CHANGE

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

JO 7110.65BB
CHG 3

Effective Date:
July 9, 2026

SUBJ: Air Traffic Control

1. Purpose of This Change. This change transmits revised pages to Federal Aviation Administration Order JO 7110.65BB, 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's Air Traffic Plans and Publications website at https://www.faa.gov/air_traffic/publications/ and Orders & Notices website at https://www.faa.gov/regulations_policies/orders_notices/.

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

5. Distribution. This change is distributed to select offices in Washington headquarters, service area offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, air traffic field facilities, and international aviation offices. This change is distributed electronically to all who subscribe to receive email notification through the FAA's website. All organizations are responsible for viewing, downloading, and subscribing to receive email notifications when changes occur to this order. Subscriptions to air traffic directives can be made through the Air Traffic Plans and Publications website at https://www.faa.gov/air_traffic/publications/ or directly via the following link: https://public.govdelivery.com/accounts/USAFAA/subscriber/new?topic_id=USAFAA_39.

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 Retain this transmittal until superseded by a new basic order.

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

CHRISTOPHER A WILBANKS
Digitally signed by CHRISTOPHER A WILBANKS
Date: 2026.04.27 12:49:29 -04'00'

Christopher A. Wilbanks
Vice President
Mission Support Services

Distribution: ZAT-710, ZAT-464

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

Explanation of Changes
Change 3

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

a. 2–1–24. TRANSFER OF POSITION RESPONSIBILITY
APPENDIX A. STANDARD OPERATING PRACTICE (SOP) FOR THE TRANSFER OF POSITION RESPONSIBILITY

This change adds a new subparagraph to Appendix A, Standard Operating Practice (SOP) for the Transfer of Position Responsibility, under paragraph 5, Responsibilities. The new subparagraph e directs controllers to display the position relief checklist during all phases of the position relief briefing.

b. 2–3–5. AIRCRAFT IDENTITY
2–4–20. AIRCRAFT IDENTIFICATION

This change incorporates the procedures outlined in FAA Order JO 7110.127, National Airspace System (NAS) Processing of Foreign Aircraft Identifications with a Numeric Nationality Mark, into this order. It provides guidance to air traffic personnel to insert the letter "Q" at the beginning of the call sign for foreign aircraft whose flight identification begins with a number, so that the En Route Automation Modernization (ERAM), Standard Terminal Automation Replacement System (STARS), and Microprocessor En Route Automated Radar Tracking System (MEARTS) can process the flight plan.

c. 3–1–4. COORDINATION BETWEEN LOCAL AND GROUND CONTROLLERS
3–1–7. POSITION DETERMINATION
3–6–2. IDENTIFICATION
3–10–7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION

This change updates language to clarify that pilot/operator position reports may be used when determining the location of aircraft, vehicles, personnel, and equipment. Additionally, outdated National Airspace System (NAS) terminology has been removed and replaced with current references to Airport Surface Detection Equipment (ASDE) and Tower Display Workstations (TDWs), ensuring consistency with modern systems and operational practices.

d. 3–7–2 TAXI AND GROUND MOVEMENT OPERATIONS

This change rearranges subparagraphs to help improve clarity. This change incorporates and cancels GENOT 25/29 N JO 7110.798, Taxi and Ground Movement Operations, which was effective August 12, 2025.

e. Editorial Changes

Editorial changes include updating references of airlines no longer existing as well as standardizing the use of all capital letters for five-letter fixes in examples and notes throughout the order; adding the missing note under FIG 3−9−9 to correct the print version; removing the term "decision height" and replacing it with "decision altitude" in for paragraphs 5–12–2, 5–12–6, and 5–12–7; replacing Center Radar Approach Control (CERAP) with Combined Control Facility (CCF) in TBL 1–2–1 and paragraph 5–5–4; and reintroducing the ability of the en route automation system to use targets derived from WAM and ADS-B for ATC services in subparagraph 5–1–2c.

f. Entire publication

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

PAGE CONTROL CHART

REMOVE PAGES	DATED	INSERT PAGES	DATED
Table of Contents i through xx	1/22/26	Table of Contents i through xx	7/9/26
1–2–3	2/20/25	1–2–3	2/20/25
1–2–4	1/22/26	1–2–4	7/9/26
2–1–13	2/20/25	2–1–13	2/20/25
2–1–14	2/20/25	2–1–14	7/9/26
2–1–15	2/20/25	2–1–15	2/20/25
2–1–16	2/20/25	2–1–16	7/9/26
2–2–3	2/20/25	2–2–3	2/20/25
2–2–4	2/20/25	2–2–4	7/9/26
2–3–9 through 2–3–12	2/20/25	2–3–9 through 2–3–12	7/9/26
2–4–3	2/20/25	2–4–3	2/20/25
2–4–4 through 2–4–6	2/20/25	2–4–4 through 2–4–6	7/9/26
2–4–11 and 2–4–12	2/20/25	2–4–11 and 2–4–12	7/9/26
2–4–15 and 2–4–16	2/20/25	2–4–15 through 2–4–17	7/9/26
2–6–5	1/22/26	2–6–5	7/9/26
2–6–6	1/22/26	2–6–6	1/22/26
3–1–1	8/7/25	3–1–1	8/7/25
3–1–2 through 3–1–9	2/20/25	3–1–2 through 3–1–8	7/9/26
3–6–1	2/20/25	3–6–1	7/9/26
3–6–2	2/20/25	3–6–2	2/20/25
3–7–3	2/20/25	3–7–3	2/20/25
3–7–4	2/20/25	3–7–4	7/9/26
3–7–5 through 3–7–7	8/7/25	3–7–5 through 3–7–7	7/9/26
3–7–8	8/7/25	3–7–8	8/7/25
3–9–15	1/22/26	3–9–15	1/22/26
3–9–16 and 3–9–17	1/22/26	3–9–16 and 3–9–17	7/9/26
3–9–18	1/22/26	3–9–18	1/22/26
3–10–11 and 3–10–12	8/7/25	3–10–11 and 3–10–12	7/9/26
4–3–1 through 4–3–12	2/20/25	4–3–1 through 4–3–12	7/9/26
4–5–7	2/20/25	4–5–7	2/20/25
4–5–8 through 4–5–12	1/22/26	4–5–8 through 4–5–12	7/9/26
4–6–1 and 4–6–2	2/20/25	4–6–1 and 4–6–2	7/9/26
5–1–1	2/20/25	5–1–1	7/9/26
5–1–2	2/20/25	5–1–2	2/20/25
5–5–3	1/22/26	5–5–3	1/22/26
5–5–4	1/22/26	5–5–4	7/9/26
5–5–7	1/22/26	5–5–7	1/22/26
5–5–8	1/22/26	5–5–8	7/9/26
5–6–3	2/20/25	5–6–3	2/20/25
5–6–4	1/22/26	5–6–4	7/9/26
5–12–1 and 5–12–2	2/20/25	5–12–1 and 5–12–2	7/9/26
7–4–1	8/7/25	7–4–1	7/9/26

REMOVE PAGES	DATED	INSERT PAGES	DATED
7–4–2	2/20/25	7–4–2	2/20/25
10–2–7	2/20/25	10–2–7	7/9/26
10–2–8	1/22/26	10–2–8	1/22/26
10–6–3	8/7/25	10–6–3	8/7/25
10–6–4	2/20/25	10–6–4	7/9/26
Appendix A–1	2/20/25	Appendix A–1	2/20/25
Appendix A–2 and Appendix A–3	2/20/25	Appendix A–2 and Appendix A–3	7/9/26
PCG–1	1/22/26	PCG–1	7/9/26
PCG C–1 through PCG C–6	2/20/25	PCG C–1 through PCG C–6	7/9/26
PCG R–5 and PCG R–6	2/20/25	PCG R–5 and PCG R–6	7/9/26
PCG S–5	8/7/25	PCG S–5	8/7/25
PCG S–6	8/7/25	PCG S–6	7/9/26
Index I–1 through I–13	1/22/26	Index I–1 through I–13	7/9/26

Table of Contents

Chapter 1. General

Section 1. Introduction

Section 2. Terms of Reference

Chapter 2. General Control

Section 1. General

Section 2. Flight Plans and Control Information

Section 3. Flight Progress Strips

Section 4. Radio and Interphone Communications

Chapter 3. Airport Traffic Control– Terminal

Section 1. General

Section 2. Visual Signals

Section 3. Airport Conditions

Section 4. Airport Lighting

Section 3. Departure Procedures

Section 4. Route Assignment

Section 5. Altitude Assignment and Verification

Section 6. Holding Aircraft

Section 7. Arrival Procedures

Section 8. Approach Clearance Procedures

Chapter 5. Radar

Section 1. General

Section 2. Beacon/ADS–B Systems

Section 3. Radar Identification

Section 4. Transfer of Radar Identification

Section 5. Radar Separation

Section 11. Surveillance Approaches– Terminal

Section 12. PAR Approaches– Terminal

Section 13. Automation– En Route

Section 14. Standard Terminal Automation Replacement System (STARS)–Terminal

Chapter 6. Nonradar

Section 1. General

Section 2. Initial Separation of Successive Departing Aircraft

Section 3. Initial Separation of Departing and Arriving Aircraft

Section 4. Longitudinal Separation

Section 5. Lateral Separation

Section 6. Vertical Separation

Section 7. Timed Approaches

Chapter 7. Visual

Section 1. General

Section 8. Class C Service– Terminal

Section 9. Class B Service Area– Terminal

Chapter 8. Offshore/Oceanic Procedures

Section 1. General

Section 2. Coordination

Section 3. Longitudinal Separation

Section 2. Special Operations

Section 3. Special Use, ATC–Assigned Airspace, and Stationary ALTRVs

Section 4. Fuel Dumping

Section 5. Jettisoning of External Stores

Section 6. Unmanned Free Balloons

Section 7. Parachute Operations

Section 8. Unidentified Anomalous Phenomena (UAP) Reports

Chapter 10. Emergencies

Section 1. General

Section 2. Emergency Assistance

Section 3. Overdue Aircraft

Appendices

NOTE–
The term "protected airspace," as used in this paragraph, is the airspace equal to one half the required applicable lateral separation on either side of an aircraft along its projected flight path. If the protected airspace of two aircraft does not overlap, applicable lateral separation is ensured.

a. *SAME COURSES* are courses whose protected airspaces are coincident, overlap, or intersect and whose angular difference is less than 45 degrees. (See FIG 1–2–1.)

b. *CROSSING COURSES* are intersecting courses whose angular difference is 45 through 135 degrees inclusive. (See FIG 1–2–1.)

c. *OPPOSITE/RECIPROCAL COURSES* are courses whose protected airspaces are coincident, overlap, or intersect and whose angular difference is greater than 135 degrees through 180 degrees inclusive. (See FIG 1–2–1.)

1–2–3. NOTES

Statements of fact, or of a prefatory or explanatory nature relating to directive material, are set forth as notes.

1–2–4. REFERENCES

As used in this order, references direct attention to an additional or supporting source of information such as FAA, NWS, and other agencies' orders, directives, notices, CFRs, and Advisory Circulars (ACs).

