CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

JO 7110.10Y
CHG 1

Effective Date:
May 26, 2016

SUBJ: Flight Services

1. Purpose of This Change. This change transmits revised pages to Federal Aviation Administration Order JO 7110.10Y, 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 Web site 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 Retain this transmittal until superseded by a new basic order.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.

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Flight Services
Explanation of Changes
Change 1

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

a. 1-3-2. DUTY PRIORITY
2-3-2. AREA/ROUTE BRIEFING PROCEDURES
2-4-3. CONTENT
2-4-4. BROADCAST PROCEDURES
3-2-1. CONDUCT OF STANDARD BRIEFING
3-2-3. CONDUCT OF OUTLOOK BRIEFING
4-1-1. INFLIGHT SERVICES
4-3-5. ROUTINE RADIO CONTACTS
Chapter 4, Section 6. En Route Flight Advisory Service (EFAS)
9-2-5. SOLICITING PIREPs
11-1-4. MESSAGE INITIATION
12-1-14. FACILITY IDENTIFICATION
13-1-3. GROUP CODES

This change reflects the migration of En Route Flight Advisory Service responsibilities into Inflight and the discontinued use of the term "Flight Watch" within the CONUS and Puerto Rico.

b. 6-2-1. FLIGHT PLAN RECORDING

The aircraft type designators and supplemental information contained in FAA Orders JO 7340.2 and 7110.65 are being removed and replaced by a separate new order. This change redirects the reader to the new order. Additionally, the designators HXA, HXB, and HXC are no longer used because these are non-standard aircraft type designators.

c. 6-3-4. IFR FLIGHT PLAN CONTROL MESSAGE FORMAT

The aircraft type designators and supplemental information contained in FAA Orders JO 7340.2 and 7110.65 are being removed and replaced by a separate new order. This change redirects the reader to the new order.

d. 8-1-2. OVERDUE AIRCRAFT ON FLIGHT PLAN

This change provides guidance for the acceptance of an overdue aircraft notification from commercially available tracking services.

e. 8-5-1. CONTACT WITH AIRCRAFT CROSSING HAZARDOUS AREA

This change deletes flight service requirement to publish this obscure service.

f. Entire Publication

A global search and replace was conducted on the term "A/FD – Airport/Facility Directory." This term is now being referred to as "Chart Supplement U.S."

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

PAGE CONTROL CHART

REMOVE PAGES	DATED	INSERT PAGES	DATED
Table of Contents i through x	12/10/15	Table of Contents i through ix	05/26/16
1–3–1	12/10/15	1–3–1	05/26/16
1–3–2	12/10/15	1–3–2	12/10/15
2–3–1	12/10/15	2–3–1	12/10/15
2–3–2	12/10/15	2–3–2	05/26/16
2–4–1 and 2–4–2	12/10/15	2–4–1 and 2–4–2	05/26/16
3–2–1	12/10/15	3–2–1	12/10/15
3–2–2 and 3–2–3	12/10/15	3–2–2 and 3–2–3	05/26/16
4–1–1 and 4–1–2	12/10/15	4–1–1 and 4–1–2	05/26/16
4–3–1	12/10/15	4–3–1	12/10/15
4–3–2 through 4–3–5	12/10/15	4–3–2 through 4–3–5	05/26/16
4–4–1 through 4–4–5	12/10/15	4–4–1 through 4–4–5	05/26/16
4–6–1 and 4–6–3	12/10/15		
6–1–1	12/10/15	6–1–1	05/26/16
6–1–2	12/10/15	6–1–2	12/10/15
6–2–1	12/10/15	6–2–1	12/10/15
6–2–2	12/10/15	6–2–2	05/26/16
6–3–3	12/10/15	6–3–3	05/26/16
6–3–4	12/10/15	6–3–4	12/10/15
7–1–1	12/10/15	7–1–1	05/26/16
7–1–2	12/10/15	7–1–2	12/10/15
8–1–1	12/10/15	8–1–1	05/26/16
8–5–1	12/10/15	8–5–1	05/26/16
9–2–1	12/10/15	9–2–1	05/26/16
9–2–2	12/10/15	9–2–2	12/10/15
11–1–1 and 11–1–2	12/10/15	11–1–1 and 11–1–2	05/26/16
12–1–11	12/10/15	12–1–11	12/10/15
12–1–12	12/10/15	12–1–12	05/26/16
13–1–1	12/10/15	13–1–1	12/10/15
13–1–2 and 13–1–3	12/10/15	13–1–2 and 13–1–3	05/26/16
I–1 through I–6	12/10/15	I–1 through I–5	05/26/16
PCG–1 and PCG–2	12/10/15	PCG–1 and PCG–2	05/26/16
PCG A–1	12/10/15	PCG A–1	12/10/15
PCG A–2 through PCG A–16	12/10/15	PCG A–2 through PCG A–16	05/26/16
PCG B–1	12/10/15	PCG B–1	05/26/16
PCG B–2	12/10/15	PCG B–2	12/10/15
PCG C–1	12/10/15	PCG C–1	12/10/15
PCG C–2 through PCG C–9	12/10/15	PCG C–2 through PCG C–9	05/26/16
PCG D–1	12/10/15	PCG D–1	12/10/15
PCG D–2 and PCG D–3	12/10/15	PCG D–2 and PCG D–3	05/26/16
PCG D–4	12/10/15	PCG D–4	12/10/15
PCG E–1 and PCG E–2	12/10/15	PCG E–1 and PCG E–2	05/26/16

PCG F–3	12/10/15
PCG F–4 and PCG F–5	12/10/15
PCG G–1	12/10/15
PCG G–2 and PCG G–3	12/10/15
PCG I–1 through PCG I–6	12/10/15
PCG L–1	12/10/15
PCG L–2	12/10/15
PCG N–1 through PCG N–4	12/10/15
PCG O–1	12/10/15
PCG O–2	12/10/15
PCG P–3	12/10/15
PCG P–4	12/10/15
PCG R–1 through PCG R–8	12/10/15
PCG S–1	12/10/15
PCG S–2	12/10/15
PCG S–5	12/10/15
PCG S–6 and PCG S–7	12/10/15
PCG S–8	12/10/15
PCG T–3 through PCG T–8	12/10/15
PCG U–1	12/10/15
PCG V–3	12/10/15
PCG V–4	12/10/15
PCG W–1	12/10/15

PCG F–3	12/10/15
PCG F–4 and PCG F–5	05/26/16
PCG G–1	12/10/15
PCG G–2 and PCG G–3	05/26/16
PCG I–1 through PCG I–6	05/26/16
PCG L–1	12/10/15
PCG L–2	05/26/16
PCG N–1 through PCG N–4	05/26/16
PCG O–1	12/10/15
PCG O–2	05/26/16
PCG P–3	12/10/15
PCG P–4	05/26/16
PCG R–1 through PCG R–8	05/26/16
PCG S–1	12/10/15
PCG S–2	05/26/16
PCG S–5	05/26/16
PCG S–6 and PCG S–7	12/10/15
PCG S–8	05/26/16
PCG T–3 through PCG T–8	05/26/16
PCG U–1	05/26/16
PCG V–3	12/10/15
PCG V–4	05/26/16
PCG W–1 and PCG W–2	05/26/16

Table of Contents

Chapter 1. General

Section 1. Introduction

Section 2. Terms of Reference

Section 3. Responsibility

Chapter 2. Broadcast Procedures

Section 1. General

Section 2. Transcribed Weather Broadcasts (TWEB) (Alaska Only)

Section 3. Telephone Information Briefing Service (TIBS)

Section 4. Hazardous Inflight Weather Advisory Service (HIWAS)

Section 5. Automatic Flight Information Service (AFIS) (Alaska Only)

Chapter 3. Pilot Briefing

Section 1. General

Section 2. Preflight Pilot Briefing

Chapter 4. Inflight Services

Section 1. General

Section 2. Data Recording

Section 3. Radio Communications

Section 4. Airport Advisory Services (Alaska Only)

Section 5. Special VFR Operation

Chapter 5. Emergency Services

Section 1. General

Section 2. Operations

Chapter 12. Phraseology

Section 1. General

Chapter 13. Data Communication Systems

Section 1. General1

Appendices

Section 3. Responsibility

1–3–1. PROCEDURAL APPLICATIONS

Apply the procedures in this order, except when other procedures are contained in a letter of agreement (LOA) or other appropriate FAA documents, provided they only supplement this order and any standards they specify are not less than those in this order.

NOTE–

1. *Pilots are required to abide by applicable provisions of 14 Code of Federal Regulations (14 CFR) or any other pertinent regulations regardless of the application of any procedure in this order.*

2. *FAA Order JO 7210.3, Facility Operation and Administration, contains administrative instructions pertaining to these letters and documents.*

1–3–2. DUTY PRIORITY

Because there are many variables involved, it is impossible to provide a standard list of duty priorities that apply to every situation. Each set of circumstances must be evaluated on its own merit, and when more than one action is required, personnel must exercise their best judgment based on the facts and circumstances known to them. Action which appears most critical from a safety standpoint should be performed first.

a. The following order of duty priorities is offered as a guideline.

1. Emergency Situations. Emergency situations are those where life or property is in immediate danger.

2. Inflight Services. Inflight services are those provided to or affecting aircraft in flight or otherwise operating on the airport surface. This includes services to airborne aircraft, airport advisories, delivery of air traffic control (ATC) clearances, advisories or requests, issuance of military flight advisory messages, notices to airmen (NOTAM), search and rescue (SAR) communications searches, flight plan handling, transcribed or live broadcasts, weather observations, pilot weather reports (PIREP), and pilot briefings.

3. Preflight Services. Preflight services are those which directly affect aircraft operations but which are provided prior to actual departure and usually by telephone. These include pilot briefings, recorded data, flight plan filing/processing, and aircraft operational reservations.

1–3–3. DUTY FAMILIARIZATION AND TRANSFER OF POSITION RESPONSIBILITY

The transfer of position responsibility must be accomplished in accordance with appropriate facility directives each time the operational responsibility for a position is transferred from one specialist to another. The relieving specialist and the specialist being relieved must share equal responsibility for the completeness and accuracy of the position relief briefing.

a. *Purpose*. This paragraph prescribes the method and the step-by-step process for conducting a position relief briefing and transferring position responsibility from one specialist to another.

b. *Discussion.*

1. In all operational facilities, the increase in traffic density and the need for the expeditious movement of air traffic without compromising safety have emphasized the importance of the position relief process. Major problems occur whenever there is a heavy reliance upon memory unsupported by routines or systematic reminders. This procedure addresses the complete task of transferring position responsibility and the associated relief briefing.

2. Position relief unavoidably provides added workload for specialists at the time of relief. The intent of this procedure is to make the transfer of position responsibility take place smoothly and to ensure a complete transfer of information with a minimum amount of workload. The method takes advantage of a self-briefing concept in which the relieving specialist obtains needed status information by reading from the Status Information Areas to begin the relief process. Up-to-the-minute information relating to the provision of flight services to pilots and aircraft in flight requires verbal exchanges between specialists during the relief process. The method also specifies the point when the transfer of position responsibility occurs.

3. In the final part of the relief process, the specialist being relieved monitors and reviews the position to ensure that nothing has been overlooked or incorrectly displayed and that the transfer of position responsibility occurred with a complete briefing.

c. *Terms.* The following terms are important for a complete understanding of this procedure:

1. Status Information Areas. Manual or automated displays of the current status of position–related equipment and operational conditions or procedures.

2. Written Notes. Manually recorded items of information kept at designated locations on the positions of operation are elements of Status Information Areas.

3. Checklist. An ordered listing of items to be covered in a position relief briefing.

d. *Precautions.*

1. Specialists involved in the position relief process should not rush or be influenced to rush.

2. During position operation, each item of status information which is or may be an operational factor for the relieving specialist should be recorded as soon as it is operationally feasible so that it will not be forgotten or incorrectly recorded.

3. Extra care should be taken when more than one specialist relieves or is being relieved from a position at the same time; for example, combining or decombining positions.

e. *Responsibilities.* The specialist being relieved must be responsible for ensuring that any pertinent status information of which he/she is aware is relayed to the relieving specialist and is either:

1. Accurately displayed in the Status Information Areas for which he/she has responsibility, or

2. Relayed to the position having responsibility for accurately displaying the status information. Prior to accepting responsibility for a position, the relieving specialist must be responsible for ensuring that any unresolved questions pertaining to the operation of the position are resolved. The specialists engaged in a position relief must conduct the relief process at the position being relieved, unless other procedures have been established and authorized by the facility air traffic manager.

f. *Step–By–Step Process of Position Relief.*

1. Preview of the Position

RELIEVING SPECIALIST

(a) Follow the checklist and review the Status Information Areas.

NOTE–
This substep may be replaced by an authorized preduty briefing provided an equivalent review of checklist items is accomplished.

(b) Observe position equipment, operational situation, and the work environment.

(c) Listen to voice communications and observe other operational actions.

(d) Observe current and pending aircraft and vehicular traffic and correlate with flight and other movement information.

(e) Indicate to the specialist being relieved that the position has been previewed and that the verbal briefing may begin.

NOTE–
Substeps (b), (c), and (d) may be conducted concurrently or in order.

2. Verbal Briefing

SPECIALIST BEING RELIEVED

(a) Review with the relieving specialist the checklist, Status Information Areas, written notes, and other prescribed sources of information, and advise of known omissions, updates, and inaccuracies. Also, brief the relieving specialist on the abnormal status of items not listed on the Status Information Areas, as well as on any items of special operational interest calling for verbal explanation or additional discussion.

(b) Brief on traffic, if applicable.

(c) Completely answer any questions asked.

(d) Observe overall position operation. If assistance is needed, provide or summon it as appropriate.

(e) Sign off the position in accordance with existing directives or otherwise indicate that the relief process is complete.

Section 3. Telephone Information Briefing Service (TIBS)

2–3–1. GENERAL

a. TIBS provides a continuous telephone recording of meteorological and/or aeronautical information.

1. TIBS must contain:

(a) Area and/or route briefings.

(b) Airspace procedures, if applicable.

(c) Special announcements, if applicable.

2. TIBS should also contain, but not be limited to:

(a) Surface observations (METAR).

(b) Terminal forecasts (TAF).

(c) Winds/temperatures aloft forecasts.

NOTE–
User needs should dictate the content of these recordings.

b. Each FSS sector/flight plan area must provide at least four route and/or area weather briefings. As a minimum, area briefings should encompass a 50 NM radius. Each briefing should require the pilot to access no more than two channels which must be route and/or area specific.

c. Separate channels must be designated for each route area, local meteorological/aeronautical information, special event, airspace procedures, etc.

EXAMPLE–
11 Northeast Michigan
12 Southeast Michigan
13 Southwest Michigan
14 Northwest Michigan including the Upper Peninsula
19 Aviation Events

2–3–2. AREA/ROUTE BRIEFING PROCEDURES

Service is provided 24 hours a day, but may be reduced in accordance with paragraph 2–1–3. Recorded information must be updated as conditions change.

a. Introduction. State the preparation time and the route and/or the area of coverage. The service area may be configured to meet the individual facility's needs; for example, 50 NM radius, route oriented.

NOTE–
For the purpose of TIBS broadcasts, an area briefing may be a geographic location not defined by a nautical mile radius, for example, NORTHWEST NEBRASKA.

PHRASEOLOGY–
THIS RECORDING PREPARED AT (time) LOCAL or (time) ZULU. BRIEFING SUMMARY FOR: A (number of miles) NAUTICAL MILE RADIUS OF (location),

or (location not defined by nautical mile radius),

or THE ROUTE FROM (location) TO (location).

b. Weather Advisories. Include WST, WS, WA, CWA, AWW, urgent PIREP (UUA), and any other available meteorological information that may adversely affect flight in the route/area.

PHRASEOLOGY–
WEATHER ADVISORIES ARE IN EFFECT FOR (adverse conditions) OVER (geographic area) (text).

c. VFR Not Recommended (VNR) Statement. Include this recommendation when current or forecast conditions, surface or aloft, would make flight under visual flight rules doubtful.

PHRASEOLOGY–
V–F–RFLIGHT NOT RECOMMENDED (location) DUE TO (conditions).

d. Synopsis. A brief statement describing the type, location, and movement of weather systems and/or masses which might affect the route or the area. 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.

e. Current Conditions. Include current weather conditions over the route/area and PIREPs on conditions reported aloft.

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

f. Density Altitude. Include the statement "Check Density Altitude" as part of the surface weather

broadcast for any weather reporting point with a field elevation of 2,000 feet MSL or above that reaches the criteria found in TBL 2−2−1.

g. En Route Forecast. Include forecast information from appropriate data; for example, area forecast (FA) synopsis, terminal aerodrome forecast (TAFs), and weather advisories.

h. Winds Aloft. Include winds aloft as forecast for the route/area as interpolated from forecast data for the local and/or the adjacent reporting locations for levels through 12,000 feet. The broadcast should include the levels from 3,000 to 12,000 feet, but must always include at least two forecast levels above the surface.

i. Request for PIREPs. When weather conditions within the area or along the route meet requirements for soliciting PIREPs (paragraph 9-2-5), include a request in the recording.

PHRASEOLOGY−
PILOT WEATHER REPORTS ARE REQUESTED. CONTACT FLIGHT SERVICE.

j. Closing Announcement. The closing announcement must provide instructions for contacting a pilot briefer for NOTAMs, military training activity, or other information.

2−3−3. MONITORING

a. Manually prepared recordings must be monitored immediately after recording to insure accuracy of data and availability by calling 1−800−WX−BRIEF.

b. Automated TIBS products and non-meteorological recordings must be monitored once each shift to ensure clarity and accuracy.

Section 4. Hazardous Inflight Weather Advisory Service (HIWAS)

2–4–1. GENERAL

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.

b. HIWAS broadcast areas are defined as the area within 150 NM of a HIWAS outlet.

2–4–2. PRIORITY

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.

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.

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.

b. Complete the update recording as soon as practical, but not more than 15 minutes from time of receipt of new hazardous weather information.

2–4–3. CONTENT

Record hazardous weather information occurring within the HIWAS broadcast area. The broadcast must include the following elements:

a. Statement of introduction including the appropriate area(s) and a recording time.

PHRASEOLOGY–
HIWAS WITHIN A ONE–FIVE–ZERO NAUTICAL MILE RADIUS OF (geographic area) RECORDED AT (time) ZULU (text).

NOTE–
Border facilities must append "in domestic U.S. airspace" to the geographical area text in the introduction statement.

b. Statement of hazardous weather, including WSTs, WSs, WAs, UUAs, AWWs, and CWAs.

c. Request for PIREPs, if applicable. (See paragraph 9–2–5, Soliciting PIREPs.)

PHRASEOLOGY–
PILOT WEATHER REPORTS ARE REQUESTED.

d. Recommendation to contact Flight Service for additional details concerning hazardous weather.

