

**CHANGE**

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

**JO 7110.65T  
CHG 3**

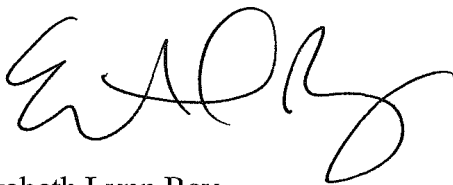
Air Traffic Organization Policy

**Effective Date:**  
August 25, 2011

**SUBJ:** Air Traffic Control

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- 1. Purpose of This Change.** This change transmits revised pages to Federal Aviation Administration Order JO 7110.65T, Air Traffic Control, and the Briefing Guide.
- 2. Audience.** This change applies to all Air Traffic Organization (ATO) personnel and anyone using ATO directives.
- 3. Where Can I Find This Change?** This change is available on the FAA Web site at [http://faa.gov/air\\_traffic/publications](http://faa.gov/air_traffic/publications) and [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://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 selected offices in Washington headquarters, regional offices, service area offices, the William J. Hughes Technical Center, and the Mike Monroney Aeronautical Center. Also, copies are sent to all air traffic field facilities and international aviation field offices; and to 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 Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.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 Lynn Ray  
Vice President, Mission Support Services  
Air Traffic Organization

Date: June 21, 2011



## Explanation of Changes Change 3

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

**a. 1-1-1. DELIVERY DATES  
4-8-5. SPECIFYING ALTITUDE**

This editorial change replaces National Imagery and Mapping Agency (NIMA) with National Geospatial-Intelligence Agency (NGA) in TBL1-1-2 and the NOTE.

**b. 2-4-20. AIRCRAFT IDENTIFICATION**

This change provides generic guidance concerning approved military services telephony.

**c. 3-1-8. LOW LEVEL WIND SHEAR/  
MICROBURST ADVISORIES**

This change identifies the term “wind shear escape” for use by aircrew experiencing a wind shear event and provides a definition of the term in the Pilot/Controller Glossary. This change cancels and incorporates N JO 7110.551, Low Level Wind Shear/Microburst Advisories, effective April 8, 2011.

**d. 3-9-4. LINE UP AND WAIT (LUAW)**

This editorial change deletes the term “USN NOT APPLICABLE” from paragraph b.

**e. 3-11-6. HELICOPTER LANDING  
CLEARANCE**

This editorial change clarifies paragraph b and phraseology.

**f. 4-2-10. CANCELLATION OF IFR FLIGHT  
PLAN**

This new paragraph creates phraseology ATC should use to request the cancellation of an IFR flight plan while the pilot is airborne or with (appropriate FSS) after landing.

**g. 5-2-11. AIR DEFENSE EXERCISE BEACON  
CODE ASSIGNMENT**

This editorial change corrects reference.

**h. 5-5-4. MINIMA**

The word “TERMINAL” is deleted.

**i. 10-2-19. REPORTING DEATH, ILLNESS, OR  
OTHER PUBLIC HEALTH RISK ON BOARD  
AIRCRAFT**

This change aligns this directive with international procedures regarding in-flight notification, specifically including those in the ICAO PANS-ATM and Annex 9. These documents specifically call for the pilot-in-command or designee to notify ATC of any suspected communicable disease or other public health risk. This change cancels and incorporates N JO 7110.546, Reporting Death, Illness, or Other Public Health Risk on Board Aircraft, effective February 1, 2011.

**j.** Additional editorial/format changes were made where necessary, to include recent organization name changes. 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 air traffic control procedures and phraseology for use by persons providing air traffic control services. Controllers 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 by it.

### 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](http://faa.gov/air_traffic/publications) and [http://employees.faa.gov/tools\\_resources/orders\\_notices/](http://employees.faa.gov/tools_resources/orders_notices/).

### 1-1-4. WHAT THIS ORDER CANCELS

FAA Order JO 7110.65S, Air Traffic Control, dated February 14, 2008, 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.

### 1-1-6. SUBMISSION CUTOFF AND EFFECTIVE DATES

This order and its changes are scheduled to be published to coincide with AIRAC dates. (See TBL 1-1-1.)

*TBL 1-1-1*  
**Publication Schedule**

Basic or Change	Cutoff Date for Submission	Effective Date of Publication
JO 7110.65T	8/27/09	2/11/10
Change 1	2/11/10	8/26/10
Change 2	7/29/10	3/10/11
Change 3	3/10/11	8/25/11
JO 7110.65U	8/25/11	2/9/12

### 1-1-7. DELIVERY DATES

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

b. If a military facility **has not** received the order/changes at least 30 days before the above effective dates, the facility shall notify its appropriate military headquarters. (See TBL 1-1-2.)

*TBL 1-1-2*  
**Military Distribution Contacts**

Military Headquarters	DSN	Commercial
U.S. Army USAASA	656-4868	(703) 806-4868
U.S. Air Force		Contact Local *NGA Customer Account Representative
U.S. Navy CNO (N885F)	664-7727	(703) 604-7727
*NGA-National Geospatial/Intelligence Agency		

### 1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

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 to Headquarters, FAA, Vice President, Mission Support Services, attention: Airspace Services.

**1-1-9. PROCEDURAL LETTERS OF AGREEMENT**

Procedures/minima which are applied jointly or otherwise require the cooperation or concurrence of more than one facility/organization must be documented in a letter of agreement. Letters of agreement only supplement this order. Any minima they specify must not be less than that specified herein unless appropriate military authority has authorized application of reduced separation between military aircraft.

**REFERENCE-**  
FAAO JO 7110.65, Para 2-1-1 ATC Service.  
FAAO JO 7210.3, Para 4-3-1, Letters of Agreement.

**1-1-10. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS**

a. Exceptional or unusual requirements may dictate procedural deviations or supplementary procedures to this order. Prior to implementing supplemental or any procedural deviation that alters the level, quality, or degree of service, obtain prior approval from the Vice President, Mission Support Services.

b. If military operations or facilities are involved, prior approval by the following appropriate headquarters is required for subsequent interface with FAA. (See TBL 1-1-3.)

*TBL 1-1-3*  
**Military Operations Interface Offices**

Branch	Address
U.S. Navy	Department of the Navy Chief of Naval Operations N-885F 2000 Navy Pentagon Washington, D.C. 20350-2000
U.S. Air Force	HQ AFFSA/A3A Bldg 4 Room 240 6500 S. MacArthur Blvd Oklahoma City, OK 73169 Email: hqaffsa.a3a@tinker.af.mil
U.S. Army	Director USAASA (MOAS-AS) 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060-5582

**NOTE-**  
*Terminal: Headquarters USAF has delegated to Major Air Command, Directors of Operations (MAJCOM/DOs) authority to reduce same runway separation standards for military aircraft. These are specified and approved by affected ATC and user units. When applied, appropriate advisories may be required; e.g., “(A/C call sign) continue straight ahead on right side; F-16 landing behind on left.” “(A/C call sign) hold position on right side; F-5 behind on left.”*

**REFERENCE-**  
FAAO JO 7110.65, Para 3-1-3 Use of Active Runways.

**1-1-11. SAFETY MANAGEMENT SYSTEM (SMS)**

Every employee is responsible to ensure the safety of equipment and procedures used in the provision of services within the National Airspace System (NAS). Risk assessment techniques and mitigations, as appropriate, are intended for implementation of any planned safety significant changes within the NAS, as directed by FAA Order 1100.161, Air Traffic Safety Oversight. Direction regarding the SMS and its application can be found in the FAA Safety Management System Manual and FAA Order 1100.161. The SMS will be implemented through a period of transitional activities. (Additional information pertaining to these requirements and processes can be obtained by contacting the service area offices.)

**1-1-12. REFERENCES TO FAA NON-AIR TRAFFIC ORGANIZATIONS**

When references are made to regional office organizations that are not part of the Air Traffic Organization (i.e., Communications Center, Flight Standards, Airport offices, etc.), the facility should contact the FAA region where the facility is physically located – not the region where the facility’s service area office is located.

**1-1-13. DISTRIBUTION**

This order is distributed to selected offices in Washington headquarters, regional offices, service area offices, the William J. Hughes Technical Center, and the Mike Monroney Aeronautical Center. Also, copies are sent to all air traffic field facilities and international aviation field offices; and to interested aviation public.

**EXAMPLE-**

“American Fifty-Two.”  
 “Delta One Hundred.”  
 “Eastern Metro One Ten.”  
 “General Motors Thirty Fifteen.”  
 “United One Zero One.”  
 “Delta Zero One Zero.”  
 “TWA Ten Zero Four.”

**NOTE-**

*Air carrier and other civil aircraft having FAA authorized call signs may be pronounced using single digits if necessary for clarity.*

**EXAMPLE-**

“United Five One Seven.”  
 “United Five Seven Zero.”

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

**EXAMPLE-**

“Tango Mooney Five Five Five Two Quebec.”  
 “Tango November One Two Three Four.”

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

**EXAMPLE-**

“Lifeguard Delta Fifty-One.”

**5.** Civilian air ambulance. State the word “LIFEGUARD” followed by the numbers/letters of the registration number.

**EXAMPLE-**

“Lifeguard Two Six Four Six.”

**6.** U.S. military. State one of the following:

**(a)** The service name, followed by the word “copter,” when appropriate, and the last 5 digits of the serial number.

**EXAMPLE-**

“Navy Five Six Seven One Three.”  
 “Coast Guard Six One Three Two Seven.”  
 “Air Guard One Three Five Eight Six.”  
 “Army Copter Three Two One Seven Six.”

**NOTE-**

*If aircraft identification becomes a problem, the procedures reflected in FAAO JO 7210.3, Facility Operation and Administration, para 2-1-13, Aircraft Identification Problems, will apply.*

**(b)** Special military operations. State one of the following followed by the last 5 digits of the serial number:

**(c)** Air evacuation flights. “AIR EVAC,” “MARINE AIR EVAC,” or “NAVY AIR EVAC.”

**EXAMPLE-**

“Air Evac One Seven Six Five Two.”

**(d)** Rescue flights. (Service name) “RESCUE.”

**EXAMPLE-**

“Air Force Rescue Six One Five Seven Niner.”

**(e)** Air Mobility Command. “REACH.”

**EXAMPLE-**

“Reach Seven Eight Five Six Two.”

**(f)** Special Air Mission. “SAM.”

**EXAMPLE-**

“Sam Niner One Five Six Two.”

**(g)** USAF Contract Aircraft “LOGAIR.”

**EXAMPLE-**

“Logair Seven Five Eight Two Six.”

**(h)** Military tactical and training:

**(1)** U.S. Air Force, Air National Guard, Military District of Washington priority aircraft, and USAF civil disturbance aircraft. Pronounceable words of 3 to 6 letters followed by a 1 to 5 digit number.