1–2–5. ANNOTATIONS

Revised, reprinted, or new pages are marked as follows:

a. The change number and the effective date are printed on each revised or additional page.

b. A page that does not require a change is reprinted in its original form.

c. Bold vertical lines in the margin of changed pages indicate the location of substantive revisions to the order. Bold vertical lines adjacent to the title of a chapter, section, or paragraph means that extensive changes have been made to that chapter, section, or paragraph.

d. Paragraphs/sections annotated with *EN ROUTE, OCEANIC,* or *TERMINAL* are only to be applied by the designated type facility. When they are not so designated, the paragraphs/sections apply to all types of facilities (en route, oceanic, and terminal).

e. The annotation, *USAF* for the U.S. Air Force, *USN* for the U.S. Navy, and *USA* for the U.S. Army denotes that the procedure immediately following the annotation applies only to the designated service.

REFERENCE–
FAA Order JO 7110.65, Para 2–1–12, Military Procedures.

f. WAKE TURBULENCE APPLICATION inserted within a paragraph means that the remaining information in the paragraph requires the application of wake turbulence procedures.

g. The annotation ***PHRASEOLOGY*** denotes the prescribed words and/or phrases to be used in communications.

NOTE–
Controllers may, after first using the prescribed phraseology for a specific procedure, rephrase the message to ensure the content is understood. Good judgment must be exercised when using nonstandard phraseology.

h. The annotation ***EXAMPLE*** provides a sample of the way the prescribed phraseology associated with the preceding paragraph(s) will be used. If the preceding paragraph(s) does (do) not include specific prescribed phraseology, the ***EXAMPLE*** merely denotes suggested words and/or phrases that may be used in communications.

NOTE–
The use of the exact text contained in an example not preceded with specific prescribed phraseology is not mandatory. However, the words and/or phrases are expected, to the extent practical, to approximate those used in the example.

1–2–6. ABBREVIATIONS

As used in this order, the abbreviations listed below have the following meanings indicated. (See TBL 1–2–1.)

TBL 1–2–1

FAA Order JO 7110.65 Abbreviations

Abbreviation	Meaning
AAO	Adverse Assumption Obstacle
AAR	Adapted arrival route
AAR	Airport arrival rate
AC	Advisory Circular
ACC	Area Control Center
ACE–IDS . . .	ASOS Controller Equipment– Information Display System
ACL	Aircraft list
ACLS	Automatic Carrier Landing System
ADAR	Adapted departure arrival route
ADC	Aerospace Defense Command
ADIZ	Air Defense Identification Zone (to be pronounced “AY DIZ”)
ADR	Adapted departure route
ADS	Automatic Dependent Surveillance
ADS–B	Automatic Dependent Surveillance–Broadcast
ADS–C	Automatic Dependent Surveillance–Contract
AFP	Airspace Flow Program
AIDC	ATS Interfacility Data Communications
AIM	Aeronautical Information Manual
AIRMET . . .	Airmen’s meteorological information
ALDARS . . .	Automated Lightning Detection and Reporting System
ALERFA . . .	Alert phase code (Alerting Service)
ALNOT	Alert notice
ALS	Approach Light System
ALTRV	Altitude reservation
AM	Ambiguity–A disparity greater than a locally adapted distance exists between the position declared for a target by MEARTS and another facility’s computer declared position during interfacility handoff
AMASS	Airport Movement Area Safety System
AMB	Ambiguity–A disparity greater than a locally adapted distance exists between the position declared for a target by STARS and another facility’s computer declared position during interfacility handoff
AMVER	Automated Mutual Assistance Vessel Rescue System
ANG	Air National Guard

Abbreviation	Meaning
APR	ATC preferred route
APREQ	Approval Request
ARAC	Army Radar Approach Control facility (US Army)
ARINC	Aeronautical Radio Incorporated
ARIP	Air refueling initial point
ARSR	Air route surveillance radar
ARTCC	Air Route Traffic Control Center
ASD	Aircraft Situation Display
ASDE	Airport surface detection equipment
ASDE–X . . .	Airport Surface Detection Equipment System – Model X
ASF	Airport Stream Filters
ASOS	Automated Surface Observing System
ASR	Airport surveillance radar
ASSC	Airport Surface Surveillance Capability
ATC	Air traffic control
ATCAA	ATC assigned airspace
ATCSCC	David J. Hurley Air Traffic Control System Command Center
ATD	Along–Track Distance
ATIS	Automatic Terminal Information Service
ATO	Air Traffic Organization
ATO COO . .	Air Traffic Organization Chief Operating Officer
ATOP	Advanced Technologies and Oceanic Procedures
ATS	Air Traffic Service
AWOS	Automated Weather Observing System
BASE	Cloud base
CA	Conflict Alert
CAA	Confirm assigned altitude
CARCAH . . .	Chief, Aerial Reconnaissance Coordination, All Hurricanes
CARF	Central Altitude Reservation Function
CAT	Clear air turbulence
CCF	Combined Control Facility
CDT	Controlled departure time
CEP	Central East Pacific
CFR	Code of Federal Regulations

and when necessary,

(reason and/or additional instructions.)

d. State the words "STAND BY."

NOTE–
"STAND BY" is not an approval or denial. The controller acknowledges the request and will respond at a later time.

REFERENCE–
FAA Order JO 7110.65, Para 2–1–21, Traffic Advisories.
FAA Order JO 7110.65, Para 4–2–5, Route or Altitude Amendments.
FAA Order JO 7110.65, Para 7–9–3, Methods.

2–1–19. WAKE TURBULENCE

a. Apply wake turbulence procedures to an aircraft operating behind another aircraft when wake turbulence separation is required.

NOTE–
Paragraph 5–5–4, Minima, subparagraphs f and g specify the required radar wake turbulence separations. Time-based separations are contained in paragraph 3–9–6, Same Runway Separation, paragraph 3–9–7, Wake Turbulence Separation for Intersection Departures, paragraph 3–9–8, Intersecting Runway Separation, paragraph 3–9–9, Nonintersecting Converging Runway Operations, paragraph 3–10–3, Same Runway Separation, paragraph 3–10–4, Intersecting Runway Separation, paragraph 6–1–4, Adjacent Airport Operation, paragraph 6–1–5, Arrival Minima, and paragraph 6–7–5, Interval Minima.

b. The separation minima must continue to touchdown for all IFR aircraft not making a visual approach or maintaining visual separation.

REFERENCE–
FAA Order JO 7110.65, Para 5–9–5, Approach Separation Responsibility.

2–1–20. WAKE TURBULENCE CAUTIONARY ADVISORIES

a. Issue wake turbulence cautionary advisories including the position, altitude if known, and direction of flight to aircraft operating behind an aircraft that requires wake turbulence separation when:

REFERENCE–
AC 90–23, Aircraft Wake Turbulence, Pilot Responsibility, Para 11.
FAA Order JO 7110.65, Para 5–5–4, Minima, subpara f.

1. *TERMINAL.* VFR aircraft not being radar vectored are behind the larger aircraft.

2. IFR aircraft accept a visual approach or visual separation.

REFERENCE–
FAA Order JO 7110.65, Para 7–4–1, Visual Approach.

3. *TERMINAL.* VFR arriving aircraft that have previously been radar vectored and the vectoring has been discontinued.

b. Issue cautionary information to any aircraft if in your opinion, wake turbulence may have an adverse effect on it. When traffic is known to be a Super aircraft, include the word *Super* in the description. When traffic is known to be a Heavy aircraft, include the word *Heavy* in the description.

NOTE–
Wake turbulence is generated when an aircraft produces lift. Because the location of wake turbulence is difficult to determine, the controller is not responsible for anticipating its existence or effect. Aircraft flying through a Super/Heavy aircraft's flight path may have an increased chance of a wake encounter.

REFERENCE–
AC 90–23, Aircraft Wake Turbulence.
P/CG Term– Aircraft Classes.
P/CG Term– Wake Turbulence.

PHRASEOLOGY–
CAUTION WAKE TURBULENCE (traffic information).

REFERENCE–
FAA Order JO 7110.65, Para 7–2–1, Visual Separation.

2–1–21. TRAFFIC ADVISORIES

Unless an aircraft is operating within Class A airspace or omission is requested by the pilot, issue traffic advisories to all aircraft (IFR or VFR) on your frequency when, in your judgment, their proximity may diminish to less than the applicable separation minima. Where no separation minima applies, such as for VFR aircraft outside of Class B/Class C airspace, or a TRSA, issue traffic advisories to those aircraft on your frequency when in your judgment their proximity warrants it. Provide this service as follows:

a. To radar identified aircraft:

1. Azimuth from aircraft in terms of the 12–hour clock, or

2. When rapidly maneuvering aircraft prevent accurate issuance of traffic as in 1 above, specify the direction from an aircraft's position in terms of the eight cardinal compass points (N, NE, E, SE, S, SW, W, and NW). This method must be terminated at the pilot's request.

3. Distance from aircraft in miles.

4. Direction in which traffic is proceeding and/or relative movement of traffic.

NOTE–
Relative movement includes closing, converging, parallel same direction, opposite direction, diverging, overtaking, crossing left to right, crossing right to left.

5. If known, type of aircraft and altitude.

REFERENCE–
FAA Order JO 7110.65, Para 2–4–21, Description of Aircraft Types.

PHRASEOLOGY–
TRAFFIC, (number) O'CLOCK,

or when appropriate,

(direction) (number) MILES, (direction)–BOUND and/or (relative movement),

and if known,

(type of aircraft and altitude).

or

When appropriate,

(type of aircraft and relative position), (number of feet) FEET ABOVE/BELOW YOU.

If altitude is unknown,

ALTITUDE UNKNOWN.

EXAMPLE–
"Traffic, eleven o'clock, one zero miles, southbound, converging, heavy Boeing Seven Eighty-seven, one seven thousand."
"Traffic, twelve o'clock, one five miles, opposite direction, altitude unknown."
"Traffic, ten o'clock, one two miles, southeast bound, one thousand feet below you."

6. When requested by the pilot, issue radar vectors to assist in avoiding the traffic, provided the aircraft to be vectored is within your area of jurisdiction or coordination has been effected with the sector/facility in whose area the aircraft is operating. If unable to provide radar vectors, inform the pilot.

PHRASEOLOGY–
(Identification) UNABLE RADAR VECTORS (time permitting, a reason).

EXAMPLE–
"November 123, unable radar vectors, you are not under my jurisdiction."

REFERENCE–
FAA Order JO 7110.65, Para 2–1–18, Operational Requests.

7. Inform the pilot of the following when traffic you have issued is not reported in sight:

(a) The traffic is no factor.

(b) The traffic is no longer depicted on radar.

PHRASEOLOGY–
TRAFFIC NO FACTOR/NO LONGER OBSERVED,

or

(number) O'CLOCK TRAFFIC NO FACTOR/NO LONGER OBSERVED,

or

(direction) TRAFFIC NO FACTOR/NO LONGER OBSERVED.

b. To aircraft that are not radar identified:

1. Distance and direction from fix.

2. Direction in which traffic is proceeding.

3. If known, type of aircraft and altitude.

4. ETA over the fix the aircraft is approaching, if appropriate.

PHRASEOLOGY–
TRAFFIC, (number) MILES/MINUTES (direction) OF (airport or fix), (direction)–BOUND,

and if known,

(type of aircraft and altitude),

ESTIMATED (fix) (time),

or

TRAFFIC, NUMEROUS AIRCRAFT VICINITY (location).

If altitude is unknown,

ALTITUDE UNKNOWN.

