CHANGE

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

JO 7110.10W
CHG 1

Effective Date:
August 22, 2013

SUBJ: Flight Services

1. Purpose of This Change. This change transmits revised pages to Federal Aviation Administration Order JO 7110.10W, Flight Services, and the Briefing Guide.

2. Audience. This change applies to select offices in Washington headquarters, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, and to all air traffic field facilities, international aviation field offices, and the interested aviation public.

3. Where Can I Find This Change? This change is available on the FAA Web site at http://faa.gov/air_traffic/publications and http://employees.faa.gov/tools_resources/orders_ notices/.

4. Explanation of Policy Change. See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures. The Briefing Guide lists only new or modified material, along with background.

5. Distribution. This change is distributed to select offices in Washington headquarters, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, and to all air traffic field facilities, international aviation field offices, and the interested aviation public.

6. Disposition of Transmittal. Retain this transmittal until superseded by a new basic order.

7. Page Control Chart. See the page control chart attachment.

Elizabeth L. Ray
Vice President, Mission Support Services
Air Traffic Organization

Date: July 1, 2013

Distribution: ZAT-793; ZAT-464; ZAT-423 (External)

Initiated By: AJV-0
Vice President, Mission Support Services

Flight Services
Explanation of Changes
Change 1

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

a. 9–2–5. SOLICITING PIREPS
9–2–10. PIREP CLASSIFICATION
9–2–14. PIREP FORMAT

This notice adds the detection of sulfur gases: hydrogen sulfide (H_2S) or sulfur dioxide (SO_2) in the aircraft cabin to the list of significant weather phenomena that are to be handled and disseminated in PIREPs. This change change cancels and incorporates N JO 7110.616, Volcanic Activity, effective March 7, 2013

b. The FAA has decommissioned all the Direction Finders (DF) in the National Airspace System (NAS). Therefore, all references to DF approaches, procedures, supplements, and charts have been removed from this order.

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

PAGE CONTROL CHART

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Chapter 1. General

Section 1. Introduction

1–1–1. PURPOSE OF THIS ORDER

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

1–1–2. AUDIENCE

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

1–1–3. WHERE TO FIND THIS ORDER

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

1–1–4. WHAT THIS ORDER CANCELS

FAA Order 7110.10V, Flight Services, dated February 9, 2012, 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. SUBMISSION CUTOFF AND EFFECTIVE DATES

This order and its changes are scheduled to be published to coincide with AIRAC dates. The effective dates will be:

Publication Schedule		
Basic or Change	Cutoff Date for Submission	Effective Date of Publication
JO 7110.10W	7/26/12	3/7/13
Change 1	3/7/13	8/22/13
Change 2	8/22/13	2/6/14
Change 3	2/6/14	7/24/14
JO 7110.10X	7/24/14	3/5/15

1–1–7. DELIVERY DATES

If an FAA facility **has not** received the order/changes at least 30 days before the above effective dates, the facility must notify its service area office distribution officer.

1–1–8. RECOMMENDATION FOR PROCEDURAL CHANGES

Any changes to this order must be submitted to the VP, Mission Support Services, attn.: ATC Procedures Office, AJV-11:

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. 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 Printing 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 distributed to selected offices in Washington headquarters, regional offices, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, all air traffic field facilities, international aviation field offices, and interested aviation public.

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 7350.8, 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 para 5-1-1. Emergency Determination

1–2–5. ABBREVIAITONS

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.

Section 3. Responsibility

1–3–1. PROCEDURAL APPLICATIONS

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

NOTE–

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

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

1–3–2. DUTY PRIORITY

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

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

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

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

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

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

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

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

b. *Discussion.*

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

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

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

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

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

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

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

d. *Precautions.*

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

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

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

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

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

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

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

1. Preview of the Position

RELIEVING SPECIALIST

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

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

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

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

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

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

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

2. Verbal Briefing

SPECIALIST BEING RELIEVED

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

(b) Brief on traffic, if applicable.

(c) Completely answer any questions asked.

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

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

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

2–5–1. 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 "Alfa," 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 "Alfa."

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) Phonetic alphabet designator.

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

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

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

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

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

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

EXAMPLE–
"Notice to Airmen, Iliamna NDB out of service."
"Transcribed weather broadcast out of service."

(h) Runway braking action or friction reports when provided. Include the time of the report and a word describing the cause of the runway friction problem.

PHRASEOLOGY–
RUNWAY (number) MU (first value, second value, third value) AT (time), (cause).

REFERENCE–
FAAO JO 7110.10, Para 4-4-3, Airport Advisory/RAIS Elements and Phraseology.

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

EXAMPLE–
"Low level wind shear is forecast."

(j) Unauthorized Laser Illumination Events. When a laser event is reported, include reported unauthorized laser illumination events on the AFIS broadcast for one hour following the last report. Include the time, location, altitude, color, and direction of the laser as reported by the pilot.

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

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

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

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

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

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

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

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

REFERENCE–
FAAO JO 7210.3, Para 2-1-9, 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 ALFA. One six five five Zulu. Wind one three zero at eight; visibility one five;

Chapter 3. Pilot Briefing

Section 1. General

3–1–1. 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.

3–1–2. 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

3–1–3. 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.

3–1–4. 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/Regional Radar Mosaics.

13. Radar Echo Tops.

14. Radar VAD Wind Profiles.

15. Visible/IR Satellite Imagery.

16. Constant Pressure Charts.

NOTE–
**Denotes weather products that are supplementary. They may only be used to enhance situational awareness. When discrepancies are noted, the specialist must base their decision on the primary weather product.*

b. Map features. (See FIG 3-1-1.)

c. Precipitation and obstruction to vision. (See FIG 3-1-2.)

FIG 3–1–1
Map Features Chart

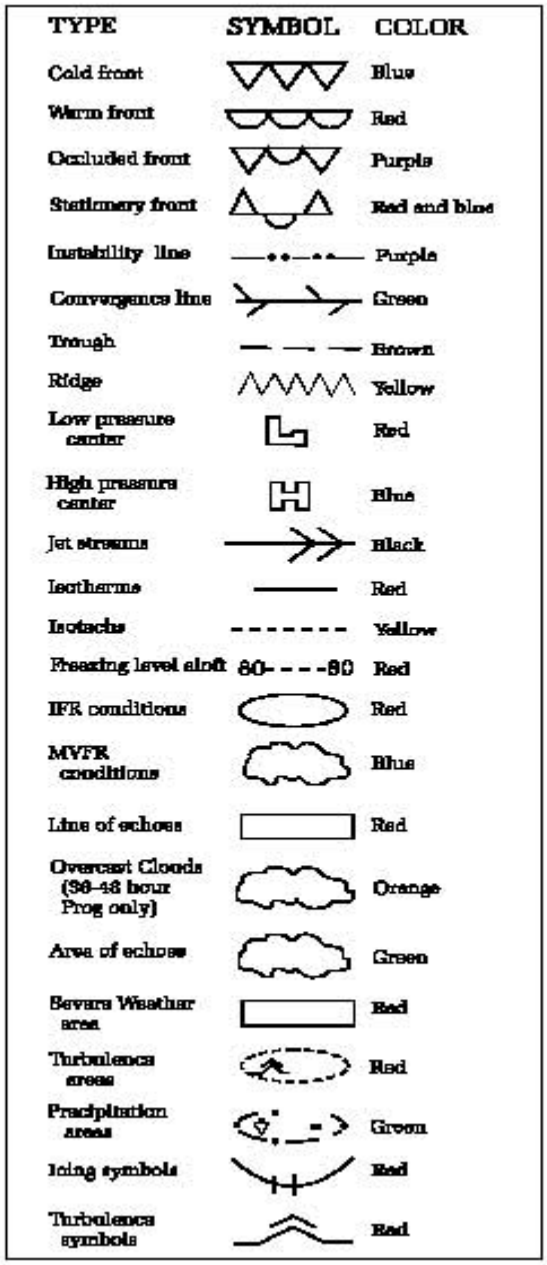
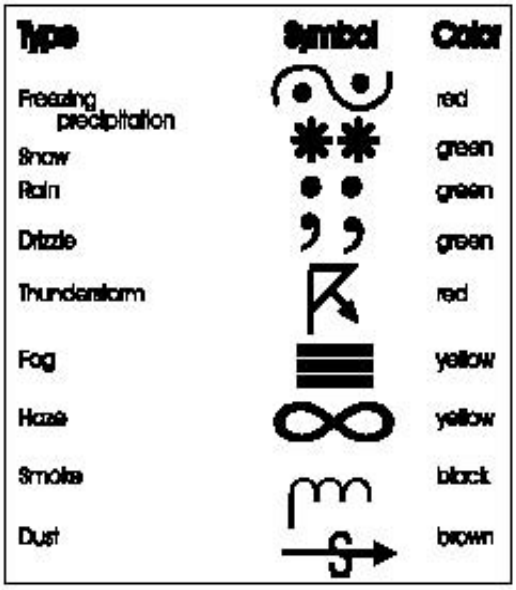


FIG 3–1–2
Precipitation and Obstruction To Vision Chart



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."

3–1–5. FORECASTS, WARNINGS, AND ADVISORIES

a. Use only weather forecasts, warnings, and advisories issued by a National Weather Service (NWS) office, including Center Weather Service

Section 2. Preflight Pilot Briefing

3–2–1. CONDUCT OF STANDARD BRIEFING

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

1. Type of flight planned.

2. Aircraft identification or pilot's name.

3. Aircraft type.

4. Departure point.

5. Route of flight.

6. Destination.

7. Flight altitude(s).

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

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

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

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

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

EXAMPLE–
"An AIRMET is in effect until 1400Z for moderate turbulence below 10,000 feet over the mountainous area of southern California."
"Palmer airport closed"

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

2. *VFR Flight Not Recommended (VNR).* Include this statement when VFR flight is proposed and sky conditions or visibilities are present or forecast, surface or aloft, that in your judgment would make flight under visual flight rules doubtful. Describe the conditions, affected locations, and times.

PHRASEOLOGY–
VFR FLIGHT NOT RECOMMENDED

EXAMPLE–
"There are broken clouds along the entire route between niner and one one thousand feet. With the approach of a cold front, these clouds are forecast to become overcast and to lower to below seven thousand with mountains and passes becoming obscured. V-F-R flight not recommended between Salt Lake City and Grand Junction after two two zero zero ZULU."
"V-F-R flight not recommended in the Seattle area until early afternoon. The current weather at Seattle is indefinite ceiling three hundred, visibility one, mist, and little improvement is expected before one eight zero zero ZULU."

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

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

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

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

5. *En Route Forecast*. Summarize forecast information that will affect the proposed flight; for example, area forecasts, TAFs, prognosis charts, weather advisories, etc. Provide the information in a logical order; for example, climb out, enroute, and descent.

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

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

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

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

NOTE–
Other SUA NOTAMs (D) such as military operations area (MOA), military training route (MTR) and warning area NOTAMs, are considered "upon request" briefing items as indicated in paragraph 3-2-1c13(a).

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

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

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

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

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

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

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

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

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

(b) Approximate density altitude data.

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

(d) Military NOTAMs.

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

(e) Special FDC instrument approach procedure changes.

3–2–2. CONDUCT OF ABBREVIATED BRIEFING

a. Provide an abbreviated briefing when a pilot requests information to supplement mass-disseminated data; update a previous briefing; or when the pilot requests that the briefing be limited to specific information. If applicable, include the statement "VFR flight not recommended" in accordance with subparagraph 3-2-1c2. The specialist must issue the following cautionary advisory to a pilot planning a flight outside of United States controlled airspace, unless the pilot advises they have the international cautionary advisory.

PHRASEOLOGY–
CHECK DATA AS SOON AS PRACTICAL AFTER ENTERING FOREIGN AIRSPACE, AS OUR

INTERNATIONAL DATA MAY BE INACCURATE OR INCOMPLETE.

b. Conduct abbreviated briefings as follows:

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

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

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

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

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

3–2–3. CONDUCT OF OUTLOOK BRIEFING

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

intentions and, if possible, the VFR departure time to the facility/sector holding the flight plan.

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

(a) When requesting:

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

(b) When relaying to aircraft:

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

(c) Relaying to control facility:

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

4–3–9. IFR FLIGHT PROGRESS REPORTS

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

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

4–3–10. ARRIVAL/MISSED APPROACH REPORTS

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

4–3–11. NONDELIVERY OF MESSAGES

Inform ATC when a message has not been delivered within:

a. Three minutes of receipt; or

b. Three minutes after the specified delivery time; or

c. A specified cancellation time.