PHRASEOLOGY–
CONTACT FLIGHT SERVICE FOR ADDITIONAL DETAILS.

2–4–4. BROADCAST PROCEDURES

a. Upon receipt of new hazardous weather information:

1. Update the HIWAS broadcast.

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.

PHRASEOLOGY–
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:

PHRASEOLOGY–
ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE IS AVAILABLE FROM FLIGHT SERVICE.

NOTE–
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.

2–4–5. SUSPENSION

HIWAS broadcasts must not be suspended for routine maintenance during periods when weather advisories have been issued for the HIWAS outlet area.

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, TAFs, prognosis charts, weather advisories, etc. Provide the information in a logical order; for example, climb out, enroute, 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 3-2-1c13(a).

(b) Flight Data Center (FDC) NOTAMs not already carried in the Notices to Airmen publication.

(c) 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.

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–
FAAO 7930.2, Paragraph 8-3-1, Military NOTAM Availability.

(e) Special FDC instrument approach procedure changes.

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 pilot requests that the briefing be limited to specific information. If applicable, include the statement "VFR flight not recommended" in accordance with subparagraph 3-2-1c2. 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.

b. Conduct abbreviated briefings as follows:

1. When a pilot desires specific information only, provide the requested information. If adverse conditions are reported or forecast, advise the pilot. Provide details on these conditions, in accordance with subparagraph 3-2-1c1, at the pilot's request.

2. When a pilot requests an update to a previous briefing, obtain from the pilot the time the briefing was received and necessary background information. To the extent possible, limit the briefing to appreciable changes in meteorological and aeronautical conditions since the previous briefing.

3. When a pilot requests information to supplement data obtained through FSS mass-dissemination media, obtain pertinent background information, the specific items required by the pilot, and provide the information in the sequence listed in subparagraph 3-2-1c.

4. When a pilot requests to file a flight plan only, ask if he/she requires the latest information on adverse conditions along the route of flight. If so, provide the information pertinent to the route of flight in accordance with subparagraph 3-2-1c1.

5. Solicit PIREPs in accordance with subparagraph 3-2-1c11.

3–2–3. CONDUCT OF OUTLOOK BRIEFING

a. Provide an outlook briefing when the proposed departure is 6 hours or more from the time of the briefing. Conduct the briefing in accordance with subparagraph 3-2-1c. Omit items in subparagraphs c2, c4, and c7 through c11, unless specifically requested by the pilot or deemed pertinent by the specialist.

b. When the proposed flight is scheduled to be conducted beyond the valid time of the available forecast material, provide a general outlook and then advise the pilot when complete forecast data will be available for the proposed flight

Chapter 4. Inflight Services

Section 1. General

4–1–1. INFLIGHT SERVICES

a. Inflight services are those provided to or affecting aircraft inflight or otherwise operating on the airport surface. This includes services to airborne aircraft, such as delivery of ATC clearances, advisories or requests, issuance of military flight advisory messages, NOTAM, SAR communications searches, flight plan handling, transcribed or live broadcast, weather observations, PIREPs, and pilot briefings.

b. Upon request, provide en route aircraft with timely and pertinent weather data tailored to a specific altitude and route using the most current available sources of aviation meteorological information. Tailor en route flight advisories to the phase of flight that begins after climb out and ends with descent to land. Current weather and terminal forecast at the airport of first intended landing and/or the alternate airport must be provided on request. When conditions dictate, provide information on weather for alternate routes and/or altitudes to assist the pilot in the avoidance of hazardous flight conditions.

NOTE–
Provide inflight services in accordance with the procedures in this chapter to aircraft on a "first come, first served" basis, as circumstances permit.

4–1–2. OPERATIONAL PRIORITY

a. Emergency situations are those where life or property are in immediate danger. Aircraft in distress have priority over all other aircraft.

b. Provide priority to civilian air ambulance flights (call sign "MEDEVAC"). Use of the MEDEVAC call sign indicates that operational priority is requested. When verbally requested, provide priority to AIR EVAC, HOSP, and scheduled air carrier/air taxi flights. Assist the pilots of MEDEVAC, AIR EVAC, and HOSP aircraft to avoid areas of significant weather and turbulent conditions. When requested by a pilot, provide notifications to expedite ground handling of patients, vital organs, or urgently needed medical materials.

c. Provide maximum assistance to search and rescue (SAR) aircraft performing a SAR mission.

d. Provide special handling as required to expedite Flight Check and automated flight inspection "Flight Check (number) Recorded" aircraft.

4–1–3. INFLIGHT WEATHER BRIEFING

Upon request, provide inflight weather briefings, in accordance with the procedure outlined in Chapter 3, Section 2.

4–1–4. INFLIGHT EQUIPMENT MALFUNCTIONS

a. Inflight equipment malfunctions include partial or complete failure of equipment which may affect either safety and/or the ability of the flight to proceed.

b. When a pilot reports a flight equipment malfunction, determine the nature and extent of any assistance desired.

c. Provide maximum assistance possible consistent with equipment and any special handling requested.

d. Relay to other specialists or facilities who will handle the aircraft all information concerning the equipment malfunction on the aircraft and any special handling requested or being provided.

4–1–5. AIRCRAFT REPORTED MALFUNCTIONS

a. Aircraft-reported NAVAID malfunctions are subject to varying circumstances. When an aircraft reports a ground-based NAVAID malfunction, take the following action:

1. Request a report from a second aircraft.

2. If the second aircraft reports normal operations, if able, inform the first aircraft. Record the incident on FAA Form 7230-4.

3. If the second aircraft confirms the malfunction:

(a) Notify the appropriate IFR control facility or sector.

(b) Notify Technical Operations personnel.

(c) Take NOTAM action when requested by Technical Operations personnel.

(d) Record the incident on FAA Form 7230-4.

4. In the absence of a second aircraft report:

(a) Notify Technical Operations and advise what time the initial aircraft reported the failure and when a second aircraft report might be obtained.

(b) Record the incident on FAA Form 7230-4.

b. When an aircraft reports a global positioning system (GPS)/global navigation satellite system (GNSS) anomaly:

1. Request the following information:

(a) Aircraft call sign and type of aircraft.

(b) Date and time of the occurrence.

(c) Location of anomaly.

(d) Altitude.

2. Record the incident on FAA Form 7230-4.

3. Forward this information to the traffic management unit (TMU) and Technical Operations personnel.

c. When an aircraft reports a Wide Area Augmentation System (WAAS) anomaly, request the following information and/or take the following actions:

1. Determine if the pilot has lost all WAAS service.

EXAMPLE–
"Are you receiving any WAAS service?"

2. If the pilot reports receipt of any WAAS service, acknowledge the report, and continue normal operations.

3. If the pilot reports loss of all WAAS service, report as a GPS anomaly using procedures in paragraph 4–1–5b.

d. When a pilot reports an ADS-B services malfunction (i.e., ADS-B, TIS-B, FIS-B, or ADS-R):

1. Request the following information:

(a) Aircraft call sign and type of aircraft.

(b) Date and time of observation.

(c) Location and altitude of anomaly.

(d) Condition observed (or anomaly).

(e) Type and software version of avionics system.

2. Forward this information to an Operations Control Center (OCC) or Service Operations Center (SOC) as appropriate.

3. Record the incident on FAA Form 7230-4.

4–1–6. NAVAID FLIGHT CHECK

Provide maximum assistance to aircraft engaged in flight inspection of NAVAIDs. Unless otherwise agreed to, maintain direct contact with the pilot and provide information regarding known traffic in the area and request the pilot's intentions.

NOTE–
1. *Many flight inspections are accomplished using automatic recording equipment. An uninterrupted flight is necessary for successful completion of the mission. The workload for the limited number of aircraft engaged in these activities requires strict adherence to a schedule.*

2. *Flight inspection operations which require special participation of ground personnel, specific communications, or radar operation capabilities are considered to require special handling. These flights are coordinated with appropriate facilities before departure.*

Section 3. Radio Communications

4–3–1. FREQUENCY USE

a. Use radio frequencies for the specific purposes for which they are intended. A frequency may be used for more than one function when required. Use the minimum number of frequencies to conduct communications. Request pilots file flight plans on discrete frequencies when possible.

b. Monitor assigned radio frequencies continuously. Keep speaker volumes at a level sufficient to hear all transmissions.

4–3–2. AUTHORIZED TRANSMISSIONS

a. Transmit only those messages necessary for safe and efficient use of the National Airspace System (NAS).

1. Relay operational information to an aircraft or its company, as requested, when abnormal conditions necessitate such requests. Do not agree to handle such messages on a regular basis.

2. Relay official FAA messages as required.

b. Inform an aircraft of the source of any message you relay from an appropriate authority.

c. Use the words or phrases in radio communications as contained in the PCG.

4–3–3. RADIO MESSAGE FORMAT

a. Use the following format for radio communications with an aircraft:

1. Identification of aircraft.

2. Identification of the calling unit.

3. The type of message to follow when this will assist the pilot.

4. The word “over,” if required.

b. Specialist initiated call. State the prefix , for example “November” when establishing initial communications with U.S.–registered aircraft followed by the International Civil Aviation Organization (ICAO) phonetic pronunciation of the numbers/letters of the aircraft registration. The specialist may state the aircraft type, the model, the manufacturer’s name, followed by the ICAO phonetic pronunciation of the numbers/letters of the aircraft registration if used by the pilot on the initial or subsequent call.

EXAMPLE–
Specialist initiated call:

“November One Two Three Four Golf, Juneau Radio, over.”
“Piper Three Four Seven Seven Papa, Fort Worth Radio, A-T-C clearance, over.”

c. Replying to call up from aircraft. Identification of the aircraft initiating the call up. Use the full identification in reply to aircraft with similar sounding identifications. For other aircraft, use the same identification the pilot used in initial call up; then use the correct identification after communication has been established. The specialist may state the aircraft type, model, or manufacturer’s name followed by the ICAO phonetic pronunciation of the numbers/letters of the aircraft registration if used by the pilot.

EXAMPLE–
Responding to pilot’s initial or subsequent call:

“Jet Commander One Two Three Four Papa.”

“Bonanza One Two Three Four Tango.”

“November Six Three Eight Mike Foxtrot.”

d. The word “heavy” must be used as part of the identification in communications with or about heavy jet aircraft.

PHRASEOLOGY–
UNITED FIFTY-EIGHT HEAVY.

NOTE–
1. *Most airlines use the word “heavy” following the company prefix and trip number when establishing communications or when changing frequencies.*

2. *When in radio-telephone communications with “Air Force One,” do not add the “heavy” designator to the call sign. State only the call sign “Air Force One” regardless of the type of aircraft.*

e. Preface a clearance or instruction intended for a specific aircraft with the identification of that aircraft.

f. Emphasize appropriate digits, letters, or similar sounding words to aid in distinguishing between similar sounding aircraft identifications.

Additionally, notify each pilot concerned when communicating with aircraft having similar sounding identifications.

EXAMPLE–
"American Five Twenty-one and American Twenty-one, transmissions being made to each of you on this frequency."

"Advisory to Cessna One Three Two Four, transmissions to Cessna One Two Three Four also being made on this frequency."

4–3–4. ABBREVIATED TRANSMISSION

Transmissions may be abbreviated as follows:

a. Use the identification prefix and the last three digits or letters of the aircraft identification after communications have been established. Do not abbreviate similar sounding aircraft identifications or the identification of an air carrier or other civil aircraft having an FAA-authorized call sign.

b. Omit the facility identification after communication has been established.

c. Transmit the message immediately after the call up (without waiting for the aircraft's reply) when the message is short and receipt is generally assured.

d. Omit the word "over" if the message obviously requires a reply.

4–3–5. ROUTINE RADIO CONTACTS

Record information received from or given to the pilot. Prior to terminating the contact, provide the following information if it is pertinent and the pilot indicates that it has not been received previously.

a. *Weather Advisory.* When a weather advisory such as a WA, WS, WST, CWA, or AWW which affects an aircraft's position, route, or destination.

b. *NOTAM*. Inform the pilot of any pertinent NOTAMs affecting the flight.

c. *Altimeter Setting.*

1. If the aircraft is operating below 18,000 feet MSL, issue current altimeter setting obtained from direct reading instruments or received from weather reporting stations. Use the setting for the location nearest the position of the aircraft.

2. If the aircraft is arriving or departing a local airport served by an operating control tower, issue altimeter setting on request only.

3. When a pilot acknowledges that he/she has received the AFIS broadcast, specialists may omit those items contained in the broadcasts if they are current.

4. Aircraft arriving or departing from a non-towered airport which has a commissioned automated weather reporting with ground-to-air capability must be advised to monitor the automated weather frequency for the altimeter setting.

PHRASEOLOGY–
MONITOR (location) AUTOMATED WEATHER FOR CURRENT ALTIMETER.

NOTE–
This requirement is deleted if the pilot states that he/she has the automated weather.

5. When the barometric pressure is greater than 31.00 inches Hg., Flight Standards will implement high barometric pressure procedures by NOTAM, defining the geographic area affected. When this occurs, use the following procedures:

(a) IFR aircraft. Issue the altimeter setting and advise the pilot that high pressure altimeter setting procedures are in effect. Control facilities will issue specific instructions when relaying IFR clearances and control instructions through FSS facilities when the altimeter is above 31.00 inches Hg.

(b) VFR aircraft. Issue the altimeter setting. Advise the pilot that high pressure altimeter setting procedures are in effect and to use an altimeter setting of 31.00 inches Hg en route.

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

NOTE–
Airports unable to accurately measure barometric pressures above 31.00 inches Hg will report the barometric pressure as missing or in excess of 31.00 inches Hg. Flight operations to or from those airports are restricted to VFR weather conditions.

REFERENCE–
AIM, Chapter 7, Section 2, Altimeter Setting Procedures
FAAO JO 7110.65 Para 2-7-2.g, Altimeter Setting Issuance Below Lowest Usable FL

d. *Incorrect Cruising Altitude*. If the aircraft is operating VFR at an altitude between 3,000 feet AGL to, but not including FL180, and reports at an incorrect cruising altitude for the direction of flight, issue a VFR cruising altitude advisory.

PHRASEOLOGY–

V-F-R CRUISING LEVELS FOR YOUR DIRECTION OF FLIGHT ARE: (Odd/Even) ALTITUDES PLUS FIVE HUNDRED FEET.

NOTE–

Facilities located in those areas where VFR altitude separation is below 3,000 feet AGL or above FL 180 must provide appropriate phraseology examples for local use.

e. *Altimeter Setting in Millibars (MBs)*. If a request for the altimeter setting in MBs is received, use the setting for the location nearest the position of the aircraft and convert to the MBs equivalent value using a MBs conversion chart. If the Mbs setting is not a whole number, always round down. (See TBL 4-3-1.)

