

CHANGE

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

**JO 7110.10AA
CHG 3**

Air Traffic Organization Policy

Effective Date:
December 31, 2020

SUBJ: Flight Services

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 Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.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

Virginia Boyle
Vice President (A), System Operations Services
Air Traffic Organization

Flight Services

Explanation of Changes

Change 3

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

- a. 2-1-1. TYPES OF BROADCASTS**
- 2-1-2. SPEECH RATE AND PHRASEOLOGY**
- 2-1-3. REDUCING RECORDED WEATHER INFORMATION SERVICES**
- 2-1-4. CURRENT DATA**
- 2-1-5. AUTOMATED BROADCAST**
- 2-2-1. GENERAL**
- 2-2-2. CONTENT**
- 2-2-3. TESTING TWEB EQUIPMENT**
- 2-2-4. SERVICE MAY BE SUSPENDED**
- 2-2-5. MONITORING**
- 2-3-1. GENERAL**
- 2-3-2. AREA/ROUTE BRIEFING PROCEDURES**
- 2-3-3. MONITORING**
- 2-4-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)**
- 3-6-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)**
- 4-4-3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY**
- 9-2-9. MEANS USED TO SOLICIT PIREPs**
- 12-1-8. WEATHER PHRASEOLOGY**

This change removes TIBS and TWEB from Flight

Service Broadcast Procedures, as the service is no longer provided by Flight Service. Chapter 2 is deleted in its entirety and AFIS is moved to the Inflight chapter.

b. 12-1-15. AIRCRAFT IDENTIFICATION

This change deletes subparagraph 12-1-15h1. The Department of Energy (DOE) Aviation Office and other U.S. Government agencies disclosed that R-A-C flights are no longer utilized. This change also modifies sub-paragraph 12-1-15h5 with updated language that includes a retitle of FAA Order JO 7110.67.

c. Appendix A. ICAO FLIGHT PLANS

This change removes references to Multi-Function Transport Satellite (MTSAT).

d. Editorial Changes

The Correspondence Mailbox address was updated in paragraph 1-1-8.

e. Entire Publication

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

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Chapter 1. General

Section 1. Introduction

1-1-1. PURPOSE OF THIS ORDER

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

1-1-2. AUDIENCE

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

1-1-3. WHERE TO FIND THIS ORDER

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

1-1-4. WHAT THIS ORDER CANCELS

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

1-1-5. EXPLANATION OF CHANGES

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

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

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

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

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

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

1-1-7. DELIVERY DATES

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

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

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

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

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

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

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

NOTE–

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

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

1–1–9. SUBSCRIPTION INFORMATION

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

Superintendent of Documents
U.S. Government Publishing Office

P.O. Box 979050
St. Louis, MO 63197–9000
Online: <http://bookstore.gpo.gov>

FAA air traffic publications are also available on the FAA's web site at:

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

1–1–10. DISTRIBUTION

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

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

Section 2. Terms of Reference

1-2-1. WORD MEANINGS

As used in this order:

- a. “Must” means a procedure is mandatory.
- b. “Should” means a procedure is recommended.
- c. “May” or “need not” means a procedure is optional.
- d. “Will” means futurity, not a requirement for application of a procedure.
- e. “Must not” means a procedure is prohibited.
- f. Singular words include the plural.
- g. Plural words include the singular.
- h. “Aircraft” means the airframe, crew members, or both.
- i. “Altitude” means indicated altitude mean sea level (MSL), flight level (FL), or both.
- j. “Miles” means nautical miles unless otherwise specified and means statute miles in conjunction with visibility.
- k. “Time,” when used for ATC operational activities, is the hour and the minute/s in Coordinated Universal Time (UTC). Change to the next minute is made at the minute plus 30 seconds, except time checks are given to the nearest quarter minute. The word “local” or the time zone equivalent must be stated when local time is given during radio and telephone communications. The term “ZULU” may be used to denote UTC.
- l. “Sector,” when used in conjunction with flight service station (FSS) functions, means a specifically described geographic area that is assigned a National Airspace Data Interchange Network (NADIN) address.
- m. “Tie-in facility,” as indicated in FAA Order JO 7350.9, Location Identifiers, for the purposes of this order, designates the responsible facility/sector for sending/receiving flight plans, flight notification messages, and performing search and rescue duties for the listed location.

n. “Shared database” is a database within an FSS operational system that is accessible by specialists in other geographical locations.

o. “Transmit” means to send data via NADIN or Weather Message Switching Center Replacement (WMSCR) to an outside recipient or to process data internally within an operational system that shares a global database.

p. “Form” means a paper record or an automated equivalent. Both must be retained in accordance with FAA directives.

q. “History files” means one or more digital or paper repositories of data that must be retained in accordance with FAA directives.

r. “Pertinent” means relating directly and significantly to the matter at hand.

1-2-2. NOTES

Statements of fact or of an explanatory nature and relating to the use of directive material have been identified and worded as “Notes.”

1-2-3. EXAMPLES

Any illustration used which serves to explain subject material is identified as an “Example.”

1-2-4. PHRASEOLOGY

Phraseology depicted in this order is mandatory.

NOTE-

Exceptions to this paragraph are referenced in Paragraph 4-1-1, Emergency Determination.

1-2-5. ABBREVIATIONS

Abbreviations authorized for use in the application of the procedures in this order are those contained in FAA Order JO 7340.2, Contractions.

1-2-6. JO 7110.10 CHANGES

a. Each reprinted, revised, or additional page will show the change number and the effective date of the change.

b. Bold lines in the margin of the text will mark the location of all changes except editorial corrections.

1-2-7. SYSTEM INSTRUCTIONS

Different operational systems are used to provide flight services within the United States. Each individual operational system must have instructions in the form of a user's manual or guide, either

electronically or in paper form, that provide the necessary steps to accomplish the requirements set forth in this order.

Where databases are shared, local procedures may be used to facilitate the handling of flight data across the flight plan area boundaries.

Chapter 2. Pilot Briefing

Section 1. General

2-1-1. DEFINITION

Pilot briefings are the translation of weather observations and forecasts, including surface, upper air, radar, satellite, and PIREPs into a form directly usable by the pilot or flight supervisory personnel to formulate plans and make decisions for the safe and efficient operation of aircraft. These briefings must also include information on NOTAM, flow control, and other items as requested.

2-1-2. PRE-DUTY REQUIREMENTS

Before assuming pilot briefing duties, familiarize yourself sufficiently with aeronautical and meteorological conditions to effectively provide briefing service. This includes:

- a. General locations of weather-causing systems and general weather conditions.
- b. Detailed information of current and forecast weather conditions for the geographical area(s) of responsibility.
- c. Aeronautical information; for example, NOTAM, special use airspace (SUA), temporary flight restrictions (TFR), ATC delays, etc.

REFERENCE—
Pertinent facility directives.

2-1-3. PREFLIGHT BRIEFING DISPLAY

Provide a preflight briefing display for specialist/pilot use. The contents and method of display must be based on individual facility requirements; for example, available equipment and space. Additional displays, as required, must be provided to ensure availability of information at all positions. At the discretion of facility management, provide a separate display for pilot use. All material in such displays must be current.

2-1-4. WEATHER DISPLAY PRODUCTS

- a. The weather graphic display should include, but not necessarily be limited to, the following analysis, prognosis, and data products:

1. Weather Depiction.
2. Surface Analysis.
3. Forecast Winds Aloft.
4. Freezing Level Graphic.
5. G-AIRMET Graphic.
6. 12- and 24-hour Low Level Significant Weather Prognosis.
7. 12-, 24-, 36-, and 48-hour Surface Prognosis.
8. High Level Significant Weather Prognosis.
9. Current Icing Product (CIP).
10. Forecast Icing Product (FIP).
11. Graphical Turbulence Guidance (GTG).
12. National Weather Radar Summary. (CONUS Only).
13. National/Regional Radar Mosaics.
14. Radar Echo Tops.
15. Radar VAD Wind Profiles.
16. Visible/IR Satellite Imagery.
17. Constant Pressure Charts.
18. 500 MB Heights and Vorticity Analysis.
19. 500 MB Heights and Vorticity Prognosis.
20. 6-, 12-, 24-, 36-, and 48-hour 500 MB Heights and Vorticity Prognosis.
21. Convective Outlook.
22. Maximum Temperature 24- and 36-Hour Forecast (CONUS Only).
23. Minimum Temperature 24- and 36-Hour Forecast (CONUS Only).
- b. Map features. (See FIG 2-1-1.)
- c. Precipitation and obstruction to vision. (See FIG 2-1-2.)

FIG 2-1-1
Map Features Chart

TYPE	SYMBOL	COLOR
Cold front		Blue
Warm front		Red
Occluded front		Purple
Stationary front		Red and blue
Instability line		Purple
Convergence line		Green
Trough		Brown
Ridge		Yellow
Low pressure center		Red
High pressure center		Blue
Jet streams		Black
Isotherms		Red
Isoachs		Yellow
Freezing level aloft 80--80		Red
IFR conditions		Red
MYFR conditions		Blue
Line of echoes		Red
Overcast Clouds (36-48 hour Prog only)		Orange
Area of echoes		Green
Severe Weather area		Red
Turbulence areas		Red
Precipitation areas		Green
icing symbols		Red
Turbulence symbols		Red

FIG 2-1-2
Precipitation and Obstruction To Vision Chart

Type	Symbol	Color
Freezing precipitation		red
Snow		green
Rain		green
Drizzle		green
Thunderstorm		red
Fog		yellow
Haze		yellow
Smoke		black
Dust		brown

d. Interpret and summarize weather radar displays as appropriate.

1. Use all available radar data and PIREPs to determine intensity, tops, area of coverage, movement, etc.

REFERENCE—

Pilot Controller Glossary (P/CG) Term, Precipitation Radar Weather Descriptions.

2. Identify data obtained from sources other than radar display by source and time of observation.

3. Define area of coverage in relation to VORs, airways for the route structure being flown, airports or geographic points to assist the pilot in relating coverage to route of flight or destination.

EXAMPLE—

"A broken line of light to heavy echoes covers an area along and three zero miles east of a line from the Crazy Woman V-O-R to the Riverton V-O-R. Average tops between two-six thousand and three-four thousand. This line is increasing in intensity. Movement has been from northwest to southeast at three zero knots. The line includes an extreme echo one five miles in diameter on Victor Two Ninety-eight forty-eight miles southeast of the Worland V-O-R, tops four three thousand. There are no known echoes within three-zero nautical miles of Victor Eight-five or Victor Two Ninety-eight south at this time."

2-1-5. FORECASTS, WARNINGS, AND ADVISORIES

a. Use only weather forecasts, warnings, and advisories issued by a National Weather Service

(NWS) office, including Center Weather Service Units (CWSUs), the U.S. military, foreign governments, or graphics systems owned/leased by the FAA or provided through a FAA–contracted service provider.

b. Use the OUTLOOK section of WSTs to provide information on where convective activity is expected. Use the Convective Outlooks (ACUS01 KWNS) to extract pertinent forecast information regarding the convective activity.

c. When an NWS forecast requires an amendment or correction, request assistance from the appropriate NWS office.

■ 2-1-6. UNAVAILABILITY OF DATA

Use all available means to obtain the data required to brief pilots. If a complete briefing cannot be provided due to circuit problems or missing data, inform the pilot of this fact. Brief to the extent possible. Advise the pilot of the time you expect the data to be available.

■ 2-1-7. TYPE OF BRIEFING TO BE CONDUCTED

Provide the pilot with the type of briefing requested (standard, abbreviated, or outlook). When it is not clear initially which type briefing is desired, provide the first one or two items requested, and then ascertain if the pilot would like a standard briefing. If a standard briefing is requested, conduct the briefing in accordance with Paragraph 2-2-1. If the pilot does not desire a standard briefing, provide either an abbreviated briefing in accordance with Paragraph 2-2-2 or an outlook briefing in accordance with Paragraph 2-2-3.

■ 2-1-8. LOGGING PILOT BRIEFINGS

a. Pilot briefings must be logged and retained in accordance with FAA Order 1350.14, Records Management. Briefings must be logged in operation-

al systems when possible but may be logged manually if needed for operational efficiency.

b. Operational systems must, as a minimum, automatically record the facility/sector, date, position, time, and specialist identification for each logged briefing. In addition, enter the following information:

1. Departure and destination.

2. Aircraft identification. (The pilot's name may be substituted for the aircraft identification, if unknown.)

3. Remarks, as applicable, to indicate OTLK (outlook briefing), AB (abbreviated briefing), and/or VNR.

c. To manually log pilot briefings, use one of the following FAA forms:

1. FAA Form 7233-2, Pilot Briefing Log. Use a separate form each day. Two or more forms may be used simultaneously at different operating positions. Complete boxes 1 through 3 on each form. Enter appropriate data in columns 4, 5, 6, 7, 8 (if pertinent), and 9. If the pilot's name is known, it may be substituted for the aircraft identification. As applicable, enter OTLK (outlook briefing), AB (abbreviated briefing), and/or VNR in column 8.

2. FAA Forms 7233-5, Inflight Contact Record, or 7230-21, Flight Progress Strip. Enter PB in block 14 if a briefing is provided. As applicable, also enter AB, OTLK, and/or VNR in the same block.

NOTE-

See Appendix B for FAA forms.

d. Where audio recorders are used, facility management may limit entries on pilot briefing records to those required for facility use.

e. Where fast-file recorders are used and the pilot states the source of a briefing on the recorder, it must be entered in the remarks field of the flight plan.

EXAMPLE-

PB/DCA

PB/DUATS

Section 2. Preflight Pilot Briefing

2-2-1. CONDUCT OF STANDARD BRIEFING

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

1. Type of flight planned.
2. Aircraft identification or pilot's name.
3. Aircraft type.
4. Departure point.
5. Route of flight.
6. Destination.
7. Flight altitude(s).

8. Estimated time of departure (ETD) and estimated time en route (ETE).

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

PHRASEOLOGY–

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

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

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

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

EXAMPLE–

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

“Palmer airport closed”

NOTE–

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

2. VFR Flight Not Recommended (VNR).

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

PHRASEOLOGY–

VFR FLIGHT NOT RECOMMENDED

EXAMPLE–

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

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

NOTE–

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

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

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

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

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

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

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

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

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

NOTE—

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

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

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

NOTE—

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

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

11. Request for PIREPs. Include this element when in your judgment, a report of actual inflight conditions is beneficial or when conditions meet criteria for solicitation of PIREPs (paragraph 8-2-5). 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 2-2-1c8(a), SUA-related airspace (air traffic control assigned airspace (ATCAA)), and MTR activity. For all SUA and MTR data requests, advise the pilot that information may be updated periodically and to contact the appropriate ATC facility for additional information while in flight.

NOTE—

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

(b) Approximate density altitude data.

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

(d) Military NOTAMs.

REFERENCE—

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

(e) Special FDC instrument approach procedure changes.

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

NOTE—

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

(g) Information contained in the Federal NOTAM System (FNS) NOTAM Search external links or Air Traffic Plans and Publications website, to include Domestic Notices and International Notices.

2-2-2. CONDUCT OF ABBREVIATED BRIEFING

a. Provide an abbreviated briefing when a pilot requests information to supplement mass-dissemin-

ated 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 2-2-1c2. 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 2-2-1c1, 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 2-2-1c.

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 2-2-1c1.

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

2-2-3. 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 2-2-1c. 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 3. Inflight Services

Section 1. General

3-1-1. 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.

c. Prior to assuming inflight duties, the specialist must review, as a minimum, the graphic information listed in subparagraph 2-1-4a, Weather Display Products (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.

3-1-2. 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. Treat air ambulance flights as follows:

1. Provide priority handling to civil air ambulance flights when the pilot, in radio transmissions, verbally identifies the flight by stating "MEDEVAC" followed by the FAA authorized call sign or the full civil registration letters/numbers. Good judgment must be used in each situation to facilitate the most expeditious movement of a MEDEVAC aircraft.

NOTE-

If a flight plan includes the letter "L" for "MEDEVAC" and/or includes "MEDEVAC" in Item 11 (Remarks) of the flight plan or Item 18 (Other Information) of an international flight plan, the entries are considered informational in nature only and not an identification for operational priority.

REFERENCE-

FAA Order JO 7110.10, Para 11-1-15, Aircraft Identification.

2. Provide priority handling to AIR EVAC and HOSP flights when verbally requested by the pilot.

NOTE-

If a flight plan includes "HOSP" or "AIR EVAC" in either Item 11 (Remarks) of the flight plan or Item 18 (Other Information) of an international flight plan, the entries are considered informational in nature only and not an identification for operational priority.

3. Assist the pilots of MEDEVAC, AIR EVAC, and HOSP aircraft to avoid areas of significant weather and adverse conditions.

4. If requested by a pilot, provide additional assistance (i.e., landline 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.

3-1-3. INFLIGHT WEATHER BRIEFING

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

3-1-4. 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.

3-1-5. 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, Daily Record of Facility Operation.

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 3-1-5b.

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.

3-1-6. 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 2. Data Recording

3-2-1. TYPES OF DATA RECORDED

- a. Operational system entries for:
 1. Flight plans and related messages.
 2. Logging pilot briefings and aircraft contacts.
 3. Weather/Flight data messages.
- b. Manual strip marking.

3-2-2. METHODS OF RECORDING DATA

a. Except as provided in 3-2-2b, 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 either FAA Order JO 7340.2, Contractions, or FAA Order JO 7350.9, 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 3-2-1 to prevent misinterpretation.

FIG 3-2-1

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	<u>S</u>
T	T
U	U
V	V
W	W
X	X
Y	Y
Z	<u>Z</u>
1	I
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	Ø

NOTE–

A slant line crossing through the numeral zero and an underline of the letter “S” on handwritten portions of flight progress strips are required only when there is reason to believe the lack of these markings could lead to a misunderstanding. A slant line through the numeral zero is required on all weather data.

1. To correct or update data, draw a horizontal line through it and write the correct information adjacent to it.

2. Do not erase any item.

3-2-3. IFR/VFR/DVFR FLIGHT PLAN RECORDING

a. Use the operational system to record and file flight plans, flight plan modifications, cancellations, activations, and closures for appropriate distribution and processing. Detailed instructions are contained in the operational system manuals.

NOTE–

FSS operational systems contain an electronic equivalent of authorized FAA Flight Plan Forms.

b. When closing an active VFR flight plan, obtain departure point and destination, if not already known.

NOTE–

A canceled VFR flight plan is one that is removed from a proposed list and has not been activated. A closed VFR flight plan is one that has been activated and is then removed from an inbound list.

c. Flight plan information may initially be recorded on FAA Form 7233-1 or other paper prior to entry into the operational system.

3-2-4. FLIGHT PROGRESS STRIPS (FAA FORMS 7230-21 AND 7233-5)

a. When officially used to record inflight data, use flight progress strips to record:

1. Aircraft contacts.
2. ATC clearances.
3. Pilot briefings on airborne aircraft.
4. Other operationally significant items.

b. Use a flight progress strip for each aircraft and record all contacts with that aircraft on the same strip. If supplemental strips are needed for additional writing space, keep the original and supplemental strips together.

NOTE–

Multiple flights by the same aircraft may be recorded on a single strip when situational awareness and strip bay efficiency are improved.

3-2-5. FLIGHT PROGRESS STRIPS AND ENTRY DATA

a. Flight progress strip. (See FIG 3-2-2.)

b. Flight progress strip entry. (See FIG 3-2-3 and FIG 3-2-4.)

FIG 3-2-2
Flight Progress Strip

1	2	3	10	12	13	14
4	5					
6	7	8				
		9				

FIG 3-2-3
Strip Entry 1

NI23E		C210/R	I50	↑ ^v	I615	AVFP	
MFE	CRP				55	O/CRP	PB DFW S CI
					1740	LNDG SAT AWX ✓	VNR
AUS	I610 / I820 / 2110						

FIG 3-2-4
Strip Entry 2

N3456Y		BE35		V →	I94I	O/SAT EI+// 00 ✓	REQ UA
				55	32E SAT OVC65	PB PPSN - HOU	
LFT							

c. Flight progress strip Item and Information.
(See TBL 3-2-1.)

TBL 3-2-1
Item and Information

Item	Information
1	Aircraft Identification (ACID) (To identify IFR aircraft piloted by solo USAF under-graduate pilot, the letter Z will be added to aircraft ID on the flight progress strip. Do not use the suffix in ground-to-air communications.)
2	Type of aircraft/special equipment.
3	True airspeed (TAS) and altitude (IFR). Altitude (VFR/DVFR, if known).
4	Departure point.
5	Route of flight.
6	Destination.
7	Actual departure time, or time VFR flight plan activated.
8	ETA at destination.
9	Estimated time of fuel exhaustion.
10	Type of flight.
11	Action time; for example, overdue time, fuel exhaustion time, LR contact time.
12	Time of contact with pilot.
13	Information received from pilot/another facility.
14	Data issued to the aircraft.

d. Flight progress strip abbreviation.
(See TBL 3-2-2.)

TBL 3-2-2
Abbreviation

Abbreviation	Meaning
Ö	Over Flight
↓	Inbound Flight
↑	Outbound Flight
A	AIRMET (WA)
AA	Airport Advisory
CWT	Caution Wake Turbulence
D	DVFR
DA	Decided Against Flight
DD	Decided to Delay Flight
DW	Downwind
FP	Filed Flight Plan
I	IFR
IC	Incomplete Briefing
PB	Pilot Brief
RY	Runway
S	SVFR
V	VFR
VNR	VFR Flight not recommended (Pilot Brief)
WS	SIGMET
WST	Convective SIGMET

e. Record ATC instructions and clearances completely and exactly.

f. Summarize other data using approved symbols and contractions. (See FIG 3-2-5 and FIG 3-2-6.)

FIG 3-2-5
Control Information Symbols Chart 1

Symbols	Meaning
T→()	Depart (direction, if specified)
↑	Climb and maintain
↓	Descend and maintain
→	Cruise
@	At
X	Cross
→	Maintain
↗	Join or intercept airway/jet route/track or course
=	While in controlled airspace
△	While in control area
△	Enter control area
△	Out of control area
NW NE E	Cleared to enter, depart or through surface area indicated direction of flight by arrow and appropriate compass letter. Maintain Special VFR conditions (altitude if appropriate) while in surface area
250 K	Aircraft requested to adjust speed to 250 knots.
-20K	Aircraft requested to reduce speed 20 knots.
+30K	Aircraft requested to increase speed 30 knots.
Ⓢ	Local Special VFR operations in the vicinity of (name) airport are authorized until (time). Maintain special VFR conditions (altitude if appropriate).
>	Before
<	After or Past
<u>170</u> (red)	Inappropriate altitude/flight level for direction of flight. (Underline assigned altitude/flight level in red.)
/	Until
()	Alternate instructions
Restriction	Restriction
↓	At or Below
↑	At or Above
-(Dash)	From-to (route, time, etc.)
(Alt)B(Alt)	Indicates a block altitude assignment. Altitudes are inclusive, and the first altitude must be lower than the second. Example: 310B370
∨ <	Clearance void if aircraft not off ground by (time)

NOTE: The absence of an airway route number between two fixes in the route of flight indicates "direct" no symbol or abbreviation is required.

FIG 3-2-6
Control Information Symbols Chart 2

Symbols	Meaning
	Pilot cancelled flight plan
✓	EN ROUTE: Aircraft has reported at assigned altitude, Example: 80 ✓
✓	TERMINAL/FSS: Information forwarded (indicated information forwarded as required)
	EN ROUTE: Information or revised information forwarded. (Circle, in red, inappropriate altitude/flight level for direction of flight or other control information when coordinated. Also circle, in red, the time (minutes and altitude when a flight plan or estimate is forwarded. Use this method in both inter-center and intra-center coordination)
	Other than assigned altitude reported (circle reported altitude)
	DME holding (use with mileages) (Upper figure indicates distance from station to DME fix; lower figure indicates length of holding pattern.) In this example, the DME fix is 10 miles out with a 6-mile pattern indicated.
	DME arc of VORTAC, TACAN, or MLS
	Contact (facility) or (freq.), (time, fix, or altitude if appropriate). Insert frequency only when it is other than standard.
R	Radar contact
R	EN ROUTE: Requested altitude (preceding altitude information)
	Radar service terminated
	Radar contact lost
RV	Radar vector
	Radar handoff (circle symbol when handoff completed)
E (red)	EMERGENCY
W (red)	WARNING
P	Points out initiated. Indicated the appropriate facility, sector, or position. Example: PZFW/
FUEL	Minimum fuel

NOTE: The absence of an airway route number between two fixes in the route of flight indicates "direct" no symbol or abbreviation is required.

g. Do not record issuance of altimeter setting unless that is the only information provided during the contact.

3-2-6. AIRCRAFT CONTACTS

a. Inflight contacts may be logged in the operational system, on flight progress strips, or on facility approved alternate forms.

b. When using flight progress strips, if the station has the aircraft's flight plan, enter "FP" in item 14 on the strip to show the flight plan is on file at the facility.

c. If there is no flight plan on file for the aircraft, the following must be obtained:

1. ACID.
2. Type of flight.
3. Time of contact.

4. Other items which are operationally significant.

d. If the inflight position is recorded, you may limit entries in the aircraft contact portion of the strip to those necessary for your use.

e. Log aircraft contacts using the operational system. The following should be logged using the symbols in TBL 3-2-3 and TBL 3-2-4:

1. Type of Briefing

- (a) Standard
- (b) Abbreviated
- (c) Outlook

2. Type of Flight

- (a) IFR
- (b) VFR
- (c) Defense VFR (DVFR)

3. Category of Flight

- (a) Air Carrier
- (b) Air Taxi
- (c) Military
- (d) General Aviation

4. Aircraft ID

5. Type of Service

- (a) Airport advisory
- (b) Clearance(s); for example, IFR, special VFR (SVFR)

6. Remarks. Operating Position (if not automatically logged by operational system)

**TBL 3-2-3
Clearance Abbreviation**

Abbreviation	Meaning
A	Cleared to airport (point of intended landing).
B	Center clearance delivered
C	ATC clears (when clearance relayed through non-ATC facility).
CAF	Cleared as filed.

D	Cleared to depart from the fix.
F	Cleared to the fix.
H	Cleared to hold and instructions issued.
L	Cleared to land.
N	Clearance not delivered.
O	Cleared to the outer marker.
PD	Cleared to climb/descend at pilot's discretion.
Q	Cleared to fly specified sectors of a NAVAID defined in terms of courses, bearings, radials, or quadrants within a designated radius.
T	Cleared through (for landing and takeoff through intermediate point).
V	Cleared over the fix.
X	Cleared to cross (airway, route, radial) at (point).
Z	Tower jurisdiction.

**TBL 3-2-4
Miscellaneous Abbreviation**

Abbreviation	Meaning
BC	Back course approach.
CT	Contact approach.
FA	Final approach.
GPS	GPS approach.
I	Initial approach.
ILS	ILS approach.
MA	Missed approach.
MLS	MLS approach.
NDB	Nondirectional radio beacon approach.
OTP	VFR conditions-on-top.
PA	Precision approach.
PT	Procedure turn.
RH	Runway heading.
RP	Report immediately upon passing (fix/altitude).
RX	Report crossing.
SA	Surveillance approach.
SI	Straight-in approach.
TA	TACAN approach.
TL	Turn left.
TR	Turn right.
VA	Visual approach.
VR	VOR approach.

Section 3. Radio Communications

3-3-1. 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.

3-3-2. 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.

3-3-3. 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.”

■ 3-3-4. 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.

■ 3-3-5. 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
FAA Order 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 3–3–1.)

TBL 3–3–1

Millibar Conversion Chart

MILLIBAR CONVERSION CHART															
<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>	<i>inches</i>	<i>millibars</i>
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	1048.4	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

3-3-6. 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).

3-3-7. 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 (VCOA) 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:

(ARTCC facility's name) Center FLIGHT DATA, CLEARANCE REQUEST

or

(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–

P/CG.

3-3-8. 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).*

3-3-9. 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).*

3-3-10. 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.

3-3-11. 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.

3-3-12. 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.

3-3-13. 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)

3-4-1. 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.

3-4-2. GENERAL

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

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

PHRASEOLOGY-

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

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

PHRASEOLOGY-

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

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

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

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

PHRASEOLOGY-

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

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

EXAMPLE-

RAIS:

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

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

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

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

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

NOTE—

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

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

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

EXAMPLE—

“Verify you have information ALPHA.”

h. If the pilot requests special VFR clearance, provide the appropriate elements and follow the procedures in Chapter 3, Section 5, Special VFR Operations.

3-4-3. 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 to all aircraft as follows:

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

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

EXAMPLE–

“Braking action poor.”

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

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

EXAMPLE–

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

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

NOTE–

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

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 3–3–5a.

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 3–4–1.

TBL 3–4–1

Density Altitude

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

PHRASEOLOGY–

CHECK DENSITY ALTITUDE.

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

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

EXAMPLE–

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

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

EXAMPLE–

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

NOTE–

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

3-4-4. CHARTS

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

3-4-5. AUTHORIZED FREQUENCIES

a. Airport Advisory:

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

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

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

NOTE–

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

PHRASEOLOGY–

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

b. RAIS:

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

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

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

4. If RAIS is requested when it is not offered, inform the pilot that the service is not available and follow para 3-4-2c.

NOTE-

This service is only provided at remote airports that have an existing discrete communications capability between the airport and the flight service station serving the

airport and a NOTAM D announcing the availability of the service is in effect.

3-4-6. TRAFFIC CONTROL

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

PHRASEOLOGY-

NO CONTROL TOWER IN OPERATION.

3-4-7. AIRCRAFT EQUIPMENT CHECKS

When requested, provide observed information.

EXAMPLE-

Landing gear appears to be down and in place.

Section 5. Special VFR Operation

3-5-1. AUTHORIZATION

a. Special VFR (SVFR) operations in weather conditions less than VFR minima are authorized:

1. For helicopters and fixed-wing aircraft at any location not prohibited by 14 CFR Part 91, Appendix D, Section 3, or when an exception to 14 CFR Part 91, Appendix D, Section 3, has been granted and an associated letter of agreement established.

REFERENCE—

14 CFR Part 91, Appendix D, Section 3, Locations at which fixed-wing Special VFR operations are prohibited.

2. Only within surface areas.

3. Only when requested by the pilot.

b. When the primary airport is reporting VFR, SVFR operations may be authorized for aircraft transiting surface areas when the pilot advises the inability to maintain VFR.

NOTE—

Control facilities must always retain SVFR operations authority when IFR operations are being conducted in surface areas.

3-5-2. REQUESTS FOR SPECIAL VFR CLEARANCE

a. Transmit SVFR clearances only for operations within surface areas on the basis of weather conditions. If weather conditions are not reported, transmit an SVFR clearance whenever a pilot advises unable to maintain VFR and requests an SVFR clearance, provided the pilot reports having at least 1-mile flight visibility.

PHRASEOLOGY—

ATC CLEARS (aircraft identification) TO ENTER/OUT OF/THROUGH (name) SURFACE AREA

and if required,

(direction) OF (name) AIRPORT (specified routing), and

MAINTAIN SPECIAL V-F-R CONDITIONS,

and if required,

AT OR BELOW (altitude below 10,000 feet MSL),

ATC CLEARS (aircraft identification) (coded arrival or departure procedure) ARRIVAL/DEPARTURE, (additional instructions as required).

b. Transmit clearance for local SVFR operations for a specified period (series of takeoffs and landings, etc.) upon request if the aircraft can be recalled when traffic or weather conditions require. Letters of agreement may be established.

PHRASEOLOGY—

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

c. If an aircraft operating under visual flight rules attempts to enter, depart, or operate within surface areas contrary to the provisions of 14 CFR Section 91.157 (visual flight rules), ensure the pilot is aware of the current weather conditions. Provide the following information:

1. 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.

2. At airports without a commissioned automated weather, or, if the pilot is unable to receive the automated weather broadcast, issue the most current weather report available. Advise the pilot that the weather is below VFR minima, and request the pilot's intentions.

PHRASEOLOGY—

(Location) WEATHER, CEILING (height), VISIBILITY (miles). (Location) SURFACE AREA IS BELOW V-F-R MINIMA. AN ATC CLEARANCE IS REQUIRED. ADVISE INTENTIONS.

NOTE—

Helicopters performing hover taxiing operations (normally not above 10 feet) within the boundary of the airport are considered to be taxiing aircraft.

d. At a pilot's request, issue a SVFR clearance, if appropriate, when a SVFR letter of agreement exists between an FSS and the control facility. If no agreement exists, request clearance from the control

facility. State the aircraft's location and route of flight.

PHRASEOLOGY–

(Facility name) *RADIO. REQUEST SPECIAL V-F-R CLEARANCE (aircraft identification) (direction) OF (location) AIRPORT (specified routing) TO ENTER/OUT OF/THROUGH (name) AIRPORT (specified routing).*

NOTE–

IFR aircraft normally have priority over SVFR aircraft.

1. If the pilot is operating outside surface area and requests SVFR clearance, issue the clearance or if unable, advise the pilot to maintain VFR outside surface area and to standby for clearance.

PHRASEOLOGY–

MAINTAIN V-F-R OUTSIDE (location) SURFACE AREA. STANDBY FOR CLEARANCE.

2. When an aircraft requests a SVFR clearance to enter surface area during periods of SVFR activity, instruct the pilot to maintain VFR conditions outside surface area pending arrival/recall/departure of SVFR operations.

PHRASEOLOGY–

MAINTAIN V-F-R CONDITIONS OUTSIDE OF THE (location) SURFACE AREA PENDING ARRIVAL/RECALL/DEPARTURE OF IFR/SPECIAL V-F-R AIRCRAFT.

3. If the pilot is operating inside the surface area and requests an SVFR clearance, advise the pilot to maintain VFR and standby for clearance.

PHRASEOLOGY–

MAINTAIN V-F-R. STANDBY FOR CLEARANCE.

e. Suspend SVFR operations when necessary to comply with instructions contained in subpara 3–5–4b or when requested by the control facility.

PHRASEOLOGY–

SPECIAL V-F-R AUTHORIZATION DISCONTINUED. RETURN TO AIRPORT OR DEPART SURFACE AREA. ADVISE INTENTIONS.

After response:

REPORT LANDING COMPLETED/CLEAR SURFACE AREA.

3–5–3. VISIBILITY BELOW 1 MILE

a. When the ground visibility is officially reported at an airport as less than 1 mile, treat requests for

SVFR operations at that airport by other than helicopters as follows:

NOTE–

14 CFR Part 91 does not prohibit helicopter Special VFR flights when visibility is less than 1 mile.

1. Inform departing aircraft that ground visibility is less than 1 mile and that a clearance cannot be issued.

PHRASEOLOGY–

(Location) VISIBILITY (value). A-T-C UNABLE TO ISSUE DEPARTURE CLEARANCE.

2. Inform arriving aircraft operating outside of the surface area that ground visibility is less than 1 mile and, unless an emergency exists, a clearance cannot be issued.

PHRASEOLOGY–

(Location) VISIBILITY (value). A-T-C UNABLE TO ISSUE ENTRY CLEARANCE UNLESS AN EMERGENCY EXISTS.

3. Inform arriving aircraft operating within the surface area that ground visibility is less than 1 mile and request the pilot's intentions. Relay the pilot's response to the control facility immediately.

PHRASEOLOGY–

(Location) VISIBILITY (value). ADVISE INTENTIONS.

b. When weather conditions are not officially reported at an airport and the pilot advises the flight visibility is less than 1 mile, treat request for SVFR operations at that airport by other than helicopters as follows:

NOTE–

14 CFR Part 91 prescribes use of officially reported ground visibility as the governing ground visibility for VFR and SVFR operations at airports where it is provided and landing or takeoff flight visibility where it is not.

1. Inform departing aircraft that a clearance cannot be issued.

PHRASEOLOGY–

UNABLE TO ISSUE DEPARTURE CLEARANCE.

2. Inform arriving aircraft operating outside the surface area that unless an emergency exists, a clearance cannot be issued.

PHRASEOLOGY–

ATC UNABLE TO ISSUE ENTRY CLEARANCE UNLESS AN EMERGENCY EXISTS.

3. Request intentions of arriving aircraft operating within surface areas. Relay the pilot's response to the control facility immediately.