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

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

a. Once upon receipt; and

b. At approximately 3-minute intervals thereafter.

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

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

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

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

2. Inform the control facility immediately.

3. Relay ATC instructions.

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

1. Inform the pilot.

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

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

Section 4. Airport Advisory Services

4–4–1. TYPES OF AIRPORT ADVISORY SERVICES

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

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

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

NOTE–
LAA/RAA both have:

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

2. Automated weather reporting with voice broadcasting.

3. A continuous automated weather data display.

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

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

1. Communication capability.

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

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

4–4–2. GENERAL

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EXAMPLE–
"Verify you have information ALFA."

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

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

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

EXAMPLE–
(Airport name), AIRPORT ADVISORY . . .

Or

(Airport name), AIRPORT INFORMATION . . .

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

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

1. Wind direction and speed.

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

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

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

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

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

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

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

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

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

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

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

3. Altimeter Setting.

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

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

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

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

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

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

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

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

EXAMPLE–
"Braking action poor."

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

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

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

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

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

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

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

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

(a) Airport Advisory/RAIS:

(1) Wind direction and speed.

(2) Altimeter (except RAIS).

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

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

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

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

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

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

9. Density Altitude.

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

PHRASEOLOGY–
CHECK DENSITY ALTITUDE.

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

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

PHRASEOLOGY–
CAUTION, WAKE TURBULENCE (traffic information).

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

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

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

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

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

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

NOTE–
Final Guard is never provided with RAIS.

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

(a) At airports with friction measuring devices, provide runway friction reports, as received from airport management, to pilots. State the runway number followed by the MU number for each of the three runway zones, the time of the report in UTC, and a word describing the cause of the runway friction problem.

EXAMPLE–
"Runway two seven, MU thirty nine, thirty eight, twenty-eight at one zero one eight ZULU, ice."

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

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

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

4–4–4. CHARTS

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

4–4–5. AUTHORIZED FREQUENCIES

a. Airport Advisory:

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

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

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

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

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

b. RAIS:

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

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

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

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

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

4–4–6. TRAFFIC CONTROL

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

PHRASEOLOGY–
NO CONTROL TOWER IN OPERATION.

4–4–7. AIRCRAFT EQUIPMENT CHECKS

When requested, provide observed information.

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

Chapter 5. Emergency Services

Section 1. General

5–1–1. 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–
FAAO 7110.10, Para 5-1-2c, Responsibility
FAAO 7110.10, Para 5-2-8, Emergency Locator Transmitter (ELT) Signals

5–1–2. 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.

5–1–3. 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.

5–1–4. 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.

5–1–5. 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.

5–1–6. RECORDING INFORMATION

Record all actions taken in the provision of emergency assistance.

5–1–7. 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

5–2–1. 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.

5–2–2. 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.

5–2–3. 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.

5–2–4. 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.

5–2–5. 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.

5–2–6. 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.

5–2–7. 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.

5–2–8. 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.*

5–2–9. 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.

5–2–10. 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.

Chapter 6. Flight Data

Section 1. General

6–1–1. COMMUNICATIONS SERVICE

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

a. Circuit interruption notifications should be as follows:

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

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

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

c. AISR and NADIN telephone numbers.

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

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

3. AISR Helpdesk: 866-466-1336.

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

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

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

6–1–2. FLIGHT PLANS

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

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

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

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

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

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

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

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

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

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

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

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

6–1–3. FLIGHT PLAN DATA

Handle flight plan data as follows:

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

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

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

6–1–4. TYPES OF DATA RECORDED

a. Operational system entries for:

1. Flight plans and related messages.

2. Logging pilot briefings and aircraft contacts.

3. Service A/B messages.

b. Manual strip marking.

6–1–5. METHODS OF RECORDING DATA

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

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

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

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

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

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

FIG 6–1–1
Hand-Printed Characters Chart

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

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 cancelled.

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

k. *Item 11*. Remarks. Information necessary for ATC, search and rescue operations, and any other data pertinent to the flight or provided by the pilot. For RM: field only - Use 1-80 characters beginning with *, #, $, or %. (See TBL 6-2-6.)

TBL 6–2–6

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

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

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

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

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

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

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

TBL 6–2–7
Code and Color

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

NOTE–
1. *For ICAO flight plans, see Appendix A.*

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

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

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

a. Type of flight.

b. Aircraft identification.

c. Aircraft type.

d. Departure point.

e. Destination.

f. Proposed departure time/ETE.

g. Remarks.

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

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

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

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

1. RNAV standard instrument departure (SID);

2. RNAV standard terminal arrival route (STAR); and/or

3. RNAV point-to-point (PTP).

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

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

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

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

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

7–1–10. ICAO ATS MESSAGE FORMAT

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

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

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

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

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

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

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

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

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

7–1–11. FLIGHT PLAN CHANGES AND CANCELLATIONS

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

REFERENCE–
FAAO JO 7110.10, Para 6-4-8, Major Flight Plan Changes from En Route Aircraft
FAAO JO 7110.10, Para 6-4-9, Change in ETA.

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

REFERENCE–
FAAO JO 7110.10, Para 6-4-10, Flight Plan Closure.

7–1–12. AIR MOBILE SERVICE (AMS)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7–1–13. AIREPs (POSITION REPORTS)

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

1. Each line must begin at the left margin.

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

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

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

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

(c) Text of the message.

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

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

(f) Designation of frequency used.

Section 3. Information Requests (INREQs)

8–3–1. 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 DUATS or AISR)

2. En route FSS as applicable

3. KSARYCYX (includes RCC, AISR, and DUAT vendors)

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.

8–3–2. 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–
FAAO 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.

8–3–3. 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

Chapter 9. FAA Weather Services

Section 1. General

9–1–1. 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.

9–1–2. 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.

9–1–3. 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)

9–2–1. GENERAL

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

9–2–2. PREPARATION FOR TRANSMISSION

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

9–2–3. RESPONSIBILITY

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

9–2–4. PIREP DISPLAY

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

9–2–5. SOLICITING PIREPs

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

1. Ceilings at or below 5,000 feet.

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

3. Thunderstorms and related phenomenon.

4. Turbulence of moderate degree or greater.

5. Icing of light degree or greater.

6. Wind shear.

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

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

(b) The smell of sulfur gases in the cockpit may indicate volcanic activity that has not yet been detected or reported and/or possible entry into an ash-bearing cloud. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck match.

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

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

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

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

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

c. Flight watch 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/FLIGHT WATCH ON (frequency) TO REPORT THESE CONDITIONS.

9–2–6. DATA TO BE INCLUDED IN PIREPs

Include the following reports of flight conditions, as appropriate:

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

b. Flight visibility.

c. Restrictions to visibility and weather occurring at altitude.

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

e. Direction and speed of wind aloft.

f. Duration and intensity of turbulence.

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

g. Extent, type, and intensity of icing.

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

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

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

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

9–2–7. REPORTING TURBULENCE IN PIREPs

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

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

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

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

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

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

9–2–8. REPORTING ICING CONDITIONS IN PIREPs

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

b. Icing types.

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

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

3. Mixed. A combination of rime and clear.

c. Icing intensity.

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

2. Light. The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti-icing equipment removes/prevents accumulation. It does not present a problem if deicing/anti-icing is used.

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

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

9–2–9. MEANS USED TO SOLICIT PIREPs

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

a. During preflight weather briefings.

b. On post-flight contacts.

c. During regular air-ground contacts.

d. Broadcast a request on NAVAID frequencies.

e. Append a request on HIWAS, TIBS, VOR-TWEB, or TWEB broadcasts.

f. Request PIREPs from air carrier and military operations offices, military pilot-to-forecaster units, and local aircraft operators.

g. Solicit from other air traffic facilities.

9–2–10. PIREP CLASSIFICATION

Categorize PIREPs as follows:

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

1. Tornadoes, funnel clouds, or waterspouts.

2. Severe or extreme turbulence (including clear air turbulence).

3. Severe icing.

4. Hail.

5. Low level wind shear. Classify LLWS PIREPs as UUA if the pilot reports air speed fluctuations of 10 knots or more. Classify reports of LLWS with air speed fluctuations less than 10 knots as routine. If airspeed fluctuation is not reported, classify PIREP as UUA.

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

6. Volcanic eruption, ash clouds, and/or detection of sulfur gases (H_2S or SO_2) in the cabin.

(a) If a pilot only reported the smell of H_2S or SO_2 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. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck match. .

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

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

9–2–11. PIREP HANDLING

Upon receipt of a PIREP, accomplish the following:

a. Urgent.

1. Deliver to the ARTCC Weather Coordinator as soon as possible.

2. Enter on Service A at the first opportunity.

3. Use in weather briefings, as appropriate.

b. Routine.

1. Transmit on Service A as soon as practical.

2. Broadcast in accordance with established procedures in Chapter 2.

3. Use in weather briefings, as appropriate.

9–2–12. OFFSHORE COASTAL ROUTES

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

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

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

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

9–2–13. PIREP PREPARATION

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

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

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

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

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

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

f. Use only authorized aircraft designators and contractions.

g. In the location TEI, include any three character alphanumeric identifier to describe locations or routes. Use only authorized identifiers from FAA Order JO 7350.8, Location Identifiers.

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

9–2–14. PIREP FORMAT

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

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

b. /OV.

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

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

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

EXAMPLE–
/OV KSTL-KMKC
/OV KSTL090030-KMKC045015

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

EXAMPLE–
/TM 1315

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

EXAMPLE–
/FL093
/FL310
/FLUNKN /RM DURC

e. /TP. Type aircraft. Enter aircraft type. f not known, enter UNKN. Icing and turbulence reports must always include the aircraft type.

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 9-2-1.

TBL 9–2–1
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 (aprx 1/4" dia or more)	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/BLSA
Sandstorms	SS
Shallow Fog	MIFG
Sml Hail/Snow Pellet Showers	SHGS
Sml Hail/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_2S 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. When the size of hail is stated, enter in 1/4 increments in remarks /RM TEI.

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.

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

EXAMPLE–
UUA /OV PANC240075 /TM 2010 /FL370/TP DC10 /WX VA /RM VOLCANIC ERUPTION 2008Z MT AUGUSTINE ASH 40S MOV SSE SO2

(b) If a pilot only detected the smell of sulfur gases (H_2S or SO_2) in the cabin and confirmed there were no volcanic ash clouds, classify the PIREP as Routine and include "VA" in Weather and "H2S NO ASH," "SO2 NO ASH," or "SULFUR SMELL NO ASH" in Remarks.

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

(c) If a volcanic activity report is received from other than a pilot, enter Aircraft "UNKN," Flight Level "UNKN," and in Remarks "UNOFFICIAL."

9. The "SKYSPOTTER" program is a result of a recommendation from the Safer Skies FAA/INDUSTRY Joint Safety Analysis and

Implementation Teams. The term ”SKYSPOTTER” indicates that a pilot has received specialized training in observing and reporting inflight weather phenomenon, pilot weather reports, or PIREPs. When a PIREP from a pilot identifying themselves as a ”SKYSPOTTER” aircraft is received, the additional comment ”/AWC” must be added at the end of the remarks section of the PIREP.

EXAMPLE–
PIREP Text/RM Text/AWC

10. If ISA is reported.

EXAMPLE–
/RM ISA −10C

9–2–15. PIREP ENCODING

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

Section 8. Center Weather Advisory (CWA)

9–8–1. 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.

9–8–2. 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.

9–8–3. 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.

10–1–11. HIGH INTENSITY RUNWAY LIGHTS (HIRL) ASSOCIATED WITH MALSR

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

TBL 10–1–4
HIRL Associated with MALSR

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

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

10–1–12. MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)

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

TBL 10–1–5
MIRL Intensity Setting

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

REFERENCE–
FAAO JO 7110.10, para 10-1-11 Note.

10–1–13. HIGH INTENSITY RUNWAY, RUNWAY CENTERLINE (RCLS), AND TOUCHDOWN ZONE LIGHTS (TDZL)

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

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

Step	Visibility	
	Day	*Night*
5	Less than 1 mile.*	When requested.
4	1 to but not including 2 miles.	Less than 1 mile.
3	2 to but not including 3 miles.	1 to but not including 3 miles.
2	When requested.	3 to 5 miles inclusive.
1	When requested.	More than 5 miles.
* and/or appropriate RVR/RVV equivalent.		