TBL 4–3–1

Millibar Conversion Chart

MILLIBAR CONVERSION CHART																
inches	*millibars*	*inches*	*millibars*	*inches*	*millibars*	*inches*	*millibars*	*inches*	*millibars*	*inches*	*millibars*	*inches*	*millibars*	*inches*	*millibars*
27.50	931.3	28.00	948.2	28.50	965.1	29.00	982.1	29.50	999.0	30.00	1015.9	30.50	1032.8	31.00	1049.8
27.51	931.6	28.01	948.5	28.51	965.5	29.01	982.4	29.51	999.3	30.01	1016.3	30.51	1033.2	31.01	1050.1
27.52	931.9	28.02	948.9	28.52	965.8	29.02	982.7	29.52	999.7	30.02	1016.6	30.52	1033.5	31.02	1050.5
27.53	932.3	28.03	949.2	28.53	966.1	29.03	983.1	29.53	1000.0	30.03	1016.9	30.53	1033.9	31.03	1050.8
27.54	932.6	28.04	949.5	28.54	966.5	29.04	983.4	29.54	1000.3	30.04	1017.3	30.54	1034.2	31.04	1051.1
27.55	933.0	28.05	949.9	28.55	966.8	29.05	983.7	29.55	1000.7	30.05	1017.6	30.55	1034.5	31.05	1051.5
27.56	933.3	28.06	950.2	28.56	967.2	29.06	984.1	29.56	1001.0	30.06	1017.9	30.56	1034.9	31.06	1051.8
27.57	933.6	28.07	950.6	28.57	967.5	29.07	984.4	29.57	1001.4	30.07	1018.3	30.57	1035.2	31.07	1052.2
27.58	934.0	28.08	950.9	28.58	967.8	29.08	984.8	29.58	1001.7	30.08	1018.6	30.58	1035.6	31.08	1052.5
27.59	934.3	28.09	951.2	28.59	968.2	29.09	985.1	29.59	1002.0	30.09	1019.0	30.59	1035.9	31.09	1052.8
27.60	934.6	28.10	951.6	28.60	968.5	29.10	985.4	29.60	1002.4	30.10	1019.3	30.60	1036.2	31.10	1053.2
27.61	935.0	28.11	951.9	28.61	968.8	29.11	985.8	29.61	1002.7	30.11	1019.6	30.61	1036.6	31.11	1053.5
27.62	935.3	28.12	952.3	28.62	969.2	29.12	986.1	29.62	1003.0	30.12	1020.0	30.62	1036.9	31.12	1053.8
27.63	935.7	28.13	952.6	28.63	969.5	29.13	986.5	29.63	1003.4	30.13	1020.3	30.63	1037.3	31.13	1054.2
27.64	936.0	28.14	952.9	28.64	969.9	29.14	986.8	29.64	1003.7	30.14	1020.7	30.64	1037.6	31.14	1054.5
27.65	936.3	28.15	953.3	28.65	970.2	29.15	987.1	29.65	1004.1	30.15	1021.0	30.65	1037.9	31.15	1054.9
27.66	936.7	28.16	953.6	28.66	970.5	29.16	987.5	29.66	1004.4	30.16	1021.3	30.66	1038.3	31.16	1055.2
27.67	937.0	28.17	953.9	28.67	970.9	29.17	987.8	29.67	1004.7	30.17	1021.7	30.67	1038.6	31.17	1055.5
27.68	937.4	28.18	954.3	28.68	971.2	29.18	988.1	29.68	1005.1	30.18	1022.0	30.68	1038.9	31.18	1055.9
27.69	937.7	28.19	954.6	28.69	971.6	29.19	988.5	29.69	1005.4	30.19	1022.4	30.69	1039.3	31.19	1056.2
27.70	938.0	28.20	955.0	28.70	971.9	29.20	988.8	29.70	1005.8	30.20	1022.7	30.70	1039.6	31.20	1056.6
27.71	938.4	28.21	955.3	28.71	972.2	29.21	989.2	29.71	1006.1	30.21	1023.0	30.71	1040.0	31.21	1056.9
27.72	938.7	28.22	955.6	28.72	972.6	29.22	989.5	29.72	1006.4	30.22	1023.4	30.72	1040.3	31.22	1057.2
27.73	939.0	28.23	956.0	28.73	972.9	29.23	989.8	29.73	1006.8	30.23	1023.7	30.73	1040.6	31.23	1057.6
27.74	939.4	28.24	956.3	28.74	973.2	29.24	990.2	29.74	1007.1	30.24	1024.0	30.74	1041.0	31.24	1057.9
27.75	939.7	28.25	956.7	28.75	973.6	29.25	990.5	29.75	1007.5	30.25	1024.4	30.75	1041.3	31.25	1058.2
27.76	940.1	28.26	957.0	28.76	973.9	29.26	990.8	29.76	1007.8	30.26	1024.7	30.76	1041.6	31.26	1058.6
27.77	940.4	28.27	957.3	28.77	974.3	29.27	991.2	29.77	1008.1	30.27	1025.1	30.77	1042.0	31.27	1058.9
27.78	940.7	28.28	957.7	28.78	974.6	29.28	991.5	29.78	1008.5	30.28	1025.4	30.78	1042.3	31.28	1059.3
27.79	941.1	28.29	958.0	28.79	974.9	29.29	991.9	29.79	1008.8	30.29	1025.7	30.79	1042.7	31.29	1059.6
27.80	941.4	28.30	958.3	28.80	975.3	29.30	992.2	29.80	1009.1	30.30	1026.1	30.80	1043.0	31.30	1059.9
27.81	941.8	28.31	958.7	28.81	975.6	29.31	992.6	29.81	1009.5	30.31	1026.4	30.81	1043.3	31.31	1060.3
27.82	942.1	28.32	959.0	28.82	976.0	29.32	992.9	29.82	1009.8	30.32	1026.8	30.82	1043.7	31.32	1060.6
27.83	942.4	28.33	959.4	28.83	976.3	29.33	993.2	29.83	1010.2	30.33	1027.1	30.83	1044.0	31.33	1061.0
27.84	942.8	28.34	959.7	28.84	976.6	29.34	992.6	29.84	1010.5	30.34	1027.4	30.84	1044.4	31.34	1061.3
27.85	943.1	28.35	960.0	28.85	977.0	29.35	993.9	29.85	1010.8	30.35	1027.8	30.85	1044.7	31.35	1061.6
27.86	943.4	28.36	960.4	28.86	977.3	29.36	994.2	29.86	1011.2	30.36	1028.1	30.86	1045.0	31.36	1062.0
27.87	943.8	28.37	960.7	28.87	977.7	29.37	994.6	29.87	1011.5	30.37	1028.4	30.87	1045.4	31.37	1062.3
27.88	944.1	28.38	961.1	28.88	978.0	29.38	994.9	29.88	1011.9	30.38	1028.8	30.88	1045.7	31.38	1062.6
27.89	944.5	28.39	961.4	28.89	978.3	29.39	995.3	29.89	1012.2	30.39	1029.1	30.89	1046.1	31.39	1063.0
27.90	944.8	28.40	961.7	28.90	978.7	29.40	995.6	29.90	1012.5	30.40	1029.5	30.90	1046.4	31.40	1063.3
27.91	945.1	28.41	962.1	28.91	979.0	29.41	995.9	29.91	1012.9	30.41	1029.8	30.91	1046.7	31.41	1063.7
27.92	945.5	28.42	962.4	28.92	979.3	29.42	996.3	29.92	1013.2	30.42	1030.1	30.92	1047.1	31.42	1064.0
27.93	945.8	28.43	962.8	28.93	979.7	29.43	996.6	29.93	1013.5	30.43	1030.5	30.93	1047.4	31.43	1064.3
27.94	946.2	28.44	963.1	28.94	980.0	29.44	997.0	29.94	1013.9	30.44	1030.8	30.94	1047.7	31.44	1064.7
27.95	946.5	28.45	963.4	28.95	980.4	29.45	997.3	29.95	1014.2	30.45	1031.2	30.95	1048.1	31.45	1065.0
27.96	946.8	28.46	963.8	28.96	980.7	29.46	997.6	29.96	1014.6	30.46	1031.5	30.96	1044.4	31.46	1065.4
27.97	947.2	28.47	964.1	28.97	981.0	29.47	998.0	29.97	1014.9	30.47	1031.8	30.97	1048.8	31.47	1065.7
27.98	947.5	28.48	964.4	28.98	981.4	29.48	998.3	29.98	1015.2	30.48	1032.2	30.98	1049.1	31.48	1066.0
27.99	947.9	28.49	964.8	28.99	981.7	29.49	998.6	29.99	1015.6	30.49	1032.5	30.99	1049.4	31.49	1066.4

4–3–6. RADIO COMMUNICATIONS TRANSFER

Transfer radio communications by specifying the following:

a. The name of the facility to be contacted and the frequency.

PHRASEOLOGY–
CONTACT (name of facility) ON (frequency).

b. In situations where an aircraft will continue to communicate with your facility, use the following:

PHRASEOLOGY–
CONTACT (name of service) ON (frequency).

4–3–7. ATC CLEARANCES, ADVISORIES, OR REQUESTS

a. Notify ATC via interphone of a pilot's request for clearance and include the departure and destination airports and, if appropriate, departing runway and time in the request. Forward pilot requests to execute the Visual Climb Over Airport (VOCA) procedure to ATC. Relay, verbatim, ATC clearances, advisories, and requests received from the control facility. Give a time check to the nearest quarter minute when relaying a clearance that includes a release or void time.

NOTE–
For ATC clearances, "verbatim" means exact control instructions in the format stated in FAA Order JO 7110.65, Air Traffic Control, Chapter 4, Section 2, Clearances, and Section 3, Departure Procedures.

PHRASEOLOGY–
Aircraft on the ground:

(Facility) RADIO, CLEARANCE REQUEST.

After go-ahead from ATC,

(Aircraft identification) DEPARTING (airport), RUNWAY (number if applicable) DESTINATION (fix or airport). (If applicable), CAN BE OFF AT (time).

Aircraft airborne:

(Facility) RADIO, CLEARANCE REQUEST.

After go-ahead from ATC:

(Aircraft identification), (position), (altitude), (route), AND (destination).

b. Prefix all ATC clearances, advisories, or requests with the appropriate phrase "A-T-C CLEARS," "A-T-C ADVISES," etc.

c. When issuing information, relaying clearances, or instructions, ensure acknowledgement by the pilot.

d. If altitude, heading, or other items are read back by the pilot, ensure the readback is correct. If incorrect or incomplete, make corrections as appropriate.

NOTE–
Pilots may acknowledge clearances, instructions, or information by using "Wilco," "Roger," "Affirmative," or other appropriate words or remarks.
REFERENCE-
PCG.

4–3–8. DEPARTURE REPORTS

a. When an IFR aircraft reports airborne or is observed airborne, transmit the aircraft identification and departure time to the control facility from which the clearance was received.

PHRASEOLOGY–
(Facility) RADIO. DEPARTURE. (Aircraft identification), (time).

NOTE–
1. *This includes known VFR departure times of aircraft which are to obtain IFR clearances when airborne.*

2. *The requirement for transmitting departure reports may be omitted if requested by the IFR control facility, provided the procedures are specified in a Letter of Agreement.*

b. When an aircraft which has filed an IFR flight plan requests a VFR departure, facilitate the request as follows:

1. If the facility/sector responsible for issuing the clearance is unable to issue a clearance, inform the pilot and suggest that the delay be taken on the ground. If the pilot insists upon taking off VFR and obtaining an IFR clearance in the air, relay the pilot's intentions and, if possible, the VFR departure time to the facility/sector holding the flight plan.

2. After obtaining approval from the facility/sector responsible for issuing the IFR clearance, an aircraft planning IFR flight may be authorized to depart VFR. Inform the pilot of the proper frequency and, if appropriate, where or when to contact the facility responsible for issuing the clearance.

(a) When requesting:

PHRASEOLOGY–
(Facility) RADIO. (Aircraft identification), REQUEST V-F-R DEPARTURE.

(b) When relaying to aircraft:

PHRASEOLOGY–
A-T-C ADVISES (aircraft identification) V-F-R DEPARTURE APPROVED. CONTACT (facility) ON (frequency) AT (location or time, if required) FOR CLEARANCE.

(c) Relaying to control facility:

PHRASEOLOGY–
(Facility) RADIO. (Aircraft identification) DEPARTED V-F-R AT (time).

4–3–9. IFR FLIGHT PROGRESS REPORTS

Relay to the appropriate ATC facility the aircraft identification, position, time, altitude, estimate of next reporting point, name of subsequent reporting point, and any pilot remarks or requests including amended flight plan data.

PHRASEOLOGY–
(Facility) RADIO. PROGRESS. (Aircraft identification), (position), (altitude), (time) (name and estimate of next reporting point) (name of subsequent reporting point) (pilot's remarks).

4–3–10. ARRIVAL/MISSED APPROACH REPORTS

Relay to the appropriate ATC facility, by the most expeditious means available, the time that an IFR aircraft lands, cancels, or executes a missed approach, and intentions, if known.

4–3–11. NONDELIVERY OF MESSAGES

Inform ATC when a message has not been delivered within:

a. Three minutes of receipt; or

b. Three minutes after the specified delivery time; or

c. A specified cancellation time.

4–3–12. BROADCAST (BLIND TRANSMISSION) OF MESSAGES

Broadcast messages as requested by ATC. If no accompanying transmitting instructions are received, transmit the message four times:

a. Once upon receipt; and

b. At approximately 3-minute intervals thereafter.

4–3–13. PENETRATION OF CLASS A AIRSPACE OR PROHIBITED/RESTRICTED AREA

a. Penetration of Class A airspace. When a VFR aircraft's position report indicates penetration of Class A airspace:

1. Inform the pilot of the Class A airspace penetration and request intentions.

PHRASEOLOGY–
YOU ARE IN CLASS A AIRSPACE. AN A-T-C CLEARANCE IS REQUIRED. REQUEST YOUR INTENTIONS.

2. Inform the control facility immediately.

3. Relay ATC instructions.

b. Penetration of PROHIBITED/RESTRICTED AREA. When an aircraft report indicates penetration of a prohibited/restricted area:

1. Inform the pilot.

PHRASEOLOGY–
YOU ARE IN A PROHIBITED/RESTRICTED AREA, AUTHORIZATION IS REQUIRED. REQUEST YOUR INTENTIONS.

2. Inform the control facility immediately. Relay ATC instructions.

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 ALFA."

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.

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

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

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

PHRASEOLOGY–
TRAFFIC (Aircraft type), (position), (minutes) AGO.

5. Braking action/NOTAM. Furnish braking action reports as received from pilots or airport management to all aircraft as follows:

(a) Describe braking action using the terms fair, poor, or nil. If the pilot or airport management reports braking action in other than the foregoing terms, ask them to categorize braking action in these terms.

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

EXAMPLE–
"Braking action poor."

"Braking action poor, reported by a Cessna Four-Oh-One."

(c) If the braking action report affects only a portion of a runway, obtain enough information from the pilot or airport management to describe braking action in terms easily understood by the pilot.

EXAMPLE–
"Braking action poor first half of Runway Six, reported by a Gulfstream Two."

"Braking action poor Runway Two-Seven, reported by a Boeing Seven Twenty-Seven."

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

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

EXAMPLE–
"All runways covered by packed snow 6 inches deep."

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

(a) Airport Advisory/RAIS:

(1) Wind direction and speed.

(2) Altimeter (except RAIS).

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

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

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

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

8. Weather advisory alert. Provide in accordance with subpara 4-3-5a.

PHRASEOLOGY–
(Advisory description) IS CURRENT FOR (condition) OVER (area).

9. Density Altitude.

(a) Facilities at airports with field elevations of 2,000 feet MSL or higher, transmit a density altitude advisory to departing general aviation aircraft whenever the temperature reaches the criteria contained in TBL 2–2-1.

PHRASEOLOGY–
CHECK DENSITY ALTITUDE.

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

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

PHRASEOLOGY–
CAUTION, WAKE TURBULENCE (traffic information).

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

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

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

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

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

EXAMPLE–
"N12RG, Wind (direction) at (speed)."

NOTE–
Final Guard is never provided with RAIS.

12. Runway Friction. Upon request, provide runway friction measurement readings/values as received from airport management to aircraft as follows:

(a) At airports with friction measuring devices, provide runway friction reports, as received from airport management, to pilots. 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 thirty nine, thirty eight, twenty-eight at one zero one eight ZULU, ice."

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

EXAMPLE–
"Ice on runway, R-C-R zero five, patchy."

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

4–4–4. CHARTS

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

4–4–5. AUTHORIZED FREQUENCIES

a. Airport Advisory:

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

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

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

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

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

b. RAIS:

1. Provide RAIS on the existing discrete frequency located at the remote airport.

2. If a pilot calls and appears to be unaware that RAIS is available, offer the service.

3. If a pilot calls on another frequency, issue advisories on the frequency the pilot is listening, in addition to the appropriate airport advisory frequency.

4. If RAIS is requested when it is not offered, inform the pilot that the service is not available and follow para 4-4-2c.

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

4–4–6. TRAFFIC CONTROL

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

PHRASEOLOGY–
NO CONTROL TOWER IN OPERATION.

4–4–7. AIRCRAFT EQUIPMENT CHECKS

When requested, provide observed information.

EXAMPLE–
Landing gear appears to be down and in place.

Chapter 6. Flight Data

Section 1. General

6–1–1. COMMUNICATIONS SERVICE

Most flight movement data exchanged outside of the facility is processed by automated systems such as NADIN. It is important to adhere to strict format and procedures during normal operations as well as system interruption periods.

a. Circuit interruption notifications should be as follows:

1. Consult your operational system handbook and standard operating procedures for detailed instructions regarding circuit interruption notification procedures.

2. Notify any guarding facility/sector, the Aeronautical Information System Replacement (AISR) Customer Service Center, and NADIN.

b. All outage reports should refer to the correct circuit and/or equipment identification numbers. Facilities should obtain and record ticket numbers provided by AISR or the TELCO authority.

c. AISR and NADIN telephone numbers.

1. NADIN/ATLANTA: (KATLYTYX) 770 210-7675.

2. NADIN/SALT LAKE CITY: (KSLCYTYX) 801 320-2172.

3. AISR Helpdesk: 866-466-1336.

d. Weather Message Switching Center Replacement (WMSCR) telephone numbers.

1. WMSCR/ATLANTA: 770-210-7574.

2. WMSCR/SALT LAKE CITY: 801-320-2046.

6–1–2. FLIGHT PLANS

Filing a VFR flight plan is recommended. Brief pilots, as appropriate, on the following:

a. Identify the tie-in station for the departure point, and advise the pilot to report departure time directly to that facility.

b. When a departure report is unlikely because of inadequate communications capability, advise the pilot that the flight plan will be activated using the proposed departure time as the actual departure time. Include “ASMD DEP” in remarks. The pilot is responsible for closing, cancelling, or extending the flight plan if the flight is cancelled or delayed.

c. Determine the flight plan area in which the destination is located. Request the pilot close the flight plan with the tie-in facility. Provide the pilot the tie-in facility/sector contact information upon request.

d. Recommend that a separate flight plan be filed for each leg of a VFR flight.

e. Request the pilot inform FSS whenever the filed time en route changes more than 30 minutes.

f. On return flights from remote areas, such as a fishing site, establish a mutually acceptable date/time with the pilot for alerting search and rescue.

g. When a pilot files to an airport served by a part-time FSS and the ETA is during the period the facility is closed, ask the pilot to close with the associated FSS, identified in FAA Order JO 7350.8, Location Identifiers, and the Chart Supplement U.S. ▌

h. Upon request, inform pilots filing IFR flight plans of the appropriate and most effective means of obtaining IFR departure clearances.

i. When a pilot files a DVFR flight plan, advise the pilot to activate with Flight Service. Also advise the pilot that a discrete beacon code will be assigned upon activation.

NOTE–
1. *A discrete beacon code may be assigned when the flight plan is filed, as necessary. If the pilot wants to file a DVFR flight plan that departs outside the facility’s flight plan area, provide the applicable toll-free number for the departure FSS.*

2. *Discrete beacon codes are assigned to facilities in accordance with FAA Order JO 7110.66, National Beacon Code Allocation Plan.*

6–1–3. FLIGHT PLAN DATA

Handle flight plan data as follows:

a. Record flight plan data on a domestic or ICAO flight plan form or electronic equivalent. Locally approved procedures may be used to manually record data prior to entry into the operational system. Flight plan data received from an operations office may be limited to only those items required for ATC or SAR purposes, provided the operations office obtains complete information on the flight.

b. Accept military flight plan proposals, cancellations, and closures from any source, including collect telephone calls.

NOTE–
Part-time operations offices must provide complete information in the event it is needed for SAR purposes.

6–1–4. TYPES OF DATA RECORDED

a. Operational system entries for:

1. Flight plans and related messages.

2. Logging pilot briefings and aircraft contacts.

3. Service A/B messages.

b. Manual strip marking.

6–1–5. METHODS OF RECORDING DATA

a. Except as provided in para 4-2-2b, all entries must be made directly into the operational system.

b. Locally approved procedures may be used to manually record data during heavy traffic periods or system outages. Aircraft contact information should be logged in the operational system as soon as practical.

c. Use control/clearance symbols, abbreviations, location identifiers, and contractions for recording position reports, traffic clearances, and other data. When recording data either electronically or manually, you may use:

1. Plain language to supplement data when it will aid in understanding the recorded information.

2. Locally approved contractions and identifiers for frequently used terms and local fixes not listed in FAA Order JO 7340.2, Contractions, or FAA Order JO 7350.8, Location Identifiers. Use only within your facility, not on data or interphone circuits. All locally approved contractions and identifiers must be placed in facility files for record and reference purposes.

d. When recording data manually, use the standard hand-printed characters shown in FIG 6–1-1 to prevent misinterpretation.

FIG 6–1–1
Hand-Printed Characters Chart

Typed	Hand Printed
A	A
B	B
C	C
D	D
E	E
F	F
G	G
H	H
I	I
J	J
K	K
L	L
M	M
N	N
O	O
P	P
Q	Q
R	R
S	S
T	T
U	U
V	V
W	W
X	X
Y	Y
Z	Z
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	Ø

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–
FAAO 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.

e. Source Identification (Field 00). Nine or ten characters required followed by a space character in the following order:

1. The three-character address of the originating facility.

2. Four characters (digits) to indicate the time (in UTC) the flight plan was composed by the originator.

3. Three characters (digits) representing the number of the message; for example, 021. It is recommended that numbering systems be restarted with 001 at the beginning of each day (0000Z).

NOTE–
There are no spaces between characters in subparas 6–3–4e1, 2, and 3.

f. Message Type (Field 01). The letters "FP" followed by a space character.

g. Aircraft Identification (Field 02). Consists of two-to-seven alphanumeric characters followed by a space character. The first character of the identification must be a letter.