EXAMPLE–
"Traffic, one zero miles east of Forsythe V–O–R, Southbound, M–D Eighty, descending to one six thousand."
"Traffic, reported one zero miles west of Downey V–O–R, northbound, Apache, altitude unknown, estimated Joliet V–O–R one three one five."
"Traffic, eight minutes west of Chicago Heights V–O–R, westbound, Mooney, eight thousand, estimated Joliet V–O–R two zero three five."
"Traffic, numerous aircraft, vicinity of Delia airport."

c. For aircraft displaying Mode C, not radar identified, issue indicated altitude.

EXAMPLE–
"Traffic, one o'clock, six miles, eastbound, altitude indicates six thousand five hundred."

REFERENCE–
FAA Order JO 7110.65, Para 3–1–6, Traffic Information.
FAA Order JO 7110.65, Para 7–2–1, Visual Separation.
FAA Order JO 7110.65, Para 7–6–10, VFR Departure Information.

2–1–22. UNMANNED AIRCRAFT SYSTEM (UAS) ACTIVITY INFORMATION.

a. Issue UAS advisory information for known UAS activity, when in your judgment their proximity warrants it. If known, include position, distance, course, type of unmanned aircraft (UA), and altitude.

EXAMPLE–
"U–A–S activity, 12 o'clock, 1 mile, southbound, quad copter, 400 feet and below."
"Unmanned aircraft system activity, 2 miles east of Brandywine Airport, 300 feet and below."

b. Issue UAS advisory information for pilot–reported or tower–observed activity, when in your judgment, their proximity warrants it. If known, include position, altitude, course, and type. Continue to issue advisories to potentially impacted aircraft for at least 15 minutes following the last report.

EXAMPLE–
"U–A–S activity reported, 12 o'clock, 1 mile, altitude reported one thousand two hundred."
"Unmanned aircraft system activity observed, 1 mile east of Trenton Airport, altitude unknown."

2–1–23. BIRD ACTIVITY INFORMATION

a. Issue advisory information on pilot-reported, tower-observed, or radar-observed and pilot-verified bird activity. Include position, species or size of birds, if known, course of flight, and altitude. Do this for at least 15 minutes after receipt of such information from pilots or from adjacent facilities unless visual observation or subsequent reports reveal the activity is no longer a factor.

EXAMPLE–
"Flock of geese, one o'clock, seven miles, northbound, last reported at four thousand."
"Flock of small birds, southbound along Mohawk River, last reported at three thousand."
"Numerous flocks of ducks, vicinity Lake Winnebago, altitude unknown."

b. Relay bird activity information to adjacent facilities and to FSSs whenever it appears it will become a factor in their areas.

2–1–24. TRANSFER OF POSITION RESPONSIBILITY

The transfer of position responsibility must be accomplished in accordance with Appendix A, Standard Operating Practice (SOP) for the Transfer of Position Responsibility, and facility directives each time operational responsibility for a position is transferred from one specialist to another.

2–1–25. WHEELS DOWN CHECK

USA/USN

Remind aircraft to check wheels down on each approach unless the pilot has previously reported wheels down for that approach.

NOTE–
The intent is solely to remind the pilot to lower the wheels, not to place responsibility on the controller.

a. Tower must issue the wheels down check at an appropriate place in the pattern.

PHRASEOLOGY–
CHECK WHEELS DOWN.

b. Approach/arrival control, GCA must issue the wheels down check as follows:

13. Any additional nonroutine operational information pertinent to flight safety.

NOTE–
EN ROUTE. This includes alerting the receiving controller that the flight is conducting celestial navigation training.

REFERENCE–
FAA Order JO 7110.65, Para 9–2–2, Celestial Navigation Training.

b. Forward position report over last reporting point in the transferring facility's area if any of the following conditions exist:

1. Time differs more than 3 minutes from estimate given.

2. Requested by receiving facility.

3. Agreed to between facilities.

2–2–7. MANUAL INPUT OF COMPUTER-ASSIGNED BEACON CODES

When a flight plan is manually entered into the computer and a computer-assigned beacon code has been forwarded with the flight plan data, insert the beacon code in the appropriate field as part of the input message.

2–2–8. ALTRV INFORMATION

EN ROUTE

When an aircraft is a part of an approved ALTRV, forward only those items necessary to properly identify the flight, update flight data contained in the ALTRV APVL, or revise previously given information.

2–2–9. COMPUTER MESSAGE VERIFICATION

EN ROUTE

Unless your facility is equipped to automatically obtain acknowledgment of receipt of transferred data, when you transfer control information by computer message, obtain, via Service F, acknowledgment that the receiving center has received the message and verification of the following:

a. Within the time limits specified by a letter of agreement or when not covered by a letter of agreement, at least 15 minutes before the aircraft is estimated to enter the receiving facility's area, or at the time of a radar handoff, or coordination for transfer of control:

1. Aircraft identification.

2. Assigned altitude.

3. Departure or coordination fix time.

b. Any cancellation of IFR or EAS generated VFR flight plan.

REFERENCE–
FAA Order JO 7110.65, Para 2–2–6, IFR Flight Progress Data.

2–2–10. TRANSMIT PROPOSED FLIGHT PLAN

EN ROUTE

a. Transmit proposed flight plans which fall within an ARTCC's Proposed Boundary Crossing Time (PBCT) parameter to adjacent ARTCC's via the Computer B network during hours of inter-center computer operation. In addition, when the route of flight of any proposed flight plan exceeds 20 elements external to the originating ARTCC's area, NADIN must be used to forward the data to all affected centers.

b. During nonautomated operation, the proposed flight plans must be sent via NADIN to the other centers involved when any of the following conditions are met:

1. The route of flight external to the originating center's area consists of 10 or more elements and the flight will enter 3 or more other center areas.

NOTE–
An element is defined as either a fix or route as specified in FAA Order JO 7110.10, Flight Services, paragraph 6–2–3, Control Messages.

2. The route of flight beyond the first point of exit from the originating center's area consists of 10 or more elements, which are primarily fixes described in fix-radial-distance or latitude/longitude format, regardless of the number of other center areas entered.

3. The flight plan remarks are too lengthy for interphone transmission.

2–2–11. FORWARDING AMENDED AND UTM DATA

a. Forward any amending data concerning previously forwarded flight plans except that revisions to ETA information in paragraph 2–2–6, IFR Flight Progress Data, need only be forwarded when the time differs by more than 3 minutes from the estimate given.

PHRASEOLOGY–
(Identification), REVISED (revised information).

EXAMPLE–
"American Two, revised flight level, three three zero."

"United Eight Ten, revised estimate, Front Royal two zero zero five."

"Ghost Five Three, revised altitude, eight thousand."

"United Twenty-one Twenty-seven, revised type, heavy Boeing Seven Eighty-seven."

REFERENCE–
FAA Order JO 7110.65, Para 2–2–6, IFR Flight Progress Data.

b. Computer acceptance of an appropriate input message fulfills the requirement for sending amended data. During EAS FDP operations, the amendment data are considered acknowledged on receipt of a computer update message or a computer–generated flight progress strip containing the amended data.

NOTE–
1. *The successful utilization of automation equipment requires timely and accurate insertion of changes and/or new data.*

2. *If a pilot is not issued a computer-generated ADR/ADAR/AAR and if amendment data is not entered into the computer, the next controller will have incorrect route information.*

c. Forward any amended control information and record the action on the appropriate flight progress strip. Additionally, when a route or altitude in a previously issued clearance is amended within 30 minutes of an aircraft's proposed departure time, the facility that amended the clearance must coordinate the amendment with the receiving facility via verbal AND automated means to ensure timely passage of the information. If the automated means of coordination are unavailable, then verbal coordination is sufficient.

NOTE–
The term "receiving" facility means the ATC facility that is expected to transmit the amended clearance to the intended aircraft/pilot.

d. *EN ROUTE.* Effect manual coordination on any interfacility flight plan data that is not passed through automated means.

e. EN ROUTE. When a controller receives a UTM notification to an FDIO only facility, they must effect manual coordination for the flight plan data. In addition, the controller must verify the flight plan data to the receiving facility within three minutes of the transfer of control point estimate.

NOTE–
FDIO only facilities are facilities with FDIO but without STARS.

2–3–5. AIRCRAFT IDENTITY

Indicate aircraft identity by one of the following using combinations not to exceed seven alphanumeric characters:

a. Civil aircraft, including the air-carrier letter-digit registration number which can include the letter "T" for air taxi, the letter "L" for MEDEVAC, or the 3-letter company designator specified in FAA Order JO 7340.2, Contractions, followed by the trip or flight number. Use the operating air carrier's company name in identifying equipment interchange flights.

EXAMPLE–
"N12345."
"TN5552Q."
"AAl192."
"LN751B."

NOTE–
The letter "L" is not to be used for air carrier/air taxi MEDEVAC *aircraft.*

b. Foreign Civil Aircraft Identifiers that begin with a number (excluding ATOP platforms). ATC personnel must:

1. Amend aircraft identifications (ACIDs) containing six or fewer characters and beginning with a number by inserting the letter "Q" into Field 02 of the IFR flight plan as the first character.

EXAMPLE–
9HRA is amended to Q9HRA

2. Amend ACIDs beginning with a number containing seven characters by replacing the first character with the letter "Q" in Field 02 of the IFR flight plan.

EXAMPLE–
2TRAVSA is amended to QTRAVSA

3. Enter the original ACID into the remarks section of the flight plan.

NOTE–
Use caution not to modify or delete any existing remarks.

4. Do not use the "Q" prefix (phonetic "Quebec") when communicating with the aircraft.

5. Unless otherwise specified in a Standard Operating Procedure, verbally coordinate the aircraft's actual ACID when conducting intrafacility transfers of control.

6. Verbally coordinate the aircraft's actual ACID when conducting interfacility transfers of control.

NOTE–
1. *ATC personnel providing control services using ATOP automation systems are NOT required to amend ACIDs beginning with a number.*

2. *If operational considerations warrant them, facilities may develop local directives or orders requiring ATC personnel using ATOP to modify an ACID beginning with a number.*

REFERENCE–
FAA Order JO 7340.2, Chapter 4, Aircraft Nationality Marks, National Emblems, and Common Marks.

c. Military Aircraft.

1. Prefixes indicating branch of service and/or type of mission followed by the last 5 digits of the serial number (the last 4 digits for CFC and CTG). (See TBL 2–3–6 and TBL 2–3–7.)

2. Pronounceable words of 3, 4, 5, and 6 letters followed by a 4–, 3–, 2–, or 1–digit number.

EXAMPLE–
"SAMP Three One Six."

3. Assigned double-letter 2-digit flight number.

4. Navy or Marine fleet and training command aircraft, one of the following:

(a) The service prefix and 2 letters (use phonetic alphabet equivalent) followed by 2 or 3 digits.

TBL 2–3–6
Branch of Service Prefix

Prefix	Branch
A	U.S. Air Force
C	U.S. Coast Guard
G	Air or Army National Guard
R	U.S. Army
VM	U.S. Marine Corps
VV	U.S. Navy
CFC	Canadian Forces
CTG	Canadian Coast Guard

TBL 2–3–7
Military Mission Prefix

Prefix	Mission
E	Medical Air Evacuation
F	Flight Check
L	LOGAIR (USAF Contract)
RCH	AMC (Air Mobility Command)
S	Special Air Mission

(b) The service prefix and a digit and a letter (use phonetic alphabet equivalent) followed by 2 or 3 digits.