10–1–14. HIRL CHANGES AFFECTING RVR

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

10–1–15. HIGH SPEED TURNOFF LIGHTS

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

10–1–16. RUNWAY END IDENTIFIER LIGHTS (REIL)

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

a. An arriving aircraft has landed.

b. A departing aircraft has left the traffic pattern area.

c. It is determined that the lights are of no further use to the pilot.

d. Operate intensity setting in accordance with the values in TBL 10-1-7 except as prescribed in subparas b and c above.

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

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

10–1–17. TAXIWAY LIGHTS

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

TBL 10–1–8
Three Step Taxiway Lights

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

TBL 10–1–9
Five Step Taxiway Lights

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

TBL 10–1–10
One Step Taxiway Lights

Day	Night
Less than 1 mile.	On

10–1–18. VISUAL APPROACH SLOPE INDICATORS (VASIs)

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

TBL 10–1–11
VASI Intensity Setting, Two–Step System

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

TBL 10–1–12
VASI Intensity Setting, Three–Step System

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

NOTE–
1. *During a 1-year period, twilight may vary 26 to 43 minutes between 25 and 49 degrees N latitude.*

2. *The basic FAA standard for VASI systems permits independent operation by means of photoelectric device. This system has no on-off control feature and is intended for continuous operation. Other VASI systems in use include those that are operated remotely from the control tower. These systems may consist of either a photoelectric intensity control with only an on-off switch, a two-step intensity system, or a three-step intensity system.*

REFERENCE–
FAAO JO 7210.3, Para 10-6-5, Visual Approach Slope Indicator (VASI) Systems.

10–1–19. 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 para 10–1–20, 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.

TBL 12–1–2
Wind Direction and Speed

Wind	*Phraseology*
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 12–1–3.)

TBL 12–1–3
Visibility

Contraction	*Phraseology*
0SM	Visibility zero.
$^{1}/_{16}$SM	Visibility one sixteenth.
$^{1}/_{8}$SM	Visibility one eighth.
M$^{1}/_{4}$SM	Visibility less than one quarter.
$^{3}/_{4}$SM	Visibility three quarters.
1$^{1}/_{2}$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 12-1-4.)

TBL 12–1–4
RVR/RVV

RVR/RVV	*Phraseology*
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 12-1-5.)

TBL 12–1–5
RVR/RVV

RVR/RVV	*Phraseology*
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 12-1-6 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 12-1-7 contains

a complete list of weather elements and appropriate phraseology**.**

TBL 12–1–6

Examples of Combining Intensity, Descriptors and Weather Phenomenon.

Contractions	*Phraseology*
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
[1]Since thunderstorms imply showery precipitation, ‘‘showers’’ may be used to describe precipitation that accompany thunderstorms.	

TBL 12–1–7

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**	Small Hail or Snow Pellets (< 1/4”)	**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 12–1–8.)

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:
AREA NAVIGATION (RNAV) GPS PRM APPROACH
LOCALIZER TYPE DIRECTIONAL AID (LDA) PRM APPROACH
SIMULTANEOUS OFFSET INSTRUMENT APPROACH (SOIA)

e. Terms Deleted:
DF
DF APPROACH PROCEDURE
DF FIX
DF GUIDANCE
DF STEER
DIRECTION FINDER
UDF
UVDF
VDF

f. Terms Modified:
CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)
GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)
GLOBAL POSITIONING SYSTEM (GPS)
ILS PRM APPROACH
LORAN
NIGHT
PRECISION RUNWAY MONITOR (PRM)
SECURITY NOTICE (SECNOT)

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

APD–
(See AUTOMATED PROBLEM DETECTION.)

APDIA–
(See AUTOMATED PROBLEM DETECTION INHIBITED AREA.)

APPROACH CLEARANCE– Authorization by ATC for a pilot to conduct an instrument approach. The type of instrument approach for which a clearance and other pertinent information is provided in the approach clearance when required.
(See CLEARED APPROACH.)
(See INSTRUMENT APPROACH PROCEDURE.)
(Refer to AIM.)
(Refer to 14 CFR Part 91.)

APPROACH CONTROL FACILITY– A terminal ATC facility that provides approach control service in a terminal area.
(See APPROACH CONTROL SERVICE.)
(See RADAR APPROACH CONTROL FACILITY.)

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

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

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

APPROACH 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.

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

APPROPRIATE AUTHORITY–

a. Regarding flight over the high seas: the relevant authority is the State of Registry.

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

APPROPRIATE OBSTACLE CLEARANCE MINIMUM ALTITUDE– Any of the following:
(See MINIMUM EN ROUTE IFR ALTITUDE.)
(See MINIMUM IFR ALTITUDE.)
(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)
(See MINIMUM VECTORING ALTITUDE.)

APPROPRIATE TERRAIN CLEARANCE MINIMUM ALTITUDE– Any of the following:
(See MINIMUM EN ROUTE IFR ALTITUDE.)
(See MINIMUM IFR ALTITUDE.)
(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)
(See MINIMUM VECTORING ALTITUDE.)

APRON– A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.
(See ICAO term APRON.)

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

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

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

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

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

AREA NAVIGATION (RNAV) APPROACH CONFIGURATION:

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

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

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

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

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

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

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

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

ARINC– An acronym for Aeronautical Radio, Inc., a corporation largely owned by a group of airlines. ARINC is licensed by the FCC as an aeronautical station and contracted by the FAA to provide communications support for air traffic control and meteorological services in portions of international airspace.

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

ARO–

(See AIRPORT RESERVATION OFFICE.)

ARRESTING SYSTEM– A safety device consisting of two major components, namely, engaging or catching devices and energy absorption devices for the purpose of arresting both tailhook and/or nontailhook-equipped aircraft. It is used to prevent aircraft from overrunning runways when the aircraft cannot be stopped after landing or during aborted

takeoff. Arresting systems have various names; e.g., arresting gear, hook device, wire barrier cable.
(See ABORT.)
(Refer to AIM.)

ARRIVAL AIRCRAFT INTERVAL– An internally generated program in hundredths of minutes based upon the AAR. AAI is the desired optimum interval between successive arrival aircraft over the vertex.

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

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

ARRIVAL SECTOR– An operational control sector containing one or more meter fixes.

ARRIVAL SECTOR ADVISORY LIST– An ordered list of data on arrivals displayed at the PVD/MDM of the sector which controls the meter fix.

ARRIVAL SEQUENCING PROGRAM– The automated program designed to assist in sequencing aircraft destined for the same airport.

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

ARSR–
(See AIR ROUTE SURVEILLANCE RADAR.)

ARTCC–
(See AIR ROUTE TRAFFIC CONTROL CENTER.)

ARTS–
(See AUTOMATED RADAR TERMINAL SYSTEMS.)

ASDA–
(See ACCELERATE-STOP DISTANCE AVAILABLE.)

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

ASDE–
(See AIRPORT SURFACE DETECTION EQUIPMENT.)

ASF–
(See AIRPORT STREAM FILTER.)

ASLAR–
(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

ASP–
(See ARRIVAL SEQUENCING PROGRAM.)

ASR–
(See AIRPORT SURVEILLANCE RADAR.)

ASR APPROACH–
(See SURVEILLANCE APPROACH.)

ASSOCIATED– A radar target displaying a data block with flight identification and altitude information.
(See UNASSOCIATED.)

ATC–
(See AIR TRAFFIC CONTROL.)

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

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

ATC CLEARANCE–
(See AIR TRAFFIC CLEARANCE.)

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

ATC INSTRUCTIONS– Directives issued by air traffic control for the purpose of requiring a pilot to take specific actions; e.g., “Turn left heading two five zero,” “Go around,” “Clear the runway.”
(Refer to 14 CFR Part 91.)

ATC PREFERRED ROUTE NOTIFICATION– URET 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 USER REQUEST EVALUATION 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.

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 channelling 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.

AUTOLAND APPROACH– An autoland approach is a precision instrument approach to touchdown and, in some cases, through the landing rollout. An autoland approach is performed by the aircraft autopilot which is receiving position information and/or steering commands from onboard navigation equipment.

Note: Autoland and coupled approaches are flown in VFR and IFR. It is common for carriers to require their crews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4,000 RVR.

(See COUPLED APPROACH.)

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

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

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

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

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

(See USER REQUEST EVALUATION TOOL.)

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

AUTOMATED RADAR TERMINAL SYSTEMS (ARTS)– A generic term for several tracking systems included in the Terminal Automation Systems (TAS). ARTS plus a suffix roman numeral denotes a major modification to that system.

a. ARTS IIIA. The Radar Tracking and Beacon Tracking Level (RT&BTL) of the modular, programmable automated radar terminal system. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. This

more sophisticated computer-driven system upgrades the existing ARTS III system by providing improved tracking, continuous data recording, and fail-soft capabilities.

b. Common ARTS. Includes ARTS IIE, ARTS IIIE; and ARTS IIIE with ACD (see DTAS) which combines functionalities of the previous ARTS systems.

c. Programmable Indicator Data Processor (PIDP). The PIDP is a modification to the AN/TPX–42 interrogator system currently installed in fixed RAPCONs. The PIDP detects, tracks, and predicts secondary radar aircraft targets. These are displayed by means of computer–generated symbols and alphanumeric characters depicting flight identification, aircraft altitude, ground speed, and flight plan data. Although primary radar targets are not tracked, they are displayed coincident with the secondary radar targets as well as with the other symbols and alphanumerics. The system has the capability of interfacing with ARTCCs.

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

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

AUTOMATIC ALTITUDE REPORT–
(See ALTITUDE READOUT.)

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

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

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

AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST (ADS-B)– A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter. The aircraft or vehicle periodically broadcasts its GPS–derived position and other information such as velocity over the data link, which is received by a ground–based transmitter/receiver (transceiver) for processing and display at an air traffic control facility.
(See GLOBAL POSITIONING SYSTEM.)
(See GROUND–BASED TRANSCEIVER.)

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

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

AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS) – ALASKA FSSs ONLY– The continuous broadcast of recorded non–control information at airports in Alaska where a FSS provides local airport advisory service. The AFIS broadcast automates the repetitive transmission of essential but routine information such as weather, wind, altimeter, favored runway, breaking action, airport NOTAMs, and other applicable information. The information is continuously broadcast over a discrete VHF radio frequency (usually the ASOS/AWSS/AWOS frequency.)

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

(See ICAO term AUTOMATIC TERMINAL INFORMATION SERVICE.)

(Refer to AIM.)

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

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

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

b. Low Level Autorotation. Commences at an altitude well below the traffic pattern, usually below 100 feet AGL and is used primarily for tactical military training.

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

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

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

(See EN ROUTE FLIGHT ADVISORY SERVICE.)

(See TRANSCRIBED WEATHER BROADCAST.)

(See WEATHER ADVISORY.)

(Refer to AIM.)

AWW–

(See SEVERE WEATHER FORECAST ALERTS.)

AZIMUTH (MLS)– A magnetic bearing extending from an MLS navigation facility.

Note: Azimuth bearings are described as magnetic and are referred to as "azimuth" in radio telephone communications.

4. CLASS D– Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace. No separation services are provided to VFR aircraft.

5. CLASS E– Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also in this class are Federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic, and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska, up to, but not including 18,000 feet MSL, and the airspace above FL 600.

CONTROLLED AIRSPACE [ICAO]– An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

Note: Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D, and E.

CONTROLLED TIME OF ARRIVAL– Arrival time assigned during a Traffic Management Program. This time may be modified due to adjustments or user options.

CONTROLLER–

(See AIR TRAFFIC CONTROL SPECIALIST.)

CONTROLLER [ICAO]– A person authorized to provide air traffic control services.

CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)– A two–way digital communications system that conveys textual air traffic control messages between controllers and pilots using ground or satellite-based radio relay stations.

CONVECTIVE SIGMET– A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to VIP level 4 with an area coverage of $^{4}/_{10}$ (40%) or more, and hail $^{3}/_{4}$ inch or greater.

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

CONVECTIVE SIGNIFICANT METEOROLOGICAL INFORMATION–

(See CONVECTIVE SIGMET.)

COORDINATES– The intersection of lines of reference, usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine position or location.

COORDINATION FIX– The fix in relation to which facilities will handoff, transfer control of an aircraft, or coordinate flight progress data. For terminal facilities, it may also serve as a clearance for arriving aircraft.

COPTER–

(See HELICOPTER.)

