systems

Section 1. General

13-1-1. TYPES OF DATA ACCEPTABLE ON FAA DATA COMMUNICATIONS SYSTEMS

- a. Distress messages.
- b. Messages concerning safety to human life.
- c. Flight movement/control/safety messages.
- d. Aviation meteorological observations/forecasts/warnings.
- e. Administrative messages which pertain to FAA personnel, facilities, or property.
- f. NOTAM data.

13-1-2. PRIORITY MESSAGES

TBL 13-1-1
Priority Messages

Priority	Message Types	Action Required
SS	Involves safety of life or property. Restricted to emergency situations.	Transmit immediately to all addressees and deliver to all internal/external offices you are responsible for.
DD	Priority operational and circuit control data.	Same as above.
FF on local agreements	Flight movement and control data relating safe/efficient operation of aircraft. Also for administrative data of a directive nature.	Transmit immediately, make internal/external delivery during next available administrative work day if office is closed. Delivery may be required to duty officer, dependent.
GG	Meteorological, NOTAM and routine administrative data.	Transmit immediately, make internal/external delivery by 10:30AM of the next business day.

13-1-3. GROUP CODES

a. NADIN has established group codes to allow message originators to input a single address, which will result in dissemination to a selected number of facilities.

b. System-wide group codes have been established for the primary use of RWA/KRWAYAYX and the ATCSCC (KCFCZDZX). These codes are KDOMYFYX and KDOMYYYX respectively.

c. A group code has also been established for each regional office and ARTCC primarily for the issuance of regional office notices (RENOT) and all ARTCC instructions. They are as follows for Regional Offices in TBL 13-1-2 and ARTCCs in TBL 13-1-3.

TBL 13-1-2
Region Group Code

Region	ID
Alaska	PANCYGYX
Central	XKC
Eastern	XNY
Great Lakes	XGC
New England	XBW
Northwest Mountain	XST
Southern	XTL
Southwest	XFE
Western-Pacific	XLA

**TBL 13-1-3
ARTCC Group Code**

ARTCC	ID
Albuquerque	XXI
Atlanta	XXN
Boston	XXU
Chicago	XXC
Cleveland	XXD
Denver	XXO
Ft. Worth	XXJ
Houston	XXH
Indianapolis	XXA
Jacksonville	XXK
Kansas City	XXS
Los Angeles	XXF
Memphis	XXM
Miami	XXL
Minneapolis	XXE
New York	XXR
Oakland	XXG
Salt Lake City	XXP
Seattle	XXT
Washington	XXQ

NOTE-
Except in Alaska, all of the group codes can be converted to a full eight-character address by placing a K in front of and YFYX following the three characters listed in TBL 13-1-2 and TBL 13-1-3.

d. In addition, the following six group codes were established that include multiple states:

- 1. KFSSYFCE (CENTRAL AREA):**
AR-IN-IL-KY-MO-TN
- 2. KFSSYFEA (EAST COAST AREA):**
MD-NC-NJ-VA-WV
- 3. KFSSYFNE (NORTHEAST AREA):**
CT-ME-VT
- 4. KFSSYFNP (NORTHERN PLAINS AREA):** ID-MT-ND-NE-SD-WY
- 5. KFSSYFSE (SOUTHEAST AREA):**
AL-FL-GA

6. KFSSYFWC (WEST COAST AREA):
AZ-CA-NV-OR

e. Using a group code, the operational system automatically transmits all VFR flight plans to the Drug Enforcement Administration in addition to the destination at the time of activation.

NOTE-
All filed flight plans, as well as all logged inflight, preflight and contact briefings, are transmitted to the Air and Marine Operations Center (AMOC) using the address KRIVYYYY. These transmissions are transparent.

f. The group code KSARYCYX has been established to assist in the processing of INREQs and ALNOTs.

13-1-4. MESSAGE FORMATS

a. Specialists should follow the transmit formats defined for the operational system in use. Failure to comply can result in the message being rejected by either NADIN or WMSCR. This may result in non-delivery to the intended recipients.

b. Full keyboard punctuation is allowed on all messages destined for internal FAA, DOD, and NWS dissemination. For international dissemination, punctuation should be limited to those characters identified in pertinent ICAO documents.

c. Contractions and abbreviations should be used to shorten data transmissions to the extent possible. In no case should one be used that is not documented in FAA Order JO 7340.2, Contractions. For international communications, be aware that the foreign correspondent may not understand all FAA contractions and may not have a full command of the English language. Care should be exercised in international communications to avoid slang phrases and non-ICAO approved abbreviations.

d. The operational system can obtain weather or aeronautical information, including WMO collectives, by request/reply for data not stored in the system. Specific examples can be found in each operational system user guide.

13-1-5. WMSCR NEGATIVE RESPONSE MESSAGES

a. WMSCR automatically generates a negative response to request/reply inputs for which it cannot deliver.

1. NO REPORT AVBL. This response means the current data has not been received by WMSCR.

the computer cannot process the request because of an input error.

2. NOT IN SYSTEM. This response means WMSCR does not receive and store the requested data.

b. WMSCR will generate only one negative response message to a request/reply transmission that requests multiple reports and only when none of the data requested can be delivered.

3. INVALID FORMAT. This response means

13-1-6. Q SIGNALS

TBL 13-1-4
Q Signals

SIGNIFICATION		
Signal		Answer
	Question of Interrogatory Form (Signal followed by letter Q)	Information or Advise Form (Signal only, except as noted)
QAL	Has aircraft... landed at your location (or at...)?	Aircraft... landed here at... hours (or landed... at... hours).
QRU	Have you anything for me [or for... (location or person)]?	I have nothing for you [or for... (location or person)].
QSL	Can you acknowledge receipt of transmission number... (or type of message)?	I acknowledge receipt of transmission number... (or type of message).
QSM	Shall I repeat the last message (transmission or portion indicated sent to me or transmission(s) from...)?	Repeat the last message (transmission or portion indicated) sent to me (or transmission(s) from...). A--not received. B--partially received (garbled).
QTA	Shall I cancel message number... (or other identification)?	Cancel message number... (or other identification).

PILOT/CONTROLLER GLOSSARY

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:

AIRCRAFT HAZARD AREA (AHA)
 AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST IN (ADS–B In)
 AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST OUT (ADS–B Out)
 CONTINGENCY HAZARD AREA (CHA)
 COOPERATIVE SURVEILLANCE
 NON–COOPERATIVE SURVEILLANCE
 PRM APPROACH
 REFINED HAZARD AREA (RHA)
 ROUND–ROBIN FLIGHT PLAN
 SPACE–BASED ADS–B (SBA)
 SPOOFING
 TRANSITIONAL HAZARD AREA (THA)
 UNSERVICEABLE (U/S)

e. Terms Deleted:

GROUND–BASED TRANSCEIVER (GBT)
 HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE (HIWAS)
 HIWAS BROADCAST AREA
 HIWAS OUTLET AREA
 ILS PRM APPROACH
 RUNWAY VISIBILITY VALUE (RVV)

f. Terms Modified:

AREA NAVIGATION (RNAV) GLOBAL POSITIONING SYSTEM (GPS) PRECISION RUNWAY
 MONITORING (PRM) APPROACH
 AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST (ADS–B)
 FUSION [STARS/CARTS]
 GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) [ICAO]

ICING
JAMMING
OUT OF SERVICE
RADAR
SQUAWK (Mode, Code, Function)
STOP ALTITUDE SQUAWK
STOP SQUAWK (Mode or Code)
TARGET
TARGET SYMBOL
TRANSMISSOMETER
VISIBILITY

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

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, permanent 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.)

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 Airmen (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 AIRMEN.)

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.

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.

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 MARSA 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 AWW.)

(See CONVECTIVE SIGMET.)

(See CWA.)

(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. MALS– 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 STREAM FILTER (ASF)– An on/off filter that allows the conflict notification function to be inhibited for arrival streams into single or multiple airports to prevent nuisance alerts.

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.”

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.)

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.

(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 30NM arc centered on the IF bounded by a straight line extending through the IF perpendicular to the intermediate course.

2. LEFT BASE AREA– A 30NM arc centered on the right corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30NM 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 30NM arc centered on the left corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30NM 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.

ARINC– An acronym for Aeronautical Radio, Inc., a corporation largely owned by a group of airlines. ARINC is licensed by the FCC as an aeronautical station and contracted by the FAA to provide communications support for air traffic control and meteorological services in portions of international airspace.

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 AIRCRAFT INTERVAL– An internally generated program in hundredths of minutes based upon the AAR. AAI is the desired optimum interval between successive arrival aircraft over the vertex.

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 SECTOR– An operational control sector containing one or more meter fixes.

ARRIVAL SECTOR ADVISORY LIST– An ordered list of data on arrivals displayed at the PVD/MDM of the sector which controls the meter fix.

ARRIVAL SEQUENCING PROGRAM– The automated program designed to assist in sequencing aircraft destined for the same airport.

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

ARSR–

(See AIR ROUTE SURVEILLANCE RADAR.)

ARTCC–

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

ARTS–

(See AUTOMATED RADAR TERMINAL SYSTEMS.)

ASDA–

(See ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDA [ICAO]–

(See ICAO Term ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDE–

(See AIRPORT SURFACE DETECTION EQUIPMENT.)

ASF–

(See AIRPORT STREAM FILTER.)

ASLAR–

(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

ASP–

(See ARRIVAL SEQUENCING PROGRAM.)

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.)

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 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 RADAR TERMINAL SYSTEMS (ARTS)– A generic term for several tracking systems included in the Terminal Automation Systems (TAS). ARTS plus a suffix roman numeral denotes a major modification to that system.

a. ARTS IIIA. The Radar Tracking and Beacon Tracking Level (RT&BTL) of the modular, program-mable automated radar terminal system. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. This more sophisticated computer-driven system upgrades the existing ARTS III system by providing improved tracking, continuous data recording, and fail-soft capabilities.

b. Common ARTS. Includes ARTS IIE, ARTS IIIIE; and ARTS IIIIE with ACD (see DTAS) which combines functionalities of the previous ARTS systems.

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 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.)

AWW–

(See SEVERE WEATHER FORECAST ALERTS.)

C

CALCULATED LANDING TIME– A term that may be used in place of tentative or actual calculated landing time, whichever applies.

CALL FOR RELEASE– Wherein the overlying ARTCC requires a terminal facility to initiate verbal coordination to secure ARTCC approval for release of a departure into the en route environment.

CALL UP– Initial voice contact between a facility and an aircraft, using the identification of the unit being called and the unit initiating the call.

(Refer to AIM.)

CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE– That portion of Canadian domestic airspace within which MNPS separation may be applied.

CARDINAL ALTITUDES– “Odd” or “Even” thousand-foot altitudes or flight levels; e.g., 5,000, 6,000, 7,000, FL 250, FL 260, FL 270.

(See ALTITUDE.)

(See FLIGHT LEVEL.)

CARDINAL FLIGHT LEVELS–

(See CARDINAL ALTITUDES.)

CAT–

(See CLEAR-AIR TURBULENCE.)

CATCH POINT– A fix/waypoint that serves as a transition point from the high altitude waypoint navigation structure to an arrival procedure (STAR) or the low altitude ground-based navigation structure.

CEILING– The heights above the earth’s surface of the lowest layer of clouds or obscuring phenomena that is reported as “broken,” “overcast,” or “obscuration,” and not classified as “thin” or “partial.”

(See ICAO term CEILING.)

CEILING [ICAO]– The height above the ground or water of the base of the lowest layer of cloud below 6,000 meters (20,000 feet) covering more than half the sky.

CENRAP–

(See CENTER RADAR ARTS PRESENTATION/PROCESSING.)

CENRAP-PLUS–

(See CENTER RADAR ARTS PRESENTATION/PROCESSING-PLUS.)

CENTER–

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

CENTER’S AREA– The specified airspace within which an air route traffic control center (ARTCC) provides air traffic control and advisory service.

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

(Refer to AIM.)

CENTER RADAR ARTS PRESENTATION/PROCESSING– A computer program developed to provide a back-up system for airport surveillance radar in the event of a failure or malfunction. The program uses air route traffic control center radar for the processing and presentation of data on the ARTS IIA or IIIA displays.

CENTER RADAR ARTS PRESENTATION/PROCESSING-PLUS– A computer program developed to provide a back-up system for airport surveillance radar in the event of a terminal secondary radar system failure. The program uses a combination of Air Route Traffic Control Center Radar and terminal airport surveillance radar primary targets displayed simultaneously for the processing and presentation of data on the ARTS IIA or IIIA displays.

CENTER TRACON AUTOMATION SYSTEM (CTAS)– A computerized set of programs designed to aid Air Route Traffic Control Centers and TRACONS in the management and control of air traffic.

CENTER WEATHER ADVISORY– An unscheduled weather advisory issued by Center Weather Service Unit meteorologists for ATC use to alert pilots of existing or anticipated adverse weather conditions within the next 2 hours. A CWA may modify or redefine a SIGMET.

(See AWW.)

(See AIRMET.)

(See CONVECTIVE SIGMET.)

(See SIGMET.)

(Refer to AIM.)

CENTRAL EAST PACIFIC– An organized route system between the U.S. West Coast and Hawaii.

CEP–

(See **CENTRAL EAST PACIFIC**.)

CERAP–

(See **COMBINED CENTER-RAPCON**.)

CERTIFIED TOWER RADAR DISPLAY (CTRD)– An FAA radar display certified for use in the NAS.

CFR–

(See **CALL FOR RELEASE**.)

CHA

(See **CONTINGENCY HAZARD AREA**)

CHAFF– Thin, narrow metallic reflectors of various lengths and frequency responses, used to reflect radar energy. These reflectors, when dropped from aircraft and allowed to drift downward, result in large targets on the radar display.

CHART SUPPLEMENT U.S.– A publication designed primarily as a pilot's operational manual containing all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, and certain special notices and procedures. This publication is issued in seven volumes according to geographical area.

CHARTED VFR FLYWAYS– Charted VFR Flyways are flight paths recommended for use to bypass areas heavily traversed by large turbine-powered aircraft. Pilot compliance with recommended flyways and associated altitudes is strictly voluntary. VFR Flyway Planning charts are published on the back of existing VFR Terminal Area charts.

CHARTED VISUAL FLIGHT PROCEDURE APPROACH– An approach conducted while operating on an instrument flight rules (IFR) flight plan which authorizes the pilot of an aircraft to proceed visually and clear of clouds to the airport via visual landmarks and other information depicted on a charted visual flight procedure. This approach must be authorized and under the control of the appropriate air traffic control facility. Weather minimums required are depicted on the chart.

CHASE– An aircraft flown in proximity to another aircraft normally to observe its performance during training or testing.

CHASE AIRCRAFT–

(See **CHASE**.)

CHOP– A form of turbulence.

a. Light Chop– Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude.

b. Moderate Chop– Turbulence similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude.

(See **TURBULENCE**.)

CIRCLE-TO-LAND MANEUVER– A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. At tower controlled airports, this maneuver is made only after ATC authorization has been obtained and the pilot has established required visual reference to the airport.

(See **CIRCLE TO RUNWAY**.)

(See **LANDING MINIMUMS**.)

(Refer to **AIM**.)

CIRCLE TO RUNWAY (RUNWAY NUMBER)–

Used by ATC to inform the pilot that he/she must circle to land because the runway in use is other than the runway aligned with the instrument approach procedure. When the direction of the circling maneuver in relation to the airport/runway is required, the controller will state the direction (eight cardinal compass points) and specify a left or right downwind or base leg as appropriate; e.g., "Cleared VOR Runway Three Six Approach circle to Runway Two Two," or "Circle northwest of the airport for a right downwind to Runway Two Two."

(See **CIRCLE-TO-LAND MANEUVER**.)

(See **LANDING MINIMUMS**.)

(Refer to **AIM**.)

CIRCLING APPROACH–

(See **CIRCLE-TO-LAND MANEUVER**.)

CIRCLING MANEUVER–

(See **CIRCLE-TO-LAND MANEUVER**.)

CIRCLING MINIMA–

(See **LANDING MINIMUMS**.)

CLASS A AIRSPACE–

(See **CONTROLLED AIRSPACE**.)

CLASS B AIRSPACE–

(See **CONTROLLED AIRSPACE**.)

CLASS C AIRSPACE–

(See CONTROLLED AIRSPACE.)

CLASS D AIRSPACE–

(See CONTROLLED AIRSPACE.)

CLASS E AIRSPACE–

(See CONTROLLED AIRSPACE.)

CLASS G AIRSPACE– Airspace that is not designated in 14 CFR Part 71 as Class A, Class B, Class C, Class D, or Class E controlled airspace is Class G (uncontrolled) airspace.

(See UNCONTROLLED AIRSPACE.)

CLEAR AIR TURBULENCE (CAT)– Turbulence encountered in air where no clouds are present. This term is commonly applied to high-level turbulence associated with wind shear. CAT is often encountered in the vicinity of the jet stream.

(See WIND SHEAR.)

(See JET STREAM.)

CLEAR OF THE RUNWAY–

a. Taxiing aircraft, which is approaching a runway, is clear of the runway when all parts of the aircraft are held short of the applicable runway holding position marking.

b. A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there are no restrictions to its continued movement beyond the applicable runway holding position marking.

c. Pilots and controllers shall exercise good judgement 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 clearance is automatically canceled if takeoff is not made prior to a specified time. The pilot must obtain

a new clearance or cancel his/her IFR flight plan if not off by the specified time.

(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 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.)

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 COMPENSATION– An action on the part of the pilot to adjust an aircraft's indicated altitude due to the effect of cold temperatures on true altitude above terrain versus aircraft indicated altitude. The amount of compensation required increases at a greater rate with a decrease in temperature and increase in height above the reporting station.

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.)

COMMON PORTION–

(See COMMON ROUTE.)

COMMON ROUTE– That segment of a North American Route between the inland navigation facility and the coastal fix.

OR

COMMON ROUTE– Typically the portion of a RNAV STAR between the en route transition end point and the runway transition start point; however, the common route may only consist of a single point that joins the en route and runway transitions.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF)– A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency and is identified in appropriate aeronautical publications.

(See DESIGNATED COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) AREA.)

(Refer to AC 90-42, Traffic Advisory Practices at Airports Without Operating Control Towers.)

COMPASS LOCATOR– A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). It can be used for navigation at distances of approximately 15 miles or as authorized in the approach procedure.

a. Outer Compass Locator (LOM)– A compass locator installed at the site of the outer marker of an instrument landing system.

(See OUTER MARKER.)

b. Middle Compass Locator (LMM)– A compass locator installed at the site of the middle marker of an instrument landing system.

(See MIDDLE MARKER.)

(See ICAO term LOCATOR.)

COMPASS ROSE– A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction.

COMPLY WITH RESTRICTIONS– An ATC instruction that requires an aircraft being vectored back onto an arrival or departure procedure to comply with all altitude and/or speed restrictions depicted on the procedure. This term may be used in lieu of repeating each remaining restriction that appears on the procedure.