1. Phrases such as FLYNET, Snow Time, etc., which do not identify specific aircraft but are supplemental data defining a special mission or function, must be contained in remarks (Field 11).

2. For foreign aircraft identifications with a numeric as the first character, insert an X as the first character and explain in the remarks section.

h. Aircraft Data (Field 03). Consists of two-to-nine characters followed by a space character. Aircraft data within the field may vary from one-to-three elements consisting of:

1. Number of aircraft (when more than one) and/or the heavy aircraft indicator. For heavy aircraft the indicator is "H/." This element contains a maximum of two characters followed by a slash.

EXAMPLE–
2/F15
3H/B52
10/F18

2. Type of Aircraft. Insert the standard aircraft type designator, in accordance with FAA Order JO 7360.1, Aircraft Type Designators.

3. Equipment Suffix. This element consists of a slash (/) followed by one letter which is one of the approved designators identifying transponder and/or navigation gear.

i. Airspeed (Field 05). Consists of two-to-four characters followed by a space character. This field must indicate the filed true airspeed in knots or Mach number.

EXAMPLE–
350
M075

j. Departure Point or Coordination Fix (Field 06). Consists of two-to-twelve characters followed by a space character. This field contains the departure point or fix at which an aircraft will pick up IFR. It must be a fix, not an airway. For proposed departures, it must match the first element in the route of flight; and for IFR pickups, it must match either the first element in the route of flight or the third element if the ./. or VFR is used as the second element.

k. Proposed Departure Time (Field 07). Consists of five or seven characters followed by a space character. This field contains the letter "P" followed by a four or six digit time group in UTC.

l. Requested Altitude (Field 09). Consists of two-to-seven characters followed by a space character. Altitudes or flight levels, as appropriate, must be expressed in hundreds of feet, but without leading zeros. The letters "OTP" must be entered in this field to indicate a requested altitude of VFR conditions-on-top. If a VFR conditions-on-top altitude is provided, it must be entered as "OTP/XXX where "XXX" is a VFR altitude. Blocked altitudes are indicated by entering the lower altitude of the requested block, the letter "B," and the higher altitude of the block; for example, 80B100, 240B270, with no spaces.

m. End of Line (New Line Key) (Field E). The first occurrence of Field E must always follow Field 09 of the message. Any time a subsequent end of line becomes necessary, if used within Field 10, it must be preceded by the appropriate element separator (not a space). If used within Field 11, Field E may be entered at any point within the remarks sequence.

n. Route of Flight (Field 10). The route of flight consists of departure point or pickup point (PUP), the route of flight, and normally a destination followed by a space character.

1. Field 10 is a fixed sequence field and must begin with a fix; for example, fix, airway, fix, airway etc. The last element may be a fix or one of the route elements VFR, DVFR, or XXX (incomplete route indicator). An element is separated from another element by a period character.

2. When consecutive fix elements or route elements are filed, the fixed sequence format is maintained by inserting two period characters between the filed Field 10 elements; for example, fix..fix or airway..airway.

3. When a pilot files an airway..airway combination, obtain the point of transition and insert it in the transmitted flight plan; for example, SGF.J105..J24.STL.J24. The foregoing does not apply if the first encountered fix happens to be the next filed junction point within the route.

NOTE–
Airway..airway combinations in the route of flight require a defined junction (either five-character alphanumeric, location identification, or pre-defined fix-radial-distance).

4. The slash character (/) is used to file a latitude/longitude fix or in describing an ETE.

5. The maximum number of filed field elements for computer-addressed flight plans is 40. Double period insertions do not count against the 40-element limitation. Transmit flight plans filed exceeding the route element limitation to the ARTCC, not its computer.

6. Fix Descriptions. A fix must be filed in one of the following ways:

(a) Fix Name. Domestic, Canadian, and International identifiers of two-to-five alphanumeric characters.

(b) Fix Radial Distance (FRD). Consists of eight-to-eleven alphanumeric characters in the following sequence: Two-to-five characters identifying a NAVAID, three characters of azimuth expressed in degrees magnetic, and three characters of distance expressed in nautical miles from the NAVAID. Zeros preceding a significant character must be entered before the azimuth and distance components as required to assure the transmission of three characters for each.

(c) Latitude/Longitude. Consists of nine-to-twelve characters entered as follows: The latitude must appear as the first component as four numbers (trailing zeros required) followed by an optional letter "N" or "S." If the optional letter is omitted, north is understood. Latitude must be separated from longitude with a slash (/) element separator. Longitude must appear as the second component as four or five digits (trailing zeros required, leading zero optional) followed by an optional letter "W" or "E." If the optional letter is omitted, west is understood.

(d) Navigation Reference System (NRS) Waypoints. NRS waypoints consist of five alphanumeric characters, which include the ICAO 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"

7. Route Descriptions. A route must be filed in one of the following ways:

(a) Airway. The official airway designator must be filed.

(b) Coded Routes. Coded routes are a shorthand method of describing a route segment or segments which may have an altitude profile described, an adapted airspeed within the route, re-entry or loop routes as an option, or a time delay at a fix within the route as an option. Some of the principal uses of coded routes are as follows:

(1) Instrument Departures (DP). DP, if used, must be filed by the computer code designator as the second element of Field 10 and be followed by the transition or exit fix.

(2) Standard Terminal Arrivals (STARs). STAR, if used, must be filed by the computer code designator as the next to last element of Field 10 and immediately follow the entry or transition fix.

(3) Published Radials. Published radials (for example, within a preferred route) are considered airways. Do not file unpublished radials.

EXAMPLE–
.JFK053..DPK017
.RBV020

(4) Military Routes. Certain military routes (for example, MTR and air refueling tracks/anchors), are considered coded routes. The route designator must be preceded and followed by the entry and exit

Chapter 7. International Operations

Section 1. Messages and Formats

7–1–1. GENERAL

a. Title 14 of the U.S. Code of Federal Regulations (14 CFR) and the International Civil Aviation Organization (ICAO) require flight plans for all civil aircraft operation between the United States and foreign locations. Bureau of Customs and Border Protection requirements, international flight plan information, and ADIZ penetration requirements are listed in other publications; for example, the FAA International Flight Information Manual (IFIM), the Bureau of Customs and Border Protection Guide for Private Flyers, the Aeronautical Information Manual (AIM), Aeronautical Information Publication (AIP), 14 CFR Part 91, and 14 CFR Part 99. Landing Rights Airports (LRA) and Airports of Entry (AOE) are listed in the Chart Supplement U.S.

b. This chapter provides guidance to FSS facilities when transmitting international flight movement messages. It incorporates relevant information from ICAO and 14 CFR documents. All personnel required to handle international messages must be familiar with ICAO documents containing instructions for preparing and transmitting communications through the Aeronautical Fixed Telecommunications Network (AFTN) circuits. These documents should be retained at facilities. FSS personnel must not act as agents for any aircraft operating or dispatching company.

NOTE–
International telecommunications instructions are found in International Standards and Recommended Practices, ICAO Annex 10 – Aeronautical Telecommunications, Volume II. PANS ATM DOC 4444, Procedures for Air Navigation Services, lists various ATS movement messages. Location indicators are contained in ICAO Document 7910, and Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services are contained in ICAO DOC 8585. FAA policies concerning acceptance of messages for international transmission are contained in 14 CFR Part 189.

c. Address the message to the proper FSS gateway facility/sector for handling. FSSs that transmit only occasional international messages or are unable to determine the correct addressing for all air traffic units concerned may refer or transfer the pilot to the proper gateway facility/sector. The FSS gateway facility/sector and their areas of responsibilities are as follows

1. Miami FSS Sector (MIA): Africa, Bermuda, Canada, Caribbean, Central America, Europe, North Atlantic, and South America.

2. Kenai FSS (ENA): Alaska.

3. Honolulu (HNL)/Oakland (OAK) Sectors: Pacific.

4. Seattle Sector (SEA): Pacific Northwest to Alaska

d. To ensure that the FSS gateway facility/sector understands your request, include T (transmit) instructions in the first line of text.

EXAMPLE–
FF KOAKYFYX

DTG PAJNYFYX

OAK T ALL INTL ADDRESSEES

(Text)

e. Use of FAA Form 7233-4 is mandatory for all IFR flights that will depart U.S. domestic airspace and enter international airspace. The filer is responsible for providing the information required in items 3 through 19.

7–1–2. AIR TRAFFIC SERVICE (ATS) MESSAGES

ATS messages, as used in this section, is a generic term meaning and including: flight information, alerting, air traffic advisory, and air traffic control (ATC) services.

7–1–3. CATEGORIES OF MESSAGES

The following ATS messages, with their normal priority indicators, are authorized for transmission by any means; for example, AFTN, NADIN,

interphone, computer-to-computer, or via the aeronautical mobile service, as applicable.

a. Emergency Messages.

1. Distress messages and distress traffic, including alerting (ALR) messages relating to distress (DETRESFA) phase-SS.

2. Urgency messages, including alerting messages relating to an alert (ALERFA) phase or to an uncertainty (INCERFA) phase-SS.

3. Other messages concerning known or suspected emergencies which do not fall under subparas 7−1−3a1 and a2 and radio communications failure (RCF) messages-FF or higher as required.

b. Movement and Control Messages.

1. Flight plan (FPL)-FF.

2. Amendment and coordination messages.

(a) Departure (DEP)-FF.

(b) Delay (DLA)-GG.

(c) Arrival (ARR)-GG.

(d) Boundary estimate (EST)-FF.*

(e) Modification (CHG)-FF.*

(f) Coordination (CDN)-FF.*

(g) Acceptance (ACP)-FF.*

3. Cancellation (CNL)-GG.*

4. Clearances, flow control (SPL, CHG, CDN)-FF or DD.*

5. Transfer of control (TCX)-FF.*

6. Requests (RQS)-FF.*

7. Position reports (AIREP)-FF.*

c. Flight Information Messages.

1. Traffic information-FF.*

2. Meteorological information (MET)-FF or GG.

3. Operation of aeronautical facilities and essential airport information (NOTAM)-GG.

** Normally exchanged between ATC units via voice circuits.*

d. Technical Messages. Four categories of these messages are specified for use on computer-to-computer circuits only. They will not be sent on AFTN or NADIN circuits.

7−1−4. SERVICE MESSAGES

a. NADIN immediately generates a service message to an originator when incorrect code or routing indicators are detected.

EXAMPLE−
FF KZKCZQZX
031840 KSLCYTYX
SVC. ZKC121 QTA RPT
FF KZKCZQZX
031840 KSLCYTYX
SVC. ZKC122 QTA MSR

b. Assign the appropriate priority indicator to international service messages. When service messages refer to messages previously transmitted, assign the same priority prefix. Identify a service message by inserting “SVC” as the first item of the text.

EXAMPLE−
FF TJSJYFYX
DTG KSEAYFYX
SVC. RUMES 231015
(Text)

7−1−5. TRANSMISSION VIA NADIN

International messages are generally introduced on NADIN for relay to AFTN circuits.

a. Operational Systems use the ICAO Flight Plan or Service-B message formats as described in the Operational System operating procedures.

b. Handle international messages on NADIN for relay to AFTN as follows:

1. Start of message. New Line Key.

2. Preamble (priority, space, addressee(s).

(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).

Chapter 8. Search and Rescue (SAR) Procedures

Section 1. General

8–1–1. RESPONSIBILITY FOR SAR ACTION

a. The departure tie-in facility/sector is responsible for SAR action until the destination tie-in facility/sector acknowledges receipt of the flight notification message. SAR responsibility is then transferred to the destination tie-in facility/sector.

NOTE–
Tie-in facilities may include an FSS, Military BASOPS, foreign facilities, etc.

b. The National SAR Plan assigns search and rescue responsibilities as follows:

1. To the military agencies for conducting physical search and rescue operations.

2. To the FAA for:

(a) Providing emergency service to aircraft in distress.

(b) Assuring that SAR procedures will be initiated if an aircraft becomes overdue or unreported. This is accomplished through the ATC system for IFR aircraft and the flight plan program and/or reports of overdue aircraft received at air traffic facilities for VFR aircraft.

(c) Attempting to locate overdue or unreported aircraft by information request (INREQ) and alert notice (ALNOT) communications search.

(d) Cooperating in the physical search by making all possible facilities available for use by the searching agencies.

NOTE–
The National SAR Plan is outlined in the AIM.

c. FSSs serve as the central point for collecting and disseminating information on overdue or missing aircraft which are not on an IFR flight plan.

d. ARTCCs serve as the central points for collecting information, coordinating with SAR, and conducting a communications search by distributing any necessary ALNOTs concerning:

1. Overdue or missing IFR aircraft.

2. Aircraft in an emergency situation occurring in their respective areas

3. Aircraft on a combined VFR/IFR or an air-filed IFR flight plan, and 30 minutes have passed since the pilot requested IFR clearance, and neither communications nor radar contact can be established.

4. Overdue or missing aircraft which have been authorized to operate in accordance with a SVFR clearance.

e. The ARTCC serves as the contact point for collecting information and coordinating with the RCC on all ELT signals.

8–1–2. OVERDUE AIRCRAFT ON FLIGHT PLAN

Consider an aircraft on a VFR or DVFR flight plan overdue:

a. When it fails to arrive 30 minutes after its ETA and communications or location cannot be established.

b. When notified by a commercially available tracking service, begin search and rescue activities most appropriate for the circumstances, i.e., a communications search followed by an ALNOT.

8–1–3. OVERDUE AIRCRAFT NOT ON FLIGHT PLAN

Consider an aircraft not on a flight plan as overdue:

a. At the actual time a reliable source reports it to be at least 1 hour late at destination. Based on this overdue time, initiate a communications search and proceed directly to the ALNOT phase. When such a report is received, verify (if possible) that the aircraft actually departed and that the request is for a missing aircraft rather than a person. Refer missing person reports to the appropriate authorities.

b. If you have reason to believe that an aircraft is overdue prior to 1 hour after its ETA, take the appropriate action immediately.

REFERENCE–
FAAO JO 7110.10, Para 8-2-1, Communications Search
FAAO JO 7110.10, Para 8-4-1, ALNOT

Section 5. Other SAR Actions

8–5–1. CANADIAN TRANSBORDER

a. Assume SAR responsibility on transborder aircraft upon acknowledgment of the inbound flight notification message.

b. When SAR action is initiated, the destination and departure facilities are responsible for all communications search actions within their respective countries and for alerting their respective RCC.

c. Canadian communications search procedures and action times are similar to U.S. procedures. They will address all SAR messages to the U.S. departure FSS, which is then responsible for initiating SAR action for the U.S. portion of the route of flight.

d. For inbounds from Canada, apply standard U.S. SAR procedures contained in this chapter for the U.S. portion of the route. Include the Canadian departure facility as an addressee on all SAR messages since that facility is responsible for initiating SAR action for the Canadian portion of the route of flight.

e. Upon receipt of a Canadian QALQ, the departure FSS must take the following actions:

1. Check history files for any information about the aircraft.

2. If unable to obtain additional information, or within 15 minutes after receipt of the QALQ, transmit a message to the destination facility containing all flight plan information not previously sent.

f. Upon receipt of a Canadian INREQ, the departure FSS must transmit an INREQ for the U.S. portion of the route of flight and reply to Canada within 1 hour in accordance with standard INREQ procedures.

g. Upon receipt of a Canadian ALNOT, the departure FSS must transmit an ALNOT for the U.S. portion of the route and reply to Canada within 1 hour in accordance with standard ALNOT procedures.

NOTE–
Some U.S. airspace is controlled by Canadian ATC facilities, which may also be addressed when appropriate.

Section 2. Pilot Weather Report (UA/UUA)

9–2–1. GENERAL

PIREPs are filed at unscheduled times with stations having sending capability to WMSCR for dissemination on the Service A domestic aviation weather system. These reports must be entered into the operational system as individual reports, not appended to a surface observation.

9–2–2. PREPARATION FOR TRANSMISSION

Record PIREP data directly into the operational system, on FAA Form 7110-2, or on other material deemed appropriate; for example, 5'' x 8'' plain paper.

9–2–3. RESPONSIBILITY

FSS specialists must actively solicit PIREPs in conjunction with preflight and inflight communications with pilots and assure timely dissemination of the PIREP information. Each facility should make special efforts to obtain PIREPs on departure and arrival weather conditions at airports within their flight plan area.

9–2–4. PIREP DISPLAY

Maintain a PIREP graphical display to conform to the particular requirements of your facility. If it is posted for internal use only, symbology may be used at the facility's discretion. If it is displayed as a pilot self-briefing aid, the use of contractions, such as overcast (OVC), must be applicable.

9–2–5. SOLICITING PIREPs

a. Solicit PIREPs for the affected area(s) when one or more of the following weather conditions exist, are reported, or forecast to occur:

1. Ceilings at or below 5,000 feet.

2. Visibility reported on the surface or aloft is 5 miles or less.

3. Thunderstorms and related phenomenon.

4. Turbulence of moderate degree or greater.

5. Icing of light degree or greater.

6. Wind shear.

7. Volcanic eruption, ash clouds, and/or detection of sulfur gases: hydrogen sulfide (H_2S) or sulfur dioxide (SO_2) in the cabin..

(a) If only H_2S or SO_2 is reported, ask the pilot if volcanic ash clouds are in the vicinity.

(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. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck match.

NOTE–
Pilots may forward PIREPs regarding volcanic activity using the format described in the Volcanic Activity Reporting Form (VAR) as depicted in the AIM

b. Also, solicit PIREPs regardless of weather conditions when:

1. A NWS or ATC facility indicates a need because of a specific weather or flight assistance situation.

2. Necessary to determine flying conditions pertinent to natural hazards (mountain passes, ridges, peaks) between the weather reporting stations.

3. The station is designated as responsible for PIREPs in an offshore coastal area.

c. In–Flight specialists must solicit sufficient PIREPs to remain aware of flight conditions.

d. To solicit PIREPs within a specific area, broadcast a request on NAVAIDs, transcribed broadcast facilities, or a selected communications frequency.

PHRASEOLOGY–
PILOT WEATHER REPORTS ARE REQUESTED (location/area). CONTACT (name) RADIO ON (frequency) TO REPORT THESE CONDITIONS.

9–2–6. DATA TO BE INCLUDED IN PIREPs

Include the following reports of flight conditions, as appropriate:

a. Height and coverage of cloud bases, tops, and layers.

b. Flight visibility.

c. Restrictions to visibility and weather occurring at altitude.

d. Air temperature and changes to temperature with altitude or range.

e. Direction and speed of wind aloft.

f. Duration and intensity of turbulence.

REFERENCE–
FAAO JO 7110.10, Para 9-2-7.

g. Extent, type, and intensity of icing.