CORRECTION– An error has been made in the transmission and the correct version follows.

COUPLED APPROACH– A coupled approach is an instrument approach performed by the aircraft autopilot which is receiving position information and/or steering commands from onboard navigation equipment. In general, coupled nonprecision approaches must be discontinued and flown manually at altitudes lower than 50 feet below the minimum descent altitude, and coupled precision approaches must be flown manually below 50 feet AGL.

Note: Coupled and autoland approaches are flown in VFR and IFR. It is common for carriers to require their crews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4,000 RVR.

(See AUTOLAND APPROACH.)

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.

c. The intended track along a straight, curved, or segmented MLS path.

(See BEARING.)
(See INSTRUMENT LANDING SYSTEM.)
(See MICROWAVE LANDING SYSTEM.)
(See RADIAL.)

CPDLC–

(See CONTROLLER PILOT DATA LINK COMMUNICATIONS.)

CPL [ICAO]–

(See ICAO term CURRENT FLIGHT PLAN.)

CRITICAL ENGINE– The engine which, upon failure, would most adversely affect the performance or handling qualities of an aircraft.

CROSS (FIX) AT (ALTITUDE)– Used by ATC when a specific altitude restriction at a specified fix is required.

CROSS (FIX) AT OR ABOVE (ALTITUDE)– Used by ATC when an altitude restriction at a specified fix is required. It does not prohibit the aircraft from crossing the fix at a higher altitude than specified; however, the higher altitude may not be one that will violate a succeeding altitude restriction or altitude assignment.

(See ALTITUDE RESTRICTION.)
(Refer to AIM.)

CROSS (FIX) AT OR BELOW (ALTITUDE)– Used by ATC when a maximum crossing altitude at a specific fix is required. It does not prohibit the aircraft from crossing the fix at a lower altitude; however, it must be at or above the minimum IFR altitude.

(See ALTITUDE RESTRICTION.)
(See MINIMUM IFR ALTITUDES.)
(Refer to 14 CFR Part 91.)

CROSSWIND–

a. When used concerning the traffic pattern, the word means “crosswind leg.”

(See TRAFFIC PATTERN.)

b. When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft.

(See CROSSWIND COMPONENT.)

CROSSWIND COMPONENT– The wind component measured in knots at 90 degrees to the longitudinal axis of the runway.

CRUISE– Used in an ATC clearance to authorize a pilot to conduct flight at any altitude from the minimum IFR altitude up to and including the altitude specified in the clearance. The pilot may level off at any intermediate altitude within this block of airspace. Climb/descent within the block is to be made at the discretion of the pilot. However, once the pilot starts descent and verbally reports leaving an altitude in the block, he/she may not return to that altitude without additional ATC clearance. Further, it is approval for the pilot to proceed to and make an approach at destination airport and can be used in conjunction with:

a. An airport clearance limit at locations with a standard/special instrument approach procedure. The CFRs require that if an instrument letdown to an airport is necessary, the pilot shall make the letdown in accordance with a standard/special instrument approach procedure for that airport, or

b. An airport clearance limit at locations that are within/below/outside controlled airspace and without a standard/special instrument approach procedure. Such a clearance is NOT AUTHORIZATION for the pilot to descend under IFR conditions below the applicable minimum IFR altitude nor does it imply that ATC is exercising control over aircraft in Class G airspace; however, it provides a means for the aircraft to proceed to destination airport, descend, and land in accordance with applicable CFRs governing VFR flight operations. Also, this provides search and rescue protection until such time as the IFR flight plan is closed.

(See INSTRUMENT APPROACH PROCEDURE.)

CRUISE CLIMB– A climb technique employed by aircraft, usually at a constant power setting, resulting in an increase of altitude as the aircraft weight decreases.

D

D-ATIS–

(See DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE.)

DA [ICAO]–

(See ICAO Term DECISION ALTITUDE/DECISION HEIGHT.)

DAIR–

(See DIRECT ALTITUDE AND IDENTITY READOUT.)

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

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

DAS–

(See DELAY ASSIGNMENT.)

DATA BLOCK–

(See ALPHANUMERIC DISPLAY.)

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

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

Note 1: Decision altitude [DA] is referenced to mean sea level [MSL] and decision height [DH] is referenced to the threshold elevation.

Note 2: The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

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

(See ICAO term DECISION ALTITUDE/DECISION HEIGHT.)

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

(See CODES.)

(See RADAR.)

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

(See AIR DEFENSE IDENTIFICATION ZONE.)

(Refer to 14 CFR Part 91.)

(Refer to 14 CFR Part 99.)

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

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

(See EXPECT FURTHER CLEARANCE (TIME).)

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

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

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

(See APPROACH CONTROL FACILITY.)

(Refer to AIM.)

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

DEPARTURE TIME– The time an aircraft becomes airborne.

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

DESIRED COURSE–

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

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

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

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

DEVIATIONS–

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

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

DH–

(See DECISION HEIGHT.)

DH [ICAO]–

(See ICAO Term DECISION ALTITUDE/ DECISION HEIGHT.)

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

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

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

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

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

DIRECT ALTITUDE AND IDENTITY READOUT– The DAIR System is a modification to the AN/TPX-42 Interrogator System. The Navy has two adaptations of the DAIR System-Carrier Air Traffic Control Direct Altitude and Identification Readout System for Aircraft Carriers and Radar Air Traffic Control Facility Direct Altitude and Identity Readout System for land-based terminal operations. The DAIR detects, tracks, and predicts secondary radar aircraft targets. Targets are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, altitude, ground speed, and flight plan data. The DAIR System is capable of interfacing with ARTCCs.

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

DISCRETE BEACON CODE–

(See DISCRETE CODE.)

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

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

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

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

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

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

DIVE BRAKES–
(See SPEED BRAKES.)

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

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

DME–
(See DISTANCE MEASURING EQUIPMENT.)

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

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

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

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

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

DOWNWIND LEG–
(See TRAFFIC PATTERN.)

DP–
(See INSTRUMENT DEPARTURE PROCEDURE.)

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

DSP–
(See DEPARTURE SEQUENCING PROGRAM.)

DT–
(See DELAY TIME.)

DTAS–
(See DIGITAL TERMINAL AUTOMATION SYSTEM.)

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

(See also FAAO JO 7110.65, Para 1–2–1, WORD MEANINGS.)

DUTY RUNWAY–

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

DVA–

(See DIVERSE VECTOR AREA.)

DVFR–

(See DEFENSE VISUAL FLIGHT RULES.)

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

DVRSN–

(See DIVERSION.)

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

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

G

GATE HOLD PROCEDURES– Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 15 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

GBT–
(See GROUND–BASED TRANSCEIVER.)

GCA–
(See GROUND CONTROLLED APPROACH.)

GDP–
(See GROUND DELAY PROGRAM.)

GENERAL AVIATION– That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of public convenience and necessity from the Civil Aeronautics Board and large aircraft commercial operators.
(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/MLS, 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 minimum altitude to intercept the glideslope/path on a precision approach. The intersection of the published intercept altitude with the glideslope/path, designated on Government charts by the lightning bolt symbol, is the precision FAF; however, when the approach chart shows an alternative lower glideslope intercept altitude, and ATC directs a lower altitude, the resultant lower intercept position is then the FAF.
(See FINAL APPROACH FIX.)
(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

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

GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE (GNSS MEA)– The minimum en route IFR altitude on a published ATS route or route segment which assures acceptable Global Navigation Satellite System reception and meets obstacle clearance requirements.
(Refer to 14 CFR Part 91.)
(Refer to 14 CFR Part 95.)

GLOBAL POSITIONING SYSTEM (GPS)– GPS refers to the worldwide positioning, navigation and timing determination capability available from the U.S. satellite constellation. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard. GPS is composed of space, control, and user elements.

GNSS [ICAO]–
(See GLOBAL NAVIGATION SATELLITE SYSTEM.)

GNSS MEA–

(See GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE.)

GO AHEAD– Proceed with your message. Not to be used for any other purpose.

GO AROUND– Instructions for a pilot to abandon his/her approach to landing. Additional instructions may follow. Unless otherwise advised by ATC, a VFR aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an IFR flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC; e.g., "Go around" (additional instructions if required).

(See LOW APPROACH.)

(See MISSED APPROACH.)

GPD–

(See GRAPHIC PLAN DISPLAY.)

GPS–

(See GLOBAL POSITIONING SYSTEM.)

GRAPHIC PLAN DISPLAY (GPD)– A view available with URET 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 USER REQUEST EVALUATION TOOL.)

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

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

GROUND CLUTTER– A pattern produced on the radar scope by ground returns which may degrade other radar returns in the affected area. The effect of ground clutter is minimized by the use of moving target indicator (MTI) circuits in the radar equipment resulting in a radar presentation which displays only targets which are in motion.

(See CLUTTER.)

GROUND COMMUNICATION OUTLET (GCO)– An unstaffed, remotely controlled, ground/ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF to a telephone connection to obtain an instrument clearance or close a VFR or IFR flight plan. They may also get an updated weather briefing prior to takeoff. Pilots will use four "key clicks" on the VHF radio to contact the appropriate ATC facility or six "key clicks" to contact the FSS. The GCO system is intended to be used only on the ground.

GROUND CONTROLLED APPROACH– A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. The approach may be conducted with surveillance radar (ASR) only or with both surveillance and precision approach radar (PAR). Usage of the term "GCA" by pilots is discouraged except when referring to a GCA facility. Pilots should specifically request a "PAR" approach when a precision radar approach is desired or request an "ASR" or "surveillance" approach when a nonprecision radar approach is desired.

(See RADAR APPROACH.)

GROUND DELAY PROGRAM (GDP)– A traffic management process administered by the ATCSCC; when aircraft are held on the ground. The purpose of the program is to support the TM mission and limit airborne holding. It is a flexible program and may be implemented in various forms depending upon the needs of the AT system. Ground delay programs provide for equitable assignment of delays to all system users.

GROUND SPEED– The speed of an aircraft relative to the surface of the earth.

GROUND STOP (GS)– The GS is a process that requires aircraft that meet a specific criteria to remain on the ground. The criteria may be airport specific, airspace specific, or equipment specific; for example, all departures to San Francisco, or all departures entering Yorktown sector, or all Category I and II aircraft going to Charlotte. GSs normally occur with little or no warning.

GROUND VISIBILITY–

(See VISIBILITY.)

GS–

(See GROUND STOP.)

I

I SAY AGAIN– The message will be repeated.

IAF–
(See INITIAL APPROACH FIX.)

IAP–
(See INSTRUMENT APPROACH PROCEDURE.)

IAWP– Initial Approach Waypoint

ICAO–
(See ICAO Term INTERNATIONAL CIVIL AVIATION ORGANIZATION.)

ICING– The accumulation of airframe ice.

Types of icing are:

a. Rime Ice– Rough, milky, opaque ice formed by the instantaneous freezing of small supercooled water droplets.

b. Clear Ice– A glossy, clear, or translucent ice formed by the relatively slow freezing or large supercooled water droplets.

c. Mixed– A mixture of clear ice and rime ice.

Intensity of icing:

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

b. Light– The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti-icing equipment removes/prevents accumulation. It does not present a problem if the deicing/anti-icing equipment is used.

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

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

IDENT– A request for a pilot to activate the aircraft transponder identification feature. This will help the controller to confirm an aircraft identity or to identify an aircraft.
(Refer to AIM.)

IDENT FEATURE– The special feature in the Air Traffic Control Radar Beacon System (ATCRBS) equipment. It is used to immediately distinguish one displayed beacon target from other beacon targets.
(See IDENT.)

IF–
(See INTERMEDIATE FIX.)

IFIM–
(See INTERNATIONAL FLIGHT INFORMATION MANUAL.)

IF NO TRANSMISSION RECEIVED FOR (TIME)– Used by ATC in radar approaches to prefix procedures which should be followed by the pilot in event of lost communications.
(See LOST COMMUNICATIONS.)

IFR–
(See INSTRUMENT FLIGHT RULES.)

IFR AIRCRAFT– An aircraft conducting flight in accordance with instrument flight rules.

IFR CONDITIONS– Weather conditions below the minimum for flight under visual flight rules.
(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

IFR DEPARTURE PROCEDURE–
(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)
(Refer to AIM.)

IFR FLIGHT–
(See IFR AIRCRAFT.)

IFR LANDING MINIMUMS–
(See LANDING MINIMUMS.)