COMPOSITE FLIGHT PLAN– A flight plan which specifies VFR operation for one portion of flight and IFR for another portion. It is used primarily in military operations.

(Refer to AIM.)

COMPULSORY REPORTING POINTS– Reporting points which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in “radar contact.”

COMPUTER NAVIGATION FIX (CNF)– A Computer Navigation Fix is a point defined by a latitude/longitude coordinate and is required to support Performance-Based Navigation (PBN) operations. A five-letter identifier denoting a CNF can be found next to an “x” on en route charts and on some approach charts. Eventually, all CNFs will be labeled and begin with the letters “CF” followed by three consonants (e.g., ‘CFWBG’). CNFs are not recognized by ATC, are not contained in ATC fix or automation databases, and are not used for ATC purposes. Pilots should not use CNFs for point-to-point navigation (e.g., proceed direct), filing a flight plan, or in aircraft/ATC communications. Use of CNFs has not been adopted or recognized by the International Civil Aviation Organization (ICAO).

(REFER to AIM 1-1-17b5(i)(2), Global Positioning System (GPS).)

CONDITIONS NOT MONITORED– When an airport operator cannot monitor the condition of the movement area or airfield surface area, this information is issued as a NOTAM. Usually necessitated due to staffing, operating hours or other mitigating factors associated with airport operations.

CONFIDENCE MANEUVER– A confidence maneuver consists of one or more turns, a climb or descent, or other maneuver to determine if the pilot in command (PIC) is able to receive and comply with ATC instructions.

CONFLICT ALERT– A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between tracked targets (known IFR or VFR aircraft) that require his/her immediate attention/action.

(See **MODE C INTRUDER ALERT**.)

CONFLICT RESOLUTION– The resolution of potential conflicts between aircraft that are radar identified and in communication with ATC by ensuring that radar targets do not touch. Pertinent traffic advisories shall be issued when this procedure is applied.

Note: This procedure shall not be provided utilizing mosaic radar systems.

CONFORMANCE– The condition established when an aircraft's actual position is within the conformance region constructed around that aircraft at its position, according to the trajectory associated with the aircraft's Current Plan.

CONFORMANCE REGION– A volume, bounded laterally, vertically, and longitudinally, within which an aircraft must be at a given time in order to be in conformance with the Current Plan Trajectory for that aircraft. At a given time, the conformance region is determined by the simultaneous application of the lateral, vertical, and longitudinal conformance bounds for the aircraft at the position defined by time and aircraft's trajectory.

CONSOLAN– A low frequency, long-distance NAVAID used principally for transoceanic navigations.

CONTACT–

a. Establish communication with (followed by the name of the facility and, if appropriate, the frequency to be used).

b. A flight condition wherein the pilot ascertains the attitude of his/her aircraft and navigates by visual reference to the surface.

(See **CONTACT APPROACH**.)

(See **RADAR CONTACT**.)

CONTACT APPROACH– An approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument approach procedure and proceed to the destination airport by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile.

(Refer to **AIM**.)

CONTAMINATED RUNWAY– A runway is considered contaminated whenever standing water, ice, snow, slush, frost in any form, heavy rubber, or other substances are present. A runway is contaminated with respect to rubber deposits or other friction-degrading substances when the average friction value for any 500-foot segment of the runway within the ALD fails below the recommended minimum friction level and the average friction value in the adjacent 500-foot segments falls below the maintenance planning friction level.

CONTERMINOUS U.S.– The 48 adjoining States and the District of Columbia.

CONTINENTAL UNITED STATES– The 49 States located on the continent of North America and the District of Columbia.

CONTINGENCY HAZARD AREA (CHA)– Used by ATC. Areas of airspace that are defined and distributed in advance of a launch or reentry operation and are activated in response to a failure.

(See **AIRCRAFT HAZARD AREA**.)

(See **REFINED HAZARD AREA**.)

(See **TRANSITIONAL HAZARD AREA**.)

CONTINUE– When used as a control instruction should be followed by another word or words clarifying what is expected of the pilot. Example: “continue taxi,” “continue descent,” “continue inbound,” etc.

CONTROL AREA [ICAO]– A controlled airspace extending upwards from a specified limit above the earth.

CONTROL SECTOR– An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector.

(See **DISCRETE FREQUENCY**.)

CONTROL SLASH– A radar beacon slash representing the actual position of the associated aircraft. Normally, the control slash is the one closest to the interrogating radar beacon site. When ARTCC radar is operating in narrowband (digitized) mode, the control slash is converted to a target symbol.

CONTROLLED AIRSPACE– An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

a. Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D, and Class E airspace.

b. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements in 14 CFR Part 91 (for specific operating requirements, please refer to 14 CFR Part 91). For IFR operations in any class of controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance. Each Class B, Class C, and Class D airspace area designated for an airport contains at least one primary airport around which the airspace is designated (for specific designations and descriptions of the airspace classes, please refer to 14 CFR Part 71).

c. Controlled airspace in the United States is designated as follows:

1. CLASS A– Generally, that airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska. Unless otherwise authorized, all persons must operate their aircraft under IFR.

2. CLASS B– Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. The configuration of each

Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspace areas resemble upside-down wedding cakes), and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds."

3. CLASS C– Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a surface area with a 5 nautical mile (NM) radius, a circle with a 10NM radius that extends no lower than 1,200 feet up to 4,000 feet above the airport elevation, and an outer area that is not charted. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. VFR aircraft are only separated from IFR aircraft within the airspace.

(See **OUTER AREA**.)

4. CLASS D– Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace. No separation services are provided to VFR aircraft.

5. CLASS E– Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface

area, the airspace will be configured to contain all instrument procedures. Also in this class are Federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic, and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska, up to, but not including 18,000 feet MSL, and the airspace above FL 600.

CONTROLLED AIRSPACE [ICAO]– An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

Note: Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D, and E.

CONTROLLED TIME OF ARRIVAL– Arrival time assigned during a Traffic Management Program. This time may be modified due to adjustments or user options.

CONTROLLER–

(See AIR TRAFFIC CONTROL SPECIALIST.)

CONTROLLER [ICAO]– A person authorized to provide air traffic control services.

CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)– A two-way digital communications system that conveys textual air traffic control messages between controllers and pilots using ground or satellite-based radio relay stations.

CONVECTIVE SIGMET– A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to VIP level 4 with an area coverage of $\frac{4}{10}$ (40%) or more, and hail $\frac{3}{4}$ inch or greater.

(See AIRMET.)

(See AWW.)

(See CWA.)

(See SIGMET.)

(Refer to AIM.)

CONVECTIVE SIGNIFICANT METEOROLOGICAL INFORMATION–

(See CONVECTIVE SIGMET.)

COOPERATIVE SURVEILLANCE– Any surveillance system, such as secondary surveillance radar (SSR), wide-area multilateration (WAM), or ADS-B, that is dependent upon the presence of certain equipment onboard the aircraft or vehicle to be detected.

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

(See NON-COOPERATIVE SURVEILLANCE.)

(See RADAR.)

(See WIDE AREA MULTILATERATION.)

COORDINATES– The intersection of lines of reference, usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine position or location.

COORDINATION FIX– The fix in relation to which facilities will handoff, transfer control of an aircraft, or coordinate flight progress data. For terminal facilities, it may also serve as a clearance for arriving aircraft.

COPTER–

(See HELICOPTER.)

CORRECTION– An error has been made in the transmission and the correct version follows.

COUPLED APPROACH– An instrument approach performed by the aircraft autopilot, and/or visually depicted on the flight director, which is receiving position information and/or steering commands from onboard navigational equipment. In general, coupled non-precision approaches must be flown manually (autopilot disengaged) at altitudes lower than 50 feet AGL below the minimum descent altitude, and coupled precision approaches must be flown manually (autopilot disengaged) below 50 feet AGL unless authorized to conduct autoland operations. Coupled instrument approaches are commonly flown to the allowable IFR weather minima established by the operator or PIC, or flown VFR for training and safety.

COURSE–

a. The intended direction of flight in the horizontal plane measured in degrees from north.

b. The ILS localizer signal pattern usually specified as the front course or the back course.

(See BEARING.)

(See INSTRUMENT LANDING SYSTEM.)

(See RADIAL.)

CPDLC–

(See CONTROLLER PILOT DATA LINK COMMUNICATIONS.)

CPL [ICAO]–

(See ICAO term CURRENT FLIGHT PLAN.)

CRITICAL ENGINE– The engine which, upon failure, would most adversely affect the performance or handling qualities of an aircraft.

CROSS (FIX) AT (ALTITUDE)– Used by ATC when a specific altitude restriction at a specified fix is required.

CROSS (FIX) AT OR ABOVE (ALTITUDE)– Used by ATC when an altitude restriction at a specified fix is required. It does not prohibit the aircraft from crossing the fix at a higher altitude than specified; however, the higher altitude may not be one that will violate a succeeding altitude restriction or altitude assignment.

(See ALTITUDE RESTRICTION.)

(Refer to AIM.)

CROSS (FIX) AT OR BELOW (ALTITUDE)– Used by ATC when a maximum crossing altitude at a specific fix is required. It does not prohibit the aircraft from crossing the fix at a lower altitude; however, it must be at or above the minimum IFR altitude.

(See ALTITUDE RESTRICTION.)

(See MINIMUM IFR ALTITUDES.)

(Refer to 14 CFR Part 91.)

CROSSWIND–

a. When used concerning the traffic pattern, the word means “crosswind leg.”

(See TRAFFIC PATTERN.)

b. When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft.

(See CROSSWIND COMPONENT.)

CROSSWIND COMPONENT– The wind component measured in knots at 90 degrees to the longitudinal axis of the runway.

CRUISE– Used in an ATC clearance to authorize a pilot to conduct flight at any altitude from the minimum IFR altitude up to and including the altitude specified in the clearance. The pilot may level off at any intermediate altitude within this block of airspace. Climb/descent within the block is to be made at the discretion of the pilot. However, once the pilot starts descent and verbally reports leaving an altitude in the block, he/she may not return to that altitude without additional ATC clearance. Further, it is approval for the pilot to proceed to and make an approach at destination airport and can be used in conjunction with:

a. An airport clearance limit at locations with a standard/special instrument approach procedure. The CFRs require that if an instrument letdown to an airport is necessary, the pilot shall make the letdown in accordance with a standard/special instrument approach procedure for that airport, or

b. An airport clearance limit at locations that are within/below/outside controlled airspace and without a standard/special instrument approach procedure. Such a clearance is NOT AUTHORIZATION for the pilot to descend under IFR conditions below the applicable minimum IFR altitude nor does it imply that ATC is exercising control over aircraft in Class G airspace; however, it provides a means for the aircraft to proceed to destination airport, descend, and land in accordance with applicable CFRs governing VFR flight operations. Also, this provides search and rescue protection until such time as the IFR flight plan is closed.

(See INSTRUMENT APPROACH PROCEDURE.)

CRUISE CLIMB– A climb technique employed by aircraft, usually at a constant power setting, resulting in an increase of altitude as the aircraft weight decreases.

CRUISING ALTITUDE– An altitude or flight level maintained during en route level flight. This is a constant altitude and should not be confused with a cruise clearance.

(See ALTITUDE.)

(See ICAO term CRUISING LEVEL.)

CRUISING LEVEL–

(See CRUISING ALTITUDE.)

CRUISING LEVEL [ICAO]– A level maintained during a significant portion of a flight.

CT MESSAGE– An EDCT time generated by the ATCSCC to regulate traffic at arrival airports. Normally, a CT message is automatically transferred from the traffic management system computer to the NAS en route computer and appears as an EDCT. In the event of a communication failure between the traffic management system computer and the NAS, the CT message can be manually entered by the TMC at the en route facility.

CTA–

(See CONTROLLED TIME OF ARRIVAL.)

(See ICAO term CONTROL AREA.)

CTAF–

(See COMMON TRAFFIC ADVISORY FREQUENCY.)

CTAS–

(See CENTER TRACON AUTOMATION SYSTEM.)

CTOP–

(See COLLABORATIVE TRAJECTORY OPTIONS PROGRAM)

CTRD–

(See CERTIFIED TOWER RADAR DISPLAY.)

CURRENT FLIGHT PLAN [ICAO]– The flight plan, including changes, if any, brought about by subsequent clearances.

CURRENT PLAN– The ATC clearance the aircraft has received and is expected to fly.

CVFP APPROACH–

(See CHARTED VISUAL FLIGHT PROCEDURE APPROACH.)

CWA–

(See CENTER WEATHER ADVISORY and WEATHER ADVISORY.)

and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join-up and breakaway.

a. A standard formation is one in which a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman.

b. Nonstandard formations are those operating under any of the following conditions:

1. When the flight leader has requested and ATC has approved other than standard formation dimensions.

2. When operating within an authorized altitude reservation (ALTRV) or under the provisions of a letter of agreement.

3. When the operations are conducted in airspace specifically designed for a special activity.
(See ALTITUDE RESERVATION.)
(Refer to 14 CFR Part 91.)

FRC–

(See REQUEST FULL ROUTE CLEARANCE.)

FREEZE/FROZEN– Terms used in referring to arrivals which have been assigned ACLTs and to the lists in which they are displayed.

FREEZE CALCULATED LANDING TIME– A dynamic parameter number of minutes prior to the meter fix calculated time of arrival for each aircraft when the TCLT is frozen and becomes an ACLT (i.e., the VTA is updated and consequently the TCLT is modified as appropriate until FCLT minutes prior to meter fix calculated time of arrival, at which time updating is suspended and an ACLT and a frozen meter fix crossing time (MFT) is assigned).

FREEZE HORIZON– The time or point at which an aircraft's STA becomes fixed and no longer fluctuates with each radar update. This setting ensures a constant time for each aircraft, necessary for the metering controller to plan his/her delay technique. This setting can be either in distance from the meter fix or a prescribed flying time to the meter fix.

FREEZE SPEED PARAMETER– A speed adapted for each aircraft to determine fast and slow aircraft.

Fast aircraft freeze on parameter FCLT and slow aircraft freeze on parameter MLDI.

FRICITION MEASUREMENT– A measurement of the friction characteristics of the runway pavement surface using continuous self-watering friction measurement equipment in accordance with the specifications, procedures and schedules contained in AC 150/5320–12, Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces.

FSDO–

(See FLIGHT STANDARDS DISTRICT OFFICE.)

FSPD–

(See FREEZE SPEED PARAMETER.)

FSS–

(See FLIGHT SERVICE STATION.)

FUEL DUMPING– Airborne release of usable fuel. This does not include the dropping of fuel tanks.

(See JETTISONING OF EXTERNAL STORES.)

FUEL REMAINING– A phrase used by either pilots or controllers when relating to the fuel remaining on board until actual fuel exhaustion. When transmitting such information in response to either a controller question or pilot initiated cautionary advisory to air traffic control, pilots will state the APPROXIMATE NUMBER OF MINUTES the flight can continue with the fuel remaining. All reserve fuel SHOULD BE INCLUDED in the time stated, as should an allowance for established fuel gauge system error.

FUEL SIPHONING– Unintentional release of fuel caused by overflow, puncture, loose cap, etc.

FUEL VENTING–

(See FUEL SIPHONING.)

FUSED TARGET–

(See DIGITAL TARGET)

FUSION [STARS]– the combination of all available surveillance sources (airport surveillance radar [ASR], air route surveillance radar [ARSR], ADS-B, etc.) into the display of a single tracked target for air traffic control separation services. FUSION is the equivalent of the current single-sensor radar display. FUSION performance is characteristic of a single-sensor radar display system. Terminal areas use mono-pulse secondary surveillance radar (ASR 9, Mode S or ASR 11, MSSR).

G

GATE HOLD PROCEDURES– Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 15 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

GCA–

(See **GROUND CONTROLLED APPROACH**.)

GDP–

(See **GROUND DELAY PROGRAM**.)

GENERAL AVIATION– That portion of civil aviation that does not include scheduled or unscheduled air carriers or commercial space operations.

(See ICAO term **GENERAL AVIATION**.)

GENERAL AVIATION [ICAO]– All civil aviation operations other than scheduled air services and nonscheduled air transport operations for remuneration or hire.

GEO MAP– The digitized map markings associated with the ASR-9 Radar System.

GLIDEPATH–

(See **GLIDESLOPE**.)

GLIDEPATH [ICAO]– A descent profile determined for vertical guidance during a final approach.

GLIDEPATH INTERCEPT ALTITUDE–

(See **GLIDESLOPE INTERCEPT ALTITUDE**.)

GLIDESLOPE– Provides vertical guidance for aircraft during approach and landing. The glideslope/glidepath is based on the following:

a. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or,

b. Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for

the visual portion of an instrument approach and landing.

c. PAR. Used by ATC to inform an aircraft making a PAR approach of its vertical position (elevation) relative to the descent profile.

(See ICAO term **GLIDEPATH**.)

GLIDESLOPE INTERCEPT ALTITUDE– The published minimum altitude to intercept the glideslope in the intermediate segment of an instrument approach. Government charts use the lightning bolt symbol to identify this intercept point. This intersection is called the Precise Final Approach fix (PFAF). ATC directs a higher altitude, the resultant intercept becomes the PFAF.

(See **FINAL APPROACH FIX**.)

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)– GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellations. A GNSS constellation may be augmented by ground stations and/or geostationary satellites to improve integrity and position accuracy.

(See **GROUND-BASED AUGMENTATION SYSTEM**.)

(See **SATELLITE-BASED AUGMENTATION SYSTEM**.)

GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE (GNSS MEA)– The minimum en route IFR altitude on a published ATS route or route segment which assures acceptable Global Navigation Satellite System reception and meets obstacle clearance requirements. (Refer to 14 CFR Part 91.) (Refer to 14 CFR Part 95.)

GLOBAL POSITIONING SYSTEM (GPS)– GPS refers to the worldwide positioning, navigation and timing determination capability available from the U.S. satellite constellation. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard. GPS is composed of space, control, and user elements.

GNSS [ICAO]–

(See GLOBAL NAVIGATION SATELLITE SYSTEM.)

GNSS MEA–

(See GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE.)

GO AHEAD– Proceed with your message. Not to be used for any other purpose.

GO AROUND– Instructions for a pilot to abandon his/her approach to landing. Additional instructions may follow. Unless otherwise advised by ATC, a VFR aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an IFR flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC; e.g., “Go around” (additional instructions if required).

(See LOW APPROACH.)

(See MISSED APPROACH.)

GPD–

(See GRAPHIC PLAN DISPLAY.)

GPS–

(See GLOBAL POSITIONING SYSTEM.)

GRAPHIC PLAN DISPLAY (GPD)– A view available with EDST that provides a graphic display of aircraft, traffic, and notification of predicted conflicts. Graphic routes for Current Plans and Trial Plans are displayed upon controller request.

(See EN ROUTE DECISION SUPPORT TOOL.)

GROSS NAVIGATION ERROR (GNE) – A lateral deviation from a cleared track, normally in excess of 25 Nautical Miles (NM). More stringent standards (for example, 10NM in some parts of the North Atlantic region) may be used in certain regions to support reductions in lateral separation.