***PHRASEOLOGY–
ADVISE INTENTIONS.***

c. Transmit a clearance to scheduled air carrier aircraft to conduct operations if ground visibility is not less than 1/2 mile.

d. Transmit a clearance to an aircraft to fly through surface area if the pilot reports flight visibility is at least 1 statute mile.

**3-5-4. PREDESIGNED SPECIAL VFR
CLEARANCES**

Transmit predesigned SVFR clearances only during those periods authorized by the control facility.

NOTE–

The control facility may rescind this authorization at any time.

a. Apply these procedures only to aircraft equipped with a functioning two-way radio. Refer all requests for no-radio SVFR operations to the control facility.

b. Transmit clearances so that only one aircraft at a time operates in surface area unless:

1. Otherwise authorized by a letter of agreement between the control facility and the FSS.

2. A pilot requests and all pilots agree that they will maintain visual separation while operating in surface area.

PHRASEOLOGY–

MAINTAIN VISUAL SEPARATION FROM (aircraft type).

Section 6. Automatic Flight Information Service (AFIS) (Alaska Only)

3-6-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)

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

NOTE-

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

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

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

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

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

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

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

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

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

EXAMPLE-

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

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

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

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

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

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

PHRASEOLOGY-

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

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

PHRASEOLOGY-

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

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

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

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

(b) Phonetic alphabet designator.

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

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

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

(1) An aviation surface report is considered current for 1 hour beyond the standard time of observation (H+00) unless superseded by a special or local observation or by the next hourly report.

(2) Do not broadcast obsolete data.

EXAMPLE–

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

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

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

EXAMPLE–

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

"Transcribed weather broadcast out of service."

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

PHRASEOLOGY–

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

EXAMPLE–

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

REFERENCE–

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

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

EXAMPLE–

"Low level wind shear is forecast."

(j) Unauthorized Laser Illumination Events. When a laser event is reported, include reported unauthorized laser illumination events on the AFIS

broadcast for one hour following the last report. Include the time, location, altitude, color, and direction of the laser as reported by the pilot.

PHRASEOLOGY–

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

EXAMPLE–

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

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

PHRASEOLOGY–

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

EXAMPLE–

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

NOTE–

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

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

REFERENCE–

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

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

(m) Local frequency advisory.

PHRASEOLOGY–

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

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

EXAMPLE–

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

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

Chapter 4. Emergency Services

Section 1. General

4-1-1. EMERGENCY DETERMINATION

a. Because of the infinite variety of possible emergency situations, specific procedures cannot be prescribed. However, when it is believed that an emergency exists or is imminent, take a course of action which appears to be most appropriate under the circumstances and which most nearly conforms to the instructions in this manual.

b. An emergency can be either a DISTRESS or URGENCY condition, as defined in the Pilot/Controller Glossary.

NOTE—

A pilot who encounters a DISTRESS condition may declare an emergency by beginning the initial communication with the word MAYDAY, preferably repeated three times. For an URGENCY condition, the word PAN-PAN may be used in the same manner.

c. If the words MAYDAY or PAN-PAN are not used, and there is doubt that a situation constitutes an emergency or potential emergency, handle it as though it is an emergency.

d. Consider an aircraft emergency exists and inform the appropriate control facility when:

1. An emergency is declared by any of the following:

(a) The pilot.

(b) Facility personnel.

(c) Officials responsible for the operation of the aircraft.

2. Reports indicate that the aircraft's operating efficiency is so impaired that a forced landing may be/is necessary.

3. Reports indicate the crew has abandoned the aircraft or is about to do so.

4. Intercept or escort services are requested.

5. The need for ground rescue appears likely.

6. An Emergency Locator Transmitter (ELT) signal is heard or reported.

REFERENCE—

FAA Order JO 7110.10, Para 4-1-2, Responsibility, Subpara c.

FAA Order JO 7110.10, Para 4-2-8, Emergency Locator Transmitter (ELT) Signals

4-1-2. RESPONSIBILITY

a. If in communication with an aircraft in distress, handle the emergency, and coordinate and direct the activities of assisting facilities. Transfer this responsibility to another facility only when better handling of the emergency will result.

b. Upon receipt of information about an aircraft in distress, forward detailed data to the appropriate control facility in whose area the emergency exists.

NOTE—

Notifying the appropriate control facility about a VFR aircraft emergency allows provision of IFR separation if considered necessary.

c. The ARTCC is responsible for consolidation of all pertinent ELT signal information. Notify the ARTCC of all heard or reported ELT signals.

4-1-3. OBTAINING INFORMATION

Obtain enough information to handle the emergency intelligently. Base decisions about the type of assistance needed on information and requests received from the pilot. 14 CFR Part 91 authorizes the pilot to determine a course of action.

4-1-4. COORDINATION

a. Request assistance from other facilities as soon as possible, particularly if radar is available.

b. Coordinate efforts to the extent possible to assist any aircraft believed overdue, lost, or in emergency status.

4-1-5. PROVIDING ASSISTANCE

a. Provide maximum assistance to aircraft in distress. If the aircraft is transponder-equipped and not on an IFR flight plan, instruct the pilot to squawk code 7700.

PHRASEOLOGY—

SQUAWK SEVEN SEVEN ZERO ZERO.

- b. Enlist the service of available radar facilities.

■ 4-1-6. RECORDING INFORMATION

Record all actions taken in the provision of emergency assistance.

■ 4-1-7. SAFE ALTITUDES FOR ORIENTATIONS

- a. Providing a safe altitude, during an orientation, is advisory in nature.

- b. Safe altitude computations, once the aircraft position is known, are as follows:

- 1. Locate the maximum elevation figure on the appropriate VFR sectional chart.

- 2. To the maximum elevation figure,

- (a) Add 1,000 feet over non-mountainous terrain; or

- (b) Add 2,000 feet over mountainous terrain.

- 3. Designated mountainous/non-mountainous areas are found in Title 14 CFR, Part 95, subpart b.

Section 2. Operations

4-2-1. INFORMATION REQUIREMENTS

a. Start assistance as soon as enough information has been obtained upon which to act. Information requirements will vary, depending on the existing situation. Minimum required information for inflight emergencies is:

1. Aircraft identification, type, and transponder.
2. Nature of the emergency.
3. Pilot's desires.

b. After initiating action, provide the altimeter setting, and obtain the following items or any other pertinent information from the pilot or aircraft operator as necessary:

1. Aircraft altitude.
2. Fuel remaining, in time.
3. Pilot-reported weather.
4. Pilot capability for IFR flight.
5. Time and place of last known position.
6. Heading since last known position.
7. Airspeed.
8. Navigation equipment capability.
9. NAVAID signals received.
10. Visible landmarks.
11. Aircraft color.
12. Number of people on board.
13. Point of departure and destination.
14. Emergency equipment on board.

4-2-2. FREQUENCY CHANGES

Provide assistance on the initial contact frequency. Change frequencies only when there is a valid reason. Advise the pilot to return to the initial frequency if unable to establish contact.

4-2-3. AIRCRAFT ORIENTATION

Orient an aircraft by the means most appropriate to the circumstances. Recognized methods include:

- a. Radar.
- b. NAVAIDs.
- c. Pilotage.
- d. Sighting by other aircraft.

4-2-4. ALTITUDE CHANGE FOR IMPROVED RECEPTION

If deemed necessary, and if weather and circumstances permit, recommend the aircraft maintain or increase altitude to improve communications or reception.

4-2-5. ALERTING CONTROL FACILITY

When an aircraft is considered to be in emergency status, alert the appropriate control facility, and forward the following information as available:

- a. Facility/sector and position calling.
- b. Flight plan, including color of aircraft, if known.
- c. Time of last transmission received, by whom, and frequency used.
- d. Last known position, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.
- e. Action taken by reporting facility and proposed action.
- f. Number of persons on board.
- g. Fuel status.
- h. Position of other aircraft near the aircraft's route of flight, when requested.
- i. Whether an ELT signal has been heard or reported in the vicinity of the last known position.
- j. Other pertinent information.

4-2-6. VFR AIRCRAFT IN WEATHER DIFFICULTY

If a VFR aircraft requests assistance when it encounters or is about to encounter IFR weather conditions, request the pilot contact the appropriate control facility. Inform that facility of the situation.

If the pilot is unable to communicate with the control facility, relay information and clearances.

■ 4-2-7. AIRCRAFT POSITION PLOTS

If necessary, plot the flight path of the aircraft on a chart, including position reports, predicted positions, possible range of flight, and any other pertinent information. Solicit the assistance of other aircraft known to be operating near the aircraft in distress. Forward the information to the appropriate control facility.

■ 4-2-8. EMERGENCY LOCATOR TRANSMITTER (ELT) SIGNALS

When an ELT signal is heard or reported:

a. Notify the ARTCC, who will coordinate with the Rescue Coordination Center (RCC).

b. If the ELT signal report was received from an airborne aircraft, attempt to obtain the following information:

1. The aircraft altitude.
2. Where and when the signal was first heard.
3. Where and when maximum signal was heard.
4. Where and when signal faded or was lost.

Solicit the assistance of other aircraft known to be operating in the signal area for the same information. Relay all information obtained to the ARTCC.

c. Attempt to obtain fixes or bearings on the signal and forward any information obtained to the ARTCC.

NOTE-

Fix information, in relation to a VOR or a VORTAC (radial distance), facilitates accurate ELT plotting by RCC and should be provided when possible.

d. In addition to the above, when the ELT signal strength indicates the transmitter may be on the airport or in the vicinity, notify the on-site technical operations services personnel for their action.

e. Air traffic personnel must not leave their required duty stations to locate an ELT signal source.

f. Attempt to locate the signal source by checking all adjacent airports not already checked by other ATC facilities for the following information:

1. Can ELT signal be heard?
2. Does signal strength indicate transmitter may be on airport?
3. Can attempt be made to locate and silence transmitter?
4. Advise the results of any action taken. Forward all information obtained and action taken to the ARTCC.
- g. Notify the ARTCC if the signal source is located and whether the aircraft is in distress, plus any action taken or proposed for silencing the transmitter. Request person who located signal's source to attempt to obtain ELT make, model, etc., for relay to RCC via the ARTCC.
- h. Notify the ARTCC if the signal terminates prior to location of the source.

NOTE-

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

2. *Operational ground testing of ELT has been authorized during the first 5 minutes of each hour. To avoid confusing the tests with an actual alarm, the testing is restricted to no more than three audio sweeps.*

3. *Portable, handcarried receivers assigned to air traffic facilities (where no technical operations services personnel are available) may be loaned to responsible airport personnel or local authorities to assist in locating signal source.*

■ 4-2-9. EXPLOSIVE CARGO

When you receive information that an emergency landing will be made with explosive cargo aboard, inform the pilot of the safest or least congested airport areas. Relay the explosive cargo information to:

- a. The emergency equipment crew.
- b. The airport management.
- c. The appropriate military agencies when requested by the pilot.

■ 4-2-10. EXPLOSIVE DETECTION DOG HANDLER TEAMS

Take the following actions upon receipt of a pilot request for the location of the nearest explosive detection K-9 team.

a. Obtain the aircraft's identification and current position, and advise the person in charge of the watch of the pilot's request.

b. Relay the pilot's request to the FAA Washington Operations Center, AEO-100, (202) 267-3333, and provide the aircraft identification and position.

c. AEO-100 will provide the nearest location. Have AEO-100 standby while the information is relayed to the pilot.

d. If the pilot wishes to divert to the airport location provided, obtain an estimated arrival time from the pilot, and advise the person in charge of the watch.

e. After the aircraft destination has been determined, provide the estimated arrival time to AEO-100. AEO-100 will then notify the appropriate airport authority at the diversion airport. In the event the K-9 team is not available at this airport, AEO-100 will advise the air traffic facility and provide them with the secondary location. Relay this to the pilot concerned for appropriate action.

REFERENCE—

FAA Order JO 7210.3, Para 2-1-12, Explosives Detection K-9 Teams

4-2-11. INFLIGHT EQUIPMENT MALFUNCTIONS

When a pilot reports an inflight equipment malfunction, take the following action:

a. Request the nature and extent of any special handling desired.

NOTE—

14 CFR Part 91.187 requires the pilot in command of each aircraft operated in controlled airspace under IFR **MUST** report as soon as practical to ATC any malfunctions of navigational, approach, or communication equipment occurring in flight. This includes the degree to which the capability of the aircraft to operate IFR in the air traffic control system is impaired and the nature and extent of any assistance desired from air traffic control.

b. Provide the maximum assistance possible consistent with equipment, workload, and any special handling requested.

c. Relay any special handling required or being provided to other specialists or facilities who will subsequently handle the aircraft.

4-2-12. MINIMUM FUEL

If an aircraft declares a state of "minimum fuel," inform any facility to whom control jurisdiction is transferred of the minimum fuel problem and be alert for any occurrence which might delay the aircraft en route.

NOTE—

Use of the term "minimum fuel" indicates recognition by a pilot that the fuel supply has reached a state whereupon reaching destination, any undue delay cannot be accepted. This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur. A minimum fuel advisory does not imply a need for traffic priority. Common sense and good judgment will determine the extent of assistance to be given in minimum fuel situations. If, at any time, the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, the pilot should declare an emergency and report fuel remaining in minutes.

4-2-13. AIRCRAFT BOMB THREATS

a. When information is received from any source that a bomb has been placed on, in, or near an aircraft for the purpose of damaging or destroying such aircraft, notify the supervisor or facility manager. If the threat is general in nature, handle it as a suspicious activity. When the threat is targeted against a specific aircraft and you are in contact with that aircraft, take the following actions as appropriate:

NOTE—

1. Facility supervisors are expected to notify the appropriate offices, agencies, and operators/air carriers according to applicable plans, directives, FAA Order JO 7210.3, Facility Operation and Administration, or military directives.

2. Suspicious activity is covered in FAA Order JO 7610.4, Chapter 7, Hijacked/Suspicious Aircraft Reporting and Procedures. Military facilities would report a general threat through the chain of command or according to service directives.

REFERENCE—

FAA Order JO 7610.4, Chapter 7, Hijacked/Suspicious Aircraft Reporting and Procedures.

3. A specific threat may be directed at an aircraft registry or tail number, the air carrier flight number, the name of an operator, crew member or passenger, the departure/arrival point or times, or combinations thereof.

1. Advise the pilot of the threat.

2. Report the threat to the Domestic Events Network (DEN) Air Traffic Security Coordinator (ATSC) via (844) 432-2962 (toll-free). If unable to

contact the DEN ATSC notify the Transportation Security Administration/Transportation Security Operation Center (TSA/TSOC) directly at 703-563-3400.

3. Ask if the pilot desires to climb or descend to an altitude that would equalize or reduce the outside air pressure/existing cabin air pressure differential. Obtain and relay an appropriate clearance considering minimum en route altitude (MEA), minimum obstruction clearance altitude (MOCA), minimum reception altitude (MRA), and weather.

NOTE–

Equalizing existing cabin air pressure with outside air pressure is a key step which the pilot may wish to take to minimize the damage potential of a bomb.

4. Handle the aircraft as an emergency, and/or provide the most expeditious handling possible with respect to the safety of other aircraft, weather conditions, ground facilities, and personnel.

NOTE–

Emergency handling is discretionary and should be based on the situation. With certain types of threats, plans may call for a low-key action or response.

5. Obtain and relay clearance to a new destination, if requested.

6. When a pilot requests technical assistance or if it is apparent that such assistance is needed, do NOT suggest what actions the pilot should take concerning a bomb, but obtain the following information and notify the supervisor who will contact the DEN ATSC or TSA/TSOC as explained in a2 above.

NOTE–

This information is needed by TSA explosives experts so that the situation can be assessed and immediate recommendations made to the pilot. The aviation explosives experts may not be familiar with all military aircraft configurations but can offer technical assistance which would be beneficial to the pilot.

(a) Type, series, and model of the aircraft.

(b) Precise location/description of the bomb device, if known.

(c) Other details which may be pertinent.

b. When a bomb threat involves an aircraft on the ground and you are in contact with the suspect aircraft, take the following actions in addition to

those discussed in the preceding paragraphs which may be appropriate:

1. If the pilot ignores the threat, recommend that takeoff be delayed until the pilot or aircraft operator establishes that a bomb is not aboard.

2. Advise the aircraft to remain as far away from other aircraft and facilities as possible, to clear the runway, if appropriate, and to taxi to an isolated or designated search area. When it is impractical or if the pilot takes an alternative action, such as parking and offloading immediately, advise other aircraft to remain clear of the suspect aircraft by at least 100 yards, if able.

NOTE–

Passenger deplaning may be of paramount importance and must be considered before the aircraft is parked or moved away from the service areas. The decision to use ramp facilities rests with the pilot, aircraft operator, and/or airport manager.

c. If you are unable to inform the suspect aircraft of a bomb threat or if you lose contact with the aircraft, advise your supervisor to contact the DEN ATSC for relay of pertinent details to other sectors or facilities, as deemed necessary.

d. When a pilot reports the discovery of a bomb or suspected bomb on an aircraft, determine the pilot's intentions and comply with his/her requests insofar as possible. Take all the actions discussed in the preceding paragraphs which may be appropriate under the existing circumstances.

e. The handling of aircraft when a hijacker has or is suspected of having a bomb requires special considerations. Be responsive to the pilot's requests and notify supervisory personnel. Apply hijacking procedures in accordance with FAA Order JO 7610.4, Special Operations, Chapter 7, and if needed, offer assistance to the pilot according to the preceding paragraphs.

4-2-14. EMERGENCY SECURITY CONTROL OF AIR TRAFFIC (ESCAT)

a. 32 CFR 245 Plan for the Emergency Security Control of Air Traffic (ESCAT) outlines responsibilities, procedures, and instructions for the security control of civil and military air traffic under various emergency conditions.

b. When notified of ESCAT implementation, follow the instructions received from the Air Traffic

Control System Command Center (ATCSCC), ARTCC, and/or Domestic Events Network (DEN) air traffic security coordinator (ATSC).

1. To ensure that ESCAT actions can be taken expeditiously, periodic ESCAT tests will be conducted in connection with NORAD exercises. Tests may be local, regional, or national in scope.

2. FSS must participate in tests except where such participation will involve the safety of aircraft.

3. During ESCAT tests, all actions will be simulated.

REFERENCE—

FAA Order JO 7610.4, Chapter 6, Emergency Security Control of Air Traffic (ESCAT).

Section 3. ADF/VOR Orientation

4-3-1. ACTIONS REQUIRED

When providing automatic direction finder (ADF)/VOR orientation services to an aircraft in emergency status:

- a. Determine if the aircraft is in VFR or IFR weather conditions, fuel remaining, altitude, and heading.
- b. If the aircraft is operating in IFR weather conditions, coordinate with the appropriate control facility.
- c. Determine if the aircraft is on a flight plan. If the aircraft is not on an IFR flight plan and is in VFR weather conditions, advise the pilot to remain VFR.

4-3-2. GENERAL

When providing ADF/VOR orientation services to an aircraft in emergency status:

a. Position Fixing.

1. Advise the pilot to remain VFR, and provide local altimeter setting.

PHRASEOLOGY–

MAINTAIN V-F-R AT ALL TIMES. ADVISE IF HEADING OR ALTITUDE CHANGE IS NECESSARY TO REMAIN V-F-R. (Location) ALTIMETER (setting).

2. Obtain heading and altitude. Advise the pilot to maintain straight and level flight and to align the heading indicator with the magnetic compass.

PHRASEOLOGY–

MAINTAIN STRAIGHT AND LEVEL FLIGHT. RESET YOUR HEADING INDICATOR TO AGREE WITH YOUR MAGNETIC COMPASS. AFTER YOU HAVE DONE THIS, SAY YOUR HEADING AND ALTITUDE.

3. Determine the weather conditions and fuel status.

PHRASEOLOGY–

WHAT IS THE WEATHER AT YOUR ALTITUDE AND FUEL REMAINING IN TIME?

4. Advise the pilot to maintain the same heading, verify the aircraft has ADF equipment, and determine the airspeed.

PHRASEOLOGY–

CONTINUE HEADING (degrees). WHAT TYPE OF

NAVIGATIONAL EQUIPMENT DO YOU HAVE ON BOARD, AND WHAT IS YOUR AIRSPEED?

5. Advise the pilot to tune the ADF receiver to the NDB. Provide the NDB name, identifier, and frequency.

PHRASEOLOGY–

TUNE YOUR A-D-F RECEIVER TO THE (name) RADIO BEACON, FREQUENCY (frequency), IDENTIFICATION (ident). CHECK VOLUME UP, AND IDENTIFY THE STATION. ADVISE WHEN YOU HAVE DONE THIS.

6. After acknowledgment has been received, advise the pilot to set the ADF function switch to the ADF position and report the reading.

PHRASEOLOGY–

IF YOU HAVE A ROTATING COMPASS CARD (ROSE) ON YOUR A-D-F INDICATOR, MAKE CERTAIN NORTH IS AT THE TOP OF THE DIAL. TURN THE FUNCTION SWITCH TO THE A-D-F POSITION. WHEN THE NEEDLE STABILIZES, ADVISE THE A-D-F NEEDLE READING.

REFERENCE–

The Instrument Flying Handbook. North may mean “north, N, zero (0) or 360.”

7. Compute the magnetic bearing.

(a) Relative Bearing (RB) + Magnetic Heading (MH) = Magnetic Bearing (MB)

(b) If the MB exceeds 360 degrees, subtract 360 to determine MB; for example, 480 degrees - 360 degrees = 120 degrees MB.

8. Advise the pilot of direction from the NDB.

PHRASEOLOGY–

YOU ARE (direction) OF THE (name) RADIO BEACON.

b. Orientation.

1. Turn the aircraft inbound to the NDB being used. Provide the direction of the turn and the heading to be flown. Advise the pilot to report when established on that heading.

PHRASEOLOGY–

FOR A-D-F ORIENTATION, TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED HEADING (degrees).

2. Notify the appropriate control facility. Provide all required information including the aircraft's position and heading.

3. Verify that the aircraft is established on a line of position to the NDB.

PHRASEOLOGY–

WHAT IS YOUR A-D-F NEEDLE READING?

4. Provide heading adjustments as needed for the aircraft to continue inbound to the NDB.

(a) If the pilot indicates an ADF reading other than 3-6-0, compute the new heading and advise the aircraft.

PHRASEOLOGY–

TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED HEADING (degrees).

(b) After pilot reports established and needle is on 3-6-0, heading adjustments are not necessary.

PHRASEOLOGY–

CONTINUE HEADING (degrees).

c. Cross-fixing. After the aircraft is established inbound to the NDB, use the following procedures:

1. Advise the pilot to tune the ADF receiver to the NDB to be used for cross-fixing. Provide the NDB name, identifier, and frequency.

PHRASEOLOGY–

TUNE YOUR A-D-F RECEIVER TO THE (name) RADIO BEACON, FREQUENCY (frequency), IDENTIFICATION (identification). CHECK VOLUME UP, AND IDENTIFY THE STATION. ADVISE WHEN YOU HAVE DONE THIS.

2. After acknowledgment has been received, request ADF reading.

PHRASEOLOGY–

WHEN THE NEEDLE STABILIZES, ADVISE THE A-D-F NEEDLE READING.

3. Compute and plot the second line of position.

NOTE–

The intersection of the two lines of position is the aircraft's position at the time of the second ADF reading.

4. Advise the pilot of the aircraft's position and the safe altitude for orientation in that area.

PHRASEOLOGY–

YOU ARE (miles) (direction) OF THE (name) RADIO BEACON. THE SAFE ALTITUDE FOR ORIENTATIONS IN THAT AREA IS (feet).

5. Request pilot's intentions and provide assistance, as requested.

PHRASEOLOGY–

WHAT ARE YOUR INTENTIONS?

4-3-3. VOR ORIENTATION/VOR CROSS-FIX

When using VOR orientation and/or cross-fix procedures, determine the aircraft's position as follows:

a. Position Fixing.

1. Advise the pilot to remain VFR and provide the local altimeter setting.

PHRASEOLOGY–

MAINTAIN V-F-R AT ALL TIMES. ADVISE IF HEADING OR ALTITUDE CHANGE IS NECESSARY TO REMAIN V-F-R. (Location) ALTIMETER (setting).

2. Obtain heading and altitude. Advise the pilot to maintain straight and level flight and to align the heading indicator to agree with the magnetic compass.

PHRASEOLOGY–

MAINTAIN STRAIGHT AND LEVEL FLIGHT. RESET YOUR HEADING INDICATOR TO AGREE WITH YOUR MAGNETIC COMPASS. AFTER YOU HAVE DONE THIS, SAY YOUR HEADING AND ALTITUDE.

3. Determine the weather conditions and the fuel status.

PHRASEOLOGY–

WHAT IS THE WEATHER AT YOUR ALTITUDE AND FUEL REMAINING IN TIME.

4. Advise the pilot to maintain the same heading, verify the aircraft has VOR equipment, and determine the airspeed.

PHRASEOLOGY–

CONTINUE HEADING (degrees). WHAT TYPE OF NAVIGATIONAL EQUIPMENT DO YOU HAVE ON BOARD, AND WHAT IS YOUR AIRSPEED?

5. If the pilot calls on a simplex frequency, such as 122.2, advise the pilot to tune the receiver to the VOR you have selected. Provide the VOR name, frequency, and communication procedures.

PHRASEOLOGY–

CONTINUE TRANSMITTING THIS FREQUENCY. TUNE YOUR V-O-R RECEIVER TO THE (name) V-O-R, FREQUENCY (frequency) IDENTIFICATION (identification). CHECK VOLUME UP, AND IDENTIFY THE STATION. ADVISE WHEN YOU HAVE DONE THIS.

NOTE–

If the pilot calls on duplex (122.1), use the VOR the pilot is tuned as the initial VOR.

6. Determine the aircraft's course selector reading.

PHRASEOLOGY–

ROTATE YOUR COURSE SELECTOR SLOWLY UNTIL THE LEFT/RIGHT NEEDLE CENTERS WITH A “TO” INDICATION. ADVISE YOUR COURSE SELECTOR READING.

7. Advise the pilot of the aircraft’s position.

PHRASEOLOGY–

YOU ARE (direction) OF THE (name) V-O-R.

- b. Orientation.

1. Turn the aircraft inbound to the VOR being used. Provide the direction of turn and the heading to be flown. Advise the pilot to report when established on that heading.

PHRASEOLOGY–

FOR V-O-R ORIENTATION, TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED HEADING (degrees).

2. Notify the appropriate control facility. Provide all the required information including the aircraft’s position and heading.

3. Verify that the aircraft is established on a line of position to the VOR.

PHRASEOLOGY–

WHAT IS THE POSITION OF YOUR LEFT/RIGHT NEEDLE?

4. Provide heading adjustments as needed for the aircraft to continue inbound to the VOR.

- (a) When the pilot indicates the left/right needle is not centered, advise the pilot to re-center needle with a “TO” indication and report the course selector reading.

PHRASEOLOGY–

Pilot response indicates needle not centered:

ROTATE YOUR COURSE SELECTOR SLOWLY UNTIL THE LEFT/RIGHT NEEDLE CENTERS WITH A “TO” INDICATION. ADVISE YOUR COURSE SELECTOR READING. (If appropriate) TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED (degrees).

- (b) After the aircraft is established on the inbound radial, advise the aircraft to continue on the inbound heading.

PHRASEOLOGY–

CONTINUE HEADING (degrees).

5. Plot line of position.

- c. Cross-fixing. After the aircraft is established inbound to the VOR, use the following procedures:

1. Advise the pilot to tune the receiver to the VOR you have selected for cross-fixing. Provide VOR name, frequency, and lost communications procedures.

PHRASEOLOGY–

CONTINUE TRANSMITTING THIS FREQUENCY. TUNE YOUR V-O-R RECEIVER TO THE (name) V-O-R, FREQUENCY (frequency), IDENTIFICATION (identification). CHECK VOLUME UP. IF COMMUNICATION IS NOT ESTABLISHED IMMEDIATELY, RETURN TO THIS FREQUENCY.

2. Using only the voice feature of the second VOR, establish positive communication with the aircraft.

PHRASEOLOGY–

(Name) RADIO TRANSMITTING ON THE (name) V-O-R. HOW DO YOU HEAR? OVER.

NOTE–

Transmit only on the frequency of the VOR being used for cross-fixing, if available.

3. After communication has been reestablished, advise the pilot to re-center the VOR left/right needle and advise the reading.

PHRASEOLOGY–

ROTATE YOUR COURSE SELECTOR SLOWLY UNTIL THE LEFT/RIGHT NEEDLE CENTERS WITH A “TO” INDICATION. ADVISE YOUR COURSE SELECTOR READING.

4. If the pilot is transmitting on duplex (122.1) and the cross fix VOR has no voice capability, provide the following instructions.

PHRASEOLOGY–

CONTINUE TRANSMITTING THIS FREQUENCY. TUNE YOUR VOR RECEIVER TO THE (name) VOR, FREQUENCY (frequency), IDENTIFICATION (ident). CHECK VOLUME UP AND IDENTIFY THE STATION. ROTATE YOUR COURSE SELECTOR SLOWLY UNTIL THE LEFT/RIGHT NEEDLE CENTERS WITH A “TO” INDICATION. ADVISE YOUR COURSE SELECTOR READING (PAUSE).

RETUNE YOUR VOR RECEIVER TO THE (name) VOR, FREQUENCY (frequency), IDENTIFICATION (identification). SAY YOUR AIRCRAFT IDENTIFICATION AND THE (name) VOR COURSE SELECTOR READING.

5. Advise the pilot to continue the inbound heading.

PHRASEOLOGY–

CONTINUE HEADING (degrees).

6. Plot the new line of position from the second VOR, advise the pilot of the aircraft's position, and the safe altitude for orientation in that area.

PHRASEOLOGY–

YOU ARE (miles) (direction) OF THE (name) V-O-R. THE SAFE ALTITUDE FOR ORIENTATIONS IN THAT AREA IS (feet).

NOTE–

The intersection of the two lines of position is the aircraft's position at the time of the second VOR reading.

7. Request the pilot's intentions.

PHRASEOLOGY–

WHAT ARE YOUR INTENTIONS?

4-3-4. GUIDANCE TO AIRPORT

After establishing the aircraft's position and if the pilot requests guidance to the airport:

- a. Plot the course to the airport.
- b. Provide the course guidance information to the pilot.

1. Advise the pilot of the direction of the turn and the heading to the airport.

PHRASEOLOGY–

FOR A HEADING TO THE (name) AIRPORT, TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED HEADING (degrees).

2. After the pilot reports established on the heading to the airport, advise the pilot of the position in relation to the airport.

PHRASEOLOGY–

YOU ARE (miles) (direction) OF THE (name) AIRPORT. CONTINUE HEADING (degrees).

3. Continue to provide assistance in the form of pilotage and airport information as necessary.

PHRASEOLOGY–

DO YOU SEE ANY PROMINENT LANDMARKS?

ARE YOU FAMILIAR WITH THE (name) AIRPORT?

(Name) AIRPORT FIELD ELEVATION (feet). IT HAS (number and surface type) RUNWAYS. THE RUNWAY/S RUN (direction). THE AIRPORT IS LOCATED (direction/distance) FROM (landmark visible to the aircraft).

4. Advise the pilot to report the landing airport in sight.

PHRASEOLOGY–

REPORT AIRPORT IN SIGHT.

5. Determine when the pilot no longer needs assistance.

PHRASEOLOGY–

DO YOU REQUIRE FURTHER ASSISTANCE?

6. When the pilot indicates assistance is no longer required, terminate the service. Provide the CTAF frequency, if appropriate, and the local altimeter setting.

PHRASEOLOGY–

(VOR/ADF) ORIENTATION SERVICE TERMINATED. COMMON TRAFFIC ADVISORY FREQUENCY (frequency). ALTIMETER (setting).

NOTE–

CTAF is defined as a UNICOM, Multicom, FSS, or airport traffic control tower (ATCT) frequency.

7. Notify appropriate control facility of the aircraft's position, termination of services, and the pilot's intentions.

Section 4. Global Positioning System (GPS)

4-4-1. ACTIONS REQUIRED

When providing GPS orientation services to an aircraft in emergency status:

- a. Determine if the aircraft is in VFR or IFR weather conditions, fuel remaining, altitude, and heading.
- b. If the aircraft is operating in IFR weather conditions, coordinate with the appropriate control facility.
- c. Determine if the aircraft is on a flight plan. If the aircraft is not on an IFR flight plan and is in VFR weather conditions, advise the pilot to remain VFR.

4-4-2. GPS ORIENTATION

When using GPS orientation, determine the aircraft's position as follows:

a. Position fixing.

1. Advise the pilot to remain VFR and provide the local altimeter setting.

PHRASEOLOGY–

MAINTAIN V-F-R AT ALL TIMES. ADVISE IF HEADING OR ALTITUDE CHANGE IS NECESSARY TO REMAIN V-F-R. (Location) ALTIMETER (setting).

2. Obtain heading and altitude. Advise the pilot to maintain straight and level flight and to align the heading indicator with the magnetic compass.

PHRASEOLOGY–

MAINTAIN STRAIGHT AND LEVEL FLIGHT. RESET YOUR HEADING INDICATOR TO AGREE WITH YOUR MAGNETIC COMPASS. AFTER YOU HAVE DONE THIS, SAY YOUR HEADING AND ALTITUDE.

3. Determine the weather conditions and fuel status.

PHRASEOLOGY–

WHAT IS THE WEATHER AT YOUR ALTITUDE AND FUEL REMAINING IN TIME.

4. Advise the pilot to maintain the same heading, verify the aircraft has GPS equipment, and determine the airspeed.

PHRASEOLOGY–

CONTINUE HEADING (degrees). WHAT TYPE OF NAVIGATIONAL EQUIPMENT DO YOU HAVE ON BOARD, AND WHAT IS YOUR AIRSPEED?

b. Orientation.

1. Advise pilot to turn on GPS or if GPS is turned on advise pilot to turn it off and back on.
2. Advise pilot to report when GPS is initialized.

NOTE–

This procedure ensures the GPS unit is not in simulator mode and does not have data displayed that may be misinterpreted.

3. Ask pilot for position information.

(a) Latitude and longitude

(b) Fix radial distance from NAVAID, airport, or fix

4. Plot the position of aircraft.

NOTE–

The position is the aircraft's position at the time of the GPS reading.

5. Advise the pilot of the aircraft's position and the safe altitude for orientation in that area.

PHRASEOLOGY–

YOU ARE (miles) (direction) OF THE (name) NAVAID/AIRPORT. THE SAFE ALTITUDE FOR ORIENTATIONS IN THAT AREA IS (feet).

6. Notify the appropriate control facility. Provide all required information including the aircraft's position and heading.

7. Request pilot's intentions and provide assistance, as requested.

PHRASEOLOGY–

WHAT ARE YOUR INTENTIONS?

4-4-3. GUIDANCE TO AIRPORT

After establishing the aircraft's position and if the pilot requests guidance to the airport:

- a. Plot the course to the airport.

- b. Provide the course guidance information to the pilot.

1. Advise the pilot of the direction of the turn and the heading to the airport.

PHRASEOLOGY–

FOR A HEADING TO THE (name) AIRPORT, TURN LEFT/RIGHT HEADING (degrees). REPORT ESTABLISHED HEADING (degrees).

2. After the pilot reports established on the heading to the airport, advise the pilot of the position in relation to the airport.

PHRASEOLOGY–

YOU ARE (miles) (direction) OF THE (name) AIRPORT. CONTINUE HEADING (degrees).

3. Continue to provide assistance in the form of pilotage and airport information as necessary.

PHRASEOLOGY–

DO YOU SEE ANY PROMINENT LANDMARKS?

ARE YOU FAMILIAR WITH THE (name) AIRPORT?

(Name) AIRPORT FIELD ELEVATION (feet). IT HAS (number and surface type) RUNWAYS. THE RUNWAY/S RUN (direction). THE AIRPORT IS LOCATED (direction/distance) FROM (landmark visible to the aircraft).

4. Advise the pilot to report the landing airport in sight.

PHRASEOLOGY–

REPORT AIRPORT IN SIGHT.

5. Determine when the pilot no longer needs assistance.

PHRASEOLOGY–

DO YOU REQUIRE FURTHER ASSISTANCE?

6. When the pilot indicates assistance is no longer required, terminate the service. Provide the CTAF frequency, if appropriate, and the local altimeter setting.

PHRASEOLOGY–

(GPS) ORIENTATION SERVICE TERMINATED. COMMON TRAFFIC ADVISORY FREQUENCY (frequency). ALTIMETER (setting).