5. Aircraft carrying the President, Vice President, and/or their family members will use the identifiers in the following tables. See TBL 2–3–8 and TBL 2–3–9.

TBL 2–3–8
President and Family

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

TBL 2–3–9
Vice President and Family

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

d. Special use. Approved special use identifiers.

2–3–6. AIRCRAFT TYPE

Use the approved aircraft type designator, in accordance with FAA Order 7360.1, Aircraft Type Designators.

2–3–7. USAF/USN UNDERGRADUATE PILOTS

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

NOTE–
USAF solo students who have passed an instrument certification check may penetrate cloud layers in climb or descent only. Requests for revised clearances to avoid clouds in level flight can still be expected. This does not change the requirement to use the letter "Z" as a suffix to the aircraft identification.

REFERENCE–
FAA Order JO 7110.65, Para 2–4–20, Aircraft Identification.
FAA Order JO 7610.14, Chapter 7, Section 2, USAF Undergraduate Flying Training (UFT)/Pilot Instructor Training (PIT)/Introduction To Fighter Fundamentals.

2–3–8. AIRCRAFT EQUIPMENT SUFFIX

a. The aircraft equipment suffix identifying communication, navigation and surveillance (CNS) capability is generated by automation using the equipment codes of the ICAO flight plan. To change a suffix, the CNS equipment codes must be modified, allowing automation to translate them into the proper suffix. If using unsupported automation platforms (OFDPS and FDP2000), verbally coordinate changes with adjacent supported facilities.

b. ERAM and ATOP are best suited for making changes to the equipment codes in an ICAO flight plan. For FDIO entries, if uncertain of the proper format to correctly amend an equipment code, verbally coordinate the change with the appropriate en route facility.

NOTE–
Directly changing the equipment suffix with a symbol preceded by a slant instead of amending the aircraft equipment codes may unintentionally alter or delete other equipment codes.

c. For VFR operations, indicate the aircraft's transponder and navigation capabilities by adding the appropriate symbol, preceded by a slant (See TBL 2–3–10).

d. GNSS-equipped aircraft:

1. Have an equipment suffix of /G, /L, /S, or /V.

2. May be determined by executing an ICAO flight plan readout and verifying a filed "G" in the ICAO equipment list.

3. May be determined by verifying with the pilot that the aircraft is GNSS-equipped.

e. When forwarding this information, state the aircraft type followed by the word "slant" and the appropriate phonetic letter equivalent of the suffix.

EXAMPLE–
"Cessna Three–ten slant Tango."
"A–Ten slant November."
"F–Sixteen slant Papa."
"Seven–sixty–seven slant Golf."

NOTE–
/H and /O are intended for ATC use only. These suffixes are not published in the Aeronautical Information Manual.

2–3–9. CLEARANCE STATUS

Use an appropriate clearance symbol followed by a dash (–) and other pertinent information to clearly show the clearance status of an aircraft. To indicate delay status use:

a. The symbol "H" at the clearance limit when holding instructions have been included in the aircraft's original clearance. Show detailed holding information following the dash when holding differs from the established pattern for the fix; i.e., turns, leg lengths, etc.

b. The symbols "F" or "O" to indicate the clearance limit when a delay is not anticipated.

TBL 2–3–10
Aircraft Equipment Suffixes

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

2–3–10. CONTROL SYMBOLOGY

Use authorized control and clearance symbols or abbreviations for recording clearances, reports, and instructions. Control status of aircraft must always be current. You may use:

a. Plain language markings when it will aid in understanding information.

b. Locally approved identifiers. Use these only within your facility and not on teletypewriter or interphone circuits.

c. Plain sheets of paper or locally prepared forms to record information when flight progress strips are not used. (See TBL 2–3–11 and TBL 2–3–12.)

d. Control Information Symbols.
(See FIG 2–3–7 and FIG 2–3–8.)

REFERENCE–
FAA Order JO 7110.65, Para 4–5–3, Exceptions.

3. Message (if any).

4. The word “over” if required.

b. Subsequent radio transmissions from the same sector/position must use the same format, except the identification of the ATC unit may be omitted.

TERMINAL. You may omit aircraft identification after initial contact when conducting the final portion of a radar approach.

REFERENCE–
FAA Order JO 7110.65, Para 2–4–20, Aircraft Identification.

2–4–9. ABBREVIATED TRANSMISSIONS

Transmissions may be abbreviated as follows:

a. Use the identification prefix and the last 3 digits or letters of the aircraft identification after communications have been established with a U.S. civil aircraft using the aircraft registration as identification.

b. Do not abbreviate:

1. Similar sounding aircraft identifications.

2. Aircraft call signs, including:

(a) Aircraft having an International Civil Aviation Organization three letter designator (ICAO 3LD) and other aircraft with an FAA authorized call sign (U.S. special or local).

(b) Aircraft with a military call sign.

3. Foreign aircraft using the foreign civil registration number as identification.

REFERENCE–
FAA Order JO 7110.65, Para 2–4–15, Emphasis for Clarity.
FAA Order JO 7110.65, Para 2–4–20, Aircraft Identification.
FAA Order JO 7610.12, Assignment and Authorization of Call Sign Designators and Associated Telephonies.

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

d. Transmit the message immediately after the callup (without waiting for the aircraft’s reply) when the message is short and receipt is generally assured.

e. Omit the word “over” if the message obviously requires a reply.

2–4–10. INTERPHONE TRANSMISSION PRIORITIES

Give priority to interphone transmissions as follows:

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

b. Second priority. Clearances and control instructions.

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

1. Progress reports.

2. Departure or arrival reports.

3. Flight plans.

d. Fourth priority. Movement messages on VFR aircraft.

2–4–11. PRIORITY INTERRUPTION

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

2–4–12. INTERPHONE MESSAGE FORMAT

Use the following format for interphone intra/interfacility communications:

a. Both the caller and receiver identify their facility and/or position in a manner that ensures they will not be confused with another position.

NOTE–
Other means of identifying a position, such as substituting departure or arrival gate/fix names for position identification, may be used. However, it must be operationally beneficial, and the procedure fully covered in a letter of agreement or a facility directive, as appropriate.

EXAMPLE–
Caller: *"Albuquerque Center Sixty Three, Amarillo Departure."*

Receiver: *"Albuquerque Center."*

b. Between two facilities which utilize numeric position identification, the caller must identify both facility and position.

EXAMPLE–
Caller: *"Albuquerque Sixty Three, Fort Worth Eighty Two."*

c. Caller states the type of coordination to be accomplished when advantageous. For example, handoff or APREQ.

d. The caller states the message.

e. The receiver states the response to the caller's message followed by the receiver's operating initials.

f. The caller states his or her operating initials.

EXAMPLE–
1. ***Caller:*** *"Denver High, R Twenty-five."*

Receiver: *"Denver High."*

Caller: *"Request direct Denver for Delta Three Twenty-eight."*

Receiver: *"Delta Three Twenty-eight direct Denver approved. H.F."*

Caller: *"G.M."*

2. ***Receiver:*** *"Denver High, Go ahead override."*

Caller: *"R Twenty-five, Request direct Denver for Delta Three Twenty-eight."*

Receiver: *"Delta Three Twenty-eight direct Denver approved. H.F."*

Caller: *"G.M."*

3. ***Caller:*** *("Bolos" is a departure gate in Houston ARTCC's Sabine sector)–"Bolos, Houston local."*

Receiver: *"Bolos."*

Caller: *"Request Flight Level three five zero for American Twenty-five."*

Receiver: *"American Twenty-five Flight Level three five zero approved, A.C."*

Caller: *"G.M."*

4. ***Caller:*** *"Sector Twelve, Ontario Approach, APREQ."*

Receiver: *"Sector Twelve."*

Caller: *"American Five Forty-two heading one three zero and climbing to one four thousand."*

Receiver: *"American Five Forty-two heading one three zero and climbing to one four thousand approved. B.N."*

Caller: *"A.M."*

5. ***Caller:*** *"Zanesville, Columbus, seventy-three line, handoff."*

Receiver: *"Zanesville."*

Caller: *"Five miles east of Appleton VOR, United Three Sixty-six."*

Receiver: *"United Three Sixty-six, radar contact, A.Z."*

Caller: *"M.E."*

g. Identify the interphone voice line on which the call is being made when two or more such lines are collocated at the receiving operating position.

EXAMPLE–
"Washington Center, Washington Approach on the Fifty Seven line."

"Chicago Center, O'Hare Tower handoff on the Departure West line."

h. *TERMINAL.* The provisions of subparagraphs a, b, c, e, f, g, and paragraph 2–4–13, Interphone Message Termination, may be omitted provided:

1. Abbreviated standard coordination procedures are contained in a facility directive describing the specific conditions and positions that may utilize an abbreviated interphone message format; and

2. There will be no possibility of misunderstanding which positions are using the abbreviated procedures.

2–4–13. INTERPHONE MESSAGE TERMINATION

Terminate interphone messages with your operating initials.

2–4–14. WORDS AND PHRASES

a. Use the words or phrases in radiotelephone and interphone communication as contained in the P/CG or, within areas where Controller Pilot Data Link Communications (CPDLC) is in use, the phraseology contained in the applicable CPDLC message set.

b. The word *super* must be used as part of the identification in all communications with or about super aircraft.

c. The word *heavy* must be used as part of the identification in all communications with or about heavy aircraft.

d. *EN ROUTE.* The use of the words *super* or *heavy* may be omitted except as follows:

1. In communications with a terminal facility about super or heavy aircraft operations.

2. In communications with or about super or heavy aircraft with regard to an airport where the en route center is providing approach control service.

3. In communications with or about super or heavy aircraft when the separation from a following aircraft may become less than 5 miles by approved procedure.

4. When issuing traffic advisories.

EXAMPLE–
"United Fifty–Eight Heavy."

NOTE–
Most airlines will use the word "super" or "heavy" following the company prefix and flight number when establishing communications or when changing frequencies within a terminal facility's area.

e. When in radio communications with "Air Force One" or "Air Force Two," do not add the heavy designator to the call sign. State only the call sign "Air Force One/Two" regardless of the type aircraft.

2–4–15. EMPHASIS FOR CLARITY

a. Treat aircraft with similar sounding aircraft identifications by emphasizing appropriate digits, letters, or similar sounding words to aid in distinguishing between similar sounding aircraft identifications. Do not abbreviate similar sounding aircraft identifications.

REFERENCE–
FAA Order JO 7110.65, Para 2–4–20, Aircraft Identification.
FAA Order JO 7110.65, Para 2–4–9, Abbreviated Transmissions.

b. Treat aircraft with similar sounding call signs by restating the call sign after the flight number.

EXAMPLE–
"United Thirty-one United."
"American Thirty-one American."

NOTE–
Similar sounding call signs procedures may apply to ICAO 3LD U.S. special, local, or military call sign.

c. Notify each pilot concerned when communicating with aircraft having similar sounding identifications.

EXAMPLE–
"United Thirty-one United, Miami Center, Alaska Thirty-one is also on this frequency, acknowledge."

"Alaska Thirty-one Alaska, Miami Center, American Thirty-one is also on this frequency, acknowledge."

d. Notify the operations supervisor-in-charge of any duplicate call signs or phonetically similar-sounding call signs when the aircraft are operating simultaneously within the same sector.