GROUND BASED AUGMENTATION SYSTEM (GBAS)– A ground based GNSS station which provides local differential corrections, integrity parameters and approach data via VHF data broadcast to GNSS users to meet real-time performance requirements for CAT I precision approaches. The aircraft applies the broadcast data to improve the accuracy and integrity of its GNSS signals and

computes the deviations to the selected approach. A single ground station can serve multiple runway ends up to an approximate radius of 23 NM.

GROUND BASED AUGMENTATION SYSTEM (GBAS) LANDING SYSTEM (GLS)– A type of precision IAP based on local augmentation of GNSS data using a single GBAS station to transmit locally corrected GNSS data, integrity parameters and approach information. This improves the accuracy of aircraft GNSS receivers’ signal in space, enabling the pilot to fly a precision approach with much greater flexibility, reliability and complexity. The GLS procedure is published on standard IAP charts, features the title GLS with the designated runway and minima as low as 200 feet DA. Future plans are expected to support Cat II and CAT III operations.

GROUND CLUTTER– A pattern produced on the radar scope by ground returns which may degrade other radar returns in the affected area. The effect of ground clutter is minimized by the use of moving target indicator (MTI) circuits in the radar equipment resulting in a radar presentation which displays only targets which are in motion.

(See CLUTTER.)

GROUND COMMUNICATION OUTLET (GCO)– An unstaffed, remotely controlled, ground/ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF to a telephone connection to obtain an instrument clearance or close a VFR or IFR flight plan. They may also get an updated weather briefing prior to takeoff. Pilots will use four “key clicks” on the VHF radio to contact the appropriate ATC facility or six “key clicks” to contact the FSS. The GCO system is intended to be used only on the ground.

GROUND CONTROLLED APPROACH– A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. The approach may be conducted with surveillance radar (ASR) only or with both surveillance and precision approach radar (PAR). Usage of the term “GCA” by pilots is discouraged except when referring to a GCA facility. Pilots should specifically request a “PAR” approach when a precision radar approach is desired or request an “ASR” or “surveillance” approach when a nonprecision radar approach is desired.

(See RADAR APPROACH.)

GROUND DELAY PROGRAM (GDP)– A traffic management process administered by the ATCSCC, when aircraft are held on the ground. The purpose of the program is to support the TM mission and limit airborne holding. It is a flexible program and may be implemented in various forms depending upon the needs of the AT system. Ground delay programs provide for equitable assignment of delays to all system users.

GROUND SPEED– The speed of an aircraft relative to the surface of the earth.

GROUND STOP (GS)– The GS is a process that

requires aircraft that meet a specific criteria to remain on the ground. The criteria may be airport specific, airspace specific, or equipment specific; for example, all departures to San Francisco, or all departures entering Yorktown sector, or all Category I and II aircraft going to Charlotte. GSs normally occur with little or no warning.

GROUND VISIBILITY–

(See VISIBILITY.)

GS–

(See GROUND STOP.)

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.

HAR–

(See HIGH ALTITUDE REDESIGN.)

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. Kilohertz (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 ALTITUDE REDESIGN (HAR)– A level of non-restrictive routing (NRR) service for aircraft that have all waypoints associated with the HAR program in their flight management systems or RNAV equipage.

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.)

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.

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.)

I

I SAY AGAIN– The message will be repeated.

IAF–

(See INITIAL APPROACH FIX.)

IAP–

(See INSTRUMENT APPROACH PROCEDURE.)

IAWP– Initial Approach Waypoint

ICAO–

(See ICAO Term INTERNATIONAL CIVIL AVIATION ORGANIZATION.)

ICAO 3LD–

(See ICAO Term ICAO Three–Letter Designator)

ICAO Three–Letter Designator (3LD)– An ICAO 3LD is an exclusive designator that, when used together with a flight number, becomes the aircraft call sign and provides distinct aircraft identification to air traffic control (ATC). ICAO approves 3LDs to enhance the safety and security of the air traffic system. An ICAO 3LD may be assigned to a company, agency, or organization and is used instead of the aircraft registration number for ATC operational and security purposes. An ICAO 3LD is also used for aircraft identification in the flight plan and associated messages and can be used for domestic and international flights. A telephony associated with an ICAO 3LD is used for radio communication.

ICING– The accumulation of airframe ice.

Types of icing are:

a. Rime Ice– Rough, milky, opaque ice formed by the instantaneous freezing of small supercooled water droplets.

b. Clear Ice– A glossy, clear, or translucent ice formed by the relatively slow freezing of large supercooled water droplets.

c. Mixed– A mixture of clear ice and rime ice.

Intensity of icing:

a. Trace– Ice becomes perceptible. Rate of accumulation is slightly greater than the rate of sublimation. Deicing/anti-icing equipment is not utilized unless encountered for an extended period of time (over 1 hour).

b. Light– The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti-icing equipment removes/prevents accumulation. It does not present a problem if the deicing/anti-icing equipment is used.

c. Moderate– The rate of accumulation is such that even short encounters become potentially hazardous and use of deicing/anti-icing equipment or flight diversion is necessary.

d. Severe– The rate of ice accumulation is such that ice protection systems fail to remove the accumulation of ice, or ice accumulates in locations not normally prone to icing, such as areas aft of protected surfaces and any other areas identified by the manufacturer. Immediate exit from the condition is necessary.

Note:

Severe icing is aircraft dependent, as are the other categories of icing intensity. Severe icing may occur at any ice accumulation rate when the icing rate or ice accumulations exceed the tolerance of the aircraft.

IDENT– A request for a pilot to activate the aircraft transponder identification feature. This will help the controller to confirm an aircraft identity or to identify an aircraft.

(Refer to AIM.)

IDENT FEATURE– The special feature in the Air Traffic Control Radar Beacon System (ATCRBS) equipment. It is used to immediately distinguish one displayed beacon target from other beacon targets.

(See IDENT.)

IDENTIFICATION [ICAO]– The situation which exists when the position indication of a particular aircraft is seen on a situation display and positively identified.

IF–

(See INTERMEDIATE FIX.)

IF NO TRANSMISSION RECEIVED FOR (TIME)– Used by ATC in radar approaches to prefix procedures which should be followed by the pilot in event of lost communications.

(See LOST COMMUNICATIONS.)

IFR–

(See INSTRUMENT FLIGHT RULES.)

IFR AIRCRAFT– An aircraft conducting flight in accordance with instrument flight rules.

IFR CONDITIONS– Weather conditions below the minimum for flight under visual flight rules.

(See **INSTRUMENT METEOROLOGICAL CONDITIONS**.)

IFR DEPARTURE PROCEDURE–

(See **IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES**.)

(Refer to AIM.)

IFR FLIGHT–

(See **IFR AIRCRAFT**.)

IFR LANDING MINIMUMS–

(See **LANDING MINIMUMS**.)

IFR MILITARY TRAINING ROUTES (IR)– Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots IAS.

IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES– Title 14 Code of Federal Regulations Part 91, prescribes standard takeoff rules for certain civil users. At some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums, departure procedures, or both to assist pilots in avoiding obstacles during climb to the minimum en route altitude. Those airports are listed in FAA/DOD Instrument Approach Procedures (IAPs) Charts under a section entitled “IFR Takeoff Minimums and Departure Procedures.” The FAA/DOD IAP chart legend illustrates the symbol used to alert the pilot to nonstandard takeoff minimums and departure procedures. When departing IFR from such airports or from any airports where there are no departure procedures, DPs, or ATC facilities available, pilots should advise ATC of any departure limitations. Controllers may query a pilot to determine acceptable departure directions, turns, or headings after takeoff. Pilots should be familiar with the departure procedures and must assure that their aircraft can meet or exceed any specified climb gradients.

IF/IAWP– Intermediate Fix/Initial Approach Waypoint. The waypoint where the final approach course of a T approach meets the crossbar of the T. When

designated (in conjunction with a TAA) this waypoint will be used as an IAWP when approaching the airport from certain directions, and as an IFWP when beginning the approach from another IAWP.

IFWP– Intermediate Fix Waypoint

ILS–

(See **INSTRUMENT LANDING SYSTEM**.)

ILS CATEGORIES– 1. Category I. An ILS approach procedure which provides for approach to a height above touchdown of not less than 200 feet and with runway visual range of not less than 1,800 feet.– 2. Special Authorization Category I. An ILS approach procedure which provides for approach to a height above touchdown of not less than 150 feet and with runway visual range of not less than 1,400 feet, HUD to DH. 3. Category II. An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet (with autoland or HUD to touchdown and noted on authorization, RVR 1,000 feet).– 4. Special Authorization Category II with Reduced Lighting. An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet with autoland or HUD to touchdown and noted on authorization (no touchdown zone and centerline lighting are required).– 5. Category III:

a. IIIA.–An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 700 feet.

b. IIIB.–An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 150 feet.

c. IIIC.–An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum.

IM–

(See **INNER MARKER**.)

IMC–

(See **INSTRUMENT METEOROLOGICAL CONDITIONS**.)

IMMEDIATELY– Used by ATC or pilots when such action compliance is required to avoid an imminent situation.

INCERFA (Uncertainty Phase) [ICAO]– A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

INCREASED SEPARATION REQUIRED (ISR)– Indicates the confidence level of the track requires 5NM separation, 3NM separation, 1 1/2NM separation, and target resolution cannot be used.

INCREASE SPEED TO (SPEED)–
(See **SPEED ADJUSTMENT**.)

INERTIAL NAVIGATION SYSTEM (INS)– An RNAV system which is a form of self-contained navigation.

(See **Area Navigation/RNAV**.)

INFLIGHT REFUELING–

(See **AERIAL REFUELING**.)

INFLIGHT WEATHER ADVISORY–

(See **WEATHER ADVISORY**.)

INFORMATION REQUEST (INREQ)– A request originated by an FSS for information concerning an overdue VFR aircraft.

INITIAL APPROACH FIX (IAF)– The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s).

(See **FIX**.)

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

INITIAL APPROACH SEGMENT–

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

INITIAL APPROACH SEGMENT [ICAO]– That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

INLAND NAVIGATION FACILITY– A navigation aid on a North American Route at which the common route and/or the noncommon route begins or ends.

INNER MARKER– A marker beacon used with an ILS (CAT II) precision approach located between the middle marker and the end of the ILS runway, transmitting a radiation pattern keyed at six dots per second and indicating to the pilot, both aurally and visually, that he/she is at the designated decision height (DH), normally 100 feet above the touchdown

zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach.

(See **INSTRUMENT LANDING SYSTEM**.)

(Refer to **AIM**.)

INNER MARKER BEACON–

(See **INNER MARKER**.)

INREQ–

(See **INFORMATION REQUEST**.)

INS–

(See **INERTIAL NAVIGATION SYSTEM**.)

INSTRUMENT APPROACH–

(See **INSTRUMENT APPROACH PROCEDURE**.)

INSTRUMENT APPROACH OPERATIONS [ICAO]– An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a. A two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

b. A three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note: Lateral and vertical navigation guidance refers to the guidance provided either by:

a) a ground-based radio navigation aid; or

b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

(See ICAO term **INSTRUMENT APPROACH PROCEDURE**.)

INSTRUMENT APPROACH PROCEDURE– A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

(Refer to 14 CFR Part 91.)

(Refer to **AIM**.)

a. U.S. civil standard instrument approach procedures are approved by the FAA as prescribed under 14 CFR Part 97 and are available for public use.

b. U.S. military standard instrument approach procedures are approved and published by the Department of Defense.

c. Special instrument approach procedures are approved by the FAA for individual operators but are not published in 14 CFR Part 97 for public use.

(See ICAO term INSTRUMENT APPROACH PROCEDURE.)

INSTRUMENT APPROACH PROCEDURE [ICAO]– A series of predetermined maneuvers by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

(See ICAO term INSTRUMENT APPROACH OPERATIONS)

INSTRUMENT APPROACH PROCEDURE CHARTS–

(See AERONAUTICAL CHART.)

INSTRUMENT DEPARTURE PROCEDURE (DP)– A preplanned instrument flight rule (IFR) departure procedure published for pilot use, in graphic or textual format, that provides obstruction clearance from the terminal area to the appropriate en route structure. There are two types of DP, Obstacle Departure Procedure (ODP), printed either textually or graphically, and, Standard Instrument Departure (SID), which is always printed graphically.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See OBSTACLE DEPARTURE PROCEDURES.)

(See STANDARD INSTRUMENT DEPARTURES.)

(Refer to AIM.)

INSTRUMENT DEPARTURE PROCEDURE (DP) CHARTS–

(See AERONAUTICAL CHART.)

INSTRUMENT FLIGHT RULES (IFR)– Rules governing the procedures for conducting instrument

flight. Also a term used by pilots and controllers to indicate type of flight plan.

(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

(See ICAO term INSTRUMENT FLIGHT RULES.)

(Refer to AIM.)

INSTRUMENT FLIGHT RULES [ICAO]– A set of rules governing the conduct of flight under instrument meteorological conditions.

INSTRUMENT LANDING SYSTEM (ILS)– A precision instrument approach system which normally consists of the following electronic components and visual aids:

a. Localizer.

(See LOCALIZER.)

b. Glideslope.

(See GLIDESLOPE.)

c. Outer Marker.

(See OUTER MARKER.)

d. Middle Marker.

(See MIDDLE MARKER.)

e. Approach Lights.

(See AIRPORT LIGHTING.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)– Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

(See INSTRUMENT FLIGHT RULES.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

INSTRUMENT RUNWAY– A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved.

(See ICAO term INSTRUMENT RUNWAY.)

INSTRUMENT RUNWAY [ICAO]– One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

a. Nonprecision Approach Runway– An instrument runway served by visual aids and a nonvisual aid providing at least directional guidance adequate for a straight-in approach.

b. Precision Approach Runway, Category I– An instrument runway served by ILS and visual aids intended for operations down to 60 m (200 feet) decision height and down to an RVR of the order of 800 m.

c. Precision Approach Runway, Category II– An instrument runway served by ILS and visual aids intended for operations down to 30 m (100 feet) decision height and down to an RVR of the order of 400 m.

d. Precision Approach Runway, Category III– An instrument runway served by ILS to and along the surface of the runway and:

1. Intended for operations down to an RVR of the order of 200 m (no decision height being applicable) using visual aids during the final phase of landing;

2. Intended for operations down to an RVR of the order of 50 m (no decision height being applicable) using visual aids for taxiing;

3. Intended for operations without reliance on visual reference for landing or taxiing.

Note 1: See Annex 10 Volume I, Part I, Chapter 3, for related ILS specifications.

Note 2: Visual aids need not necessarily be matched to the scale of nonvisual aids provided. The criterion for the selection of visual aids is the conditions in which operations are intended to be conducted.

INTEGRITY– The ability of a system to provide timely warnings to users when the system should not be used for navigation.

INTERMEDIATE APPROACH SEGMENT–
(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INTERMEDIATE APPROACH SEGMENT [ICAO]– That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, race track or dead reckoning track procedure and the final approach fix or point, as appropriate.

INTERMEDIATE FIX– The fix that identifies the beginning of the intermediate approach segment of an instrument approach procedure. The fix is not normally identified on the instrument approach chart as an intermediate fix (IF).

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INTERMEDIATE LANDING– On the rare occasion that this option is requested, it should be approved. The departure center, however, must advise the ATCSCC so that the appropriate delay is carried over and assigned at the intermediate airport. An intermediate landing airport within the arrival center will not be accepted without coordination with and the approval of the ATCSCC.

INTERNATIONAL AIRPORT– Relating to international flight, it means:

a. An airport of entry which has been designated by the Secretary of Treasury or Commissioner of Customs as an international airport for customs service.

b. A landing rights airport at which specific permission to land must be obtained from customs authorities in advance of contemplated use.

c. Airports designated under the Convention on International Civil Aviation as an airport for use by international commercial air transport and/or international general aviation.

(See ICAO term INTERNATIONAL AIRPORT.)

(Refer to Chart Supplement U.S.)

INTERNATIONAL AIRPORT [ICAO]– Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

INTERNATIONAL CIVIL AVIATION ORGANIZATION [ICAO]– A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport.

INTERROGATOR– The ground-based surveillance radar beacon transmitter-receiver, which normally scans in synchronism with a primary radar, transmitting discrete radio signals which repetitiously request all transponders on the mode being used to

reply. The replies received are mixed with the primary radar returns and displayed on the same plan position indicator (radar scope). Also, applied to the airborne element of the TACAN/DME system.

(See TRANSPONDER.)

(Refer to AIM.)

INTERSECTING RUNWAYS– Two or more runways which cross or meet within their lengths.

(See INTERSECTION.)

INTERSECTION–

a. A point defined by any combination of courses, radials, or bearings of two or more navigational aids.

b. Used to describe the point where two runways, a runway and a taxiway, or two taxiways cross or meet.

INTERSECTION DEPARTURE– A departure from any runway intersection except the end of the runway.

(See INTERSECTION.)

INTERSECTION TAKEOFF–

(See INTERSECTION DEPARTURE.)

IR–

(See IFR MILITARY TRAINING ROUTES.)

IRREGULAR SURFACE– A surface that is open for use but not per regulations.

ISR–

(See INCREASED SEPARATION REQUIRED.)

J

JAMMING– Denotes emissions that do not mimic Global Navigation Satellite System (GNSS) signals (e.g., GPS and WAAS), but rather interfere with the civil receiver’s ability to acquire and track GNSS signals. Jamming can result in denial of GNSS navigation, positioning, timing and aircraft dependent functions.

JET BLAST– The rapid air movement produced by exhaust from jet engines.

JET ROUTE– A route designed to serve aircraft operations from 18,000 feet MSL up to and including flight level 450. The routes are referred to as “J” routes with numbering to identify the designated route; e.g., J105.

(See Class A AIRSPACE.)

(Refer to 14 CFR Part 71.)

JET STREAM– A migrating stream of high-speed winds present at high altitudes.

JETTISONING OF EXTERNAL STORES– Airborne release of external stores; e.g., tiptanks, ordnance.

(See FUEL DUMPING.)

(Refer to 14 CFR Part 91.)

JOINT USE RESTRICTED AREA–

(See RESTRICTED AREA.)

JUMP ZONE– The airspace directly associated with a Drop Zone. Vertical and horizontal limits may be locally defined.

N

NAS–

(See NATIONAL AIRSPACE SYSTEM.)

NAT HLA–

(See NORTH ATLANTIC HIGH LEVEL AIRSPACE.)

NATIONAL AIRSPACE SYSTEM– The common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information, and manpower and material. Included are system components shared jointly with the military.

NATIONAL BEACON CODE ALLOCATION PLAN AIRSPACE (NBCAP)– Airspace over United States territory located within the North American continent between Canada and Mexico, including adjacent territorial waters outward to about boundaries of oceanic control areas (CTA)/Flight Information Regions (FIR).

(See FLIGHT INFORMATION REGION.)