**EXAMPLE-**

“Paul Two Zero.”  
 “Pat One Five Seven.”  
 “Gaydog Four.”

**NOTE-**

*When the “Z” suffix described in para 2-3-7 USAF/USN Undergraduate Pilots, is added to identify aircraft piloted by USAF undergraduate pilots, the call sign will be limited to a combination of six characters.*

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

**EXAMPLE-**

“Navy Golf Alfa Two One.”  
 “Marine Four Charlie Two Three Six.”

**7.** Presidential aircraft and Presidential family aircraft:

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

**EXAMPLE-**  
 "Air Force One."  
 "Army One."  
 "Marine One."

(b) When the President is aboard a civil aircraft, state the words "Executive One."

(c) When a member of the President's family is aboard any aircraft, if the U.S. Secret Service or the White House Staff determines it is necessary, state the words "Executive One Foxtrot."

**REFERENCE-**  
 FAAO JO 7110.65, Para 2-1-4 Operational Priority.

**8. Vice Presidential aircraft:**

(a) When the Vice President is aboard a military aircraft, state the name of the military service, followed by the word "Two."

**EXAMPLE-**  
 "Air Force Two."  
 "Army Two."  
 "Marine Two."

(b) When the Vice President is aboard a civil aircraft, state the words "Executive Two."

(c) When a member of the Vice President's family is aboard any aircraft, if the U.S. Secret Service or the White House Staff determines it is necessary, state the words "Executive Two Foxtrot."

**REFERENCE-**  
 FAAO JO 7110.65, Para 2-1-4 Operational Priority.

**9. DOT and FAA flights.** The following alphanumeric identifiers and radio/interphone call signs are established for use in air/ground communications when the Secretary of Transportation, Deputy Secretary of Transportation, FAA Administrator or FAA Deputy Administrator have a requirement to identify themselves. (See TBL 2-4-2.)

**TBL 2-4-2**  
**DOT and FAA Alphanumeric Identifiers and Call Signs**

Official	Identifier	Call Sign
Secretary of Transportation	DOT-1	Transport-1
Deputy Secretary of Transportation	DOT-2	Transport-2
Administrator, Federal Aviation Administration	FAA-1	Safeair-1
Deputy Administrator, Federal Aviation Administration	FAA-2	Safeair-2

**10. Other Special Flights.**

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

**EXAMPLE-**  
 "Romeo Alfa Charlie One Six Five Three."

(b) Flight Inspection of navigational aids. State the call sign "FLIGHT CHECK" followed by the digits of the registration number.

**EXAMPLE-**  
 "Flight Check Three Niner Six Five Four."

(c) USAF aircraft engaged in aerial sampling missions. State the call sign "SAMP" followed by the last three digits of the serial number.

**EXAMPLE-**  
 "SAMP Three One Six."

**REFERENCE-**  
 FAAO JO 7110.65, Para 9-2-17 SAMP.

**11. Use a pilot's name in identification of an aircraft only in special or emergency situations.**

**b. Foreign registry.** State one of the following:

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

**EXAMPLE-**  
 "Stationair F-L-R-B."  
 "C-F-L-R-B."

**NOTE-**  
 Letters may be spoken individually or phonetically.

**2. Air carrier.** The abbreviated name of the operating company followed by the letters or digits of the registration or call sign.

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

**3. The flight number in group form, or you may use separate digits if that is the format used by the pilot.**

**EXAMPLE-**  
 "Scandinavian Sixty-eight."  
 "Scandinavian Six Eight."

**4. Foreign Military.** Except for military services identified in FAA Order JO 7340.2, Contractions, the name of the country and the military service followed by the separate digits or letters of the registration or call sign. For military services listed in FAA Order JO 7340.2, the approved telephony followed by the separate digits of the serial number.

**EXAMPLE–**

*“Canforce Five Six Two Seven.”*

*“Brazilian Air Force Five Three Two Seven Six.”*

## 2–4–21. DESCRIPTION OF AIRCRAFT TYPES

Except for heavy aircraft, describe aircraft as follows when issuing traffic information.

### a. Military:

1. Military designator, with numbers spoken in group form, or

2. Service and type, or

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

### b. Air Carrier:

1. Manufacturer’s model or designator.

2. Add the manufacturer’s name, company name or other identifying features when confusion or misidentification is likely.

**EXAMPLE–**

*“L–Ten–Eleven.”*

*“American MD–Eighty. Seven Thirty–Seven.”*

*“Boeing Seven Fifty–Seven.”*

**NOTE–**

*Pilots of “interchange” aircraft are expected to inform the tower on the first radio contact the name of the operating company and trip number followed by the company name, as displayed on the aircraft, and the aircraft type.*

### c. General Aviation and Air Taxi:

1. Manufacturer’s model, or designator.

2. Manufacturer’s name, or add color when considered advantageous.

**EXAMPLE–**

*“Tri–Pacer”*

*“P A Twenty–Two.”*

*“Cessna Four–Oh–One.”*

*“Blue and white King Air.”*

*“Airliner.”*

*“Sikorsky S–Seventy–Six.”*

d. When issuing traffic information to aircraft following a heavy jet, specify the word “heavy” before the manufacturer’s name and model.

**EXAMPLE–**

*“Heavy L–Ten–Eleven.”*

*“Heavy C–Five.”*

*“Heavy Boeing Seven Forty–Seven.”*

**REFERENCE–**

*FAAO JO 7110.65, Para 2–1–21 Traffic Advisories.*

## 2–4–22. AIRSPACE CLASSES

A, B, C, D, E, and G airspace are pronounced in the ICAO phonetics for clarification. The term “Class” may be dropped when referring to airspace in pilot/controller communications.

**EXAMPLE–**

*“Cessna 123 Mike Romeo cleared to enter Bravo airspace.”*

*“Sikorsky 123 Tango Sierra cleared to enter New York Bravo airspace.”*





### 3-1-8. LOW LEVEL WIND SHEAR/ MICROBURST ADVISORIES

a. When low level wind shear/microburst is reported by pilots, Integrated Terminal Weather System (ITWS), or detected on wind shear detection systems such as LLWAS NE++, LLWAS-RS, WSP, or TDWR, controllers must issue the alert to all arriving and departing aircraft. Continue the alert to aircraft until it is broadcast on the ATIS and pilots indicate they have received the appropriate ATIS code. A statement must be included on the ATIS for 20 minutes following the last report or indication of the wind shear/microburst.

#### PHRASEOLOGY-

LOW LEVEL WIND SHEAR (or MICROBURST, as appropriate) ADVISORIES IN EFFECT.

#### NOTE-

Some aircraft are equipped with Predictive Wind Shear (PWS) alert systems that warn the flight crew of a potential wind shear up to 3 miles ahead and 25 degrees either side of the aircraft heading at or below 1200' AGL. Pilot reports may include warnings received from PWS systems.

#### REFERENCE-

FAAO JO 7110.65, Para 2-6-3 PIREP Information.

FAAO JO 7110.65, Para 2-9-3 Content.

FAAO JO 7110.65, Para 3-10-1 Landing Information.

b. At facilities without ATIS, ensure that wind shear/microburst information is broadcast to all arriving and departing aircraft for 20 minutes following the last report or indication of wind shear/microburst.

1. At locations equipped with LLWAS, the local controller must provide wind information as follows:

#### NOTE-

The LLWAS is designed to detect low level wind shear conditions around the periphery of an airport. It does not detect wind shear beyond that limitation.

#### REFERENCE-

FAAO JO 7210.3, Para 10-3-3, Low Level Wind Shear/Microburst Detection Systems.

(a) If an alert is received, issue the airport wind and the displayed field boundary wind.

#### PHRASEOLOGY-

WIND SHEAR ALERT. AIRPORT WIND (direction) AT (velocity). (Location of sensor) BOUNDARY WIND (direction) AT (velocity).

(b) If multiple alerts are received, issue an advisory that there are wind shear alerts in two/several/all quadrants. After issuing the advisory, issue the airport wind in accordance with para 3-9-1,

Departure Information, followed by the field boundary wind most appropriate to the aircraft operation.

#### PHRASEOLOGY-

WIND SHEAR ALERTS TWO/SEVERAL/ALL QUADRANTS. AIRPORT WIND (direction) AT (velocity). (Location of sensor) BOUNDARY WIND (direction) AT (velocity).

(c) If requested by the pilot, issue specific field boundary wind information even though the LLWAS may not be in alert status.

#### NOTE-

The requirements for issuance of wind information remain valid as appropriate under this paragraph, para 3-9-1 Departure Information and para 3-10-1 Landing Information.

2. Wind shear detection systems, including TDWR, WSP, LLWAS NE++ and LLWAS-RS provide the capability of displaying microburst alerts, wind shear alerts, and wind information oriented to the threshold or departure end of a runway. When detected, the associated ribbon display allows the controller to read the displayed alert without any need for interpretation.

(a) If a wind shear or microburst alert is received for the runway in use, issue the alert information for that runway to arriving and departing aircraft as it is displayed on the ribbon display.

#### PHRASEOLOGY-

(Runway) (arrival/departure) WIND SHEAR/MICROBURST ALERT, (windspeed) KNOT GAIN/LOSS, (location).

#### EXAMPLE-

17A MBA 40K - 3MF

#### PHRASEOLOGY-

RUNWAY 17 ARRIVAL MICROBURST ALERT 40 KNOT LOSS 3 MILE FINAL.

#### EXAMPLE-

17D WSA 25K+ 2MD

#### PHRASEOLOGY-

RUNWAY 17 DEPARTURE WIND SHEAR ALERT 25 KNOT GAIN 2 MILE DEPARTURE.

(b) If requested by the pilot or deemed appropriate by the controller, issue the displayed wind information oriented to the threshold or departure end of the runway.

#### PHRASEOLOGY-

(Runway) DEPARTURE/THRESHOLD WIND (direction) AT (velocity).

(c) LLWAS NE++ or LLWAS–RS may detect a possible wind shear/microburst at the edge of the system but may be unable to distinguish between a wind shear and a microburst. A wind shear alert message will be displayed, followed by an asterisk, advising of a possible wind shear outside of the system network.

**NOTE–**

LLWAS NE++ when associated with TDWR can detect wind shear/microbursts outside the network if the TDWR fails.

**PHRASEOLOGY–**

(Appropriate wind or alert information) **POSSIBLE WIND SHEAR OUTSIDE THE NETWORK.**

(d) If unstable conditions produce multiple alerts, issue an advisory of multiple wind shear/microburst alerts followed by specific alert or wind information most appropriate to the aircraft operation.