NOTE–

CTAF is defined as a UNICOM, Multicom, FSS, or ATCT frequency.

7. Notify appropriate control facility of the aircraft's position, termination of services, and the pilot's intentions.

Chapter 5. Flight Data

Section 1. General

5-1-1. 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.

5-1-2. 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 canceled 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 7350.9, 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.

5-1-3. 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.

5-1-4. 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.

5-1-5. METHODS OF RECORDING DATA

a. Except as provided in para 3-2-2b, 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 7350.9, 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 5-1-1 to prevent misinterpretation.

FIG 5-1-1

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

NOTE–

A slant line crossing through the numeral zero and an underline of the letter “S” on handwritten portions of flight progress strips are required only when there is reason to believe the lack of these markings could lead to a misunderstanding. A slant line through the numeral zero is required on all weather data.

e. To correct or update data, draw a horizontal line through it and write the correct information adjacent to it.

f. Do not erase any item.

5–1–6. IFR/VFR/DVFR FLIGHT PLAN RECORDING

a. Use the operational system to record and file flight plans, flight plan modifications, cancellations, activations, and closures for appropriate distribution and processing. Detailed instructions are contained in the operational system manuals.

NOTE–

FSS operational systems contain an electronic equivalent of authorized FAA Flight Plan Forms.

b. When closing an active VFR flight plan, obtain departure point and destination, if not already known.

NOTE–

A canceled VFR flight plan is one that is removed from a proposed list and has not been activated. A closed VFR flight plan is one that has been activated and is now removed from an inbound list.

c. Flight plan information may initially be recorded on FAA Form 7233-1 or other paper prior to entry into the operational system

5–1–7. PART-TIME FSS CLOSURE ACTION

Part-time facilities must forward the following information to the designated guard FSS.

a. Inbound flights - all information.

b. Outbound flights - VFR and IFR flight plan data when proposed departure time and/or ETA is within the period from 1 hour prior to closing until 1 hour after opening.

c. All other pertinent information; for example, NOTAMs and pending outages.

5–1–8. TELEPHONE REQUESTS FOR ATC CLEARANCES

When a telephone request for an ATC clearance is received, positively verify the departure location by airport name or location identifier, and the city name and state.

NOTE–

1. *With telephone calls being received from larger geographic areas, verification of the departure location may prevent a critical safety situation involving similar or identical airport or city names possibly located in different states.*

2. *City refers to a city, town, village or publicly recognized place.*

3. *Refer to FAA Order JO 7110.10, Paragraph 3–3–7, ATC Clearances, Advisories, or Requests, for guidance on relaying ATC clearances.*

Section 2. Flight Plan Proposals

5-2-1. 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 5-2-3, *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 5-2-1.)

**TBL 5-2-1
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 5-2-2 and TBL 5-2-3.)

**TBL 5-2-2
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 5-2-3
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 5-2-4.)

**TBL 5-2-4
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 5-2-5.)

TBL 5-2-5
Suffix to Aircraft Type

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

NOTE—

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

REFERENCE—

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

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

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

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

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

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

NOTE—

1. On some direct flights beyond the departure center's airspace, it may be necessary to include a fix in the adjacent center's airspace or latitude/longitude coordinates, as appropriate, to facilitate computer acceptance. Local procedures should be applied to these special situations.

2. NRS waypoints consist of five alphanumeric characters, which include the ICAO Flight Information Region (FIR) identifier, followed by the letter corresponding to the FIR subset (ARTCC area for the contiguous U.S.), the latitude increment in single digit or group form, and the longitude increment.

EXAMPLE—

"KD34U"

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

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

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

For RM: field only - Use 1-80 characters beginning with *, #, \$, or %. (See TBL 5-2-6.)

TBL 5-2-6

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

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

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

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

NOTE-

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

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

p. Item 16. Color of Aircraft. Use authorized contractions when available. (See TBL 5-2-7.)

TBL 5-2-7
Code and Color

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

NOTE-

1. For ICAO flight plans, see Appendix A.

2. Local procedures may be developed for use on the reverse side of FAA Form 7233-1.

5-2-2. OUTBOUNDS DEPARTING FROM OUTSIDE FLIGHT PLAN AREA

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

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

EXAMPLE-

FF PAENYFYX

DTG PAFAYFYX

VFR N1234 BE9L ENA FAI P1330/0130 \$FP PAFAYFYX

NOTE-

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

5-2-3. FLIGHT PLANS WITH AREA NAVIGATION (RNAV) ROUTES IN DOMESTIC U.S. AIRSPACE

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

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

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

Section 3. IFR Flight Plan Handling

5-3-1. IFR FLIGHT PLANS

IFR flight plans should consist of items 1 through 17 of FAA Form 7233-1 or electronic equivalent. Items 1 through 11 must be transmitted to the ARTCC as part of the IFR flight plan proposal. Items 12 through 17 must be retained by the FSS or in the operational system and be available upon request.

NOTE-

1. Part-time FSSs must forward items 1 through 17 in accordance with Paragraph 5-1-7, Part-time FSS Closure Action.

2. Procedures for automatic assignment of RNAV routes are contained in Paragraph 5-2-3, Flight Plans with Area Navigation (RNAV) Routes in Domestic U.S. Airspace.

5-3-2. NOTIFYING ARTCC

Transmit flight plans and flight plan amendments to the ARTCC for the departure point. Facilities should use FAA Order JO 7350.9, Location Identifiers, or the appropriate aeronautical charts to determine the ARTCC to which each transmission must be made. Transmit flight plans (if necessary) and flight plan amendments via interphone to the flight data position (error referral position) or departure sector when the aircraft's proposed departure time is 46 minutes or less from transmittal time. Advise the ARTCC's departure sector or flight data position (error referral position), via interphone, when a message is received indicating ineligibility or a response is not received via data terminal within 10 minutes. Transmit flight plans as follows:

a. When multiple (two or more) flight plans are received from the same aircraft, or for flight plans which propose alternating VFR and IFR, stopover, or terminal area delay, the station receiving the flight plans transmits separate flight plans to the appropriate ARTCCs for each IFR portion or segment.

b. Transmit flight plans specifying special use airspace delays (MOAs, warning areas, restricted areas, ATCAA) as in subpara 5-3-2 a except when letters of agreement specify otherwise.

c. Aerial refueling delays, or any other en route delays not covered in subparas. 5-3-2 a or b and not

involving a change of altitude stratum, do not require separate messages. Delay information must be filed within the route of flight. If a change of altitude stratum is indicated, transmit separate messages as in subparas 5-3-2 a or b.

d. When a composite, stopover, or terminal area delay flight plan is revised:

1. Before departure, transmit the information to the original addressees plus any new addressees.

2. After departure, transmit the information to all new addresses that are affected by the change.

e. When a flight is to depart after 0500 hours local time on the day following the filing of the flight plan, do not transmit the flight plan to the ARTCC until after 0000 hours local time.

NOTE-

In the event of a time zone difference between the station and the associated ARTCC, use the ARTCC's local time in determining transmission time.

f. Address all IFR flight plan messages to the ARTCC serving the point of departure and all concerned oceanic and non-conterminous air traffic service (ATS) units, except FAA ATCTs.

NOTE-

The ARTCC within whose control area IFR flight is proposed to begin will forward the proposed tower en route flight plan data to the appropriate departure terminal facility.

g. For flights inbound to the conterminous U.S. from Alaska or Hawaii, address only the first conterminous U.S. ARTCC; for example, for a proposed flight from Sitka to Houston, address PAZAZQZX, CZVRZQZX, and KZSEZQZX.

REFERENCE-

FAA Order JO 7110.65, Para 2-2-2, Forwarding Information.

5-3-3. IFR FLIGHT PLAN CONTROL MESSAGES

Transmit all proposed IFR flight plan messages to the ARTCC within whose control area IFR flight is proposed to begin.

a. Communications Functions. Flight plan data messages must be addressed to the computer only. All other types of messages for ARTCC attention must be addressed to the Flight Data position only.

Acknowledgements for all numbered messages will be received from the computer or the Flight Data position indicating receipt by the ARTCC, but not necessarily computer acceptance. (See TBL 5-3-1.)

TBL 5-3-1
ARTCC ID & Computer Flight Data

ARTCC	ID	Computer	Flight Data
Albuquerque	ZAB	KZABZQZX	KZABZRZX
Atlanta	ZTL	KZTLZQZX	KZTLZRZX
Anchorage	ZAN	PAZAZQZX	PAZAZRZX
Boston	ZBW	KZBWZQZX	KZBWZRZX
Chicago	ZAU	KZAUZQZX	KZAUZRZX
Cleveland	ZOB	KZOBZQZX	KZOBZRZX
Denver	ZDV	KZDVZQZX	KZDVZRZX
Fort Worth	ZFW	KZFWZQZX	KZFWZRZX
Honolulu	ZHN	PHZHZQZX	PHZHZRZX
Houston	ZHU	KZHUZQZX	KZHUZRZX
Indianapolis	ZID	KZIDZQZX	KZIDZRZX
Jacksonville	ZJX	KZJXZQZX	KZJXZRZX
Kansas City	ZKC	KZKCZQZX	KZKCZRZX
Los Angeles	ZLA	KZLAZQZX	KZLAZRZX
Memphis	ZME	KZMEZQZX	KZMEZRZX
Miami	ZMA	KZMAZQZX	KZMAZRZX
Minneapolis	ZMP	KZMPZQZX	KZMPZRZX
New York	ZNY	KZNYZQZX	KZNYZRZX
Oakland	ZOA	KZ0AZQZX	KZ0AZRZX
Salt Lake	ZLC	KZLCZQZX	KZLCZRZX
San Juan	ZLU	TJZSZQZX	TJZSZRZX
Seattle	ZSE	KZSEZQZX	KZSEZRZX
Washington	ZDC	KZDCZQZX	KZDCZRZX

b. Adhere to a fixed order of data. Do not exceed the stated maximum number of characters or elements allowed for each field in messages addressed to an ARTCC computer. Flight plans filed containing more than the stated character maximums should be sent using the ARTCC flight data address.

c. For manual entry into Service B, one space character must be entered at the end of each data field. The first data field of a message need not be preceded by a space. The last data field of a message need not be followed by a space.

d. Each field of data is composed of one or more elements. Discrete elements of information within a field are separated by delimiters, generally slashes (/) or periods (ABC..DEF).

e. Messages addressed using a ARTCC flight data address (see TBL 5-3-1) are not processed by the ARTCC computer. Response and/or interpretation of these messages are dependent on flight data personnel action. The prime consideration of these

types of messages must be the readability of the transmitted data.

f. All domestic flight data processing computers have the capability to return acknowledgments to the source and, depending on local adaption, return error messages and accept amendments. Notify the appropriate ARTCC Data Systems Specialist or Primary A position when it is suspected that a flight plan has been erroneously rejected by the computer.

g. IFR flight plans specifying stopovers or terminal area delays require separate messages be sent to the appropriate ARTCCs for each segment. Unless otherwise covered by a letter of agreement, treat flight plans proposing SUA delays in the same manner. Separate messages are also required for any other en route delays if a change of altitude stratum is proposed at the delay point. See subparagraph 5-3-4n8(b)(2) for delays not involving a change of altitude stratum.

h. Some fields contain the necessary functions to operate the computer data terminal adapters and are designated by alpha characters (HIO..RAW-ER.V23.EUG/D0+30..16S). Do not separate these fields with spaces.

5-3-4. IFR FLIGHT PLAN CONTROL MESSAGE FORMAT

For En Route Automation System Flight Data Processing (EAS FDP) acceptance, the complete message contents, the order of data, the number of characters allowed within any data field or element, and any associated operational procedures or restrictions are as follows (as used here, "field" refers to EAS FDP field):

NOTE-

Detailed operating instructions for processing IFR Flight Plans are contained in the operational system instructions.

a. Start of Message Code (Field A). (New Line Key)

b. Preamble Line (Field B). Consists of originator, priority, and addressee(s).

c. Originator Line (Field C). Consists of a six-digit date-time group and the eight-character originator identifier.

d. End of Line Function (Field E). Same as subpara 5-3-4a.

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 5–3–4e1, 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 flight identifications with a numeral as the first character, insert a Q as the first character and explain in the remarks section by listing the actual flight identification.

NOTE–

Use caution not to modify existing remarks.

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

fixes in terms of fix/radial/distance (FRD), and re-entry information may be suffixed to certain military coded routes as follows:

[a] The entry and exit fix must be associated with a fix on the route, and the entry fix must be prior to the exit fix on the route.

EXAMPLE–

TNP355025..IR252
PKE107012

[b] Routes having re-entries for a single strategic training range (STR) site must contain the entry of alternate entry fix in terms of FRD, the route designator followed immediately by a plus sign (+), either the letter “R” (1st STR site) or “S” (2nd STR site), and a digit indicating the number of re-entries.

EXAMPLE–

(FRD) IR240+R2 (FRD)
(FRD) IR240+S3 (FRD)

[c] Routes having re-entries for two STR sites must contain the entry/alternate fix in terms of FRD, the route designator followed immediately by a plus sign (+), the letter “R,” and a digit indicating the number of re-entries on the first STR site, immediately followed by second plus sign (+), the letter “S,” and a digit indicating the number of re-entries on the second STR site.

EXAMPLE–

(FRD) IR240+R2+S3 (FRD)

[d] STR routes must be entered and exited at the respective primary fix. Alternate STR routes must be entered/exited at the alternate entry/exit fix. The routes must be identified by an individual name.

EXAMPLE–

(FRD) IR240+R2 (FRD) (Primary)
(FRD) IR240A+R2 (FRD) (Alternate)

(5) North American Routes (NAR). NAR routes are numerically coded over existing airways and route systems from and to specific coastal fixes serving the North Atlantic.

EXAMPLE–

.NA9
.NA50

(6) Stereo Routes. A stereo route must specify a pre-stored stereo tag. An “FP” message may be entered with a stereo tag as the only Field 10 entry, which causes the Field 10 data stored for the stereo tag to be substituted for the stereo tag and processed

as the filed Field 10. Additionally, the filed departure point (Field 06) must agree with the stored departure point.

(7) Incomplete Route Indicator (XXX). When XXX, the incomplete route indicator, appears in Field 10, the element preceding the XXX element must be a fix.

(8) VFR or DVFR element. When VFR or DVFR is the second element of Field 10, the filed fix following VFR or DVFR must be internal to the ARTCC’s area to whom the flight plan was initially submitted. When VFR or DVFR is other than the second element in Field 10, the element preceding the VFR or DVFR must be a filed fix.

8. Fix Suffix.

(a) En Route Delay Suffix consists of an element separator (/), followed by the letter D, followed by the hours and minutes separated by a plus sign (+). Must be appended to a fix.

EXAMPLE–

.STL/D1+30
.PKE107012/D2+05

(b) Use of this suffix is limited to the following cases:

(1) Aerial Refueling Tracks and Anchors. The suffix is appended to the entry fix.

EXAMPLE–

.ICT248055/D0+30.AR330

(2) En route delays not involving a change of altitude stratum and not involving a stopover, terminal area delay, or SUA delay unless specifically covered by a letter of agreement with the receiving ARTCC.

(c) ETE Suffix. Consists of an element separator (/) and four digits appended to the destination. Leading zeros are required, and the time en route is expressed in hours and minutes.

EXAMPLE–

.STL/0105

9. A period is not required after the last element of Field 10. If remarks (Field 11) are present, a space is required after the last element of Field 10. If remarks are not present, no space is required and Field F (End of Message) should be the next entry.

o. Remarks (Field 11). Consists of the appropriate remarks code character and the remarks. Spaces are permitted within the remarks field to separate words

or contractions. Remarks must be transmitted in Field 11 whenever a pilot files the information on the flight plan. A remark is required whenever there is a modification to the flight plan by the specialist.

1. If it is necessary to make modifications to the filed route of flight for the purpose of achieving computer acceptance of the input due, for example, to correct a fix or an airway identification, "FRC," meaning "Full Route Clearance Necessary," or "FRC/(fix)," will be added to the remarks. "FRC" or "FRC/(fix)" must always be the first item of intra-center remarks. When "FRC" or "FRC/(fix)" appears on a flight progress strip, the controller issuing the ATC clearance to the aircraft must issue a full route clearance to the specified fix, or if no fix is specified, for the entire route. "FRC" or "FRC/(fix)" must always be first in Remarks (Field 11).

NOTE–

INPUT OPERATORS ARE LIMITED TO MAKING ONLY THOSE CHANGES REQUIRED FOR COMPUTER ACCEPTANCE. Modifications, such as those to conform with traffic flows and preferred/recommended routings, must only be made by the pilot or his/her operations office or the controller responsible for initiating the clearance to the aircraft.

2. In the case of applicable military flights requesting that the flight plan is not passed to air defense radar (NOPAR), NOPAR must be the first item in Remarks (Field 11).

3. Remarks for military flight plans filing an IR route must contain the IR route designator, entry time prefaced by the letter "E," exit time prefaced by the letter "X," and MARSAs when applicable. Remarks for flight plans filing a terminal area delay must contain the airport identifier at which the delay will occur, followed by the letter "D," followed by the duration of the delay in hours plus minutes, followed by the destination airport. These should be the first item in Remarks (Field 11).

4. When a pilot files an FAA-assigned three-letter company designator, if the designator and/or radiotelephony is new or changed, the authorized radiotelephony call sign must be included in the remarks field for at least 60 days following the effective date. In cases where there is no three-letter identifier assignment or a three-letter identifier is used in a medical emergency, the assigned radiotelephony must be included in the remarks field.

NOTE–

1. A radiotelephony may be assigned by the FAA without assigning a three-letter identifier. Special radiotelephony assignments are usually temporary and for commemorative flights, large number of aircraft in an organized race, aircraft operating during an emergency or disaster condition, or aircraft requiring special handling for test purposes.

2. The pilot is responsible for knowing when it is appropriate to file the radiotelephony in remarks under the 60 day rule or for special radiotelephony assignments. The pilot may also request that the radiotelephony be filed in remarks due to special needs of the flight.

p. End of Message Function (Field F). Consists of enter function.

5-3-5. ADDITIONAL MESSAGES

The following messages are eligible for input to ARTCC computers via Service B, in addition to the flight plan ("FP") message:

a. Remove Strip (RS). The purpose of the RS message input is to advise the computer that data on a particular flight is no longer valid and in effect cancels the flight plan and removes it from computer storage.

1. Eligibility. RS messages may be entered only for flight plans which:

(a) Are proposed flights.

(b) Have been previously entered by the same source entering the RS message.

(c) The flight plan is inactive; for example, a departure strip must not yet have been printed. Otherwise, the following rejection message is returned: "REJECT--NOT YOUR CONTROL."

2. Format. Fields 01 (Message type) and 02 (Aircraft Identification) are required.

EXAMPLE–
RS SWA138

b. Amendment (AM) Message. The purpose of the AM message is to change data previously stored in the ARTCC computer.

1. Eligibility. Same as for the RS message (above).

2. Format. AM messages sent to the ARTCC computer must follow a specific format. First, the field to be amended must be identified, then the amended information given. The ARTCC computer

recognizes the following fields by either number or name: (See TBL 5-3-2.)

TBL 5-3-2
Field Number and Name

<i>Field</i>	<i>Field Number</i>	<i>Field Name</i>
Aircraft Identification	02	AID
Aircraft Type	03	TYP
Speed	05	SPD
Departure/Coordination Pt.	06	FIX
Proposed Time	07	TIM
Altitude	09	RAL
Route of Flight	10	RTE
Remarks	11	RMK

3. Restrictions.

(a) If Field 02 is to be amended, no other field may be amended in the same message. If Field 02 and other fields are to be amended, send an RS message and re-enter the entire corrected flight plan. If an attempt is made to amend Field 02 within a multiple amendment message or to amend Field 02 to M, the following rejection message is returned: “REJECT—INVALID AMENDMENT.”

NOTE—

Alternate procedure is to send two amendments - the first amends field 2; the second amends the other field or fields.

(b) Field 07 Amendments. An attempt to amend Field 07 to anything other than a P-time is not allowed. If such an amendment is attempted, the following error message is returned: “COFIE INVALID TIME PREFIX.”

(c) Amendment to Fields 06, 07, and 10: Where Fields 06, 07, and 10 are amended with a single AM message, the following rules apply:

(1) The amended Field 06 replaces the previously stored coordination fix (Field 06).

(2) The amended Field 07, with appropriate letter prefix, replaces the previously stored coordination time (Field 07).

(3) The amended route data (Field 10) may completely replace the previously filed Field 10 or may be merged with the filed Field 10.

(4) If the last element of the amended route data is followed by a destination indicator, this last element becomes the new destination fix.

(5) When amended route data is merged with filed data, it replaces all data between the departure point and the first non-amended element remaining in the field. The last element of the amended data must match the first element of the remaining non-amended data, otherwise the following rejection message is returned: “REJECT—(last element) CANNOT MERGE.”

(d) Amendment to Field 10 Only. Except as permitted above, a Field 10 amendment must be the only field amended; no other field may be amended with the same message. Otherwise, the following is returned: “REJECT—INVALID AMENDMENT.”

EXAMPLE—

<i>Message Type</i>	<i>Aircraft Identification</i>	<i>Field to be Revised</i>	<i>New Field Data</i>	<i>Field to be Revised</i>	<i>New Field Data</i>
AM	TWA179	07	P0800	08	350
AM	UAL466	07	0300		
AM	AAL4355	10	ORD.J60 .DEN		

c. Correction Message (CM). When the ARTCC computer detects an error in a flight plan, an error message is generated to the sender when the sender is within the departure ARTCC’s adapted boundaries.

NOTE—

These procedures may not apply to all operational systems.

1. Eligibility. CM messages may be entered only for the period for which the departure ARTCC’s program is adapted, normally 5 minutes. After that time, the flight plan in error drops out to the ARTCC Primary A position for re-entry. The sender has primary responsibility for corrective action.

NOTE—

Error messages are generated only on messages from sending stations within the adaptation parameters of the departure ARTCC and for only that portion of the route within that ARTCC’s adapted boundaries. Other flight plans in error are referred to a Primary A position.

2. Format. Responses to error messages must be transmitted in the form of a CM message within the time parameters adapted for your ARTCC.

EXAMPLE–**ARTCC–Generated Error Message:**

<i>Sending Facility</i>	<i>MSG Type</i>	<i>MSG NR</i>	<i>Field in Error</i>	<i>Data in Error</i>	<i>Reason</i>
DCA	Error	123	08	9A	FORMAT
<i>CM Format:</i>					
Field 00	MSG Type		Correct Data		
DCA 1820123	CM		090		

3. When a CM message in response to an error message results in any change to a pilot-filed Field 06 (Departure Point) or Field 10 (Route of Flight) once the flight plan has been accepted, an AM message must be sent to add a field 11 intra-ARTCC remark. In remarks, insert “FRC PILOT FILED (original data).”

4. Should a “NOT YOUR CONTROL” response be received, do not retransmit the flight plan or the AM. Confirm ARTCC receipt of the flight plan or AM (FRC/REMARKS) via interphone with the Primary A position. (See TBL 5–3–3.)

TBL 5–3–3**Computer Flight Data Input**

COMPUTER FLIGHT DATA INPUT CHART			
<i>Field</i>	<i>Element</i>	<i>Example</i>	<i>Requirements</i>
A	Start of Message (SOM code)	New Line Key	Required for SOM recognition.
B	Preamble Line	FF KZFWZQZ X	Provides priority, and addressee.
C	Originator	DTG KMLCYFY X	Required for ending the message header.
D	End of Line	(New Line Key)	EOL.
E	End of Message	(Enter Function)	End of Message.

5–3–6. COORDINATE RNAV ROUTES

a. When accepting flight plans containing coordinate RNAV routes, ensure that the route of flight after the departure fix is defined by latitude/longitude coordinates and a fix identifier.

b. The arrival fix must be identified by both the latitude/longitude coordinates and the fix identifier.

EXAMPLE–

(1)	(2)	(3)	(4)	(4)	(5)
MIA	SRQ	3407/10615	3407/11546	TNP	LAX

1. Departure airport.

2. Departure fix.

3. Intermediate fixes defined by latitude/longitude coordinates.

4. Arrival fix for the destination airport in terms of both the latitude/longitude coordinates and the fix identifier.

5. Destination airport.

Section 4. Flight Plan Handling

5-4-1. FLIGHT PLAN ACTIVATION

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

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

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

5-4-2. DEPARTURE REPORT MESSAGE

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

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

5-4-3. ACKNOWLEDGING NUMBERED MESSAGES

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

EXAMPLE-
 FF KMMVYFYX
 DTG KRNOYFYX
 R 001

5-4-4. FLIGHT NOTIFICATION MESSAGE

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

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

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

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

NOTE-

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

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

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

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

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

NOTE–

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

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

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

EXAMPLE–

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

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

REFERENCE–

DOD Flight Information Publication, General Planning Document.

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

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

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

EXAMPLE–

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

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

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

1. For the first leg, transmit the items in subparas 5–4–4a and 5–4–4f.

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

original flight plan and are transmitted to all addressees.

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

EXAMPLE–

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

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

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

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

NOTE–

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

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

5–4–5. SUSPENDING FLIGHT NOTIFICATION MESSAGES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5-4-6. ACKNOWLEDGING FLIGHT NOTIFICATION MESSAGES

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

EXAMPLE-

FF KRCAYXX
DTG KRIUYFYX
R DECAL01

NOTE-

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

5-4-7. ACTION BY ADDRESSEES

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

a. Military IFR flights.

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

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

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

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

b. Military VFR flights.

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

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

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

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

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

5-4-8. MAJOR FLIGHT PLAN CHANGES FROM EN ROUTE AIRCRAFT

a. Change of Destination.

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

(a) Type of flight plan.

(b) Aircraft identification.

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

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

EXAMPLE–

VFR Change of Destination:

FF KBOIFYX KSEAYFYX

DTG KDCYFYX

*VFR N98789 C182/U PVU GEG 2230 \$0VR SLC 1900
ORIG DESTN BOI*

IFR Change of Destination:

FF KRCAYYX KTIKYXX KRIUYFYX

DTG KDCYFYX

*IFR DECAL01 T43/R SMF TIK 0230 \$AP3NP3S OVR
SLC 2330 ORIG DESTN RCA*

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

EXAMPLE–

FF KABQYFYX

DTG KOAKYFYX

VFR N87690 C182/U SFO ELP 2100 \$CNLD

IFR OVER BFL

NOTE–

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

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

EXAMPLE–

FF KTIKYXX

DTG KDENYFYX

DECAL01 CHGD TO VFR RON

5-4-9. CHANGE IN ETA

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

EXAMPLE–

FF KENAYFYX

DTG KSEAYFYX

SEA001 ENA

N34567 E2140

REFERENCE–

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

5-4-10. FLIGHT PLAN CLOSURE

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

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

EXAMPLE–

FF KDCAFYX

DTG KHHRYFYX

HHR002 DCA

N2 A0839 (Remarks, as appropriate)

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

1. Requested by BASOPS.

2. Special military flights arrive.

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

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

EXAMPLE–
FF KDCAIFYX
DTG KMIVIFYX
MIV001 DCA
N8567 A1745 FPNO PHF NMK

2. If the station receiving the closure message is not the destination tie-in station, transmit a numbered closure message to the destination tie-in station, including the aircraft identification, the closure time, the departure point, and destination. Remarks are optional.

EXAMPLE–
FF KHUFIFYX
DTG KDAYIFYX
DAY003
N11ND C1217 LOU IND LNDD CMH

5–4–11. MILITARY FLIGHTS TO/FROM U.S. ■

a. To U.S. If “REQ ARR” is in remarks, suspend the flight plan until arrival information is received from BASOPS and forward to the departure location.

b. From U.S. If requested by BASOPS, include “REQ ARR” in remarks section of ICAO flight plan. Terminate suspense action only after receipt of an arrival message and delivery to BASOPS.

Section 5. Military Operations

5-5-1. SPECIAL MILITARY FLIGHTS

a. Advise the ARTCC of flight notification messages, progress reports, changes en route, and related messages concerning Presidential or Vice Presidential flights.

b. Alaska. In addition to the above, give advance notice to all RCCs along the route of flight. Telephone SARCC (907) 752-0227 or (907) 752-0128. Initiate communications search procedures if arrival is not received within 15 minutes after ETA, and immediately notify Alaskan NORAD Region Control Center (ANRCC).

5-5-2. MILITARY FOREIGN FLIGHTS

Generally, all military foreign flights are required to clear through specified military bases. Pilots normally will not file flight plans directly with an FSS unless BASOPS is not available. BASOPS with no Service B access will forward an ICAO-type flight plan message via their tie-in FSS for relay through the Aeronautical Fixed Telecommunications Network (AFTN). BASOPS should specify all addressees, both ATC and operational, in accordance with ICAO standards and military regulations.

5-5-3. USAF/USN UNDERGRADUATE PILOTS

Aircraft piloted by solo USAF/USN undergraduate student pilots (who may occasionally request revised clearances), are normally restricted to flight in VFR conditions. The aircraft identification in the flight plan must include the letter "Z" as a suffix. Do not use this suffix in ground-to-air communication.

NOTE-

USAF/USN solo students who have passed an instrument certification check may penetrate cloud layers in climb or descent only. Requests for revised clearances to avoid clouds in level flight can still be expected. This does not

change the requirement to use the letter "Z" as a suffix to the aircraft identification.

5-5-4. MESSAGE HANDLING

Accept and forward messages from any military authority that concern aircraft movement, national defense, safety of flight, or emergencies. This includes, but is not limited to, the following:

a. Flight Advisory Messages.

1. The FSS originating the advisory or receiving it from the originating BASOPS must determine the FSS nearest the aircraft's estimated position for VFR flights, or the appropriate ARTCC for IFR flights. Transmit a numbered message only to the facility identified. Include in the text "FLT ADVY," aircraft identification and type, and route of flight, in that order. The last item must be the identifier of the originating BASOPS or FSS. Plain language may be used.

EXAMPLE-

FF KZIDZRZX

DTG KCOUYFYX

COU005 ZID

FLT ADVY A12345 T38 GVW J80 DAY

DAY WX BLO LNDG MIN. SUG PROCD CVG.

ADZ INTENTIONS DLVR 1625

GVW BASOPS

2. Inform the originator if unable to deliver the flight advisory within 15 minutes. Store the message in the history files.

b. Electronic Counter Measure (ECM) Alerts. Transmit a numbered message via Service B to tie-in stations serving the addressees. If acknowledgements are not received within 1 hour, deliver via telephone.

c. REACH and SAM Flight Messages. Forward to the airlift command post specified by the pilot if message contains request "Pass to Air Mobility Command & Airlift Command Post (AMC ACP)," specified by the pilot.

Section 6. IFR/DVFR ADIZ Flight Plans

5-6-1. AIRCRAFT MOVEMENT INFORMATION SERVICES (AMIS) WITHIN AN ADIZ-IFR

In addition to the normal handling of aircraft operating in accordance with IFR, ADIZ penetration information or position reports on IFR operations outside of controlled airspace must be forwarded immediately to the appropriate ARTCC.

5-6-2. AMIS WITHIN AN ADIZ-DVFR

For security control of air traffic, specific information contained in flight plans filed by a pilot operating or proposing to operate in accordance with DVFR within an ADIZ must be forwarded to NORAD.

NOTE-

Other offices, military and civil, as well as pilots, may file DVFR flight plans for civil aircraft with a FSS for forwarding to NORAD.

5-6-3. FORWARDING DVFR INFORMATION

a. Forward DVFR flight plan information to NORAD via the Service B NORAD address or by telephone.

NOTE-

1. The following NORAD addresses are group addresses that include all appropriate NORAD sectors and law enforcement:

KZAMZQZX – the contiguous 48 states and San Juan.

PHIRAO CZ – Hawaii

PAEDYYYY – Alaska

2. NORAD will not send an acknowledgement and must be manually acknowledged from the suspense list by the specialist. (NORAD Headquarters assumes responsibility for receipt.)

b. DVFR flight plans must be entered into the operational system for processing in accordance with system instructions and include the following information:

1. Aircraft call sign.
2. Number and type of aircraft.
3. Altitude (within ADIZ).
4. True airspeed.

5. Time of departure.

(a) When the flight plan information is provided before the aircraft's departure, enter as a proposal. Depart the flight plan immediately upon receipt of the actual departure time.

(b) If arrangements cannot be made to obtain the actual departure time, forward the ETD.

6. Point of departure.

7. ETA.

8. Destination.

9. Remarks.

(a) DVFR discrete transponder code.

(b) True airspeed.

(c) Estimated point of penetration of the ADIZ (latitude/longitude or fix-radial-distance), except in Alaska.

(d) Estimated time of penetration of the ADIZ, except in Alaska.

(e) If no arrival report (NORIV) will be filed with an appropriate aeronautical facility, include the contraction "NORIV" as a non-transmitted remark. Do not pass "NORIV" to NORAD.

EXAMPLE-

1210 135 3442/09345 1446

NOTE-

On a proposed flight plan, a single "X" may replace the DVFR discrete transponder code, true airspeed, estimated point of penetration of the ADIZ, or the estimated time of penetration of the ADIZ.

EXAMPLE-

Missing true airspeed:

1210 X 3442/09345 1446

Missing estimated point of ADIZ penetration and time:

1210 135 XX

c. Forward DVFR flight plan information for aircraft operating into Canada using the same procedures in paragraph 5-6-3b, except add "DVFR" in remarks and transmit the information to the appropriate Canadian transborder tie-in facility.

5-6-4. STOPOVER DVFR FLIGHT PLANS

Accept stopover DVFR flight plans filed on those aircraft planning one or more landings (within an

ADIZ) en route to the destination, provided the information in paragraph 5-6-3 is furnished for each segment of flight. Remind the pilot that 14 CFR Part 99 requires departure times to be made good and that a written record should be retained of these times at each departure point.

Section 7. Non-Emergency Parachute Jumping

5-7-1. COORDINATION

All pertinent information received from pilots prior to and during parachute jumping activity must be forwarded to other affected ATC facilities.

5-7-2. PRE-JUMP RADIO COMMUNICATIONS

a. When a pre-jump radio call required by 14 CFR Section 105.13 is received, contact the ARTCC sector or terminal facility in whose airspace the jump

begins. If the controller has pertinent traffic, advise the jump aircraft to contact the control facility on the appropriate frequency for traffic information.

b. If the aircraft is unable to contact the control facility direct, obtain traffic information and relay it to the aircraft.

EXAMPLE-

“Cessna Four Zero Yankee, A-T-C advises traffic, Cessna Four Twenty-One passing SPUTS intersection eastbound on Victor One Fifty-Seven at seven thousand.”

Chapter 6. International Operations

Section 1. Messages and Formats

6-1-1. GENERAL

a. Title 19 of the U.S. Code of Federal Regulations (CFR), Part 122 contains Advance Passenger Information System (APIS) regulations, which require APIS manifests to be submitted to U.S. Customs and Border Protection (CBP) for all private aircraft arriving from or departing for a foreign port or place. APIS regulations also require that electronic notices of arrival and departure as well as electronic manifests relative to travelers (passengers and crew) be submitted to CBP within specific timeframes. For detailed information on the APIS regulations, see Advance Information on Private Aircraft Arriving and Departing the United States, 73 Fed. Reg. 68,295 (Nov. 18, 2008) (19 CFR 122.22). This publication, along with other resources, is available at <http://www.cbp.gov>. In addition, 14 CFR and the International Civil Aviation Organization (ICAO) require flight plans for all civil aircraft operation between the United States and foreign locations. International flight plan information and ADIZ penetration requirements are listed in other publications; for example, the Aeronautical Information Manual (AIM), the Aeronautical Information Publication (AIP), 14 CFR Part 91, and 14 CFR Part 99.

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. controlled airspace and enter international airspace. The filer is responsible for providing the information required in items 3 through 19.

6-1-2. 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.

6-1-3. 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 6-1-3a1 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.

6-1-4. 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)

6-1-5. 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).

6-1-6. TRANSMISSION OF ATS MESSAGES

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

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

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

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

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

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

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

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

NOTE-

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

YCYX Rescue Coordination Center (RCC).

YDYX Authority Supervising the Aerodrome.

YFYX Aeronautical Fixed Station FSS/IATSC).

YMYX Meteorological Office (NWS).