REFERENCE–
FAAO JO 7110.10, Para 9-2-8.

h. Weather conditions and cloud cover through mountain passes and over ridges and peaks.

i. Location, extent, and movement of thunderstorms and/or tornadic activity.

j. Excessive winds aloft, LLWS, and other phenomena bearing on safety and efficiency of flight.

9–2–7. REPORTING TURBULENCE IN PIREPs

a. Turbulence reports must include location, altitude, or range of altitudes, and aircraft type, and should include whether in clouds or clear air. The degree of turbulence, intensity, and duration (occasional, intermittent, and continuous) is determined by the pilot.

1. Light. Loose objects in aircraft remain at rest.

2. Moderate. Unsecured objects are dislodged. Occupants feel definite strains against seat belts and shoulder straps.

3. Severe. Occupants thrown violently against seat belts. Momentary loss of aircraft control. Unsecured objects tossed about.

4. Extreme. Aircraft is tossed violently about, impossible to control. May cause structural damage.

b. Report Clear Air Turbulence (CAT) or CHOP if used by the pilot to describe the type of turbulence.

9–2–8. REPORTING ICING CONDITIONS IN PIREPs

a. Icing reports must include location, altitude or range of altitudes, aircraft type, air temperature, intensity, and type of icing.

b. Icing types.

1. Rime. Rough, milky, opaque ice formed by the instantaneous freezing of small super-cooled water droplets.

2. Clear. A glossy, clear or translucent ice formed by the relatively slow freezing of large super-cooled water droplets.

3. Mixed. A combination of rime and clear.

c. Icing intensity.

1. Trace. Ice becomes perceptible. Rate of accumulation slightly greater than sublimation. Deicing/anti-icing equipment is not utilized unless encountered for an extended period of time (over 1 hour).

2. 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 deicing/anti-icing is used.

3. Moderate. The rate of accumulation is such that even short encounters become potentially hazardous, and use of deicing/anti-icing equipment or diversion is necessary.

4. Severe. The rate of accumulation is such that deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.

9–2–9. MEANS USED TO SOLICIT PIREPs

Inform pilots of a need for PIREPs. The following methods may be used to collect PIREPs:

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 HIWAS, 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.

Chapter 11. Interphone Communications

Section 1. General

11–1–1. PURPOSE

a. The procedures and phraseologies contained in this chapter apply to inter-facility and intra-facility telephone communications conducted from any position of operation.

b. Interphone use is restricted to authorized official business only.

c. Monitor interphones continuously. At facilities without ringers, keep speaker volume at a level sufficient to hear all transmissions. In the event of interphone failure, use authorized back-up procedures; for example, commercial telephone, aircraft radio relay.

d. Use the words or phrases in interphone communications as contained in the Pilot/Controller Glossary.

11–1–2. INTERPHONE TRANSMISSION PRIORITIES

Give priority to interphone transmissions as follows:

a. *First priority.* Emergency messages including essential information on aircraft accidents or suspected accidents. After actual emergency has passed, give a lower priority to messages relating to an accident.

b. *Second priority*. Clearance and control instructions.

c. *Third priority.* Movement and control messages using the following order of precedence when possible:

1. Progress reports.

2. Departure or arrival reports.

3. Flight plans.

d. *Fourth priority.* Movement messages on VFR aircraft.

e. *Fifth priority.* NOTAM coordination.

f. *Sixth priority.* Administrative messages; for example, outages.

11–1–3. PRIORITY INTERRUPTION

Use the words “emergency” or “control” for interrupting lower priority messages when you have an emergency or control message to transmit.

11–1–4. MESSAGE INITIATION

Initiate interphone messages as follows:

a. Assure line is not in use.

PHRASEOLOGY–
LINE CLEAR?

b. If line is not in use, establish contact with the desired facility and/or position.

EXAMPLE–
EXAMPLE-
Manual signaling (Ring Line):
FSS-(Calls Center via DA/IA Line).
Center- “Anchorage Center” or “Sector D-5.”
FSS- “Kenai radio. Kenai progress Apache One Two Three.”
Center- “Go ahead”
FSS- “Over Kenai...etc.” “L-H”
Center- “C-M”

Voice signaling (Shout Line):
FSS- “Fort Worth Center, Fort Worth Radio, Clearance Request.“
Center “Fort Worth Center, Go Ahead.”
FSS- “Request Clearance, Army .....etc.”

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

EXAMPLE–
“Radio, inbound estimate.”

d. FSS.

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

EXAMPLE–
“Fairbanks Radio.”
“*Leesburg Radio*”

11–1–5. MESSAGE TERMINATION

Terminate interphone messages with your operating initials.

EXAMPLE–
"V-N"

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–Schannel 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 FAAO 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–
FAAO JO 7210.3, Para 2-1-13, 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."

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		Region	ID
Alaska	PANCYGYX		Northwest Mountain	XST
Central	XKC		Southern	XTL
Eastern	XNY		Southwest	XFE
Great Lakes	XGC		Western-Pacific	XLA
New England	XBW			

TBL 13–1–3
ARTCC Group Code

ARTCC	ID		ARTCC	ID
Albuquerque	XXI		Kansas City	XXS
Atlanta	XXN		Los Angeles	XXF
Boston	XXU		Memphis	XXM
Chicago	XXC		Miami	XXL
Cleveland	XXD		Minneapolis	XXE
Denver	XXO		New York	XXR
Ft. Worth	XXJ		Oakland	XXG
Houston	XXH		Salt Lake City	XXP
Indianapolis	XXA		Seattle	XXT
Jacksonville	XXK		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 13–1–2and 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 KRIVYYYX. 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.

2. NOT IN SYSTEM. This response means WMSCR does not receive and store the requested data.

3. INVALID FORMAT. This response means the computer cannot process the request because of an input error.

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.

13–1–6. Q SIGNALS

TBL 13–1–4
Q Signals

SIGNIFICATION		
Signal Question of Interrogatory Form (Signal followed by letter Q)		**Answer** 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 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).

Index

[References are to page numbers]

A

B

C

[References are to page numbers]

[References are to page numbers]

I

L

M

N

O

[References are to page numbers]

P

Q

R

S

T

[References are to page numbers]

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:
ATC SURVEILLANCE SOURCE
CHART SUPPLEMENT U.S.
COLD TEMPERATURE COMPENSATION
GROUND BASED AUGMENTATION SYSTEM (GBAS)
GROUND BASED AUGMENTATION SYSTEM (GBAS) LANDING SYSTEM (GLS)
TIME BASED FLOW MANAGEMENT (TBFM)
WIDE AREA MULTILATERATION (WAM)

e. Terms Deleted:
AIRPORT/FACILITY DIRECTORY (A/FD)
EN ROUTE FLIGHT ADVISORY SERVICE
FLIGHT WATCH
OCEANIC DISPLAY AND PLANNING SYSTEM (ODAPS)
REMOTE AIRPORT ADVISORY (RAA)
SUPER HIGH FREQUENCY
TRAFFIC MANAGEMENT ADVISOR (TMA)

f. Terms Modified:
ADVISORY SERVICE
AVIATION WEATHER SERVICE
BRAKING ACTION
DISTANCE MEASURING EQUIPMENT
DME FIX
FLIGHT SERVICE STATION (FSS)
ICING
LOCAL AIRPORT ADVISORY (LAA)
RADAR CONTACT
RADAR CONTACT LOST

SCHEDULED TIME OF ARRIVAL (STA)
UNFROZEN

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

A

AAI–
(See ARRIVAL AIRCRAFT INTERVAL.)

AAR–
(See AIRPORT ARRIVAL RATE.)

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

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

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

ACC [ICAO]–
(See ICAO term AREA CONTROL CENTER.)

ACCELERATE-STOP DISTANCE AVAILABLE– The runway plus stopway length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff.

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

ACDO–
(See AIR CARRIER DISTRICT OFFICE.)

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

ACL–
(See AIRCRAFT LIST.)

ACLS–
(See AUTOMATIC CARRIER LANDING SYSTEM.)

ACLT–
(See ACTUAL CALCULATED LANDING TIME.)

ACROBATIC FLIGHT– An intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight.
(See ICAO term ACROBATIC FLIGHT.)
(Refer to 14 CFR Part 91.)

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

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

ACTUAL CALCULATED LANDING TIME– ACLT is a flight's frozen calculated landing time. An actual time determined at freeze calculated landing time (FCLT) or meter list display interval (MLDI) for the 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 vertex time of arrival (VTA) of the aircraft or the tentative calculated landing time (TCLT)/ACLT of the previous aircraft plus the arrival aircraft interval (AAI), whichever is later. This time will not be updated in response to the aircraft's progress.

ACTUAL NAVIGATION PERFORMANCE (ANP)–
(See REQUIRED NAVIGATION PERFORMANCE.)

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

a. Traffic advisories.

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

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

d. Advisories that traffic is no longer a factor.

e. Weather and chaff information.

f. Weather assistance.

g. Bird activity information.

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

(See TRAFFIC ADVISORIES.)
(Refer to AIM.)

ADF–
(See AUTOMATIC DIRECTION FINDER.)

ADIZ–
(See AIR DEFENSE IDENTIFICATION ZONE.)

ADLY–
(See ARRIVAL DELAY.)

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

ADR–
(See AIRPORT DEPARTURE RATE.)

ADS [ICAO]–
(See ICAO term AUTOMATIC DEPENDENT SURVEILLANCE.)

ADS–B–
(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST.)

ADS–C–
(See AUTOMATIC DEPENDENT SURVEILLANCE–CONTRACT.)

ADVISE INTENTIONS– Tell me what you plan to do.

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

(See ADVISORY SERVICE.)

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

(See LOCAL AIRPORT ADVISORY.)
(See UNICOM.)
(Refer to ADVISORY CIRCULAR NO. 90-42.)
(Refer to AIM.)

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

(See ADDITIONAL SERVICES.)
(See LOCAL AIRPORT ADVISORY.)
(See RADAR ADVISORY.)
(See SAFETY ALERT.)
(See TRAFFIC ADVISORIES.)
(Refer to AIM.)

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

(Refer to VFR/IFR Wall Planning Charts.)

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

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

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

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

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

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

AERONAUTICAL BEACON– A visual NAVAID displaying flashes of white and/or colored light to indicate the location of an airport, a heliport, a landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction.

(See AIRPORT ROTATING BEACON.)
(Refer to AIM.)

AERONAUTICAL CHART– A map used in air navigation containing all or part of the following: topographic features, hazards and obstructions,

navigation aids, navigation routes, designated airspace, and airports. Commonly used aeronautical charts are:

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

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)– The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

a. Domestic Air Defense Identification Zone. An ADIZ within the United States along an international boundary of the United States.

b. Coastal Air Defense Identification Zone. An ADIZ over the coastal waters of the United States.

c. Distant Early Warning Identification Zone (DEWIZ). An ADIZ over the coastal waters of the State of Alaska.

d. Land–Based Air Defense Identification Zone. An ADIZ over U.S. metropolitan areas, which is activated and deactivated as needed, with dimensions, activation dates and other relevant information disseminated via NOTAM.

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– 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). Responsible for approving IFR flights at designated high density traffic airports (John F. Kennedy, LaGuardia, and Ronald Reagan Washington National) during specified hours.

(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.

AIRMEN'S METEOROLOGICAL INFORMATION–
(See AIRMET.)

AIRMET– In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or Convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 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. MALSR– Medium Intensity Approach Light System with Runway Alignment Indicator Lights.

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

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

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

edge when installed on a runway equipped with a VASI.

(Refer to FAAO 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 a X–band Surface Movement Radar and multilateration. Data from these two sources are fused and presented on a digital display.

c. ASDE–3X– an ASDE–X system that uses the ASDE–3 Surface Movement Radar.

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– 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 distance measured from a point-in-space by systems using

area navigation reference capabilities that are 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– 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 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 an ILS 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.DME FIX
(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.

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.)

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– 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 FAAO 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, programmable 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 IIIE; and ARTS IIIE 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), Automated Weather Sensor System (AWSS) 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 GPS–derived position and other information such as velocity over the data link, which is received by a ground–based transmitter/receiver (transceiver) for processing and display at an air traffic control facility.
(See GLOBAL POSITIONING SYSTEM.)
(See GROUND–BASED TRANSCEIVER.)

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) is a datalink translation function of the ADS–B ground system required to accommodate the two separate operating frequencies (978 MHz and 1090 ES). 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, breaking action, airport NOTAMs, and other applicable information. The information is continuously broadcast over a discrete VHF radio frequency (usually the ASOS/AWSS/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.)

B

BACK-TAXI– A term used by air traffic controllers to taxi an aircraft on the runway opposite to the traffic flow. The aircraft may be instructed to back-taxi to the beginning of the runway or at some point before reaching the runway end for the purpose of departure or to exit the runway.

BASE LEG–
(See TRAFFIC PATTERN.)

BEACON–
(See AERONAUTICAL BEACON.)
(See AIRPORT ROTATING BEACON.)
(See AIRWAY BEACON.)
(See MARKER BEACON.)
(See NONDIRECTIONAL BEACON.)
(See RADAR.)

BEARING– The horizontal direction to or from any point, usually measured clockwise from true north, magnetic north, or some other reference point through 360 degrees.
(See NONDIRECTIONAL BEACON.)

BELOW MINIMUMS– Weather conditions below the minimums prescribed by regulation for the particular action involved; e.g., landing minimums, takeoff minimums.

BLAST FENCE– A barrier that is used to divert or dissipate jet or propeller blast.

BLAST PAD– A surface adjacent to the ends of a runway provided to reduce the erosive effect of jet blast and propeller wash.

BLIND SPEED– The rate of departure or closing of a target relative to the radar antenna at which cancellation of the primary radar target by moving target indicator (MTI) circuits in the radar equipment causes a reduction or complete loss of signal.
(See ICAO term BLIND VELOCITY.)

BLIND SPOT– An area from which radio transmissions and/or radar echoes cannot be received. The term is also used to describe portions of the airport not visible from the control tower.

BLIND TRANSMISSION–
(See TRANSMITTING IN THE BLIND.)

BLIND VELOCITY [ICAO]– The radial velocity of a moving target such that the target is not seen on primary radars fitted with certain forms of fixed echo suppression.

BLIND ZONE–
(See BLIND SPOT.)

BLOCKED– Phraseology used to indicate that a radio transmission has been distorted or interrupted due to multiple simultaneous radio transmissions.

BOTTOM ALTITUDE– In reference to published altitude restrictions on a STAR or STAR runway transition, the lowest altitude authorized.

BOUNDARY LIGHTS–
(See AIRPORT LIGHTING.)

BRAKING ACTION (GOOD, MEDIUM, POOR, OR NIL)– A report of conditions on the airport movement area providing a pilot with a degree/quality of braking that he/she might expect. Braking action is reported in terms of good, good to medium, medium, medium to poor, or nil.
(See RUNWAY CONDITION READING.)

BRAKING ACTION ADVISORIES– When tower controllers have received runway braking action reports which include the terms “medium,” “poor,” or “nil,” or whenever weather conditions are conducive to deteriorating or rapidly changing runway braking conditions, the tower will include on the ATIS broadcast the statement, “Braking action advisories are in effect” on the ATIS broadcast. During the time braking action advisories are in effect, ATC will issue the latest braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating braking conditions and should request current runway condition information if not volunteered by controllers. Pilots should also be prepared to provide a descriptive runway condition report to controllers after landing.

BREAKOUT– A technique to direct aircraft out of the approach stream. In the context of simultaneous (independent) parallel operations, a breakout is used to direct threatened aircraft away from a deviating aircraft.

BROADCAST– Transmission of information for which an acknowledgement is not expected.
(See ICAO term BROADCAST.)

BROADCAST [ICAO]– A transmission of information relating to air navigation that is not addressed to a specific station or stations.

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)– A FAA radar display certified for use in the NAS.

CFR–
(See CALL FOR RELEASE.)

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.)

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– That airspace not designated as Class A, B, C, D or E.

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.

(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) that are 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.)

COMPOSITE ROUTE SYSTEM– An organized oceanic route structure, incorporating reduced lateral spacing between routes, in which composite separation is authorized.

COMPOSITE SEPARATION– A method of separating aircraft in a composite route system where, by management of route and altitude assignments, a combination of half the lateral minimum specified for the area concerned and half the vertical minimum is applied.

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."

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 conflictions 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.

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 airspaces 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 $^{4}/_{10}$ (40%) or more, and hail $^{3}/_{4}$ inch or greater.

(See AIRMET.)
(See AWW.)
(See CWA.)
(See SIGMET.)
(Refer to AIM.)

CONVECTIVE SIGNIFICANT METEOROLOGICAL INFORMATION–

(See CONVECTIVE SIGMET.)

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.)

D

D-ATIS–

(See DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE.)

DA [ICAO]–

(See ICAO Term DECISION ALTITUDE/DECISION HEIGHT.)

DAIR–

(See DIRECT ALTITUDE AND IDENTITY READOUT.)

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

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

DAS–

(See DELAY ASSIGNMENT.)

DATA BLOCK–

(See ALPHANUMERIC DISPLAY.)

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

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

1. Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.
2. Category II and III minima are expressed as a DH and not a DA. Minima is assessed by reference to a radio altimeter and not a barometric altimeter, which makes the minima a DH.
3. The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

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

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

(See ICAO term DECISION ALTITUDE/DECISION HEIGHT.)

DECODER– The device used to decipher signals received from ATCRBS transponders to effect their display as select codes.

(See CODES.)
(See RADAR.)

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

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

(See AIR DEFENSE IDENTIFICATION ZONE.)
(Refer to 14 CFR Part 91.)
(Refer to 14 CFR Part 99.)

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

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

(See EXPECT FURTHER CLEARANCE (TIME).)

DELAY TIME– The amount of time that the arrival must lose to cross the meter fix at the assigned meter fix time. This is the difference between ACLT and VTA.

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

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

(See APPROACH CONTROL FACILITY.)
(Refer to AIM.)

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

DEPARTURE TIME– The time an aircraft becomes airborne.

DESCEND VIA– An abbreviated ATC clearance that requires compliance with a published procedure lateral path and associated speed restrictions and provides a pilot-discretion descent to comply with published altitude restrictions.

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

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

DESIRED COURSE–

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

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

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

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

DEVIATIONS–

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

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

DH–

(See DECISION HEIGHT.)

DH [ICAO]–

(See ICAO Term DECISION ALTITUDE/ DECISION HEIGHT.)

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

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

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

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

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

DIRECTLY BEHIND– An aircraft is considered to be operating directly behind when it is following the

actual flight path of the lead aircraft over the surface of the earth except when applying wake turbulence separation criteria.

DISCRETE BEACON CODE–
(See DISCRETE CODE.)

DISCRETE CODE– As used in the Air Traffic Control Radar Beacon System (ATCRBS), any one of the 4096 selectable Mode 3/A aircraft transponder codes except those ending in zero zero; e.g., discrete codes: 0010, 1201, 2317, 7777; nondiscrete codes: 0100, 1200, 7700. Nondiscrete codes are normally reserved for radar facilities that are not equipped with discrete decoding capability and for other purposes such as emergencies (7700), VFR aircraft (1200), etc.
(See RADAR.)
(Refer to AIM.)