**PHRASEOLOGY–**

**MULTIPLE WIND SHEAR/MICROBURST ALERTS** (specific alert or wind information).

(e) The LLWAS NE++ and LLWAS–RS are designed to operate with as many as 50 percent of the total sensors inoperative. When all three remote sensors designated for a specific runway arrival or departure wind display line are inoperative then the LLWAS NE++ and LLWAS–RS for that runway arrival/departure must be considered out of service. When a specific runway arrival or departure wind display line is inoperative and wind shear/microburst activity is likely; (for example, frontal activity, convective storms, PIREPs), the following statement must be included on the ATIS, “WIND SHEAR AND MICROBURST INFORMATION FOR RUNWAY (runway number) ARRIVAL/DEPARTURE NOT AVAILABLE.”

**NOTE–**

The geographic situation display (GSD) is a supervisory planning tool and is not intended to be a primary tool for microburst or wind shear.

**c. Wind Shear Escape Procedures.**

1. If an aircraft under your control informs you that it is performing a wind shear escape, do not issue control instructions that are contrary to pilot actions. ATC should continue to provide safety alerts regarding terrain or obstacles and traffic advisories for the escape aircraft, as appropriate.

**EXAMPLE–**

“Denver Tower, United 1154, wind shear escape.”

**NOTE–**

Aircraft that execute a wind shear escape maneuver will usually conduct a full power climb straight ahead and will not accept any control instructions until onboard systems advise the crew or the pilot in command (PIC) advises ATC that the escape maneuver is no longer required.

**REFERENCE–**

P/CG Term – Wind Shear Escape

2. Unless advised by additional aircraft that they are also performing an escape procedure, do not presume that other aircraft in the proximity of the escape aircraft are responding to wind shear alerts/events as well. Continue to provide control instructions, safety alerts, and traffic advisories, as appropriate.

3. Once the responding aircraft has initiated a wind shear escape maneuver, the controller is not responsible for providing standard separation between the aircraft that is responding to an escape and any other aircraft, airspace, terrain, or obstacle. Responsibility for separation resumes when one of the following conditions are met:

**(a) Departures:**

(1) A crew member informs ATC that the wind shear escape maneuver is complete and ATC observes that standard separation has been re-established, or

(2) A crew member informs ATC that the escape maneuver is complete and has resumed a previously assigned departure clearance/routing.

**(b) Arrivals:**

(1) A crew member informs ATC that the escape maneuver is complete, and

(2) The aircrew has executed an alternate clearance or requested further instructions.

**NOTE–**

When the escape procedure is complete, the flight crew must advise ATC they are returning to their previously assigned clearance or request further instructions.

**EXAMPLE–**

“Denver Tower, United 1154, wind shear escape complete, resuming last assigned heading/(name) DP/clearance.”

Or

“Denver Tower, United 1154, wind shear escape complete, request further instructions.”

### 3-1-9. USE OF TOWER RADAR DISPLAYS

a. Uncertified tower display workstations shall be used only as an aid to assist controllers in visually locating aircraft or in determining their spatial relationship to known geographical points. Radar services and traffic advisories are not to be provided using uncertified tower display workstations. General information may be given in an easy to understand manner, such as “to your right” or “ahead of you.”

**EXAMPLE-**

“Follow the aircraft ahead of you passing the river at the stacks.” “King Air passing left to right.”

**REFERENCE-**

FAAO JO 7210.3, Para 10-5-3, Functional Use of Certified Tower Radar Displays.

b. Local controllers may use certified tower radar displays for the following purposes:

1. To determine an aircraft’s identification, exact location, or spatial relationship to other aircraft.

**NOTE-**

This authorization does not alter visual separation procedures. When employing visual separation, the provisions of para 7-2-1 Visual Separation, apply unless otherwise authorized by the Vice President of Terminal Service.

**REFERENCE-**

FAAO JO 7110.65, Para 5-3-2 Primary Radar Identification Methods.  
FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.  
FAAO JO 7110.65, Para 5-3-4 Terminal Automation Systems Identification Methods.

2. To provide aircraft with radar traffic advisories.

3. To provide a direction or suggested headings to VFR aircraft as a method for radar identification or as an advisory aid to navigation.

**PHRASEOLOGY-**

(Identification), *PROCEED* (direction)-*BOUND*, (other instructions or information as necessary),

or

(identification), *SUGGESTED HEADING* (degrees), (other instructions as necessary).

**NOTE-**

It is important that the pilot be aware of the fact that the directions or headings being provided are suggestions or are advisory in nature. This is to keep the pilot from being inadvertently misled into assuming that radar vectors (and

other associated radar services) are being provided when, in fact, they are not.

4. To provide information and instructions to aircraft operating within the surface area for which the tower has responsibility.

**EXAMPLE-**

“TURN BASE LEG NOW.”

**NOTE-**

Unless otherwise authorized, tower radar displays are intended to be an aid to local controllers in meeting their responsibilities to the aircraft operating on the runways or within the surface area. They are not intended to provide radar benefits to pilots except for those accrued through a more efficient and effective local control position. In addition, local controllers at nonapproach control towers must devote the majority of their time to visually scanning the runways and local area; an assurance of continued positive radar identification could place distracting and operationally inefficient requirements upon the local controller. Therefore, since the requirements of para 5-3-1 Application, cannot be assured, the radar functions prescribed above are not considered to be radar services and pilots should not be advised of being in “radar contact.”

c. Additional functions may be performed provided the procedures have been reviewed and authorized by appropriate management levels.

**REFERENCE-**

FAAO JO 7110.65, Para 5-5-4 Minima.

### 3-1-10. OBSERVED ABNORMALITIES

When requested by a pilot or when you deem it necessary, inform an aircraft of any observed abnormal aircraft condition.

**PHRASEOLOGY-**

(Item) *APPEAR/S* (observed condition).

**EXAMPLE-**

“Landing gear appears up.”

“Landing gear appears down and in place.”

“Rear baggage door appears open.”

### 3-1-11. SURFACE AREA RESTRICTIONS

a. If traffic conditions permit, approve a pilot’s request to cross Class C or Class D surface areas or exceed the Class C or Class D airspace speed limit. Do not, however, approve a speed in excess of 250 knots (288 mph) unless the pilot informs you a higher minimum speed is required.

**NOTE-**

14 CFR Section 91.117 permits speeds in excess of

250 knots (288 mph) when so required or recommended in the airplane flight manual or required by normal military operating procedures.

**REFERENCE-**

FAAO JO 7110.65, Para 2-1-16 Surface Areas.

**b.** Do not approve a pilot's request or ask a pilot to conduct unusual maneuvers within surface areas of Class B, C, or D airspace if they are not essential to the performance of the flight.

**EXCEPTION.** A pilot's request to conduct aerobatic practice activities may be approved, when operating in accordance with a letter of agreement, and the activity will have no adverse effect on safety of the air traffic operation or result in a reduction of service to other users.

**REFERENCE-**

FAAO JO 7210.3, Para 5-4-7, Aerobatic Practice Areas.

**NOTE-**

These unusual maneuvers include unnecessary low passes, unscheduled flybys, practice instrument approaches to altitudes below specified minima (unless a landing or touch-and-go is to be made), or any so-called "buzz jobs" wherein a flight is conducted at a low altitude and/or a high rate of speed for thrill purposes. Such maneuvers increase hazards to persons and property and contribute to noise complaints.

### 3-1-12. VISUALLY SCANNING RUNWAYS

**a.** Local controllers shall visually scan runways to the maximum extent possible.

**b.** Ground control shall assist local control in visually scanning runways, especially when runways are in close proximity to other movement areas.

### 3-1-13. ESTABLISHING TWO-WAY COMMUNICATIONS

Pilots are required to establish two-way radio communications before entering the Class D airspace. If the controller responds to a radio call with, "(a/c call sign) standby," radio communications have been established and the pilot can enter the Class D airspace. If workload or traffic conditions prevent immediate provision of Class D services, inform the pilot to remain outside the Class D airspace until conditions permit the services to be provided.

**PHRASEOLOGY-**

(A/c call sign) **REMAIN OUTSIDE DELTA AIRSPACE AND STANDBY.**

**REFERENCE-**

FAAO JO 7110.65, Para 7-2-1 Visual Separation.

### 3-1-14. GROUND OPERATIONS WHEN VOLCANIC ASH IS PRESENT

When volcanic ash is present on the airport surface, and to the extent possible:

**a.** Avoid requiring aircraft to come to a full stop while taxiing.

**b.** Provide for a rolling takeoff for all departures.

**NOTE-**

When aircraft begin a taxi or takeoff roll on ash contaminated surfaces, large amounts of volcanic ash will again become airborne. This newly airborne ash will significantly reduce visibility and will be ingested by the engines of following aircraft.

**REFERENCE-**

AIM, Para 7-5-9, Flight Operations in Volcanic Ash.

### 3-1-15. GROUND OPERATIONS RELATED TO THREE-HOUR TARMAC RULE

When a request is made by the pilot-in-command of an aircraft to return to the ramp, gate, or alternate deplaning area due to the Three-hour Tarmac Rule:

**a.** Provide the requested services as soon as operationally practical, or

**b.** Advise the pilot-in-command that the requested service cannot be accommodated because it would create a significant disruption to air traffic operations.

**NOTE-**

Facility procedures, including actions that constitute a significant disruption, vary by airport and must be identified in the facility directive pertaining to the Three-hour Tarmac Rule.

**PHRASEOLOGY-**

(Identification) **TAXI TO** (ramp, gate, or alternate deplaning area) **VIA** (route).

or

(Identification) **EXPECT A** (number) **MINUTE DELAY DUE TO** (ground and/or landing and/or departing) **TRAFFIC,**

or

*(Identification) UNABLE DUE TO OPERATIONAL DISRUPTION.*

**REFERENCE-**

*DOT Rule, Enhancing Airline Passenger Protections, 14 CFR, Part 259, commonly referred to as the Three-hour Tarmac Rule.*



## Section 9. Departure Procedures and Separation

### 3-9-1. DEPARTURE INFORMATION

Provide current departure information, as appropriate, to departing aircraft.

a. Departure information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code.

b. Issue departure information by including the following:

1. Runway in use. (May be omitted if pilot states “have the numbers.”)

2. Surface wind from direct readout dial, wind shear detection system, or automated weather observing system information display. (May be omitted if pilot states “have the numbers.”)