IFR MILITARY TRAINING ROUTES (IR)– Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots IAS.

IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES– Title 14 Code of Federal

Regulations Part 91, prescribes standard takeoff rules for certain civil users. At some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums, departure procedures, or both to assist pilots in avoiding obstacles during climb to the minimum en route altitude. Those airports are listed in FAA/DOD Instrument Approach Procedures (IAPs) Charts under a section entitled "IFR Takeoff Minimums and Departure Procedures." The FAA/DOD IAP chart legend illustrates the symbol used to alert the pilot to nonstandard takeoff minimums and departure procedures. When departing IFR from such airports or from any airports where there are no departure procedures, DPs, or ATC facilities available, pilots should advise ATC of any departure limitations. Controllers may query a pilot to determine acceptable departure directions, turns, or headings after takeoff. Pilots should be familiar with the departure procedures and must assure that their aircraft can meet or exceed any specified climb gradients.

IF/IAWP– Intermediate Fix/Initial Approach Waypoint. The waypoint where the final approach course of a T approach meets the crossbar of the T. When designated (in conjunction with a TAA) this waypoint will be used as an IAWP when approaching the airport from certain directions, and as an IFWP when beginning the approach from another IAWP.

IFWP– Intermediate Fix Waypoint

ILS–
(See INSTRUMENT LANDING SYSTEM.)

ILS CATEGORIES– 1. Category I. An ILS approach procedure which provides for approach to a height above touchdown of not less than 200 feet and with runway visual range of not less than 1,800 feet.– 2. Special Authorization Category I. An ILS approach procedure which provides for approach to a height above touchdown of not less than 150 feet and with runway visual range of not less than 1,400 feet, HUD to DH. 3. Category II. An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet (with autoland or HUD to touchdown and noted on authorization, RVR 1,000 feet).– 4. Special Authorization Category II with Reduced Lighting. An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet with autoland or HUD to touchdown and noted on authorization (no touchdown zone and centerline lighting are required).– 5. Category III:

a. IIIA.–An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 700 feet.

b. IIIB.–An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 150 feet.

c. IIIC.–An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum.

ILS PRM APPROACH– An instrument landing system (ILS) approach conducted to parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3,000 feet where closely spaced independent approaches are permitted. Also used in conjunction with an LDA PRM, or RNAV (GPS) PRM approach to conduct Simultaneous Offset Instrument Approach (SOIA) operations. No Transgression Zone (NTZ) monitoring is required to conduct these approaches. When the runway spacing is less than 3,600 feet, the NTZ must be monitored by a Precision Runway Monitor (PRM) or other high update rate surveillance system.
(Refer to AIM)

IM–
(See INNER MARKER.)

IMC–
(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

IMMEDIATELY– Used by ATC or pilots when such action compliance is required to avoid an imminent situation.

INCERFA (Uncertainty Phase) [ICAO]– A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

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

INERTIAL NAVIGATION SYSTEM– An RNAV system which is a form of self-contained navigation.
(See Area Navigation/RNAV.)

INFLIGHT REFUELING–
(See AERIAL REFUELING.)

INFLIGHT WEATHER ADVISORY–
(See WEATHER ADVISORY.)

INFORMATION REQUEST– A request originated by an FSS for information concerning an overdue VFR aircraft.

INITIAL APPROACH FIX– The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s).
(See FIX.)
(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INITIAL APPROACH SEGMENT–
(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INITIAL APPROACH SEGMENT [ICAO]– That segment of an instrument approach procedure between the initial approach fix and the intermediate approach fix or, where applicable, the final approach fix or point.

INLAND NAVIGATION FACILITY– A navigation aid on a North American Route at which the common route and/or the noncommon route begins or ends.

INNER MARKER– A marker beacon used with an ILS (CAT II) precision approach located between the middle marker and the end of the ILS runway, transmitting a radiation pattern keyed at six dots per second and indicating to the pilot, both aurally and visually, that he/she is at the designated decision height (DH), normally 100 feet above the touchdown zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach.
(See INSTRUMENT LANDING SYSTEM.)
(Refer to AIM.)

INNER MARKER BEACON–
(See INNER MARKER.)

INREQ–
(See INFORMATION REQUEST.)

INS–
(See INERTIAL NAVIGATION SYSTEM.)

INSTRUMENT APPROACH–
(See INSTRUMENT APPROACH PROCEDURE.)

INSTRUMENT APPROACH PROCEDURE– A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.
(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)
(Refer to 14 CFR Part 91.)
(Refer to AIM.)

a. U.S. civil standard instrument approach procedures are approved by the FAA as prescribed under 14 CFR Part 97 and are available for public use.

b. U.S. military standard instrument approach procedures are approved and published by the Department of Defense.

c. Special instrument approach procedures are approved by the FAA for individual operators but are not published in 14 CFR Part 97 for public use.
(See ICAO term INSTRUMENT APPROACH PROCEDURE.)

INSTRUMENT APPROACH 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.

INSTRUMENT APPROACH PROCEDURES CHARTS–
(See AERONAUTICAL CHART.)

INSTRUMENT DEPARTURE PROCEDURE (DP)– A preplanned instrument flight rule (IFR) departure procedure published for pilot use, in graphic or textual format, that provides obstruction clearance from the terminal area to the appropriate en route structure. There are two types of DP, Obstacle Departure Procedure (ODP), printed either textually or graphically, and, Standard Instrument Departure (SID), which is always printed graphically.
(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)
(See OBSTACLE DEPARTURE PROCEDURES.)
(See STANDARD INSTRUMENT DEPARTURES.)
(Refer to AIM.)

INSTRUMENT DEPARTURE PROCEDURE (DP) CHARTS–
(See AERONAUTICAL CHART.)

INSTRUMENT FLIGHT RULES– Rules governing the procedures for conducting instrument flight. Also

a term used by pilots and controllers to indicate type of flight plan.

(See INSTRUMENT METEOROLOGICAL CONDITIONS.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

(See ICAO term INSTRUMENT FLIGHT RULES.)

(Refer to AIM.)

INSTRUMENT FLIGHT RULES [ICAO]– A set of rules governing the conduct of flight under instrument meteorological conditions.

INSTRUMENT LANDING SYSTEM– A precision instrument approach system which normally consists of the following electronic components and visual aids:

a. Localizer.

(See LOCALIZER.)

b. Glideslope.

(See GLIDESLOPE.)

c. Outer Marker.

(See OUTER MARKER.)

d. Middle Marker.

(See MIDDLE MARKER.)

e. Approach Lights.

(See AIRPORT LIGHTING.)

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

INSTRUMENT METEOROLOGICAL CONDITIONS– Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions.

(See INSTRUMENT FLIGHT RULES.)

(See VISUAL FLIGHT RULES.)

(See VISUAL METEOROLOGICAL CONDITIONS.)

INSTRUMENT RUNWAY– A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved.

(See ICAO term INSTRUMENT RUNWAY.)

INSTRUMENT RUNWAY [ICAO]– One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

a. Nonprecision Approach Runway–An instrument runway served by visual aids and a nonvisual aid providing at least directional guidance adequate for a straight-in approach.

b. Precision Approach Runway, Category I–An instrument runway served by ILS and visual aids intended for operations down to 60 m (200 feet) decision height and down to an RVR of the order of 800 m.

c. Precision Approach Runway, Category II–An instrument runway served by ILS and visual aids intended for operations down to 30 m (100 feet) decision height and down to an RVR of the order of 400 m.

d. Precision Approach Runway, Category III–An instrument runway served by ILS to and along the surface of the runway and:

1. Intended for operations down to an RVR of the order of 200 m (no decision height being applicable) using visual aids during the final phase of landing;

2. Intended for operations down to an RVR of the order of 50 m (no decision height being applicable) using visual aids for taxiing;

3. Intended for operations without reliance on visual reference for landing or taxiing.

Note 1: See Annex 10 Volume I, Part I, Chapter 3, for related ILS specifications.

Note 2: Visual aids need not necessarily be matched to the scale of nonvisual aids provided. The criterion for the selection of visual aids is the conditions in which operations are intended to be conducted.

INTEGRITY– The ability of a system to provide timely warnings to users when the system should not be used for navigation.

INTERMEDIATE APPROACH SEGMENT–

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INTERMEDIATE APPROACH SEGMENT [ICAO]– That segment of an instrument approach procedure between either the intermediate approach fix and the final approach fix or point, or between the end of a reversal, race track or dead reckoning track procedure and the final approach fix or point, as appropriate.

INTERMEDIATE FIX– The fix that identifies the beginning of the intermediate approach segment of an instrument approach procedure. The fix is not normally identified on the instrument approach chart as an intermediate fix (IF).

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

INTERMEDIATE LANDING– On the rare occasion that this option is requested, it should be approved. The departure center, however, must advise the ATCSCC so that the appropriate delay is carried over and assigned at the intermediate airport. An intermediate landing airport within the arrival center will not be accepted without coordination with and the approval of the ATCSCC.

INTERNATIONAL AIRPORT– Relating to international flight, it means:

a. An airport of entry which has been designated by the Secretary of Treasury or Commissioner of Customs as an international airport for customs service.

b. A landing rights airport at which specific permission to land must be obtained from customs authorities in advance of contemplated use.

c. Airports designated under the Convention on International Civil Aviation as an airport for use by international commercial air transport and/or international general aviation.

(See ICAO term INTERNATIONAL AIRPORT.)
(Refer to AIRPORT/FACILITY DIRECTORY.)
(Refer to IFIM.)

INTERNATIONAL AIRPORT [ICAO]– Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

INTERNATIONAL CIVIL AVIATION ORGANIZATION [ICAO]– A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport.

a. Regions include:

1. African-Indian Ocean Region
2. Caribbean Region
3. European Region
4. Middle East/Asia Region
5. North American Region
6. North Atlantic Region
7. Pacific Region
8. South American Region

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

INTERROGATOR– The ground-based surveillance radar beacon transmitter-receiver, which normally scans in synchronism with a primary radar, transmitting discrete radio signals which repetitiously request all transponders on the mode being used to reply. The replies received are mixed with the primary radar returns and displayed on the same plan position indicator (radar scope). Also, applied to the airborne element of the TACAN/DME system.

(See TRANSPONDER.)
(Refer to AIM.)

INTERSECTING RUNWAYS– Two or more runways which cross or meet within their lengths.

(See INTERSECTION.)

INTERSECTION–

a. A point defined by any combination of courses, radials, or bearings of two or more navigational aids.

b. Used to describe the point where two runways, a runway and a taxiway, or two taxiways cross or meet.

INTERSECTION DEPARTURE– A departure from any runway intersection except the end of the runway.

(See INTERSECTION.)

INTERSECTION TAKEOFF–

(See INTERSECTION DEPARTURE.)

IR–

(See IFR MILITARY TRAINING ROUTES.)

L

LAA–
(See LOCAL AIRPORT ADVISORY.)

LAAS–
(See LOW ALTITUDE ALERT SYSTEM.)

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

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

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

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

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

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

LANDING DIRECTION INDICATOR– A device which visually indicates the direction in which landings and takeoffs should be made.
(See TETRAHEDRON.)
(Refer to AIM.)

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

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

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

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

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

Note: Descent below the established MDA or DH is not authorized during an approach unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made and adequate visual reference to required visual cues is maintained.

(See CIRCLE-TO-LAND MANEUVER.)
(See DECISION HEIGHT.)
(See INSTRUMENT APPROACH PROCEDURE.)
(See MINIMUM DESCENT ALTITUDE.)
(See STRAIGHT-IN LANDING.)
(See VISIBILITY.)
(Refer to 14 CFR Part 91.)

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

LANDING SEQUENCE– The order in which aircraft are positioned for landing.
(See APPROACH SEQUENCE.)

LAST ASSIGNED ALTITUDE– The last altitude/flight level assigned by ATC and acknowledged by the pilot.
(See MAINTAIN.)
(Refer to 14 CFR Part 91.)

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

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

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

LF–
(See LOW FREQUENCY.)

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

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

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

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

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

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

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

LOCALIZER OFFSET– An angular offset of the localizer from the runway extended centerline in a direction away from the no transgression zone (NTZ) that increases the normal operating zone (NOZ) width. An offset requires a 50 foot increase in DH and is not authorized for CAT II and CAT III approaches.

LOCALIZER TYPE DIRECTIONAL AID– A NAVAID used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of a complete ILS and is not aligned with the runway.
(Refer to AIM.)