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

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

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

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

DIVE BRAKES–
(See SPEED BRAKES.)

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

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

DME–
(See DISTANCE MEASURING EQUIPMENT.)

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

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

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

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

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

DOWNWIND LEG–
(See TRAFFIC PATTERN.)

DP–
(See INSTRUMENT DEPARTURE PROCEDURE.)

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

DROP ZONE– Any pre-determined area upon which parachutists or objects land after making an intentional parachute jump or drop.
(Refer to 14 CFR §105.3, Definitions)

DSP–
(See DEPARTURE SEQUENCING PROGRAM.)

DT–
(See DELAY TIME.)

DTAS–
(See DIGITAL TERMINAL AUTOMATION SYSTEM.)

DUE REGARD– A phase of flight wherein an aircraft commander of a State-operated aircraft assumes responsibility to separate his/her aircraft from all other aircraft.
(See also FAAO JO 7110.65, Para 1–2–1, WORD MEANINGS.)

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

DVA–
(See DIVERSE VECTOR AREA.)

DVFR–
(See DEFENSE VISUAL FLIGHT RULES.)

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

DVRSN–
(See DIVERSION.)

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

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

E

EAS–
(See EN ROUTE AUTOMATION SYSTEM.)

EDCT–
(See EXPECT DEPARTURE CLEARANCE TIME.)

EDST–
(See EN ROUTE DECISION SUPPORT TOOL)

EFC–
(See EXPECT FURTHER CLEARANCE (TIME).)

ELT–
(See EMERGENCY LOCATOR TRANSMITTER.)

EMERGENCY– A distress or an urgency condition.

EMERGENCY LOCATOR TRANSMITTER– A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243.0 MHz. It aids in locating downed aircraft by radiating a downward sweeping audio tone, 2-4 times per second. It is designed to function without human action after an accident.
(Refer to 14 CFR Part 91.)
(Refer to AIM.)

E-MSAW–
(See EN ROUTE MINIMUM SAFE ALTITUDE WARNING.)

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

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

EN ROUTE CHARTS–
(See AERONAUTICAL CHART.)

EN ROUTE DECISION SUPPORT TOOL– An automated tool provided at each Radar Associate position in selected En Route facilities. This tool utilizes flight and radar data to determine present and future trajectories for all active and proposal aircraft and provides enhanced automated flight data management.

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

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

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

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

EN ROUTE SPACING PROGRAM (ESP)– A program designed to assist the exit sector in achieving the required in-trail spacing.

EN ROUTE TRANSITION–

a. Conventional STARs/SIDs. The portion of a SID/STAR that connects to one or more en route airway/jet route.

b. RNAV STARs/SIDs. The portion of a STAR preceding the common route or point, or for a SID the portion following, that is coded for a specific en route fix, airway or jet route.

ESP–
(See EN ROUTE SPACING PROGRAM.)

ESTABLISHED–To be stable or fixed on a route, route segment, altitude, heading, etc.

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

(See ICAO Term TOTAL ESTIMATED ELAPSED TIME.)

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

ESTIMATED POSITION ERROR (EPE)–

(See Required Navigation Performance)

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

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

ETA–

(See ESTIMATED TIME OF ARRIVAL.)

ETE–

(See ESTIMATED TIME EN ROUTE.)

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

(Refer to AIM.)

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

(Refer to AIM.)

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

(See GROUND DELAY PROGRAM.)

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

EXPECT FURTHER CLEARANCE VIA (AIRWAYS, ROUTES OR FIXES)– Used to inform a pilot of the routing he/she can expect if any part of the route beyond a short range clearance limit differs from that filed.

EXPEDITE– Used by ATC when prompt compliance is required to avoid the development of an imminent situation. Expedite climb/descent normally indicates to a pilot that the approximate best rate of climb/descent should be used without requiring an exceptional change in aircraft handling characteristics.

power or control. The standard overhead approach starts at a relatively high altitude over a runway ("high key") followed by a continuous 180 degree turn to a high, wide position ("low key") followed by a continuous 180 degree turn final. The standard straight-in pattern starts at a point that results in a straight-in approach with a high rate of descent to the runway. Flameout approaches terminate in the type approach requested by the pilot (normally fullstop).

FLIGHT CHECK– A call-sign prefix used by FAA aircraft engaged in flight inspection/certification of navigational aids and flight procedures. The word "recorded" may be added as a suffix; e.g., "Flight Check 320 recorded" to indicate that an automated flight inspection is in progress in terminal areas.

(See FLIGHT INSPECTION.)

(Refer to AIM.)

FLIGHT FOLLOWING–

(See TRAFFIC ADVISORIES.)

FLIGHT INFORMATION REGION– An airspace of defined dimensions within which Flight Information Service and Alerting Service are provided.

a. Flight Information Service. A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

b. Alerting Service. A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid and to assist such organizations as required.

FLIGHT INFORMATION SERVICE– A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

FLIGHT INFORMATION SERVICE–BROADCAST (FIS–B)– A ground broadcast service provided through the ADS–B Broadcast Services network over the UAT data link that operates on 978 MHz. The FIS–B system provides pilots and flight crews of properly equipped aircraft with a cockpit display of certain aviation weather and aeronautical information.

FLIGHT INSPECTION– Inflight investigation and evaluation of a navigational aid to determine whether it meets established tolerances.

(See FLIGHT CHECK.)

(See NAVIGATIONAL AID.)

FLIGHT LEVEL– A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, flight level (FL) 250 represents a barometric altimeter indication of 25,000 feet; FL 255, an indication of 25,500 feet.

(See ICAO term FLIGHT LEVEL.)

FLIGHT LEVEL [ICAO]– A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hPa (1013.2 mb), and is separated from other such surfaces by specific pressure intervals.

Note 1: A pressure type altimeter calibrated in accordance with the standard atmosphere:

a. When set to a QNH altimeter setting, will indicate altitude;

b. When set to a QFE altimeter setting, will indicate height above the QFE reference datum; and

c. When set to a pressure of 1013.2 hPa (1013.2 mb), may be used to indicate flight levels.

Note 2: The terms 'height' and 'altitude,' used in Note 1 above, indicate altimetric rather than geometric heights and altitudes.

FLIGHT LINE– A term used to describe the precise movement of a civil photogrammetric aircraft along a predetermined course(s) at a predetermined altitude during the actual photographic run.

FLIGHT MANAGEMENT SYSTEMS– A computer system that uses a large data base to allow routes to be preprogrammed and fed into the system by means of a data loader. The system is constantly updated with respect to position accuracy by reference to conventional navigation aids. The sophisticated program and its associated data base ensures that the most appropriate aids are automatically selected during the information update cycle.

FLIGHT MANAGEMENT SYSTEM PROCEDURE– An arrival, departure, or approach procedure developed for use by aircraft with a slant (/) E or slant (/) F equipment suffix.

FLIGHT PATH– A line, course, or track along which an aircraft is flying or intended to be flown.

(See COURSE.)

(See TRACK.)

FLIGHT PLAN– Specified information relating to the intended flight of an aircraft that is filed orally or in writing with an FSS or an ATC facility.

(See FAST FILE.)

(See FILED.)

(Refer to AIM.)

FLIGHT PLAN AREA (FPA)– The geographical area assigned to a flight service station (FSS) for the purpose of establishing primary responsibility for services that may include search and rescue for VFR aircraft, issuance of NOTAMs, pilot briefings, inflight services, broadcast services, emergency services, flight data processing, international operations, and aviation weather services. Large consolidated FSS facilities may combine FPAs into larger areas of responsibility (AOR).

(See FLIGHT SERVICE STATION.)

(See TIE-IN FACILITY.)

FLIGHT RECORDER– A general term applied to any instrument or device that records information about the performance of an aircraft in flight or about conditions encountered in flight. Flight recorders may make records of airspeed, outside air temperature, vertical acceleration, engine RPM, manifold pressure, and other pertinent variables for a given flight.

(See ICAO term FLIGHT RECORDER.)

FLIGHT RECORDER [ICAO]– Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

Note: See Annex 6 Part I, for specifications relating to flight recorders.

FLIGHT SERVICE STATION (FSS)– An air traffic facility which provides pilot briefings, flight plan processing, en route flight advisories, search and rescue services, and assistance to lost aircraft and aircraft in emergency situations. FSS also relay ATC clearances, process Notices to Airmen, broadcast aviation weather and aeronautical information, and advise Customs and Immigration of transborder flights. In Alaska, FSS provide Airport Advisory Services.

(See FLIGHT PLAN AREA.)

(See TIE-IN FACILITY.)

FLIGHT STANDARDS DISTRICT OFFICE– An FAA field office serving an assigned geographical area and staffed with Flight Standards personnel who serve the aviation industry and the general public on matters relating to the certification and operation of air carrier and general aviation aircraft. Activities include general surveillance of operational safety, certification of airmen and aircraft, accident prevention, investigation, enforcement, etc.

FLIGHT TEST– A flight for the purpose of:

a. Investigating the operation/flight characteristics of an aircraft or aircraft component.

b. Evaluating an applicant for a pilot certificate or rating.

FLIGHT VISIBILITY–

(See VISIBILITY.)

FLIP–

(See DOD FLIP.)

FLY HEADING (DEGREES)– Informs the pilot of the heading he/she should fly. The pilot may have to turn to, or continue on, a specific compass direction in order to comply with the instructions. The pilot is expected to turn in the shorter direction to the heading unless otherwise instructed by ATC.

FLY-BY WAYPOINT– A fly-by waypoint requires the use of turn anticipation to avoid overshoot of the next flight segment.

FLY-OVER WAYPOINT– A fly-over waypoint precludes any turn until the waypoint is overflown and is followed by an intercept maneuver of the next flight segment.

FLY VISUAL TO AIRPORT–

(See PUBLISHED INSTRUMENT APPROACH PROCEDURE VISUAL SEGMENT.)

FMA–

(See FINAL MONITOR AID.)

FMS–

(See FLIGHT MANAGEMENT SYSTEM.)

FMSP–

(See FLIGHT MANAGEMENT SYSTEM PROCEDURE.)

FORMATION FLIGHT– More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation 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.

FRICTION 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/CARTS]- 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.

GBT–
(See GROUND–BASED TRANSCEIVER.)

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) [ICAO]– GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellation in conjunction with a network of ground stations.

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–BASED TRANSCEIVER (GBT)– The ground–based transmitter/receiver (transceiver) receives automatic dependent surveillance–broadcast messages, which are forwarded to an air traffic control facility for processing and display with other radar targets on the plan position indicator (radar display).

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

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.)

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.)

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 or 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.

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.)

IF–
(See INTERMEDIATE FIX.)

IFIM–
(See INTERNATIONAL FLIGHT INFORMATION MANUAL.)

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.

ILS PRM APPROACH– An instrument landing system (ILS) approach conducted to parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3,000 feet where independent closely spaced approaches are permitted. Also used in conjunction with an LDA PRM, RNAV PRM or GLS PRM approach to conduct Simultaneous Offset Instrument Approach (SOIA) operations. No Transgression Zone (NTZ) monitoring is required to conduct these approaches. ATC utilizes an enhanced display with alerting and, with certain runway spacing, a high update rate PRM surveillance sensor. Use of a secondary monitor frequency, pilot PRM training, and publication of an Attention All Users Page are also required for all PRM approaches.
(Refer to AIM)

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.

INCREASE SPEED TO (SPEED)–
(See SPEED ADJUSTMENT.)

INERTIAL NAVIGATION SYSTEM– 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– A request originated by an FSS for information concerning an overdue VFR aircraft.

INITIAL APPROACH FIX– 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 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 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 [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 PROCEDURES 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– 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– 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– 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.)
(Refer to IFIM.)

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.

a. Regions include:

1. African-Indian Ocean Region

2. Caribbean Region

3. European Region

4. Middle East/Asia Region

5. North American Region

6. North Atlantic Region

7. Pacific Region

8. South American Region

INTERNATIONAL FLIGHT INFORMATION MANUAL– A publication designed primarily as a pilot's preflight planning guide for flights into foreign airspace and for flights returning to the U.S. from foreign locations.

INTERROGATOR– The ground-based surveillance radar beacon transmitter-receiver, which normally scans in synchronism with a primary radar, transmitting discrete radio signals which repetitious-

ly 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.)

ISR– Indicates the confidence level of the track requires 5NM separation. 3NM separation, 1 1/2NM separation, and target resolution cannot be used.

L

LAA–

(See LOCAL AIRPORT ADVISORY.)

LAAS–

(See LOW ALTITUDE ALERT SYSTEM.)

LAHSO– An acronym for "Land and Hold Short Operation." These operations include landing and holding short of an intersecting runway, a taxiway, a predetermined point, or an approach/departure flightpath.

LAHSO-DRY– Land and hold short operations on runways that are dry.

LAHSO-WET– Land and hold short operations on runways that are wet (but not contaminated).

LAND AND HOLD SHORT OPERATIONS– Operations which include simultaneous takeoffs and landings and/or simultaneous landings when a landing aircraft is able and is instructed by the controller to hold-short of the intersecting runway/taxiway or designated hold-short point. Pilots are expected to promptly inform the controller if the hold short clearance cannot be accepted.

(See PARALLEL RUNWAYS.)

(Refer to AIM.)

LANDING AREA– Any locality either on land, water, or structures, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo.

(See ICAO term LANDING AREA.)

LANDING AREA [ICAO]– That part of a movement area intended for the landing or take-off of aircraft.

LANDING DIRECTION INDICATOR– A device which visually indicates the direction in which landings and takeoffs should be made.

(See TETRAHEDRON.)

(Refer to AIM.)

LANDING DISTANCE AVAILABLE (LDA)– The runway length declared available and suitable for a landing airplane.

(See ICAO term LANDING DISTANCE AVAILABLE.)

LANDING DISTANCE AVAILABLE [ICAO]– The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

LANDING MINIMUMS– The minimum visibility prescribed for landing a civil aircraft while using an instrument approach procedure. The minimum applies with other limitations set forth in 14 CFR Part 91 with respect to the Minimum Descent Altitude (MDA) or Decision Height (DH) prescribed in the instrument approach procedures as follows:

a. Straight-in landing minimums. A statement of MDA and visibility, or DH and visibility, required for a straight-in landing on a specified runway, or

b. Circling minimums. A statement of MDA and visibility required for the circle-to-land maneuver.

Note: Descent below the MDA or DH must meet the conditions stated in 14 CFR Section 91.175.

(See CIRCLE-TO-LAND MANEUVER.)

(See DECISION HEIGHT.)

(See INSTRUMENT APPROACH PROCEDURE.)

(See MINIMUM DESCENT ALTITUDE.)

(See STRAIGHT-IN LANDING.)

(See VISIBILITY.)

(Refer to 14 CFR Part 91.)

LANDING ROLL– The distance from the point of touchdown to the point where the aircraft can be brought to a stop or exit the runway.

LANDING SEQUENCE– The order in which aircraft are positioned for landing.

(See APPROACH SEQUENCE.)

LAST ASSIGNED ALTITUDE– The last altitude/flight level assigned by ATC and acknowledged by the pilot.

(See MAINTAIN.)

(Refer to 14 CFR Part 91.)

LATERAL NAVIGATION (LNAV)– A function of area navigation (RNAV) equipment which calculates,

displays, and provides lateral guidance to a profile or path.

LATERAL SEPARATION– The lateral spacing of aircraft at the same altitude by requiring operation on different routes or in different geographical locations.
(See SEPARATION.)

LDA–
(See LOCALIZER TYPE DIRECTIONAL AID.)
(See LANDING DISTANCE AVAILABLE.)
(See ICAO Term LANDING DISTANCE AVAILABLE.)

LF–
(See LOW FREQUENCY.)

LIGHTED AIRPORT– An airport where runway and obstruction lighting is available.
(See AIRPORT LIGHTING.)
(Refer to AIM.)

LIGHT GUN– A handheld directional light signaling device which emits a brilliant narrow beam of white, green, or red light as selected by the tower controller. The color and type of light transmitted can be used to approve or disapprove anticipated pilot actions where radio communication is not available. The light gun is used for controlling traffic operating in the vicinity of the airport and on the airport movement area.
(Refer to AIM.)

LIGHT-SPORT AIRCRAFT (LSA)- An FAA-registered aircraft, other than a helicopter or powered-lift, that meets certain weight and performance. Principally it is a single engine aircraft with a maximum of two seats and weighing no more than 1,430 pounds if intended for operation on water, or 1,320 pounds if not. They must be of simple design (fixed landing gear (except if intended for operations on water or a glider) piston powered, non-pressurized, with a fixed or ground adjustable propeller), Performance is also limited to a maximum airspeed in level flight of not more than 120 knots CAS, have a maximum never-exceed speed of not more than 120 knots CAS for a glider, and have a maximum stalling speed, without the use of lift-enhancing devices (VS1) of not more than 45 knots CAS. They may be certificated as either Experimental LSA or as a Special LSA aircraft. A minimum of a sport pilot_certificate is required to operate light-sport aircraft." (Refer to 14 CFR Part 1, §1.1.)

LINE UP AND WAIT (LUAW)– Used by ATC to inform a pilot to taxi onto the departure runway to line up and wait. It is not authorization for takeoff. It is used when takeoff clearance cannot immediately be issued because of traffic or other reasons.
(See CLEARED FOR TAKEOFF.)

LOCAL AIRPORT ADVISORY (LAA)– A service available only in Alaska and provided by facilities, which are located on the landing airport, have a discrete ground–to–air communication frequency or the tower frequency when the tower is closed, automated weather reporting with voice broadcasting, and a continuous ASOS/AWSS/AWOS data display, other continuous direct reading instruments, or manual observations available to the specialist.
(See AIRPORT ADVISORY AREA.)

LOCAL TRAFFIC– Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.
(See TRAFFIC PATTERN.)

LOCALIZER– The component of an ILS which provides course guidance to the runway.
(See INSTRUMENT LANDING SYSTEM.)
(See ICAO term LOCALIZER COURSE.)
(Refer to AIM.)

LOCALIZER COURSE [ICAO]– The locus of points, in any given horizontal plane, at which the DDM (difference in depth of modulation) is zero.

LOCALIZER OFFSET– An angular offset of the localizer aligned with 3° of the runway alignment.

LOCALIZER TYPE DIRECTIONAL AID– A localizer with an angular offset that exceeds 3°. of the runway alignment used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which are not part of a complete ILS.
(Refer to AIM.)