3. Altimeter setting. (May be omitted if pilot states “have the numbers.”)

**REFERENCE-**  
FAAO JO 7110.65, Para 2-7-1 Current Settings.

c. Time, when requested.

d. Issue the official ceiling and visibility, when available, to a departing aircraft before takeoff as follows:

1. To a VFR aircraft when weather is below VFR conditions.

2. To an IFR aircraft when weather is below VFR conditions or highest takeoff minima, whichever is greater.

**NOTE-**  
Standard takeoff minimums are published in 14 CFR Section 91.175(f). Takeoff minima other than standard are prescribed for specific airports/runways and published in a tabular form supplement to the FAA instrument approach procedures charts and appropriate FAA Forms 8260.

e. Issue the route for the aircraft/vehicle to follow on the movement area in concise and easy to understand terms. The taxi clearance must include the specific route to follow.

f. **USAF NOT APPLICABLE.** An advisory to “check density altitude” when appropriate.

**REFERENCE-**  
FAAO JO 7210.3, Para 2-10-6, Broadcast Density Altitude Advisory.

g. Issue braking action for the runway in use as received from pilots or the airport management when Braking Action Advisories are in effect.

**REFERENCE-**  
FAAO JO 7110.65, Para 2-7-2 Altimeter Setting Issuance Below Lowest Usable FL.  
FAAO JO 7110.65, Para 3-1-8 Low Level Wind Shear/Microburst Advisories.  
FAAO JO 7110.65, Para 3-3-5 Braking Action Advisories.  
P/CG Term- Braking Action Advisories.

### 3-9-2. DEPARTURE DELAY INFORMATION

USA/USAF/USN NOT APPLICABLE

When gate-hold procedures are in effect, issue the following departure delay information as appropriate:

**REFERENCE-**  
FAAO JO 7210.3, Para 10-4-3, Gate Hold Procedures.

a. Advise departing aircraft the time at which the pilot can expect to receive engine startup advisory.

**PHRASEOLOGY-**  
*GATE HOLD PROCEDURES ARE IN EFFECT. ALL AIRCRAFT CONTACT (position) ON (frequency) FOR ENGINE START TIME. EXPECT ENGINE START/TAXI (time).*

b. Advise departing aircraft when to start engines and/or to advise when ready to taxi.

**PHRASEOLOGY-**  
*START ENGINES, ADVISE WHEN READY TO TAXI,*

*or*

*ADVISE WHEN READY TO TAXI.*

c. If the pilot requests to hold in a delay absorbing area, the request shall be approved if space and traffic conditions permit.

d. Advise all aircraft on GC/FD frequency upon termination of gate hold procedures.

**PHRASEOLOGY-**  
*GATE HOLD PROCEDURES NO LONGER IN EFFECT.*

### 3-9-3. DEPARTURE CONTROL INSTRUCTIONS

Inform departing IFR, SVFR, VFR aircraft receiving radar service, and TRSA VFR aircraft of the following:

**a. Before takeoff.**

**1.** Issue the appropriate departure control frequency and beacon code. The departure control frequency may be omitted if a SID has been or will be assigned and the departure control frequency is published on the SID.

**PHRASEOLOGY-**

*DEPARTURE FREQUENCY (frequency), SQUAWK (code).*

**2.** Inform all departing IFR military turboprop/turbojet aircraft (except transport and cargo types) to change to departure control frequency. If the local controller has departure frequency override, transmit urgent instructions on this frequency. If the override capability does not exist, transmit urgent instructions on the emergency frequency.

**PHRASEOLOGY-**

*CHANGE TO DEPARTURE.*

**3. USAF.** USAF control towers are authorized to inform all departing IFR military transport/cargo type aircraft operating in formation flight to change to departure control frequency before takeoff.

**b. After takeoff.**

**1.** When the aircraft is about 1/2 mile beyond the runway end, instruct civil aircraft, and military transport, and cargo types to contact departure control, provided further communication with you is not required.

**2.** Do not request departing military turboprop/turbojet aircraft (except transport and cargo types) to make radio frequency or radar beacon changes before the aircraft reaches 2,500 feet above the surface.

**REFERENCE-**

*FAAO JO 7110.65, Para 7-2-1 Visual Separation.*

### 3-9-4. LINE UP AND WAIT (LUAW)

**a.** The intent of LUAW is to position aircraft for an imminent departure. Authorize an aircraft to line up and wait, except as restricted in subpara g, when takeoff clearances cannot be issued because of traffic.

Issue traffic information to any aircraft so authorized. Traffic information may be omitted when the traffic is another aircraft which has landed on or is taking off the runway and is clearly visible to the holding aircraft. Do not use conditional phrases such as “behind landing traffic” or “after the departing aircraft.”

**b.** First state the runway number followed by the line up and wait clearance.

**PHRASEOLOGY-**

*RUNWAY (number), LINE UP AND WAIT.*

**c. Procedures.**

**1.** At facilities without a safety logic system or facilities with the safety logic system in the limited configuration:

**(a)** Do not issue a landing clearance to an aircraft requesting a full-stop, touch-and-go, stop-and-go, option, or unrestricted low approach on the same runway with an aircraft that is holding in position or taxiing to line up and wait until the aircraft in position starts takeoff roll.

**(b)** Do not authorize an aircraft to LUAW if an aircraft has been cleared to land, touch-and-go, stop-and-go, option, or unrestricted low approach on the same runway.

**PHRASEOLOGY-**

*RUNWAY (number), CONTINUE, TRAFFIC HOLDING IN POSITION.*

**EXAMPLE-**

*“American 528, Runway Two-Three continue, traffic holding in position.”*

**2.** Except when reported weather conditions are less than ceiling 800 feet or visibility less than 2 miles, facilities using the safety logic system in the full core alert mode:

**(a)** May issue a landing clearance for a full-stop, touch-and-go, stop-and-go, option, or unrestricted low approach to an arriving aircraft with an aircraft holding in position or taxiing to LUAW on the same runway, or

**(b)** May authorize an aircraft to LUAW when an aircraft has been cleared for a full stop, touch-and-go, stop-and-go, option, or unrestricted low approach on the same runway.

**REFERENCE-**

*FAAO JO 7110.65, Para 3-10-5 Landing Clearance.*



### 3-11-4. HELICOPTER ARRIVAL SEPARATION

Separate an arriving helicopter from other helicopters by ensuring that it does not land until one of the following conditions exists:

- a. A preceding, arriving helicopter has come to a stop or taxied off the landing area. (See FIG 3-11-3 and FIG 3-11-4.)

FIG 3-11-3

Helicopter Arrival Separation

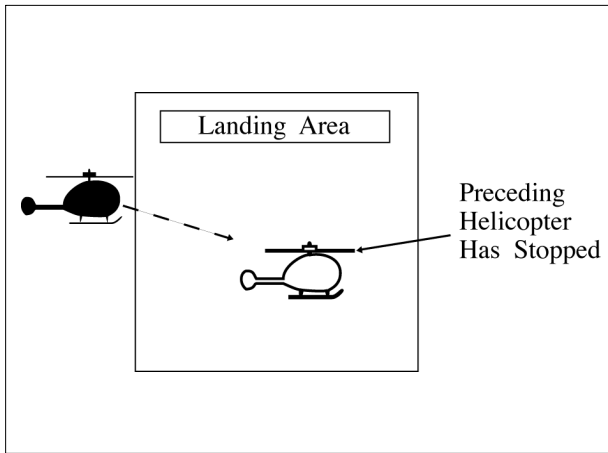
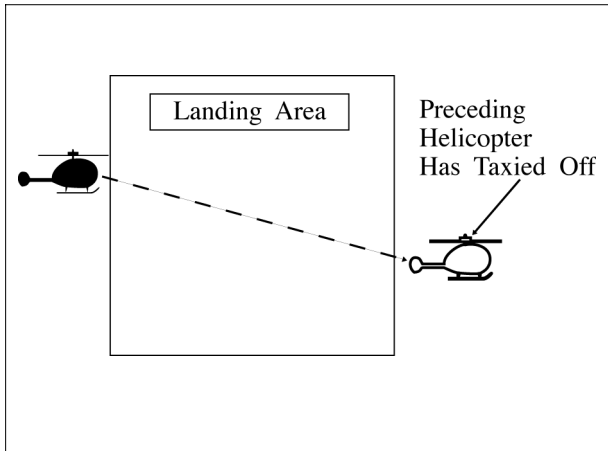


FIG 3-11-4

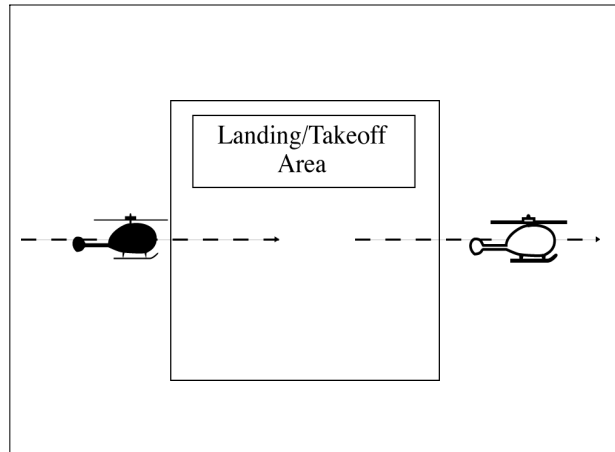
Helicopter Arrival Separation



- b. A preceding, departing helicopter has left the landing area. (See FIG 3-11-5.)

FIG 3-11-5

Helicopter Arrival Separation

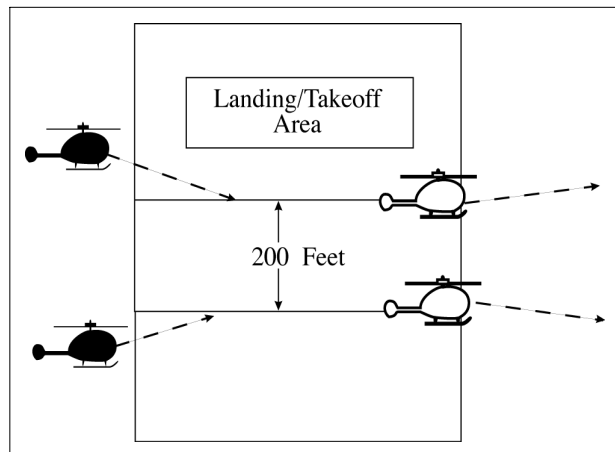


### 3-11-5. SIMULTANEOUS LANDINGS OR TAKEOFFS

Authorize helicopters to conduct simultaneous landings or takeoffs if the distance between the landing or takeoff points is at least 200 feet and the courses to be flown do not conflict. Refer to surface markings to determine the 200 foot minimum, or instruct a helicopter to remain at least 200 feet from another helicopter. (See FIG 3-11-6.)