NATIONAL FLIGHT DATA CENTER (NFDC)– A facility in Washington D.C., 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.)

NATIONAL FLIGHT DATA DIGEST (NFDD)– A daily (except weekends and Federal holidays) publication of flight information appropriate to aeronautical charts, aeronautical publications, Notices to Airmen, or other media serving the purpose of providing operational flight data essential to safe and efficient aircraft operations.

NATIONAL SEARCH AND RESCUE PLAN– An interagency agreement which provides for the effective utilization of all available facilities in all types of search and rescue missions.

NAVAID–

(See NAVIGATIONAL AID.)

NAVAID CLASSES– VOR, VORTAC, and TACAN aids are classed according to their operational use. The three classes of NAVAIDs are:

- a. T– Terminal.
- b. L– Low altitude.
- c. H– High altitude.

Note: The normal service range for T, L, and H class aids is found in the AIM. Certain operational requirements make it necessary to use some of these aids at greater service ranges than specified. Extended range is made possible through flight inspection determinations. Some aids also have lesser service range due to location, terrain, frequency protection, etc. Restrictions to service range are listed in Chart Supplement U.S.

NAVIGABLE AIRSPACE– Airspace at and above the minimum flight altitudes prescribed in the CFRs including airspace needed for safe takeoff and landing.

(Refer to 14 CFR Part 91.)

NAVIGATION REFERENCE SYSTEM (NRS)– The NRS is a system of waypoints developed for use within the United States for flight planning and navigation without reference to ground based navigational aids. The NRS waypoints are located in a grid pattern along defined latitude and longitude lines. The initial use of the NRS will be in the high altitude environment in conjunction with the High Altitude Redesign initiative. The NRS waypoints are intended for use by aircraft capable of point-to-point navigation.

NAVIGATION SPECIFICATION [ICAO]– A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

a. **RNP specification.** A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP; e.g., RNP 4, RNP APCH.

b. **RNAV specification.** A navigation specification based on area navigation that does not include the requirement for performance monitoring and alert-

ing, designated by the prefix RNAV; e.g., RNAV 5, RNAV 1.

Note: The Performance-based Navigation Manual (Doc 9613), Volume II contains detailed guidance on navigation specifications.

NAVIGATIONAL AID– Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

(See AIR NAVIGATION FACILITY.)

NAVSPEC–

(See NAVIGATION SPECIFICATION [ICAO].)

NBCAP AIRSPACE–

(See NATIONAL BEACON CODE ALLOCATION PLAN AIRSPACE.)

NDB–

(See NONDIRECTIONAL BEACON.)

NEGATIVE– “No,” or “permission not granted,” or “that is not correct.”

NEGATIVE CONTACT– Used by pilots to inform ATC that:

a. Previously issued traffic is not in sight. It may be followed by the pilot’s request for the controller to provide assistance in avoiding the traffic.

b. They were unable to contact ATC on a particular frequency.

NFDC–

(See NATIONAL FLIGHT DATA CENTER.)

NFDD–

(See NATIONAL FLIGHT DATA DIGEST.)

NIGHT– The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

(See ICAO term NIGHT.)

NIGHT [ICAO]– The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be specified by the appropriate authority.

Note: Civil twilight ends in the evening when the center of the sun’s disk is 6 degrees below the horizon and begins in the morning when the center of the sun’s disk is 6 degrees below the horizon.

NO GYRO APPROACH– A radar approach/vector provided in case of a malfunctioning gyro-compass or directional gyro. Instead of providing the pilot with headings to be flown, the controller observes the radar track and issues control instructions “turn right/left” or “stop turn” as appropriate.

(Refer to AIM.)

NO GYRO VECTOR–

(See NO GYRO APPROACH.)

NO TRANSGRESSION ZONE (NTZ)– The NTZ is a 2,000 foot wide zone, located equidistant between parallel runway or SOIA final approach courses, in which flight is normally not allowed.

NONAPPROACH CONTROL TOWER– Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the Class D airspace. The primary function of a nonapproach control tower is the sequencing of aircraft in the traffic pattern and on the landing area. Nonapproach control towers also separate aircraft operating under instrument flight rules clearances from approach controls and centers. They provide ground control services to aircraft, vehicles, personnel, and equipment on the airport movement area.

NONCOMMON ROUTE/PORTION– That segment of a North American Route between the inland navigation facility and a designated North American terminal.

NON-COOPERATIVE SURVEILLANCE– Any surveillance system, such as primary radar, that is not dependent upon the presence of any equipment on the aircraft or vehicle to be tracked.

(See COOPERATIVE SURVEILLANCE.)

(See RADAR.)

NONDIRECTIONAL BEACON– An L/MF or UHF radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and “home” on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

(See AUTOMATIC DIRECTION FINDER.)

(See COMPASS LOCATOR.)

NONMOVEMENT AREAS– Taxiways and apron (ramp) areas not under the control of air traffic.

NONPRECISION APPROACH–

(See **NONPRECISION APPROACH PROCEDURE**.)

NONPRECISION APPROACH PROCEDURE– A standard instrument approach procedure in which no electronic glideslope is provided; e.g., VOR, TACAN, NDB, LOC, ASR, LDA, or SDF approaches.

NONRADAR– Precedes other terms and generally means without the use of radar, such as:

a. Nonradar Approach. Used to describe instrument approaches for which course guidance on final approach is not provided by ground-based precision or surveillance radar. Radar vectors to the final approach course may or may not be provided by ATC. Examples of nonradar approaches are VOR, NDB, TACAN, ILS, RNAV, and GLS approaches.

(See **FINAL APPROACH COURSE**.)

(See **FINAL APPROACH-IFR**.)

(See **INSTRUMENT APPROACH PROCEDURE**.)

(See **RADAR APPROACH**.)

b. Nonradar Approach Control. An ATC facility providing approach control service without the use of radar.

(See **APPROACH CONTROL FACILITY**.)

(See **APPROACH CONTROL SERVICE**.)

c. Nonradar Arrival. An aircraft arriving at an airport without radar service or at an airport served by a radar facility and radar contact has not been established or has been terminated due to a lack of radar service to the airport.

(See **RADAR ARRIVAL**.)

(See **RADAR SERVICE**.)

d. Nonradar Route. A flight path or route over which the pilot is performing his/her own navigation. The pilot may be receiving radar separation, radar monitoring, or other ATC services while on a nonradar route.

(See **RADAR ROUTE**.)

e. Nonradar Separation. The spacing of aircraft in accordance with established minima without the use of radar; e.g., vertical, lateral, or longitudinal separation.

(See **RADAR SEPARATION**.)

NON-RESTRICTIVE ROUTING (NRR)– Portions of a proposed route of flight where a user can flight

plan the most advantageous flight path with no requirement to make reference to ground-based NAVAIDs.

NOPAC–

(See **NORTH PACIFIC**.)

NORDO (No Radio)– Aircraft that cannot or do not communicate by radio when radio communication is required are referred to as “NORDO.”

(See **LOST COMMUNICATIONS**.)

NORMAL OPERATING ZONE (NOZ)– The NOZ is the operating zone within which aircraft flight remains during normal independent simultaneous parallel ILS approaches.

NORTH AMERICAN ROUTE– A numerically coded route preplanned over existing airway and route systems to and from specific coastal fixes serving the North Atlantic. North American Routes consist of the following:

a. Common Route/Portion. That segment of a North American Route between the inland navigation facility and the coastal fix.

b. Noncommon Route/Portion. That segment of a North American Route between the inland navigation facility and a designated North American terminal.

c. Inland Navigation Facility. A navigation aid on a North American Route at which the common route and/or the noncommon route begins or ends.

d. Coastal Fix. A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

NORTH AMERICAN ROUTE PROGRAM (NRP)– The NRP is a set of rules and procedures which are designed to increase the flexibility of user flight planning within published guidelines.

NORTH ATLANTIC HIGH LEVEL AIRSPACE (NAT HLA)– That volume of airspace (as defined in ICAO Document 7030) between FL 285 and FL 420 within the Oceanic Control Areas of Bodo Oceanic, Gander Oceanic, New York Oceanic East, Reykjavik, Santa Maria, and Shanwick, excluding the Shannon and Brest Ocean Transition Areas. ICAO Doc 007 *North Atlantic Operations and Airspace Manual* provides detailed information on related aircraft and operational requirements.

NORTH MARK– A beacon data block sent by the host computer to be displayed by the ARTS on a 360 degree bearing at a locally selected radar azimuth and distance. The North Mark is used to ensure correct range/azimuth orientation during periods of CENRAP.

NORTH PACIFIC– An organized route system between the Alaskan west coast and Japan.

NOT STANDARD– Varying from what is expected or published. For use in NOTAMs only.

NOT STD–

(See NOT STANDARD.)

NOTAM–

(See NOTICE TO AIRMEN.)

NOTAM [ICAO]– A notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

a. I Distribution– Distribution by means of telecommunication.

b. II Distribution– Distribution by means other than telecommunications.

NOTICE TO AIRMEN (NOTAM)– A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely

knowledge of which is essential to personnel concerned with flight operations.

NOTAM(D)– A NOTAM given (in addition to local dissemination) distant dissemination beyond the area of responsibility of the Flight Service Station. These NOTAMs will be stored and available until canceled.

c. FDC NOTAM– A NOTAM regulatory in nature, transmitted by USNOF and given system wide dissemination.

(See ICAO term NOTAM.)

NOTICES TO AIRMEN PUBLICATION– A publication issued every 28 days, designed primarily for the pilot, which contains NOTAMs, graphic notices, and other information considered essential to the safety of flight as well as supplemental data to other aeronautical publications. The contraction NTAP is used in NOTAM text.

(See NOTICE TO AIRMEN.)

NRR–

(See NON-RESTRICTIVE ROUTING.)

NRS–

(See NAVIGATION REFERENCE SYSTEM.)

NTAP–

(See NOTICES TO AIRMEN PUBLICATION.)

NUMEROUS TARGETS VICINITY (LOCATION)– A traffic advisory issued by ATC to advise pilots that targets on the radar scope are too numerous to issue individually.

(See TRAFFIC ADVISORIES.)

OFF-ROUTE OBSTRUCTION CLEARANCE ALTITUDE (OROCA)– An off-route altitude which provides obstruction clearance with a 1,000 foot buffer in non-mountainous terrain areas and a 2,000 foot buffer in designated mountainous areas within the United States. This altitude may not provide signal coverage from ground-based navigational aids, air traffic control radar, or communications coverage.

OTR–

(See OCEANIC TRANSITION ROUTE.)

OTS–

(See ORGANIZED TRACK SYSTEM.)

OUT– The conversation is ended and no response is expected.

OUT OF SERVICE/UNSERVICEABLE (U/S)– When a piece of equipment, a NAVAID, a facility or a service is not operational, certified (if required) and immediately “available” for Air Traffic or public use.

OUTER AREA (associated with Class C airspace)– Non-regulatory airspace surrounding designated Class C airspace airports wherein ATC provides radar vectoring and sequencing on a full-time basis for all IFR and participating VFR aircraft. The service provided in the outer area is called Class C service which includes: IFR/IFR-IFR separation; IFR/VFR-traffic advisories and conflict resolution; and VFR/VFR-traffic advisories and, as appropriate, safety alerts. The normal radius will be 20 nautical miles with some variations based on site-specific requirements. The outer area extends outward from the primary Class C airspace airport and extends from the lower limits of radar/radio coverage up to the ceiling of the approach control’s delegated airspace excluding the Class C charted area and other airspace as appropriate.

(See CONFLICT RESOLUTION.)

(See CONTROLLED AIRSPACE.)

OUTER COMPASS LOCATOR–

(See COMPASS LOCATOR.)

OUTER FIX– A general term used within ATC to describe fixes in the terminal area, other than the final approach fix. Aircraft are normally cleared to these fixes by an Air Route Traffic Control Center or an Approach Control Facility. Aircraft are normally cleared from these fixes to the final approach fix or final approach course.

OR

OUTER FIX– An adapted fix along the converted route of flight, prior to the meter fix, for which crossing times are calculated and displayed in the metering position list.

OUTER FIX ARC– A semicircle, usually about a 50–70 mile radius from a meter fix, usually in high altitude, which is used by CTAS/ERAM to calculate outer fix times and determine appropriate sector meter list assignments for aircraft on an established arrival route that will traverse the arc.

OUTER FIX TIME– A calculated time to depart the outer fix in order to cross the vertex at the ACLT. The time reflects descent speed adjustments and any applicable delay time that must be absorbed prior to crossing the meter fix.

OUTER MARKER– A marker beacon at or near the glideslope intercept altitude of an ILS approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.

(See INSTRUMENT LANDING SYSTEM.)

(See MARKER BEACON.)

(Refer to AIM.)

OVER– My transmission is ended; I expect a response.

OVERHEAD MANEUVER– A series of predetermined maneuvers prescribed for aircraft (often in formation) for entry into the visual flight rules (VFR) traffic pattern and to proceed to a landing. An overhead maneuver is not an instrument flight rules (IFR) approach procedure. An aircraft executing an overhead maneuver is considered VFR and the IFR flight plan is canceled when the aircraft reaches the “initial point” on the initial approach portion of the maneuver. The pattern usually specifies the following:

- a. The radio contact required of the pilot.
- b. The speed to be maintained.
- c. An initial approach 3 to 5 miles in length.
- d. An elliptical pattern consisting of two 180 degree turns.
- e. A break point at which the first 180 degree turn is started.
- f. The direction of turns.

g. Altitude (at least 500 feet above the conventional pattern).

h. A “Roll-out” on final approach not less than 1/4 mile from the landing threshold and not less than 300 feet above the ground.

OVERLYING CENTER– The ARTCC facility that is responsible for arrival/departure operations at a specific terminal.

P

P TIME–

(See PROPOSED DEPARTURE TIME.)

P-ACP–

(See PREARRANGED COORDINATION PROCEDURES.)

PAN-PAN– The international radio-telephony urgency signal. When repeated three times, indicates uncertainty or alert followed by the nature of the urgency.

(See MAYDAY.)

(Refer to AIM.)

PAR–

(See PRECISION APPROACH RADAR.)

PAR [ICAO]–

(See ICAO Term PRECISION APPROACH RADAR.)

PARALLEL ILS APPROACHES– Approaches to parallel runways by IFR aircraft which, when established inbound toward the airport on the adjacent final approach courses, are radar-separated by at least 2 miles.

(See FINAL APPROACH COURSE.)

(See SIMULTANEOUS ILS APPROACHES.)

PARALLEL OFFSET ROUTE– A parallel track to the left or right of the designated or established airway/route. Normally associated with Area Navigation (RNAV) operations.

(See AREA NAVIGATION.)

PARALLEL RUNWAYS– Two or more runways at the same airport whose centerlines are parallel. In addition to runway number, parallel runways are designated as L (left) and R (right) or, if three parallel runways exist, L (left), C (center), and R (right).

PBCT–

(See PROPOSED BOUNDARY CROSSING TIME.)

PBN–

(See ICAO Term PERFORMANCE–BASED NAVIGATION.)

PDC–

(See PRE–DEPARTURE CLEARANCE.)

PERFORMANCE–BASED NAVIGATION (PBN) [ICAO]– Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note: Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability, and functionality needed for the proposed operation in the context of a particular airspace concept.

PERMANENT ECHO– Radar signals reflected from fixed objects on the earth’s surface; e.g., buildings, towers, terrain. Permanent echoes are distinguished from “ground clutter” by being definable locations rather than large areas. Under certain conditions they may be used to check radar alignment.

PHOTO RECONNAISSANCE– Military activity that requires locating individual photo targets and navigating to the targets at a preplanned angle and altitude. The activity normally requires a lateral route width of 16 NM and altitude range of 1,500 feet to 10,000 feet AGL.

PILOT BRIEFING– A service provided by the FSS to assist pilots in flight planning. Briefing items may include weather information, NOTAMS, military activities, flow control information, and other items as requested.

(Refer to AIM.)

PILOT IN COMMAND– The pilot responsible for the operation and safety of an aircraft during flight time.

(Refer to 14 CFR Part 91.)

PILOT WEATHER REPORT– A report of meteorological phenomena encountered by aircraft in flight.

(Refer to AIM.)

PILOT’S DISCRETION– When used in conjunction with altitude assignments, means that ATC has offered the pilot the option of starting climb or descent whenever he/she wishes and conducting the climb or descent at any rate he/she wishes. He/she may temporarily level off at any intermediate altitude. However, once he/she has vacated an altitude, he/she may not return to that altitude.

PIREP–

(See PILOT WEATHER REPORT.)

PITCH POINT– A fix/waypoint that serves as a transition point from a departure procedure or the low altitude ground-based navigation structure into the high altitude waypoint system.

PLANS DISPLAY– A display available in EDST that provides detailed flight plan and predicted conflict information in textual format for requested Current Plans and all Trial Plans.

(See EN ROUTE DECISION SUPPORT TOOL)

POFZ–

(See PRECISION OBSTACLE FREE ZONE.)

POINT OUT–

(See RADAR POINT OUT.)

POINT-TO-POINT (PTP)– A level of NRR service for aircraft that is based on traditional waypoints in their FMSs or RNAV equipage.

POLAR TRACK STRUCTURE– A system of organized routes between Iceland and Alaska which overlie Canadian MNPS Airspace.

POSITION REPORT– A report over a known location as transmitted by an aircraft to ATC.

(Refer to AIM.)

POSITION SYMBOL– A computer-generated indication shown on a radar display to indicate the mode of tracking.

POSITIVE CONTROL– The separation of all air traffic within designated airspace by air traffic control.

PRACTICE INSTRUMENT APPROACH– An instrument approach procedure conducted by a VFR or an IFR aircraft for the purpose of pilot training or proficiency demonstrations.

PRE-DEPARTURE CLEARANCE– An application with the Terminal Data Link System (TDLS) that provides clearance information to subscribers, through a service provider, in text to the cockpit or gate printer.

PREARRANGED COORDINATION– A standardized procedure which permits an air traffic controller to enter the airspace assigned to another air traffic controller without verbal coordination. The procedures are defined in a facility directive which ensures approved separation between aircraft.

PREARRANGED COORDINATION PROCEDURES– A facility's standardized procedure that describes the process by which one controller shall allow an aircraft to penetrate or transit another controller's airspace in a manner that assures approved separation without individual coordination for each aircraft.

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.

Note: The abbreviation "PAR" is also used to denote preferential arrival routes in ARTCC computers.

(See GLIDEPATH.)

(See PAR.)

(See PREFERENTIAL ROUTES.)

(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.

Note: Precision approach radars are designed to enable pilots of aircraft to be given guidance by radio communication during the final stages of the approach to land.

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.