LOCALIZER TYPE DIRECTIONAL AID (LDA) PRECISION RUNWAY MONITOR (PRM) APPROACH– An approach, which includes a glidslope, used in conjunction with an ILS PRM, RNAV PRM or GLS PRM approach to an adjacent runway to conduct Simultaneous Offset Instrument Approaches (SOIA) to parallel runways whose centerlines are separated by less than 3,000 feet and

N

NAS–

(See NATIONAL AIRSPACE SYSTEM.)

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– 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– 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– 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 alerting, 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.)

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.

NONCOMPOSITE SEPARATION– Separation in accordance with minima other than the composite separation minimum specified for the area concerned.

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.)

(See ICAO term NONRADAR SEPARATION.)

NONRADAR SEPARATION [ICAO]– The separation used when aircraft position information is derived from sources other than radar.

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 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.

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– 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.

a. 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.

b. 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 current NOTAM 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.)

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

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

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See STANDARD INSTRUMENT DEPARTURES.)

(Refer to AIM.)

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

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

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

(a) 400 feet, or

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

2. For runways serving only small airplanes:

(a) 300 feet for precision instrument runways.

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

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

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

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

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

(Refer to FAAO JO 7110.65, Para 3–1–5, VEHICLES/EQUIPMENT/PERSONNEL ON RUNWAYS.)

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

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

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

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

OCEANIC ERROR REPORT– A report filed when ATC observes an Oceanic Error as defined by FAAO 7110.82, Reporting Oceanic Errors.

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

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

ODP–
(See OBSTACLE DEPARTURE PROCEDURE.)

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

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

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

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

OFT–
(See OUTER FIX TIME.)

OM–
(See OUTER MARKER.)

ON COURSE–

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

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

(See ON-COURSE INDICATION.)

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

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

ONER–
(See OCEANIC NAVIGATIONAL ERROR REPORT.)

OPERATIONAL–
(See DUE REGARD.)

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

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

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

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

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

OPTION APPROACH– An approach requested and conducted by a pilot which will result in either a touch-and-go, missed approach, low approach, stop-and-go, or full stop landing.

(See CLEARED FOR THE OPTION.)
(Refer to AIM.)

ORGANIZED TRACK SYSTEM– A series of ATS routes which are fixed and charted; i.e., CEP, NOPAC, or flexible and described by NOTAM; i.e., NAT TRACK MESSAGE.

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 nonradar 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 onboard 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 ILS PRM APPROACH and PRECISION RUNWAY MONITOR SYSTEM.)

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

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RADAR– A device which, by measuring the time interval between transmission and reception of radio pulses and correlating the angular orientation of the radiated antenna beam or beams in azimuth and/or elevation, provides information on range, azimuth, and/or elevation of objects in the path of the transmitted pulses.

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 INTERROGATOR.)
(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) (Army).

2. Radar Air Traffic Control Facility (RATCF) (Navy/FAA).

3. Radar Approach Control (RAPCON) (Air Force/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.)
(See ICAO term RADAR IDENTIFICATION.)

RADAR IDENTIFICATION [ICAO]– The process of correlating a particular radar blip or radar position symbol with a specific aircraft.

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 FAAO JO 7110.65, Para 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.)

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– An unmanned communications facility remotely controlled by air traffic personnel. RCOs serve FSSs. RTRs 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–
(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. 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.

c. Actual Navigation Performance (ANP). A measure of the current estimated navigational performance. Also referred to as Estimated Position Error (EPE).

d. Estimated Position Error (EPE). A measure of the current estimated navigational performance. Also referred to as Actual Navigation Performance (ANP).

e. Lateral Navigation (LNAV). A function of area navigation (RNAV) equipment which calculates, displays, and provides lateral guidance to a profile or path.

f. 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– 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 systems (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, which 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.

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– 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.)

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 take-off of aircraft.

RUNWAY CENTERLINE LIGHTING–
(See AIRPORT LIGHTING.)

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 END IDENTIFIER LIGHTS–
(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 VISIBILITY VALUE–
(See VISIBILITY.)

RUNWAY VISUAL RANGE–
(See VISIBILITY.)

S

SAA–
(See SPECIAL ACTIVITY AIRSPACE.)

SAFETY ALERT– A safety alert issued by ATC to aircraft under their control if ATC is aware the aircraft is at an altitude which, in the controller's judgment, places the aircraft in unsafe proximity to terrain, obstructions, or other aircraft. The controller may discontinue the issuance of further alerts if the pilot advises he/she is taking action to correct the situation or has the other aircraft in sight.

a. Terrain/Obstruction Alert– A safety alert issued by ATC to aircraft under their control if ATC is aware the aircraft is at an altitude which, in the controller's judgment, places the aircraft in unsafe proximity to terrain/obstructions; e.g., "Low Altitude Alert, check your altitude immediately."

b. Aircraft Conflict Alert– A safety alert issued by ATC to aircraft under their control if ATC is aware of an aircraft that is not under their control at an altitude which, in the controller's judgment, places both aircraft in unsafe proximity to each other. With the alert, ATC will offer the pilot an alternate course of action when feasible; e.g., "Traffic Alert, advise you turn right heading zero niner zero or climb to eight thousand immediately."

Note: The issuance of a safety alert is contingent upon the capability of the controller to have an awareness of an unsafe condition. The course of action provided will be predicated on other traffic under ATC control. Once the alert is issued, it is solely the pilot's prerogative to determine what course of action, if any, he/she will take.

SAFETY LOGIC SYSTEM– A software enhancement to ASDE–3, ASDE–X, and ASDE–3X, that predicts the path of aircraft landing and/or departing, and/or vehicular movements on runways. Visual and aural alarms are activated when the safety logic projects a potential collision. The Airport Movement Area Safety System (AMASS) is a safety logic system enhancement to the ASDE–3. The Safety Logic System for ASDE–X and ASDE–3X is an integral part of the software program.

SAFETY LOGIC SYSTEM ALERTS–

a. ALERT– An actual situation involving two real safety logic tracks (aircraft/aircraft, aircraft/vehicle, or aircraft/other tangible object) that safety logic has predicted will result in an imminent collision, based upon the current set of Safety Logic parameters.

b. FALSE ALERT–

1. Alerts generated by one or more false surface–radar targets that the system has interpreted as real tracks and placed into safety logic.

2. Alerts in which the safety logic software did not perform correctly, based upon the design specifications and the current set of Safety Logic parameters.

3. The alert is generated by surface radar targets caused by moderate or greater precipitation.

c. NUISANCE ALERT– An alert in which one or more of the following is true:

1. The alert is generated by a known situation that is not considered an unsafe operation, such as LAHSO or other approved operations.

2. The alert is generated by inaccurate secondary radar data received by the Safety Logic System.

3. One or more of the aircraft involved in the alert is not intending to use a runway (for example, helicopter, pipeline patrol, non–Mode C overflight, etc.).

d. VALID NON–ALERT– A situation in which the safety logic software correctly determines that an alert is not required, based upon the design specifications and the current set of Safety Logic parameters.

e. INVALID NON–ALERT– A situation in which the safety logic software did not issue an alert when an alert was required, based upon the design specifications.

SAIL BACK– A maneuver during high wind conditions (usually with power off) where float plane movement is controlled by water rudders/opening and closing cabin doors.

SAME DIRECTION AIRCRAFT– Aircraft are operating in the same direction when:

a. They are following the same track in the same direction; or

b. Their tracks are parallel and the aircraft are flying in the same direction; or

c. Their tracks intersect at an angle of less than 45 degrees.

SAR–
(See SEARCH AND RESCUE.)

SAY AGAIN– Used to request a repeat of the last transmission. Usually specifies transmission or portion thereof not understood or received; e.g., "Say again all after ABRAM VOR."

SAY ALTITUDE– Used by ATC to ascertain an aircraft's specific altitude/flight level. When the aircraft is climbing or descending, the pilot should state the indicated altitude rounded to the nearest 100 feet.

SAY HEADING– Used by ATC to request an aircraft heading. The pilot should state the actual heading of the aircraft.

SCHEDULED TIME OF ARRIVAL (STA)– A STA is the desired time that an aircraft should cross a certain point (landing or metering fix). It takes other traffic and airspace configuration into account. A STA time shows the results of the TBFM scheduler that has calculated an arrival time according to parameters such as optimized spacing, aircraft performance, and weather.

SDF–
(See SIMPLIFIED DIRECTIONAL FACILITY.)

SEA LANE– A designated portion of water outlined by visual surface markers for and intended to be used by aircraft designed to operate on water.

SEARCH AND RESCUE– A service which seeks missing aircraft and assists those found to be in need of assistance. It is a cooperative effort using the facilities and services of available Federal, state and local agencies. The U.S. Coast Guard is responsible for coordination of search and rescue for the Maritime Region, and the U.S. Air Force is responsible for search and rescue for the Inland Region. Information pertinent to search and rescue should be passed through any air traffic facility or be transmitted directly to the Rescue Coordination Center by telephone.
(See FLIGHT SERVICE STATION.)
(See RESCUE COORDINATION CENTER.)
(Refer to AIM.)

SEARCH AND RESCUE FACILITY– A facility responsible for maintaining and operating a search and rescue (SAR) service to render aid to persons and property in distress. It is any SAR unit, station, NET, or other operational activity which can be usefully employed during an SAR Mission; e.g., a Civil Air Patrol Wing, or a Coast Guard Station.
(See SEARCH AND RESCUE.)

SECNOT–
(See SECURITY NOTICE.)

SECONDARY RADAR TARGET– A target derived from a transponder return presented on a radar display.

SECTIONAL AERONAUTICAL CHARTS–
(See AERONAUTICAL CHART.)

SECTOR LIST DROP INTERVAL– A parameter number of minutes after the meter fix time when arrival aircraft will be deleted from the arrival sector list.

SECURITY NOTICE (SECNOT) – A SECNOT is a request originated by the Air Traffic Security Coordinator (ATSC) for an extensive communications search for aircraft involved, or suspected of being involved, in a security violation, or are considered a security risk. A SECNOT will include the aircraft identification, search area, and expiration time. The search area, as defined by the ATSC, could be a single airport, multiple airports, a radius of an airport or fix, or a route of flight. Once the expiration time has been reached, the SECNOT is considered to be cancelled.

SECURITY SERVICES AIRSPACE – Areas established through the regulatory process or by NOTAM, issued by the Administrator under title 14, CFR, sections 99.7, 91.141, and 91.139, which specify that ATC security services are required; i.e., ADIZ or temporary flight rules areas.

SEE AND AVOID– When weather conditions permit, pilots operating IFR or VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in 14 CFR Part 91.

SEGMENTED CIRCLE– A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.
(Refer to AIM.)

SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE– An instrument approach procedure may have as many as four separate segments depending on how the approach procedure is structured.

a. Initial Approach– The segment between the initial approach fix and the intermediate fix or the

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.)

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 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 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)– A MOA is 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.

(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– 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. Restricted areas are depicted on en route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

(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.

SQUAWK (Mode, Code, Function)– Activate specific modes/codes/functions on the aircraft transponder; e.g., "Squawk three/alpha, two one zero five, low."

(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– 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 inform an aircraft to turn-off the automatic altitude reporting feature of its transponder. It is issued when the verbally reported altitude varies 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 tell the pilot to turn specified functions of the aircraft transponder off.

(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 FAAO 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.

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 OMNIDIRECTIONAL RANGE STATION– 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.

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 telecommunications 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 7350.8, 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-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 take-off 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 take-off 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/AWSS 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– 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– 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.

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) and runway visibility value (RVV).

(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.

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– 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, nor 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.)

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.

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.)

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–

(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– The VSCS is 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.

(See VOICE SWITCHING AND CONTROL SYSTEM.)
(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 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.)

W

WA–
(See AIRMET.)
(See WEATHER ADVISORY.)

WAAS–
(See WIDE-AREA AUGMENTATION SYSTEM.)

WAKE TURBULENCE– Phenomena resulting from the passage of an aircraft through the atmosphere. The term includes vortices, thrust stream turbulence, jet blast, jet wash, propeller wash, and rotor wash both on the ground and in the air.
(See AIRCRAFT CLASSES.)
(See JET BLAST.)
(See VORTICES.)
(Refer to AIM.)

WARNING AREA–
(See SPECIAL USE AIRSPACE.)

WAYPOINT– A predetermined geographical position used for route/instrument approach definition, progress reports, published VFR routes, visual reporting points or points for transitioning and/or circumnavigating controlled and/or special use airspace, that is defined relative to a VORTAC station or in terms of latitude/longitude coordinates.

WEATHER ADVISORY– In aviation weather forecast practice, an expression of hazardous weather conditions not predicted in the area forecast, as they affect the operation of air traffic and as prepared by the NWS.
(See AIRMET.)
(See SIGMET.)

WHEN ABLE–

a. In conjunction with ATC instructions, gives the pilot the latitude to delay compliance until a condition or event has been reconciled. Unlike "pilot discretion," when instructions are prefaced "when able," the pilot is expected to seek the first opportunity to comply.

b. In conjunction with a weather deviation clearance, requires the pilot to determine when he/she is clear of weather, then execute ATC instructions.

c. Once a maneuver has been initiated, the pilot is expected to continue until the specifications of the instructions have been met. "When able," should not be used when expeditious compliance is required.

WIDE-AREA AUGMENTATION SYSTEM (WAAS)– The WAAS is a satellite navigation system consisting of the equipment and software which augments the GPS Standard Positioning Service (SPS). The WAAS provides enhanced integrity, accuracy, availability, and continuity over and above GPS SPS. The differential correction function provides improved accuracy required for precision approach.

WIDE AREA MULTILATERATION (WAM)– A distributed surveillance technology which may utilize any combination of signals from Air Traffic Control Radar Beacon System (ATCRBS) (Modes A and C) and Mode S transponders, and ADS-B transmissions. Multiple geographically dispersed ground sensors measure the time-of-arrival of the transponder messages. Aircraft position is determined by joint processing of the time-difference-of-arrival (TDOA) measurements computed between a reference and the ground stations measured time-of-arrival.

WILCO– I have received your message, understand it, and will comply with it.

WIND GRID DISPLAY– A display that presents the latest forecasted wind data overlaid on a map of the ARTCC area. Wind data is automatically entered and updated periodically by transmissions from the National Weather Service. Winds at specific altitudes, along with temperatures and air pressure can be viewed.

WIND SHEAR– A change in wind speed and/or wind direction in a short distance resulting in a tearing or shearing effect. It can exist in a horizontal or vertical direction and occasionally in both.

WIND SHEAR ESCAPE– An unplanned abortive maneuver initiated by the pilot in command (PIC) as a result of onboard cockpit systems. Wind shear escapes are characterized by maximum thrust climbs in the low altitude terminal environment until wind shear conditions are no longer detected.

WING TIP VORTICES–
(See VORTICES.)

WORDS TWICE–

a. As a request: “Communication is difficult. Please say every phrase twice.”

b. As information: “Since communications are difficult, every phrase in this message will be spoken twice.”

WS–

(See SIGMET.)

(See WEATHER ADVISORY.)

WST–

(See CONVECTIVE SIGMET.)

(See WEATHER ADVISORY.)

BRIEFING GUIDE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Table of Contents

1. PARAGRAPH NUMBER AND TITLE:
1-3-2. DUTY PRIORITY
2-3-2. AREA/ROUTE BRIEFING PROCEDURES
2-4-3. CONTENT
2-4-4. BROADCAST PROCEDURES
3-2-1. CONDUCT OF STANDARD BRIEFING
3-2-3. CONDUCT OF OUTLOOK BRIEFING
4-1-1. INFLIGHT SERVICES
4-2-6. AIRCRAFT CONTACTS
4-3-5. ROUTINE RADIO CONTACTS
Chapter 4., Section 6. En Route Flight Advisory Service (EFAS)
9-2-5. SOLICITING PIREPs
11-1-4. MESSAGE INITIATION
12-1-14. FACILITY IDENTIFICATION
13-1-3. GROUP CODES

2. BACKGROUND: The proposed change to realign the En Route Flight Advisory Service (EFAS), known as "Flight Watch" in air-to-ground communications, to the Inflight position is part of an effort by Flight Service to modernize and streamline service delivery in order to increase efficiencies and value for its stakeholders. When EFAS was introduced in 1972, EFAS specialists received advanced training in aviation weather which included translating data received from radar and satellite displays. At the time, only flight service stations providing EFAS services had access to these products. Currently, all CONUS flight service specialists have access to common weather displays, such as radar and satellite imagery, as well as other weather products which were previously available only to EFAS specialists. Today, a pilot contacting Flight Watch for updated weather information is not able to obtain NOTAM information or flight planning services and must contact Flight Service on a different frequency. With this new approach, a pilot can obtain all services that Flight Service has to offer with one call. The elimination of overlapping services will allow for a smarter, more strategic allocation of limited resources.

3. CHANGE:

OLD	NEW
1-3-2. DUTY PRIORITY	**1-3-2. DUTY PRIORITY**
Title through **a1**	No Change
2. Inflight Services. Inflight services are those provided to or affecting aircraft in flight or otherwise operating on the airport surface. This includes services to airborne aircraft, airport advisories, delivery of air traffic control (ATC) clearances, advisories or requests, issuance of military flight advisory messages, en route flight advisory service (EFAS), notices to airmen (NOTAM), search and rescue (SAR) communications searches, flight plan handling, transcribed or live broadcasts, weather observations, pilot weather reports (PIREP), and pilot briefings.	**2.** Inflight services are those provided to or affecting aircraft in flight or otherwise operating on the airport surface. This includes services to airborne aircraft, airport advisories, delivery of air traffic control (ATC) clearances, advisories or requests, issuance of military flight advisory messages, notices to airmen (NOTAM), search and rescue (SAR) communications searches, flight plan handling, transcribed or live broadcasts, weather observations, pilot weather reports (PIREP), and pilot briefings.

OLD

2-3-2. AREA/ROUTE BRIEFING PROCEDURES

Title through **h**

i. Request for PIREPs. When weather conditions within the area or along the route meet requirements for soliciting PIREPs (paragraph 9-2-5), include a request in the recording.

PHRASEOLOGY–
PILOT WEATHER REPORTS ARE REQUESTED. CONTACT FLIGHT WATCH or FLIGHT SERVICE, as appropriate.

NEW

2-3-2. AREA/ROUTE BRIEFING PROCEDURES

No Change

No Change

PHRASEOLOGY–
PILOT WEATHER REPORTS ARE REQUESTED. CONTACT FLIGHT SERVICE.

OLD

2-4-3. CONTENT

Title through **c**

d. Recommendation to contact Flight Watch or Flight Service for additional details concerning hazardous weather.

PHRASEOLOGY–
CONTACT FLIGHT WATCH or FLIGHT SERVICE, as appropriate , FOR ADDITIONAL DETAILS.

NEW

2-4-3. CONTENT

No Change

d. Recommendation to contact Flight Service for additional details concerning hazardous weather.

PHRASEOLOGY–
CONTACT FLIGHT SERVICE FOR ADDITIONAL DETAILS.