FIG 3-11-6

Simultaneous Helicopter Landings or Takeoffs



### 3-11-6. HELICOPTER LANDING CLEARANCE

a. Issue landing clearances to helicopters going to movement areas other than active runways or from diverse directions to points on active runways, with additional instructions as necessary. Whenever possible, issue a landing clearance in lieu of extended hover-taxi or air-taxi operations.

**PHRASEOLOGY-**

*MAKE APPROACH STRAIGHT-IN/CIRCLING LEFT/RIGHT TURN TO* (location, runway, taxiway, helipad, Maltese cross) *ARRIVAL/ARRIVAL ROUTE* (number, name, or code).

*HOLD SHORT OF* (active runway, extended runway centerline, other).

*REMAIN* (direction/distance; e.g., 700 feet, 1 1/2 miles) *OF/FROM* (runway, runway centerline, other helicopter/aircraft).

*CAUTION* (power lines, unlighted obstructions, wake turbulence, etc.).

*CLEARED TO LAND.*

b. If landing is requested to non-movement areas, an area not authorized for helicopter use, or an area off the airport, and, in your judgment, the operation appears to be reasonable, use the following phraseology instead of the landing clearance in subpara a.

**PHRASEOLOGY-**

*LANDING AT* (requested location) *WILL BE AT YOUR OWN RISK* (additional instructions, as necessary). *USE CAUTION* (if applicable).

c. Unless agreed to by the pilot, do not issue downwind landings if the tailwind exceeds 5 knots.

**NOTE-**

*A pilot request to land at a given point from a given direction constitutes agreement.*

**REFERENCE-**

FAAO JO 7110.65, Para 4-3-3 Abbreviated Departure Clearance.

**4-2-8. IFR-VFR AND VFR-IFR FLIGHTS**

a. Clear an aircraft planning IFR operations for the initial part of flight and VFR for the latter part to the fix at which the IFR part ends.

b. Treat an aircraft planning VFR for the initial part of flight and IFR for the latter part as a VFR departure. Issue a clearance to this aircraft when it requests IFR clearance approaching the fix where it proposes to start IFR operations. The phraseology **CLEARED TO (destination) AIRPORT AS FILED** may be used with abbreviated departure clearance procedures.

**REFERENCE-**

FAAO JO 7110.65, Para 4-3-3 Abbreviated Departure Clearance.

c. When an aircraft changes from VFR to IFR, the controller shall assign a beacon code to Mode-C equipped aircraft that will allow MSAW alarms.

d. When a VFR aircraft, operating below the minimum altitude for IFR operations, requests an IFR clearance and you are aware that the pilot is unable to climb in VFR conditions to the minimum IFR altitude:

1. Before issuing a clearance, ask if the pilot is able to maintain terrain and obstruction clearance during a climb to the minimum IFR altitude.

**NOTE-**

*Pilots of pop-up aircraft are responsible for terrain and obstacle clearance until reaching minimum instrument altitude (MIA) or minimum en route altitude (MEA). Pilot compliance with an approved FAA procedure or an ATC instruction transfers that responsibility to the FAA; therefore, do not assign (or imply) specific course guidance that will (or could) be in effect below the MIA or MEA.*

**EXAMPLE-**

*“November Eight Seven Six, are you able to provide your own terrain and obstruction clearance between your present altitude and six thousand feet?”*

2. If the pilot is able to maintain terrain and obstruction separation, issue the appropriate clearance as prescribed in para 4-2-1, Clearance Items, and para 4-5-6, Minimum En Route Altitudes.

3. If unable to maintain terrain and obstruction separation, instruct the pilot to maintain VFR and to state intentions.

4. If appropriate, apply the provisions of para 10-2-7, VFR Aircraft In Weather Difficulty, or para 10-2-9, Radar Assistance Techniques, as necessary.

**4-2-9. CLEARANCE ITEMS**

The following guidelines shall be utilized to facilitate the processing of airfile aircraft:

a. Ensure the aircraft is within your area of jurisdiction unless otherwise coordinated.

b. Obtain necessary information needed to provide IFR service.

c. Issue clearance to destination, short range clearance, or an instruction to the pilot to contact a FSS or AFSS if the flight plan cannot be processed.

**NOTE-**

*These procedures do not imply that the processing of airfiles has priority over another ATC duty to be performed.*

**REFERENCE-**

FAAO JO 7110.65, Para 2-2-1 Recording Information.

**4-2-10. CANCELLATION OF IFR FLIGHT PLAN**

a. If necessary, before instructing an IFR aircraft arriving at an airport not served by an air traffic control tower or flight service station to change to the common traffic advisory frequency, provide the pilot with instructions on how to cancel his/her IFR flight plan.

1. Airports with an air/ground communications station:

**PHRASEOLOGY-**

*(Call sign) REPORT CANCELLATION OF IFR ON (frequency).*

2. Airports without an air/ground communications station:

**PHRASEOLOGY-**

*(Call sign) REPORT CANCELLATION OF IFR THIS FREQUENCY OR WITH FLIGHT SERVICE.*

*Or*

*(Call sign) REPORT CANCELLATION OF IFR THIS FREQUENCY OR WITH (FSS serving the area or the ATC controlling facility).*

**EXAMPLE-**

*“N13WA report cancellation of IFR this frequency or with McAlester Radio.”*

**b.** Respond to a pilot's cancellation of his/her IFR flight plan as follows:

***PHRASEOLOGY-***

*(Call sign) IFR CANCELLATION RECEIVED.*

**f.** For GPS UNRELIABLE NOTAMs, inform pilots requesting a GPS or RNAV approach that GPS is unreliable and clear the aircraft for the approach. This advisory may be omitted if contained in the Automated Terminal Information System (ATIS) broadcast.

**g.** For pilot reported GPS anomalies, advise subsequent aircraft requesting a GPS or RNAV approach that GPS is unreliable and clear the aircraft for the approach. This advisory may be discontinued after 15 minutes if no subsequent reports are received.

**REFERENCE-**  
FAAO JO 7110.65, Para 2-1-10 NAVAID Malfunctions.  
FAAO JO 7110.65, Para 4-7-12 Airport Conditions.

**PHRASEOLOGY-**  
*CLEARED (approach), GPS UNRELIABLE.*

**h.** For Wide Area Augmentation System (WAAS) UNAVAILABLE NOTAMs, advise aircraft requesting a GPS or RNAV approach that WAAS is unavailable and clear the aircraft for the approach. This advisory may be omitted if contained in the ATIS broadcast.

**PHRASEOLOGY-**  
*CLEARED (approach), WAAS UNAVAILABLE.*

**NOTE-**

**1.** WAAS UNAVAILABLE NOTAMs indicate a failure of a WAAS system component. GPS/WAAS equipment reverts to GPS-only operation and satisfies the requirements for basic GPS equipment.

**2.** WAAS UNRELIABLE NOTAMs indicate predictive coverage, are published for pilot preflight planning, and do not require any controller action.

#### 4-8-2. CLEARANCE LIMIT

Issue approach or other clearances, as required, specifying the destination airport as the clearance limit if airport traffic control service is not provided even though this is a repetition of the initial clearance.

#### 4-8-3. RELAYED APPROACH CLEARANCE

**TERMINAL**

Include the weather report, when it is required and available, when an approach clearance is relayed through a communication station other than an air carrier company radio. You may do this by telling the station to issue current weather.

#### 4-8-4. ALTITUDE ASSIGNMENT FOR MILITARY HIGH ALTITUDE INSTRUMENT APPROACHES

Altitudes above those shown on the high altitude instrument approach procedures chart may be specified when required for separation.

**NOTE-**

*To preclude the possibility of aircraft exceeding rate-of-descent or airspeed limitations, the maximum altitudes which may be assigned for any portion of the high altitude instrument approach procedure will be determined through coordination between the ATC facility concerned and the military authority which originated the high altitude instrument approach procedure.*

**REFERENCE-**  
FAAO JO 7110.65, Para 4-7-5 Military Turbojet En Route Descent.

#### 4-8-5. SPECIFYING ALTITUDE

Specify in the approach clearance the altitude shown in the approach procedures when adherence to that altitude is required for separation. When vertical separation will be provided from other aircraft by pilot adherence to the prescribed maximum, minimum, or mandatory altitudes, the controller may omit specifying the altitude in the approach clearance.

**NOTE-**

*Use FAA or NGA instrument approach procedures charts appropriate for the aircraft executing the approach.*

#### 4-8-6. CIRCLING APPROACH

**a.** Circling approach instructions may only be given for aircraft landing at airports with operational control towers.

**b.** Include in the approach clearance instructions to circle to the runway in use if landing will be made on a runway other than that aligned with the direction of instrument approach. When the direction of the circling maneuver in relation to the airport/runway is required, state the direction (eight cardinal compass points) and specify a left or right base/downwind leg as appropriate.

**PHRASEOLOGY-**  
*CIRCLE TO RUNWAY (number),*

*or*

*CIRCLE (direction using eight cardinal compass points) OF THE AIRPORT/RUNWAY FOR A LEFT/RIGHT BASE/DOWNWIND TO RUNWAY (number).*

**NOTE-**

Where standard instrument approach procedures (SIAPs) authorize circling approaches, they provide a basic minimum of 300 feet of obstacle clearance at the MDA within the circling area considered. The dimensions of these areas, expressed in distances from the runways, vary for the different approach categories of aircraft. In some cases a SIAP may otherwise restrict circling approach maneuvers.

c. Do not issue clearances, such as “extend downwind leg,” which might cause an aircraft to exceed the circling approach area distance from the runways within which required circling approach obstacle clearance is assured.

**4-8-7. SIDE-STEP MANEUVER****TERMINAL**

Side-step Maneuver. When authorized by an instrument approach procedure, you may clear an aircraft for an approach to one runway and inform the aircraft that landing will be made on a parallel runway.

**EXAMPLE-**

“Cleared I-L-S Runway seven left approach. Side-step to runway seven right.”

**NOTE-**

Side-step maneuvers require higher weather minima/MDA. These higher minima/MDA are published on the instrument approach charts.

**REFERENCE-**

FAAO JO 7110.65, Para 3-3-2 Closed/Unsafe Runway Information.  
P/CG Term- Side-step Maneuver.

**4-8-8. COMMUNICATIONS RELEASE**

If an IFR aircraft intends to land at an airport not served by a tower or FSS, approve a change to the advisory service frequency when you no longer require direct communications.

**PHRASEOLOGY-**

CHANGE TO ADVISORY FREQUENCY APPROVED.

**NOTE-**

An expeditious frequency change permits the aircraft to receive timely local airport traffic information in accordance with AC 90-42, Traffic Advisory Practices at Airports Without Operating Control Towers.