LOCALIZER TYPE DIRECTIONAL AID (LDA) PRECISION RUNWAY MONITOR (PRM) APPROACH – An approach, which includes a glidslope, used in conjunction with an ILS PRM or RNAV (GPS) PRM approach to an adjacent runway to conduct Simultaneous Offset Instrument Approaches (SOIA) to parallel runways whose centerlines are separated by less than 3,000 feet and at least 750 feet. NTZ monitoring is required to conduct these approaches. When the approach course spacing is less than 3,600 feet at the Missed Approach Point (MAP), the use of a PRM or other high update rate surveillance system in order to conduct simultaneous independent approaches is required.
(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.)

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 ALTITUDE ALERT SYSTEM– An automated function of the TPX-42 that alerts the controller when a Mode C transponder equipped aircraft on an IFR flight plan is below a predetermined minimum safe altitude. If requested by the pilot, Low Altitude Alert System monitoring is also available to VFR Mode C transponder equipped aircraft.

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– The frequency band between 30 and 300 kHz.

(Refer to AIM.)

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.)

N

NAS–

(See NATIONAL AIRSPACE SYSTEM.)

NATIONAL AIRSPACE SYSTEM– The common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information, and manpower and material. Included are system components shared jointly with the military.

NATIONAL BEACON CODE ALLOCATION PLAN AIRSPACE– Airspace over United States territory located within the North American continent between Canada and Mexico, including adjacent territorial waters outward to about boundaries of oceanic control areas (CTA)/Flight Information Regions (FIR).

(See FLIGHT INFORMATION REGION.)

NATIONAL FLIGHT DATA CENTER– A facility in Washington D.C., established by FAA to operate a central aeronautical information service for the collection, validation, and dissemination of aeronautical data in support of the activities of government, industry, and the aviation community. The information is published in the National Flight Data Digest.

(See NATIONAL FLIGHT DATA DIGEST.)

NATIONAL FLIGHT DATA DIGEST– A daily (except weekends and Federal holidays) publication of flight information appropriate to aeronautical charts, aeronautical publications, Notices to Airmen, or other media serving the purpose of providing operational flight data essential to safe and efficient aircraft operations.

NATIONAL SEARCH AND RESCUE PLAN– An interagency agreement which provides for the effective utilization of all available facilities in all types of search and rescue missions.

NAVAID–

(See NAVIGATIONAL AID.)

NAVAID CLASSES– VOR, VORTAC, and TACAN aids are classed according to their operational use. The three classes of NAVAIDs are:

a. T– Terminal.

b. L– Low altitude.

c. H– High altitude.

Note: The normal service range for T, L, and H class aids is found in the AIM. Certain operational requirements make it necessary to use some of these aids at greater service ranges than specified. Extended range is made possible through flight inspection determinations. Some aids also have lesser service range due to location, terrain, frequency protection, etc. Restrictions to service range are listed in Airport/Facility Directory.

NAVIGABLE AIRSPACE– Airspace at and above the minimum flight altitudes prescribed in the CFRs including airspace needed for safe takeoff and landing.

(Refer to 14 CFR Part 91.)

NAVIGATION REFERENCE SYSTEM (NRS)– The NRS is a system of waypoints developed for use within the United States for flight planning and navigation without reference to ground based navigational aids. The NRS waypoints are located in a grid pattern along defined latitude and longitude lines. The initial use of the NRS will be in the high altitude environment in conjunction with the High Altitude Redesign initiative. The NRS waypoints are intended for use by aircraft capable of point–to–point navigation.

NAVIGATION SPECIFICATION [ICAO]– A set of aircraft and flight crew requirements needed to support performance–based navigation operations within a defined airspace. There are two kinds of navigation specifications:

a. RNP specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP; e.g., RNP 4, RNP APCH.

b. RNAV specification. A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV; e.g., RNAV 5, RNAV 1.

Note: The Performance–based Navigation Manual (Doc 9613), Volume II contains detailed guidance on navigation specifications.

NAVIGATIONAL AID– Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

(See AIR NAVIGATION FACILITY.)

NBCAP AIRSPACE–

(See NATIONAL BEACON CODE ALLOCATION PLAN AIRSPACE.)

NDB–

(See NONDIRECTIONAL BEACON.)

NEGATIVE– "No," or "permission not granted," or "that is not correct."

NEGATIVE CONTACT– Used by pilots to inform ATC that:

a. Previously issued traffic is not in sight. It may be followed by the pilot's request for the controller to provide assistance in avoiding the traffic.

b. They were unable to contact ATC on a particular frequency.

NFDC–

(See NATIONAL FLIGHT DATA CENTER.)

NFDD–

(See NATIONAL FLIGHT DATA DIGEST.)

NIGHT– The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

(See ICAO term NIGHT.)

NIGHT [ICAO]– The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be specified by the appropriate authority.

Note: Civil twilight ends in the evening when the center of the sun's disk is 6 degrees below the horizon and begins in the morning when the center of the sun's disk is 6 degrees below the horizon.

NO GYRO APPROACH– A radar approach/vector provided in case of a malfunctioning gyro-compass or directional gyro. Instead of providing the pilot with headings to be flown, the controller observes the radar track and issues control instructions "turn right/left" or "stop turn" as appropriate.

(Refer to AIM.)

NO GYRO VECTOR–

(See NO GYRO APPROACH.)

NO TRANSGRESSION ZONE (NTZ)– The NTZ is a 2,000 foot wide zone, located equidistant between parallel runway final approach courses in which flight is not allowed.

NONAPPROACH CONTROL TOWER– Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the Class D airspace. The primary function of a nonapproach control tower is the sequencing of aircraft in the traffic pattern and on the landing area. Nonapproach control towers also separate aircraft operating under instrument flight rules clearances from approach controls and centers. They provide ground control services to aircraft, vehicles, personnel, and equipment on the airport movement area.

NONCOMMON ROUTE/PORTION– That segment of a North American Route between the inland navigation facility and a designated North American terminal.

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

NONDIRECTIONAL BEACON– An L/MF or UHF radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

(See AUTOMATIC DIRECTION FINDER.)

(See COMPASS LOCATOR.)

NONMOVEMENT AREAS– Taxiways and apron (ramp) areas not under the control of air traffic.

NONPRECISION APPROACH–

(See NONPRECISION APPROACH PROCEDURE.)

NONPRECISION APPROACH PROCEDURE– A standard instrument approach procedure in which no electronic glideslope is provided; e.g., VOR, TACAN, NDB, LOC, ASR, LDA, or SDF approaches.

NONRADAR– Precedes other terms and generally means without the use of radar, such as:

a. Nonradar Approach. Used to describe instrument approaches for which course guidance on final

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

Note: The abbreviation "PAR" is also used to denote preferential arrival routes in ARTCC computers.

(See GLIDEPATH.)

(See PAR.)

(See PREFERENTIAL ROUTES.)

(See ICAO term PRECISION APPROACH RADAR.)

(Refer to AIM.)

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

Note: Precision approach radars are designed to enable pilots of aircraft to be given guidance by radio communication during the final stages of the approach to land.

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

PRECISION RUNWAY MONITOR (PRM)– Provides air traffic controllers monitoring the NTZ during simultaneous close parallel approaches with high precision secondary surveillance data. A PRM is required for simultaneous independent operations when runway centerlines, or in the case of SOIA, final approach courses, are separated by less than 3,600 feet. High resolution color monitoring display (FMA) present (NTZ) surveillance track data to controllers along with detailed maps depicting approaches and no transgression zone.

(Refer to AIM)

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

PREFERENTIAL ROUTES– Preferential routes (PDRs, PARs, and PDARs) are adapted in ARTCC computers to accomplish inter/intrafacility controller coordination and to assure that flight data is posted at the proper control positions. Locations having a need for these specific inbound and outbound routes normally publish such routes in local facility bulletins, and their use by pilots minimizes flight plan route amendments. When the workload or traffic situation permits, controllers normally provide radar vectors or assign requested routes to minimize circuitous routing. Preferential routes are usually confined to one ARTCC's area and are referred to by the following names or acronyms:

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

b. Preferential Arrival Route (PAR). A specific arrival route from an appropriate en route point to an airport or terminal area. It may be included in a Standard Terminal Arrival (STAR) or a Preferred IFR Route. The abbreviation "PAR" is used primarily within the ARTCC and should not be confused with the abbreviation for Precision Approach Radar.

c. Preferential Departure and Arrival Route (PDAR). A route between two terminals which are within or immediately adjacent to one ARTCC's area. PDARs are not synonymous with Preferred IFR Routes but may be listed as such as they do accomplish essentially the same purpose.

(See PREFERRED IFR ROUTES.)

PREFERRED IFR ROUTES– Routes established between busier airports to increase system efficiency and capacity. They normally extend through one or

more ARTCC areas and are designed to achieve balanced traffic flows among high density terminals. IFR clearances are issued on the basis of these routes except when severe weather avoidance procedures or other factors dictate otherwise. Preferred IFR Routes are listed in the Airport/Facility Directory. If a flight is planned to or from an area having such routes but the departure or arrival point is not listed in the Airport/Facility Directory, pilots may use that part of a Preferred IFR Route which is appropriate for the departure or arrival point that is listed. Preferred IFR Routes are correlated with DPs and STARs and may be defined by airways, jet routes, direct routes between NAVAIDs, Waypoints, NAVAID radials/DME, or any combinations thereof.

(See CENTER'S AREA.)

(See INSTRUMENT DEPARTURE PROCEDURE.)

(See PREFERENTIAL ROUTES.)

(See STANDARD TERMINAL ARRIVAL.)

(Refer to AIRPORT/FACILITY DIRECTORY.)

(Refer to NOTICES TO AIRMEN PUBLICATION.)

PRE-FLIGHT PILOT BRIEFING–

(See PILOT BRIEFING.)

PREVAILING VISIBILITY–

(See VISIBILITY.)

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

PRM–

(See ILS PRM APPROACH and PRECISION RUNWAY MONITOR.)

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

(See ICAO term PROCEDURE TURN.)

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

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

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

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

(See FINAL APPROACH COURSE.)

(See PROCEDURE TURN.)

(See SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE.)

PROFILE DESCENT– An uninterrupted descent (except where level flight is required for speed adjustment; e.g., 250 knots at 10,000 feet MSL) from cruising altitude/level to interception of a glideslope or to a minimum altitude specified for the initial or intermediate approach segment of a nonprecision instrument approach. The profile descent normally terminates at the approach gate or where the glideslope or other appropriate minimum altitude is intercepted.

PROGRESS REPORT–

(See POSITION REPORT.)

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

PROHIBITED AREA–

(See SPECIAL USE AIRSPACE.)

(See ICAO term PROHIBITED AREA.)

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

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

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

b. An obstacle, not characterized as low and close in, whose height is no less than 300 feet above the

departure end of takeoff runway (DER) elevation, is within 10NM from the DER, and that penetrates that airport/heliport's diverse departure obstacle clearance surface (OCS).

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

(See OBSTACLE.)
(See OBSTRUCTION.)

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.)

S

SAA–
(See SPECIAL ACTIVITY AIRSPACE.)

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

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

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

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

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

SAFETY LOGIC SYSTEM ALERTS–

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

b. FALSE ALERT–

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAR–
(See SEARCH AND RESCUE.)

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

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

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

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

SDF–
(See SIMPLIFIED DIRECTIONAL FACILITY.)

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

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

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

SECNOT–
(See SECURITY NOTICE.)

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

SECTIONAL AERONAUTICAL CHARTS–
(See AERONAUTICAL CHART.)

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

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

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

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

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

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

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

point where the aircraft is established on the intermediate course or final approach course.

(See ICAO term INITIAL APPROACH SEGMENT.)

b. Intermediate Approach– The segment between the intermediate fix or point and the final approach fix.

(See ICAO term INTERMEDIATE APPROACH SEGMENT.)

c. Final Approach– The segment between the final approach fix or point and the runway, airport, or missed approach point.

(See ICAO term FINAL APPROACH SEGMENT.)

d. Missed Approach– The segment between the missed approach point or the point of arrival at decision height and the missed approach fix at the prescribed altitude.

(Refer to 14 CFR Part 97.)

(See ICAO term MISSED APPROACH PROCEDURE.)

SEPARATION– In air traffic control, the spacing of aircraft to achieve their safe and orderly movement in flight and while landing and taking off.

(See SEPARATION MINIMA.)

(See ICAO term SEPARATION.)