REFERENCE–
FAA Order JO 7210.3, Para 2–1–14, Aircraft Identification Problems.

2–4–16. ICAO PHONETICS

Use the ICAO pronunciation of numbers and individual letters. (See the ICAO radiotelephony alphabet and pronunciation in TBL 2–4–1.)

EXAMPLE–

Mach Number	Statement
1.5	"Mach one point five."
0.64	"Mach point six four."
0.7	"Mach point seven."

m. Miles. The separate digits of the mileage followed by the word "mile."

EXAMPLE–
"Three zero-mile arc east of Nottingham."
"Traffic, one o'clock, two five miles, northbound, A–Three Twenty, flight level two seven zero."

2–4–18. NUMBER CLARIFICATION

a. If deemed necessary for clarity, and after stating numbers as specified in paragraph 2–4–17, Numbers Usage, controllers may restate numbers using either group or single-digit form.

EXAMPLE–
"One Seven Thousand, Seventeen Thousand."
"Altimeter Two Niner Niner Two, Twenty Nine Ninety Two."
"One Two Six Point Five Five, One Twenty Six Point Fifty Five."

2–4–19. FACILITY IDENTIFICATION

Identify facilities as follows:

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

EXAMPLE–
"Columbus Tower."
"Barksdale Tower."
"Navy Jacksonville Tower."

b. Air route traffic control centers. State the name of the facility followed by the word "center."

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

EXAMPLE–
"Denver Approach."
"Griffiss Approach."
"Navy Jacksonville Approach."

d. Functions within a terminal facility. State the name of the facility followed by the name of the function.

EXAMPLE–
"Boston Departure."
"LaGuardia Clearance Delivery."
"O'Hare Ground."

e. When calling or replying on an interphone line which connects only two non–VSCS equipped facilities, you may omit the facility name.

EXAMPLE–
"Bradford High, Handoff."

f. Flight service stations. State the name of the station followed by the word "radio."

EXAMPLE–
"Leesburg Radio."

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

EXAMPLE–
"Corpus Christi G–C–A."
"Davison G–C–A."

2–4–20. AIRCRAFT IDENTIFICATION

Use the full identification in reply to aircraft with similar sounding identifications. For other aircraft, the same identification may be used in reply that the pilot used in his/her initial callup except use the correct identification after communications have been established. Identify aircraft as follows:

a. U.S. registry aircraft. State one of the following:

REFERENCE–
FAA Order JO 7110.65, Para 2–4–8, Radio Message Format.
FAA Order JO 7110.65, Para 2–4–9, Abbreviated Transmissions.
FAA Order JO 7110.65, Para 2–4–15, Emphasis for Clarity.
FAA Order JO 7110.65, Para 2–4–17, Numbers Usage.

1. Civil. State the prefix "November" when establishing initial communications with U.S. registered aircraft followed by the ICAO phonetic pronunciation of the numbers/letters of the aircraft registration. The controller may state the aircraft type, the model, the manufacturer's name, followed by the ICAO phonetic pronunciation of the numbers/letters of the aircraft registration if used by the pilot on the initial or subsequent call.

EXAMPLE–
Air traffic controller's initiated call:

"November One Two Three Four Golf."
"November One Two Three Four."

Responding to pilot's initial or subsequent call:

"Jet Commander One Two Three Four Papa."
"Bonanza One Two Three Four Tango."
"Sikorsky Six Three Eight Mike Foxtrot."

NOTE–
If aircraft identification becomes a problem when the procedures specified above are used, see paragraph 2–4–15, Emphasis for Clarity.

2. Aircraft having an ICAO 3LD and other FAA authorized call sign (U.S. special or local). State the call sign followed by the flight number in group form.

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

EXAMPLE–
"American Fifty-two."
"Delta One Hundred."
"Southwest One Ten."
"General Motors Thirty Fifteen."
"United One Zero One."
"Delta Zero One Zero."
"American Ten Zero Four."

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) 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."

(b) USAF or other government aircraft engaged in aerial sampling/surveying missions. State the call sign "SAMP" followed by a three–digit flight number.

EXAMPLE–
"SAMP Three One Six."

REFERENCE–
FAA Order JO 7110.65, Para 9–2–17, SAMP Flights.

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 full aircraft registration, or state the letters or digits of the full aircraft registration. Do not abbreviate.

EXAMPLE–
"Citation C–G–L–R–B."
"C–G–L–R–B."

NOTE–
1. *Letters may be spoken individually or phonetically.*

2. *Some foreign civil aircraft registrations begin with a number but show as a "Q" in the flight plan (the filed flight identification will be listed in the remarks section). Do not verbally state the "Q" prefix in communication with the aircraft.*

REFERENCE–
FAA Order JO 7110.65, Para 2–3–5, Aircraft Identity.
FAA Order JO 7110.65, Para 2–4–9, Abbreviated Transmissions.
FAA Order JO 7340.2, Chapter 4, Aircraft Nationality Marks, National Emblems, and Common Marks.

2. ICAO 3LD. State the associated telephony followed by the flight number in group form, or separate digits may be used if that is the format used by the pilot. Do not abbreviate.

EXAMPLE–
"Scandinavian Sixty–eight."
"Scandinavian Six Eight."

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

EXAMPLE–
"Canforce Five Six Two Seven."
"Brazilian Air Force Five Three Two Seven."

2–4–21. DESCRIPTION OF AIRCRAFT TYPES

Except for super and 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 type designator.

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

EXAMPLE–
"A-Three Twenty."
"American E-One Ninety."
"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 type 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 super aircraft, specify the word s*uper* before the manufacturer's name and model.

e. When issuing traffic information to aircraft following a heavy aircraft, specify the word *heavy* before the manufacturer's name and model.

EXAMPLE–
"Super A-Three-Eighty" or "Super A-three-eighty-eight."
"Heavy C-Seventeen."
"Heavy Boeing Seven Forty-Seven."

REFERENCE–
FAA Order 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.”

PHRASEOLOGY–

AREA OF (Intensity) PRECIPITATION BETWEEN (number) O'CLOCK AND (number) O'CLOCK, (number) MILES, MOVING (direction) AT (number) KNOTS, TOPS (altitude). AREA IS (number) MILES IN DIAMETER.

EXAMPLE–

1. *"Area of heavy precipitation between ten o'clock and two o'clock, one five miles. Area is two five miles in diameter."*

2. *"Area of heavy to extreme precipitation between ten o'clock and two o'clock, one five miles. Area is two five miles in diameter."*

REFERENCE–

P/CG Term – Precipitation Radar Weather Descriptions.

e. *TERMINAL:* In STARS, correlate precipitation descriptors from subparagraph d as follows:

1. Level 1 = LIGHT

2. Level 2 = MODERATE

3. Levels 3 and 4 = HEAVY

4. Levels 5 and 6 = EXTREME

f. When precipitation intensity information is not available.

PHRASEOLOGY–

AREA OF PRECIPITATION BETWEEN (number) O'CLOCK AND (number) O'CLOCK, (number) MILES. MOVING (direction) AT (number) KNOTS, TOPS (altitude). AREA IS (number) MILES IN DIAMETER, INTENSITY UNKNOWN.

EXAMPLE–

"Area of precipitation between one o'clock and three o'clock, three five miles moving south at one five knots, tops flight level three three zero. Area is three zero miles in diameter, intensity unknown."

NOTE–

Phraseology using precipitation intensity descriptions is only applicable when the radar precipitation intensity information is determined by NWS radar equipment or NAS ground based digitized radar equipment with weather capabilities. This precipitation may not reach the surface.

g. *EN ROUTE*. When issuing precipitation intensity, use the following:

1. Describe the lowest displayable precipitation intensity as MODERATE.

2. Describe the highest displayable precipitation intensity as HEAVY to EXTREME.

PHRASEOLOGY–

AREA OF (Intensity) PRECIPITATION BETWEEN (number) O'CLOCK and (number) O'CLOCK, (number) MILES, MOVING (direction) AT (number) KNOTS, TOPS (altitude). If applicable, AREA IS (number) MILES IN DIAMETER.

EXAMPLE–

1. *"Area of moderate precipitation between ten o'clock and one o'clock, three zero miles moving east at two zero knots, tops flight level three seven zero.*

2. *"Area of moderate precipitation between ten o'clock and three o'clock, two zero miles. Area is two five miles in diameter."*

h. Controllers must ensure that the highest available level of precipitation intensity within their area of jurisdiction is displayed unless operational/equipment limitations exist.

i. When requested by the pilot, provide radar navigational guidance and/or approve deviations around weather or chaff areas. In areas of significant weather, plan ahead and be prepared to suggest, upon pilot request, the use of alternative routes/altitudes.

1. An approval for lateral deviation authorizes the pilot to maneuver left or right within the lateral limits specified in the clearance.

REFERENCE–

AIM, Para 7–1–12, ATC Inflight Weather Avoidance Assistance, Subpara b1(b).

2. When approving a weather deviation for an aircraft that had previously been issued a crossing altitude, including climb via or descend via clearances, issue an altitude to maintain and, if necessary, assign a speed along with the clearance to deviate. If you intend on clearing the aircraft to resume the procedure, advise the pilot.

PHRASEOLOGY–

DEVIATION (restrictions, if necessary) APPROVED, MAINTAIN (altitude), (if necessary) MAINTAIN (speed), (if applicable) EXPECT TO RESUME (SID/STAR, etc.) AT (NAVAID, fix/waypoint).

NOTE–

After a climb via or descend via clearance has been issued, a vector/deviation off of a SID/STAR cancels all published altitude and speed restrictions on the procedure. The aircraft's Flight Management System (FMS) may be unable to process crossing altitude restrictions once the aircraft leaves the SID/STAR lateral path. Without an assigned altitude, the aircraft's FMS may revert to leveling off at the altitude set by the pilot, which may be the SID/STAR published top or bottom altitude.

REFERENCE–

FAA Order JO 7110.65, Para 4–2–5, Route or Altitude Amendments.
FAA Order JO 7110.65, Para 5–6–1, Application.
FAA Order JO 7110.65, Para 5–6–2, Methods.

3. If a pilot enters your area of jurisdiction already deviating for weather, advise the pilot of any additional weather which may affect the route.

NOTE–

When aircraft are deviating around weather and transitioning from sector to sector, unless previously coordinated, the receiving controller should not assume that the transferring controller has issued weather affecting the aircraft's route of flight.

4. If traffic and airspace (i.e., special use airspace boundaries, LOA constraints) permit, combine the approval for weather deviation with a clearance on course.

PHRASEOLOGY–

DEVIATION (restrictions if necessary) APPROVED, WHEN ABLE, PROCEED DIRECT (name of NAVAID/WAYPOINT/FIX)

or

DEVIATION (restrictions if necessary) APPROVED, WHEN ABLE, FLY HEADING (degrees), VECTOR TO JOIN (airway) AND ADVISE.

EXAMPLE–

1. *"Deviation 20 degrees right approved, when able proceed direct O'Neill VORTAC and advise." En Route: The corresponding fourth line entry is "D20R/ONL" or "D20R/F."*

2. *"Deviation 30 degrees left approved, when able fly heading zero niner zero, vector to join J324 and advise." En Route: In this case the free text character limitation prevents use of fourth line coordination and verbal coordination is required.*

5. If traffic or airspace prevents you from clearing the aircraft on course at the time of the approval for a weather deviation, instruct the pilot to advise when clear of weather.