**4-8-9. MISSED APPROACH**

Except in the case of a VFR aircraft practicing an instrument approach, an approach clearance automatically authorizes the aircraft to execute the missed approach procedure depicted for the instrument approach being flown. An alternate missed approach procedure as published on the appropriate FAA Form 8260 or appropriate military form may be assigned when necessary. Once an aircraft commences a missed approach, it may be radar vectored.

**NOTE-**

1. Alternate missed approach procedures are published on the appropriate FAA Form 8260 or appropriate military form and require a detailed clearance when they are issued to the pilot.

2. In the event of a missed approach involving a turn, unless otherwise cleared, the pilot will proceed to the missed approach point before starting that turn.

**REFERENCE-**

FAAO JO 7110.65, Para 4-8-1, Practice Approaches.  
FAAO JO 7110.65, Para 5-6-3 Vectors Below Minimum Altitude.  
FAAO JO 7110.65, Para 5-8-3 Successive or Simultaneous Departures.  
FAAO 8260.19, Flight Procedures and Airspace, Paras 404 and 815.  
FAAO 8260.3, United States Standard for Terminal Instrument Procedures (TERPS), Paras 275, 278, 943, 957, and 997.

**4-8-10. APPROACH INFORMATION**

Specify the following in the approach clearance when the pilot says he/she is unfamiliar with the procedure:

- a. Initial approach altitude.
- b. Direction and distance from the holding fix within which procedure turn is to be completed.
- c. Altitude at which the procedure turn is to be made.
- d. Final approach course and altitude.
- e. Missed approach procedures if considered necessary.

**PHRASEOLOGY-**

INITIAL APPROACH AT (altitude), PROCEDURE TURN AT (altitude), (number) MINUTES/MILES (direction), FINAL APPROACH ON (name of NAVAID) (specified) COURSE/RADIAL/AZIMUTH AT (altitude).

**4-8-11. PRACTICE APPROACHES**

Except for military aircraft operating at military airfields, ensure that neither VFR nor IFR practice approaches disrupt the flow of other arriving and departing IFR or VFR aircraft. Authorize, withdraw

assigned altitude in more than one stratum or other conditions of flight not compatible with a stratified code assignment.

**NOTE-**

1. *Categories of flight that can be assigned Code 4000 include certain flight test aircraft, MTR missions, aerial refueling operation requiring descent involving more than one stratum, ALTRVs where continuous monitoring of ATC communications facilities is not required and frequent altitude changes are approved, and other aircraft operating on flight plans requiring special handling by ATC.*

2. *Military aircraft operating VFR or IFR in restricted/warning areas or VFR on VR routes will adjust their transponders to reply on Code 4000 unless another code has been assigned by ATC or coordinated, if possible, with ATC.*

c. Assign the following codes to arriving IFR aircraft, except military turbojet aircraft as specified in para 4-7-4, Radio Frequency and Radar Beacon Changes for Military Aircraft:

**NOTE-**

*FL 180 may be used in lieu of FL 240 where the base of Class A airspace and the base of the operating sector are at FL 180, and for inter-facility handoff the receiving sector is also stratified at FL 180.*

1. **Code 2300** may be assigned for descents while above FL 240.

2. **Code 1500** may be assigned for descents into and while within the strata below FL 240, or with prior coordination the specific code utilized by the destination controller, or the code currently assigned when descent clearance is issued.

3. The applicable en route code for the holding altitude if holding is necessary before entering the terminal area and the appropriate code in subparas 1 or 2.

**REFERENCE-**

*FAAO JO 7110.65, Para 4-2-8 IFR-VFR and VFR-IFR Flights.  
FAAO JO 7110.65, Para 5-2-3 Nondiscrete Environment.  
FAAO JO 7110.65, Para 5-2-4 Mixed Environment.  
FAAO JO 7110.65, Para 5-2-9 VFR Code Assignments.  
FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.*

## 5-2-7. EMERGENCY CODE ASSIGNMENT

Assign codes to emergency aircraft as follows:

a. **Code 7700** when the pilot declares an emergency and the aircraft is not radar identified.

**PHRASEOLOGY-**

*SQUAWK MAYDAY ON 7700.*

b. After radio and radar contact have been established, you may request other than single-piloted helicopters and single-piloted turbojet aircraft to change from **Code 7700** to another code appropriate for your radar beacon code environment.

**NOTE-**

1. *The code change, based on pilot concurrence, the nature of the emergency, and current flight conditions will signify to other radar facilities that the aircraft in distress is identified and under ATC control.*

2. *Pilots of single-piloted helicopters and single-piloted turbojet aircraft may be unable to reposition transponder controls during the emergency.*

**PHRASEOLOGY-**

*RADAR CONTACT (position). IF FEASIBLE, SQUAWK (code).*

**REFERENCE-**

*FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.*

c. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of **Code 7700**:

1. **TERMINAL.** Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. **EN ROUTE.** An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

## 5-2-8. RADIO FAILURE

When you observe a **Code 7600** display, apply the procedures in para 10-4-4, Communications Failure.

**NOTE-**

*Should a transponder-equipped aircraft experience a loss of two-way radio communications capability, the pilot can be expected to adjust his/her transponder to Code 7600.*

**REFERENCE-**

*FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.*

## 5-2-9. VFR CODE ASSIGNMENTS

a. For VFR aircraft receiving radar advisories, assign an appropriate function code or computer-assigned code for the code environment in which you are providing service.

**NOTE-**

1. Para 5-2-2 Discrete Environment; para 5-2-3 Nondiscrete Environment, and para 5-2-4 Mixed Environment, specify code assignment procedures to follow for the three code environments.

2. Para 5-2-6 Function Code Assignments, specifies the function code allocation from which an appropriate code for the aircraft indicated in subpara a should be selected. In the terminal environment, additional function codes may be authorized by the appropriate service area office.

1. If the aircraft is outside of your area of responsibility and an operational benefit will be gained by retaining the aircraft on your frequency for the purpose of providing services, ensure that coordination has been effected:

(a) As soon as possible after positive identification, and

(b) Prior to issuing a control instruction or providing a service other than a safety alert/traffic advisory.

**NOTE-**

Safety alerts/traffic advisories may be issued to an aircraft prior to coordination if an imminent situation may be averted by such action. Coordination should be effected as soon as possible thereafter.

b. Instruct IFR aircraft which cancel an IFR flight plan and are not requesting radar advisory service and VFR aircraft for which radar advisory service is being terminated to squawk the VFR code.

**PHRASEOLOGY-**  
**SQUAWK VFR.**

or

SQUAWK 1200.

**NOTE-**

1. Aircraft not in contact with an ATC facility may squawk 1255 in lieu of 1200 while en route to/from or within the designated fire fighting area(s).

2. VFR aircraft which fly authorized SAR missions for the USAF or USCG may be advised to squawk 1277 in lieu of 1200 while en route to/from or within the designated search area.

**REFERENCE-**

FAAO 7110.66, National Beacon Code Allocation Plan.

c. When an aircraft changes from VFR to IFR, the controller shall assign a beacon code to Mode C equipped aircraft that will allow MSAW alarms.

**REFERENCE-**

FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.

**5-2-10. BEACON CODE FOR PRESSURE SUIT FLIGHTS AND FLIGHTS ABOVE FL 600**

a. Mode 3/A, Code 4400, and discrete Codes 4440 through 4465 are reserved for use by R-71, F-12, U-2, B-57, pressure suit flights, and aircraft operations above FL 600.

**NOTE-**

The specific allocation of the special use codes in subset 4400 is in FAAO 7110.66, National Beacon Code Allocation Plan.

b. Ensure that aircraft remain on Code 4400 or one of the special use discrete codes in the 4400 subset if filed as part of the flight plan. Except when unforeseen events, such as weather deviations, equipment failure, etc., cause more than one aircraft with same Mode 3/A discrete beacon codes to be in the same or adjacent ARTCC's airspace at the same time, a controller may request the pilot to make a code change, squawk standby, or to stop squawk as appropriate.

**NOTE-**

Due to the inaccessibility of certain equipment to the flight crews, Code 4400 or a discrete code from the 4400 subset is preset on the ground and will be used throughout the flight profile including operations below FL 600. Controllers should be cognizant that not all aircraft may be able to accept the transponder changes identified in the exception. Emergency Code 7700, however, can be activated.

**REFERENCE-**

FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.

**5-2-11. AIR DEFENSE EXERCISE BEACON CODE ASSIGNMENT****EN ROUTE**

Ensure exercise FAKER aircraft remain on the exercise flight plan filed discrete beacon code.

**NOTE-**

1. NORAD will ensure exercise FAKER aircraft flight plans are filed containing discrete beacon codes from the Department of Defense code allocation specified in FAA Order JO 7610.4, Special Operations, Appendix 6.

2. NORAD will ensure that those FAKER aircraft assigned the same discrete beacon code are not flight planned in the same or any adjacent ARTCC's airspace at the same time. (Simultaneous assignment of codes will only occur when operational requirements necessitate.)

**REFERENCE-**

FAAO JO 7110.65, Para 5-3-3 Beacon Identification Methods.



## Section 5. Radar Separation

### 5-5-1. APPLICATION

a. Radar separation shall be applied to all RNAV aircraft operating on a random (impromptu) route at or below FL 450 and to all published Q routes in the conterminous United States.

#### EN ROUTE

EXCEPTION. Aircraft equipped with IFR-certified GPS systems operating on point-to-point RNAV routes within the Anchorage Air Route Traffic Control Center (ARTCC) controlled airspace (excluding oceanic airspace) where ATC surveillance coverage is not available, may be provided nonradar separation, in lieu of radar separation, when an operational advantage will be gained.

#### REFERENCE-

FAAO JO 7110.65, Para 2-1-3, *Procedural Preference*  
FAAO JO 7110.65, Para 4-1-2, *Exceptions*  
FAAO JO 7110.65, Para 6-5-4, *Minima Along Other Than Established Airways or Routes*

b. Radar separation may be applied between:

1. Radar identified aircraft.

2. An aircraft taking off and another radar identified aircraft when the aircraft taking off will be radar-identified within 1 mile of the runway end.

3. A radar-identified aircraft and one not radar-identified when either is cleared to climb/descend through the altitude of the other provided:

(a) The performance of the radar system is adequate and, as a minimum, primary radar targets or ASR-9/Full Digital Radar Primary Symbol targets are being displayed on the display being used within the airspace within which radar separation is being applied; and

(b) Flight data on the aircraft not radar-identified indicate it is a type which can be expected to give adequate primary/ASR-9/Full Digital Radar Primary Symbol return in the area where separation is applied; and

(c) The airspace within which radar separation is applied is not less than the following number of miles from the edge of the radar display:

(1) When less than 40 miles from the antenna- 6 miles;

(2) When 40 miles or more from the antenna- 10 miles;

(3) Narrowband radar operations- 10 miles; and

(d) Radar separation is maintained between the radar-identified aircraft and all observed primary, ASR-9/Full Digital Radar Primary Symbol, and secondary radar targets until nonradar separation is established from the aircraft not radar identified; and

(e) When the aircraft involved are on the same relative heading, the radar-identified aircraft is vectored a sufficient distance from the route of the aircraft not radar identified to assure the targets are not superimposed prior to issuing the clearance to climb/descend.