YNYX International NOTAM Office (NOF).

YTYX Telecommunications Authority.

YWYX Military Flight Operational Control Center (ACP)

YXYX Military Organization (BASOPS).

YYYY Organization not allocated a two-letter designator.

ZOZX Oceanic Air Traffic Control Center.

ZPZX Air Traffic Service Reporting Office.

ZQZX Computer Facility at ACC/ARTCC.

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

ZZTX Aerodrome Control Tower.

ZZZX Aircraft in flight.

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

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

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

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

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

1. If message is relevant to IFR and:

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

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

(c) Relevant to oceanic operations, use ZOZX.

NOTE–

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

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

3. If SVC or administrative, use ZRZX.

6-1-7. ORIGINATING MESSAGES

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

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

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

NOTE–

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

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

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

6-1-8. ADDRESSING MESSAGES

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

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

NOTE–

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

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

NOTE–

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

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

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

2. Not more than two operational control units concerned.

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

6-1-9. FLIGHT PLAN FORMS AND INSTRUCTIONS

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

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

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

NOTE—

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

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

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

6-1-10. ICAO ATS MESSAGE FORMAT

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

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

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

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

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

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

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

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

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

6-1-11. FLIGHT PLAN CHANGES AND CANCELLATIONS

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

REFERENCE—

FAA Order JO 7110.10, Para 5-4-8, Major Flight Plan Changes from En Route Aircraft.

FAA Order JO 7110.10, Para 5-4-9, Change in ETA.

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

REFERENCE—

FAA Order JO 7110.10, Para 5-4-10, Flight Plan Closure.

6-1-12. AIR MOBILE SERVICE (AMS)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6-1-13. AIREPs (POSITION REPORTS)

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

- 1.** Each line must begin at the left margin.

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

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

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

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

- (c)** Text of the message.

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

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

(f) Designation of frequency used.**EXAMPLE–**

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

(g) Time in UTC of the communication.

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

EXAMPLE–

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

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

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

(a) Item 1, Aircraft identification.

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

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

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

(e) Item 5, Next position and time over. Record the next reporting point and the estimated time over such reporting point, or record the estimated position that will be reached 1 hour later, according to the position reporting procedures in effect. Use the data conventions specified in subpara 6–1–13b1(b), Item 2, Position, for position. Record time in minutes past the hour (two numerics) or in hours and minutes UTC (four numerics) when necessary.

EXAMPLE–

PSNRP portion of AIREP prepared by De Ridder and addressed to Canadian Pacific Airlines (CPC) in Toronto and Mexico City:
 FF CYYZCPCX MMMXXMZT
 122105 KDRIYFYX
 ARP CPC583 KBRO 2100 F370 MMTM28
 KNEW RB
 MMMM R
 TO2103]

2. Section 2. When reported by the pilot:

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

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

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

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

(b) Item 9, Spot wind or mean wind and position. Spot wind is used whenever practical and normally refers to the position given in subpara 6–1–13b1(b), Item 2, Position. When a spot wind is given for any other location, record its position. Whenever it is not practical to record spot wind,

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

EXAMPLE–

AIREP comprised of PSNRP and aircraft operator information:

FF CYYZCPCX MMMXXMZT

122105 KDRIYFYX

ARP CPC583 KBRO 2100 F370 MMTM28

MMMXX 2248 FUEL 0324

KNEW RB

MMMXX R

TO2103

(c) Item 10, Turbulence (TURB). Record severe turbulence as TURB SEV and moderate turbulence as TURB MOD. If turbulence is experienced in cloud, add INC (in cloud). If in subsonic flight, report severe turbulence as soon as possible after occurrence. This requires AIREP SPECIAL. Record and report moderate turbulence only if encountered within last 10 minutes prior to reaching position in subpara 6–1–13b1(b), Item 2, Position. If in transonic or supersonic flight, report severe or moderate turbulence as soon as possible after occurrence. This requires AIREP SPECIAL.

(d) Item 11, Icing. Record severe icing as ICE SEV, moderate icing as ICE MOD. Report severe icing as soon as possible after occurrence. This requires AIREP SPECIAL. Record and report moderate icing only if encountered within last 10 minutes prior to reaching position in subpara 6–1–13b1(b), Item 2, Position.

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

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

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

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

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

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

EXAMPLE–

Full AIREP:

FF CYYZCPCX MMMXXMZT KMIAYMYX

162215 TJSJFYX

ARP CPC583 2709N05415W 2212 F330

23N056W 59 0035 FUEL 0324 M534 310/60

MEAN 2543N05532W TURB MOD ICE MOD SCT

CB TOP F280

TJSJ RB

TO2214

NOTE–

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

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

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

(7) If the position of the phenomenon reported is not the same as the position given under subpara 6–1–13b1(b), Item 2, Position, report it after the phenomenon.

6–1–14. AIREP SPECIALS (ARS)

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

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

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

EXAMPLE–
FF KMIAYMYX
211538 TJSJYFYX

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

6–1–15. ARTCC RELAY OF VFR MESSAGES

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

NOTE–

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

Section 2. Customs Notification and ADIZ Requirements

6-2-1. FLIGHT PLAN/CUSTOMS REQUIREMENTS

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

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

6-2-2. CUSTOMS REQUIREMENTS FOR INBOUND AND OUTBOUND AIRCRAFT

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

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

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

6-2-3. ADIZ REQUIREMENTS FOR INBOUND AND OUTBOUND AIRCRAFT

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

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

NOTE-

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

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

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

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

1. Aircraft call sign.
2. Number and type of aircraft.
3. Altitude (within ADIZ).
4. True airspeed.
5. Time of departure.
6. Point of departure.
7. Destination.
8. ETA.

9. Remarks: DVFR discrete transponder code; estimated first point of penetration of ADIZ

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

EXAMPLE-

1210 135 3442/09345 1446

NOTE-

See Para 5-3-3, IFR Flight Plan Control Messages.



Section 3. Alerting Service

6-3-1. GENERAL

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

6-3-2. ALERTING PHASES

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

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

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

3. Distress phase when:

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

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

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

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

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

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

6-3-3. ALERTING MESSAGE CONTENTS

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

NOTE-

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

EXAMPLE-

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

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

2. Agency and person calling.

3. Nature of the emergency.

4. Significant information from the flight plan.

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

6. Last position report and how determined.

7. Color and distinctive marks of aircraft.

8. Any action taken by reporting office.

9. Other pertinent remarks.

EXAMPLE–

(INCERFA)

SS MMMXYAYX

DTG KSANYFYX

(ALR-INCERFA/KSAN/OVERDUE

-N1234S-VG

-C172

-KRNO2000

-MMLP0130

-REQ ACK OR ARR ACFT OVERDUE YOUR
STN)

(ALERFA)

SS MMMXYAYX

TEXT:(ALR-ALERFA/KSAN/OVERDUE)

(text remains same except for remarks information).

(DETRESFA)

SS MMMXYAYX

TEXT:(ALR-DETRESFA/KSAN/OVERDUE

(text remains same except for remarks information).

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

EXAMPLE–

(CANCELLATION)

SS MMMXYAYX

020618 KMIAYFYX

(ALR-ALERFA/KMIAYFYX/CNLD

N1234 LOCATED)

NOTE–

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

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

6-4-1. GENERAL

Except as indicated in this section, handle Transborder Canadian movement and control messages as described in Sections 1, 2, and 3. Do not include ADCUS in flight plan remarks for flight plans to Canada because NAV CANADA no longer alerts Canadian Customs. CANPASS authorizations are the obligation of the pilot, at the number in subparagraph 6-4-3a. Do not include ADCUS in flight plan remarks for flights plans from Canada to the United States because U.S. flight service no longer alerts U.S. Customs and Border Patrol (CBP). U.S. Advance Passenger Information System (APIS) authorizations are the obligation of the pilot for flights departing and entering the U.S., as stated in 19 CFR 122. APIS resources for pilots are available at <http://www.cbp.gov>.

6-4-2. INBOUNDS FROM CANADA

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

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

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

6-4-3. OUTBOUNDS TO CANADA

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

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

NOTE-

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

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

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

NOTE-

1. The operational system will automatically format the required items and transmit the flight notification message when activated if the proposed flight plan was filed in accordance with subparagraphs 6-4-3d and 6-4-3e.

2. Facilities address messages to the destination relay facility listed in FAA Order JO 7350.9, Location Identifiers. Facilities transmit flight notification messages for VFR flights in accordance with Paragraph 5-4-4, Flight Notification Message. Flight notification messages included the type of flight plan as the first item of the notification message. CANPASS is required in the remarks, as appropriate.

EXAMPLE-

FF CZYZZFZX

DTG KBUFYFYX

VFR N711VR C182 BUF YYZ 1735 CANPASS

d. IFR Flight Plans

1. CANPASS Flight Plans.

NOTE-

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

EXAMPLE-

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

DD:DSM TM:P1800 AE:200

RT:DSM..CYYZ

AD:CYYZ TE:0300 RM:\$CANPASS

FB:0400 AA:

PD:JOE PILOT
 HB:DSM NB:2 CR:R/W TL:
 OP:
 CP:
 TA:2100

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

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

e. VFR Flight Plans.

NOTE–

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

EXAMPLE–

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

CANPASS

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

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

g. Suspend VFR message until acknowledgment is received.

REFERENCE–

FAA Order JO 7110.10, Para 7–5–1, Canadian Transborder.

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

EXAMPLE–

FF CZYZZFZX
 DTG KBUFYFYX
 REQ ACP N711VR

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

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

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

EXAMPLE–

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

FF CZYZZFZX

DTG KBUFYFYX
 CHG VFR N711VR C182 BUF YYZ 1845 CANPASS

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

NOTE–

Canada will not acknowledge receipt of these messages.

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

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

6-4-4. OUTBOUNDS TO CANADA DEPARTING FROM OUTSIDE FLIGHT PLAN AREA

Accept flight plans regardless of departure point within the NAS. (See Paragraph 6-4-1 and subparagraph 6-4-3a for CANPASS guidance.)

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

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

EXAMPLE-

FF PAKTYFYX

DTG KSEAYFYX

N711VR C182 KTN YYJ P1630/0330 CANPASS

NOTE-

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

b. Forward IFR flight plan information for aircraft proposing to depart from outside the facility's flight plan area in accordance with Paragraph 5-3-1, Domestic IFR Flight Plans. If Customs flight notification service (ADCUS) is requested, advise the pilot to contact CANPASS at 888-226-7277; include CANPASS information as an intrafacility remark, and transmit the proposal message to both the ARTCC and the tie-in SECTOR/FSS. Enter the ARTCC computer address last.

EXAMPLE-

FF KAOOYFYX KZOBZQZX

DTG KDCAYFYX

DCA2010001 FP N1234P P28R/A 150 PIT P0200
150 PIT..CIP..DKK..BUF..YYZ/0130 CANPASS

NOTE-

The operational system will automatically format the

required items and transmit the flight notification message.

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

NOTE-

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

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

1. Transmit a flight notification message in accordance with Paragraph 5-4-4, Flight Notification Message.

NOTE-

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

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

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

6-4-5. IFR FLIGHT PLANS DEPARTING CANADIAN AIRPORTS

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

NOTE-

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

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

6-4-6. SEARCH AND RESCUE MESSAGES

Provide Search and Rescue for flights inbound from Canada in accordance with Chapter 7.

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

6-5-1. GENERAL

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

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

6-5-2. INBOUNDS FROM MEXICO

a. Flight notification messages.

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

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

b. Search and Rescue. Provide search and rescue service in accordance with standard format/time increments listed in Section 3, Alerting Service, and Chapter 7, Search and Rescue (SAR) Procedures. The departure station in Mexico is responsible for initiating SAR action until an acknowledgment of the flight notification message is received.

6-5-3. OUTBOUNDS TO MEXICO

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

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

NOTE-

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

REFERENCE-

FAA Order JO 7350.9, Location Identifiers.

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

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

NOTE-

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

b. VFR Flight Plans.

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

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

NOTE-

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

REFERENCE-

FAA Order JO 7350.9, Location Identifiers.

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

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

(f) ETA.

(g) Remarks.

EXAMPLE–

FF MMCUXMXO

DTG KSJTYFYX

VFR N1234S C182 SJT MMCU 1400 4ZUCHERMANN

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

REFERENCE–

FAA Order JO 7350.9, Location Identifiers.

EXAMPLE–

FF MMCUXMXO MMYXMXO

REQ ACP N1234S

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

e. If acknowledgment/acceptance is not received within 1 hour of the departure, use interphone/telephone or other available means to deliver the message to the appropriate Regional Flight Dispatch Office. See TBL 6–5–1 for telephone numbers. For a complete address, add xmxo to the identifier.

TBL 6–5–1

Mexican Regional Flight Dispatch Office Phone Numbers

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

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

Chapter 7. Search and Rescue (SAR) Procedures

Section 1. General

7-1-1. 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.

7-1-2. 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.

7-1-3. 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—

*FAA Order JO 7110.10, Para 7-2-1, Communications Search
FAA Order JO 7110.10, Para 7-4-1, ALNOT*

Section 2. Overdue Aircraft Action

7-2-1. COMMUNICATIONS SEARCH

a. As soon as a VFR/DVFR aircraft (military or civil) becomes overdue, the destination tie-in facility/sector (including intermediate destination tie-in facilities for military aircraft) must initiate a communications search to locate the aircraft by checking the following:

1. Destination airport.
2. Flight plan phone number, if available.
3. BASOPS, if applicable.
4. Customs, if applicable.
5. ATC facilities as applicable.

b. If the aircraft has not been located, check the following:

1. Departure airport.
2. All airports adjacent to the destination that could accommodate the aircraft.
3. Appropriate ARTCC sectors.

7-2-2. QALQ

a. If the communications search does not locate the aircraft, and the flight plan is not held by the destination station, transmit a QALQ to the facility/sector that holds the flight plan.

Possible Flight Plan Originators:

KxxxYFYX	Flight	Service
Station/Sector		
KxxxYXYX	Military	BASOPS
KAISXCLX	AISR	

NOTE—

QALQ is used to solicit information that is not accessible. If the flight plan information is already available to the destination tie-in facility/sector, QALQ is not required.

b. The QALQ message text must begin with the contraction “QALQ” followed by the aircraft identification.

EXAMPLE—

QALQ N12345

c. If the specialist determines that the communications search cannot be completed prior to the INREQ transmission time, the QALQ must be transmitted in time to receive the information for the INREQ message. The communications search must continue without reference to time until such a time that the aircraft is located, the communications search is complete, or the search is suspended.

d. In the case of a U.S.-registered aircraft, or any aircraft known to be piloted by or transporting U.S. citizens and en route within a foreign country or between two foreign countries, if an overdue report is received either from someone directly concerned or from aviation authorities of a foreign country, notify the Washington Communications Control Center immediately via Service B message addressed to KRWAYAYX.

e. Automated systems will accept properly formatted QALQs, INREQs, ALNOTs, INCERFAs, ALERFAs, and DETRESFAs and place them on the SAR list. A SAR alert may be generated at designated workstations. SAR messages must be deleted from the SAR list when the SAR is canceled.

7-2-3. ACTION BY DEPARTURE STATION ON RECEIPT OF QALQ

Upon receipt of the QALQ message, the departure tie-in facility must check for any information about the aircraft, and take the following actions:

a. If the aircraft is located, notify the destination facility. This may be delivered via Service B message or recorded communications.

b. If unable to obtain additional information, transmit a message to the destination tie-in facility containing all information not previously sent. Include any verbal or written remarks which could be pertinent to the search.

NOTE—

For operational systems using a common data base, the departure and destination station may be considered the same.

EXAMPLE–*QALQ N4367V**[flight plan information]**[additional pertinent information]*

after the QALQ is sent, transmit a cancellation message addressed to all recipients of the QALQ.

EXAMPLE–*QALQ N4367V CNLD***■ 7-2-4. CANCELLATION OF THE QALQ**

If the aircraft is located by the destination facility

Section 3. Information Requests (INREQs)

7-3-1. INREQ

If the reply to the QALQ is negative or the aircraft has not been located within 30 minutes after it becomes overdue, whichever occurs first:

a. The destination tie-in facility/sector must transmit a numbered INREQ message addressed to:

1. Flight plan originator (if other than AISR).
2. En route FSS as applicable.
3. KSARYCYX (includes RCC and AISR).
4. En route ARTCCs as applicable.

5. BASOPS if destination or departure tie-in facility.

6. Other addresses the specialist deems beneficial to the search.

b. Include the flight plan and any other pertinent information in the INREQ message which could assist in search activities. Retrieve data from the history files, format the message, and transmit. Provide the aircraft's last known position as the final item of the message. The message text must begin with the contraction "INREQ," followed by the aircraft identification.

EXAMPLE-

*DCA001 (appropriate three-character identifiers)
INREQ N12345
[flight plan information]
[additional pertinent information]*

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

d. If the flight is within the Honolulu sector, notify Honolulu SARCC via recorded telecommunications line.

e. RCC does not have transmit capability. Acknowledgement is not required for messages to RCC.

f. If additional information is received in INREQ reply messages, transmit the information, as necessary, to all original addressees.

7-3-2. ACTION UPON RECEIPT OF INREQ

Stations receiving an INREQ must take the following action:

a. Search facility records for information regarding the aircraft. Expand the communications search to include all flight plan area airports along the proposed route of flight that could accommodate the aircraft. Notify appropriate ATC facilities. Reply to the INREQ within 1 hour of receipt with flight plan and other pertinent information. If unable to complete the communications search within 1 hour, forward a status report followed by a final report when the search is complete.

EXAMPLE-

*HNL001 (appropriate three-character identifiers)
INREQ N1234A [status report]*

*HNL001 (appropriate three-character identifiers)
INREQ N1234A [final report]*

NOTE-

Upon receipt of INREQs and ALNOTs, ATCTs and ARTCCs are required to check facility records, report findings to the FSS that alerted them within 1 hour, and retain in an active status until canceled.

REFERENCE-

FAA Order JO 7110.65, Para 10-3-4, ALNOT.

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

c. For facilities that have any portion of their incoming calls and/or Service B diverted to another facility, notify that facility of the INREQ. The facility receiving diverted calls or Service B traffic must check their records and advise of any information or contact with the aircraft.

7-3-3. CANCELLATION OF INREQ

The INREQ originator must transmit a cancellation message containing the location of the aircraft to all INREQ addressees if the aircraft is located. Notify associated ATC facilities.

EXAMPLE-

*LOU001 (appropriate three-character identifiers)
INREQ N1234A CNLD LCTD BWG*

Section 4. Alert Notices (ALNOTs)

7-4-1. ALNOT

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

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

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

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

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

EXAMPLE-

ALNOT N12345

[flight plan information]

[additional pertinent information]

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

NOTE-

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

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

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

7-4-2. ACTION UPON RECEIPT OF ALNOT

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

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

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

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

EXAMPLE-

ALNOT N1234A [status report]

ALNOT N1234A [final report]

d. Alaska. FSSs within the ALNOT search area must broadcast the ALNOT.

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

7-4-3. REPORTING ALNOT STATUS TO RCC

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

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

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

7-4-4. CANCELLATION OF ALNOT

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

EXAMPLE-

ALNOT N12345 CNLD ACFT LCTD JAX

ALNOT N1513B CNLD SEARCH SUSPENDED

Section 5. Other SAR Actions

7-5-1. 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.

Chapter 8. FAA Weather Services

Section 1. General

8-1-1. INTRODUCTION

Surface meteorological observations are filed at scheduled and unscheduled intervals with stations having sending capability to WMSCR for dissemination on the Service A domestic aviation weather system. These reports are aviation routine weather reports (METAR) and aviation selected special weather reports (SPECI). All reports must include a report type and the six-digit time of the observation. Computer sorting and validation requires exact adherence to format and procedure at all times.

8-1-2. SCHEDULED TRANSMISSION TIMES

a. METAR REPORTS. Transmit METAR between H+55 and H+00.

b. SPECI AND DELAYED OR CORRECTED REPORTS. Transmit SPECI, delayed or corrected reports as soon as possible after H+00.

8-1-3. DISTRIBUTION

Most meteorological and NOTAM data exchanged outside of the facility is dependent on WMSCR. It is important to follow strict format and procedures during normal operations, as well as during system interruption periods.

a. Circuit interruption. Notify WMSCR and/or NADIN and the appropriate Telco servicing company and/or technical help desk.

b. Record the circuit and/or equipment identification numbers in all outage reports. Facilities should obtain and record ticket numbers provided by the Telco authority and/or technical help desk.

c. WMSCR telephone numbers:

WMSCR (KNKAWMSC):
Atlanta 770-210-7574.
Salt Lake City 801-320-2046

Section 2. Pilot Weather Report (UA/UUA)

8-2-1. 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.

8-2-2. 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.

8-2-3. RESPONSIBILITY

a. FSS specialists must actively solicit PIREPs in conjunction with preflight and inflight communications with pilots and assure timely dissemination of the PIREP information.

1. Timely dissemination of PIREPs alert pilots to significant weather reports and improves aviation forecasts.

2. Changing weather conditions should dictate increased frequency of PIREP solicitation.

3. PIREPs indicating good weather are valuable and pertinent to aviation weather forecasters and pilots. These include PIREPs indicating a lack of icing or turbulence, and should be disseminated in a timely fashion.

b. Each facility should make special efforts to solicit PIREPs on departure and arrival weather conditions at airports within their flight plan area.

8-2-4. 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.

8-2-5. 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. Braking action reports less than good.
8. Volcanic eruption, ash clouds, and/or detection of sulfur gases in the cabin: hydrogen sulfide (H₂S) or sulfur dioxide (SO₂).

(a) If only H₂S or SO₂ is reported with no reported volcanic ash clouds, 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. H₂S, also known as sewer gas, has the odor of rotten eggs. SO₂ is identifiable as the sharp, acrid odor of a freshly struck match.

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.

8-2-6. 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—

FAA Order JO 7110.10, Para 8-2-7, Reporting Turbulence in PIREPs

- g. Extent, type, and intensity of icing.

REFERENCE—

FAA Order JO 7110.10, Para 8-2-8, Reporting Icing Conditions in PIREPs.

- 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.

8-2-7. 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.

8-2-8. 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.

8-2-9. 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. Request PIREPs from air carrier and military operations offices, military pilot-to-forecaster units, and local aircraft operators.
- f. Solicit from other air traffic facilities.

8-2-10. PIREP CLASSIFICATION

Categorize PIREPs as follows:

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

- 1. Tornadoes, funnel clouds, or waterspouts.
- 2. Severe or extreme turbulence (including clear air turbulence).
- 3. Severe icing.
- 4. Hail.

5. Low level wind shear. Classify LLWS PIREPs as UUA if the pilot reports air speed fluctuations of 10 knots or more. Classify reports of LLWS with air speed fluctuations less than 10 knots as routine. If airspeed fluctuation is not reported, classify PIREP as UUA.

NOTE-

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

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

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

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

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

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

8-2-11. PIREP HANDLING

Upon receipt of a PIREP, accomplish the following:

a. **Urgent.**

1. Deliver to the ARTCC Weather Coordinator as soon as possible.

2. Enter on Service A at the first opportunity.

3. Use in weather briefings, as appropriate.

b. **Routine.**

1. Transmit on Service A as soon as practical.

2. Use in weather briefings, as appropriate.

8-2-12. OFFSHORE COASTAL ROUTES

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

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

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

NOTE-

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

8-2-13. PIREP PREPARATION

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

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

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

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

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

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

f. Use only authorized aircraft designators and contractions.

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

h. Omit entries of TEIs, except as listed in subpara 8-2-13b, for which no data was reported.

8-2-14. PIREP FORMAT

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

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

b. /OV.

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

EXAMPLE-

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

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

EXAMPLE-

/OV KSTL-KMKC
/OV KSTL090030-KMKC045015

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

EXAMPLE-

/TM 1315

d. /FL. Altitude/flight level. Enter the altitude in hundreds of feet (MSL) where the phenomenon was first encountered. If not known, enter UNKN. If the aircraft was climbing or descending, enter the

appropriate contraction (DURC or DURD) in the remarks/RM TEI. If the condition was encountered within a layer, enter the altitude range within the appropriate TEI describing the condition.

EXAMPLE-

/FL093
/FL310
/FLUNKN /RM DURC

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

EXAMPLE-

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

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

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

EXAMPLE-

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

2. Use authorized contractions for cloud cover.

EXAMPLE-

SKC
FEW
SCT
BKN
OVC

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

EXAMPLE-

/SK SCT-BKN050-TOP100
/SK BKN-OVCUNKN-TOP060/BKN120-TOP150/ SKC

4. Unknown heights are indicated by the contraction UNKN.

EXAMPLE-

/SK OVC065-TOPUNKN

5. If a pilot indicates he/she is in the clouds, enter IMC in the remarks.

EXAMPLE–

/SK OVC065-TOPUNKN /RM IMC

6. When more than one layer is reported, separate layers by a solidus (/).

g. /WX. Flight visibility and flight weather. Report weather conditions encountered by the pilot as follows:

1. Flight visibility, if reported, will be the first entry in the /WX field. Enter as FV followed by a two-digit visibility value rounded down, if necessary, to the nearest whole statute mile and append “SM” (FV03SM). If visibility is reported as unrestricted, enter FV99SM.

2. Enter flight weather types using one or more of the standard surface weather reporting symbols contained in TBL 8–2–1.

TBL 8–2–1

Weather Type and Symbols

Type	METAR Code
Drifting / Blowing Snow	DRSN/BLSN
Drifting Dust	DRDU
Drifting Sand	DRSA
Drizzle/Freezing Drizzle	DZ/FZDZ
Dust / Blowing Dust	DU/BLDU
Duststorm	DS
Fog (vis < 5/8SM)	FG
Freezing Fog	FZFG
Freezing Rain	FZRA
Funnel Cloud	FC
Hail	GR
Hail Shower	SHGR
Haze	HZ
Ice Crystals	IC
Ice Pellets/ Showers	PL/SHPL
Mist (vis 5/8SM or more)	BR
Patchy Fog	BCFG
Patchy Fog on part of Arpt	PRFG
Rain / Showers	RA/SHRA
Sand / Blowing Sand	SA/BSA
Sandstorms	SS
Shallow Fog	MIFG
Snow Pellet Showers	SHGS
Snow Pellets	GS
Smoke	FU
Snow Grains	SG
Snow / Showers	SN/SHSN
Spray	PY
Squalls	SQ
Thunderstorm	TS
Tornado/Waterspout	+FC
Unknown Precipitation	UP
Volcanic Ash (incl. eruption, H ₂ S or SO ₂)	VA
Well developed Dust/Sand Whirls ..	PO

3. Intensity of precipitation (- for light, no qualifier for moderate, and + for heavy) must be indicated with precipitation types, except ice crystals and hail, including those associated with a thunderstorm and those of a showery nature.

4. Intensity of obscurations must be ascribed as moderate or + heavy for dust and sand storms only. No intensity for blowing dust, blowing sand, or blowing snow.

EXAMPLE-

/WX FV01SM +DS000-TOP083/ SKC /RM DURC

5. When more than one form of precipitation is combined in the report, the dominant type must be reported first.

EXAMPLE-

/WX FV00SM +TSRAGR

6. When FC is entered in /WX, FUNNEL CLOUD is spelled out on /RM. When +FC is entered in /WX, TORNADO or WATERSPOUT is spelled out in the /RM TEI.

EXAMPLE-

/WX FC /RM FUNNEL CLOUD

/WX +FC /RM TORNADO or WATERSPOUT

7. State the size of the hail in remarks in 1/4" increments or any hail less than 1/4" is stated as "GR less than 1/4".

8. The proximity qualifier VC (Vicinity) is only used with TS, FG, FC, +FC, SH, PO, BLDU, BLSA, and BLSN.

EXAMPLE-

/WX FV02SM BLDU000-TOP083 VC W

9. When more than one type of weather is reported enter in the following order: 1) TORNADO, WATERSPOUT, OR FUNNEL CLOUD; 2) Thunderstorm with or without associated precipitation; 3) Weather phenomena in order of decreasing predominance. No more than three groups in a single PIREP.

10. Weather layers must be entered with the base and/or top of the layer when reported. Use the same format as in the /SK TEI.

EXAMPLE-

/WX FU002-TOP030

h. /TA. Air Temperature. Report outside air temperature using two digits in degrees Celsius. Prefix negative temperatures with a M; for example, /TA 08 or /TA M08.

i. /WV. Wind direction and speed. If reported, wind direction from which the wind is blowing must be coded using three figures. Directions less than 100 degrees must be preceded by a "0". For example, a wind direction of 90 degrees is coded as 090. The wind speed must be entered as a two or three digit group immediately following the wind direction. The

speed must be coded in whole knots using the hundreds digit (if not zero) and the tens and units digits. The wind group always ends with "KT" to indicate that winds are reported in knots. Speeds of less than 10 knots must be coded using a leading zero. For example, a wind speed of 8 knots must be coded 08KT and a wind speed of 112 knots must be coded 112kt.

EXAMPLE-

/WV 28080KT

/WV 28008KT

/WV 280105KT

j. /TB. Turbulence. Report intensity, type, and altitude as follows:

1. Intensity. Enter duration if reported by the pilot (INTMT, OCNL, CONS) and intensity using contractions LGT, MOD, SEV, or EXTRM. Separate a range or variation of intensity with a hyphen; for example, MOD-SEV. If turbulence was not encountered, enter NEG.

2. Type. Enter CAT or CHOP if reported by the pilot.

3. Altitude. Report altitude only if it differs from value reported in /FL. When a layer of turbulence is reported, separate height values with a hyphen. If lower or upper limits are not defined, use BLO or ABV.

EXAMPLE-

/TB LGT 040

/TB MOD-SEV BLO 080

/TB MOD-SEV CAT 350

/TB NEG 120-180

/TB MOD CHOP 220/NEG 230-280

/TB MOD CAT ABV 290

k. IC. Icing. Report intensity, type and altitude of icing as follows:

1. Intensity. Enter intensity first using contractions TRACE, LGT, MOD, or SEV. Separate reports of a range or variation of intensity with a hyphen. If icing was not encountered, enter NEG.

2. Type. Enter the reported icing type as RIME, CLR, or MX.

3. Altitude. Enter the reported icing/altitude only if different from the value reported in the /FL TEI. Use a hyphen to separate reported layers of icing. Use ABV or BLO when a layer is not defined.

EXAMPLE–

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

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

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

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

EXAMPLE–

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

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

EXAMPLE–

/RM TORNADO E MOV E

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

EXAMPLE–

/RM NMRS TS S MOV E GR1/2

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

EXAMPLE–

/RM OCNL LTGICCG

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

EXAMPLE–

/RM DISCHARGE 120

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

EXAMPLE–

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

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

EXAMPLE–

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

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

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

NOTE–

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

EXAMPLE–

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

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

EXAMPLE–

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

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

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

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

EXAMPLE–
PIREP Text/RM Text/AWC

10. If ISA is reported.

EXAMPLE–
/RM ISA –10C

8–2–15. PIREP ENCODING

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

Section 3. Wind and Temperature Aloft Forecast (FB)

8-3-1. GENERAL

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

TBL 8-3-1

Wind/Temperature Aloft Forecast Schedules

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

8-3-2. LEVELS FORECAST

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

8-3-3. DISTRIBUTION

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

Section 4. Terminal Aerodrome Forecast (TAF)

8-4-1. GENERAL

NWS forecast offices prepare and forward 24- or 30-hour TAFs for selected U.S. terminals to the WMSCR for distribution. Similar forecasts for the U.S. Military, Canada, and Mexico are sent to WMSCR from the NCEP and Air Force Weather Agency (AFWA) for distribution.

8-4-2. TERMINAL AERODROME FORECAST SCHEDULES

TAFs are prepared four times a day and are issued at 2330, 0530, 1130, and 1730 UTC.

Section 5. Aviation Surface Forecast/Aviation Cloud Forecast/Area Forecast (FA)

8-5-1. GENERAL

a. Area forecasts (FA) are available for the Gulf of Mexico, Caribbean, Hawaii, and Alaska through the WMSCR and provide an overview of weather conditions which could impact aviation operations. FAs are issued by the Aviation Weather Center (AWC) in Kansas City, Missouri, the Alaska Aviation Weather Unit (AAWU) in Anchorage, Alaska, and the Weather Forecast Office (WFO) in Honolulu, Hawaii. The delineation of the areas is specified in the National Weather Service Instruction 10-811.

Canadian and Mexican FAs are also available through WMSCR.

b. FAs consist of the following elements according to each geographical location in TBL 8-5-1.

c. The Aviation Surface Forecast and Aviation Cloud Forecast are displayed as nine regional views and a CONUS view. These images are produced by the Aviation Weather Center and distributed by NOAAPORT and static URLs. See FIG 8-5-1, Graphical Forecast Images, for regional views.

TBL 8-5-1
Area Forecasts (FA)

	Gulf of Mexico	Caribbean	Hawaii	Alaska
Synopsis		X	X	X
Clouds and Weather	X	X	X	X (Includes AIRMETs)
Icing and Freezing Level	X	X		X
Turbulence	X	X		X

8-5-2. AREA FORECAST (FA) SCHEDULE

FAs are issued three times a day in Alaska and the Gulf of Mexico; and four times a day in Hawaii and the Caribbean. The issuance times are in TBL 8-5-2.

TBL 8-5-2
Area Forecast (FA) Schedule

	Gulf of Mexico (UTC)	Caribbean (UTC)	Hawaii (UTC)	Alaska
1 st Issuance	0130	0330	0430	0415 DT 0515 ST
2 nd Issuance	1030	0930	0940	1215 DT 1315 ST
3 rd Issuance	1830	1530	1540	2015 DT 2115 ST
4 th Issuance		2130	2140	
Note: DT – Daylight Time, ST – Standard Time, UTC – Coordinated Universal Time				

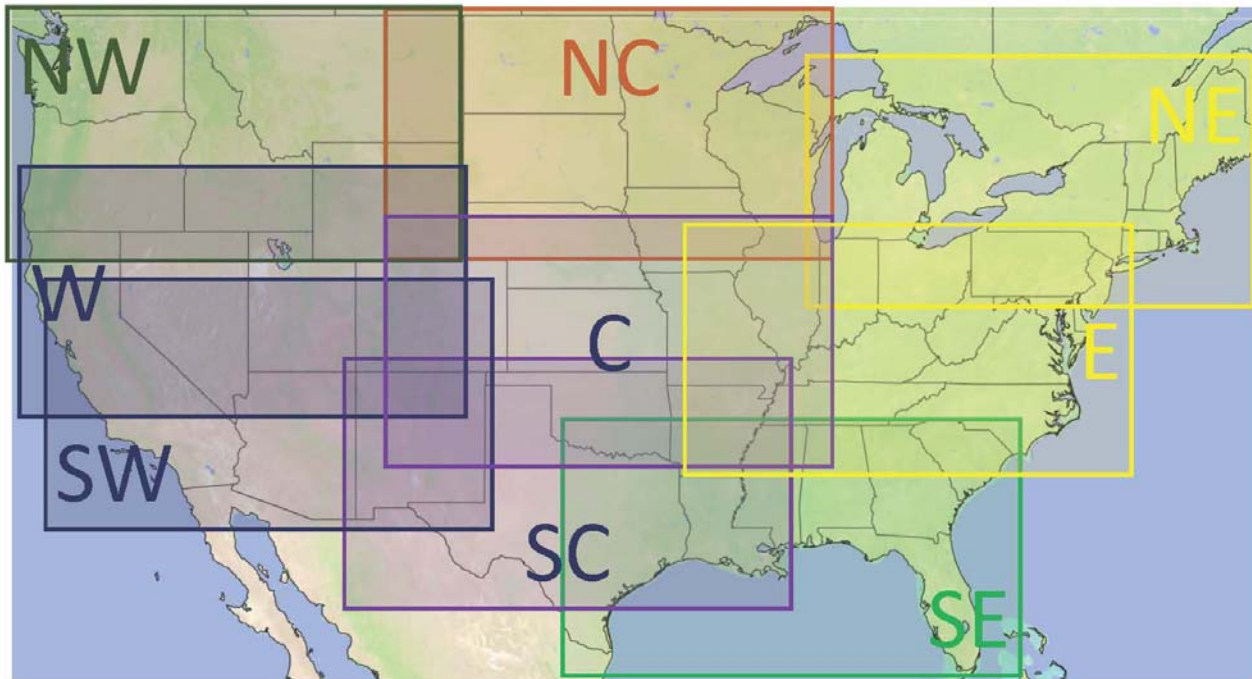
8-5-3. AVIATION SURFACE FORECAST AND AVIATION CLOUD FORECAST ISSUANCE TIMES

The Aviation Surface Forecast and Aviation Cloud Forecast are issued 8 times a day and are composed

of 6 snapshots that are valid for up to 18 hours. The images are based on forecast model run times of 00Z, 03Z, 06Z, 09Z, 12Z, 15Z, 18Z, and 21Z. The actual issuance time will be 1–2 hours after each model run. The delays are due to latency.