PHRASEOLOGY–

DEVIATION (restrictions if necessary) APPROVED, ADVISE CLEAR OF WEATHER.

EXAMPLE–

"Deviation North of course approved, advise clear of weather."
En Route: In this case the corresponding fourth line entry is "DN," and the receiving controller must provide a clearance to rejoin the route in accordance with paragraph 2–1–15c.

j. When a deviation cannot be approved as requested because of traffic, take an alternate course of action that provides positive control for traffic resolution and satisfies the pilot's need to avoid weather.

PHRASEOLOGY–

UNABLE REQUESTED DEVIATION, FLY HEADING (heading), ADVISE CLEAR OF WEATHER

or

UNABLE REQUESTED DEVIATION, TURN (number of degrees) DEGREES (left or right) VECTOR FOR TRAFFIC, ADVISE CLEAR OF WEATHER,

EXAMPLE–

"Unable requested deviation, turn thirty degrees right vector for traffic, advise clear of weather."

Chapter 3. Airport Traffic Control– Terminal

Section 1. General

3–1–1. PROVIDE SERVICE

Provide airport traffic control service based only upon observed or known traffic and airport conditions.

NOTE–
When operating in accordance with CFRs, it is the responsibility of the pilot to avoid collision with other aircraft. However, due to the limited space around terminal locations, traffic information can aid pilots in avoiding collision between aircraft operating within Class B, Class C, or Class D surface areas and the terminal radar service areas, and transiting aircraft operating in proximity to terminal locations.

3–1–2. PREVENTIVE CONTROL

Provide preventive control service only to aircraft operating in accordance with a letter of agreement. When providing this service, issue advice or instructions only if a situation develops which requires corrective action.

NOTE–
1. *Preventive control differs from other airport traffic control in that repetitious, routine approval of pilot action is eliminated. Controllers intervene only when they observe a traffic conflict developing.*

2. *Airfield Operating instructions, Memorandums of Understanding, or other specific directives used exclusively by the Department of Defense (DoD) satisfies the criteria in paragraph 3–1–2 above.*

3–1–3. USE OF ACTIVE RUNWAYS

The local controller has primary responsibility for operations conducted on the active runway and must control the use of those runways. Positive coordination and control is required as follows:

NOTE–
Exceptions may be authorized only as provided in paragraph 1–1–11, Waivers to This Order, and FAA Order JO 7210.3, Facility Operation and Administration, paragraph 10–1–7, Use of Active Runways, where justified by extraordinary circumstances at specific locations.

REFERENCE–
FAA Order JO 7110.65, Para 1–1–11, Waivers to This Order.
FAA Order JO 7210.3, Para 10–1–7, Use of Active Runways.

a. Ground control must obtain approval from local control before authorizing an aircraft or a vehicle to cross or use any portion of an active runway. The coordination must include the point/intersection at the runway where the operation will occur.

PHRASEOLOGY–
CROSS (runway) AT (point/intersection).

b. When the local controller authorizes another controller to cross an active runway, the local controller must verbally specify the runway to be crossed and the point/intersection at the runway where the operation will occur preceded by the word “cross.”

PHRASEOLOGY–
CROSS (runway) AT (point/intersection).

c. The ground controller must advise the local controller when the coordinated runway operation is complete. This may be accomplished verbally or through visual aids as specified by a facility directive.

d. *USA/USAF/USN NOT APPLICABLE.* Authorization for aircraft/vehicles to taxi/proceed on or along an active runway, for purposes other than crossing, must be provided via direct communications on the appropriate

local control frequency. This authorization may be provided on the ground control frequency after coordination with local control is completed for those operations specifically described in a facility directive.

NOTE–
The USA, USAF, and USN establish local operating procedures in accordance with, respectively, USA, USAF, and USN directives.

e. The local controller must coordinate with the ground controller before using a runway not previously designated as active.

REFERENCE–
FAA Order JO 7110.65, Para 3–1–4, Coordination Between Local and Ground Controllers.

3–1–4. COORDINATION BETWEEN LOCAL AND GROUND CONTROLLERS

Local and ground controllers must exchange information as necessary for the safe and efficient use of airport runways and movement areas. This may be accomplished via verbal means, flight progress strips, other written information, or automation displays. As a minimum, provide aircraft identification and applicable runway/intersection/taxiway information as follows:

a. Ground control must notify local control when a departing aircraft has been taxied to a runway other than one previously designated as active.

REFERENCE–
FAA Order JO 7110.65, Para 3–1–3, Use of Active Runways.
FAA Order JO 7210.3, Para 10–1–6, Selecting Active Runways.

b. Ground control must notify local control of any aircraft taxied to an intersection for takeoff. This notification may be accomplished by verbal means or by flight progress strips.

REFERENCE–
FAA Order JO 7110.65, Para 3–9–7, Wake Turbulence Separation for Intersection Departures.

c. When the runways in use for landing/departing aircraft are not visible from the tower or the aircraft using them are not visible on an ASDE, advise the local/ground controller of the aircraft's location before releasing the aircraft to the other controller.

3–1–5. VEHICLES/EQUIPMENT/PERSONNEL NEAR/ON RUNWAYS

a. When established in a letter of agreement (LOA), vehicles, equipment, and personnel in two–way communications with ATC may be authorized to operate in the runway safety area (RSA) up to the edge of the runway surface, which includes when aircraft are arriving, departing, or taxiing along the runway.

PHRASEOLOGY–
PROCEED AS REQUESTED; (and if necessary, additional instructions or information).

REFERENCE–
FAA Order JO 7210.3, Para 4–3–1, Letters of Agreement.

NOTE–
DoD-only airfields—See Service Manual and/or local operating procedures for guidance on aerodrome operations and LOA requirements.

b. Ensure that the runway to be used is free of all known ground vehicles, equipment, and personnel before a departing aircraft starts takeoff or a landing aircraft crosses the runway threshold.

NOTE–
"PROCEED AS REQUESTED" is not approved phraseology for instructing aircraft, vehicles, equipment, or personnel to cross or operate on a runway.

NOTE–
Establishing hold lines/signs is the responsibility of the airport manager. Standards for surface measurements, markings, and signs are contained in the following Advisory Circulars; AC 150/5300–13, Airport Design; AC 150/5340–1, Standards for Airport Markings, and AC 150/5340–18, Standards for Airport Sign Systems. The operator is responsible to properly position the aircraft, vehicle, or equipment at the appropriate hold line/sign or designated point. The requirements in paragraph 3–1–12, Visually Scanning Runways, remain valid as appropriate.

REFERENCE–
FAA Order JO 7110.65, Para 3–7–4, Runway Proximity.
FAA Order JO 7110.65, Para 3–8–2, Touch-and-Go or Stop-and-Go or Low Approach.
FAA Order JO 7110.65, Para 3–10–10, Altitude Restricted Low Approach.
AC 150/5300–13, Airport Design.
AC 150/5340–1, Standards for Airport Markings.
14 CFR Section 91.129, Operations in Class D Airspace.
AIM, Para 2–2–3, Obstruction Lights.
P/CG Term – Runway in Use/Active Runway/Duty Runway.

3–1–6. TRAFFIC INFORMATION

a. Describe vehicles, equipment, or personnel on or near the movement area in a manner which will assist pilots in recognizing them.

EXAMPLE–
"Mower left of runway two seven."
"Trucks crossing approach end of runway two five."
"Workman on taxiway Bravo."
"Aircraft left of runway one eight."

b. Describe the relative position of traffic in an easy to understand manner, such as "to your right" or "ahead of you."

EXAMPLE–
1. *"Traffic, United Airbus Three Twenty-one on downwind leg to your left."*
2. *"King Air inbound from outer marker on straight-in approach to runway one seven."*
3. *"Traffic, Heavy Boeing Seven Sixty-seven on 2-mile final to the parallel runway, runway two six right, cleared to land. Caution wake turbulence."*

c. When using a CTRD, you may issue traffic advisories using the standard radar phraseology prescribed in paragraph 2–1–21, Traffic Advisories.

REFERENCE–
FAA Order JO 7110.65, Para 3–10–10, Altitude Restricted Low Approach.

3–1–7. POSITION DETERMINATION

Determine the position of an aircraft, vehicles, personnel, or equipment before issuing taxi instructions, takeoff clearance, or authorization to proceed onto the movement area. Pilot/operator position reports may be used when visual observation of aircraft, vehicles, personnel, or equipment is not possible. Procedures covering the use of ASDE are contained in Section 6 of this chapter.

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–
FAA Order JO 7110.65, Para 2–6–2, PIREP Solicitation and Dissemination.
FAA Order JO 7110.65, Para 2–9–3, Content.
FAA Order 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.

c. Apply the following procedures and phraseology for the depicted wind shear detection system described below.

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–
FAA Order 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 paragraph 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, paragraph 3–9–1, Departure Information, and paragraph 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.

d. 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 approved separation between the aircraft that is responding to an escape and any other aircraft, airspace, terrain, or obstacle. Responsibility for approved separation resumes when one of the following conditions is met:

(a) Departures:

(1) A crew member informs ATC that the wind shear escape maneuver is complete and ATC observes that approved 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 must 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–
FAA Order 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 paragraph 7–2–1, Visual Separation, apply unless otherwise authorized by the Service Area Director of Air Traffic Operations.

REFERENCE–
FAA Order JO 7110.65, Para 5–3–2, Primary Radar Identification Methods.
FAA Order JO 7110.65, Para 5–3–3, Beacon/ADS–B Identification Methods.
FAA Order 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 paragraph 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–
FAA Order JO 7110.65, Para 5–5–4, Minima.

d. If there is an outage of the ASR supporting the ASDE system and Multilateration (MLAT) is inoperative or is not present at airports with an ASDE system, the tower position(s) responsible for aircraft on approach to the airport must enable the ADS–B indicator on the tower display workstation(s) (TDW(s)).

NOTE–
The ADS–B indicator will only display if the TDW is operating in Fused Display Mode.

REFERENCE–
FAA Order JO 7110.65, Para 3–6–2, Identification.
FAA Order JO 7110.65, Para 5–14–5, Information Displayed.

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–
FAA Order 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–
FAA Order JO 7210.3, Para 5–4–8, 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 must visually scan runways to the maximum extent possible.

b. Ground control must 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 airport traffic control 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–
FAA Order 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/FOUR–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/Four-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/Four-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/Four-Hour Tarmac Rule.

Section 6. Airport Surface Detection Procedures

3–6–1. EQUIPMENT USAGE

a. The operational status of ASDE systems must be determined during the relief briefing, or as soon as possible after assuming responsibility for the associated position.

b. Use ASDE systems to augment visual observation of aircraft landing or departing, and aircraft or vehicular movements on runways and taxiways, or other parts of the movement area.

1. ASDE systems with safety logic must be operated continuously.

2. ASDE systems without safety logic must be operated:

(a) Continuously between sunset and sunrise.

(b) When visibility is less than the most distant point in the active movement area, or

(c) When, in your judgment, its use will assist you in the performance of your duties at any time.

NOTE–
Radar-only mode is an enhancement of the ASDE–X and ASSC systems that allows the system to stay operational with safety logic processing during a simultaneous loss of the Multilateration (MLAT) subsystem and ADS–B data or loss of ADS–B data when MLAT is not present. The system stays in full core alert status under radar-only mode but without automatic data block capability.