PREFERENTIAL ROUTES– Preferential routes (PDRs, PARs, and PDARs) are adapted in ARTCC computers to accomplish inter/intrafacility controller coordination and to assure that flight data is posted at the proper control positions. Locations having a need for these specific inbound and outbound routes normally publish such routes in local facility bulletins, and their use by pilots minimizes flight plan route amendments. When the workload or traffic situation permits, controllers normally provide radar vectors or assign requested routes to minimize circuitous routing. Preferential routes are usually confined to one ARTCC's area and are referred to by the following names or acronyms:

a. Preferential Departure Route (PDR). 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.

b. Preferential Arrival Route (PAR). 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. The abbreviation "PAR" is used primarily within the ARTCC and should not be confused with the abbreviation for Precision Approach Radar.

c. Preferential Departure and Arrival Route (PDAR). A route between two terminals which are within or immediately adjacent to one ARTCC's area. PDARs are not synonymous with Preferred IFR Routes but may be listed as such as they do accomplish essentially the same purpose.

(See PREFERRED IFR ROUTES.)

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. 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 are correlated with DPs and STARs and may be defined by airways, jet routes, direct routes between NAVAIDs, Waypoints, NAVAID radials/DME, or any combinations thereof.

(See CENTER'S AREA.)

(See INSTRUMENT DEPARTURE PROCEDURE.)

(See PREFERENTIAL ROUTES.)

(See STANDARD TERMINAL ARRIVAL.)

(Refer to CHART SUPPLEMENT U.S.)

(Refer to NOTICES TO AIRMEN PUBLICATION.)

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 10NM from the DER, and that penetrates that airport/heliport's diverse departure obstacle clearance surface (OCS).

c. An obstacle beyond 10NM 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.)

R

RADAR– A device that provides information on range, azimuth, and/or elevation of objects by measuring the time interval between transmission and reception of directional radio pulses and correlating the angular orientation of the radiated antenna beam or beams in azimuth and/or elevation.

a. Primary Radar– A radar system in which a minute portion of a radio pulse transmitted from a site is reflected by an object and then received back at that site for processing and display at an air traffic control facility.

b. Secondary Radar/Radar Beacon (ATCRBS)– A radar system in which the object to be detected is fitted with cooperative equipment in the form of a radio receiver/transmitter (transponder). Radar pulses transmitted from the searching transmitter/receiver (interrogator) site are received in the cooperative equipment and used to trigger a distinctive transmission from the transponder. This reply transmission, rather than a reflected signal, is then received back at the transmitter/receiver site for processing and display at an air traffic control facility.

(See COOPERATIVE SURVEILLANCE.)

(See INTERROGATOR.)

(See NON-COOPERATIVE SURVEILLANCE.)

(See TRANSPONDER.)

(See ICAO term RADAR.)

(Refer to AIM.)

RADAR [ICAO]– A radio detection device which provides information on range, azimuth and/or elevation of objects.

a. Primary Radar– Radar system which uses reflected radio signals.

b. Secondary Radar– Radar system wherein a radio signal transmitted from a radar station initiates the transmission of a radio signal from another station.

RADAR ADVISORY– The provision of advice and information based on radar observations.

(See ADVISORY SERVICE.)

RADAR ALTIMETER–

(See RADIO ALTIMETER.)

RADAR APPROACH– An instrument approach procedure which utilizes Precision Approach Radar (PAR) or Airport Surveillance Radar (ASR).

(See AIRPORT SURVEILLANCE RADAR.)

(See INSTRUMENT APPROACH PROCEDURE.)

(See PRECISION APPROACH RADAR.)

(See SURVEILLANCE APPROACH.)

(See ICAO term RADAR APPROACH.)

(Refer to AIM.)

RADAR APPROACH [ICAO]– An approach, executed by an aircraft, under the direction of a radar controller.

RADAR APPROACH CONTROL FACILITY– A terminal ATC facility that uses radar and nonradar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility.

(See APPROACH CONTROL SERVICE.)

a. Provides radar ATC services to aircraft operating in the vicinity of one or more civil and/or military airports in a terminal area. The facility may provide services of a ground controlled approach (GCA); i.e., ASR and PAR approaches. A radar approach control facility may be operated by FAA, USAF, US Army, USN, USMC, or jointly by FAA and a military service. Specific facility nomenclatures are used for administrative purposes only and are related to the physical location of the facility and the operating service generally as follows:

1. Army Radar Approach Control (ARAC) (US Army).

2. Radar Air Traffic Control Facility (RATCF) (USN/FAA and USMC/FAA).

3. Radar Approach Control (RAPCON) (USAF/FAA, USN/FAA, and USMC/FAA).

4. Terminal Radar Approach Control (TRACON) (FAA).

5. Air Traffic Control Tower (ATCT) (FAA). (Only those towers delegated approach control authority.)

RADAR ARRIVAL– An aircraft arriving at an airport served by a radar facility and in radar contact with the facility.

(See NONRADAR.)

RADAR BEACON–

(See RADAR.)

RADAR CLUTTER [ICAO]– The visual indication on a radar display of unwanted signals.

RADAR CONTACT–

a. Used by ATC to inform an aircraft that it is identified using an approved ATC surveillance source on an air traffic controller’s display and that radar flight following will be provided until radar service is terminated. Radar service may also be provided within the limits of necessity and capability. When a pilot is informed of “radar contact,” he/she automatically discontinues reporting over compulsory reporting points.

(See ATC SURVEILLANCE SOURCE.)

(See RADAR CONTACT LOST.)

(See RADAR FLIGHT FOLLOWING.)

(See RADAR SERVICE.)

(See RADAR SERVICE TERMINATED.)

(Refer to AIM.)

b. The term used to inform the controller that the aircraft is identified and approval is granted for the aircraft to enter the receiving controllers airspace.

(See ICAO term RADAR CONTACT.)

RADAR CONTACT [ICAO]– The situation which exists when the radar blip or radar position symbol of a particular aircraft is seen and identified on a radar display.

RADAR CONTACT LOST– Used by ATC to inform a pilot that the surveillance data used to determine the aircraft’s position is no longer being received, or is no longer reliable and radar service is no longer being provided. The loss may be attributed to several factors including the aircraft merging with weather or ground clutter, the aircraft operating below radar line of sight coverage, the aircraft entering an area of poor radar return, failure of the aircraft’s equipment, or failure of the surveillance equipment.

(See CLUTTER.)

(See RADAR CONTACT.)

RADAR ENVIRONMENT– An area in which radar service may be provided.

(See ADDITIONAL SERVICES.)

(See RADAR CONTACT.)

(See RADAR SERVICE.)

(See TRAFFIC ADVISORIES.)

RADAR FLIGHT FOLLOWING– The observation of the progress of radar-identified aircraft, whose primary navigation is being provided by the pilot, wherein the controller retains and correlates the aircraft identity with the appropriate target or target symbol displayed on the radar scope.

(See RADAR CONTACT.)

(See RADAR SERVICE.)

(Refer to AIM.)

RADAR IDENTIFICATION– The process of ascertaining that an observed radar target is the radar return from a particular aircraft.

(See RADAR CONTACT.)

(See RADAR SERVICE.)

RADAR IDENTIFIED AIRCRAFT– An aircraft, the position of which has been correlated with an observed target or symbol on the radar display.

(See RADAR CONTACT.)

(See RADAR CONTACT LOST.)

RADAR MONITORING–

(See RADAR SERVICE.)

RADAR NAVIGATIONAL GUIDANCE–

(See RADAR SERVICE.)

RADAR POINT OUT– An action taken by a controller to transfer the radar identification of an aircraft to another controller if the aircraft will or may enter the airspace or protected airspace of another controller and radio communications will not be transferred.

RADAR REQUIRED– A term displayed on charts and approach plates and included in FDC NOTAMS to alert pilots that segments of either an instrument approach procedure or a route are not navigable because of either the absence or unusability of a NAVAID. The pilot can expect to be provided radar navigational guidance while transiting segments labeled with this term.

(See RADAR ROUTE.)

(See RADAR SERVICE.)

RADAR ROUTE– A flight path or route over which an aircraft is vectored. Navigational guidance and altitude assignments are provided by ATC.

(See FLIGHT PATH.)

(See ROUTE.)

RADAR SEPARATION–

(See RADAR SERVICE.)

RADAR SERVICE– A term which encompasses one or more of the following services based on the use of

radar which can be provided by a controller to a pilot of a radar identified aircraft.

a. Radar Monitoring– The radar flight-following of aircraft, whose primary navigation is being performed by the pilot, to observe and note deviations from its authorized flight path, airway, or route. When being applied specifically to radar monitoring of instrument approaches; i.e., with precision approach radar (PAR) or radar monitoring of simultaneous ILS, RNAV and GLS approaches, it includes advice and instructions whenever an aircraft nears or exceeds the prescribed PAR safety limit or simultaneous ILS RNAV and GLS no transgression zone.

(See ADDITIONAL SERVICES.)

(See TRAFFIC ADVISORIES.)

b. Radar Navigational Guidance– Vectoring aircraft to provide course guidance.

c. Radar Separation– Radar spacing of aircraft in accordance with established minima.

(See ICAO term RADAR SERVICE.)

RADAR SERVICE [ICAO]– Term used to indicate a service provided directly by means of radar.

a. Monitoring– The use of radar for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path.

b. Separation– The separation used when aircraft position information is derived from radar sources.

RADAR SERVICE TERMINATED– Used by ATC to inform a pilot that he/she will no longer be provided any of the services that could be received while in radar contact. Radar service is automatically terminated, and the pilot is not advised in the following cases:

a. An aircraft cancels its IFR flight plan, except within Class B airspace, Class C airspace, a TRSA, or where Basic Radar service is provided.

b. An aircraft conducting an instrument, visual, or contact approach has landed or has been instructed to change to advisory frequency.

c. An arriving VFR aircraft, receiving radar service to a tower-controlled airport within Class B airspace, Class C airspace, a TRSA, or where sequencing service is provided, has landed; or to all other airports, is instructed to change to tower or advisory frequency.

d. An aircraft completes a radar approach.

RADAR SURVEILLANCE– The radar observation of a given geographical area for the purpose of performing some radar function.

RADAR TRAFFIC ADVISORIES– Advisories issued to alert pilots to known or observed radar traffic which may affect the intended route of flight of their aircraft.

(See TRAFFIC ADVISORIES.)

RADAR TRAFFIC INFORMATION SERVICE–

(See TRAFFIC ADVISORIES.)

RADAR VECTORING [ICAO]– Provision of navigational guidance to aircraft in the form of specific headings, based on the use of radar.

RADIAL– A magnetic bearing extending from a VOR/VORTAC/TACAN navigation facility.

RADIO–

a. A device used for communication.

b. Used to refer to a flight service station; e.g., “Seattle Radio” is used to call Seattle FSS.

RADIO ALTIMETER– Aircraft equipment which makes use of the reflection of radio waves from the ground to determine the height of the aircraft above the surface.

RADIO BEACON–

(See NONDIRECTIONAL BEACON.)

RADIO DETECTION AND RANGING–

(See RADAR.)

RADIO MAGNETIC INDICATOR– An aircraft navigational instrument coupled with a gyro compass or similar compass that indicates the direction of a selected NAVAID and indicates bearing with respect to the heading of the aircraft.

RAIS–

(See REMOTE AIRPORT INFORMATION SERVICE.)

RAMP–

(See APRON.)

RANDOM ALTITUDE– An altitude inappropriate for direction of flight and/or not in accordance with FAA Order JO 7110.65, Paragraph 4–5–1, VERTICAL SEPARATION MINIMA.

RANDOM ROUTE– Any route not established or charted/published or not otherwise available to all users.

RC–

(See ROAD RECONNAISSANCE.)

RCAG–

(See REMOTE COMMUNICATIONS AIR/GROUND FACILITY.)

RCC–

(See RESCUE COORDINATION CENTER.)

RCO–

(See REMOTE COMMUNICATIONS OUTLET.)

RCR–

(See RUNWAY CONDITION READING.)

READ BACK– Repeat my message back to me.

RECEIVER AUTONOMOUS INTEGRITY MONITORING (RAIM)– A technique whereby a civil GNSS receiver/processor determines the integrity of the GNSS navigation signals without reference to sensors or non-DoD integrity systems other than the receiver itself. This determination is achieved by a consistency check among redundant pseudorange measurements.

RECEIVING CONTROLLER– A controller/facility receiving control of an aircraft from another controller/facility.

RECEIVING FACILITY–

(See RECEIVING CONTROLLER.)

RECONFORMANCE– The automated process of bringing an aircraft's Current Plan Trajectory into conformance with its track.

REDUCE SPEED TO (SPEED)–

(See SPEED ADJUSTMENT.)

REFINED HAZARD AREA (RHA)– Used by ATC. Airspace that is defined and distributed after a failure of a launch or reentry operation to provide a more concise depiction of the hazard location than a Contingency Hazard Area.

(See AIRCRAFT HAZARD AREA.)

(See CONTINGENCY HAZARD AREA.)

(See TRANSITIONAL HAZARD AREA.)

REIL–

(See RUNWAY END IDENTIFIER LIGHTS.)

RELEASE TIME– A departure time restriction issued to a pilot by ATC (either directly or through an authorized relay) when necessary to separate a departing aircraft from other traffic.

(See ICAO term RELEASE TIME.)

RELEASE TIME [ICAO]– Time prior to which an aircraft should be given further clearance or prior to which it should not proceed in case of radio failure.

REMOTE AIRPORT INFORMATION SERVICE (RAIS)– A temporary service provided by facilities, which are not located on the landing airport, but have communication capability and automated weather reporting available to the pilot at the landing airport.

REMOTE COMMUNICATIONS AIR/GROUND FACILITY– An unmanned VHF/UHF transmitter/receiver facility which is used to expand ARTCC air/ground communications coverage and to facilitate direct contact between pilots and controllers. RCAG facilities are sometimes not equipped with emergency frequencies 121.5 MHz and 243.0 MHz.

(Refer to AIM.)

REMOTE COMMUNICATIONS OUTLET (RCO)– An unmanned communications facility remotely controlled by air traffic personnel. RCOs serve FSSs. Remote Transmitter/Receivers (RTR) serve terminal ATC facilities. An RCO or RTR may be UHF or VHF and will extend the communication range of the air traffic facility. There are several classes of RCOs and RTRs. The class is determined by the number of transmitters or receivers. Classes A through G are used primarily for air/ground purposes. RCO and RTR class O facilities are nonprotected outlets subject to undetected and prolonged outages. RCO (O's) and RTR (O's) were established for the express purpose of providing ground-to-ground communications between air traffic control specialists and pilots located at a satellite airport for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times. As a secondary function, they may be used for advisory purposes whenever the aircraft is below the coverage of the primary air/ground frequency.

REMOTE TRANSMITTER/RECEIVER (RTR)–

(See REMOTE COMMUNICATIONS OUTLET.)

REPORT– Used to instruct pilots to advise ATC of specified information; e.g., "Report passing Hamilton VOR."

REPORTING POINT– A geographical location in relation to which the position of an aircraft is reported.

(See COMPULSORY REPORTING POINTS.)

(See ICAO term REPORTING POINT.)

(Refer to AIM.)

REPORTING POINT [ICAO]– A specified geographical location in relation to which the position of an aircraft can be reported.

REQUEST FULL ROUTE CLEARANCE– Used by pilots to request that the entire route of flight be read verbatim in an ATC clearance. Such request should be made to preclude receiving an ATC clearance based on the original filed flight plan when a filed IFR flight plan has been revised by the pilot, company, or operations prior to departure.

REQUIRED NAVIGATION PERFORMANCE (RNP)– A statement of the navigational performance necessary for operation within a defined airspace. The following terms are commonly associated with RNP:

a. Required Navigation Performance Level or Type (RNP-X). A value, in nautical miles (NM), from the intended horizontal position within which an aircraft would be at least 95-percent of the total flying time.

b. Advanced – Required Navigation Performance (A-RNP). A navigation specification based on RNP that requires advanced functions such as scalable RNP, radius-to-fix (RF) legs, and tactical parallel offsets. This sophisticated Navigation Specification (NavSpec) is designated by the abbreviation “A-RNP”.

c. Required Navigation Performance (RNP) Airspace. A generic term designating airspace, route(s), leg(s), operation(s), or procedure(s) where minimum required navigational performance (RNP) have been established.

d. Actual Navigation Performance (ANP). A measure of the current estimated navigational performance. Also referred to as Estimated Position Error (EPE).

e. Estimated Position Error (EPE). A measure of the current estimated navigational performance. Also referred to as Actual Navigation Performance (ANP).

f. Lateral Navigation (LNAV). A function of area navigation (RNAV) equipment which calculates, displays, and provides lateral guidance to a profile or path.

g. Vertical Navigation (VNAV). A function of area navigation (RNAV) equipment which calculates, displays, and provides vertical guidance to a profile or path.

RESCUE COORDINATION CENTER (RCC)– A search and rescue (SAR) facility equipped and manned to coordinate and control SAR operations in an area designated by the SAR plan. The U.S. Coast Guard and the U.S. Air Force have responsibility for the operation of RCCs.

(See ICAO term RESCUE CO-ORDINATION CENTRE.)

RESCUE CO-ORDINATION CENTRE [ICAO]– A unit responsible for promoting efficient organization of search and rescue service and for coordinating the conduct of search and rescue operations within a search and rescue region.

RESOLUTION ADVISORY– A display indication given to the pilot by the Traffic alert and Collision Avoidance System (TCAS II) recommending a maneuver to increase vertical separation relative to an intruding aircraft. Positive, negative, and vertical speed limit (VSL) advisories constitute the resolution advisories. A resolution advisory is also classified as corrective or preventive.

RESTRICTED AREA–

(See SPECIAL USE AIRSPACE.)

(See ICAO term RESTRICTED AREA.)

RESTRICTED AREA [ICAO]– An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

RESUME NORMAL SPEED– Used by ATC to advise a pilot to resume an aircraft’s normal operating speed. It is issued to terminate a speed adjustment where no published speed restrictions apply. It does not delete speed restrictions in published procedures of upcoming segments of flight. This does not relieve the pilot of those speed restrictions that are applicable to 14 CFR Section 91.117.

RESUME OWN NAVIGATION– Used by ATC to advise a pilot to resume his/her own navigational responsibility. It is issued after completion of a radar vector or when radar contact is lost while the aircraft is being radar vectored.

(See RADAR CONTACT LOST.)

(See RADAR SERVICE TERMINATED.)

RESUME PUBLISHED SPEED– Used by ATC to advise a pilot to resume published speed restrictions that are applicable to a SID, STAR, or other instrument procedure. It is issued to terminate a speed

adjustment where speed restrictions are published on a charted procedure.

RHA–

(See REFINED HAZARD AREA.)

RMI–

(See RADIO MAGNETIC INDICATOR.)

RNAV–

(See AREA NAVIGATION (RNAV).)

RNAV APPROACH– An instrument approach procedure which relies on aircraft area navigation equipment for navigational guidance.

(See AREA NAVIGATION (RNAV).)

(See INSTRUMENT APPROACH PROCEDURE.)

ROAD RECONNAISSANCE (RC)– Military activity requiring navigation along roads, railroads, and rivers. Reconnaissance route/route segments are seldom along a straight line and normally require a lateral route width of 10 NM to 30 NM and an altitude range of 500 feet to 10,000 feet AGL.