FIG 8-5-1

Graphic Forecast Images



Section 6. Severe Weather Forecasts

8-6-1. GENERAL

Severe weather forecasts are issued by the NWS Storm Prediction Center (SPC) in Norman, Oklahoma, in the form of weather watches, convective outlooks, and status reports and transmitted to WMSCR for distribution. An Aviation Watch Notification Message (SPC AWW) is the weather watch formatted for the aviation community to alert them of organized thunderstorms forecast to produce tornadic and/or severe weather. FSSs may obtain the public weather watch (SPC WW) from WMSCR if desired.

8-6-2. DISTRIBUTION

Upon receipt of SPC AWW alert, the WMSCR immediately transmits the report on selected Service A circuits. Severe weather status reports (WW-A) are never urgent. These are relayed unscheduled.

8-6-3. CONVECTIVE OUTLOOK NARRATIVE (AC)

The Storm Prediction Center will issue ACs numerous times each day. These forecasts describe the potential for severe and non-severe convective activity across the contiguous U.S.

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

8-7-1. GENERAL

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

For the contiguous U.S., WSTs are issued hourly at 55 minutes past every hour. WAs are issued as described in TBL 8-7-1.

8-7-2. DISTRIBUTION

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

TBL 8-7-1
(Effective 09/18/14)

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

Section 8. Center Weather Advisory (CWA)

8-8-1. GENERAL

A Center Weather Advisory (CWA) is an unscheduled weather advisory for conditions meeting or approaching national in-flight advisory (WA, WS, or WST) criteria. It is primarily used by aircrews to anticipate and avoid adverse weather conditions in the en route and terminal environments.

8-8-2. CRITERIA

a. CWAs are valid for up to 2 hours and may include forecasts of conditions expected to begin within 2 hours of issuance. If conditions are expected to persist after the advisory's valid period, a statement to that effect is included in the last line of the text. Additional CWAs will subsequently be issued as appropriate. The CWSU will issue a CWA:

1. When necessary to supplement an existing WS, WST, or WA for the purpose of refining or updating the location, movement, extent, or intensity of the weather event relevant to the ARTCC's area of responsibility.

2. When an inflight advisory has not yet been issued, but the observed or expected weather conditions meet WS, WST or WA criteria based on current pilot reports and reinforced by other sources of information concerning existing meteorological conditions.

3. When observed, or developing weather conditions do not meet WS, WST or WA criteria but current pilot reports or other weather information sources indicate that an existing, or anticipated, meteorological phenomena will adversely affect the

safe flow of air traffic within the ARTCC's area of responsibility.

b. The CWA will describe the location of the phenomenon using ARTCC relevant points of reference, such as VORs, and will include the height, extent, intensity, and movement of the phenomenon. Each CWA will have a phenomenon number.

c. The format of the CWA communications header is: (ARTCC designator)(phenomenon number) CWA (date/time issued in UTC)/(ARTCC designator) CWA (issuance number) VALID UNTIL (date/time in UTC)/(FROM) (affected area)/(text).

EXAMPLE-

ZOB1 CWA 032141

ZOB CWA 101 VALID UNTIL 032300

FROM 10S DET TO 40N DJB TO 40E SBN TO 80SE MKG LN SEV TSTMS WITH EXTRM PCPN MOVG FROM 2525 3/4 INCH HAIL RPRTD LAST 5 MINS 20 SW YIP. TSTMS WITH HVY TO EXTRM PCPN CONTG DTW AREA BYD 2300

ZKC1 CWA 121528

ZKC CWA 102 VALID UNTIL 121728

STL DIAM 30 NM. NMRS RPTS OF MOD TO SEV ICG 080/090.. LGT OR NEG ICG RPTD 040/120 RMNDR OF ZKC AREA AND NE OF AREA.

8-8-3. DISTRIBUTION

The CWA will be distributed to ARTCC area supervisors and traffic management coordinators and will be entered through FAA AISR and other communications media to make it available for dissemination to other FAA and NWS facilities.

Chapter 9. Airport Lighting and Visibility Aids (Alaska Only)

Section 1. General

9-1-1. AIRPORT LIGHTING

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

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

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

9-1-2. OBSTRUCTION LIGHTS

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

9-1-3. ROTATING BEACON

If controls are provided, turn on the rotating beacon:

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

9-1-4. APPROACH LIGHTS

Operate approach lights:

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

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

1. A landing runway served by the lights.

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

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

c. As requested by the pilot.

d. As you deem necessary, if not contrary to pilot's request.

NOTE-

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

9-1-5. APPROACH LIGHTING SYSTEM INTENSITY SETTINGS (ALS)

Operate intensity controls in accordance with the values depicted. (See TBL 9-1-1.)

TBL 9-1-1
ALS Intensity Setting

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

9-1-6. SEQUENCED FLASHING LIGHTS (SFL)

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

NOTE—

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

9-1-7. RUNWAY EDGE LIGHTS

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

a. Between sunset and sunrise.

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

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

b. Between sunrise and sunset, turn the lights on when the surface visibility is less than 2 miles as described in subparagraphs 9-1-7a1 and a2.

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

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

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

9-1-8. CHANGING LIGHTED RUNWAYS

a. To switch lights:

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

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

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

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

Operate MALSR/ODALS that have separate on-off and intensity setting controls in accordance with TBL 9-1-2 and TBL 9-1-3.

NOTE—

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

TBL 9-1-2**Two-Step MALSR/One-Step RAIL**

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

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

TBL 9-1-3**Three-Step MALSR/Three-Step RAIL**

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

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

9-1-10. HIGH INTENSITY RUNWAY LIGHTS (HIRL) ASSOCIATED WITH MALSR

Operate HIRL that controls the associated MALSR in accordance with the intensity setting in TBL 9-1-4.

TBL 9-1-4**HIRL Associated with MALSR**

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

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

NOTE—

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

9-1-11. MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)

Operate MIRL or MIRL which control the associated MALSR in accordance with the TBL 9-1-5.

**TBL 9-1-5
MIRL Intensity Setting**

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

REFERENCE—

FAA Order JO 7110.10, Para 9-1-10 Note.

9-1-12. HIGH INTENSITY RUNWAY, RUNWAY CENTERLINE (RCLS), AND TOUCHDOWN ZONE LIGHTS (TDZL)

Operate high intensity runway and associated runway centerline and touch-down zone lights in accordance with TBL 9-1-6.

**TBL 9-1-6
HIRL, RCLS, TDZL Intensity Setting**

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

* and/or appropriate RVR/RVV equivalent.

9-1-13. HIRL CHANGES AFFECTING RVR

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

9-1-14. HIGH SPEED TURNOFF LIGHTS

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

9-1-15. RUNWAY END IDENTIFIER LIGHTS (REIL)

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

- a. An arriving aircraft has landed.
- b. A departing aircraft has left the traffic pattern area.
- c. It is determined that the lights are of no further use to the pilot.
- d. Operate intensity setting in accordance with the values in TBL 9-1-7 except as prescribed in subparagraphs b and c above.

**TBL 9-1-7
REIL Intensity Setting, Two-Step System**

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

9-1-16. TAXIWAY LIGHTS

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

TBL 9-1-8
Three Step Taxiway Lights

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

TBL 9-1-9
Five Step Taxiway Lights

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

TBL 9-1-10
One Step Taxiway Lights

Day	Night
Less than 1 mile.	On

9-1-17. VISUAL APPROACH SLOPE INDICATORS (VASIs)

The VASI system with remote on-off switching must be operated when it serves the runway in use and where intensities are controlled in accordance with TBL 9-1-11 and TBL 9-1-12.

TBL 9-1-11
VASI Intensity Setting, Two-Step System

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

TBL 9-1-12
VASI Intensity Setting, Three-Step System

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

NOTE-

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

REFERENCE-

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

9-1-18. VISIBILITY AIDS - GENERAL

a. Where RVR/ RVV equipment is operational, irrespective of subsequent operation or nonoperation of navigational or visual aids for the application of RVR/RVV as a takeoff or landing minima, furnish the values for the runway in use in accordance with Paragraph 9-1-19, RVR/RVV.

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

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

NOTE-

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

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

NOTE-

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

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

9-1-19. RVR/RVV

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

b. When two or more RVR systems serve the runway in use, report the indicated values for the different systems in terms of touchdown, mid, and rollout as appropriate.

c. When there is a requirement to issue an RVR/RVV value and a visibility condition greater or less than the reportable values of the equipment is indicated, state the condition as “MORE THAN” or “LESS THAN” the appropriate minimum or maximum readable value.

d. When a readout indicates a rapidly varying visibility condition (1,000 feet or more for RVR; one or more reportable values for RVV), report the current value followed by the range of visibility variance.

9-1-20. OPERATION OF LANDING DIRECTION INDICATOR

Align the landing direction indicator with the favored or designated runway.

Chapter 10. Interphone Communications

Section 1. General

10-1-1. 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.

10-1-2. 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.

10-1-3. PRIORITY INTERRUPTION

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

10-1-4. 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—

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, Armyetc.”

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”

10-1-5. MESSAGE TERMINATION

Terminate interphone messages with your operating initials.

EXAMPLE-
“*V-N*”

Chapter 11. Phraseology

Section 1. General

11-1-1. PURPOSE

This chapter prescribes standardized procedures and phraseologies to be used by specialist when communicating weather and aeronautical information in broadcast, radiotelephone, and interphone communications. Where position or procedure-specific phraseology is required, reference is to be made to the relevant chapter of this order.

11-1-2. PHRASEOLOGY

The annotation PHRASEOLOGY denotes the prescribed words and/or phrases to be used in communications.

NOTE—

Specialists may, after first using the prescribed phraseology for a specific procedure, rephrase the message to ensure the content is understood. Good judgment must be exercised when using nonstandard phraseology.

11-1-3. WORDS AND PHRASES

Use the words or phrases in broadcast, radiotelephone, and interphone communications as contained in the Pilot/Controller Glossary.

11-1-4. ANNOUNCING MISSING ITEMS

With the exception of RVR, announce the word “missing” when any item or component of a weather report is not reported, or in place of unreadable or obviously incorrect items or portions of weather reports. When appropriate, instead of speaking the name of several locations with missing reports, announce: “Other scheduled reports missing.”

NOTE—

On occasion, a parameter from an automated observation may be reported as missing in the body of the report but is available as a manually reported parameter in the remarks section. When the report is spoken, include the manually reported element in its proper sequence within the report.

11-1-5. ICAO PHONETICS

Use the ICAO pronunciation of numbers and, as necessary, individual letters for clarity. The ICAO radiotelephony alphabet and pronunciation guide are contained in TBL 11-1-1.

**TBL 11-1-1
ICAO Phonetics**

Character	Word	Pronunciation
0	Zero	ZE-RO
1	One	WUN
2	Two	TOO
3	Three	TREE
4	Four	FOW-ER
5	Five	FIFE
6	Six	SIX
7	Seven	SEV-EN
8	Eight	AIT
9	Nine	NIN-ER
A	Alfa	ALFAH
B	Bravo	BRAHVOH
C	Charlie	CHARLEE
D	Delta	DELLTAH
E	Echo	ECKOH
F	Foxtrot	FOKSTROT
G	Golf	GOLF
H	Hotel	HOHTELL
I	India	INDEEAH
J	Juliett	JEWLEEETT
K	Kilo	KEYLOH
L	Lima	LEEMAH
M	Mike	MIKE
N	November	NOVEMBER
O	Oscar	OSSCAR
P	Papa	PAHPAH
Q	Quebec	KEHBECK
R	Romeo	ROWMEOH
S	Sierra	SEEAIRAH
T	Tango	TANGGO
U	Uniform	YOUNEEFORM
V	Victor	VIKTAH
W	Whiskey	WISKEY

X	X-ray	ECKSRAY
Y	Yankee	YANGKEY
Z	Zulu	ZOOLoo

NOTE–

Syllables to be emphasized in pronunciation are in bold face.

11-1-6. RELAY OF ATC COMMUNICATIONS

Prefix a clearance, information, or a request for information which will be relayed from a control facility to an aircraft with the appropriate phrase “A-T-C clears,” “A-T-C advises,” or “A-T-C requests.”

11-1-7. EXPEDITIOUS COMPLIANCE

a. Use the word “immediately” only when expeditious compliance is required to avoid an imminent situation.

b. Use the word “expedite” only when prompt compliance is required to avoid the development of an imminent situation.

c. In either case, and if time permits, include the reason for this action.

11-1-8. WEATHER PHRASEOLOGY

Use the following phraseology and procedures for stating surface weather observations and for information similarly encoded in other aviation weather products and forecasts.

a. Location.

1. Announce the geographic name (not the identifier) once.

EXAMPLE–

“Paducah.”

2. When the location name is duplicated within 500 miles, follow the location name with the state name.

EXAMPLE–

“Columbus, Ohio.”

3. When weather reports originate at more than one airport at the same geographical location, identify the airport.

EXAMPLE–

“Anchorage, Merrill.”

“Chicago, O’Hare.”

4. Where it is considered necessary and is requested by the military base commander, broadcast military observations by stating the location, the name of the airport if different, and the controlling military branch.

EXAMPLE–

“Joint Base Andrews.”

“Elmendorf, Air Force Base.”

“Fort Riley, Marshall Army Air Field.”

“Norfolk Naval Air Station.”

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

PHRASEOLOGY–

(Location) **AUTOMATED.**

c. If a special report is the most recent observation available, follow the location with the words “SPECIAL WEATHER REPORT,” (last two digits of the time) “OBSERVATION.” Use data from the record report to fill in the items not included in the special observation, such as temperature and dew point.

d. If the weather data is not available, state the location and the word “missing.”

e. Wind Direction and Speed. Announce surface wind direction and speed by stating the word “wind” followed by the separate digits of the wind direction to the nearest 10 degrees and the separate digits of the speed. A “G” between two wind speed values is announced as “gusts.” State local wind as it appears in the report. Announce the variability of wind at the end of the wind group. (See TBL 11-1-2.)

TBL 11-1-2
Wind Direction and Speed

<i>Wind</i>	<i>Phraseology</i>
00000KT	WIND CALM.
26012KT	WIND TWO SIX ZERO AT ONE TWO.
29012KT 260V320	WIND TWO NINER ZERO AT ONE TWO WIND VARIABLE BETWEEN TWO SIX ZERO AND THREE TWO ZERO.
30008KT	WIND THREE ZERO ZERO AT EIGHT.
36012G20KT	WIND THREE SIX ZERO AT ONE TWO GUSTS TWO ZERO.
VRB04KT	WIND VARIABLE AT FOUR.

f. Visibility.

State the word “visibility” followed by the visibility values in miles and/or fractions of miles, except announce values indicated by the figure 0 as “zero.” Announce the separate digits of whole numbers as applicable. (See TBL 11-1-3.)

TBL 11-1-3
Visibility

<i>Contraction</i>	<i>Phraseology</i>
0SM	Visibility zero.
$\frac{1}{16}$ SM	Visibility one sixteenth.
$\frac{1}{8}$ SM	Visibility one eighth.
$M\frac{1}{4}$ SM	Visibility less than one quarter.
$\frac{3}{4}$ SM	Visibility three quarters.
$1\frac{1}{2}$ SM	Visibility one and one-half.
8SM	Visibility eight.
25SM	Visibility two five.

NOTE—

When visibility is less than 3 miles and variable, this information is reported in the remarks.

g. RVR/RVV.

1. Provide RVR/RVV information by stating the runway, the abbreviation RVR/RVV, and the indicated value. The abbreviations “R-V-R” or “R-V-V” may be spoken in lieu of “visual range” or “visibility value.” When the indicated values are separated by a V, preface the values with the words “variable,” followed by the first value, the word “to,” then the second value. (See TBL 11-1-4.)

TBL 11-1-4
RVR/RVV

<i>RVR/RVV</i>	<i>Phraseology</i>
R36VV11/2	“Runway three six, R-V-V one and one-half.”
R05LVV1V2	“Runway five left, R-V-V variable between one and two.”
R18/2000V3000FT	“Runway one eight, R-V-R variable between two thousand to three thousand. Or Runway one eight visual range variable between two thousand and three thousand.”
R26R/2400FT	“Runway two six right visual range two thousand four hundred.”

2. When there is a requirement to issue an RVR or RVV value and a visibility condition greater or less than the reportable values of the equipment is indicated, state the condition as “MORE THAN” or “LESS THAN” the appropriate minimum or maximum readable value. (See TBL 11-1-5.)

TBL 11-1-5
RVR/RVV

<i>RVR/RVV</i>	<i>Phraseology</i>
R16/M0600FT	“Runway one six runway visual range less than six hundred. Or Runway one six R-V-R less than six hundred.”
R36L/M0600V2500FT	“Runway three six left, R-V-R variable between less than six hundred and two thousand five hundred. Or Runway three six left visual range variable between less than six hundred and two thousand five hundred.”
R36/P6000FT	“Runway three six R-V-R more than six thousand. Or Runway three six visual range more than six thousand.”

h. Weather Elements. TBL 11-1-6 depicts sample phraseology for weather element contractions. Intensity refers to precipitation, not descriptors. Proximity is spoken after the phenomenon to which it refers. Descriptors are spoken ahead of weather phenomenon with the exception of “showers” which is spoken after the precipitation.

TBL 11-1-7 contains a complete list of weather elements and appropriate phraseology.

TBL 11-1-6

Examples of Combining Intensity, Descriptors and Weather Phenomenon.

<i>Contractions</i>	<i>Phraseology</i>
BLSN	BLOWING SNOW
-FZRAPL	LIGHT FREEZING RAIN, ICE PELLETS
FZRA	FREEZING RAIN
FZDZ	FREEZING DRIZZLE
MIFG	SHALLOW FOG
-SHRA	LIGHT RAIN SHOWERS
SHRA	RAIN SHOWERS
SHSN	SNOW SHOWERS
TSRA	THUNDERSTORM, RAIN
+TSRA	THUNDERSTORM, HEAVY RAIN (SHOWERS) ¹
+TSRAGR	THUNDERSTORM, HEAVY RAIN, HAIL
VCSH	SHOWERS IN THE VICINITY

¹Since thunderstorms imply showery precipitation, “showers” may be used to describe precipitation that accompany thunderstorms.

TBL 11-1-7

Weather Elements

INTENSITY or PROXIMITY 1		DESCRIPTOR 2		PRECIPITATION 3		OBSCURATION 4		OTHER 5	
-	Light	MI	Shallow	DZ	Drizzle	BR	Mist	PO	Well-Developed Dust/Sand Whirls
		BC	Patchy	RA	Rain	FG	Fog	SQ	Squalls
	Moderate (No Qualifier)	DR	Low Drifting	SN	Snow	FU	Smoke	FC +FC	Funnel Cloud, Tornado or Waterspout
		BL	Blowing	SG	Snow Grains	DU	Dust	SS	Sandstorm
+	Heavy	SH	Showers	IC	Ice Crystals	SA	Sand	DS	Duststorm
		TS	Thunderstorm	PL	Ice Pellets	HZ	Haze		
VC	In the Vicinity	FZ	Freezing	GR	Hail	PY	Spray		
		PR	Partial	GS	Snow Pellets	VA	Volcanic Ash		
				UP	*Unknown Precipitation				

*** Automated stations only.**

i. Ceiling and Sky Coverage.

1. State sky coverage in the same order as reported on the weather observation. Announce ceiling as follows: (See TBL 11-1-8.)

TBL 11-1-8
Ceiling and Sky Coverage

<i>Designator</i>	<i>Phraseology</i>
BKN000 ¹	SKY PARTIALLY OBSCURED
BKN000 ²	CEILING LESS THAN FIVE ZERO BROKEN
FEW000 ¹	SKY PARTIALLY OBSCURED
FEW000 ²	FEW CLOUDS AT LESS THAN FIVE ZERO
(lowest layer aloft) BKN/OVC	(precede with) CEILING
SCT000 ¹	SKY PARTIALLY OBSCURED
SCT000 ²	LESS THAN FIVE ZERO SCATTERED
VV	INDEFINITE CEILING
¹ Surface-based obscurations. Requires remarks, i.e. RMK FG SCT000, FU BKN000, etc.	
² No remark means the layer is aloft.	

2. State cloud heights in tens, hundreds and/or thousands of feet. (See TBL 11-1-9.)

TBL 11-1-9
Cloud Heights

<i>Number</i>	<i>Phraseology</i>
000 ¹	ZERO
003	THREE HUNDRED
018	ONE THOUSAND EIGHT HUNDRED
200	TWO ZERO THOUSAND
¹ Spoken as zero only when used with VV.	

NOTE—

1. When the ceiling is less than 3,000 feet and variable, the variable limits will be reported in the remarks.
2. “Group form” is the pronunciation of a series of numbers as the whole number, or pairs of numbers they represent rather than pronouncing each separate digit. The use of group form may, however, be negated by four-digit identifiers or the placement of zeros in the identifier.

3. Announce sky conditions as indicated below. (See TBL 11-1-10.)

TBL 11-1-10
Sky Conditions

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

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

TBL 11-1-11
Sky and Ceiling Conditions

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

j. Announce surface temperature and dew point by stating the words “temperature” or “dew point,” as appropriate, followed by the temperature in degrees Celsius. Temperatures below zero are announced by prefixing the word “minus” before the values. (See TBL 11-1-12.)

TBL 11-1-12
Temperature/Dewpoint

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

k. Altimeter Setting.

1. State the word “altimeter” followed by the four digits of the altimeter setting. (See TBL 11-1-13.)

TBL 11-1-13
Altimeter Setting

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

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

PHRASEOLOGY–

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

3. If a request for the altimeter setting in MBs is received, announce the separate digits of the MB equivalent value, using the MB conversion chart, followed by the word “Mbs.” If the MB setting is not a whole number, always round down. (See TBL 11-1-14.)

REFERENCE–

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

TBL 11-1-14
Millibar Conversion

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

4. When altimeter is in excess of 31.00:

(a) Advise all aircraft.

PHRASEOLOGY–

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

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

PHRASEOLOGY–

RECOMMEND YOU SET ALTIMETER THREE ONE ZERO ZERO EN ROUTE.

11-1-9. WEATHER REMARKS

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

a. Sky and Ceiling (See TBL 11-1-15.)

TBL 11-1-15
Sky and Ceiling

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

b. Obscuring Phenomena. (See TBL 11-1-16.)

TBL 11-1-16
Obscuring Phenomena

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

c. Visibility. (See TBL 11-1-17.)

TBL 11-1-17
Visibility

<i>Contraction</i>	<i>Phraseology</i>
SFC VIS 1/2	“Surface visibility one-half.”
SFC VIS 15 TWRINC	“Surface visibility one five, tower in clouds.”
TWR VIS 3/4	“Tower visibility three-quarters.”
VIS S 1 W 1/4	“Visibility south one, west one-quarter.”
VIS 1V3	“Visibility variable between one and three.”

d. Weather and obstruction to visibility.
(See TBL 11-1-18.)

TBL 11-1-18
Weather and Obstruction

<i>Contraction</i>	<i>Phraseology</i>
BCFG S	“Patchy fog south.”
DUST DEVILS NW	“Dust devils northwest.”
FG DSPTG	“Fog dissipating.”
FU DRFTG OVR FLD	“Smoke drifting over field.”
FUOCTY	“Smoke over city.”
GR 2	“Hailstones two inches in diameter.”
INTMT -RA	“Intermittent light rain.”
OCNL LTG DSNT NW	“Occasional lightning distant northwest.”
OCNL SHRA	“Occasional moderate rain showers.”
-RA OCNLY +RA	“Light rain occasionally heavy.”
RAB30	“Rain began at three zero.”
SNB15E40	“Snow began at one five, ended at four zero.”
SNINCR 5/10	“Snow increase five inches during past hour, ten inches on the ground.”
TS OHD MOV E	“Thunderstorm overhead, moving east.”
FRQ LTGCG TS W MOV E	“Frequent lightning cloud to ground, thunderstorm west moving east.”
UNCONFIRMED TORNADO 15W OKC MOV NE 2015	“Unconfirmed tornado one five west of Oklahoma City, moving northeast sighted at two zero one five zulu.”
WET SN	“Wet snow.”

e. Wind. (See TBL 11-1-19.)

TBL 11-1-19
Wind

<i>Contraction</i>	<i>Phraseology</i>
PK WND 33048/22	“Peak wind three three zero at four eight occurred at two two past the hour.”
WSHFT 30	“Wind shifted at three zero.”

f. Pressure. (See TBL 11-1-20.)**TBL 11-1-20
Pressure**

<i>Contraction</i>	<i>Phraseology</i>
PRESFR	“Pressure falling rapidly.”
PRESRR	“Pressure rising rapidly.”

g. Freezing Level Data. (See TBL 11-1-21.)**TBL 11-1-21
Freezing Level Data**

<i>Contraction</i>	<i>Explanation</i>
RADAT 87045	Relative humidity 87 percent, only crossing of zero degrees Celsius isotherm was four thousand five hundred M-S-L.
RADAT 87L024105	Relative humidity 87 percent at the lowest crossing of zero degrees Celsius. Two crossings occurred at two thousand four hundred and one zero thousand five hundred M-S-L.
RADAT MISG	The sounding terminated below the first crossing of the zero degree Celsius isotherm. Temperatures were all above freezing.
RADAT ZERO	The entire sounding was below zero degrees Celsius.

h. Icing Data. (See TBL 11-1-22.)**TBL 11-1-22
Icing Data**

<i>Contraction</i>	<i>Explanation</i>
RAICG 12 MSL	Icing at one thousand two hundred M-S-L.
RAICG 24 MSL SNW	Icing at two thousand four hundred M-S-L in snow.

i. Maintenance Data. (See TBL 11-1-23.)**TBL 11-1-23
Maintenance Data**

<i>RVR/RVV</i>	<i>Phraseology</i>
PNO	“Precipitation amount not available.”
RVRNO	“R-V-R (or runway visual range) information not available.”
TSNO	“Thunderstorm/lightning information not available.”
VISNO	“Visibility sensor information not available.”

11-1-10. WEATHER ADVISORIES

a. When announcing weather advisories, include the complete advisory description including the product name and alphanumeric identification. Specify Eastern, Central, or Western section as applicable when stating WSTs.

PHRASEOLOGY-**AIRMET**

*ALERT WEATHER WATCH, ONE ZERO SEVEN FOR SEVERE THUNDERSTORMS
CONVECTIVE SIGMET TWO SEVEN EASTERN
HOUSTON CENTER WEATHER ADVISORY ONE,
ISSUANCE TWO
SIGMET WHISKEY THREE*

b. Do not read the OUTLOOK section of WSTs when stating the advisory. Data contained in the OUTLOOK concerning convective activity location, movement, and intensity may be extracted for compilation in forecast summarizations.

EXAMPLE-

“Convective SIGMET one seven Eastern—from five zero south of St. Petersburg to three zero south of Columbus, line of thunderstorms three five miles wide moving east at one five knots. Maximum tops four seven thousand.”

c. VNR. When VFR flight is proposed and sky conditions or visibilities are present or forecast, surface based or aloft that, in your judgment, would make visual flight doubtful, include one of the following statements:

PHRASEOLOGY-

V-F-R FLIGHT NOT RECOMMENDED (location if applicable) DUE TO (conditions).

or

V-F-R NOT RECOMMENDED.

11-1-11. RADAR

Use the following phraseology and procedures for communicating radar products:

Radar displays. When stating precipitation intensity from a radar display (such as NEXRAD), use the following four categories as appropriate:

- a. Light: (Equates to radar return levels of less than 30 dBZ.)
- b. Moderate: (Equates to radar return levels of 30 to 40 dBZ.)
- c. Heavy: (Equates to radar return levels of greater than 40 to 50 dBZ.)
- d. Extreme: (Equates to radar return levels of greater than 50 dBZ.)

11-1-12. WINDS AND TEMPERATURES ALOFT FORECAST (FB)

When announcing the FB, use the following phraseology and procedures:

- a. State the altitude, then announce wind direction and speed by the separate digits of the wind direction to the 10-degree multiple, the word AT, and the separate digits of the speed.
- b. When the forecast speed is less than 5 knots, the coded group is 9900 and read, "light and variable."
- c. Encoded wind speed 100 to 199 knots have 50 added to the direction code and 100 subtracted from the speed.
- d. If wind speed is forecast at 200 knots or greater, the wind group is coded as 199 knots; for example, 7799 is decoded 270 degrees at 199 knots or greater.
- e. A six-digit group includes forecast temperature. Provide temperatures on request only, stating the word "temperature," followed by the word "minus," as appropriate, and the separate digits. (See TBL 11-1-24.)

TBL 11-1-24
Altitude

<i>Coded</i>	<i>Phraseology</i>
2707	"(altitude), two seven zero at seven."
7799	"(altitude), two seven zero at one niner niner or greater."
850552	"(altitude), three five zero at one zero five, temperature minus five two."
9900+00	"(altitude), light and variable, temperature zero."

11-1-13. NUMBER USAGE

State numbers as follows:

- a. Serial numbers. The separate digits. (See TBL 11-1-25.)

TBL 11-1-25
Serial Numbers

<i>Number</i>	<i>Phraseology</i>
11,495	"One one four niner five."
20,069	"Two zero zero six niner."

- b. Altitudes or flight levels.

- 1. Altitudes. Pronounce each digit in the number of hundreds or thousands followed by the word "hundred" or "thousand," as appropriate. (See TBL 11-1-26.)

TBL 11-1-26
Altitudes

<i>Altitude</i>	<i>Phraseology</i>
5,000	"Five thousand."
10,000	"One zero thousand."
11,500	"One one thousand five hundred."

- 2. Altitudes may be restated in group form for added clarity if the specialist chooses. (See TBL 11-1-27.)

TBL 11-1-27
Altitudes – continued

<i>Altitude</i>	<i>Phraseology</i>
10,000	"Ten thousand."
11,500	"Eleven thousand five hundred."

- 3. Flight levels. The words "flight level," followed by the separate digits of the flight level. (See TBL 11-1-28.)

TBL 11-1-28
Flight Levels

<i>Flight Level</i>	<i>Phraseology</i>
180	“Flight level one eight zero.”
270	“Flight level two seven zero.”

4. MDA/DH Altitudes. The words “minimum descent altitude” or “decision height,” followed by separate digits of the MDA/DH altitude. (See TBL 11-1-29.)

TBL 11-1-29
MDA/DH Altitude

<i>Altitude</i>	<i>Phraseology</i>
486	“Decision height, four eight six.”
1,320	“Minimum descent altitude, one three two zero.”

c. Time.

1. General time information. The four separate digits of the hour and minutes in terms of Coordinated Universal Time (UTC). (See TBL 11-1-30.)

TBL 11-1-30
Coordinated Universal Time

<i>Time</i>	<i>Phraseology</i>
0115 (UTC)	“Zero one one five.”
1315 (UTC)	“One three one five.”

2. Upon request. The four separate digits of the hours and minutes in terms of UTC followed by the local time equivalent; or the local time equivalent only. Local time may be based on the 24-hour clock system. (See TBL 11-1-31.) The term “ZULU” may be used to denote UTC.

TBL 11-1-31
Coordinated Universal Time

<i>Time</i>	<i>Phraseology</i>
2:30 p.m. or 2230 (UTC), 2:30 p.m. or 2230 (UTC), 1430 PST	“Two thirty P-M. local.” “Two two three zero, two thirty P-M. local.” “Two two three zero, one four three zero Pacific or local.”

3. Time check. The word “time” followed by the four separate digits of the hour and minutes, and nearest quarter minute. Fractions of a quarter minute

less than eight seconds are stated as the preceding quarter minute; fractions of a quarter minute of 8 seconds or more are stated as the succeeding quarter minute. (See TBL 11-1-32.)

TBL 11-1-32
Time Check

<i>Time</i>	<i>Phraseology</i>
1415:06	“Time, one four one five.”
1415:10	“Time, one four one five and one-quarter.”

4. Abbreviated time. The separate digits of the minutes only. (See TBL 11-1-33.)

TBL 11-1-33
Abbreviated Time

<i>Time</i>	<i>Phraseology</i>
1415	“One five.”
1420	“Two zero.”

NOTE-

Change to the next minute is made at the minute plus 30 seconds.

d. Field elevation. The words “field elevation,” followed by the separate digits of the elevation. (See TBL 11-1-34.)

TBL 11-1-34
Field Elevation

<i>Elevation</i>	<i>Phraseology</i>
17 feet	“Field elevation, one seven.”
187 feet	“Field elevation, one eight seven.”
2,817 feet	“Field elevation, two eight one seven.”

e. The number “0” is stated as “zero,” except where it is used in approved “group form” for authorized aircraft callsigns and in stating altitudes.

EXAMPLE-

“Field elevation one six zero.”

“Heading three zero zero.”

“One zero thousand five hundred.”

“Western five thirty.”

“Ten thousand five hundred.”

“EMAIR One Ten”

f. Heading. The word “heading,” followed by the three separate digits of the number of degrees, omitting the word “degrees.” Use heading 360 degrees to indicate a north heading. (See TBL 11-1-35.)

TBL 11-1-35
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 11-1-36.)

TBL 11-1-36
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 11-1-37.)

TBL 11-1-37
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 11-1-38.)

TBL 11-1-38
Frequencies

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

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

EXAMPLE–

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

j. Speeds.

1. The separate digits of the speed followed by the word knots. (See TBL 11-1-39.)

TBL 11-1-39
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 11-1-40.)

TBL 11-1-40
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 11-1-41.)

TBL 11-1-41
Miles

Miles	Phraseology
30	“Three zero miles.”

11-1-14. 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.”

11-1-15. AIRCRAFT IDENTIFICATION

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

followed by the numbers/letters of the aircraft registration.

EXAMPLE–

“Bonanza One Two Three Four Tango.”

“Douglas Three Zero Five Romeo.”

“Jet Commander One Four Two Four.”

“November One Two Three Four Golf.”

NOTE–

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

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

EXAMPLE–

“American Five Twenty-One.”

“United One Zero One.”

“General Motors Thirty-Fifteen.”

“Delta One Hundred.”

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

EXAMPLE–

“American Five Twenty-One American.”

“Commuter Six Eleven Commuter.”

“General Motors Thirty-Seven General Motors.”

REFERENCE–

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

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

EXAMPLE–

On initial contact.

“Tango Mooney Five Five Five Two Quebec.”

or

“Tango November Five Five Five Two Quebec.”

On subsequent contacts.

“Mooney Five Two Quebec.”

or

“November Five Two Quebec.”

b. MEDEVAC aircraft.

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

EXAMPLE–

“MEDEVAC Delta Fifty-One.”

NOTE–

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

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

EXAMPLE–

“MEDEVAC Two Six Four Six X-Ray.”

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

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

EXAMPLE–

“Guard Two Six Three.”

“Army Copter Three Two One Seven Six.”

“Coast Guard Six One Three Two Seven.”

“Navy Five Six Seven One Three.”

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

EXAMPLE–

“Army Copter Three Two One Seven Six Army Copter.”

“Coast Guard Six One Three Two Seven Coast Guard.”

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

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

EXAMPLE–

“AIR EVAC One Seven Six Five Two.”

(b) Rescue flights. (Service name) “RESCUE.”

EXAMPLE–

“Air Force Rescue Six One Five Seven Niner.”

(c) Air Mobility Command. “REACH.”

EXAMPLE–

“Reach Seven Eight Five Six Two.”

(d) Special Air Mission. “SAM.”

EXAMPLE–

“Sam Niner One Five Six Two.”

(e) USAF Contract Aircraft. “LOGAIR.”

EXAMPLE–

“Logair Seven Five Eight Two Six.”

4. Military tactical and training.

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

EXAMPLE–

“Paul Two Zero.”

“Pat One Five Seven.”

“Graydog Four.”

NOTE–

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

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

EXAMPLE–

“Marine Four Charlie Two Three Six.”