3–6–2. IDENTIFICATION

a. To identify an observed target/track on an ASDE system display, correlate its position with one or more of the following:

1. Pilot/vehicle operator position report.

2. Controller's visual observation.

3. An identified target observed on the TDW.

b. An observed target/track on an ASDE system display may be identified as a false target by visual observation. If the area containing a suspected false target is not visible from the tower, an airport operations vehicle or pilots of aircraft operating in the area may be used to conduct the visual observation.

c. After positive verification that a target is false, through pilot/vehicle operator position report or controller visual observation, the track may be temporarily dropped, which will remove the target from the display and safety logic processing. A notation must be made to FAA Form 7230–4, Daily Record of Facility Operation, when a track is temporarily dropped.

3–6–3. INFORMATION USAGE

a. ASDE system derived information may be used to:

1. Formulate clearances and control instructions to aircraft and vehicles on the movement area.

REFERENCE–
FAA Order JO 7210.3, Para 3–6–2, ATC Surveillance Source Use.

2. Position aircraft and vehicles using the movement area.

3. Determine the exact location of aircraft and vehicles, or spatial relationship to other aircraft/vehicles on the movement area.

4. Monitor compliance with control instructions by aircraft and vehicles on taxiways and runways.

5. Confirm pilot reported positions.

6. Provide directional taxi information, as appropriate.

PHRASEOLOGY–
TURN (left/right) ON THE TAXIWAY/RUNWAY YOU ARE APPROACHING.

b. Do not provide specific navigational guidance (exact headings to be followed) unless an emergency exists or by mutual agreement with the pilot.

NOTE–
It remains the pilot's responsibility to navigate visually via routes to the clearance limit specified by the controller and to avoid other parked or taxiing aircraft, vehicles, or persons in the movement area.

c. Do not allow an aircraft to begin departure roll or cross the landing threshold whenever there is an unidentified target/track displayed on the runway.

3–6–4. SAFETY LOGIC ALERT RESPONSES

When the system generates an alert, the controller must immediately assess the situation visually and as presented on the ASDE system display, then take appropriate action as follows:

a. When an arrival aircraft (still airborne, prior to the landing threshold) activates a warning alert, the controller must issue go-around instructions. (Exception: Alerts involving known formation flights, as they cross the landing threshold, may be disregarded if all other factors are acceptable.)

NOTE–
The intent of this paragraph is that an aircraft does not land on the runway, on that approach, when the safety logic system has generated a warning alert. A side−step maneuver or circle to land on another runway satisfies this requirement.

REFERENCE–
FAA Order JO 7110.65, Para 3−8−1, Sequence/Spacing Application.
FAA Order JO 7110.65, Para 3−9−6, Same Runway Separation.
FAA Order JO 7110.65, Para 3−10−3, Same Runway Separation.
P/CG Term− Go Around.

b. When an arrival aircraft activates a warning alert to a taxiway, the controller must issue go−around instructions.

c. When two arrival aircraft, or an arrival aircraft and a departing aircraft activate an alert, the controller will issue go−around instructions or take appropriate action to ensure intersecting runway separation is maintained.

REFERENCE–
FAA Order JO 7110.65, Para 3−9−8, Intersecting Runway/Intersecting Flight Path Operations.
FAA Order JO 7110.65, Para 3−10−4, Intersecting Runway/Intersecting Flight Path Separation.

d. For other safety logic system alerts, issue instructions/clearances based on good judgment and evaluation of the situation at hand.

or

(direction),

or

ACROSS RUNWAY (number), at (runway/taxiway).

or

VIA (route), HOLD SHORT OF (location)

or

FOLLOW (traffic) (restrictions as necessary)

or

BEHIND (traffic).

EXAMPLE–
"Cross Runway Two–Eight Left, at taxiway Alpha, hold short of Runway Two–Eight Right."

"Taxi/continue taxiing/proceed to the hangar."

"Taxi/continue taxiing/proceed straight ahead then via ramp to the hangar."

"Taxi/continue taxiing/proceed on Taxiway Charlie, hold short of Runway Two–Seven."

or

"Taxi/continue taxing/proceed on Charlie, hold short of Runway Two–Seven."

b. When authorizing an aircraft to taxi to an assigned takeoff runway, state the departure runway followed by the specific taxi route. Issue hold short instructions, in accordance with subparagraph a above, when an aircraft will be required to hold short of a runway or other points along the taxi route.

NOTE–
If the specific taxi route ends into a connecting taxiway with the same identifier (for example, taxiway "A" connects with Taxiway "A1") at the approach end of the runway, the connecting taxiway may be omitted from the clearance.

PHRASEOLOGY–
RUNWAY (number), TAXI VIA (route as necessary).

or

RUNWAY (number), TAXI VIA (route as necessary)(hold short instructions as necessary)."

EXAMPLE–
"Runway Three–Six Left, taxi via taxiway Alpha, hold short of taxiway Charlie."

or

"Runway Three–Six Left, taxi via Alpha, hold short of Charlie."

or

"Runway Three–Six Left, taxi via taxiway Alpha, hold short of Runway Two–Seven Right."

or

"Runway Three−Six Left, taxi via Charlie, cross Runway Two−Seven Left, hold short of Runway Two−Seven Right."

or

"Runway Three−Six Left, taxi via Alpha, Charlie, cross Runway One−Zero."

c. Issue a crossing clearance to aircraft for each runway their route crosses. An aircraft must have crossed a previous runway before another runway crossing clearance may be issued. At those airports where the taxi distance between runway centerlines is 1,300 feet or less, multiple runway crossings may be issued with a single clearance. The air traffic manager must submit a request to the appropriate Service Area Director of Air Traffic Operations and receive approval before authorizing multiple runway crossings.

NOTE−
Controllers should avoid crossing points that are not perpendicular or nearly perpendicular to the runway to be crossed, (for example, reverse high speed taxiways).

PHRASEOLOGY−
"Cross (runway) at (runway/taxiway), hold short of (runway)", or
Cross (runways) at (runway/taxiway).

EXAMPLE−
"Cross Runway One−Six Left at Taxiway Bravo, hold short of Runway One−Six Right."
"Cross Runway One−Six Left and Runway One−Six Right at Taxiway Bravo."

REFERENCE−
FAA Order JO 7210.3, Para 10−3−11 Multiple Runway Crossings.

d. When an aircraft/vehicle is instructed to "follow" traffic and requires a runway crossing, issue a runway crossing clearance in addition to the follow instructions and/or hold short instructions, as applicable.

EXAMPLE−
"Follow (traffic), cross Runway Two−Seven Right, at Taxiway Whiskey"

or

"Follow (traffic), cross Runway Two Seven−Right at Taxiway Whiskey, hold short of Runway Two−Seven Left."

e. Issue a crossing clearance to vehicles for each runway their route crosses. A vehicle must have crossed a previous runway before another runway crossing clearance may be issued.

NOTE−
A clearance is required for vehicles to operate on any active, inactive, or closed runway except for vehicles operating on closed runways in accordance with a Letter of Agreement (LOA).

f. Vehicles that have been issued a clearance onto a runway to conduct runway operations are authorized to cross intersecting runways, unless otherwise restricted. Issue hold short instructions as needed.

NOTE−
Vehicles should not normally use runways as transition routes to other parts of the airfield. These movements are not considered runway operations and the use of alternative routes is preferred.

g. Crossing of active runway(s) by aircraft/vehicle(s):

1. During departure operations, ensure that aircraft/vehicles intending to cross a runway do not cross the runway holding position markings until the controller visually observes the departure aircraft in a turn, or the departure aircraft has passed the point where the crossing aircraft/vehicle is located, regardless of altitude, unless authorized in FAA Order JO 7110.65, paragraph 3−10−10, Altitude Restricted Low Approach.

REFERENCE−
AIM, Runway Position Holding Markings, Subpara 2−3−5a.
FAA Order 7110.65, Para 3−10−10, Altitude Restricted Low Approach.

2. During arrival operations, ensure the following:

(a) An aircraft/vehicle has completed crossing prior to an arriving aircraft crossing the landing threshold, or

REFERENCE–
P/CG Term – Clear of the Runway.

(b) An aircraft/vehicle must not cross the runway holding position markings until an arriving aircraft has passed the point at which the crossing is intended, or

(c) An aircraft/vehicle must not cross the runway holding position markings until an arriving aircraft has completed landing roll and:

(1) Acknowledged the instruction to exit the runway prior to the point at which the crossing is intended, or

(2) Acknowledged the instruction to hold short of the point at which the crossing is intended, or

(3) Is visually observed exiting the runway prior to the point at which the crossing is intended.

3. LAHSO application: When the arriving aircraft has acknowledged a clearance to land and hold short in accordance with FAA Order JO 7110.118, Land and Hold Short Operations (LAHSO), an aircraft/vehicle may cross the runway beyond the arriving aircraft's hold short point. The crossing aircraft/vehicle must be informed the landing traffic will hold short of the intersection.

PHRASEOLOGY–
(crossing instructions) LANDING TRAFFIC WILL HOLD SHORT OF THE INTERSECTION.

EXAMPLE–
"United Forty-Eight, Cross Runway Seven Left at taxiway Whiskey, landing traffic will hold short of the intersection."

REFERENCE–
FAA Order JO 7110.65, Para 3–10–5, Landing Clearance.

h. Request a read back of runway hold short instructions when it is not received from the pilot/vehicle operator.

PHRASEOLOGY–
READ BACK HOLD INSTRUCTIONS.

EXAMPLE–
1. *"American Four Ninety Two, Runway Three Six Left, taxi via taxiway Charlie, hold short of Runway Two Seven Right."*

or

"American Four Ninety Two, Runway Three Six Left, taxi via Charlie, hold short of Runway Two Seven Right."

"American Four Ninety Two, Roger."

"American Four Ninety Two, read back hold instructions."

2. *"Cleveland Tower, American Sixty Three is ready for departure."*

"American Sixty Three, hold short of Runway Two Three Left, traffic one mile final."

"American Sixty Three, Roger."

"American Sixty Three, read back hold instructions."

3. *"OPS Three proceed via taxiway Charlie hold short of Runway Two Seven."*

or

"OPS Three proceed via Charlie hold short of Runway Two Seven."

"OPS Three, Roger."

"OPS Three, read back hold instructions."

NOTE–
Read back hold instructions phraseology may be initiated for any point on a movement area when the controller believes the read back is necessary.

i. Issue progressive taxi/ground movement instructions when:

1. A pilot/operator requests.

2. The specialist deems it necessary due to traffic or field conditions, e.g., construction or closed taxiways.

3. Necessary during reduced visibility, especially when the taxi route is not visible from the tower.

NOTE–
Progressive instructions may include step–by–step directions and/or directional turns.

REFERENCE–
FAA Order JO 7110.65, Para 3–7–4, Runway Proximity.
FAA Order JO 7110.65, Para 3–11–1, Taxi and Ground Movement Operation.

j. Issue instructions to expedite a taxiing aircraft or a moving vehicle.

PHRASEOLOGY–
TAXI WITHOUT DELAY (traffic if necessary).

EXIT/PROCEED/CROSS (runway/taxiway) at (runway/taxiway) WITHOUT DELAY.

k. Issue instructions to aircraft/vehicle to hold short of an approach/departure hold area when required.