ROGER– I have received all of your last transmission. It should not be used to answer a question requiring a yes or a no answer.

(See AFFIRMATIVE.)

(See NEGATIVE.)

ROLLOUT RVR–

(See VISIBILITY.)

ROTOR WASH– A phenomenon resulting from the vertical down wash of air generated by the main rotor(s) of a helicopter.

ROUND-ROBIN FLIGHT PLAN– A single flight plan filed from the departure airport to an intermediary destination(s) and then returning to the original departure airport.

ROUTE– A defined path, consisting of one or more courses in a horizontal plane, which aircraft traverse over the surface of the earth.

(See AIRWAY.)

(See JET ROUTE.)

(See PUBLISHED ROUTE.)

(See UNPUBLISHED ROUTE.)

ROUTE ACTION NOTIFICATION– EDST notification that a PAR/PDR/PDAR has been applied to the flight plan.

(See ATC PREFERRED ROUTE NOTIFICATION.)

(See EN ROUTE DECISION SUPPORT TOOL.)

ROUTE SEGMENT– As used in Air Traffic Control, a part of a route that can be defined by two navigational fixes, two NAVAIDs, or a fix and a NAVAID.

(See FIX.)

(See ROUTE.)

(See ICAO term ROUTE SEGMENT.)

ROUTE SEGMENT [ICAO]– A portion of a route to be flown, as defined by two consecutive significant points specified in a flight plan.

RSA–

(See RUNWAY SAFETY AREA.)

RTR–

(See REMOTE TRANSMITTER/RECEIVER.)

RUNWAY– A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees; e.g., Runway 1, Runway 25.

(See PARALLEL RUNWAYS.)

(See ICAO term RUNWAY.)

RUNWAY [ICAO]– A defined rectangular area on a land aerodrome prepared for the landing and takeoff of aircraft.

RUNWAY CENTERLINE LIGHTING–

(See AIRPORT LIGHTING.)

RUNWAY CONDITION CODES (RwyCC)– Numerical readings, provided by airport operators, that indicate runway surface contamination (for example, slush, ice, rain, etc.). These values range from “1” (poor) to “6” (dry) and must be included on the ATIS when the reportable condition is less than 6 in any one or more of the three runway zones (touchdown, midpoint, rollout).

RUNWAY CONDITION READING– Numerical decelerometer readings relayed by air traffic controllers at USAF and certain civil bases for use by the pilot in determining runway braking action. These readings are routinely relayed only to USAF and Air National Guard Aircraft.

(See BRAKING ACTION.)

RUNWAY CONDITION REPORT (RwyCR)– A data collection worksheet used by airport operators that correlates the runway percentage of coverage along with the depth and type of contaminant for the purpose of creating a FICON NOTAM.

(See **RUNWAY CONDITION CODES**.)

RUNWAY END IDENTIFIER LIGHTS (REIL)–

(See **AIRPORT LIGHTING**.)

RUNWAY ENTRANCE LIGHTS (REL)–An array of red lights which include the first light at the hold line followed by a series of evenly spaced lights to the runway edge aligned with the taxiway centerline, and one additional light at the runway centerline in line with the last two lights before the runway edge.

RUNWAY GRADIENT– The average slope, measured in percent, between two ends or points on a runway. Runway gradient is depicted on Government aerodrome sketches when total runway gradient exceeds 0.3%.

RUNWAY HEADING– The magnetic direction that corresponds with the runway centerline extended, not the painted runway number. When cleared to “fly or maintain runway heading,” pilots are expected to fly or maintain the heading that corresponds with the extended centerline of the departure runway. Drift correction shall not be applied; e.g., Runway 4, actual magnetic heading of the runway centerline 044, fly 044.

RUNWAY IN USE/ACTIVE RUNWAY/DUTY RUNWAY– Any runway or runways currently being used for takeoff or landing. When multiple runways are used, they are all considered active runways. In the metering sense, a selectable adapted item which specifies the landing runway configuration or direction of traffic flow. The adapted optimum flight plan from each transition fix to the vertex is determined by the runway configuration for arrival metering processing purposes.

RUNWAY LIGHTS–

(See **AIRPORT LIGHTING**.)

RUNWAY MARKINGS–

(See **AIRPORT MARKING AIDS**.)

RUNWAY OVERRUN– In military aviation exclusively, a stabilized or paved area beyond the end of a runway, of the same width as the runway plus

shoulders, centered on the extended runway centerline.

RUNWAY PROFILE DESCENT– An instrument flight rules (IFR) air traffic control arrival procedure to a runway published for pilot use in graphic and/or textual form and may be associated with a STAR. Runway Profile Descents provide routing and may depict crossing altitudes, speed restrictions, and headings to be flown from the en route structure to the point where the pilot will receive clearance for and execute an instrument approach procedure. A Runway Profile Descent may apply to more than one runway if so stated on the chart.

(Refer to **AIM**.)

RUNWAY SAFETY AREA– A defined surface surrounding the runway prepared, or suitable, for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. The dimensions of the RSA vary and can be determined by using the criteria contained within AC 150/5300-13, Airport Design, Chapter 3. Figure 3–1 in AC 150/5300-13 depicts the RSA. The design standards dictate that the RSA shall be:

a. Cleared, graded, and have no potentially hazardous ruts, humps, depressions, or other surface variations;

b. Drained by grading or storm sewers to prevent water accumulation;

c. Capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and,

d. Free of objects, except for objects that need to be located in the runway safety area because of their function. These objects shall be constructed on low impact resistant supports (frangible mounted structures) to the lowest practical height with the frangible point no higher than 3 inches above grade.

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

RUNWAY STATUS LIGHTS (RWSL) SYSTEM– The RWSL is a system of runway and taxiway lighting to provide pilots increased situational awareness by illuminating runway entry lights (REL) when the runway is unsafe for entry or crossing, and take-off hold lights (THL) when the runway is unsafe for departure.

RUNWAY TRANSITION–

a. Conventional STARs/SIDs. The portion of a STAR/SID that serves a particular runway or runways at an airport.

b. RNAV STARs/SIDs. Defines a path(s) from the common route to the final point(s) on a STAR. For a SID, the common route that serves a particular runway or runways at an airport.

RUNWAY USE PROGRAM– A noise abatement runway selection plan designed to enhance noise abatement efforts with regard to airport communities for arriving and departing aircraft. These plans are developed into runway use programs and apply to all turbojet aircraft 12,500 pounds or heavier; turbojet aircraft less than 12,500 pounds are included only if the airport proprietor determines that the aircraft creates a noise problem. Runway use programs are coordinated with FAA offices, and safety criteria used in these programs are developed by the Office of Flight Operations. Runway use programs are

administered by the Air Traffic Service as “Formal” or “Informal” programs.

a. Formal Runway Use Program– An approved noise abatement program which is defined and acknowledged in a Letter of Understanding between Flight Operations, Air Traffic Service, the airport proprietor, and the users. Once established, participation in the program is mandatory for aircraft operators and pilots as provided for in 14 CFR Section 91.129.

b. Informal Runway Use Program– An approved noise abatement program which does not require a Letter of Understanding, and participation in the program is voluntary for aircraft operators/pilots.

RUNWAY VISUAL RANGE (RVR)–

(See VISIBILITY.)

RwyCC–

(See RUNWAY CONDITION CODES.)

RwyCR–

(See RUNWAY CONDITION REPORT.)

to the runway threshold, visual separation by the aircraft conducting the offset approach is utilized.

(Refer to AIM)

SIMULTANEOUS (PARALLEL) DEPENDENT APPROACHES- An approach operation permitting ILS/RNAV/GLS approaches to adjacent parallel runways where prescribed diagonal spacing must be maintained. Aircraft are not permitted to pass each other during simultaneous dependent operations. Integral parts of a total system ATC procedures, and appropriate airborne and ground based equipment.

SINGLE DIRECTION ROUTES- Preferred IFR Routes which are sometimes depicted on high altitude en route charts and which are normally flown in one direction only.

(See PREFERRED IFR ROUTES.)

(Refer to CHART SUPPLEMENT U.S.)

SINGLE FREQUENCY APPROACH- A service provided under a letter of agreement to military single-piloted turbojet aircraft which permits use of a single UHF frequency during approach for landing. Pilots will not normally be required to change frequency from the beginning of the approach to touchdown except that pilots conducting an en route descent are required to change frequency when control is transferred from the air route traffic control center to the terminal facility. The abbreviation "SFA" in the DOD FLIP IFR Supplement under "Communications" indicates this service is available at an aerodrome.

SINGLE-PILOTED AIRCRAFT- A military turbojet aircraft possessing one set of flight controls, tandem cockpits, or two sets of flight controls but operated by one pilot is considered single-piloted by ATC when determining the appropriate air traffic service to be applied.

(See SINGLE FREQUENCY APPROACH.)

SKYSPOTTER- A pilot who has received specialized training in observing and reporting inflight weather phenomena.

SLASH- A radar beacon reply displayed as an elongated target.

SLDI-

(See SECTOR LIST DROP INTERVAL.)

SLOT TIME-

(See METER FIX TIME/SLOT TIME.)

SLOW TAXI- To taxi a float plane at low power or low RPM.

SN-

(See SYSTEM STRATEGIC NAVIGATION.)

SPACE-BASED ADS-B (SBA)- A constellation of satellites that receives ADS-B Out broadcasts and relays that information to the appropriate surveillance facility. The currently deployed SBA system is only capable of receiving broadcasts from 1090ES-equipped aircraft, and not from those equipped with only a universal access transceiver (UAT). Also, aircraft with a top-of-fuselage-mounted transponder antenna (required for TCAS II installations) will be better received by SBA, especially at latitudes below 45 degrees.

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST OUT.)

SPEAK SLOWER- Used in verbal communications as a request to reduce speech rate.

SPECIAL ACTIVITY AIRSPACE (SAA)- Any airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon aircraft operations. This airspace may be restricted areas, prohibited areas, military operations areas, air ATC assigned airspace, and any other designated airspace areas. The dimensions of this airspace are programmed into EDST and can be designated as either active or inactive by screen entry. Aircraft trajectories are constantly tested against the dimensions of active areas and alerts issued to the applicable sectors when violations are predicted.

(See EN ROUTE DECISION SUPPORT TOOL.)

SPECIAL AIR TRAFFIC RULES (SATR)- Rules that govern procedures for conducting flights in certain areas listed in 14 CFR Part 93. The term "SATR" is used in the United States to describe the rules for operations in specific areas designated in the Code of Federal Regulations.

(Refer to 14 CFR Part 93.)

SPECIAL EMERGENCY- A condition of air piracy or other hostile act by a person(s) aboard an aircraft which threatens the safety of the aircraft or its passengers.

SPECIAL FLIGHT RULES AREA (SFRA)- An area in the NAS, described in 14 CFR Part 93, wherein the flight of aircraft is subject to special

traffic rules, unless otherwise authorized by air traffic control. Not all areas listed in 14 CFR Part 93 are designated SFRA, but special air traffic rules apply to all areas described in 14 CFR Part 93.

SPECIAL INSTRUMENT APPROACH PROCEDURE–

(See INSTRUMENT APPROACH PROCEDURE.)

SPECIAL USE AIRSPACE– Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace are:

a. Alert Area– Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of nonparticipating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating aircraft as well as pilots transiting the area are equally responsible for collision avoidance.

b. Controlled Firing Area– Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.

c. Military Operations Area (MOA)– Permanent and temporary MOAs are airspace established outside of Class A airspace area to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. Permanent MOAs are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route Low Altitude Charts.

Note: Temporary MOAs are not charted.

(Refer to AIM.)

d. Prohibited Area– Airspace designated under 14 CFR Part 73 within which no person may operate an aircraft without the permission of the using agency.

(Refer to AIM.)

(Refer to En Route Charts.)

e. Restricted Area– Permanent and temporary restricted areas are airspace designated under 14 CFR Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most

restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Permanent restricted areas are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

Note: Temporary restricted areas are not charted.

(Refer to 14 CFR Part 73.)

(Refer to AIM.)

f. Warning Area– A warning area is airspace of defined dimensions extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning area is to warn nonparticipating pilots of the 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 metrological 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.

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 RESERVATIONS– Altitude reservations which encompass activities in a fixed area. Stationary 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.

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.

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.

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.

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.)

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 (TCAN)– 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.

TCAS–

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

TCH–

(See **THRESHOLD CROSSING HEIGHT**.)

TCLT–

(See **TENTATIVE CALCULATED LANDING TIME**.)

TDLS–

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

TDZE–

(See **TOUCHDOWN ZONE ELEVATION**.)

TELEPHONE INFORMATION BRIEFING SERVICE– A continuous telephone recording of meteorological and/or aeronautical information.

(Refer to **AIM**.)

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.

TENTATIVE CALCULATED LANDING TIME (TCLT)– A projected time calculated for adapted vertex for each arrival aircraft based upon runway configuration, airport acceptance rate, airport arrival delay period, and other metered arrival aircraft. This time is either the VTA of the aircraft or the TCLT/ACLT of the previous aircraft plus the AAI, whichever is later. This time will be updated in response to an aircraft's progress and its current relationship to other arrivals.

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 ARTS IIE, ARTS IIIA, ARTS IIIE, 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 RADAR SERVICE AREA– Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. The AIM contains an explanation of TRSA. TRSAs are depicted on VFR aeronautical charts. Pilot participation is urged but is not mandatory.

TERMINAL VFR RADAR SERVICE– A national program instituted to extend the terminal radar services provided instrument flight rules (IFR) aircraft to visual flight rules (VFR) aircraft. The program is divided into four types service referred to as basic radar service, terminal radar service area (TRSA) service, Class B service and Class C service. The type of service provided at a particular location is contained in the Chart Supplement U.S.

a. Basic Radar Service– These services are provided for VFR aircraft by all commissioned terminal radar facilities. Basic radar service includes safety alerts, traffic advisories, limited radar vectoring when requested by the pilot, and sequencing at locations where procedures have been established for this purpose and/or when covered by a letter of agreement. The purpose of this service is to adjust the flow of arriving IFR and VFR aircraft into the traffic pattern in a safe and orderly manner and to provide traffic advisories to departing VFR aircraft.

b. TRSA Service– This service provides, in addition to basic radar service, sequencing of all IFR and participating VFR aircraft to the primary airport and separation between all participating VFR aircraft. The purpose of this service is to provide separation between all participating VFR aircraft and all IFR aircraft operating within the area defined as a TRSA.

c. Class C Service– This service provides, in addition to basic radar service, approved separation between IFR and VFR aircraft, and sequencing of

VFR aircraft, and sequencing of VFR arrivals to the primary airport.

d. Class B Service– This service provides, in addition to basic radar service, approved separation of aircraft based on IFR, VFR, and/or weight, and sequencing of VFR arrivals to the primary airport(s).
(See CONTROLLED AIRSPACE.)
(See TERMINAL RADAR SERVICE AREA.)
(Refer to AIM.)
(Refer to CHART SUPPLEMENT U.S.)

TERMINAL-VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE STATION (TVOR)– A very high frequency terminal omnirange station located on or near an airport and used as an approach aid.

(See NAVIGATIONAL AID.)
(See VOR.)

TERRAIN AWARENESS WARNING SYSTEM (TAWS)– An on-board, terrain proximity alerting system providing the aircrew ‘Low Altitude warnings’ to allow immediate pilot action.

TERRAIN FOLLOWING– The flight of a military aircraft maintaining a constant AGL altitude above the terrain or the highest obstruction. The altitude of the aircraft will constantly change with the varying terrain and/or obstruction.

TETRAHEDRON– A device normally located on uncontrolled airports and used as a landing direction indicator. The small end of a tetrahedron points in the direction of landing. At controlled airports, the tetrahedron, if installed, should be disregarded because tower instructions supersede the indicator.

(See SEGMENTED CIRCLE.)
(Refer to AIM.)

TF–
(See TERRAIN FOLLOWING.)

THAT IS CORRECT– The understanding you have is right.

THA–
(See TRANSITIONAL HAZARD AREA.)

THREE-HOUR TARMAC RULE– Rule that relates to Department of Transportation (DOT) requirements placed on airlines when tarmac delays are anticipated to reach 3 hours.

360 OVERHEAD–
(See OVERHEAD MANEUVER.)

THRESHOLD– The beginning of that portion of the runway usable for landing.

(See AIRPORT LIGHTING.)

(See DISPLACED THRESHOLD.)

THRESHOLD CROSSING HEIGHT– The theoretical height above the runway threshold at which the aircraft’s glideslope antenna would be if the aircraft maintains the trajectory established by the mean ILS glideslope or the altitude at which the calculated glidepath of an RNAV or GPS approaches.

(See GLIDESLOPE.)

(See THRESHOLD.)

THRESHOLD LIGHTS–

(See AIRPORT LIGHTING.)

TIBS–

(See TELEPHONE INFORMATION BRIEFING SERVICE.)

TIE-IN FACILITY– The FSS primarily responsible for providing FSS services, including telecommunication services for landing facilities or navigational aids located within the boundaries of a flight plan area (FPA). Three-letter identifiers are assigned to each FSS/FPA and are annotated as tie-in facilities in the Chart Supplement U.S., the Alaska Supplement, the Pacific Supplement, and FAA Order JO 7350.9, Location Identifiers. Large consolidated FSS facilities may have many tie-in facilities or FSS sectors within one facility.

(See FLIGHT PLAN AREA.)

(See FLIGHT SERVICE STATION.)

TIME BASED FLOW MANAGEMENT (TBFM)– The hardware, software, methods, processes, and initiatives to manage air traffic flows based on time to balance air traffic demand with system capacity, and support the management of PBN. This includes, but not limited to, Adjacent Center Metering (ACM), En Route Departure Capability (EDC), Ground-based Interval Management-Spacing (GIM-S), Integrated Departure/Arrival Capability (IDAC), Single Center Metering (SCM), Time-Based Metering (TBM), Time-Based Scheduling (TBS), and Extended/Coupled Metering.

TIME GROUP– Four digits representing the hour and minutes from the Coordinated Universal Time (UTC) clock. FAA uses UTC for all operations. The term “ZULU” may be used to denote UTC. The word “local” or the time zone equivalent shall be used to denote local when local time is given during radio and

telephone communications. When written, a time zone designator is used to indicate local time; e.g., “0205M” (Mountain). The local time may be based on the 24-hour clock system. The day begins at 0000 and ends at 2359.

TIS-B–

(See TRAFFIC INFORMATION SERVICE–BROADCAST.)

TMPA–

(See TRAFFIC MANAGEMENT PROGRAM ALERT.)

TMU–

(See TRAFFIC MANAGEMENT UNIT.)

TODA–

(See TAKEOFF DISTANCE AVAILABLE.)

(See ICAO term TAKEOFF DISTANCE AVAILABLE.)

TOI–

(See TRACK OF INTEREST.)

TOP ALTITUDE– In reference to SID published altitude restrictions, the charted “maintain” altitude contained in the procedure description or assigned by ATC.