“Navy Golf Alpha Two One.”

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

EXAMPLE–

“Alpha Kilo One Five.”

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

d. Foreign registry. State one of the following:

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

EXAMPLE–

“Stationair F-L-R-B.”

“C-F-L-R-B.”

“Canadian Foxtrot Lima Romeo Bravo.”

NOTE–

Letters may be spoken individually or phonetically.

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

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

EXAMPLE–

“Air France F-L-R-L-G.”

NOTE–

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

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

EXAMPLE–

“Scandinavian Six Eight.”

“Scandinavian Sixty-eight.”

3. Foreign Military.

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

EXAMPLE–

“Brazilian Air Force Five Three Two Seven Six.”

“Canforce Five Six Two Seven.”

e. Presidential aircraft and Presidential family aircraft.

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

EXAMPLE–

“Air Force One.”

“Army One.”

“Marine One.”

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

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

f. Vice Presidential aircraft.

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

EXAMPLE–

“Air Force Two.”

“Army Two.”

“Marine Two.”

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

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

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

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

1. Department of Transportation.

(a) Secretary:

(1) Identifier - DOT-1.

(2) Call Sign - Transport-1.

(b) Deputy Secretary:

(1) Identifier - DOT-2.

(2) Call Sign - Transport-2

2. Federal Aviation Administration.

(a) Administrator:

(1) Identifier - FAA-1.

(2) Call Sign - Safe Air-1.

(b) Deputy Administrator:

(1) Identifier - FAA-2

(2) Call Sign - Safe Air-2.

PHRASEOLOGY–

Grand Forks Radio, Transport Two, (message).

Miami Radio, Safe Air One, (message).

h. Other special flights.

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

EXAMPLE–

“SAFI Five Two Seven.”

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

EXAMPLE–

“Flight check Three Niner Six Five Four.”

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

EXAMPLE–

“SAMP Three One Six.”

4. Flights conducted by U.S. governmental organizations (federal, state, local, tribal, and territorial) using FAA authorized U.S. special call signs for purposes of national security and defense, homeland security, intelligence, and law enforcement. These flights may be identified in accordance with FAA Order JO 7110.67, Air Traffic Management Security Services for Special Operations.

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

11-1-16. DESCRIPTION OF AIRCRAFT TYPES

Except for heavy aircraft, describe aircraft as follows:

a. Military.

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

2. Service and type; or

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

EXAMPLE-

"Air Force Bomber."

"B-One."

"Bomber."

"F-Fifteen."

"Fighter."

"Navy Fighter."

b. Air Carrier.

1. Manufacturer's name or model.

2. Add the manufacturer's name, company name or other identifying features when confusion or misunderstanding is likely.

EXAMPLE-

"American M-D Eighty Seven-Thirty-Seven."

"Boeing Seven-Fifty-Seven."

"L-Ten-Eleven."

c. General Aviation and Air Taxi.

1. Manufacturer's model, name, or designator.

2. Manufacturer's name, or add color when considered advantageous.

EXAMPLE-

"Airliner."

"Blue and White King Air."

"Cessna Four-Oh-One."

"Cessna Three Ten."

"Green Apache."

"P-A Twenty-Two."

"Tri-Pacer."

11-1-17. AIRCRAFT EQUIPMENT CODES

When communicating this information (aircraft equipment suffixes) state the aircraft type, the word "slant," and the appropriate phonetic letter equivalent of the suffix.

EXAMPLE-

"Boeing Seven-Oh-Seven slant Romeo."

"D-C Six slant Tango."

"F-Eight-E slant Papa."

"F-Four-C slant November."

11-1-18. AIRWAYS AND ROUTES

Describe airways, routes, or jet routes as follows:

a. VOR/VORTAC/TACAN airways or jet routes. State the word "Victor" or the letter "J," followed by the number of the airway or route in group form. For RNAV routes, add the word "Romeo."

EXAMPLE-

"J Eight Thirty Romeo."

"J Five Thirty-Three."

"Offset one zero miles right of J Eight Thirty Romeo."

"Victor Seven Ten Romeo."

"Victor Twelve."

b. VOR/VORTAC/TACAN alternate airways. State the word "Victor," followed by the number of the airway in group form and the alternate direction.

EXAMPLE-

"Victor Twelve South."

c. Colored/L/MF airways. State the color of the airway followed by the number in group form.

EXAMPLE-

"Blue Eighty-One."

d. Named Routes. State the words "North American Route" or "Bahama Route," followed by the number of the route in group form.

EXAMPLE-

"North American Route Fifty."

"Bahama Route Fifty-Five Victor."

e. Military Training Routes (MTRs). State the letters "I-R" or "V-R," followed by the number of the route in group form.

EXAMPLE–

“I-R Five Thirty-One.”

“V-R Fifty-two.”

11–1–19. NAVAID TERMS

a. Announce NAVAIDs as follows in TBL 11–1–42:

TBL 11–1–42
NAVAID Terms

Contraction	Phraseology
DME	D-M-E
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
ILS	I-L-S
LOM	Outer compass locator
MLS	M-L-S
NDB	Nondirectional radio beacon
RNAV	Area Navigation System
TACAN	TACK-AN
VOR	V-O-R
VORTAC	VOR- (as in “vortex”) TACK
WAAS	Wide Area Augmentation System

b. Describe radials, arcs, courses, bearings, and quadrants of NAVAIDs as follows:

1. VOR/VORTAC/TACAN/MLS NAVAIDs. State the name of the NAVAID followed by the separate digits of the radial/azimuth (omitting the word degrees) and the word “radial/azimuth.”

EXAMPLE–

“Appleton Zero Five Zero Radial.”

“Lindburg Runway Two Seven MLS two six zero azimuth.”

2. Arcs about VOR-DME/VORTAC/TACAN/MLS NAVAIDs. State the distance in miles from the NAVAID followed by the words “mile arc,” the direction from the NAVAID in terms of the eight principal points of the compass, the word “of,” and the name of the NAVAID.

EXAMPLE–

“Two zero mile arc southwest of O’Hare Runway Two Seven Left M-L-S.”

3. Quadrant within a radius of NAVAID. State direction from NAVAID in terms of the quadrant; e.g.

NE, SE, SW, NW, followed by the distance in miles from the NAVAID.

EXAMPLE–

“Cleared to fly northeast quadrant of Philipsburg VORTAC within four zero mile radius.”

REFERENCE–

P/CG Term, QUADRANT.

4. Nondirectional beacons. State the course to or the bearing from the radio beacon, omitting the word “degree,” followed by the words “course to” or “bearing from,” the name of the radio beacon, and the words “radio beacon”.

EXAMPLE–

“Three four zero bearing from Randolph Radio Beacon.”

11–1–20. NAVAID FIXES

Describe fixes determined by reference to a radial/localizer/azimuth and distance from a VOR-DME/VORTAC/TACAN/ILS-DME or MLS as follows:

a. When a fix is not named, state the name of the NAVAID, followed by a specified radial/localizer/azimuth, and state the distance in miles followed by the phrase “mile fix.”

EXAMPLE–

“Appleton zero five zero radial three seven mile fix.”

“Reno localizer back course four mile fix.”

“Hobby Runway One Two M-L-S zero niner zero azimuth one two mile fix.”

b. When a fix is charted on a SID, STAR, en route chart, or approach plate, state the name of the fix followed by the phrase “D-M-E fix” or “waypoint,” as appropriate.

EXAMPLE–

“Shaum D-M-E Fix.”

“Shaum Waypoint.”

c. Use specific terms to describe a fix. Do not use expressions such as “passing Victor Twelve” or “passing J Eleven.”

11–1–21. RUNWAY CONDITIONS

a. State factual information as reported by airport management concerning the condition of the runway surface and describing the accumulation of precipitation. Furnish quality of braking action as received from pilots to all aircraft as follows:

1. Describe the quality of braking action using the terms “good”, “good to medium”, ‘medium’,

‘medium to poor’, poor, or nil. If the pilot reports braking action in other than the approved terms, ask them to categorize braking action in these terms.

2. Include the type of aircraft from which the report is received.

EXAMPLE–

“All runways covered by packed snow six inches deep.”

“Braking action poor reported by a Boeing Seven Thirty-Seven.”

3. If the braking action report affects only a portion of a runway, obtain enough information from the pilot to describe braking action in terms easily understood by other pilots.

EXAMPLE–

“Braking action poor first half of runway, reported by a Gulfstream Two.”

“Braking action poor beyond the intersection of Runway Two Seven, reported by a Boeing Seven Thirty-Seven.”

NOTE–

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

b. State runway friction measurement readings/values as received from airport management to aircraft as follows:

1. At airports with friction measuring devices, provide runway friction reports, as received from airport management, to pilots on request. State the runway number followed by the MU number for each of the three runway zones, the time of the report in UTC, and a word describing the cause of the runway friction problem.

EXAMPLE–

“Runway Two Seven, MU forty-two, forty-one, twenty-eight at one zero one eight ZULU, ice.”

2. Issue the runway surface condition and/or the runway condition reading (RCR), if provided, to all USAF and ANG aircraft. Issue the RCR to other aircraft upon request.

EXAMPLE–

“Ice on runway, R-C-R Zero Five, patchy.”

NOTE–

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

Chapter 12. Data Communication Systems

Section 1. General

12-1-1. 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.

12-1-2. PRIORITY MESSAGES

TBL 12-1-1
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.

12-1-3. 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 12-1-2 and ARTCCs in TBL 12-1-3.

TBL 12-1-2
Region Group Code

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

TBL 12-1-3
ARTCC Group Code

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

NOTE-

Except in Alaska, all of the group codes can be converted to a full eight-character address by placing a K in front of and YFYX following the three characters listed in TBL 12-1-2 and TBL 12-1-3.

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 KRIVYYX. These transmissions are transparent.

f. The group code KSARYCYX has been established to assist in the processing of INREQs and ALNOTs.

12-1-4. 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.

12-1-5. 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.

12-1-6. Q SIGNALS

TBL 12-1-4 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 of message)?	I acknowledge receipt of transmission number... (or type of message).
QSM	Shall I repeat the last message (transmission or portion indicated sent to me or transmission(s) from...)?	Repeat the last message (transmission or portion indicated) sent to me (or transmission(s) from...). A--not received. B--partially received (garbled).
QTA	Shall I cancel message number... (or other identification)?	Cancel message number... (or other identification).

ITEM 10: EQUIPMENT AND CAPABILITIES

Capabilities comprise the following elements:

- (a) Presence of relevant serviceable equipment on board the aircraft;
- (b) Equipment and capabilities commensurate with flight crew qualifications; and
- (c) Where applicable, authorization from the appropriate authority.

Radio communication, navigation and approach aid equipment and capabilities

ENTER one letter as follows:

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

OR

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

AND/OR

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

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

Any alphanumeric characters not indicated above are reserved.

NOTE-

1. If the letter *S* is used, standard equipment is considered to be VHF RTF, VOR, and ILS, unless another combination is prescribed by the appropriate ATS authority.
2. If the letter *G* is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ and separated by a space.
3. See RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard – DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.
4. If the letter *R* is used, the performance based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance based navigation to a specific route segment, route or area is contained in the Performance-Based Navigation Manual (Doc 9613).
5. If the letter *Z* is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT/, as appropriate.

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

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

Surveillance equipment and capabilities

ENTER N if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable,

OR

ENTER one or more of the following descriptors, up to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board. Enter no more than one transponder code (Modes A, C, or S)

SSR Modes A and C:

- A Transponder - Mode A (4 digits - 4096 codes)
- C Transponder - Mode A (4 digits - 4096 codes) and Mode C

SSR Mode S:

- E Transponder - Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability
- H Transponder - Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability
- I Transponder - Mode S, including aircraft identification, but no pressure-altitude capability
- L Transponder - Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability
- P Transponder — Mode S, including pressure-altitude, but no aircraft identification capability
- S Transponder - Mode S, including both pressure-altitude and aircraft identification capability
- X Transponder - Mode S with neither aircraft identification nor pressure-altitude capability

NOTE-

Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.

ADS-B:

- B1 ADS-B with dedicated 1090 MHz ADS-B “out” capability
- B2 ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability
- U1 ADS-B “out” capability using UAT
- U2 ADS-B “out” and “in” capability using UAT
- V1 ADS-B “out” capability using VDL Mode 4
- V2 ADS-B “out” and “in” capability using VDL Mode 4

NOTE-

File no more than one code for each type of capability, e.g. file B1 or B2 and not both

ADS-C:

- D1 ADS-C with FANS 1/A capabilities
- G1 ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.

EXAMPLE-

ADE3RV/HB2U2V2G1

NOTE

Additional surveillance application should be listed in Item 18 following the indicator SUR/.

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:

AUTOMATED EMERGENCY DESCENT
EMERGENCY AUTOLAND SYSTEM
EMERGENCY DESCENT MODE
STNR ALT RESERVATION

e. Terms Deleted:

TELEPHONE INFORMATION BRIEFING SERVICE
TIBS
TRANSCRIBED WEATHER BROADCAST (TWEB)
TWEB

f. Terms Modified:

GROSS NAVIGATION ERROR (GNE)
GROUND COMMUNICATION OUTLET (GCO)
STATIONARY RESERVATIONS

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. 90-66.)

(Refer to AIM.)

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

(See ADDITIONAL SERVICES.)

(See LOCAL AIRPORT ADVISORY.)

(See RADAR ADVISORY.)

(See SAFETY ALERT.)

(See TRAFFIC ADVISORIES.)

(Refer to AIM.)

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,

clearance and other pertinent information is provided in the approach clearance when required.

(See CLEARED APPROACH.)

(See INSTRUMENT APPROACH PROCEDURE.)

(Refer to AIM.)

(Refer to 14 CFR Part 91.)

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

(See APPROACH CONTROL SERVICE.)

(See RADAR APPROACH CONTROL FACILITY.)

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

(See ICAO term APPROACH CONTROL SERVICE.)

(Refer to AIM.)

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

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

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

APPROACH LIGHT SYSTEM–

(See AIRPORT LIGHTING.)

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

(See LANDING SEQUENCE.)

(See ICAO term APPROACH SEQUENCE.)

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

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

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

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

APPROPRIATE AUTHORITY–

a. Regarding flight over the high seas: the relevant authority is the State of Registry.

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

APPROPRIATE OBSTACLE CLEARANCE MINIMUM ALTITUDE– Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

APPROPRIATE TERRAIN CLEARANCE MINIMUM ALTITUDE– Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

APRON– A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

(See ICAO term APRON.)

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

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

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

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

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

AREA NAVIGATION (RNAV) APPROACH CONFIGURATION:

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

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

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

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

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

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

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

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

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

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.)

ASDA–

(See ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDA [ICAO]–

(See ICAO Term ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDE–

(See AIRPORT SURFACE DETECTION EQUIPMENT.)

ASF–

(See AIRPORT STREAM FILTER.)

ASLAR–

(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

ASP–

(See ARRIVAL SEQUENCING PROGRAM.)

ASR–

(See AIRPORT SURVEILLANCE RADAR.)

ASR APPROACH–

(See SURVEILLANCE APPROACH.)

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

(See UNASSOCIATED.)

ATC–

(See AIR TRAFFIC CONTROL.)

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

(See ADVISORY.)

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

(See SPECIAL USE AIRSPACE.)

ATC CLEARANCE–

(See AIR TRAFFIC CLEARANCE.)

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

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

(Refer to 14 CFR Part 91.)

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

(See ROUTE ACTION NOTIFICATION.)

(See EN ROUTE DECISION SUPPORT TOOL.)

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

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

ATC SECURITY SERVICES– Communications and security tracking provided by an ATC facility in

support of the DHS, the DOD, or other Federal security elements in the interest of national security. Such security services are only applicable within designated areas. ATC security services do not include ATC basic radar services or flight following.

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

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

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

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

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

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

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

ATCAA–
(See ATC ASSIGNED AIRSPACE.)

ATCRBS–
(See RADAR.)

ATCSCC–
(See AIR TRAFFIC CONTROL SYSTEM
COMMAND CENTER.)

ATCT–
(See TOWER.)

ATD–
(See ALONG–TRACK DISTANCE.)

ATIS–
(See AUTOMATIC TERMINAL INFORMATION
SERVICE.)

ATIS [ICAO]–
(See ICAO Term AUTOMATIC TERMINAL
INFORMATION SERVICE.)

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

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

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

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

AUTOMATED EMERGENCY DESCENT–
(See EMERGENCY DESCENT MODE.)

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

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

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

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

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

(See EN ROUTE DECISION SUPPORT TOOL.)

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

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

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

AUTOMATIC ALTITUDE REPORT–

(See ALTITUDE READOUT.)

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

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

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

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

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST IN.)

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST OUT.)

(See COOPERATIVE SURVEILLANCE.)

(See GLOBAL POSITIONING SYSTEM.)

(See SPACE–BASED ADS–B.)

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

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST OUT.)

(See AUTOMATIC DEPENDENT SURVEILLANCE–REBROADCAST.)

(See FLIGHT INFORMATION SERVICE–BROADCAST.)

(See TRAFFIC INFORMATION SERVICE–BROADCAST.)

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

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST.)

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST IN.)

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

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

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

(See BEARING.)

(See NONDIRECTIONAL BEACON.)

AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS) – ALASKA FSSs ONLY– The continuous broadcast of recorded non-control information at airports in Alaska where a FSS provides local airport advisory service. The AFIS broadcast automates the repetitive transmission of essential but routine information such as weather, wind, altimeter, favored runway, braking action, airport NOTAMs, and other applicable information. The information is continuously broadcast over a discrete VHF radio frequency (usually the ASOS/AWOS frequency).

AUTOMATIC TERMINAL INFORMATION SERVICE– The continuous broadcast of recorded noncontrol information in selected terminal areas. Its purpose is to improve controller effectiveness and to

relieve frequency congestion by automating the repetitive transmission of essential but routine information; e.g., “Los Angeles information Alfa. One three zero zero Coordinated Universal Time. Weather, measured ceiling two thousand overcast, visibility three, haze, smoke, temperature seven one, dew point five seven, wind two five zero at five, altimeter two niner niner six. I-L-S Runway Two Five Left approach in use, Runway Two Five Right closed, advise you have Alfa.”

(See ICAO term AUTOMATIC TERMINAL INFORMATION SERVICE.)

(Refer to AIM.)

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

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

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

b. Low Level Autorotation. Commences at an altitude well below the traffic pattern, usually below 100 feet AGL and is used primarily for tactical military training.

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

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

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

(See TRANSCRIBED WEATHER BROADCAST.)

(See WEATHER ADVISORY.)

(Refer to AIM.)

AWW–

(See SEVERE WEATHER FORECAST
ALERTS.)

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, GOOD TO MEDIUM, MEDIUM, MEDIUM TO POOR, POOR, OR NIL)– A report of conditions on the airport movement area providing a pilot with a degree/quality of braking to expect. Braking action is reported in terms of good, good to medium, medium, medium to poor, poor, or nil.

(See RUNWAY CONDITION READING.)

(See RUNWAY CONDITION REPORT.)

(See RUNWAY CONDITION CODES.)

BRAKING ACTION ADVISORIES– When tower controllers receive 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.” During the time braking action advisories are in effect, ATC will issue the most current 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 issued 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.

BUFFER AREA– As applied to an MVA or MIA chart, a depicted 3 NM or 5 NM radius MVA/MIA sector isolating a displayed obstacle for which the sector is established. A portion of a buffer area can also be inclusive of a MVA/MIA sector polygon boundary.

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 90-66, Non-Towered Airport Flight Operations.)

COMPASS LOCATOR– A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). It can be used for navigation at distances of approximately 15 miles or as authorized in the approach procedure.

a. Outer Compass Locator (LOM)– A compass locator installed at the site of the outer marker of an instrument landing system.

(See OUTER MARKER.)

b. Middle Compass Locator (LMM)– A compass locator installed at the site of the middle marker of an instrument landing system.

(See MIDDLE MARKER.)

(See ICAO term LOCATOR.)

COMPASS ROSE– A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction.

COMPLY WITH RESTRICTIONS– An ATC instruction that requires an aircraft being vectored back onto an arrival or departure procedure to comply with all altitude and/or speed restrictions depicted on the procedure. This term may be used in lieu of repeating each remaining restriction that appears on the procedure.

COMPOSITE FLIGHT PLAN– A flight plan which specifies VFR operation for one portion of flight and IFR for another portion. It is used primarily in military operations.

(Refer to AIM.)

COMPULSORY REPORTING POINTS– Reporting points which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in “radar contact.”

COMPUTER NAVIGATION FIX (CNF)– A Computer Navigation Fix is a point defined by a latitude/longitude coordinate and is required to support Performance-Based Navigation (PBN) operations. A five-letter identifier denoting a CNF can be found next to an “x” on en route charts and on some approach charts. Eventually, all CNFs will be labeled and begin with the letters “CF” followed by three consonants (e.g., ‘CFWBG’). CNFs are not recognized by ATC, are not contained in ATC fix or automation databases, and are not used for ATC purposes. Pilots should not use CNFs for point-to-point navigation (e.g., proceed direct), filing a flight plan, or in aircraft/ATC communications. Use of CNFs has not been adopted or recognized by the International Civil Aviation Organization (ICAO).

(REFER to AIM 1-1-17b5(i)(2), Global Positioning System (GPS).)

CONDITIONS NOT MONITORED– When an airport operator cannot monitor the condition of the movement area or airfield surface area, this information is issued as a NOTAM. Usually necessitated due to staffing, operating hours or other mitigating factors associated with airport operations.

CONFIDENCE MANEUVER– A confidence maneuver consists of one or more turns, a climb or descent, or other maneuver to determine if the pilot in command (PIC) is able to receive and comply with ATC instructions.

CONFLICT ALERT– A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between tracked targets (known IFR or VFR aircraft) that require his/her immediate attention/action.

(See MODE C INTRUDER ALERT.)

CONFLICT RESOLUTION– The resolution of potential conflicts between aircraft that are radar identified and in communication with ATC by ensuring that radar targets do not touch. Pertinent

traffic advisories shall be issued when this procedure is applied.

Note: This procedure shall not be provided utilizing mosaic radar systems.

CONFORMANCE– The condition established when an aircraft’s actual position is within the conformance region constructed around that aircraft at its position, according to the trajectory associated with the aircraft’s Current Plan.

CONFORMANCE REGION– A volume, bounded laterally, vertically, and longitudinally, within which an aircraft must be at a given time in order to be in conformance with the Current Plan Trajectory for that aircraft. At a given time, the conformance region is determined by the simultaneous application of the lateral, vertical, and longitudinal conformance bounds for the aircraft at the position defined by time and aircraft’s trajectory.

CONSOLAN– A low frequency, long-distance NAVAID used principally for transoceanic navigations.

CONTACT–

a. Establish communication with (followed by the name of the facility and, if appropriate, the frequency to be used).

b. A flight condition wherein the pilot ascertains the attitude of his/her aircraft and navigates by visual reference to the surface.

(See CONTACT APPROACH.)

(See RADAR CONTACT.)

CONTACT APPROACH– An approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument approach procedure and proceed to the destination airport by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile.

(Refer to AIM.)

CONTAMINATED RUNWAY– A runway is considered contaminated whenever standing water, ice, snow, slush, frost in any form, heavy rubber, or other substances are present. A runway is contaminated with respect to rubber deposits or other

friction-degrading substances when the average friction value for any 500-foot segment of the runway within the ALD fails below the recommended minimum friction level and the average friction value in the adjacent 500-foot segments falls below the maintenance planning friction level.

CONTERMINOUS U.S.– The 48 adjoining States and the District of Columbia.

CONTINENTAL UNITED STATES– The 49 States located on the continent of North America and the District of Columbia.

CONTINGENCY HAZARD AREA (CHA)– Used by ATC. Areas of airspace that are defined and distributed in advance of a launch or reentry operation and are activated in response to a failure.

(See AIRCRAFT HAZARD AREA.)

(See REFINED HAZARD AREA.)

(See TRANSITIONAL HAZARD AREA.)

CONTINUE– When used as a control instruction should be followed by another word or words clarifying what is expected of the pilot. Example: “continue taxi,” “continue descent,” “continue inbound,” etc.

CONTROL AREA [ICAO]– A controlled airspace extending upwards from a specified limit above the earth.

CONTROL SECTOR– An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector.

(See DISCRETE FREQUENCY.)

CONTROL SLASH– A radar beacon slash representing the actual position of the associated aircraft. Normally, the control slash is the one closest to the interrogating radar beacon site. When ARTCC radar is operating in narrowband (digitized) mode, the control slash is converted to a target symbol.

CONTROLLED AIRSPACE– An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

a. Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D, and Class E airspace.

b. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements in 14 CFR Part 91 (for specific operating requirements, please refer to 14 CFR Part 91). For IFR operations in any class of controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance. Each Class B, Class C, and Class D airspace area designated for an airport contains at least one primary airport around which the airspace is designated (for specific designations and descriptions of the airspace classes, please refer to 14 CFR Part 71).

c. Controlled airspace in the United States is designated as follows:

1. CLASS A– Generally, that airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska. Unless otherwise authorized, all persons must operate their aircraft under IFR.

2. CLASS B– Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspace areas resemble upside-down wedding cakes), and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds."

3. CLASS C– Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a surface area with a 5 NM radius, a circle with a 10 NM radius that extends no lower than 1,200

feet up to 4,000 feet above the airport elevation, and an outer area that is not charted. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. VFR aircraft are only separated from IFR aircraft within the airspace.

(See OUTER AREA.)

4. CLASS D– Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace. No separation services are provided to VFR aircraft.

5. CLASS E– Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also in this class are Federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic, and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska, up to, but not including 18,000 feet MSL, and the airspace above FL 600.

CONTROLLED AIRSPACE [ICAO]– An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

Note: Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D, and E.

CONTROLLED TIME OF ARRIVAL– Arrival time assigned during a Traffic Management Program. This time may be modified due to adjustments or user options.

CONTROLLER–

(See **AIR TRAFFIC CONTROL SPECIALIST**.)

CONTROLLER [ICAO]– A person authorized to provide air traffic control services.

CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)– A two-way digital communications system that conveys textual air traffic control messages between controllers and pilots using ground or satellite-based radio relay stations.

CONVECTIVE SIGMET– A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to VIP level 4 with an area coverage of $\frac{4}{10}$ (40%) or more, and hail $\frac{3}{4}$ inch or greater.

(See **AIRMET**.)

(See **AWW**.)

(See **CWA**.)

(See **SIGMET**.)

(Refer to **AIM**.)

CONVECTIVE SIGNIFICANT METEOROLOGICAL INFORMATION–

(See **CONVECTIVE SIGMET**.)

COOPERATIVE SURVEILLANCE– Any surveillance system, such as secondary surveillance radar (SSR), wide-area multilateration (WAM), or ADS-B, that is dependent upon the presence of certain equipment onboard the aircraft or vehicle to be detected.

(See **AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST**.)

(See **NON-COOPERATIVE SURVEILLANCE**.)

(See **RADAR**.)

(See **WIDE AREA MULTILATERATION**.)

COORDINATES– The intersection of lines of reference, usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine position or location.

COORDINATION FIX– The fix in relation to which facilities will handoff, transfer control of an aircraft,

or coordinate flight progress data. For terminal facilities, it may also serve as a clearance for arriving aircraft.

COPTER–

(See **HELICOPTER**.)

CORRECTION– An error has been made in the transmission and the correct version follows.

COUPLED APPROACH– An instrument approach performed by the aircraft autopilot, and/or visually depicted on the flight director, which is receiving position information and/or steering commands from onboard navigational equipment. In general, coupled non-precision approaches must be flown manually (autopilot disengaged) at altitudes lower than 50 feet AGL below the minimum descent altitude, and coupled precision approaches must be flown manually (autopilot disengaged) below 50 feet AGL unless authorized to conduct autoland operations. Coupled instrument approaches are commonly flown to the allowable IFR weather minima established by the operator or PIC, or flown VFR for training and safety.

COURSE–

a. The intended direction of flight in the horizontal plane measured in degrees from north.

b. The ILS localizer signal pattern usually specified as the front course or the back course.

(See **BEARING**.)

(See **INSTRUMENT LANDING SYSTEM**.)

(See **RADIAL**.)

CPDLC–

(See **CONTROLLER PILOT DATA LINK COMMUNICATIONS**.)

CPL [ICAO]–

(See ICAO term **CURRENT FLIGHT PLAN**.)

CRITICAL ENGINE– The engine which, upon failure, would most adversely affect the performance or handling qualities of an aircraft.

CROSS (FIX) AT (ALTITUDE)– Used by ATC when a specific altitude restriction at a specified fix is required.

CROSS (FIX) AT OR ABOVE (ALTITUDE)– Used by ATC when an altitude restriction at a specified fix is required. It does not prohibit the aircraft from crossing the fix at a higher altitude than specified; however, the higher altitude may not be one that will

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

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

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

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

E-MSAW–

(See EN ROUTE MINIMUM SAFE ALTITUDE WARNING.)

ENHANCED FLIGHT VISION SYSTEM (EFVS)–

An EFVS is an installed aircraft system which uses

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

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

(See AIR ROUTE TRAFFIC CONTROL CENTER.)

(Refer to AIM.)

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

(Refer to AIM.)

EN ROUTE CHARTS–

(See AERONAUTICAL CHART.)

EN ROUTE DECISION SUPPORT TOOL (EDST)–

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

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

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

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

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

EN ROUTE 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.)

EST–

(See ESTIMATED.)

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

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

ESTIMATED (EST)–When used in NOTAMs “EST” is a contraction that is used by the issuing authority only when the condition is expected to return to service prior to the expiration time. Using “EST” lets the user know that this NOTAM has the possibility of returning to service earlier than the

expiration time. Any NOTAM which includes an “EST” will be auto-expired at the designated expiration time.

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

(See ICAO Term TOTAL ESTIMATED ELAPSED TIME.)

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

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

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

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

ETA–

(See ESTIMATED TIME OF ARRIVAL.)

ETE–

(See ESTIMATED TIME EN ROUTE.)

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

(Refer to AIM.)

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

(Refer to AIM.)

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

(See GROUND DELAY PROGRAM.)

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

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

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

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

G

GATE HOLD PROCEDURES– Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 15 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

GCA–

(See **GROUND CONTROLLED APPROACH**.)

GDP–

(See **GROUND DELAY PROGRAM**.)

GENERAL AVIATION– That portion of civil aviation that does not include scheduled or unscheduled air carriers or commercial space operations.

(See ICAO term **GENERAL AVIATION**.)

GENERAL AVIATION [ICAO]– All civil aviation operations other than scheduled air services and nonscheduled air transport operations for remuneration or hire.

GEO MAP– The digitized map markings associated with the ASR-9 Radar System.

GLIDEPATH–

(See **GLIDESLOPE**.)

GLIDEPATH [ICAO]– A descent profile determined for vertical guidance during a final approach.

GLIDEPATH INTERCEPT ALTITUDE–

(See **GLIDESLOPE INTERCEPT ALTITUDE**.)

GLIDESLOPE– Provides vertical guidance for aircraft during approach and landing. The glideslope/glidepath is based on the following:

a. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or,

b. Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for

the visual portion of an instrument approach and landing.

c. PAR. Used by ATC to inform an aircraft making a PAR approach of its vertical position (elevation) relative to the descent profile.

(See ICAO term **GLIDEPATH**.)

GLIDESLOPE INTERCEPT ALTITUDE– The published minimum altitude to intercept the glideslope in the intermediate segment of an instrument approach. Government charts use the lightning bolt symbol to identify this intercept point. This intersection is called the Precise Final Approach fix (PFAF). ATC directs a higher altitude, the resultant intercept becomes the PFAF.

(See **FINAL APPROACH FIX**.)

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)– GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellations. A GNSS constellation may be augmented by ground stations and/or geostationary satellites to improve integrity and position accuracy.

(See **GROUND-BASED AUGMENTATION SYSTEM**.)

(See **SATELLITE-BASED AUGMENTATION SYSTEM**.)

GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE (GNSS MEA)– The minimum en route IFR altitude on a published ATS route or route segment which assures acceptable Global Navigation Satellite System reception and meets obstacle clearance requirements. (Refer to 14 CFR Part 91.) (Refer to 14 CFR Part 95.)

GLOBAL POSITIONING SYSTEM (GPS)– GPS refers to the worldwide positioning, navigation and timing determination capability available from the U.S. satellite constellation. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard. GPS is composed of space, control, and user elements.

GNSS [ICAO]–

(See GLOBAL NAVIGATION SATELLITE SYSTEM.)

GNSS MEA–

(See GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE.)

GO AHEAD– Proceed with your message. Not to be used for any other purpose.

GO AROUND– Instructions for a pilot to abandon his/her approach to landing. Additional instructions may follow. Unless otherwise advised by ATC, a VFR aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an IFR flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC; e.g., “Go around” (additional instructions if required).

(See LOW APPROACH.)

(See MISSED APPROACH.)

GPD–

(See GRAPHIC PLAN DISPLAY.)

GPS–

(See GLOBAL POSITIONING SYSTEM.)

GRAPHIC PLAN DISPLAY (GPD)– A view available with EDST that provides a graphic display of aircraft, traffic, and notification of predicted conflicts. Graphic routes for Current Plans and Trial Plans are displayed upon controller request.

(See EN ROUTE DECISION SUPPORT TOOL.)

GROSS NAVIGATION ERROR (GNE) – A lateral deviation of 10 NM or more from the aircraft’s cleared route.

GROUND BASED AUGMENTATION SYSTEM (GBAS)– A ground based GNSS station which provides local differential corrections, integrity parameters and approach data via VHF data broadcast to GNSS users to meet real-time performance requirements for CAT I precision approaches. The aircraft applies the broadcast data to improve the accuracy and integrity of its GNSS signals and computes the deviations to the selected approach. A single ground station can serve multiple runway ends up to an approximate radius of 23 NM.

GROUND BASED AUGMENTATION SYSTEM (GBAS) LANDING SYSTEM (GLS)– A type of precision IAP based on local augmentation of GNSS data using a single GBAS station to transmit locally corrected GNSS data, integrity parameters and approach information. This improves the accuracy of aircraft GNSS receivers’ signal in space, enabling the pilot to fly a precision approach with much greater flexibility, reliability and complexity. The GLS procedure is published on standard IAP charts, features the title GLS with the designated runway and minima as low as 200 feet DA. Future plans are expected to support Cat II and CAT III operations.

GROUND CLUTTER– A pattern produced on the radar scope by ground returns which may degrade other radar returns in the affected area. The effect of ground clutter is minimized by the use of moving target indicator (MTI) circuits in the radar equipment resulting in a radar presentation which displays only targets which are in motion.

(See CLUTTER.)

GROUND COMMUNICATION OUTLET (GCO)– An unstaffed, remotely controlled, ground/ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF radio to a telephone connection. If the connection goes to ATC, the pilot can obtain an IFR clearance or close an IFR flight plan. If the connection goes to Flight Service, the pilot can open or close a VFR flight plan; obtain an updated weather briefing prior to takeoff; close an IFR flight plan; or, for Alaska or MEDEVAC only, obtain an IFR clearance. 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.)

INCERFA (Uncertainty Phase) [ICAO]– A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

INCREASED SEPARATION REQUIRED (ISR)– Indicates the confidence level of the track requires 5 NM separation. 3 NM separation, 1 ½ NM separation, and target resolution cannot be used.

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

INERTIAL NAVIGATION SYSTEM (INS)– An RNAV system which is a form of self-contained navigation.
(See **Area Navigation/RNAV**.)

INFLIGHT REFUELING–
(See **AERIAL REFUELING**.)

INFLIGHT WEATHER ADVISORY–
(See **WEATHER ADVISORY**.)

INFORMATION REQUEST (INREQ)– A request originated by an FSS for information concerning an overdue VFR aircraft.

INITIAL APPROACH FIX (IAF)– The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s).
(See **FIX**.)
(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

INITIAL APPROACH SEGMENT–
(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

INITIAL APPROACH SEGMENT [ICAO]– That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

INLAND NAVIGATION FACILITY– A navigation aid on a North American Route at which the common route and/or the noncommon route begins or ends.

INNER MARKER– A marker beacon used with an ILS (CAT II) precision approach located between the middle marker and the end of the ILS runway, transmitting a radiation pattern keyed at six dots per second and indicating to the pilot, both aurally and visually, that he/she is at the designated decision height (DH), normally 100 feet above the touchdown

zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach.