#### REFERENCE-

FAAO JO 7110.65, Para 4-1-2 *Exceptions*.  
FAAO JO 7110.65, Para 4-4-1 *Route Use*.  
FAAO JO 7110.65, Para 5-3-1 *Application*.  
FAAO JO 7110.65, Para 5-5-8 *Additional Separation for Formation Flights*.  
FAAO JO 7110.65, Para 5-9-5 *Approach Separation Responsibility*.

### 5-5-2. TARGET SEPARATION

a. Apply radar separation:

1. Between the centers of primary radar targets; however, do not allow a primary target to touch another primary target or a beacon control slash.

2. Between the ends of beacon control slashes.

#### NOTE-

*At TPX-42 sites, the bracket video feature must be activated to display the beacon control slash.*

3. Between the end of a beacon control slash and the center of a primary target.

4. All-digital displays. Between the centers of digitized targets. Do not allow digitized targets to touch.

#### REFERENCE-

FAAO JO 7110.65, Para 5-9-7 *Simultaneous Independent ILS/MLS Approaches- Dual & Triple*.

### 5-5-3. TARGET RESOLUTION

a. A process to ensure that correlated radar targets or digitized targets do not touch.

b. Mandatory traffic advisories and safety alerts shall be issued when this procedure is used.

**NOTE-**

*This procedure shall not be provided utilizing mosaic radar systems.*

**c.** Target resolution shall be applied as follows:

1. Between the edges of two primary targets or the edges of primary digitized targets.
2. Between the end of the beacon control slash and the edge of a primary target or primary digitized target.
3. Between the ends of two beacon control slashes.

### 5-5-4. MINIMA

Separate aircraft by the following minima:

**a. TERMINAL.** Single Sensor ASR or Digital Terminal Automation System (DTAS):

**NOTE-**

*Includes single sensor long range radar mode.*

1. When less than 40 miles from the antenna— 3 miles.
2. When 40 miles or more from the antenna— 5 miles.
3. For single sensor ASR-9 with Mode S, when less than 60 miles from the antenna— 3 miles.

**NOTE-**

*Wake turbulence procedures specify increased separation minima required for certain classes of aircraft because of the possible effects of wake turbulence.*

**b.** Stage A/DARC, MEARTS Mosaic Mode, Terminal Mosaic/Multi-Sensor Mode:

**NOTE-**

*Mosaic/Multi-Sensor Mode combines radar input from 2 to 16 sites into a single picture utilizing a mosaic grid composed of radar sort boxes.*

1. Below FL 600— 5 miles.
2. At or above FL 600— 10 miles.
3. For areas meeting all of the following conditions:
  - (a) Radar site adaptation is set to single sensor.
  - (b) Significant operational advantages can be obtained.
  - (c) Within 40 miles of the antenna.

**(d)** Below FL 180.

**(e)** Facility directives specifically define the area where the separation can be applied. Facility directives may specify 3 miles.

**REFERENCE-**

*FAAO JO 7210.3, Para 8-2-1, Single Site Coverage Stage A Operations.*

*FAAO JO 7210.3, Para 11-8-15, Single Site Coverage ATTS Operations.*

**4.** When transitioning from terminal to en route control, 3 miles increasing to 5 miles or greater, provided:

**(a)** The aircraft are on diverging routes/courses, and/or

**(b)** The leading aircraft is and will remain faster than the following aircraft; and

**(c)** Separation constantly increasing and the first center controller will establish 5 NM or other appropriate form of separation prior to the aircraft departing the first center sector; and

**(d)** The procedure is covered by a letter of agreement between the facilities involved and limited to specified routes and/or sectors/positions.

**c.** MEARTS Mosaic Mode:

**NOTE-**

**1.** *Sensor Mode displays information from the radar input of a single site.*

**2.** *Procedures to convert MEARTS Mosaic Mode to MEARTS Sensor Mode at each PVD/MDM will be established by facility directive.*

**1.** When less than 40 miles from the antenna— 3 miles.

**2.** When 40 miles or more from the antenna— 5 miles.

**d.** STARS Multi-Sensor Mode:

**NOTE-**

**1.** *In Multi-Sensor Mode, STARS displays targets as filled and unfilled boxes, depending upon the target's distance from the radar site providing the data. Since there is presently no way to identify which specific site is providing data for any given target, utilize separation standards for targets 40 or more miles from the antenna.*

**2.** *When operating in STARS Single Sensor Mode, if TRK appears in the data block, handle in accordance with para 5-3-7 Identification Status, subpara b, and take appropriate steps to establish nonradar separation.*

**3.** *TRK appears in the data block whenever the aircraft is being tracked by a radar site other than the radar currently*

**NOTE–**

Altitudes and obstructions depicted on the EOVM are the actual altitudes and locations of the obstacle/terrain and contain no lateral or vertical buffers for obstruction clearance.

**REFERENCE–**

FAAO JO 7210.3, Para 3–9–4, Emergency Obstruction Video Map (EOVM).

**10–2–18. VOLCANIC ASH**

a. If a volcanic ash cloud is known or forecast to be present:

1. Relay all information available to pilots to ensure that they are aware of the ash cloud's position and altitude(s).

2. Suggest appropriate reroutes to avoid the area of known or forecast ash clouds.

**NOTE–**

Volcanic ash clouds are not normally detected by airborne or air traffic radar systems.

b. If advised by an aircraft that it has entered a volcanic ash cloud and indicates that a distress situation exists:

1. Consider the aircraft to be in an emergency situation.

2. Do not initiate any climb clearances to turbine-powered aircraft until the aircraft has exited the ash cloud.

3. Do not attempt to provide escape vectors without pilot concurrence.

**NOTE–**

1. The recommended escape maneuver is to reverse course and begin a descent (if terrain permits). However, it is the pilot's responsibility to determine the safest escape route from the ash cloud.

2. Controllers should be aware of the possibility of complete loss of power to any turbine-powered aircraft that encounters an ash cloud.

**REFERENCE–**

FAAO JO 7110.65, Para 10–2–4 Altitude Change for Improved

*Reception.*

AIM, Para 7–5–9, Flight Operations in Volcanic Ash.

**10–2–19. REPORTING DEATH, ILLNESS, OR OTHER PUBLIC HEALTH RISK ON BOARD AIRCRAFT**

a. If an air traffic controller receives a report of the death of person, an illness, and/or other public health risk obtain the following information and notify the operations manager in charge (OMIC)/front line manager (FLM)/controller-in-charge (CIC) as soon as possible.

1. Call sign.

2. Number of suspected cases of illness on board.

3. Nature of the illnesses or other public health risk, if known.

4. Number of persons on board.

5. Number of deaths, if applicable.

6. Pilot's intent (for example, continue to destination or divert).

7. Any request for assistance (for example, needing emergency medical services to meet the aircraft at arrival).

b. The OMIC/FLM/CIC must relay the information to the DEN as soon as possible.

**NOTE–**

1. If the ATC facility is not actively monitoring the DEN or does not have a dedicated line to the DEN, they must call into the DEN directly via (202) 493-4170.

2. Except in extraordinary circumstances, such as a situation requiring ATC intervention, follow-on coordination regarding the incident will not involve ATC frequencies.

3. The initial report to a U.S. ATC facility may be passed from a prior ATC facility along the route of flight.

**REFERENCE–**

FAAO JO 7210.3, Para 2-1-29, REPORTING DEATH, ILLNESS, OR OTHER PUBLIC HEALTH RISK ON BOARD AIRCRAFT



# PILOT/CONTROLLER GLOSSARY

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## PURPOSE

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

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

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

## EXPLANATION OF CHANGES

a. Terms Added:

WIND SHEAR ESCAPE

b. Terms Modified:

AIRPORT LIGHTING

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)

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



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

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

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

**AIRMEN'S METEOROLOGICAL INFORMATION**–

(See AIRMET.)

**AIRMET**– In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or Convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles, and extensive mountain obscurement.

(See AWW.)

(See CONVECTIVE SIGMET.)

(See CWA.)

(See SIGMET.)

(Refer to AIM.)

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

**AIRPORT ADVISORY AREA**– The area within ten miles of an airport without a control tower or where

the tower is not in operation, and on which a Flight Service Station is located.

(See LOCAL AIRPORT ADVISORY.)

(Refer to AIM.)

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

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

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

(See TOUCHDOWN ZONE ELEVATION.)

(See ICAO term AERODROME ELEVATION.)

**AIRPORT/FACILITY DIRECTORY**– A publication designed primarily as a pilot's operational manual containing all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, and certain special notices and procedures. This publication is issued in seven volumes according to geographical area.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**f. Runway End Identifier Lights (REIL)**– Two synchronized flashing lights, one on each side of the

runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

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

**h. Precision Approach Path Indicator (PAPI)**– An airport lighting facility, similar to VASI, providing vertical approach slope guidance to aircraft during approach to landing. PAPIs consist of a single row of either two or four lights, normally installed on the left side of the runway, and have an effective visual range of about 5 miles during the day and up to 20 miles at night. PAPIs radiate a directional pattern of high intensity red and white focused light beams which indicate that the pilot is “on path” if the pilot sees an equal number of white lights and red lights, with white to the left of the red; “above path” if the pilot sees more white than red lights; and “below path” if the pilot sees more red than white lights.

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

(Refer to AIM.)

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

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

(Refer to AIM.)

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

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

**AIRPORT ROTATING BEACON**– A visual NAVAID operated at many airports. At civil airports,



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.

**DIRECTION FINDER**– A radio receiver equipped with a directional sensing antenna used to take bearings on a radio transmitter. Specialized radio direction finders are used in aircraft as air navigation aids. Others are ground-based, primarily to obtain a “fix” on a pilot requesting orientation assistance or to locate downed aircraft. A location “fix” is established by the intersection of two or more bearing lines plotted on a navigational chart using either two separately located Direction Finders to obtain a fix on an aircraft or by a pilot plotting the bearing indications of his/her DF on two separately located ground-based transmitters, both of which can be identified on his/her chart. UDFs receive signals in the ultra high frequency radio broadcast band; VDFs in the very high frequency band; and UVDFs in both bands. ATC provides DF service at those air traffic control towers and flight service stations listed in the Airport/Facility Directory and the DOD FLIP IFR En Route Supplement.