TORA–

(See TAKEOFF RUN AVAILABLE.)

(See ICAO term TAKEOFF RUN AVAILABLE.)

TORCHING– The burning of fuel at the end of an exhaust pipe or stack of a reciprocating aircraft engine, the result of an excessive richness in the fuel air mixture.

TOS–

(See TRAJECTORY OPTIONS SET)

TOTAL ESTIMATED ELAPSED TIME [ICAO]– For IFR flights, the estimated time required from takeoff to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from takeoff to arrive over the destination aerodrome.

(See ICAO term ESTIMATED ELAPSED TIME.)

TOUCH-AND-GO– An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

TOUCH-AND-GO LANDING–

(See TOUCH-AND-GO.)

TOUCHDOWN–

a. The point at which an aircraft first makes contact with the landing surface.

b. Concerning a precision radar approach (PAR), it is the point where the glide path intercepts the landing surface.

(See ICAO term TOUCHDOWN.)

TOUCHDOWN [ICAO]– The point where the nominal glide path intercepts the runway.

Note: Touchdown as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

TOUCHDOWN RVR–

(See VISIBILITY.)

TOUCHDOWN ZONE– The first 3,000 feet of the runway beginning at the threshold. The area is used for determination of Touchdown Zone Elevation in the development of straight-in landing minimums for instrument approaches.

(See ICAO term TOUCHDOWN ZONE.)

TOUCHDOWN ZONE [ICAO]– The portion of a runway, beyond the threshold, where it is intended landing aircraft first contact the runway.

TOUCHDOWN ZONE ELEVATION– The highest elevation in the first 3,000 feet of the landing surface. TDZE is indicated on the instrument approach procedure chart when straight-in landing minimums are authorized.

(See TOUCHDOWN ZONE.)

TOUCHDOWN ZONE LIGHTING–

(See AIRPORT LIGHTING.)

TOWER– A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the Class D airspace area regardless of flight plan or weather

conditions (IFR or VFR). A tower may also provide approach control services (radar or nonradar).

(See AIRPORT TRAFFIC CONTROL SERVICE.)

(See APPROACH CONTROL FACILITY.)

(See APPROACH CONTROL SERVICE.)

(See MOVEMENT AREA.)

(See TOWER EN ROUTE CONTROL SERVICE.)

(See ICAO term AERODROME CONTROL TOWER.)

(Refer to AIM.)

TOWER EN ROUTE CONTROL SERVICE– The control of IFR en route traffic within delegated airspace between two or more adjacent approach control facilities. This service is designed to expedite traffic and reduce control and pilot communication requirements.

TOWER TO TOWER–

(See TOWER EN ROUTE CONTROL SERVICE.)

TRACEABLE PRESSURE STANDARD– The facility station pressure instrument, with certification/calibration traceable to the National Institute of Standards and Technology. Traceable pressure standards may be mercurial barometers, commissioned ASOS or dual transducer AWOS, or portable pressure standards or DASI.

TRACK– The actual flight path of an aircraft over the surface of the earth.

(See COURSE.)

(See FLIGHT PATH.)

(See ROUTE.)

(See ICAO term TRACK.)

TRACK [ICAO]– The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (True, Magnetic, or Grid).

TRACK OF INTEREST (TOI)– Displayed data representing an airborne object that threatens or has the potential to threaten North America or National Security. Indicators may include, but are not limited to: noncompliance with air traffic control instructions or aviation regulations; extended loss of communications; unusual transmissions or unusual flight behavior; unauthorized intrusion into controlled airspace or an ADIZ; noncompliance with issued flight restrictions/security procedures; or unlawful interference with airborne flight crews, up to and including hijack. In certain circumstances, an object

may become a TOI based on specific and credible intelligence pertaining to that particular aircraft/object, its passengers, or its cargo.

TRACK OF INTEREST RESOLUTION– A TOI will normally be considered resolved when: the aircraft/object is no longer airborne; the aircraft complies with air traffic control instructions, aviation regulations, and/or issued flight restrictions/security procedures; radio contact is re-established and authorized control of the aircraft is verified; the aircraft is intercepted and intent is verified to be nonthreatening/nonhostile; TOI was identified based on specific and credible intelligence that was later determined to be invalid or unreliable; or displayed data is identified and characterized as invalid.

TRAFFIC–

a. A term used by a controller to transfer radar identification of an aircraft to another controller for the purpose of coordinating separation action. Traffic is normally issued:

1. In response to a handoff or point out,
2. In anticipation of a handoff or point out, or
3. In conjunction with a request for control of an aircraft.

b. A term used by ATC to refer to one or more aircraft.

TRAFFIC ADVISORIES– Advisories issued to alert pilots to other known or observed air traffic which may be in such proximity to the position or intended route of flight of their aircraft to warrant their attention. Such advisories may be based on:

- a.** Visual observation.
- b.** Observation of radar identified and nonidentified aircraft targets on an ATC radar display, or
- c.** Verbal reports from pilots or other facilities.

Note 1: The word “traffic” followed by additional information, if known, is used to provide such advisories; e.g., “Traffic, 2 o’clock, one zero miles, southbound, eight thousand.”

Note 2: Traffic advisory service will be provided to the extent possible depending on higher priority duties of the controller or other limitations; e.g., radar limitations, volume of traffic, frequency congestion, or controller workload. Radar/nonradar traffic advisories do not relieve the pilot of his/her responsibility to see and avoid other aircraft. Pilots are cautioned that there are many times when the controller is not able to give traffic

advisories concerning all traffic in the aircraft’s proximity; in other words, when a pilot requests or is receiving traffic advisories, he/she should not assume that all traffic will be issued.

(Refer to AIM.)

TRAFFIC ALERT (aircraft call sign), TURN (left/right) IMMEDIATELY, (climb/descend) AND MAINTAIN (altitude).

(See SAFETY ALERT.)

TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)– An airborne collision avoidance system based on radar beacon signals which operates independent of ground-based equipment. TCAS-I generates traffic advisories only. TCAS-II generates traffic advisories, and resolution (collision avoidance) advisories in the vertical plane.

TRAFFIC INFORMATION–

(See TRAFFIC ADVISORIES.)

TRAFFIC INFORMATION SERVICE–BROADCAST (TIS–B)– The broadcast of ATC derived traffic information to ADS–B equipped (1090ES or UAT) aircraft. The source of this traffic information is derived from ground–based air traffic surveillance sensors, typically from radar targets. TIS–B service will be available throughout the NAS where there are both adequate surveillance coverage (radar) and adequate broadcast coverage from ADS–B ground stations. Loss of TIS–B will occur when an aircraft enters an area not covered by the GBT network. If this occurs in an area with adequate surveillance coverage (radar), nearby aircraft that remain within the adequate broadcast coverage (ADS–B) area will view the first aircraft. TIS–B may continue when an aircraft enters an area with inadequate surveillance coverage (radar); nearby aircraft that remain within the adequate broadcast coverage (ADS–B) area will not view the first aircraft.

TRAFFIC IN SIGHT– Used by pilots to inform a controller that previously issued traffic is in sight.

(See NEGATIVE CONTACT.)

(See TRAFFIC ADVISORIES.)

TRAFFIC MANAGEMENT PROGRAM ALERT– A term used in a Notice to Airmen (NOTAM) issued in conjunction with a special traffic management program to alert pilots to the existence of the program and to refer them to either the Notices to Airmen publication or a special traffic management program advisory message for program details. The contraction TMPA is used in NOTAM text.

TRAFFIC MANAGEMENT UNIT– The entity in ARTCCs and designated terminals directly involved in the active management of facility traffic. Usually under the direct supervision of an assistant manager for traffic management.

TRAFFIC NO FACTOR– Indicates that the traffic described in a previously issued traffic advisory is no factor.

TRAFFIC NO LONGER OBSERVED– Indicates that the traffic described in a previously issued traffic advisory is no longer depicted on radar, but may still be a factor.

TRAFFIC PATTERN– The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

a. **Upwind Leg**– A flight path parallel to the landing runway in the direction of landing.

b. **Crosswind Leg**– A flight path at right angles to the landing runway off its upwind end.

c. **Downwind Leg**– A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.

d. **Base Leg**– A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

e. **Final Approach**– A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. An aircraft making a straight-in approach VFR is also considered to be on final approach.

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

(See **TAXI PATTERNS**.)

(See ICAO term **AERODROME TRAFFIC CIRCUIT**.)

(Refer to 14 CFR Part 91.)

(Refer to **AIM**.)

TRAFFIC SITUATION DISPLAY (TSD)– TSD is a computer system that receives radar track data from all 20 CONUS ARTCCs, organizes this data into a mosaic display, and presents it on a computer screen. The display allows the traffic management coordinator multiple methods of selection and highlighting of individual aircraft or groups of aircraft. The user has the option of superimposing these aircraft positions

over any number of background displays. These background options include ARTCC boundaries, any stratum of en route sector boundaries, fixes, airways, military and other special use airspace, airports, and geopolitical boundaries. By using the TSD, a coordinator can monitor any number of traffic situations or the entire systemwide traffic flows.

TRAJECTORY– A EDST representation of the path an aircraft is predicted to fly based upon a Current Plan or Trial Plan.

(See **EN ROUTE DECISION SUPPORT TOOL**.)

TRAJECTORY MODELING– The automated process of calculating a trajectory.

TRAJECTORY OPTIONS SET (TOS)– A TOS is an electronic message, submitted by the operator, that is used by the Collaborative Trajectory Options Program (CTOP) to manage the airspace captured in the traffic management program. The TOS will allow the operator to express the route and delay trade-off options that they are willing to accept.

TRANSCRIBED WEATHER BROADCAST (TWEB)– A continuous recording of meteorological and aeronautical information that is broadcast on L/MF and VOR facilities for pilots. (Provided only in Alaska.)

(Refer to **AIM**.)

TRANSFER OF CONTROL– That action whereby the responsibility for the separation of an aircraft is transferred from one controller to another.

(See ICAO term **TRANSFER OF CONTROL**.)

TRANSFER OF CONTROL [ICAO]– Transfer of responsibility for providing air traffic control service.

TRANSFERRING CONTROLLER– A controller/facility transferring control of an aircraft to another controller/facility.

(See ICAO term **TRANSFERRING UNIT/CONTROLLER**.)

TRANSFERRING FACILITY–

(See **TRANSFERRING CONTROLLER**.)

TRANSFERRING UNIT/CONTROLLER [ICAO]– Air traffic control unit/air traffic controller in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit/air traffic controller along the route of flight.

Note: See definition of accepting unit/controller.

TRANSITION–

a. The general term that describes the change from one phase of flight or flight condition to another; e.g., transition from en route flight to the approach or transition from instrument flight to visual flight.

b. A published procedure (DP Transition) used to connect the basic DP to one of several en route airways/jet routes, or a published procedure (STAR Transition) used to connect one of several en route airways/jet routes to the basic STAR.

(Refer to DP/STAR Charts.)

TRANSITION POINT– A point at an adapted number of miles from the vertex at which an arrival aircraft would normally commence descent from its en route altitude. This is the first fix adapted on the arrival speed segments.

TRANSITION WAYPOINT– The waypoint that defines the beginning of a runway or en route transition on an RNAV SID or STAR.

TRANSITIONAL AIRSPACE– That portion of controlled airspace wherein aircraft change from one phase of flight or flight condition to another.

TRANSITIONAL HAZARD AREA (THA)– Used by ATC. Airspace normally associated with an Aircraft Hazard Area within which the flight of aircraft is subject to restrictions.

(See AIRCRAFT HAZARD AREA.)

(See CONTINGENCY HAZARD AREA.)

(See REFINED HAZARD AREA.)

TRANSMISSOMETER– An apparatus used to determine visibility by measuring the transmission of light through the atmosphere. It is the measurement source for determining runway visual range (RVR).

(See VISIBILITY.)

TRANSMITTING IN THE BLIND– A transmission from one station to other stations in circumstances where two-way communication cannot be established, but where it is believed that the called stations may be able to receive the transmission.

TRANSPONDER– The airborne radar beacon receiver/transmitter portion of the Air Traffic Control Radar Beacon System (ATCRBS) which automatically receives radio signals from interrogators on the ground, and selectively replies with a specific reply pulse or pulse group only to those interrogations

being received on the mode to which it is set to respond.

(See INTERROGATOR.)

(See ICAO term TRANSPONDER.)

(Refer to AIM.)

TRANSPONDER [ICAO]– A receiver/transmitter which will generate a reply signal upon proper interrogation; the interrogation and reply being on different frequencies.

TRANSPONDER CODES–

(See CODES.)

TRANSPONDER OBSERVED – Phraseology used to inform a VFR pilot the aircraft's assigned beacon code and position have been observed. Specifically, this term conveys to a VFR pilot the transponder reply has been observed and its position correlated for transit through the designated area.

TRIAL PLAN– A proposed amendment which utilizes automation to analyze and display potential conflicts along the predicted trajectory of the selected aircraft.

TRSA–

(See TERMINAL RADAR SERVICE AREA.)

TSD–

(See TRAFFIC SITUATION DISPLAY.)

TURBOJET AIRCRAFT– An aircraft having a jet engine in which the energy of the jet operates a turbine which in turn operates the air compressor.

TURBOPROP AIRCRAFT– An aircraft having a jet engine in which the energy of the jet operates a turbine which drives the propeller.

TURBULENCE– An atmospheric phenomenon that causes changes in aircraft altitude, attitude, and or airspeed with aircraft reaction depending on intensity. Pilots report turbulence intensity according to aircraft's reaction as follows:

a. Light – Causes slight, erratic changes in altitude and or attitude (pitch, roll, or yaw).

b. Moderate– Similar to Light but of greater intensity. Changes in altitude and or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.

c. Severe– Causes large, abrupt changes in altitude and or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.

d. Extreme– The aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.

(See CHOP.)

(Refer to AIM.)

TURN ANTICIPATION– (maneuver anticipation).

TVOR–

(See **TERMINAL-VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION**.)

TWEB–

(See **TRANSCRIBED WEATHER BROADCAST**.)

TWO-WAY RADIO COMMUNICATIONS FAILURE–

(See **LOST COMMUNICATIONS**.)

U

UHF–

(See ULTRAHIGH FREQUENCY.)

ULTRAHIGH FREQUENCY (UHF)– The frequency band between 300 and 3,000 MHz. The bank of radio frequencies used for military air/ground voice communications. In some instances this may go as low as 225 MHz and still be referred to as UHF.

ULTRALIGHT VEHICLE– A single-occupant aeronautical vehicle operated for sport or recreational purposes which does not require FAA registration, an airworthiness certificate, or pilot certification. Operation of an ultralight vehicle in certain airspace requires authorization from ATC.

(Refer to 14 CFR Part 103.)

UNABLE– Indicates inability to comply with a specific instruction, request, or clearance.

UNASSOCIATED– A radar target that does not display a data block with flight identification and altitude information.

(See ASSOCIATED.)

UNCONTROLLED AIRSPACE– Airspace in which aircraft are not subject to controlled airspace (Class A, B, C, D, or E) separation criteria.

UNDER THE HOOD– Indicates that the pilot is using a hood to restrict visibility outside the cockpit while simulating instrument flight. An appropriately rated pilot is required in the other control seat while this operation is being conducted.

(Refer to 14 CFR Part 91.)

UNFROZEN– The Scheduled Time of Arrival (STA) tags, which are still being rescheduled by the time based flow management (TBFM) calculations. The aircraft will remain unfrozen until the time the corresponding estimated time of arrival (ETA) tag passes the preset freeze horizon for that aircraft's stream class. At this point the automatic rescheduling will stop, and the STA becomes "frozen."

UNICOM– A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.

(See CHART SUPPLEMENT U.S.)

(Refer to AIM.)

UNMANNED AIRCRAFT (UA)– A device used or intended to be used for flight that has no onboard pilot. This device can be any type of airplane, helicopter, airship, or powered-lift aircraft. Unmanned free balloons, moored balloons, tethered aircraft, gliders, and unmanned rockets are not considered to be a UA.

UNMANNED AIRCRAFT SYSTEM (UAS)– An unmanned aircraft and its associated elements related to safe operations, which may include control stations (ground, ship, or air based), control links, support equipment, payloads, flight termination systems, and launch/recovery equipment. It consists of three elements: unmanned aircraft, control station, and data link.

UNPUBLISHED ROUTE– A route for which no minimum altitude is published or charted for pilot use. It may include a direct route between NAVAIDs, a radial, a radar vector, or a final approach course beyond the segments of an instrument approach procedure.

(See PUBLISHED ROUTE.)

(See ROUTE.)

UNRELIABLE (GPS/WAAS)– An advisory to pilots indicating the expected level of service of the GPS and/or WAAS may not be available. Pilots must then determine the adequacy of the signal for desired use.

UNSERVICEABLE (U/S)

(See OUT OF SERVICE/UNSERVICEABLE.)

UPWIND LEG–

(See TRAFFIC PATTERN.)

URGENCY– A condition of being concerned about safety and of requiring timely but not immediate assistance; a potential distress condition.

(See ICAO term URGENCY.)

URGENCY [ICAO]– A condition concerning the safety of an aircraft or other vehicle, or of person on board or in sight, but which does not require immediate assistance.

USAFIB–

(See ARMY AVIATION FLIGHT INFORMATION BULLETIN.)

V

VASI–

(See VISUAL APPROACH SLOPE INDICATOR.)

VCOA–

(See VISUAL CLIMB OVER AIRPORT.)

VDP–

(See VISUAL DESCENT POINT.)

VECTOR– A heading issued to an aircraft to provide navigational guidance by radar.

(See ICAO term RADAR VECTORING.)

VERIFY– Request confirmation of information; e.g., “verify assigned altitude.”

VERIFY SPECIFIC DIRECTION OF TAKEOFF (OR TURNS AFTER TAKEOFF)– Used by ATC to ascertain an aircraft’s direction of takeoff and/or direction of turn after takeoff. It is normally used for IFR departures from an airport not having a control tower. When direct communication with the pilot is not possible, the request and information may be relayed through an FSS, dispatcher, or by other means.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

VERTEX– The last fix adapted on the arrival speed segments. Normally, it will be the outer marker of the runway in use. However, it may be the actual threshold or other suitable common point on the approach path for the particular runway configuration.

VERTEX TIME OF ARRIVAL– A calculated time of aircraft arrival over the adapted vertex for the runway configuration in use. The time is calculated via the optimum flight path using adapted speed segments.

VERTICAL NAVIGATION (VNAV)– A function of area navigation (RNAV) equipment which calculates, displays, and provides vertical guidance to a profile or path.

VERTICAL SEPARATION– Separation between aircraft expressed in units of vertical distance.

(See SEPARATION.)

VERTICAL TAKEOFF AND LANDING AIRCRAFT (VTOL)– Aircraft capable of vertical climbs

and/or descents and of using very short runways or small areas for takeoff and landings. These aircraft include, but are not limited to, helicopters.

(See SHORT TAKEOFF AND LANDING AIRCRAFT.)