(See **INSTRUMENT LANDING SYSTEM**.)
(Refer to **AIM**.)

INNER MARKER BEACON–
(See **INNER MARKER**.)

INREQ–
(See **INFORMATION REQUEST**.)

INS–
(See **INERTIAL NAVIGATION SYSTEM**.)

INSTRUMENT APPROACH–
(See **INSTRUMENT APPROACH PROCEDURE**.)

INSTRUMENT APPROACH OPERATIONS [ICAO]– An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a. A two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

b. A three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note: Lateral and vertical navigation guidance refers to the guidance provided either by:

- a) a ground-based radio navigation aid; or
- b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

(See **ICAO term INSTRUMENT APPROACH PROCEDURE**.)

INSTRUMENT APPROACH PROCEDURE– A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

(Refer to **14 CFR Part 91**.)

(Refer to **AIM**.)

a. U.S. civil standard instrument approach procedures are approved by the FAA as prescribed under **14 CFR Part 97** and are available for public use.

b. U.S. military standard instrument approach procedures are approved and published by the Department of Defense.

c. Special instrument approach procedures are approved by the FAA for individual operators but are not published in 14 CFR Part 97 for public use.

(See ICAO term INSTRUMENT APPROACH PROCEDURE.)

INSTRUMENT APPROACH PROCEDURE [ICAO]– A series of predetermined maneuvers by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

(See ICAO term INSTRUMENT APPROACH OPERATIONS)

INSTRUMENT APPROACH PROCEDURE CHARTS–

(See AERONAUTICAL CHART.)

INSTRUMENT DEPARTURE PROCEDURE (DP)– A preplanned instrument flight rule (IFR) departure procedure published for pilot use, in graphic or textual format, that provides obstruction clearance from the terminal area to the appropriate en route structure. There are two types of DP, Obstacle Departure Procedure (ODP), printed either textually or graphically, and, Standard Instrument Departure (SID), which is always printed graphically.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See OBSTACLE DEPARTURE PROCEDURES.)

(See STANDARD INSTRUMENT DEPARTURES.)

(Refer to AIM.)

INSTRUMENT DEPARTURE PROCEDURE (DP) CHARTS–

(See AERONAUTICAL CHART.)

INSTRUMENT FLIGHT RULES (IFR)– Rules governing the procedures for conducting instrument

flight. Also a term used by pilots and controllers to indicate type of flight plan.

(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

(See ICAO term INSTRUMENT FLIGHT RULES.)

(Refer to AIM.)

INSTRUMENT FLIGHT RULES [ICAO]– A set of rules governing the conduct of flight under instrument meteorological conditions.

INSTRUMENT LANDING SYSTEM (ILS)– A precision instrument approach system which normally consists of the following electronic components and visual aids:

a. Localizer.

(See LOCALIZER.)

b. Glideslope.

(See GLIDESLOPE.)

c. Outer Marker.

(See OUTER MARKER.)

d. Middle Marker.

(See MIDDLE MARKER.)

e. Approach Lights.

(See AIRPORT LIGHTING.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)– Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

(See INSTRUMENT FLIGHT RULES.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

INSTRUMENT RUNWAY– A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved.

(See ICAO term INSTRUMENT RUNWAY.)

INSTRUMENT RUNWAY [ICAO]– One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

Approaches (SOIA) to parallel runways whose centerlines are separated by less than 3,000 feet and at least 750 feet. NTZ monitoring is required to conduct these approaches.

(See SIMULTANEOUS OFFSET INSTRUMENT APPROACH (SOIA).)

(Refer to AIM.)

LOCALIZER USABLE DISTANCE– The maximum distance from the localizer transmitter at a specified altitude, as verified by flight inspection, at which reliable course information is continuously received.

(Refer to AIM.)

LOCATOR [ICAO]– An LM/MF NDB used as an aid to final approach.

Note: A locator usually has an average radius of rated coverage of between 18.5 and 46.3 km (10 and 25 NM).

LONG RANGE NAVIGATION–

(See LORAN.)

LONGITUDINAL SEPARATION– The longitudinal spacing of aircraft at the same altitude by a minimum distance expressed in units of time or miles.

(See SEPARATION.)

(Refer to AIM.)

LORAN– An electronic navigational system by which hyperbolic lines of position are determined by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran A operates in the 1750-1950 kHz frequency band. Loran C and D operate in the 100-110 kHz frequency band. In 2010, the U.S. Coast Guard terminated all U.S. LORAN-C transmissions.

(Refer to AIM.)

LOST COMMUNICATIONS– Loss of the ability to communicate by radio. Aircraft are sometimes referred to as NORDO (No Radio). Standard pilot procedures are specified in 14 CFR Part 91. Radar controllers issue procedures for pilots to follow in the event of lost communications during a radar approach when weather reports indicate that an aircraft will likely encounter IFR weather conditions during the approach.

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

LOST LINK (LL)– An interruption or loss of the control link, or when the pilot is unable to effect control of the aircraft and, as a result, the UA will perform a predictable or planned maneuver. Loss of command and control link between the Control Station and the aircraft. There are two types of links:

a. An uplink which transmits command instructions to the aircraft, and

b. A downlink which transmits the status of the aircraft and provides situational awareness to the pilot.

LOST LINK PROCEDURE– Preprogrammed or predetermined mitigations to ensure the continued safe operation of the UA in the event of a lost link (LL). In the event positive link cannot be established, flight termination must be implemented.

LOW ALTITUDE AIRWAY STRUCTURE– The network of airways serving aircraft operations up to but not including 18,000 feet MSL.

(See AIRWAY.)

(Refer to AIM.)

LOW ALTITUDE ALERT, CHECK YOUR ALTITUDE IMMEDIATELY–

(See SAFETY ALERT.)

LOW APPROACH– An approach over an airport or runway following an instrument approach or a VFR approach including the go-around maneuver where the pilot intentionally does not make contact with the runway.

(Refer to AIM.)

LOW FREQUENCY (LF)– The frequency band between 30 and 300 kHz.

(Refer to AIM.)

LOCALIZER PERFORMANCE WITH VERTICAL GUIDANCE (LPV)– A type of approach with vertical guidance (APV) based on WAAS, published on RNAV (GPS) approach charts. This procedure takes advantage of the precise lateral guidance available from WAAS. The minima is published as a decision altitude (DA).

LUAW–

(See LINE UP AND WAIT.)

terminates at the approach gate or where the glideslope or other appropriate minimum altitude is intercepted.

PROGRESS REPORT–

(See POSITION REPORT.)

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

PROHIBITED AREA–

(See SPECIAL USE AIRSPACE.)

(See ICAO term PROHIBITED AREA.)

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

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

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

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

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

(See OBSTACLE.)

(See OBSTRUCTION.)

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

PROPOSED BOUNDARY CROSSING TIME– Each center has a PBCT parameter for each internal airport. Proposed internal flight plans are transmitted

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

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

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

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

PT–

(See PROCEDURE TURN.)

PTP–

(See POINT-TO-POINT.)

PTS–

(See POLAR TRACK STRUCTURE.)

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

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

PWS–

(See PREDICTIVE WIND SHEAR ALERT SYSTEM.)

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

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

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

SPOOFING– Denotes emissions of GNSS-like signals that may be acquired and tracked in combination with or instead of the intended signals by civil receivers. The onset of spoofing effects can be instantaneous or delayed, and effects can persist after the spoofing has ended. Spoofing can result in false and potentially confusing, or hazardously misleading, position, navigation, and/or date/time information in addition to loss of GNSS use.

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

(See TRANSPONDER.)

STA–

(See SCHEDULED TIME OF ARRIVAL.)

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

STAND BY– Means the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in “stand by for clearance.” The caller should reestablish contact if a delay is lengthy. “Stand by” is not an approval or denial.

STANDARD INSTRUMENT APPROACH PROCEDURE (SIAP)–

(See INSTRUMENT APPROACH PROCEDURE.)

STANDARD INSTRUMENT DEPARTURE (SID)– A preplanned instrument flight rule (IFR) air traffic control (ATC) departure procedure printed for pilot/controller use in graphic form to provide

obstacle clearance and a transition from the terminal area to the appropriate en route structure. SIDs are primarily designed for system enhancement to expedite traffic flow and to reduce pilot/controller workload. ATC clearance must always be received prior to flying a SID.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See OBSTACLE DEPARTURE PROCEDURE.)

(Refer to AIM.)

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

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

STANDARD TERMINAL ARRIVAL CHARTS–
(See AERONAUTICAL CHART.)

STANDARD TERMINAL AUTOMATION REPLACEMENT SYSTEM (STARS)–

(See DTAS.)

STAR–

(See STANDARD TERMINAL ARRIVAL.)

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

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

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

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

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

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

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

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

(See STATIONARY ALTITUDE RESERVATION.)

STOL AIRCRAFT–

(See SHORT TAKEOFF AND LANDING AIRCRAFT.)

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

(See ALTITUDE READOUT.)

(See TRANSPONDER.)

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

(See LOW APPROACH.)

(See OPTION APPROACH.)

STOP BURST–

(See STOP STREAM.)

STOP BUZZER–

(See STOP STREAM.)

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

(See STOP ALTITUDE SQUAWK.)

(See TRANSPONDER.)

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

(See JAMMING.)

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

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

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

(See LANDING MINIMUMS.)

(See STRAIGHT-IN APPROACH VFR.)

(See STRAIGHT-IN LANDING.)

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

(See TRAFFIC PATTERN.)

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

(See STRAIGHT-IN APPROACH IFR.)

STRAIGHT-IN LANDING MINIMUMS–

(See LANDING MINIMUMS.)

STRAIGHT-IN MINIMUMS–

(See STRAIGHT-IN LANDING MINIMUMS.)

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

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

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

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

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

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

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

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

SURFACE AREA– The airspace contained by the lateral boundary of the Class B, C, D, or E airspace designated for an airport that begins at the surface and extends upward.

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

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

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

(Refer to AIM.)

SWAP–

(See SEVERE WEATHER AVOIDANCE PLAN.)

SWSL–

(See SUPPLEMENTAL WEATHER SERVICE LOCATION.)

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

T

TACAN–

(See TACTICAL AIR NAVIGATION.)

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

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

(See VORTAC.)

(Refer to AIM.)

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

TAKEOFF AREA–

(See LANDING AREA.)

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

(See ICAO term TAKEOFF DISTANCE AVAILABLE.)

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

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

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

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

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

(See ICAO term TAKEOFF RUN AVAILABLE.)

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

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

(See ASSOCIATED.)

(See DIGITAL TARGET.)

(See DIGITIZED RADAR TARGET.)

(See FUSED TARGET.)

(See PRIMARY RADAR TARGET.)

(See RADAR.)

(See SECONDARY RADAR TARGET.)

(See ICAO term TARGET.)

(See UNASSOCIATED.)

TARGET [ICAO]– In radar:

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

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

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

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

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

c. Between the ends of two beacon control slashes.

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

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

TARGET SYMBOL–

(See TARGET.)

(See ICAO term TARGET.)

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

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

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

TAS–

(See **TERMINAL AUTOMATION SYSTEMS**.)

TAWS–

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

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

(See **AIR TAXI**.)

(See **HOVER TAXI**.)

(Refer to 14 CFR Section 135.100.)

(Refer to **AIM**.)

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

TCAS–

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

TCH–

(See **THRESHOLD CROSSING HEIGHT**.)

TCLT–

(See **TENTATIVE CALCULATED LANDING TIME**.)

TDLS–

(See **TERMINAL DATA LINK SYSTEM**.)

TDZE–

(See **TOUCHDOWN ZONE ELEVATION**.)

TEMPORARY FLIGHT RESTRICTION (TFR)– A TFR is a regulatory action issued by the FAA via the U.S. NOTAM System, under the authority of United States Code, Title 49. TFRs are issued within the sovereign airspace of the United States and its

territories to restrict certain aircraft from operating within a defined area on a temporary basis to protect persons or property in the air or on the ground. While not all inclusive, TFRs may be issued for disaster or hazard situations such as: toxic gas leaks or spills, fumes from flammable agents, aircraft accident/incident sites, aviation or ground resources engaged in wildfire suppression, or aircraft relief activities following a disaster. TFRs may also be issued in support of VIP movements, for reasons of national security; or when determined necessary for the management of air traffic in the vicinity of aerial demonstrations or major sporting events. NAS users or other interested parties should contact a FSS for TFR information. Additionally, TFR information can be found in automated briefings, NOTAM publications, and on the internet at <http://www.faa.gov>. The FAA also distributes TFR information to aviation user groups for further dissemination.

TENTATIVE CALCULATED LANDING TIME (TCLT)– A projected time calculated for adapted vertex for each arrival aircraft based upon runway configuration, airport acceptance rate, airport arrival delay period, and other metered arrival aircraft. This time is either the VTA of the aircraft or the TCLT/ACLT of the previous aircraft plus the AAI, whichever is later. This time will be updated in response to an aircraft's progress and its current relationship to other arrivals.

TERMINAL AREA– A general term used to describe airspace in which approach control service or airport traffic control service is provided.

TERMINAL AREA FACILITY– A facility providing air traffic control service for arriving and departing IFR, VFR, Special VFR, and on occasion en route aircraft.

(See **APPROACH CONTROL FACILITY**.)

(See **TOWER**.)

TERMINAL AUTOMATION SYSTEMS (TAS)– TAS is used to identify the numerous automated tracking systems including STARS and MEARTS.

TERMINAL DATA LINK SYSTEM (TDLS)– A system that provides Digital Automatic Terminal Information Service (D-ATIS) both on a specified radio frequency and also, for subscribers, in a text message via data link to the cockpit or to a gate printer. TDLS also provides Pre-departure Clearances (PDC), at selected airports, to subscribers, through a service provider, in text to the cockpit or to

a gate printer. In addition, TDLS will emulate the Flight Data Input/Output (FDIO) information within the control tower.

TERMINAL RADAR SERVICE AREA– Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. The AIM contains an explanation of TRSA. TRSAs are depicted on VFR aeronautical charts. Pilot participation is urged but is not mandatory.

TERMINAL VFR RADAR SERVICE– A national program instituted to extend the terminal radar services provided instrument flight rules (IFR) aircraft to visual flight rules (VFR) aircraft. The program is divided into four types service referred to as basic radar service, terminal radar service area (TRSA) service, Class B service and Class C service. The type of service provided at a particular location is contained in the Chart Supplement U.S.

a. Basic Radar Service– These services are provided for VFR aircraft by all commissioned terminal radar facilities. Basic radar service includes safety alerts, traffic advisories, limited radar vectoring when requested by the pilot, and sequencing at locations where procedures have been established for this purpose and/or when covered by a letter of agreement. The purpose of this service is to adjust the flow of arriving IFR and VFR aircraft into the traffic pattern in a safe and orderly manner and to provide traffic advisories to departing VFR aircraft.

b. TRSA Service– This service provides, in addition to basic radar service, sequencing of all IFR and participating VFR aircraft to the primary airport and separation between all participating VFR aircraft. The purpose of this service is to provide separation between all participating VFR aircraft and all IFR aircraft operating within the area defined as a TRSA.

c. Class C Service– This service provides, in addition to basic radar service, approved separation between IFR and VFR aircraft, and sequencing of VFR aircraft, and sequencing of VFR arrivals to the primary airport.

d. Class B Service– This service provides, in addition to basic radar service, approved separation

of aircraft based on IFR, VFR, and/or weight, and sequencing of VFR arrivals to the primary airport(s).

(See CONTROLLED AIRSPACE.)

(See TERMINAL RADAR SERVICE AREA.)

(Refer to AIM.)

(Refer to CHART SUPPLEMENT U.S.)

TERMINAL-VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE STATION (TVOR)– A very high frequency terminal omnirange station located on or near an airport and used as an approach aid.

(See NAVIGATIONAL AID.)

(See VOR.)

TERRAIN AWARENESS WARNING SYSTEM (TAWS)– An on-board, terrain proximity alerting system providing the aircrew ‘Low Altitude warnings’ to allow immediate pilot action.

TERRAIN FOLLOWING– The flight of a military aircraft maintaining a constant AGL altitude above the terrain or the highest obstruction. The altitude of the aircraft will constantly change with the varying terrain and/or obstruction.

TETRAHEDRON– A device normally located on uncontrolled airports and used as a landing direction indicator. The small end of a tetrahedron points in the direction of landing. At controlled airports, the tetrahedron, if installed, should be disregarded because tower instructions supersede the indicator.

(See SEGMENTED CIRCLE.)

(Refer to AIM.)

TF–

(See TERRAIN FOLLOWING.)

THAT IS CORRECT– The understanding you have is right.

THA–

(See TRANSITIONAL HAZARD AREA.)

THREE-HOUR TARMAC RULE– Rule that relates to Department of Transportation (DOT) requirements placed on airlines when tarmac delays are anticipated to reach 3 hours.

360 OVERHEAD–

(See OVERHEAD MANEUVER.)

THRESHOLD– The beginning of that portion of the runway usable for landing.

(See AIRPORT LIGHTING.)

(See DISPLACED THRESHOLD.)

THRESHOLD CROSSING HEIGHT– The theoretical height above the runway threshold at which the aircraft’s glideslope antenna would be if the aircraft maintains the trajectory established by the mean ILS glideslope or the altitude at which the calculated glidepath of an RNAV or GPS approaches.

(See GLIDESLOPE.)

(See THRESHOLD.)

THRESHOLD LIGHTS–

(See AIRPORT LIGHTING.)

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 7350.9, Location Identifiers. Large consolidated FSS facilities may have many tie-in facilities or FSS sectors within one facility.

(See FLIGHT PLAN AREA.)

(See FLIGHT SERVICE STATION.)

TIME-BASED FLOW MANAGEMENT (TBFM)–

The hardware, software, methods, processes, and initiatives to manage air traffic flows based on time to balance air traffic demand with system capacity, and support the management of PBN. This includes, but not limited to, Adjacent Center Metering (ACM), En Route Departure Capability (EDC), Ground-based Interval Management-Spacing (GIM-S), Integrated Departure/Arrival Capability (IDAC), Single Center Metering (SCM), Time-Based Metering (TBM), Time-Based Scheduling (TBS), and Extended/Coupled Metering.

TIME GROUP– Four digits representing the hour and minutes from the Coordinated Universal Time (UTC) clock. FAA uses UTC for all operations. The term “ZULU” may be used to denote UTC. The word “local” or the time zone equivalent shall be used to denote local when local time is given during radio and telephone communications. When written, a time zone designator is used to indicate local time; e.g., “0205M” (Mountain). The local time may be based on the 24-hour clock system. The day begins at 0000 and ends at 2359.

TIS-B–

(See TRAFFIC INFORMATION SERVICE–BROADCAST.)

TMPA–

(See TRAFFIC MANAGEMENT PROGRAM ALERT.)

TMU–

(See TRAFFIC MANAGEMENT UNIT.)

TODA–

(See TAKEOFF DISTANCE AVAILABLE.)

(See ICAO term TAKEOFF DISTANCE AVAILABLE.)

TOI–

(See TRACK OF INTEREST.)

TOP ALTITUDE– In reference to SID published altitude restrictions, the charted “maintain” altitude contained in the procedure description or assigned by ATC.

TORA–

(See TAKEOFF RUN AVAILABLE.)

(See ICAO term TAKEOFF RUN AVAILABLE.)

TORCHING– The burning of fuel at the end of an exhaust pipe or stack of a reciprocating aircraft engine, the result of an excessive richness in the fuel air mixture.

TOS–

(See TRAJECTORY OPTIONS SET)

TOTAL ESTIMATED ELAPSED TIME [ICAO]– For IFR flights, the estimated time required from takeoff to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from takeoff to arrive over the destination aerodrome.

(See ICAO term ESTIMATED ELAPSED TIME.)

TOUCH-AND-GO– An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

TOUCH-AND-GO LANDING–

(See TOUCH-AND-GO.)

TOUCHDOWN–

a. The point at which an aircraft first makes contact with the landing surface.

b. Concerning a precision radar approach (PAR), it is the point where the glide path intercepts the landing surface.

(See ICAO term TOUCHDOWN.)

TOUCHDOWN [ICAO]– The point where the nominal glide path intercepts the runway.

Note: Touchdown as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

TOUCHDOWN RVR–

(See VISIBILITY.)

TOUCHDOWN ZONE– The first 3,000 feet of the runway beginning at the threshold. The area is used for determination of Touchdown Zone Elevation in the development of straight-in landing minimums for instrument approaches.

(See ICAO term TOUCHDOWN ZONE.)

TOUCHDOWN ZONE [ICAO]– The portion of a runway, beyond the threshold, where it is intended landing aircraft first contact the runway.

TOUCHDOWN ZONE ELEVATION– The highest elevation in the first 3,000 feet of the landing surface. TDZE is indicated on the instrument approach procedure chart when straight-in landing minimums are authorized.

(See TOUCHDOWN ZONE.)

TOUCHDOWN ZONE LIGHTING–

(See AIRPORT LIGHTING.)

TOWER– A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the Class D airspace area regardless of flight plan or weather conditions (IFR or VFR). A tower may also provide approach control services (radar or nonradar).

(See AIRPORT TRAFFIC CONTROL SERVICE.)

(See APPROACH CONTROL FACILITY.)

(See APPROACH CONTROL SERVICE.)

(See MOVEMENT AREA.)

(See TOWER EN ROUTE CONTROL SERVICE.)

(See ICAO term AERODROME CONTROL TOWER.)

(Refer to AIM.)

TOWER EN ROUTE CONTROL SERVICE– The control of IFR en route traffic within delegated airspace between two or more adjacent approach control facilities. This service is designed to expedite traffic and reduce control and pilot communication requirements.

TOWER TO TOWER–

(See TOWER EN ROUTE CONTROL SERVICE.)

TRACEABLE PRESSURE STANDARD– The facility station pressure instrument, with certification/calibration traceable to the National Institute of Standards and Technology. Traceable pressure standards may be mercurial barometers, commissioned ASOS or dual transducer AWOS, or portable pressure standards or DASI.

TRACK– The actual flight path of an aircraft over the surface of the earth.

(See COURSE.)

(See FLIGHT PATH.)

(See ROUTE.)

(See ICAO term TRACK.)

TRACK [ICAO]– The projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (True, Magnetic, or Grid).

TRACK OF INTEREST (TOI)– Displayed data representing an airborne object that threatens or has the potential to threaten North America or National Security. Indicators may include, but are not limited to: noncompliance with air traffic control instructions or aviation regulations; extended loss of communications; unusual transmissions or unusual flight behavior; unauthorized intrusion into controlled airspace or an ADIZ; noncompliance with issued flight restrictions/security procedures; or unlawful interference with airborne flight crews, up to and including hijack. In certain circumstances, an object may become a TOI based on specific and credible intelligence pertaining to that particular aircraft/object, its passengers, or its cargo.

TRACK OF INTEREST RESOLUTION– A TOI will normally be considered resolved when: the aircraft/object is no longer airborne; the aircraft complies with air traffic control instructions, aviation regulations, and/or issued flight restrictions/security procedures; radio contact is re-established and authorized control of the aircraft is verified; the aircraft is intercepted and intent is verified to be

nonthreatening/nonhostile; TOI was identified based on specific and credible intelligence that was later determined to be invalid or unreliable; or displayed data is identified and characterized as invalid.

TRAFFIC–

a. A term used by a controller to transfer radar identification of an aircraft to another controller for the purpose of coordinating separation action. Traffic is normally issued:

1. In response to a handoff or point out,
2. In anticipation of a handoff or point out, or
3. In conjunction with a request for control of an aircraft.

b. A term used by ATC to refer to one or more aircraft.

TRAFFIC ADVISORIES– Advisories issued to alert pilots to other known or observed air traffic which may be in such proximity to the position or intended route of flight of their aircraft to warrant their attention. Such advisories may be based on:

- a.** Visual observation.
- b.** Observation of radar identified and nonidentified aircraft targets on an ATC radar display, or
- c.** Verbal reports from pilots or other facilities.

Note 1: The word “traffic” followed by additional information, if known, is used to provide such advisories; e.g., “Traffic, 2 o’clock, one zero miles, southbound, eight thousand.”

Note 2: Traffic advisory service will be provided to the extent possible depending on higher priority duties of the controller or other limitations; e.g., radar limitations, volume of traffic, frequency congestion, or controller workload. Radar/nonradar traffic advisories do not relieve the pilot of his/her responsibility to see and avoid other aircraft. Pilots are cautioned that there are many times when the controller is not able to give traffic advisories concerning all traffic in the aircraft’s proximity; in other words, when a pilot requests or is receiving traffic advisories, he/she should not assume that all traffic will be issued.

(Refer to AIM.)

TRAFFIC ALERT (aircraft call sign), TURN (left/right) IMMEDIATELY, (climb/descend) AND MAINTAIN (altitude).

(See SAFETY ALERT.)

TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)– An airborne collision

avoidance system based on radar beacon signals which operates independent of ground-based equipment. TCAS-I generates traffic advisories only. TCAS-II generates traffic advisories, and resolution (collision avoidance) advisories in the vertical plane.

TRAFFIC INFORMATION–

(See TRAFFIC ADVISORIES.)

TRAFFIC INFORMATION SERVICE–BROADCAST (TIS-B)– The broadcast of ATC derived traffic information to ADS-B equipped (1090ES or UAT) aircraft. The source of this traffic information is derived from ground-based air traffic surveillance sensors, typically from radar targets. TIS-B service will be available throughout the NAS where there are both adequate surveillance coverage (radar) and adequate broadcast coverage from ADS-B ground stations. Loss of TIS-B will occur when an aircraft enters an area not covered by the GBT network. If this occurs in an area with adequate surveillance coverage (radar), nearby aircraft that remain within the adequate broadcast coverage (ADS-B) area will view the first aircraft. TIS-B may continue when an aircraft enters an area with inadequate surveillance coverage (radar); nearby aircraft that remain within the adequate broadcast coverage (ADS-B) area will not view the first aircraft.

TRAFFIC IN SIGHT– Used by pilots to inform a controller that previously issued traffic is in sight.

(See NEGATIVE CONTACT.)

(See TRAFFIC ADVISORIES.)

TRAFFIC MANAGEMENT PROGRAM ALERT– A term used in a Notice to Airmen (NOTAM) issued in conjunction with a special traffic management program to alert pilots to the existence of the program and to refer them to 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.

TRANSFER OF CONTROL– That action whereby the responsibility for the separation of an aircraft is transferred from one controller to another.

(See ICAO term TRANSFER OF CONTROL.)

TRANSFER OF CONTROL [ICAO]– Transfer of responsibility for providing air traffic control service.

TRANSFERRING CONTROLLER– A controller/facility transferring control of an aircraft to another controller/facility.

(See ICAO term TRANSFERRING UNIT/CONTROLLER.)

TRANSFERRING FACILITY–

(See TRANSFERRING CONTROLLER.)

TRANSFERRING UNIT/CONTROLLER [ICAO]– Air traffic control unit/air traffic controller in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit/air traffic controller along the route of flight.

Note: See definition of accepting unit/controller.

TRANSITION–

a. The general term that describes the change from one phase of flight or flight condition to another; e.g., transition from en route flight to the approach or transition from instrument flight to visual flight.

b. A published procedure (DP Transition) used to connect the basic DP to one of several en route airways/jet routes, or a published procedure (STAR Transition) used to connect one of several en route airways/jet routes to the basic STAR.

(Refer to DP/STAR Charts.)

TRANSITION POINT– A point at an adapted number of miles from the vertex at which an arrival aircraft would normally commence descent from its en route altitude. This is the first fix adapted on the arrival speed segments.

TRANSITION WAYPOINT– The waypoint that defines the beginning of a runway or en route transition on an RNAV SID or STAR.

TRANSITIONAL AIRSPACE– That portion of controlled airspace wherein aircraft change from one phase of flight or flight condition to another.

TRANSITIONAL HAZARD AREA (THA)– Used by ATC. Airspace normally associated with an Aircraft Hazard Area within which the flight of aircraft is subject to restrictions.

(See AIRCRAFT HAZARD AREA.)

(See CONTINGENCY HAZARD AREA.)

(See REFINED HAZARD AREA.)

TRANSMISSOMETER– An apparatus used to determine visibility by measuring the transmission of light through the atmosphere. It is the measurement source for determining runway visual range (RVR).

(See VISIBILITY.)

TRANSMITTING IN THE BLIND– A transmission from one station to other stations in circumstances where two-way communication cannot be established, but where it is believed that the called stations may be able to receive the transmission.

TRANSPONDER– The airborne radar beacon receiver/transmitter portion of the Air Traffic Control Radar Beacon System (ATCRBS) which automatically receives radio signals from interrogators on the ground, and selectively replies with a specific reply pulse or pulse group only to those interrogations being received on the mode to which it is set to respond.

(See INTERROGATOR.)

(See ICAO term TRANSPONDER.)

(Refer to AIM.)

TRANSPONDER [ICAO]– A receiver/transmitter which will generate a reply signal upon proper interrogation; the interrogation and reply being on different frequencies.

TRANSPONDER CODES–

(See CODES.)

TRANSPONDER OBSERVED – Phraseology used to inform a VFR pilot the aircraft's assigned beacon code and position have been observed. Specifically, this term conveys to a VFR pilot the transponder

reply has been observed and its position correlated for transit through the designated area.

TRIAL PLAN– A proposed amendment which utilizes automation to analyze and display potential conflicts along the predicted trajectory of the selected aircraft.

TRSA–

(See TERMINAL RADAR SERVICE AREA.)

TSD–

(See TRAFFIC SITUATION DISPLAY.)

TURBOJET AIRCRAFT– An aircraft having a jet engine in which the energy of the jet operates a turbine which in turn operates the air compressor.

TURBOPROP AIRCRAFT– An aircraft having a jet engine in which the energy of the jet operates a turbine which drives the propeller.

TURBULENCE– An atmospheric phenomenon that causes changes in aircraft altitude, attitude, and or airspeed with aircraft reaction depending on intensity. Pilots report turbulence intensity according to aircraft's reaction as follows:

a. Light – Causes slight, erratic changes in altitude and or attitude (pitch, roll, or yaw).

b. Moderate– Similar to Light but of greater intensity. Changes in altitude and or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.

c. Severe– Causes large, abrupt changes in altitude and or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.

d. Extreme– The aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.

(See CHOP.)

(Refer to AIM.)

TURN ANTICIPATION– (maneuver anticipation).

TVOR–

(See TERMINAL-VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION.)

TWO-WAY RADIO COMMUNICATIONS FAILURE–

(See LOST COMMUNICATIONS.)

U

UHF–

(See **ULTRAHIGH FREQUENCY**.)

ULTRAHIGH FREQUENCY (UHF)– The frequency band between 300 and 3,000 MHz. The bank of radio frequencies used for military air/ground voice communications. In some instances this may go as low as 225 MHz and still be referred to as UHF.

ULTRALIGHT VEHICLE– A single-occupant aeronautical vehicle operated for sport or recreational purposes which does not require FAA registration, an airworthiness certificate, or pilot certification. Operation of an ultralight vehicle in certain airspace requires authorization from ATC.

(Refer to 14 CFR Part 103.)

UNABLE– Indicates inability to comply with a specific instruction, request, or clearance.

UNASSOCIATED– A radar target that does not display a data block with flight identification and altitude information.

(See **ASSOCIATED**.)

UNCONTROLLED AIRSPACE– Airspace in which aircraft are not subject to controlled airspace (Class A, B, C, D, or E) separation criteria.

UNDER THE HOOD– Indicates that the pilot is using a hood to restrict visibility outside the cockpit while simulating instrument flight. An appropriately rated pilot is required in the other control seat while this operation is being conducted.

(Refer to 14 CFR Part 91.)

UNFROZEN– The Scheduled Time of Arrival (STA) tags, which are still being rescheduled by the time-based flow management (TBFM) calculations. The aircraft will remain unfrozen until the time the corresponding estimated time of arrival (ETA) tag passes the preset freeze horizon for that aircraft's stream class. At this point the automatic rescheduling will stop, and the STA becomes "frozen."

UNICOM– A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.

(See **CHART SUPPLEMENT U.S.**)

(Refer to **AIM**.)

UNMANNED AIRCRAFT (UA)– A device used or intended to be used for flight that has no onboard pilot. This device can be any type of airplane, helicopter, airship, or powered-lift aircraft. Unmanned free balloons, moored balloons, tethered aircraft, gliders, and unmanned rockets are not considered to be a UA.

UNMANNED AIRCRAFT SYSTEM (UAS)– An unmanned aircraft and its associated elements related to safe operations, which may include control stations (ground, ship, or air based), control links, support equipment, payloads, flight termination systems, and launch/recovery equipment. It consists of three elements: unmanned aircraft, control station, and data link.

UNPUBLISHED ROUTE– A route for which no minimum altitude is published or charted for pilot use. It may include a direct route between NAVAIDs, a radial, a radar vector, or a final approach course beyond the segments of an instrument approach procedure.

(See **PUBLISHED ROUTE**.)

(See **ROUTE**.)

UNRELIABLE (GPS/WAAS)– An advisory to pilots indicating the expected level of service of the GPS and/or WAAS may not be available. Pilots must then determine the adequacy of the signal for desired use.

UNSERVICEABLE (U/S)

(See **OUT OF SERVICE/UNSERVICEABLE**.)

UPWIND LEG–

(See **TRAFFIC PATTERN**.)

URGENCY– A condition of being concerned about safety and of requiring timely but not immediate assistance; a potential distress condition.

(See **ICAO term URGENCY**.)

URGENCY [ICAO]– A condition concerning the safety of an aircraft or other vehicle, or of person on board or in sight, but which does not require immediate assistance.

USAFIB–

(See **ARMY AVIATION FLIGHT INFORMATION BULLETIN**.)

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BRIEFING GUIDE



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

**Initiated By: AJR-0
Vice President, System Operations Services**

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1. PARAGRAPH NUMBER AND TITLE:

2-1-1. TYPES OF BROADCASTS

2-1-2. SPEECH RATE AND PHRASEOLOGY

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3-6-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)

4-4-3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY

9-2-9. MEANS USED TO SOLICIT PIREPs

12-1-8. WEATHER PHRASEOLOGY

2. BACKGROUND: Flight Service has provided Telephone Information Briefings Service (TIBS) and the Transcribed Weather Broadcast (TWEB) since the 1980s. Both TIBS and TWEB were recordings produced by Flight Service specialists working the Broadcast position which provided weather and aeronautical information that pilots could access without going through a specialist. At the time they were voice recordings, and today they are produced using text to voice technology. TIBS can be accessed via the telephone and TWEB via radio. Both recordings are tailored to fit the needs of an individual facility and its geographic location, and updated as necessary.

When these broadcasts were originally conceived there was a large demand to speak with a specialist and wait times could be extremely long. These recordings alleviated the workload of the specialists and helped to reduce wait times for pilots. Pilots at that time had no other choice but to call Flight Service to obtain weather and NOTAMs for the route of flight. With the advent of the Internet and other technology, the demand for the services of a Flight Service specialist has dropped considerably. Pilots no longer need to “call” a Flight Service specialist or listen to telephone recordings of route and area briefings containing aviation weather and aeronautical information to adhere to 14 CFR 91.103. Currently, there are multiple sources providing access to weather and aeronautical information at the pilot’s fingertips. It is often presented in a graphical format, making it much easier to visualize conditions along their proposed route of flight at little to no cost.