SEPARATION [ICAO]– Spacing between aircraft, levels or tracks.

SEPARATION MINIMA– The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.

(See SEPARATION.)

SERVICE– A generic term that designates functions or assistance available from or rendered by air traffic control. For example, Class C service would denote the ATC services provided within a Class C airspace area.

SEVERE WEATHER AVOIDANCE PLAN– An approved plan to minimize the affect of severe weather on traffic flows in impacted terminal and/or ARTCC areas. SWAP is normally implemented to provide the least disruption to the ATC system when flight through portions of airspace is difficult or impossible due to severe weather.

SEVERE WEATHER FORECAST ALERTS– Preliminary messages issued in order to alert users that a Severe Weather Watch Bulletin (WW) is being issued. These messages define areas of possible severe thunderstorms or tornado activity. The messages are unscheduled and issued as required by the Storm Prediction Center (SPC) at Norman, Oklahoma.

(See AIRMET.)

(See CONVECTIVE SIGMET.)

(See CWA.)

(See SIGMET.)

SFA–

(See SINGLE FREQUENCY APPROACH.)

SFO–

(See SIMULATED FLAMEOUT.)

SHF–

(See SUPER HIGH FREQUENCY.)

SHORT RANGE CLEARANCE– A clearance issued to a departing IFR flight which authorizes IFR flight to a specific fix short of the destination while air traffic control facilities are coordinating and obtaining the complete clearance.

SHORT TAKEOFF AND LANDING AIRCRAFT– An aircraft which, at some weight within its approved operating weight, is capable of operating from a runway in compliance with the applicable STOL characteristics, airworthiness, operations, noise, and pollution standards.

(See VERTICAL TAKEOFF AND LANDING AIRCRAFT.)

SIAP–

(See STANDARD INSTRUMENT APPROACH PROCEDURE.)

SID–

(See STANDARD INSTRUMENT DEPARTURE.)

SIDESTEP MANEUVER– A visual maneuver accomplished by a pilot at the completion of an instrument approach to permit a straight-in landing on a parallel runway not more than 1,200 feet to either side of the runway to which the instrument approach was conducted.

(Refer to AIM.)

SIGMET– A weather advisory issued concerning weather significant to the safety of all aircraft.

SIGMET advisories cover severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than 3 miles.
(See AIRMET.)
(See AWW.)
(See CONVECTIVE SIGMET.)
(See CWA.)
(See ICAO term SIGMET INFORMATION.)
(Refer to AIM.)

SIGMET INFORMATION [ICAO]– Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations.

SIGNIFICANT METEOROLOGICAL INFORMATION–
(See SIGMET.)

SIGNIFICANT POINT– A point, whether a named intersection, a NAVAID, a fix derived from a NAVAID(s), or geographical coordinate expressed in degrees of latitude and longitude, which is established for the purpose of providing separation, as a reporting point, or to delineate a route of flight.

SIMPLIFIED DIRECTIONAL FACILITY– A NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer except that the SDF course may be offset from the runway, generally not more than 3 degrees, and the course may be wider than the localizer, resulting in a lower degree of accuracy.
(Refer to AIM.)

SIMULATED FLAMEOUT– A practice approach by a jet aircraft (normally military) at idle thrust to a runway. The approach may start at a runway (high key) and may continue on a relatively high and wide downwind leg with a continuous turn to final. It terminates in landing or low approach. The purpose of this approach is to simulate a flameout.
(See FLAMEOUT.)

SIMULTANEOUS ILS APPROACHES– An approach system permitting simultaneous ILS/MLS approaches to airports having parallel runways separated by at least 4,300 feet between centerlines. Integral parts of a total system are ILS/MLS, radar, communications, ATC procedures, and appropriate airborne equipment.
(See PARALLEL RUNWAYS.)
(Refer to AIM.)

SIMULTANEOUS MLS APPROACHES–
(See SIMULTANEOUS ILS APPROACHES.)

SIMULTANEOUS OFFSET INSTRUMENT APPROACH (SOIA) – An instrument landing system comprised of an ILS PRM or RNAV (GPS) PRM approach to one runway and an offset LDA PRM with glideslope or an RNAV (GPS) PRM approach utilizing vertical guidance to another where parallel runway spaced less than 3,000 feet and at least 750 feet apart. The approach courses converge by 2.5 to 3 degrees. Closely spaced independent approach procedures apply up to the point where the approach course separation becomes 3,000 feet, at the offset MAP. From the offset MAP to the runway threshold, visual separation by the aircraft conducting the offset LDA PRM or GPS PRM approach is utilized.
(Refer to AIM)

SINGLE DIRECTION ROUTES– Preferred IFR Routes which are sometimes depicted on high altitude en route charts and which are normally flown in one direction only.
(See PREFERRED IFR ROUTES.)
(Refer to AIRPORT/FACILITY DIRECTORY.)

SINGLE FREQUENCY APPROACH– A service provided under a letter of agreement to military single-piloted turbojet aircraft which permits use of a single UHF frequency during approach for landing. Pilots will not normally be required to change frequency from the beginning of the approach to touchdown except that pilots conducting an en route descent are required to change frequency when control is transferred from the air route traffic control center to the terminal facility. The abbreviation “SFA” in the DOD FLIP IFR Supplement under “Communications” indicates this service is available at an aerodrome.

SINGLE-PILOTED AIRCRAFT– A military turbojet aircraft possessing one set of flight controls, tandem cockpits, or two sets of flight controls but operated by one pilot is considered single-piloted by ATC when determining the appropriate air traffic service to be applied.
(See SINGLE FREQUENCY APPROACH.)

SKYSPOTTER– A pilot who has received specialized training in observing and reporting inflight weather phenomena.

SLASH– A radar beacon reply displayed as an elongated target.

SLDI–
(See SECTOR LIST DROP INTERVAL.)

SLOT TIME–
(See METER FIX TIME/SLOT TIME.)

SLOW TAXI– To taxi a float plane at low power or low RPM.

SN–
(See SYSTEM STRATEGIC NAVIGATION.)

SPEAK SLOWER– Used in verbal communications as a request to reduce speech rate.

SPECIAL ACTIVITY AIRSPACE (SAA)– Any airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon aircraft operations. This airspace may be restricted areas, prohibited areas, military operations areas, air ATC assigned airspace, and any other designated airspace areas. The dimensions of this airspace are programmed into URET and can be designated as either active or inactive by screen entry. Aircraft trajectories are constantly tested against the dimensions of active areas and alerts issued to the applicable sectors when violations are predicted.
(See USER REQUEST EVALUATION TOOL.)

SPECIAL EMERGENCY– A condition of air piracy or other hostile act by a person(s) aboard an aircraft which threatens the safety of the aircraft or its passengers.

SPECIAL INSTRUMENT APPROACH PROCEDURE–
(See INSTRUMENT APPROACH PROCEDURE.)

SPECIAL USE AIRSPACE– Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace are:

a. Alert Area– Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of nonparticipating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating aircraft as well as pilots transiting the area are equally responsible for collision avoidance.

b. Controlled Firing Area– Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.

c. Military Operations Area (MOA)– A MOA is airspace established outside of Class A airspace area to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.
(Refer to AIM.)

d. Prohibited Area– Airspace designated under 14 CFR Part 73 within which no person may operate an aircraft without the permission of the using agency.
(Refer to AIM.)
(Refer to En Route Charts.)

e. Restricted Area– Airspace designated under 14 CFR Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Restricted areas are depicted on en route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.
(Refer to 14 CFR Part 73.)
(Refer to AIM.)

f. Warning Area– A warning area is airspace of defined dimensions extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning area is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

SPECIAL VFR CONDITIONS– Meteorological conditions that are less than those required for basic VFR flight in Class B, C, D, or E surface areas and in which some aircraft are permitted flight under visual flight rules.
(See SPECIAL VFR OPERATIONS.)
(Refer to 14 CFR Part 91.)

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

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

(See SPECIAL VFR CONDITIONS.)

(See ICAO term SPECIAL VFR FLIGHT.)

SPEED–

(See AIRSPEED.)

(See GROUND SPEED.)

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

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

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

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

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

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

(See TRANSPONDER.)

STA–

(See SCHEDULED TIME OF ARRIVAL.)

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

STAND BY– Means the controller or pilot must pause for a few seconds, usually to attend to other duties of a higher priority. Also means to wait as in "stand by for clearance." The caller should reestablish contact if a delay is lengthy. "Stand by" is not an approval or denial.

STANDARD INSTRUMENT APPROACH PROCEDURE (SIAP)–

(See INSTRUMENT APPROACH PROCEDURE.)

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

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See OBSTACLE DEPARTURE PROCEDURE.)

(Refer to AIM.)

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

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

STANDARD TERMINAL ARRIVAL CHARTS–

(See AERONAUTICAL CHART.)

STANDARD TERMINAL AUTOMATION REPLACEMENT SYSTEM (STARS)–

(See DTAS.)

STAR–

(See STANDARD TERMINAL ARRIVAL.)

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

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

STATIONARY RESERVATIONS– Altitude reservations which encompass activities in a fixed area. Stationary reservations may include activities,

such as special tests of weapons systems or equipment, certain U.S. Navy carrier, fleet, and anti-submarine operations, rocket, missile and drone operations, and certain aerial refueling or similar operations.

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

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

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

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

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

STOP ALTITUDE SQUAWK– Used by ATC to inform an aircraft to turn-off the automatic altitude reporting feature of its transponder. It is issued when the verbally reported altitude varies 300 feet or more from the automatic altitude report.
(See ALTITUDE READOUT.)
(See TRANSPONDER.)

STOP AND GO– A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point.
(See LOW APPROACH.)
(See OPTION APPROACH.)

STOP BURST–
(See STOP STREAM.)

STOP BUZZER–
(See STOP STREAM.)

STOP SQUAWK (Mode or Code)– Used by ATC to tell the pilot to turn specified functions of the aircraft transponder off.
(See STOP ALTITUDE SQUAWK.)
(See TRANSPONDER.)

STOP STREAM– Used by ATC to request a pilot to suspend electronic attack activity.
(See JAMMING.)

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

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

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

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

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

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

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

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

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

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

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

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

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

SUPER HIGH FREQUENCY– The frequency band between 3 and 30 gigahertz (GHz). The elevation and azimuth stations of the microwave landing system operate from 5031 MHz to 5091 MHz in this spectrum.

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

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

SURFACE AREA– The airspace contained by the lateral boundary of the Class B, C, D, or E airspace designated for an airport that begins at the surface and extends upward.

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

(Refer to FAAO JO 7110.65, Para 10–6–4, INFLIGHT CONTINGENCIES.)

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

(Refer to AIM.)

SWAP–

(See SEVERE WEATHER AVOIDANCE PLAN.)

SWSL–

(See SUPPLEMENTAL WEATHER SERVICE LOCATION.)

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

U

UHF–
(See ULTRAHIGH FREQUENCY.)

ULTRAHIGH FREQUENCY– The frequency band between 300 and 3,000 MHz. The bank of radio frequencies used for military air/ground voice communications. In some instances this may go as low as 225 MHz and still be referred to as UHF.

ULTRALIGHT VEHICLE– An aeronautical vehicle operated for sport or recreational purposes which does not require FAA registration, an airworthiness certificate, nor pilot certification. They are primarily single occupant vehicles, although some two-place vehicles are authorized for training purposes. Operation of an ultralight vehicle in certain airspace requires authorization from ATC.
(Refer to 14 CFR Part 103.)

UNABLE– Indicates inability to comply with a specific instruction, request, or clearance.

UNASSOCIATED– A radar target that does not display a data block with flight identification and altitude information.
(See ASSOCIATED.)

UNDER THE HOOD– Indicates that the pilot is using a hood to restrict visibility outside the cockpit while simulating instrument flight. An appropriately rated pilot is required in the other control seat while this operation is being conducted.
(Refer to 14 CFR Part 91.)

UNFROZEN– The Scheduled Time of Arrival (STA) tags, which are still being rescheduled by traffic management advisor (TMA) 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 AIRPORT/FACILITY DIRECTORY.)
(Refer to AIM.)

UNPUBLISHED ROUTE– A route for which no minimum altitude is published or charted for pilot use. It may include a direct route between NAVAIDs, a radial, a radar vector, or a final approach course beyond the segments of an instrument approach procedure.
(See PUBLISHED ROUTE.)
(See ROUTE.)