VERY HIGH FREQUENCY (VHF)– The frequency band between 30 and 300 MHz. Portions of this band, 108 to 118 MHz, are used for certain NAVAIDs; 118 to 136 MHz are used for civil air/ground voice communications. Other frequencies in this band are used for purposes not related to air traffic control.

VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION–

(See VOR.)

VERY LOW FREQUENCY (VLF)– The frequency band between 3 and 30 kHz.

VFR–

(See VISUAL FLIGHT RULES.)

VFR AIRCRAFT– An aircraft conducting flight in accordance with visual flight rules.

(See VISUAL FLIGHT RULES.)

VFR CONDITIONS– Weather conditions equal to or better than the minimum for flight under visual flight rules. The term may be used as an ATC clearance/instruction only when:

a. An IFR aircraft requests a climb/descent in VFR conditions.

b. The clearance will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA approved noise abatement route or altitude.

c. A pilot has requested a practice instrument approach and is not on an IFR flight plan.

Note: All pilots receiving this authorization must comply with the VFR visibility and distance from cloud criteria in 14 CFR Part 91. Use of the term does not relieve controllers of their responsibility to separate aircraft in Class B and Class C airspace or TRSAs as required by FAA Order JO 7110.65. When used as an ATC clearance/instruction, the term may be abbreviated “VFR;” e.g., “MAINTAIN VFR,” “CLIMB/DESCEND VFR,” etc.

VFR FLIGHT–

(See VFR AIRCRAFT.)

VFR MILITARY TRAINING ROUTES (VR)– Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training under VFR below 10,000 feet MSL at airspeeds in excess of 250 knots IAS.

VFR NOT RECOMMENDED– An advisory provided by a flight service station to a pilot during a preflight or inflight weather briefing that flight under visual flight rules is not recommended. To be given when the current and/or forecast weather conditions are at or below VFR minimums. It does not abrogate the pilot’s authority to make his/her own decision.

VFR-ON-TOP– ATC authorization for an IFR aircraft to operate in VFR conditions at any appropriate VFR altitude (as specified in 14 CFR and as restricted by ATC). A pilot receiving this authorization must comply with the VFR visibility, distance from cloud criteria, and the minimum IFR altitudes specified in 14 CFR Part 91. The use of this term does not relieve controllers of their responsibility to separate aircraft in Class B and Class C airspace or TRSAs as required by FAA Order JO 7110.65.

VFR TERMINAL AREA CHARTS–
(See AERONAUTICAL CHART.)

VFR WAYPOINT–
(See WAYPOINT.)

VHF–
(See VERY HIGH FREQUENCY.)

VHF OMNIDIRECTIONAL RANGE/TACTICAL AIR NAVIGATION–
(See VORTAC.)

VIDEO MAP– An electronically displayed map on the radar display that may depict data such as airports, heliports, runway centerline extensions, hospital emergency landing areas, NAVAIDs and fixes, reporting points, airway/route centerlines, boundaries, handoff points, special use tracks, obstructions, prominent geographic features, map alignment indicators, range accuracy marks, and/or minimum vectoring altitudes.

VISIBILITY– The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by

night. Visibility is reported as statute miles, hundreds of feet or meters.

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

a. Flight Visibility– The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

b. Ground Visibility– Prevailing horizontal visibility near the earth’s surface as reported by the United States National Weather Service or an accredited observer.

c. Prevailing Visibility– The greatest horizontal visibility equaled or exceeded throughout at least half the horizon circle which need not necessarily be continuous.

d. Runway Visual Range (RVR)– An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR, where available, is used in lieu of prevailing visibility in determining minimums for a particular runway.

1. Touchdown RVR– The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone.

2. Mid-RVR– The RVR readout values obtained from RVR equipment located midfield of the runway.

3. Rollout RVR– The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway.

(See ICAO term FLIGHT VISIBILITY.)

(See ICAO term GROUND VISIBILITY.)

(See ICAO term RUNWAY VISUAL RANGE.)

(See ICAO term VISIBILITY.)

VISIBILITY [ICAO]– The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night.

a. Flight Visibility– The visibility forward from the cockpit of an aircraft in flight.

b. Ground Visibility– The visibility at an aerodrome as reported by an accredited observer.

c. Runway Visual Range [RVR]– The range over which the pilot of an aircraft on the centerline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centerline.

VISUAL APPROACH– An approach conducted on an instrument flight rules (IFR) flight plan which authorizes the pilot to proceed visually and clear of clouds to the airport. The pilot must, at all times, have either the airport or the preceding aircraft in sight. This approach must be authorized and under the control of the appropriate air traffic control facility. Reported weather at the airport must be: ceiling at or above 1,000 feet, and visibility of 3 miles or greater.

(See ICAO term VISUAL APPROACH.)

VISUAL APPROACH [ICAO]– An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

VISUAL APPROACH SLOPE INDICATOR (VASI)–

(See AIRPORT LIGHTING.)

VISUAL CLIMB OVER AIRPORT (VCOA)– A departure option for an IFR aircraft, operating in visual meteorological conditions equal to or greater than the specified visibility and ceiling, to visually conduct climbing turns over the airport to the published “climb-to” altitude from which to proceed with the instrument portion of the departure. VCOA procedures are developed to avoid obstacles greater than 3 statute miles from the departure end of the runway as an alternative to complying with climb gradients greater than 200 feet per nautical mile. Pilots are responsible to advise ATC as early as possible of the intent to fly the VCOA option prior to departure. These textual procedures are published in the ‘Take-Off Minimums and (Obstacle) Departure Procedures’ section of the Terminal Procedures Publications and/or appear as an option on a Graphic ODP.

(See AIM.)

VISUAL DESCENT POINT– A defined point on the final approach course of a nonprecision straight-in approach procedure from which normal descent from the MDA to the runway touchdown point may be commenced, provided the approach threshold of that runway, or approach lights, or other markings identifiable with the approach end of that runway are clearly visible to the pilot.

VISUAL FLIGHT RULES– Rules that govern the procedures for conducting flight under visual conditions. The term “VFR” is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

(See INSTRUMENT FLIGHT RULES.)

(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

VISUAL HOLDING– The holding of aircraft at selected, prominent geographical fixes which can be easily recognized from the air.

(See HOLDING FIX.)

VISUAL METEOROLOGICAL CONDITIONS– Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

(See INSTRUMENT FLIGHT RULES.)

(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

(See VISUAL FLIGHT RULES.)

VISUAL SEGMENT–

(See PUBLISHED INSTRUMENT APPROACH PROCEDURE VISUAL SEGMENT.)

VISUAL SEPARATION– A means employed by ATC to separate aircraft in terminal areas and en route airspace in the NAS. There are two ways to effect this separation:

a. The tower controller sees the aircraft involved and issues instructions, as necessary, to ensure that the aircraft avoid each other.

b. A pilot sees the other aircraft involved and upon instructions from the controller provides his/her own separation by maneuvering his/her aircraft as

necessary to avoid it. This may involve following another aircraft or keeping it in sight until it is no longer a factor.

(See SEE AND AVOID.)

(Refer to 14 CFR Part 91.)

VLF–

(See VERY LOW FREQUENCY.)

VMC–

(See VISUAL METEOROLOGICAL CONDITIONS.)

VOICE SWITCHING AND CONTROL SYSTEM (VSCS)– A computer controlled switching system that provides air traffic controllers with all voice circuits (air to ground and ground to ground) necessary for air traffic control.

(Refer to AIM.)

VOR– A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Airspace System. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature. Voice features may be used by ATC or FSS for transmitting instructions/information to pilots.

(See NAVIGATIONAL AID.)

(Refer to AIM.)

VOR TEST SIGNAL–

(See VOT.)

VORTAC– A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance measuring equipment (DME) at one site.

(See DISTANCE MEASURING EQUIPMENT.)

(See NAVIGATIONAL AID.)

(See TACAN.)

(See VOR.)

(Refer to AIM.)

VORTICES– Circular patterns of air created by the movement of an airfoil through the air when generating lift. As an airfoil moves through the atmosphere in sustained flight, an area of low pressure is created above it. The air flowing from the high pressure area to the low pressure area around and about the tips of the airfoil tends to roll up into two rapidly rotating vortices, cylindrical in shape. These vortices are the most predominant parts of aircraft wake turbulence and their rotational force is dependent upon the wing loading, gross weight, and speed of the generating aircraft. The vortices from medium to super aircraft can be of extremely high velocity and hazardous to smaller aircraft.

(See AIRCRAFT CLASSES.)

(See WAKE TURBULENCE.)

(Refer to AIM.)

VOT– A ground facility which emits a test signal to check VOR receiver accuracy. Some VOTs are available to the user while airborne, and others are limited to ground use only.

(See CHART SUPPLEMENT U.S.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

VR–

(See VFR MILITARY TRAINING ROUTES.)

VSCS–

(See VOICE SWITCHING AND CONTROL SYSTEM.)

VTA–

(See VERTEX TIME OF ARRIVAL.)

VTOL AIRCRAFT–

(See VERTICAL TAKEOFF AND LANDING AIRCRAFT.)

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BRIEFING GUIDE



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

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

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1. PARAGRAPH NUMBER AND TITLE:

2-1-1. TYPES OF BROADCASTS

Chapter 2, Section 4. Hazardous Inflight Weather Advisory Service (HIWAS)

2-4-1. GENERAL

2-4-2. PRIORITY

2-4-3. CONTENT

2-4-4. BROADCAST PROCEDURES

2-4-5. SUSPENSION

Chapter 2, Section 5. Automatic Flight Information Service (AFIS) (Alaska Only)

9-2-9. MEANS USED TO SOLICIT PIREPS

2. BACKGROUND: Hazardous Inflight Weather Advisory Service (HIWAS) is a legacy service that broadcasts hazardous weather advisories over a network of very high frequency omni-directional radio range (VOR) outlets across the continental United States (CONUS). Originally, a specialist created these broadcasts using a script. Today, the broadcast is made by a computer-based system using text to voice technology. Airborne pilots can access these recordings over select VOR outlets. Flight Information Service-Broadcast (FIS-B) replaces the current HIWAS broadcast with both a graphical and textual display of hazardous weather information right to the cockpit at lower altitudes and over a greater geographical area. For those pilots who have not yet adopted the latest technology, Air Traffic Controllers will still broadcast an advisory alert to advise pilots that adverse weather conditions exist and to contact Flight Service for additional information if needed.

3. CHANGE:

OLD	NEW
<p>2-1-1. TYPES OF BROADCASTS</p> <p>Weather and flight information must be broadcast/recorded by one or more of the following categories:</p> <p>a. Transcribed Weather Broadcast (TWEB). (Alaska only.)</p> <p>b. Telephone Information Briefing Service (TIBS). (Alaska only.)</p> <p>c. <u>Hazardous Inflight Weather Advisory Service (HIWAS).</u></p> <p>d. Automatic Flight Information Service (AFIS). (Alaska only.)</p>	<p>2-1-1. TYPES OF BROADCASTS</p> <p>No Change</p> <p>No Change</p> <p>No Change</p> <p>Delete</p> <p>c. Automatic Flight Information Service (AFIS). (Alaska only.)</p>
<p>OLD</p> <p><u>Section 4. Hazardous Inflight Weather Advisory Service (HIWAS)</u></p>	<p>NEW</p> <p>Delete</p>
<p>OLD</p> <p><u>2-4-1. GENERAL</u></p>	<p>NEW</p> <p>Delete</p>

a. Hazardous Inflight Weather Advisory Service (HIWAS), available in the 48 contiguous states and the District of Columbia, is a continuous broadcast of inflight weather advisories including AWWs, WSs, WSTs, CWAs, WAs, and UUAs. Delete

b. HIWAS broadcast areas are defined as the area within 150 NM of a HIWAS outlet. Delete

OLD

NEW

2-4-2. PRIORITY

Delete

HIWAS broadcasts must not be interrupted/delayed except for emergency situations, when an aircraft requires immediate attention, or for reasonable use of the voice override capability on specific HIWAS outlets in order to use the limited Remote Communication Outlet (RCO) to maintain en route communications. The service must be provided 24 hours a day. Delete

a. Make the following announcement if there are no hazardous weather advisories in the HIWAS broadcast area. Update the announcement at least every 2 hours. Delete

PHRASEOLOGY-
THIS RECORDING PREPARED AT (time) ZULU.
THERE ARE NO HAZARDOUS WEATHER ADVISORIES WITHIN A ONE-FIVE-ZERO NAUTICAL MILE RADIUS OF THIS HIWAS OUTLET. Delete

b. Complete the update recording as soon as practical, but not more than 15 minutes from time of receipt of new hazardous weather information. Delete

OLD

NEW

2-4-3. CONTENT

Delete

Record hazardous weather information occurring within the HIWAS broadcast area. The broadcast must include the following elements: Delete

a. Statement of introduction including the appropriate area(s) and a recording time. Delete

PHRASEOLOGY-
HIWAS WITHIN A ONE-FIVE-ZERO NAUTICAL MILE RADIUS OF (geographic area) RECORDED AT (time) ZULU (text). Delete

NOTE-
Border facilities must append "in domestic U.S. airspace" to the geographical area text in the introduction statement. Delete

b. Statement of hazardous weather, including WSTs, WSs, WAs, UUAs, AWWs, and CWAs. Delete

c. Request for PIREPs, if applicable. (See Paragraph 9-2-5, Soliciting PIREPs.)

Delete

PHRASEOLOGY-

Delete

PILOT WEATHER REPORTS ARE REQUESTED.

d. Recommendation to contact Flight Service for additional details concerning hazardous weather.

Delete

PHRASEOLOGY-

Delete

CONTACT FLIGHT SERVICE FOR ADDITIONAL DETAILS.

OLD

NEW

2-4-4. BROADCAST PROCEDURES

Delete

a. Upon receipt of new hazardous weather information:

Delete

1. Update the HIWAS broadcast.

Delete

2. Make a HIWAS update announcement once on all communications/navigational aid (NAVAID) frequencies except on emergency and navigational frequencies already dedicated to continuous broadcast services.

Delete

PHRASEOLOGY-

Delete

ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE FOR (geographical area) IS AVAILABLE ON HIWAS, OR CONTACT FLIGHT SERVICE, as appropriate.

b. In the event that a HIWAS broadcast area is out of service, make the following announcement on all communications/NAVAID frequencies except on emergency and navigational frequencies already dedicated to continuous broadcast services:

Delete

PHRASEOLOGY-

Delete

ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE IS AVAILABLE FROM FLIGHT SERVICE.

NOTE-

Delete

Simultaneous announcements may cause heterodyne problems on multiple outlets having the same frequency and interference over close outlets with known problems. Announcements may have to be rebroadcast to insure compliance.

OLD

NEW

2-4-5. SUSPENSION

Delete

HIWAS broadcasts must not be suspended for routine maintenance during periods when weather advisories have been issued for the HIWAS outlet area.

Delete

OLD
Section 5. Automatic Flight Information Service (AFIS) (Alaska Only)

2-5-1

NEW
Section 4. Automatic Flight Information Service (AFIS) (Alaska Only)

Renumber **2-4-1**

OLD
9-2-9. MEANS USED TO SOLICIT PIREPs

Title through d

e. Append a request on HIWAS, TIBS, VOR-TWEB, or TWEB broadcasts.

NEW
9-2-9. MEANS USED TO SOLICIT PIREPs

No Change

e. Append a request on TIBS, VOR-TWEB, or TWEB broadcasts.

1. PARAGRAPH NUMBER AND TITLE:

- 7-1-7. ORIGINATING MESSAGES
- 7-4-2. INBOUNDS FROM CANADA
- 7-4-3. OUTBOUNDS TO CANADA

2. BACKGROUND: In accordance with Transport Canada Aeronautical Information Manual (AIM), Rules of the Air (RAC) 3.10. Canadian Aviation Regulations do not allow Round-Robin flight plans with an intermediate stop for transborder flights.

3. CHANGE:

OLD
7-1-7. ORIGINATING MESSAGES

Title through b

c. Do not accept Round-Robin flight plans to international locations, other than Canada.

NOTE-

- 1. Only accept VFR round-robin flight plans to Canada if the filer of the flight plan is in possession of a valid numbered letter of authorization and adheres to the provisions contained therein.**
- 2. Individual requests for the temporary authorization letter should be directed to the appropriate service area office.**
- 3. The temporary authorization letter mandates the pilot, or responsible party, to provide the FSS with a name, telephone number and authorization number for inclusion in the remarks section of the flight plan.**
- 4. FSS must log a double (2) count for the round-robin flight plan.**

NEW
7-1-7. ORIGINATING MESSAGES

No Change

c. Do not accept round-robin flight plans to international locations.

Delete

Delete

Delete

NOTE-

FSS must log a double (2) count for round-robin flight plans.

OLD

7-4-2. INBOUNDS FROM CANADA

a. Do not accept VFR flight plans other than air filed flight plans for aircraft departing from Canada. Refer individuals to the appropriate NAVCANADA facility to file flight plans out of Canada. Do not accept round-robin flight plans to international locations, other than Canada.

NEW

7-4-2. INBOUNDS FROM CANADA

a. Do not accept VFR flight plans other than air filed flight plans for aircraft departing from Canada. Refer individuals to the appropriate NAVCANADA facility to file flight plans out of Canada.

OLD

7-4-3. OUTBOUNDS TO CANADA

Title through j
Add

NEW

7-4-3. OUTBOUNDS TO CANADA

No Change

k. Do not accept round-robin flight plans to Canada.

1. PARAGRAPH NUMBER AND TITLE: 7-4-3. OUTBOUNDS TO CANADA

2. BACKGROUND: In accordance with the government of Canada Border Services Agency policy, updates to aircraft customs information must be made via telephone.

3. CHANGE:

OLD

7-4-3. OUTBOUNDS TO CANADA

a. When Customs notification service is requested advise the pilot to contact Canada’s Private Aircraft Program for Customs (CANPASS) at 888-226-7277 and include CANPASS in the remarks section of the flight plan. If the pilot informs that he/she has contacted CANPASS, place CANPASS in the remarks section of the flight plan. Process outbound flight plans in accordance with Chapter 6 and subparas 7-4-3d and e.

NOTE-
U.S. CBP authorizations for flights outbound from the U.S. to Canada are the obligation of the pilot and must be obtained via the APIS process. APIS resources for pilots are available at <http://www.cbp.gov>.

b. Accept Customs notification requests from inflight aircraft for relay via flight notification message only for airports of entry where Customs flight notification service is provided and when proposed ETA is during Customs service hours.

NEW

7-4-3. OUTBOUNDS TO CANADA

a. When Customs notification service is requested, advise the pilot to contact Canada’s Private Aircraft Program for Customs (CANPASS) at 888-226-7277 and include CANPASS in the remarks section of the flight plan. If the pilot informs that he/she has contacted CANPASS, place CANPASS in the remarks section of the flight plan.

No Change

b. Accept Customs notification requests from inflight aircraft for relay via **telephone** notification **to CANPASS at 888-226-7277** for airports of entry when proposed ETA is during Customs service hours.