OLD

2-4-4. BROADCAST PROCEDURES

Title through **a1**

2. Make a HIWAS update announcement once on all communications/navigational aid (NAVAID) frequencies except on emergency, EFAS, and navigational frequencies already dedicated to continuous broadcast services. Delete reference to Flight Watch when those services are closed.

PHRASEOLOGY–
ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE FOR (geographical area) IS AVAILABLE ON HIWAS OR CONTACT FLIGHT WATCH, or FLIGHT SERVICE, as appropriate.

NEW

2-4-4. BROADCAST PROCEDURES

No Change

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.

PHRASEOLOGY–
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, EFAS, and navigational frequencies already dedicated to continuous broadcast services:

PHRASEOLOGY–
ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE IS AVAILABLE FROM FLIGHT WATCH or FLIGHT SERVICE, as appropriate.

OLD

3-2-1. CONDUCT OF STANDARD BRIEFING

Title through **c10**

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 Watch or Flight Service to report en route conditions.

12. *EFAS*. When appropriate, inform pilots of the availability of Flight Watch for weather updates; for example, thunderstorms, icing.

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

(a) and **(b)**

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

OLD

3-2-3. CONDUCT OF OUTLOOK BRIEFING

a. Provide an outlook briefing when the proposed departure is 6 hours or more from the time of the briefing. Conduct the briefing in accordance with subparagraph 3-2-1c. Omit items in subparagraphs c2, c4, and c7 through c12, unless specifically requested by the pilot or deemed pertinent by the specialist.

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:

PHRASEOLOGY–
ATTENTION ALL AIRCRAFT, HAZARDOUS WEATHER ADVISORY UPDATE IS AVAILABLE FROM FLIGHT SERVICE.

NEW

3-2-1. CONDUCT OF STANDARD BRIEFING

No Change

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.

Delete

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

No Change

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

NEW

3-2-3. CONDUCT OF OUTLOOK BRIEFING

a. Provide an outlook briefing when the proposed departure is 6 hours or more from the time of the briefing. Conduct the briefing in accordance with subparagraph 3-2-1c. Omit items in subparagraphs c2, c4, and c7 through **c11**, unless specifically requested by the pilot or deemed pertinent by the specialist.

OLD	NEW
4-1-1. INFLIGHT SERVICES	**4-1-1. INFLIGHT SERVICES**
Inflight services are those provided to or affecting aircraft inflight or otherwise operating on the airport surface. This includes services to airborne aircraft, such as airport advisories, delivery of ATC clearances, advisories or requests, issuance of military flight advisory messages, EFAS, NOTAM, SAR communications searches, flight plan handling, transcribed or live broadcast, weather observations, PIREPs, and pilot briefings.	**a.** Inflight services are those provided to or affecting aircraft inflight or otherwise operating on the airport surface. This includes services to airborne aircraft such as delivery of ATC clearances, advisories or requests, issuance of military flight advisory messages, NOTAM, SAR communications searches, flight plan handling, transcribed or live broadcast, weather observations, PIREPs, and pilot briefings.
Add	**b. Upon request, provide en route aircraft with timely and pertinent weather data tailored to a specific altitude and route using the most current available sources of aviation meteorological information. Tailor en route flight advisories to the phase of flight that begins after climb out and ends with descent to land. Current weather and terminal forecast at the airport of first intended landing and/or the alternate airport must be provided on request. When conditions dictate, provide information on weather for alternate routes and/or altitudes to assist the pilot in the avoidance of hazardous flight conditions.**
NOTE– *Provide inflight services in accordance with the procedures in this chapter to aircraft on a "first come, first served" basis, as circumstances permit.*	No Change

OLD	NEW
4-3-5. ROUTINE RADIO CONTACTS	**4-3-5. ROUTINE RADIO CONTACTS**
Title through **a**	No Change
b. *Shifting to Flight Watch*. During hours of flight watch operation, inflight specialists must recommend shifting to the flight watch frequency for en route advisories when weather conditions in an area along the pilot's route of flight so dictate. An example would be a pilot flying into an area of marginal weather farther along the route. It would be advantageous for the pilot to contact the flight watch specialist to pursue an alternate course of action should the need arise.	Delete
PHRASEOLOGY– *FOR ADDITIONAL EN ROUTE WEATHER, CONTACT FLIGHT WATCH (frequency).*	Delete
c through **f**	Reletter **b** through **e**

OLD	NEW
Chapter 4. Section 6. En Route Flight Advisory Service (EFAS)	Delete
4-6-1. GENERAL	Delete
The purpose of EFAS, radio call "FLIGHT WATCH" (FW), is to provide en route aircraft with timely and pertinent weather data tailored to a specific altitude and route using the most current available sources of aviation meteorological information.	Delete
NOTE– *EFAS/Flight Watch outlets are listed in the Airport/Facility Directory (AFD).*	Delete
4-6-2. POSITION RESPONSIBILITEIS	Delete
Prior to assuming the duties of the flight watch position:	Delete
a. Perform a thorough self-briefing by reviewing all pertinent weather data.	Delete
b. When relieving a specialist on the flight watch position, obtain a pre-duty briefing from the person being relieved.	Delete
c. When appropriate, obtain a briefing of current and forecast weather within the flight watch area (FWA) from the CWSU of the associated air route traffic control center (ARTCC). (See para 4-6-5.)	Delete
d. Maintain currency of weather conditions and trends while assigned the flight watch position by reviewing new or revised meteorological issuances and by observing weather trends contained in current weather reports and PIREPs.	Delete
4-6-3. OPERATING PROCEDURES	Delete
a. Tailor en route flight advisories to the phase of flight that begins after climb out and ends with descent to land. Current weather and terminal forecast at the airport of first intended landing and/or the alternate airport must be provided on request. When conditions dictate, provide information on weather for alternate routes and/or altitudes to assist the pilot in the avoidance of hazardous flight conditions. Advise the pilot to contact the adjacent FWA when adverse weather conditions along the intended route extend beyond the FWA.	Delete

b. EFAS must not be used for routine inflight services; for example, flight plan filing, position reporting, or full route (preflight) briefings. If a request for information is received that is not within the scope of flight watch, advise the pilot of the appropriate FSS to contact. Delete

EXAMPLE– Delete
"Cessna Four Seven Five Eight Xray, Cleveland Flight Watch, contact Altoona Radio on one two two point four to file your flight plan."

c. Suggest route or destination changes to avoid areas of weather which in the judgment of the specialist constitute a threat to safe flight. Delete

d. Alert the associated CWSU or WFO immediately of reported or observed significant weather that is not included in aviation forecasts. Delete

4-6-4. FREQUENCIES Delete

a. Use frequency 122.0 MHz to provide flight watch services to aircraft below FL 180. Delete

b. Use the assigned discrete frequency to provide flight watch services to aircraft at FL 180 and above. This frequency can also be used for communications with aircraft below FL 180 when communication coverage permits. Delete

c. Aircraft operating at FL 180 or above that contact flight watch on frequency 122.0 MHz should be advised to change to the high altitude discrete frequency for Flight Watch. Delete

PHRASEOLOGY– Delete
(Aircraft identification) (facility) FLIGHT WATCH, FOR SERVICE AT YOUR ALTITUDE. CONTACT FLIGHT WATCH ON (frequency).

d. Avoid the simultaneous keying of two or more transmitters on the same frequency. This action can block or hinder communications. Delete

NOTE– Delete
Frequency 122.0 MHz RCF outlets are geographically located to ensure communications coverage at 5,000 feet AGL and above over the conterminous United States. High altitude discrete frequency RCF outlets are geographically located to ensure communications coverage between FL 180 and FL 450 over the EFAS facility's area of responsibility. Communications practices should be guided by these restrictions.

4-6-5. NWS SUPPORT TO EFAS Delete

The NWS support function for EFAS is as follows: Delete

a. The associated CWSU is designated as the primary support facility for each flight watch area. The CWSU should be contacted at least once per shift for a general briefing of meteorological conditions which are impacting, or expected to impact, aviation weather within the flight watch /ARTCC area. Delete

NOTE–
Due to assigned priorities, the CWSU meteorologist may not be able to provide in-depth briefing service for up to 2 hours after the start of the first shift of the CWSU unit. (See FAA Order JO 7210.3, Para 14-3-6, National Weather Service (NWS) Support, for establishment of operational support.) Delete

b. During the period when the CWSU is not available to provide consultation service, WFOs are responsible for responding to EFAS facility requests regarding weather conditions prevailing within the WFO area of responsibility. The EFAS specialist should contact the responsible WFO directly for clarification of forecasts or questions concerning products originated by the WFO. Delete

NOTE–
The ARTCC/EFAS area may encompass multiple WFO areas. Delete

c. Consult with the Aviation Weather Center (AWC), as appropriate, when further information or clarification is needed regarding WS, WST, WA, and FA products. Delete

4-6-6. PILOT WEATHER REPORTS Delete

a. Actively solicit and disseminate PIREPs in accordance with Chapter 9, Section 2. Additionally, PIREPs concerning winds and temperature aloft, wind shear, turbulence, and icing must be solicited and disseminated when one or more of these conditions or criteria exist. Flight watch specialists must solicit sufficient PIREPs to remain aware of flight conditions. Delete

b. Maintain a graphic display of pertinent PIREPs within the flight watch area. Periodically review the display, and actively solicit additional PIREPs when necessary to ensure completeness and accuracy of the information. Delete

c. Requests for special solicitation of PIREPs from other facilities or the NWS must be honored as rapidly as operations permit. Delete

4-6-7. GRAPHIC WEATHER DISPLAY	Delete
a. Prior to assuming flight watch duties, the specialist must review, as a minimum, the graphic information listed below (if available). After assuming duties, the specialist must continue to review graphic and written data as needed during the watch to update and maintain a thorough knowledge of weather synoptic and forecast information affecting aviation operations.	Delete
1. Weather Depiction.	Delete
2. Surface Analysis.	Delete
3. Forecast Winds Aloft.	Delete
4. G-AIRMET Graphic.	Delete
5. 12- and 24- hour low–level significant weather prognosis.	Delete
6. 36-and 48- hour low–level significant weather prognosis.	Delete
7. High–level significant weather prognosis.	Delete
8. Freezing level graphic.	Delete
9. Freezing level analysis.	Delete
10. *Current Icing Product (CIP).	Delete
11. *Forecast Icing Product (FIP).	Delete
12. *Graphical Turbulence Guidance (GTG).	Delete
13. 850 MB upper air analysis.	Delete
14. 700 MB upper air analysis.	Delete
15. 500 MB upper air analysis.	Delete
16. 300 MB upper air analysis.	Delete
17. 250 MB upper air analysis.	Delete
18. 200 MB upper air analysis.	Delete
19. 500 MB heights and vorticity analysis.	Delete
20. 500 MB heights and vorticity prognosis.	Delete
21. Severe weather outlook.	Delete
22. Lifted index analysis.	Delete
23. National weather radar summary.	Delete
24. Maximum temperature 24- and 36- hour forecast.	Delete
25. Minimum temperature 24- and 36- hour forecast.	Delete

NOTE– **Denotes weather products that are supplementary. They may only be used to enhance situational awareness. When discrepancies are noted, the specialist must base their decision on the primary weather product.*	Delete
b. Access local and remote weather displays as necessary to maintain current knowledge of precipitation intensity, movement, and coverage. Provide pertinent real-time weather radar information that will directly impact the aircraft's flight.	Delete
4-6-8. INTERRUPTIONS TO SERVICE	Delete
Notification of temporary outages, either equipment or operational, must be made in accordance with FAA Order JO 7930.2, Notices to Airmen (NOTAM). In order to provide continuous service, notify the specialist responsible for the adjacent flight watch area of outages.	Delete
4-6-9. EMERGENCIES	Delete
a. Emergency situations must be handled in accordance with Chapter 5.	Delete
b. When working an aircraft in an emergency situation over a remote outlet, the normal procedure is to provide assistance on the initial contact frequency. Flight watch specialists should bear in mind that air traffic facilities based at, or near to, the remote location may be in a better position to assist the pilot. A decision to affect a frequency change should be based on the situation and circumstances involved in the emergency.	Delete

OLD	NEW
9-2-5. SOLICITING PIREPs	**9-2-5. SOLICITING PIREPs**
Title through **b**	No Change
c. Flight watch specialists must solicit sufficient PIREPs to remain aware of flight conditions.	**c. In-Flight** specialists must solicit sufficient PIREPs to remain aware of flight conditions.
d. To solicit PIREPs within a specific area, broadcast a request on NAVAIDs, transcribed broadcast facilities, or a selected communications frequency.	No Change
PHRASEOLOGY– *PILOT WEATHER REPORTS ARE REQUESTED (location/area). CONTACT (name) RADIO/ FLIGHT WATCH ON (frequency) TO REPORT THESE CONDITIONS.*	***PHRASEOLOGY–*** *PILOT WEATHER REPORTS ARE REQUESTED (location/area). CONTACT (name) RADIO ON (frequency) TO REPORT THESE CONDITIONS.*

OLD	NEW
11-1-4. MESSAGE INITIATION	**11-1-4. MESSAGE INITIATION**
Title through **d1**	No Change
2. Flight Watch position. State the name of the associated ARTCC followed by the words "FLIGHT WATCH."	Delete
EXAMPLE– *"Indianapolis Flight Watch."*	Delete

OLD	NEW
12-1-14. FACILITY IDENTIFICATION	**12-1-14. FACILITY IDENTIFICATION**
Title through **f1**	No Change
2. Flight Watch position. State the name of the associated ARTCC followed by the words "FLIGHT WATCH."	Delete
EXAMPLE– *"Indianapolis Flight Watch."*	Delete
f3 and **f4**	Renumber **f2** and **f3**

OLD	NEW
13-1-3. GROUP CODES	**13-1-3. GROUP CODES**
Title through **d**	No Change
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.	No Change
NOTE– *All filed flight plans, as well as all logged inflight, preflight, flight watch and contact briefings, are transmitted to the Air and Marine Operations Center (AMOC) using the address KRIVYYYX. These transmissions are transparent.*	***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 KRIVYYYX. These transmissions are transparent.*

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1. PARAGRAPH NUMBER AND TITLE: 6-2-1. FLIGHT PLAN RECORDING

2. BACKGROUND: The International Civil Aviation Organization (ICAO) formulates aircraft type designators for the world's aircraft that will most likely receive air traffic services. ICAO provides this information through ICAO Document 8643, Aircraft Type Designators, which is updated at least annually. FAA supplements the ICAO information and publishes it through two documents: FAA Order JO 7340.2, Contractions, and FAA Order JO 7110.65, Air Traffic Control. These FAA documents didn't contain all the aircraft listed by ICAO and the FAA documents contained dissimilar information.

3. CHANGE:

OLD	NEW
6-2-1. FLIGHT PLAN RECORDING	**6-2-1. FLIGHT PLAN RECORDING**
Title through **b3**	No Change
c. *Item 3*. Aircraft Type. Insert the name or abbreviation (tow-to-four alphanumeric characters) of the manufacturer's or military designation. For amateur-built/experimental aircraft, use HXA, HXB, or HXC, in accordance with the FAA Order JO 7110.65, Appendix C. Aircraft Information Specific Homebuilt/ Experimental, spell out aircraft type in Remarks.	**c.** *Item 3*. Aircraft Type. Insert the **standard aircraft type designator, in accordance with FAA Order JO 7360.1, Aircraft Type Designators**.

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1. PARAGRAPH NUMBER AND TITLE: 6-3-4. IFR FLIGHT PLAN CONTROL MESSAGE FORMAT

2. BACKGROUND: The International Civil Aviation Organization (ICAO) formulates aircraft type designators for the world's aircraft that will most likely receive air traffic services. ICAO provides this information through ICAO Document 8643, Aircraft Type Designators, which is updated at least annually. FAA supplements the ICAO information and publishes it through two documents: FAA Order JO 7340.2, Contractions, and FAA Order JO 7110.65, Air Traffic Control. These FAA documents didn't contain all the aircraft listed by ICAO and the FAA documents contained dissimilar information.

3. CHANGE:

OLD	NEW
6-3-4. IFR FLIGHT PLAN CONTROL MESSAGE FORMAT	**6-3-4. IFR FLIGHT PLAN CONTROL MESSAGE FORMAT**
Title through **h1**	No Change
2. Type of Aircraft. This element is mandatory and contains two-to-four characters consisting of the authorized aircraft designator as contained in FAA Order JO 7340.2, Contractions. Enter military designators of aircraft, omitting prefixes and suffixes pertaining to aircraft mission or model.	**2.** Type of Aircraft. **Insert the standard aircraft type designator, in accordance with FAA Order JO 7360.1, Aircraft Type Designators**.

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1. PARAGRAPH NUMBER AND TITLE: 8-1-2. OVERDUE AIRCRAFT ON FLIGHT PLAN

2. BACKGROUND: Search and Rescue capabilities for VFR overdue aircraft have improved with advances in commercial technologies. Flight service stations (where equipped) now have the ability to search for overdue aircraft using commercially available tracking technology for equipped and participating aircraft. The use of this technology by participating aircraft may provide a more timely notification of unplanned course or destination deviations and a more accurate last known position to begin search and rescue operations.

3. CHANGE:

OLD	NEW
8-1-2. OVERDUE AIRCRAFT ON FLIGHT PLAN	**8-1-2. OVERDUE AIRCRAFT ON FLIGHT PLAN**
Consider an aircraft on a VFR or DVFR flight plan overdue when it fails to arrive 30 minutes after its ETA and communications or location cannot be established.	Consider an aircraft on a VFR or DVFR flight plan overdue**:**
Add	**a. When it fails to arrive 30 minutes after its ETA and communications or location cannot be established.**
Add	**b. When notified by a commercially available tracking service, begin search and rescue activities most appropriate for the circumstances, i.e., a communications search followed by an ALNOT.**

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1. PARAGRAPH NUMBER AND TITLE: 8-5-1. CONTACT WITH AIRCRAFT CROSSING HAZARDOUS AREA

2. BACKGROUND: In the Flight Service NAS Initiative this service was reviewed for relevance and was discovered to have been requested so few times as to be deemed obsolete. We believe enhanced radar coverage and modern economical navigation devices have made this obscure service a relic of obsolescence.

3. CHANGE:

OLD	NEW
8-5-1. CONTACT WITH AIRCRAFT CROSSING HAZARDOUS AREA	Delete
When lake, island, mountain, swamp reporting, or special reporting service programs have been established and a pilot requests the service, establish radio contact every 10 minutes (or at designated position checkpoints) with the aircraft while it is crossing the hazardous area. If contact with the aircraft is lost for more than 15 minutes, begin search and rescue at the ALNOT phase.	Delete
NOTE– *Hazardous Area Reporting Service and chart depictions are published in the AIM*	Delete
8-5-2. CANADIAN TRANBORDER	**8-5-1. CANADIAN TRANSBORDER**