UNRELIABLE (GPS/WAAS)– An advisory to pilots indicating the expected level of service of the GPS and/or WAAS may not be available. Pilots must then determine the adequacy of the signal for desired use.

UPWIND LEG–
(See TRAFFIC PATTERN.)

URET–
(See USER REQUEST EVALUATION TOOL.)

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.)

USER REQUEST EVALUATION TOOL (URET)– User Request Evaluation Tool is 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.

V

VASI–
(See VISUAL APPROACH SLOPE INDICATOR.)

VCOA–
(See VISUAL CLIMB OVER AIRPORT.)

VDP–
(See VISUAL DESCENT POINT.)

VECTOR– A heading issued to an aircraft to provide navigational guidance by radar.
(See ICAO term RADAR VECTORING.)

VERIFY– Request confirmation of information; e.g., "verify assigned altitude."

VERIFY SPECIFIC DIRECTION OF TAKEOFF (OR TURNS AFTER TAKEOFF)– Used by ATC to ascertain an aircraft's direction of takeoff and/or direction of turn after takeoff. It is normally used for IFR departures from an airport not having a control tower. When direct communication with the pilot is not possible, the request and information may be relayed through an FSS, dispatcher, or by other means.
(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

VERTEX– The last fix adapted on the arrival speed segments. Normally, it will be the outer marker of the runway in use. However, it may be the actual threshold or other suitable common point on the approach path for the particular runway configuration.

VERTEX TIME OF ARRIVAL– A calculated time of aircraft arrival over the adapted vertex for the runway configuration in use. The time is calculated via the optimum flight path using adapted speed segments.

VERTICAL NAVIGATION (VNAV)– A function of area navigation (RNAV) equipment which calculates, displays, and provides vertical guidance to a profile or path.

VERTICAL SEPARATION– Separation between aircraft expressed in units of vertical distance.
(See SEPARATION.)

VERTICAL TAKEOFF AND LANDING AIRCRAFT– Aircraft capable of vertical climbs and/or descents and of using very short runways or small areas for takeoff and landings. These aircraft include, but are not limited to, helicopters.
(See SHORT TAKEOFF AND LANDING AIRCRAFT.)

VERY HIGH FREQUENCY– The frequency band between 30 and 300 MHz. Portions of this band, 108 to 118 MHz, are used for certain NAVAIDs; 118 to 136 MHz are used for civil air/ground voice communications. Other frequencies in this band are used for purposes not related to air traffic control.

VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION–
(See VOR.)

VERY LOW FREQUENCY– The frequency band between 3 and 30 kHz.

VFR–
(See VISUAL FLIGHT RULES.)

VFR AIRCRAFT– An aircraft conducting flight in accordance with visual flight rules.
(See VISUAL FLIGHT RULES.)

VFR CONDITIONS– Weather conditions equal to or better than the minimum for flight under visual flight rules. The term may be used as an ATC clearance/instruction only when:

a. An IFR aircraft requests a climb/descent in VFR conditions.

b. The clearance will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA approved noise abatement route or altitude.

c. A pilot has requested a practice instrument approach and is not on an IFR flight plan.

Note: All pilots receiving this authorization must comply with the VFR visibility and distance from cloud criteria in 14 CFR Part 91. Use of the term does not relieve controllers of their responsibility to separate aircraft in Class B and Class C airspace or TRSAs as required by FAAO JO 7110.65. When used as an ATC clearance/instruction, the term may be abbreviated "VFR;" e.g., "MAINTAIN VFR," "CLIMB/DESCEND VFR," etc.

VFR FLIGHT–
(See VFR AIRCRAFT.)

VFR MILITARY TRAINING ROUTES– Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training under VFR below 10,000 feet MSL at airspeeds in excess of 250 knots IAS.

VFR NOT RECOMMENDED– An advisory provided by a flight service station to a pilot during a preflight or inflight weather briefing that flight under visual flight rules is not recommended. To be given when the current and/or forecast weather conditions are at or below VFR minimums. It does not abrogate the pilot's authority to make his/her own decision.

VFR-ON-TOP– ATC authorization for an IFR aircraft to operate in VFR conditions at any appropriate VFR altitude (as specified in 14 CFR and as restricted by ATC). A pilot receiving this authorization must comply with the VFR visibility, distance from cloud criteria, and the minimum IFR altitudes specified in 14 CFR Part 91. The use of this term does not relieve controllers of their responsibility to separate aircraft in Class B and Class C airspace or TRSAs as required by FAAO JO 7110.65.

VFR TERMINAL AREA CHARTS–
(See AERONAUTICAL CHART.)

VFR WAYPOINT–
(See WAYPOINT.)

VHF–
(See VERY HIGH FREQUENCY.)

VHF OMNIDIRECTIONAL RANGE/TACTICAL AIR NAVIGATION–
(See VORTAC.)

VIDEO MAP– An electronically displayed map on the radar display that may depict data such as airports, heliports, runway centerline extensions, hospital emergency landing areas, NAVAIDs and fixes, reporting points, airway/route centerlines, boundaries, handoff points, special use tracks, obstructions, prominent geographic features, map alignment indicators, range accuracy marks, minimum vectoring altitudes.

VISIBILITY– The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported as statute miles, hundreds of feet or meters.

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

a. Flight Visibility– The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

b. Ground Visibility– Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.

c. Prevailing Visibility– The greatest horizontal visibility equaled or exceeded throughout at least half the horizon circle which need not necessarily be continuous.

d. Runway Visibility Value (RVV)– The visibility determined for a particular runway by a transmissometer. A meter provides a continuous indication of the visibility (reported in miles or fractions of miles) for the runway. RVV is used in lieu of prevailing visibility in determining minimums for a particular runway.

e. Runway Visual Range (RVR)– An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is used in lieu of RVV and/or prevailing visibility in determining minimums for a particular runway.

1. Touchdown RVR– The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone.

2. Mid-RVR– The RVR readout values obtained from RVR equipment located midfield of the runway.

W

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

WAAS–
(See WIDE-AREA AUGMENTATION SYSTEM.)

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

WARNING AREA–
(See SPECIAL USE AIRSPACE.)

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

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

WHEN ABLE– When used in conjunction with ATC instructions, gives the pilot the latitude to delay compliance until a condition or event has been reconciled. Unlike "pilot discretion," when instructions are prefaced "when able," the pilot is expected to seek the first opportunity to comply. Once a maneuver has been initiated, the pilot is expected to continue until the specifications of the instructions have been met. "When able," should not be used when expeditious compliance is required.

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

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

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

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

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

WING TIP VORTICES–
(See VORTICES.)

WORDS TWICE–

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

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

WORLD AERONAUTICAL CHARTS–
(See AERONAUTICAL CHART.)

WS–
(See SIGMET.)
(See WEATHER ADVISORY.)

WST–
(See CONVECTIVE SIGMET.)
(See WEATHER ADVISORY.)

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BRIEFING GUIDE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Initiated By: AJV-0
Vice President, Mission Support Services

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1. PARAGRAPH NUMBER AND TITLE: 9−2−5. PIREP FORMAT

2. BACKGROUND: The FAA is responsible for providing meteorological data to stakeholders of the NAS. This includes disseminating and distributing observations, forecasts, and warning messages that pertain to volcanic activity including volcanic ash. PIREPs for volcanic activity and volcanic ash are provided to ATC in a specified format which is specified in the AIM. These reports are then forwarded to the Volcanic Ash Advisory Centers (VAAC) and are used to issue volcanic ash SIGMETs. These changes are to comply with new ICAO guidelines as set forth by the International Airways Volcano Watch Operations Group which have been in effect since November 2010. These changes also comply with the NWS Federal Meteorological Handbook (FMH) Number 12, change 2, effective July 1, 2012.

3. CHANGE:

OLD	NEW
9-2-5. SOLICITING PIREPs	**9−2−5. SOLICITING PIREPs**
Title thru **a6**	No change
7. Volcanic eruption, ash clouds, and/or detection of sulfur dioxide (SO_2) in the cabin.	**7.** Volcanic eruption, ash clouds, and/or detection of **sulfur gases: hydrogen sulfide (H_2S) or** sulfur dioxide (SO_2) in the cabin.
(a) If only SO_2 is reported, ask the pilot if volcanic ash clouds are in the vicinity.	**(a)** If only **H_2S or SO_2** is reported, ask the pilot if volcanic ash clouds are in the vicinity.
(b) Sulphur dioxide has a sulfur-like odor.	**(b) The smell of sulfur gases in the cockpit may indicate volcanic activity that has not yet been detected or reported and/or possible entry into an ash-bearing cloud. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck match**.

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1. PARAGRAPH NUMBER AND TITLE: 9−2−10. PIREP CLASSIFICATION

2. BACKGROUND: The FAA is responsible for providing meteorological data to stakeholders of the NAS. This includes disseminating and distributing observations, forecasts, and warning messages that pertain to volcanic activity including volcanic ash. PIREPs for volcanic activity and volcanic ash are provided to ATC in a specified format which is specified in the AIM. These reports are then forwarded to the Volcanic Ash Advisory Centers (VAAC) and are used to issue volcanic ash SIGMETs. These changes are to comply with new ICAO guidelines as set forth by the International Airways Volcano Watch Operations Group which have been in effect since November 2010. These changes also comply with the NWS Federal Meteorological Handbook (FMH) Number 12, change 2, effective July 1, 2012..

3. CHANGE:

OLD	NEW
9−2−10. PIREP CLASSIFICATION	**9−2−10. PIREP CLASSIFICATION**
Title thru **a5**	No change
6. Volcanic eruption, ash clouds, and/or detection of sulfur dioxide (SO_2) in the cabin.	**6.** Volcanic eruption, ash clouds, and/or detection of **sulfur gases (H_2S or** SO_2) in the cabin.

(a) If a pilot only reported the smell of SO_2 in the cabin and confirmed no volcanic ash clouds were present, classify the report as a ROUTINE PIREP.

(b) Sulfur dioxide has a sulfur-like odor.

(a) If a pilot only reported the smell of **H_2S or** SO_2 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. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck match.

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1. PARAGRAPH NUMBER AND TITLE: 9−2−14. PIREP FORMAT

2. BACKGROUND: The FAA is responsible for providing meteorological data to stakeholders of the NAS. This includes disseminating and distributing observations, forecasts, and warning messages that pertain to volcanic activity including volcanic ash. PIREPs for volcanic activity and volcanic ash are provided to ATC in a specified format which is specified in the AIM. These reports are then forwarded to the Volcanic Ash Advisory Centers (VAAC) and are used to issue volcanic ash SIGMETs. These changes are to comply with new ICAO guidelines as set forth by the International Airways Volcano Watch Operations Group which have been in effect since November 2010. These changes also comply with the NWS Federal Meteorological Handbook (FMH) Number 12, change 2, effective July 1, 2012.

3. CHANGE:

OLD

9−2−14. PIREP FORMAT

Title thru **g2**

TBL 9−2−1
Weather Type and Symbols

Volcanic Ash

g3 through **l7**

8. Volcanic Activity. Volcanic eruption, ash clouds and/or sulfur dioxide 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 dioxide (SO_2) in the cabin and reported volcanic ash clouds, include "VA" in Weather and "SO2" or "SULPHUR SMELL" in Remarks.

NEW

9−2−14. PIREP FORMAT

No change

TBL 9−2−1
Weather Type and Symbols

Volcanic Ash **(incl. eruption, H_2S or SO_2)**

No Change

8. Volcanic Activity. Volcanic eruption, ash clouds and/or sulfur **gases** are Urgent PIREPs. Report**s** 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 (**H_2S or** SO_2) in the cabin and reported volcanic ash clouds, include "VA" in Weather and **"H2S,"** "SO2**,**" or "**SULFUR** SMELL" in Remarks.

Add	**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. H_2S, also known as sewer gas, has the odor of rotten eggs. SO_2 is identifiable as the sharp, acrid odor of a freshly struck***
(b) If a pilot only detected the smell of sulphur dioxide (SO_2) in the cabin and confirmed there were no volcanic ash clouds, classify the PIREP as Routine and include "VA" in Weather and "SO2 NO ASH" or "SULPHUR SMELL NO ASH" in Remarks.	**(b)** If a pilot only detected the smell of **sulfur gases** (**H_2S or** SO_2) 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 SULPHUR SMELL NO ASH*	***EXAMPLE–*** *UA /OV PANC240075 /TM 2010 /FL370/TP DC10 /WX VA /RM **SULFUR** SMELL NO ASH*