3. CHANGE:

OLD	NEW
<u>Chapter 2. Broadcast Procedures</u>	Delete
<u>Section 1. General</u>	Delete
OLD	NEW
<u>2-1-1. TYPES OF BROADCASTS</u>	Delete
<u>Weather and flight information must be broadcast/ recorded by one or more of the following categories:</u>	Delete

<u>a. Transcribed Weather Broadcast (TWEB). (Alaska only.)</u>	Delete
<u>b. Telephone Information Briefing Service (TIBS). (Alaska only.)</u>	Delete
<u>c. Automatic Flight Information Service (AFIS). (Alaska only.)</u>	Delete

OLD	NEW
<u>2-1-2. SPEECH RATE AND PHRASEOLOGY</u>	Delete
<u>a. Data must be spoken such that:</u>	Delete
<u>1. The speech rate is not excessive.</u>	Delete
<u>2. The enunciation is of the highest quality, and;</u>	Delete
<u>3. Each part of the message is easily understood.</u>	Delete
<u>b. Standardized procedures and phraseology to be used by FSS personnel and automated equipment are to be conducted in accordance with Chapter 12, Phraseology.</u>	Delete

OLD	NEW
<u>2-1-3. REDUCING RECORDED WEATHER INFORMATION SERVICES</u>	Delete
<u>Recorded weather information services in Alaska (TWEB and TIBS) may be reduced during the hours of 1800-0600 local time only. Adjust full broadcast service times to coincide with daylight hours. When a broadcast period is reduced, record the time the broadcast will be resumed, and advise users to contact flight service for weather briefings and other services.</u>	Delete
<u>PHRASEOLOGY-</u> <u>THE TIBS RECORDING IS SUSPENDED. REGULAR RECORDED WEATHER SERVICE WILL BE RE- SUMED AT (time) ZULU/ (time) LOCAL. FOR PILOT WEATHER BRIEFINGS AND OTHER SERVICES, CONTACT FLIGHT SERVICE (phone number or ad- ditional telephone instructions, as appropriate). THE TWEB RECORDING IS SUSPENDED. REGULAR RECORDED WEATHER SERVICE WILL BE RE- SUMED AT (time) ZULU/ (time) LOCAL. FOR PILOT WEATHER BRIEFING AND OTHER SERVICES CONTACT FLIGHT SERVICE (frequency or phone number, as appropriate)</u>	Delete

OLD	NEW
<u>2-1-4. CURRENT DATA</u>	Delete
<u>An aviation surface report is considered current for 1 hour beyond the standard time of observation (H+00) unless superseded by a special or local observation or by the next hourly report. Do not broadcast obsolete data.</u>	Delete
OLD	NEW
<u>2-1-5. AUTOMATED BROADCAST</u>	Delete
<u>Most broadcasts are automated products that are available 24 hours a day. The products must adhere to the requirements of this chapter. Specialists are responsible for monitoring the product for accuracy, speech rate, and proper enunciation before it is transmitted.</u>	Delete
OLD	NEW
<u>Section 2. Transcribed Weather Broadcasts (TWEB) (Alaska Only)</u>	Delete
OLD	NEW
<u>2-1-2. GENERAL</u>	Delete
<u>a. Transcribed weather broadcast service provides continuous aeronautical and meteorological information on low or medium frequency (L/MF) and very high frequency omnidirectional range (VOR) facilities.</u>	Delete
<u>b. At TWEB equipment locations controlling two or more VORs, the one used least for ground-to-air communications, preferably the nearest VOR, may be used as a TWEB outlet simultaneously with the nondirectional radio beacon (NDB) facility. Where this is accomplished, capability to manually override the broadcast must be provided for emergency communications.</u>	Delete
OLD	NEW
<u>2-2-2. CONTENT</u>	Delete
<u>The sequence, source, and content of transcribed broadcast material must be:</u>	Delete
<u>a. Introduction. State the location and preparation time.</u>	Delete
<u>PHRASEOLOGY–</u>	Delete
<u>(location) TRANSCRIBED AVIATION WEATHER BROADCAST PREPARED AT (time) ZULU.</u>	

b. Adverse Conditions. Extracted from convective significant meteorological information (SIGMET) (WST), SIGMET (WS), Airmen's Meteorological Information (AIRMET), AIRMET (WA), Center Weather Advisory (CWA), and Alert Weather Watch (AWW).

Delete

PHRASEOLOGY-

WEATHER ADVISORIES ARE IN EFFECT FOR (adverse conditions) OVER (geographical area) (list weather advisories only, no text).

Delete

c. Synopsis. A brief statement describing the type, location, and movement of weather systems and/or masses which might affect the route or the area.

Delete

d. Terminal Forecasts. Include the valid time of forecast.

Delete

PHRASEOLOGY-

TERMINAL FORECAST FOR (location) VALID UNTIL (time) ZULU.

Delete

e. Winds Aloft Forecast. Broadcast winds aloft forecast for the location nearest to the TWEB. 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.

Delete

PHRASEOLOGY-

WINDS ALOFT FORECAST VALID UNTIL (time) ZULU. (Location) (Altitude) (direction) AT (speed).

Delete

f. Surface Weather Reports. Record surface reports as described in paragraph 12-1-8, Weather Phraseology.

Delete

1. Broadcast local reports first, then broadcast the remainder of the reports beginning with the first station east of true north and continuing clockwise around the TWEB location.

Delete

2. Announce the location name of a surface report once.

Delete

(a) Surface weather broadcast introduction:

Delete

PHRASEOLOGY-

(Location name) AVIATION WEATHER, (4 digits of time), ZULU OBSERVATIONS.

Delete

(b) Special weather reports:

Delete

PHRASEOLOGY-

(Location name) SPECIAL REPORT (last 2 digits of time) OBSERVATION, (weather report).

Delete

g. Density Altitude. Include temperature and the statement “Check Density Altitude” as part of the surface weather broadcast for any station with a field elevation of 2,000 feet MSL or above that meets the following criteria: (See TBL 2-2-1.)

Delete

Delete

*TBL 2-2-1***Density Altitude**

<u>Field Elevation</u>	<u>Temperature (C)</u>
<u>2,000–2,999</u>	<u>29 degrees or higher</u>
<u>3,000–3,999</u>	<u>27 degrees or higher</u>
<u>4,000–4,999</u>	<u>24 degrees or higher</u>
<u>5,000–5,999</u>	<u>21 degrees or higher</u>
<u>6,000–6,999</u>	<u>18 degrees or higher</u>
<u>7,000–higher</u>	<u>16 degrees or higher</u>

h. PILOT WEATHER REPORTS

Delete

Summarize PIREPs and, if the weather conditions meet solicitation requirements, append a request for PIREPs.

Delete

PHRASEOLOGY-

PILOT REPORT OF WEATHER CONDITIONS AT (text).

Delete

i. Alert Notice (ALNOT) Alert Announcement, if applicable.

Delete

PHRASEOLOGY-

OVERDUE AIRCRAFT ALERT, (time) ZULU (aircraft identification), (color), (type), DEPARTED (airport) VIA (route), (destination), LAST KNOWN POSITION (state last known position), THIS AIRCRAFT IS OVERDUE. ALL AIRCRAFT ARE REQUESTED TO MONITOR ONE TWO ONE POINT FIVE FOR E-L-T SIGNAL. INFORM THE NEAREST F-A-A FACILITY OF ANY INFORMATION REGARDING THIS AIRCRAFT.

Delete

j. Closing statement.

Delete

PHRASEOLOGY-

PILOT WEATHER REPORTS ARE REQUESTED. FOR NOTAM, MILITARY TRAINING ACTIVITY, OR OTHER SERVICES, CONTACT A FLIGHT SERVICE STATION.

Delete

OLD	NEW
<u>2-2-3. TESTING TWEB EQUIPMENT</u>	Delete
<u>When TWEB equipment is to be tested, broadcast an advisory to this effect. Ensure no obsolete information is broadcast during a testing period.</u>	Delete
OLD	NEW
<u>2-2-4. SERVICE MAY BE SUSPENDED</u>	Delete
<u>TWEB service may be suspended:</u>	Delete
<u>a. For routine maintenance only during periods when weather conditions within 100 miles of the broadcast outlet are equal to or better than a ceiling of 3,000 feet and visibility of 5 miles.</u>	Delete
<u>b. When the equipment fails. If a malfunction occurs in the recording or control unit but the tape transport unit remains operative, continue broadcasting current data. Remove data as it becomes obsolete.</u>	Delete
OLD	NEW
<u>2-2-5. MONITORING</u>	Delete
<u>a. At TWEB equipment locations, listen to at least one complete TWEB cycle each hour. Check for completeness, accuracy, speech rate, and proper enunciation. Correct any noted irregularities.</u>	Delete
<u>b. If practical:</u>	Delete
<u>1. The control facility must monitor the transmissions through local outlet.</u>	Delete
<u>2. The FSS associated with a remote outlet must monitor the transmissions for a sufficient period each hour to assure voice quality and clarity.</u>	Delete
<u>c. Promptly correct or inform the TWEB facility of any irregularities.</u>	Delete
OLD	NEW
<u>Section 3. Telephone Information Briefing Service (TIBS)</u>	Delete
OLD	NEW
<u>2-3-1. GENERAL</u>	Delete
<u>a. TIBS provides a continuous telephone recording of meteorological and/or aeronautical information.</u>	Delete
<u>1. TIBS must contain:</u>	Delete
<u>(a) Area and/or route briefings.</u>	Delete

<u>(b) Airspace procedures, if applicable.</u>	Delete
<u>(c) Special announcements, if applicable.</u>	Delete
<u>2. TIBS should also contain, but not be limited to:</u>	Delete
<u>(a) Surface observations (METAR).</u>	Delete
<u>(b) Terminal forecasts (TAF).</u>	Delete
<u>(c) Winds/temperatures aloft forecasts.</u>	Delete
<u>NOTE–</u>	Delete
<u>User needs should dictate the content of these recordings.</u>	
<u>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.</u>	Delete
<u>c. Separate channels must be designated for each route area, local meteorological/ aeronautical information, special event, airspace procedures, etc.</u>	Delete
<u>EXAMPLE–</u>	Delete
<u>11 Special Announcements</u>	
<u>12 Route FAI to GAL</u>	
<u>13 Route FAI to AKP</u>	
<u>14 Route FAI to FYU</u>	
<u>17 Current Weather – FAI–ANC</u>	
<u>18 Current Weather –Interior AK</u>	

OLD	NEW
<u>2-3-2. AREA/ROUTE BRIEFING PROCEDURES</u>	Delete
<u>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.</u>	Delete
<u>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.</u>	Delete
<u>NOTE–</u>	Delete
<u>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.</u>	

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).

Delete

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.

Delete

PHRASEOLOGY–

WEATHER ADVISORIES ARE IN EFFECT FOR (adverse conditions) OVER (geographic area) (text).

Delete

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.

Delete

PHRASEOLOGY–

V-F-R FLIGHT NOT RECOMMENDED (location) DUE TO (conditions).

Delete

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.

Delete

e. Current Conditions. Include current weather conditions over the route/area and PIREPs on conditions reported aloft.

Delete

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.”

Delete

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.

Delete

g. En Route Forecast. Include forecast information from appropriate data; for example, area forecast (FA) synopsis for Hawaii and Alaska only, terminal aerodrome forecast (TAFs), and weather advisories.

Delete

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.

Delete

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.

Delete

PHRASEOLOGY-
PILOT WEATHER REPORTS ARE REQUESTED.
CONTACT FLIGHT SERVICE.

Delete

j. Closing Announcement. The closing announcement must provide instructions for contacting a pilot briefer for NOTAMs, military training activity, or other information.

Delete

OLD

NEW

2-3-3. MONITORING

Delete

a. Manually prepared recordings must be monitored immediately after recording to insure accuracy of data and availability by calling 1-800-WX-BRIEF.

Delete

b. Automated TIBS products and non-meteorological recordings must be monitored once each shift to ensure clarity and accuracy.

Delete

OLD

NEW

Section 4. Automatic Flight Information Service (AFIS) (Alaska Only)

Delete

OLD

NEW

2-4-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)

Delete

Use the AFIS to provide advance non-control airport, meteorological, and pertinent NOTAM information to aircraft. Specialists must provide local airport advisory (LAA) information when the AFIS is not available.

Delete

NOTE-
Use of the AFIS by pilots is not mandatory, but pilots who use two-way radio communication with the FSS are urged to use the service.

Delete

a. Begin each new AFIS message with the airport/facility name and a phonetic alphabet letter. The phonetic alphabet letter must also be spoken at the end of the message and be used sequentially, beginning with “Alpha,” ending with “Zulu.” Full-time facilities must repeat the letter without regard to the beginning of a new day. Part-time facilities must identify the first resumed broadcast message with “Alpha.”

Delete

b. The AFIS recording must be reviewed for completeness, accuracy, speech rate, and proper enunciation before being transmitted.

Delete

c. Maintain an AFIS message that reflects the most current local airport information.

Delete

1. Make a new AFIS recording when any of the following occur:

Delete

(a) Upon receipt of any new official weather, regardless of any change in values.

Delete

(b) When runway braking action reports are received that indicate runway braking is worse than that which was included in the current AFIS broadcast.

Delete

(c) When there is a change in any other pertinent data for the airport or surrounding area, such as change in favored runway, new or canceled NOTAMs, WAs, Ws, CWAs, PIREPs, or other information that facilitates the repetitive transmission of essential but routine information.

Delete

2. Omit rapidly changing data. When this occurs, the AFIS must contain a statement advising pilots whom to contact for the omitted data.

Delete

EXAMPLE-

“For latest ceiling/visibility/altimeter/wind/(other conditions) contact (facility and frequency).”

Delete

3. Broadcast, on the LAA frequency, the new airport AFIS phonetic alphabet identifier after each new recording.

Delete

4. After establishing two-way radio communication, if the pilot does not state that he/she has the current AFIS code, the specialist must either:

Delete

(a) Use LAA procedures to issue pertinent AFIS information, or

Delete

(b) Advise the pilot to return to the AFIS frequency.

Delete

5. AFIS broadcasts may be suspended within specified time periods. During these periods, the AFIS must contain a brief statement that the AFIS is suspended for the specified time and pilots should contact the FSS for LAA.

Delete

PHRASEOLOGY-

(Airport name) FLIGHT INFORMATION BROADCASTS ARE SUSPENDED UNTIL (time). CONTACT (facility name) RADIO ON (frequency) FOR AIRPORT INFORMATION.

Delete

6. Part-time and seasonal facilities must record a message with the appropriate frequency and facility contact information as well as known information regarding resumption of LAA.

Delete

PHRASEOLOGY-

(Name of FSS) HOURS OF OPERATION ARE (time) LOCAL TIME TO (time) LOCAL TIME. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency) PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).

Delete

(Name of FSS) IS CLOSED FOR THE WINTER SEASON. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency). PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).

7. Use the following format and include the following in AFIS broadcast as appropriate:

Delete

(a) (Airport/facility name) airport information.

Delete

(b) Phonetic alphabet designator.

Delete

(c) Special routing procedures in effect (when appropriate for the Ketchikan (KTN) area).

Delete

(d) Time of the AFIS preparation (UTC) followed by the word, "ZULU."

Delete

(e) Include the current weather observation and other pertinent remarks. The ceiling/sky conditions, visibility, and obstruction to vision maybe omitted if the ceiling is above 5,000 and the visibility is more than 5 miles.

Delete

EXAMPLE-

"The weather is better than five thousand and five."

Delete

(f) Favored runway and additional local information, as required.

Delete

(g) NOTAMs concerning local NAVAIDs and field conditions pertinent to flight.

Delete

EXAMPLE–

“Notice to Airmen, Iliamna NDB out of service.”
“Transcribed weather broadcast out of service.”

Delete

(h) Runway braking action or runway condition codes (RwyCC) when provided. Include the time of the report.

Delete

PHRASEOLOGY–

RUNWAY (number) condition code (first value, second value, third value) AT (time).

Delete

EXAMPLE–

Runway Three–Six condition code two, two, one at one zero one eight Zulu.”

Delete

REFERENCE–

FAA Order JO 7110.10, Para 4–4–3, Airport Advisory/RAIS Elements and Phraseology.

Delete

(i) Low–level wind shear (LLWS) advisory, including those contained in the terminal aerodrome forecast (TAF) and in PIREPs. (Include PIREP information at least 20 minutes following the report).

Delete

EXAMPLE–

“Low level wind shear is forecast.”

Delete

(j) Unauthorized Laser Illumination Events. When a laser event is reported, include reported unauthorized laser illumination events on the AFIS broadcast for one hour following the last report. Include the time, location, altitude, color, and direction of the laser as reported by the pilot.

Delete

PHRASEOLOGY–

UNAUTHORIZED LASER ILLUMINATION EVENT, (UTC time), (location), (altitude), (color), (direction).

Delete

EXAMPLE–

“Unauthorized laser illumination event at zero one zero zero Zulu, eight–mile final runway one eight at three thousand feet, green laser from the southwest.”

Delete

(k) Man–Portable Air Defense Systems (MANPADS) alert and advisory. Specify the nature and location of threat or incident, whether reported or observed and by whom, time (if known), and notification to pilots to advise ATC if they need to divert.

Delete

PHRASEOLOGY–

MANPADS ALERT. EXERCISE EXTREME CAUTION. MANPADS THREAT/ATTACK/POST–EVENT ACTIVITY OBSERVED/REPORTED BY (reporting agency) (location) AT (time, if known). (When transmitting to an individual aircraft) ADVISE ON INITIAL CONTACT IF YOU WANT TO DIVERT.

Delete

EXAMPLE-

Delete

“MANPADS alert. Exercise extreme caution. MANPADS threat reported by TSA, Anchorage area. Advise on initial contact if you want to divert.”

“MANPADS alert. Exercise extreme caution. MANPADS attack observed by flight service station one-half mile northwest of airfield at one-two-five-zero Zulu. Advise on initial contact if you want to divert.”

NOTE-

Delete

1. Upon receiving or observing an unauthorized MANPADS alert/advisory, contact the Alaska Flight Service Information Area Group(AFSIAG) through the Alaskan Region Regional Operations Center (ROC).

2. Continue broadcasting the MANPADS alert/ advisory until advised by national headquarters the threat is no longer present. Coordination may be through the AFSIAG or the Alaskan ROC.

Delete

REFERENCE-

FAA Order JO 7210.3, Para 2-1-9, Handling MANPADS Incidents.

Delete

(l) Any other advisories applicable to the area covered by the LAA.

Delete

(m) Local frequency advisory.

Delete

PHRASEOLOGY-

Delete

CONTACT (facility name) RADIO ON (frequency) FOR TRAFFIC ADVISORIES.

(n) Instructions for the pilot to acknowledge receipt of the AFIS message on initial contact.

Delete

EXAMPLE-

Delete

“Dillingham airport information ALPHA. One six five five Zulu. Wind one three zero at eight; visibility one five; ceiling four thousand overcast; temperature four, dew point three; altimeter two niner niner zero. Favored runway one niner. Notice to Airmen, Dillingham V-O-R out of service. Contact Dillingham Radio on one two three point six for traffic advisories. Advise on initial contact you have ALPHA.”

“Kotzebue information ALPHA. One six five five Zulu. Wind, two one zero at five; visibility two, fog; ceiling one hundred overcast; temperature minus one two, dew point minus one four; altimeter three one zero five. Altimeter in excess of three one zero zero, high pressure altimeter setting procedures are in effect. Favored runway two six. Weather in Kotzebue surface area is below V-F-R minima – an ATC clearance is required. Notice to Airmen, Hotham NDB out of service. Contact Kotzebue Radio on one two three point six for traffic advisories and advise intentions. Advise on initial contact you have ALPHA.”

Chapter 3 through Chapter 13

Renumber Chapter 2 through Chapter 12

OLD	NEW
Add	<u>Section 6. Automatic Flight Information Service (AFIS) (Alaska Only)</u>
OLD	NEW
Add	<u>3-6-1. AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS)</u>
Add	<u>Use the AFIS to provide advance non-control airport, meteorological, and pertinent NOTAM information to aircraft. Specialists must provide local airport advisory (LAA) information when the AFIS is not available.</u>
Add	<u>NOTE—</u> <u>Use of the AFIS by pilots is not mandatory, but pilots who use two-way radio communication with the FSS are urged to use the service.</u>
Add	<u>a. Begin each new AFIS message with the airport/facility name and a phonetic alphabet letter. The phonetic alphabet letter must also be spoken at the end of the message and be used sequentially, beginning with “Alpha,” ending with “Zulu.” Full-time facilities must repeat the letter without regard to the beginning of a new day. Part-time facilities must identify the first resumed broadcast message with “Alpha.”</u>
Add	<u>b. The AFIS recording must be reviewed for completeness, accuracy, speech rate, and proper enunciation before being transmitted.</u>
Add	<u>c. Maintain an AFIS message that reflects the most current local airport information.</u>
Add	<u>1. Make a new AFIS recording when any of the following occur:</u>
Add	<u>(a) Upon receipt of any new official weather, regardless of any change in values.</u>
Add	<u>(b) When runway braking action reports are received that indicate runway braking is worse than what was included in the current AFIS broadcast.</u>
Add	<u>(c) When there is a change in any other pertinent data for the airport or surrounding area, such as change in favored runway, new or canceled NOTAMs, WAs, WSs, CWAs, PIREPs, or other information that facilitates the repetitive transmission of essential but routine information.</u>

- Add **2. Omit rapidly changing data. When this occurs, the AFIS must contain a statement advising pilots whom to contact for the omitted data.**
- Add **EXAMPLE–**
“For latest ceiling/visibility/altimeter/wind/(other conditions) contact (facility and frequency).”
- Add **3. Broadcast, on the LAA frequency, the new airport AFIS phonetic alphabet identifier after each new recording.**
- Add **4. After establishing two-way radio communication, if the pilot does not state that he/she has the current AFIS code, the specialist must either:**
- Add **(a) Use LAA procedures to issue pertinent AFIS information, or**
- Add **(b) Advise the pilot to return to the AFIS frequency.**
- Add **5. AFIS broadcasts may be suspended within specified time periods. During these periods, the AFIS must contain a brief statement that the AFIS is suspended for the specified time and pilots should contact the FSS for LAA.**
- Add **PHRASEOLOGY–**
(Airport name) FLIGHT INFORMATION BROADCASTS ARE SUSPENDED UNTIL (time). CONTACT (facility name) RADIO ON (frequency) FOR AIRPORT INFORMATION.
- Add **6. Part-time and seasonal facilities must record a message with the appropriate frequency and facility contact information as well as known information regarding resumption of LAA.**
- Add **PHRASEOLOGY–**
(Name of FSS) HOURS OF OPERATION ARE (time) LOCAL TIME TO (time) LOCAL TIME. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency) PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).

(Name of FSS) IS CLOSED FOR THE WINTER SEASON. THE COMMON TRAFFIC ADVISORY FREQUENCY IS (frequency). PILOT CONTROLLED LIGHTING IS AVAILABLE ON (frequency). FOR ADDITIONAL INFORMATION CONTACT (name of FSS) ON (frequency).
- Add **7. Use the following format and include the following in AFIS broadcast as appropriate:**

- Add (a) (Airport/facility name) airport information.
- Add (b) Phonetic alphabet designator.
- Add (c) Special routing procedures in effect (when appropriate for the Ketchikan (KTN) area).
- Add (d) Time of the AFIS preparation (UTC) followed by the word, "ZULU."
- Add (e) Include the current weather observation and other pertinent remarks. The ceiling/sky conditions, visibility, and obstruction to vision may be omitted if the ceiling is above 5,000 feet and the visibility is more than 5 miles.
- Add (1) An aviation surface report is considered current for 1 hour beyond the standard time of observation (H+00) unless superseded by a special or local observation or by the next hourly report.
- Add (2) Do not broadcast obsolete data.
- Add EXAMPLE–
"The weather is better than five thousand and five."
- Add (f) Favored runway and additional local information, as required.
- Add (g) NOTAMs concerning local NAVAIDs and field conditions pertinent to flight.
- Add EXAMPLE–
"Notice to Airmen, Iliamna NDB out of service."
"Transcribed weather broadcast out of service."
- Add (h) Runway braking action or runway condition codes (RwyCC) when provided. Include the time of the report.
- Add PHRASEOLOGY–
RUNWAY (number) condition code (first value, second value, third value) AT (time).
- Add EXAMPLE–
"Runway Three–Six condition code two, two, one at one zero one eight Zulu."
- Add REFERENCE–
FAA Order JO 7110.10, Para 3–4–3, Airport Advisory/RAIS Elements and Phraseology.
- Add (i) Low-level wind shear (LLWS) advisory, including those contained in the terminal aerodrome forecast (TAF) and in PIREPs. (Include PIREP information at least 20 minutes following the report).
- Add EXAMPLE–
"Low level wind shear is forecast."

Add	<u>(j) Unauthorized Laser Illumination Events. When a laser event is reported, include reported unauthorized laser illumination events on the AFIS broadcast for one hour following the last report. Include the time, location, altitude, color, and direction of the laser as reported by the pilot.</u>
Add	<u>PHRASEOLOGY–</u> <u>UNAUTHORIZED LASER ILLUMINATION EVENT, (UTC time), (location), (altitude), (color), (direction).</u>
Add	<u>EXAMPLE–</u> <u>“Unauthorized laser illumination event at zero one zero zero Zulu, eight-mile final runway one eight at three thousand feet, green laser from the southwest.”</u>
Add	<u>(k) Man-Portable Air Defense Systems (MANPADS) alert and advisory. Specify the nature and location of the threat or incident, whether reported or observed, and by whom, time (if known), and notification to pilots to advise ATC if they need to divert.</u>
Add	<u>PHRASEOLOGY–</u> <u>MANPADS ALERT. EXERCISE EXTREME CAUTION. MANPADS THREAT/ATTACK/POST-EVENT ACTIVITY OBSERVED/REPORTED BY (reporting agency) (location) AT (time, if known). (When transmitting to an individual aircraft) ADVISE ON INITIAL CONTACT IF YOU WANT TO DIVERT.</u>
Add	<u>EXAMPLE–</u> <u>“MANPADS alert. Exercise extreme caution. MANPADS threat reported by TSA, Anchorage area. Advise on initial contact if you want to divert.”</u> <u>“MANPADS alert. Exercise extreme caution. MANPADS attack observed by flight service station one-half mile northwest of airfield at one-two-five-zero Zulu. Advise on initial contact if you want to divert.”</u>
Add	<u>NOTE–</u> <u>1. Upon receiving or observing an unauthorized MANPADS alert/advisory, contact the Alaska Flight Service Information Area Group (AFSIAG) through the Alaskan Region Regional Operations Center (ROC).</u>
Add	<u>2. Continue broadcasting the MANPADS alert/advisory until advised by national headquarters that the threat is no longer present. Coordination may be through the AFSIAG or the Alaskan ROC.</u>
Add	<u>REFERENCE–</u> <u>FAA Order JO 7210.3, Para 2-1-10, Handling MANPADS Incidents.</u>

Add	<u>(l) Any other advisories applicable to the area covered by the LAA.</u>
Add	<u>(m) Local frequency advisory.</u>
Add	<u>PHRASEOLOGY–</u> <u>CONTACT (facility name) RADIO ON (frequency)</u> <u>FOR TRAFFIC ADVISORIES.</u>
Add	<u>(n) Instructions for the pilot to acknowledge receipt of the AFIS message on initial contact.</u>
Add	<u>EXAMPLE–</u> <u>“Dillingham airport information ALPHA. One six five five Zulu. Wind one three zero at eight; visibility one five; ceiling four thousand overcast; temperature four, dew point three; altimeter two niner niner zero. Favored runway one niner. Notice to Airmen, Dillingham V–O–R out of service. Contact Dillingham Radio on one two three point six for traffic advisories. Advise on initial contact you have ALPHA.”</u> <u>“Kotzebue information ALPHA. One six five five Zulu. Wind, two one zero at five; visibility two, fog; ceiling one hundred overcast; temperature minus one two, dew point minus one four; altimeter three one zero five. Altimeter in excess of three one zero zero, high pressure altimeter setting procedures are in effect. Favored runway two six. Weather in Kotzebue surface area is below V–F–R minima – an ATC clearance is required. Notice to Airmen, Hotham NDB out of service. Contact Kotzebue Radio on one two three point six for traffic advisories and advise intentions. Advise on initial contact you have ALPHA.”</u>

OLD**4–4–3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY****Title through b8 PHRASEOLOGY****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.

NEW**3–4–3. AIRPORT ADVISORY/RAIS ELEMENTS AND PHRASEOLOGY**

No Change

No Change

(a) Facilities at airports with field elevations of 2,000 feet MSL or higher, transmit a density altitude advisory to departing general aviation aircraft whenever the temperature reaches the criteria contained in TBL 3–4–1.

Add

*TBL 3-4-1***Density Altitude**

<u>Field Elevation</u>	<u>Temperature (C)</u>
<u>2,000–2,999</u>	<u>29 degrees or higher</u>
<u>3,000–3,999</u>	<u>27 degrees or higher</u>
<u>4,000–4,999</u>	<u>24 degrees or higher</u>
<u>5,000–5,999</u>	<u>21 degrees or higher</u>
<u>6,000–6,999</u>	<u>18 degrees or higher</u>
<u>7,000–higher</u>	<u>16 degrees or higher</u>

PHRASEOLOGY–***CHECK DENSITY ALTITUDE.***

No Change

OLD**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 through d

e. Append a request on HIWAS, TIBS, VORTWEB, or TWEB broadcasts.

f and g**NEW****8-2-9. MEANS USED TO SOLICIT PIREPs**

No Change

No Change

Delete

Re-letter **e** and **f****OLD****12-1-8. WEATHER PHRASEOLOGY****Title through i2****NEW****11-1-8. WEATHER PHRASEOLOGY**

No Change

OLD*TBL 12-1-9***Cloud Heights**

<i>Number</i>	<i>Phraseology</i>
000 ¹	ZERO
003	THREE HUNDRED
018	ONE THOUSAND EIGHT HUNDRED
200	TWO ZERO THOUSAND
¹ Spoken as zero only when used with VV.	

NEW*TBL 11-1-9***Cloud Heights**

<i>Number</i>	<i>Phraseology</i>
000 ¹	ZERO
003	THREE HUNDRED
018	ONE THOUSAND EIGHT HUNDRED
200	TWO ZERO THOUSAND
¹ Spoken as zero only when used with VV.	

NOTE–

1. .When the ceiling is less than 3,000 feet and variable, the variable limits will be reported in the remarks.

No Change

2. When communicating weather information on the TIBS broadcast or telephone, specialist may announce cloud heights in either group form or in hundreds or thousands of feet, such as seventeen thousand or one seven thousand.

Delete

3. “Group form” is the pronunciation of a series of numbers as the whole number, or pairs of numbers they represent rather than pronouncing each separate digit. The use of group form may, however, be negated by four-digit identifiers or the placement of zeros in the identifier.

2. “Group form” is the pronunciation of a series of numbers as the whole number, or pairs of numbers they represent rather than pronouncing each separate digit. The use of group form may, however, be negated by four-digit identifiers or the placement of zeros in the identifier.

1. PARAGRAPH NUMBER AND TITLE: 12–1–15. AIRCRAFT IDENTIFICATION

2. BACKGROUND: AJR–222 conducted discussions with the Department of Energy (DOE) Aviation Office on their use of the R–A–C call sign. Those discussions disclosed that the call sign is no longer used by DOE. DOE recommended AJR–222 contact the Federal Bureau of Investigation and the United States Air Force on their use of the call sign. They advised that they either never used or no longer utilize the R–A–C call sign.

3. CHANGE:

OLD

12–1–15. AIRCRAFT IDENTIFICATION

Title through **g2(b)(2) PHRASEOLOGY**

h. Other special flights.

1. Department of Energy flights. State the letters “R–A–C” (use phonetic alphabet equivalents), followed by the last 4 separate digits of the aircraft registration number.

EXAMPLE–

“Romeo Alfa Charlie One Six Five Three.”

h2 through **h4 EXAMPLE**

5. United States governmental Departments or Agencies, with a demonstrated and approved need, have been granted special domestic/ICAO telephonics (call signs). These items are contained in FAA Order JO 7110.67, Special Aircraft Operations by Federal, State Law Enforcement, Military Organizations, and Special Activities.

NEW

11–1–15. AIRCRAFT IDENTIFICATION

No Change

No Change

Delete

Delete

Renumber **h1** through **h3 EXAMPLE**

4. Flights conducted by U.S. governmental organizations (federal, state, local, tribal, and territorial) using FAA authorized U.S. special call signs for purposes of national security and defense, homeland security, intelligence, and law enforcement. These flights may be identified in accordance with FAA Order JO 7110.67, Air Traffic Management Security Services for Special Operations.

1. PARAGRAPH NUMBER AND TITLE: Appendix A. ICAO FLIGHT PLANS

2. BACKGROUND: The Japan Civil Aviation Bureau (JCAB) has decommissioned its Multi-Function Transport Satellite (MTSAT) network for all voice and data services on February 6, 2020. Customers who use MTSAT were advised to transition to the Inmarsat Classic Aero network for the same type of service.

3. CHANGE:

OLD	NEW
Appendix A. ICAO FLIGHT PLANS	Appendix A. ICAO FLIGHT PLANS
Title through 2 Item 9	No Change

OLD**ITEM 10: EQUIPMENT AND CAPABILITIES**

Capabilities comprise the following elements:

- (a) Presence of relevant serviceable equipment on board the aircraft;
- (b) Equipment and capabilities commensurate with flight crew qualifications; and
- (c) Where applicable, authorization from the appropriate authority.

Radio communication, navigation and approach aid equipment and capabilities

ENTER one letter as follows:

- N if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable,

OR

- S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1),

AND/OR

ENTER one or more of the following letters to indicate the serviceable COM/NAV/ approach aid equipment and capabilities available:

A	GBAS landing system	K	MLS
B	LPV (APV with SBAS)	L	ILS
C	LORAN C	M1	ATC RTF SATCOM (INMARSAT)
D	DME	M2	<u>ATC RTF (MTSAT)</u>
E1	FMC WPR ACARS	M3	ATC RTF (Iridium)
E2	D-FIS ACARS	O	VOR
E3	PDC ACARS	P1	CPDLC RCP 400 (<i>See Note 7</i>)
F	ADF	P2	CPDLC RCP 240 (<i>See Note 7</i>)
G	GNSS (<i>See Note 2</i>)	P3	SATVOICE RCP 400 (<i>See Note 7</i>)
H	HF RTF	P4–P9	Reserved for RCP
I	<u>Intertial</u> Navigation	R	PBN approved (<i>See Note 4</i>)
J1	CPDLC ATN VDL Mode 2 (<i>See Note 3</i>)	T	TACAN
J2	CPDLC FANS 1/A HFDL	U	UHF RTF
J3	CPDLC FANS 1/A VDL Mode A	V	VHF RTF
J4	CPDLC FANS 1/A VDL Mode 2	W	RVSM approved
J5	CPDLC FANS 1/A SATCOM(INMARSAT)	X	MNPS approved
J6	<u>CPDLC FANS 1/A SATCOM (MTSAT)</u>	Y	VHF with 8.33 kHz channel spacing capability
J7	CPDLC FANS 1/A SATCOM (Iridium)	Z	Other equipment carried or other capabilities
			(<i>See Note 5</i>)

Any alphanumeric characters not indicated above are reserved.

NEW**ITEM 10: EQUIPMENT AND CAPABILITIES**

Capabilities comprise the following elements:

- (a) Presence of relevant serviceable equipment on board the aircraft;
- (b) Equipment and capabilities commensurate with flight crew qualifications; and
- (c) Where applicable, authorization from the appropriate authority.

Radio communication, navigation and approach aid equipment and capabilities

ENTER one letter as follows:

- N if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable,

OR

- S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1),

AND/OR

ENTER one or more of the following letters to indicate the serviceable COM/NAV/ approach aid equipment and capabilities available:

A	GBAS landing system	K	MLS
B	LPV (APV with SBAS)	L	ILS
C	LORAN C	M1	ATC RTF SATCOM (INMARSAT)
D	DME	M2	<u>Reserved</u>
E1	FMC WPR ACARS	M3	ATC RTF (Iridium)
E2	D-FIS ACARS	O	VOR
E3	PDC ACARS	P1	CPDLC RCP 400 (See Note 7)
F	ADF	P2	CPDLC RCP 240 (See Note 7)
G	GNSS (See Note 2)	P3	SATVOICE RCP 400 (See Note 7)
H	HF RTF	P4–P9	Reserved for RCP
I	<u>Inertial</u> Navigation	R	PBN approved (See Note 4)
J1	CPDLC ATN VDL Mode 2 (See Note 3)	T	TACAN
J2	CPDLC FANS 1/A HFDL	U	UHF RTF
J3	CPDLC FANS 1/A VDL Mode A	V	VHF RTF
J4	CPDLC FANS 1/A VDL Mode 2	W	RVSM approved
J5	CPDLC FANS 1/A SATCOM(INMARSAT)	X	MNPS approved
J6	<u>Reserved</u>	Y	VHF with 8.33 kHz channel spacing capability
J7	CPDLC FANS 1/A SATCOM (Iridium)	Z	Other equipment carried or other capabilities (See Note 5)

Any alphanumeric characters not indicated above are reserved.