(See DF FIX.)

(See DF GUIDANCE.)

**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.

# 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:** 2-4-20. AIRCRAFT IDENTIFICATION

**2. BACKGROUND:** Several international military services, in addition to Canada, now have approved telephony identified in FAA Order JO 7340.2, Contractions.

**3. CHANGE:**

**OLD**

**2-4-20. AIRCRAFT IDENTIFICATION**

title thru b3

4. Foreign Military. Except Canada, the name of the country and the military service followed by the separate digits or letters of the registration or call sign. Canadian Forces aircraft shall be identified by the word “CANFORCE” followed by the separate digits of the serial number. The Canadian Coast Guard shall be identified as “Canadian Coast Guard” followed by the separate digits of the serial number.

**NEW**

**2-4-20. AIRCRAFT IDENTIFICATION**

No Change

4. Foreign Military. Except **for military services identified in FAA Order JO 7340.2, Contractions**, the name of the country and the military service followed by the separate digits or letters of the registration or call sign. **For military services listed in FAA Order JO 7340.2, the approved telephony** followed by the separate digits of the serial number.

**1. PARAGRAPH NUMBER AND TITLE:** 3-1-8. LOW LEVEL WIND SHEAR/MICROBURST ADVISORIES

**2. BACKGROUND:** A communication disconnect exists between the air traffic control (ATC) and the aviation communities concerning actions a flight crew will make during a wind shear go around that has been initiated following in-cockpit windshear detection escape guidance. Flight crews are tasked with first escaping the wind shear event and then communicating/complying with ATC instructions. Unfortunately, ATC may not be aware that an aircrew is executing a "wind shear escape" procedure and the current directive does not identify this procedure.

**3. CHANGE:**

**OLD**

**3-1-8. LOW LEVEL WIND SHEAR/MICROBURST ADVISORIES**

a thru b

1. At locations equipped with LLWAS, the local controller shall provide wind information as follows:

**NOTE** through **b2(d)**

**NEW**

**3-1-8. LOW LEVEL WIND SHEAR/MICROBURST ADVISORIES**

No Change

1. At locations equipped with LLWAS, the local controller **must** provide wind information as follows:

No Change

(e) The LLWAS NE++ and LLWAS-RS are designed to operate with as many as 50 percent of the total sensors inoperative. When all three remote sensors designated for a specific runway arrival or departure wind display line are inoperative then the LLWAS NE++ and LLWAS-RS for that runway arrival/departure shall be considered out of service. When a specific runway arrival or departure wind display line is inoperative and wind shear/microburst activity is likely; (e.g.; frontal activity, convective storms, PIREPs), a statement shall be included on the ATIS, “WIND SHEAR AND MICROBURST INFORMATION FOR RUNWAY (runway number) ARRIVAL/DEPARTURE NOT AVAILABLE.”

*NOTE-*

(e) The LLWAS NE++ and LLWAS-RS are designed to operate with as many as 50 percent of the total sensors inoperative. When all three remote sensors designated for a specific runway arrival or departure wind display line are inoperative then the LLWAS NE++ and LLWAS-RS for that runway arrival/departure **must** be considered out of service. When a specific runway arrival or departure wind display line is inoperative and wind shear/microburst activity is likely; (**for example**, frontal activity, convective storms, PIREPs), **the following** statement **must** be included on the ATIS, “WIND SHEAR AND MICROBURST INFORMATION FOR RUNWAY (number) ARRIVAL/DEPARTURE NOT AVAILABLE.”

No Change

Add

**c. Wind Shear Escape Procedures.**

Add

**1. If an aircraft under your control informs you that it is performing a wind shear escape, do not issue control instructions that are contrary to pilot actions. ATC should continue to provide safety alerts regarding terrain or obstacles and traffic advisories for the escape aircraft, as appropriate.**

Add

*EXAMPLE-*  
*“Denver Tower, United 1154, wind shear escape.”*

Add

*NOTE-*  
*Aircraft that execute a wind shear escape maneuver will usually conduct a full power climb straight ahead and will not accept any control instructions until onboard systems advise the crew or the pilot in command (PIC) advises ATC that the escape maneuver is no longer required.*

Add

*REFERENCE-*  
*P/CG Term – Wind Shear Escape*

Add

**2. Unless advised by additional aircraft that they are also performing an escape procedure, do not presume that other aircraft in the proximity of the escape aircraft are responding to wind shear alerts/events as well. Continue to provide control instructions, safety alerts, and traffic advisories as appropriate.**

Add

**3. Once the responding aircraft has initiated a wind shear escape maneuver, the controller is not responsible for providing standard separation between the aircraft that is responding to an escape and any other aircraft, airspace, terrain, or obstacle. Responsibility for separation resumes when one of the following conditions are met:**

- Add **(a) Departures:**
  - (1) A crew member informs ATC that the wind shear escape maneuver is complete and ATC observes that standard separation has been re-established, or**
  - Add **(2) A crew member informs ATC that the escape maneuver is complete and has resumed a previously assigned departure clearance/routing.**
- Add **(b) Arrivals:**
  - Add **(1) A crew member informs ATC that the escape maneuver is complete, and**
  - Add **(2) The aircrew has executed an alternate clearance or requested further instructions.**
  - Add **NOTE–**  
**When the escape procedure is complete, the flight crew must advise ATC they are returning to their previously assigned clearance or request further instructions.**
  - Add **EXAMPLE–**  
**“Denver Tower, United 1154, wind shear escape complete, resuming last assigned heading/(name) DP/clearance.”**
  - Add **Or**  
**“Denver Tower, United 1154, wind shear escape complete, request further instructions.”**

**1. PARAGRAPH NUMBER AND TITLE:** 4–2–10. CANCELLATION OF IFR FLIGHT PLAN

**2. BACKGROUND:** Numerous airports within the National Airspace System are uncontrolled and many of those that have an air traffic control (ATC) tower are only operational on a part-time basis. The Aeronautical Information Manual advises pilots operating under Instrument Flight Rules (IFR) arriving at uncontrolled airports, and are unable to cancel their IFR flight plan with a functioning Flight Service Station, they must cancel this service with ATC while airborne or on the ground after landing. Once cancellation is received, the affected airspace may then be released for IFR use by additional aircraft.

ATC facilities use this procedure regularly, but there is no official phraseology specified in FAA Order JO 7110.65 for controller use when requesting pilots to report IFR cancellation or how to properly acknowledge the receipt of an IFR cancellation. Controller opinions and facility procedures vary on what is considered a proper advisory and appropriate acknowledgement. A universal response for both situations, using prescribed phraseology in Chapter 4 of the FAA Order JO 7110.65, would eliminate the confusion of this procedure and enhance pilot confidence of an ATC acknowledgement.

**3. CHANGE:**

<b><u>OLD</u></b>	<b><u>NEW</u></b>
Add	<b><u>4-2-10. CANCELLATION OF IFR FLIGHT PLAN</u></b>

- Add **a. If necessary, before instructing an IFR aircraft arriving at an airport not served by an air traffic control tower or flight service station to change to the common traffic advisory frequency, provide the pilot with instructions on how to cancel his/her IFR flight plan.**
- Add **1. Airports with an air/ground communications station:**
- Add **PHRASEOLOGY-**  
**(Call sign) REPORT CANCELLATION OF IFR ON (frequency).**
- Add **2. Airports without an air/ground communications station:**
- Add **PHRASEOLOGY-**  
**(Call sign) REPORT CANCELLATION OF IFR THIS FREQUENCY OR WITH FLIGHT SERVICE.**  
**Or**
- Add **(Aircraft call sign) REPORT CANCELLATION OF IFR THIS FREQUENCY OR WITH (FSS serving the area or the ATC controlling facility).**
- Add **EXAMPLE-**  
**“N13WA report cancellation of IFR this frequency or with McAlester Radio.”**
- Add **b. Respond to a pilot’s cancellation of his/her IFR flight plan as follows:**
- Add **PHRASEOLOGY-**  
**(Call sign) IFR CANCELLATION RECEIVED.**

**1. PARAGRAPH NUMBER AND TITLE:** 10-2-19. REPORTING DEATH, ILLNESS, OR OTHER PUBLIC HEALTH RISK ON BOARD AIRCRAFT

**2. BACKGROUND:** The International Civil Aviation Organization (ICAO) standard calls for pilots in command to ensure reporting of in-flight cases of suspected communicable disease to air traffic control (ATC). ATC is then expected to relay this notification to the appropriate public health or other competent authority. The Centers for Disease Control and Prevention (CDC) has requested FAA assistance in implementing this notification protocol, which will also be used for deaths and other public health risks on board aircraft. The new emphasis on this notification routing through ATC is intended to expedite alerting and better support shared situational awareness among the key stakeholders, reinforcing efforts to slow the spread of dangerous diseases and other public health risks by air travel, while enabling ATC to better mitigate impacts caused by actions necessary to facilitate public health intervention (e.g., diversion of the affected flight) on the safety and efficiency of the aviation system.

**3. CHANGE:**

<b><u>OLD</u></b>	<b><u>NEW</u></b>
Add	<b><u>10-2-19. REPORTING DEATH, ILLNESS, OR OTHER PUBLIC HEALTH RISK ON BOARD AIRCRAFT</u></b>

Add **a. If an air traffic controller receives a report of the death of person, an illness, and/or other public health risk obtain the following information and notify the operations manager in charge (OMIC)/front line manager (FLM)/controller-in-charge (CIC) as soon as possible.**

Add **1. Call sign.**

Add **2. Number of suspected cases of illness on board.**

Add **3. Nature of the illnesses or other public health risk, if known.**

Add **4. Number of persons on board.**

Add **5. Number of deaths, if applicable.**

Add **6. Pilot’s intent (for example, continue to destination or divert).**

Add **7. Any request for assistance (for example, needing emergency medical services to meet the aircraft at arrival).**

Add **b. The OMIC/FLM/CIC must relay the information to the DEN as soon as possible.**

Add **NOTE-**

**1. If the ATC facility is not actively monitoring the DEN or does not have a dedicated line to the DEN, they must call into the DEN directly via (202) 493-4170.**

Add **2. Except in extraordinary circumstances, such as a situation requiring ATC intervention, follow-on coordination regarding the incident will not involve ATC frequencies.**

Add **3. The initial report to a U.S. ATC facility may be passed from a prior ATC facility along the route of flight.**

Add **REFERENCE-**  
**FAAO JO 7210.3, Para 2-1-29, REPORTING DEATH, ILLNESS, OR OTHER PUBLIC HEALTH RISK ON BOARD AIRCRAFT**