PHRASEOLOGY–
HOLD SHORT OF (runway) APPROACH

HOLD SHORT OF (runway)DEPARTURE

3–7–3. GROUND OPERATIONS

Avoid clearances which require:

a. Super or heavy aircraft to use greater than normal taxiing power.

b. Small aircraft or helicopters to taxi in close proximity to taxiing or hover-taxi helicopters.

NOTE–
Use caution when taxiing smaller aircraft/helicopters in the vicinity of larger aircraft/helicopters. Controllers may use the words rotor wash, jet blast, or prop wash when issuing cautionary advisories.

EXAMPLE–
"Follow Boeing 757, Runway Three–Six Left, taxi via Alpha, Caution jet blast."

or

When appropriate,

"Follow CH–53, Runway Two–One, taxi via Bravo, Caution rotor wash."

REFERENCE–
AC 90–23, Aircraft Wake Turbulence, Para 10 and Para 11.

3–7–4. RUNWAY PROXIMITY

Hold a taxiing aircraft or vehicle clear of the runway as follows:

a. Instruct aircraft or vehicle to hold short of a specific runway.

b. Instruct aircraft or vehicle to hold at a specified point.

c. Issue traffic information as necessary.

PHRASEOLOGY–
HOLD SHORT OF/AT (runway number or specific point), (traffic or other information).

NOTE–
Establishing hold lines/signs is the responsibility of the airport manager. The standards for surface measurements, markings, and signs are contained in AC 150/5300−13, Airport Design; AC 150/5340−1, Standards for Airport Markings, and AC 150/5340−18, Standards for Airport Sign Systems. The operator is responsible for properly positioning the aircraft, vehicle, or equipment at the appropriate hold line/sign or designated point. The requirements in paragraph 3−1−12, Visually Scanning Runways, remain valid as appropriate.

REFERENCE–
FAA Order JO 7110.65, Para 3−7−2, Taxi and Ground Movement Operations.
FAA Order JO 7110.65, Para 3−10−10, Altitude Restricted Low Approach.
FAA Order JO 7110.65, Para 3−1−5, Vehicles/Equipment/Personnel on Runways.

3−7−5. PRECISION APPROACH CRITICAL AREA

a. Aircraft and vehicle access to the ILS critical area must be controlled to ensure the integrity of ILS course signals whenever the official weather observation is a ceiling of less than 800 feet or visibility less than 2 miles. Unless the arriving aircraft has reported the runway in sight or is circling to land to another runway, do not authorize vehicles/aircraft to operate in or over the critical area, except as specified in subparagraph a1, whenever an arriving aircraft is inside the ILS outer marker (OM) or the fix used in lieu of the OM.

PHRASEOLOGY–
HOLD SHORT OF (runway) ILS CRITICAL AREA.

NOTE–
When available weather sources such as METARs/SPECI/PIREPs/controller observations indicate weather conditions are changing from VFR to IFR and are deteriorating, actions are expected to be taken to update the official weather observation.

REFERENCE–
FAA Order JO 7110.65, Para 2−6−2 PIREP Solicitation and Dissemination.
FAA Order JO 7110.65, Para 2−6−3, Reporting Weather Conditions.
FAA Order JO 7110.65, Para 2−6−5, Disseminating Official Weather Information.
FAA Order JO 7210.3, Para 2−9−2, Receipt and Dissemination of Weather Observations.
FAA Order JO 7210.3, Para 10−3−1, SIGMENT and PIREP Handling.
FAA Order JO 7900.5, Para 6.4d, Equipment for Sky Condition.
FAA Order 6750.16, Siting Criteria for Instrument Landing Systems.

1. LOCALIZER CRITICAL AREA

(a) Do not authorize vehicle or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM when the official weather observation is a ceiling of less than 800 feet or visibility less than 2 miles, except:

(1) A preceding arriving aircraft on the same or another runway that passes over or through the area while landing or exiting the runway.

(2) A preceding departing aircraft or missed approach on the same or another runway that passes through or over the area.

(b) In addition to subparagraph a1(a), when the official weather observation indicates a ceiling of less than 200 feet or RVR 2,000 feet, do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the middle marker, or in the absence of a middle marker, 1/2 mile final.

2. GLIDESLOPE CRITICAL AREA. Do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM unless the arriving aircraft has reported the runway in sight or is circling to land on another runway when the official weather observation indicates a ceiling of less than 800 feet or visibility less than 2 miles.

b. Operators commonly conduct “coupled” or “autoland” approaches to satisfy maintenance, training, or reliability program requirements. Promptly issue an advisory if the critical area will not be protected when an

arriving aircraft advises that a "coupled," "CATIII," "autoland," or similar type approach will be conducted and the official weather observation indicates a ceiling of 800 feet or more, or the visibility is 2 miles or more.

PHRASEOLOGY–
ILS CRITICAL AREA NOT PROTECTED.

c. The Department of Defense (DoD) is authorized to define criteria for protection of precision approach critical areas at military controlled airports. This protection is provided to all aircraft operating at that military controlled airport. Waiver authority for DoD precision approach critical area criteria rests with the appropriate military authority.

NOTE–
Signs and markings are installed by the airport operator to define the ILS critical area. No point along the longitudinal axis of the aircraft is permitted past the hold line for holding purposes. The operator is responsible to properly position the aircraft, vehicle, or equipment at the appropriate hold line/sign or designated point. The requirements in paragraph 3–1–12, Visually Scanning Runways, remain valid as appropriate.

REFERENCE–
AC150/5340–1, Standards for Airport Markings.

3–7–6. PRECISION OBSTACLE FREE ZONE (POFZ) AND FINAL APPROACH OBSTACLE CLEARANCE SURFACES (OCS)

a. Ensure the POFZ is clear of traffic (aircraft or vehicles) when an aircraft on a vertically–guided final approach is within 2 miles of the runway threshold and the official weather observation indicates the ceiling is below 300 feet or visibility is less than 3/4 SM to protect aircraft executing a missed approach.

NOTE–
Only horizontal surfaces (e.g., the wings) can penetrate the POFZ, but not the vertical surfaces (e.g., fuselage or tail). Three hundred feet (300) is used because ATC does not measure ceilings in fifty (50) foot increments.

b. Ensure the final approach OCS (e.g., ILS /LPV W, X, and Y surfaces) are clear of aircraft/vehicles when an aircraft on the vertically–guided approach is within 2 miles of the runway threshold and the official weather observation indicates the ceiling is below 800 feet or visibility is less than 2 SM to protect aircraft executing a missed approach.

NOTE–
1. *The POFZ and the close–in portion of the final approach obstacle clearance surfaces protect aircraft executing a missed approach.*

2. *Vehicles that are less than 10 feet in height, necessary for the maintenance of the airport and/or navigation facilities operating outside the movement area, are exempt.*

c. If it is not possible to clear the POFZ or OCS prior to an aircraft reaching a point 2 miles from the runway threshold and the weather is less than described in subparagraph a or b above, issue traffic to the landing aircraft.

NOTE–
The POFZ and/or OCS must be cleared as soon as practical.

PHRASEOLOGY–
(ACID), IN THE EVENT OF MISSED APPROACH (issue traffic).

TAXIING AIRCRAFT/VEHICLE LEFT/RIGHT OF RUNWAY.

EXAMPLE–
"United 623, in the event of missed approach, taxiing aircraft right of runway."

"Delta 1058, in the event of missed approach, vehicle left of runway."

REFERENCE–
FAA Order JO 7110.65, Para 3–1–6, Traffic Information.
AC 150/5300–13, Airport Design.

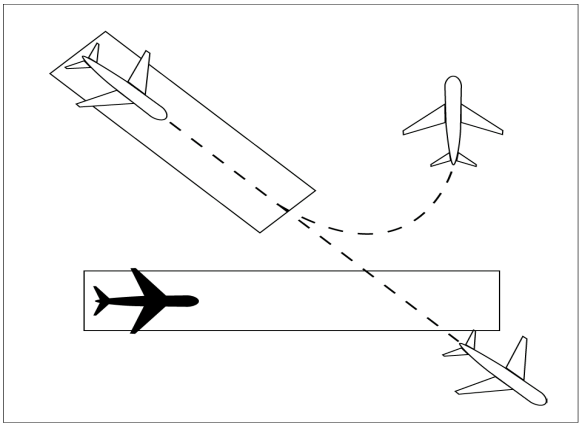
3–9–9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

a. Separate departing aircraft from an aircraft using a nonintersecting runway when the flight paths intersect by ensuring that the departure does not begin takeoff roll until one of the following exists:

REFERENCE–
FAA Order JO 7110.65, Para 2–1–21, Traffic Advisories.

1. The preceding aircraft has departed and crossed the departure runway, or is turning to avert any conflict (see FIG 3–9–14).

FIG 3–9–14
Converging Runway Separation



2. A preceding arriving aircraft has completed the landing roll and will hold short of the projected intersection, passed the projected intersection, or has crossed over the departure runway (see FIG 3–9–15 and FIG 3–9–16).

FIG 3–9–15
Converging Runway Separation

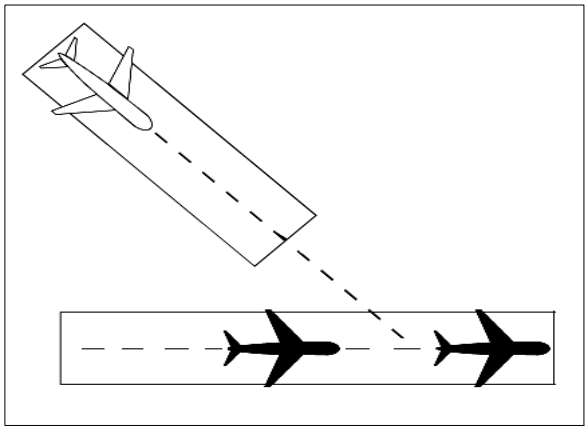
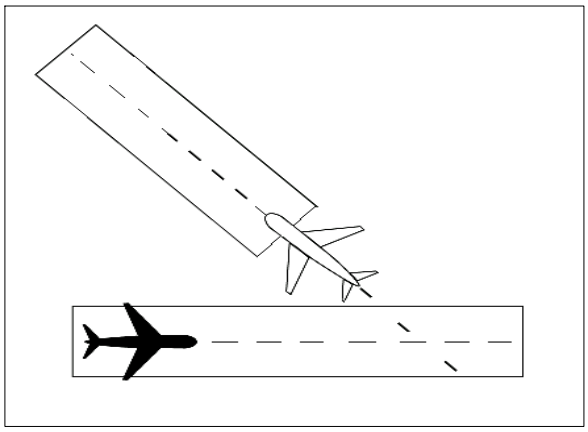


FIG 3–9–16
Converging Runway Separation



b. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway at a distance of 1 NM or less from either departure end, apply the provisions of paragraph 3–9–8, Intersecting Runway/ Intersecting Flight Path Operations, unless the facility is using aids specified in a facility directive, (may include but are not limited to, Arrival/Departure Window (ADW), ASDE–X Virtual Runway Intersection Point (VRIP), cut-off points or automation). (See FIG 3–9–17 and FIG 3–9–18.)

REFERENCE–
FAA Order JO 7210.3, Para 10-3-16, Go-Around/Missed Approach and Non–Intersecting Converging Runway Operations.

FIG 3–9–17
Converging Runway Separation

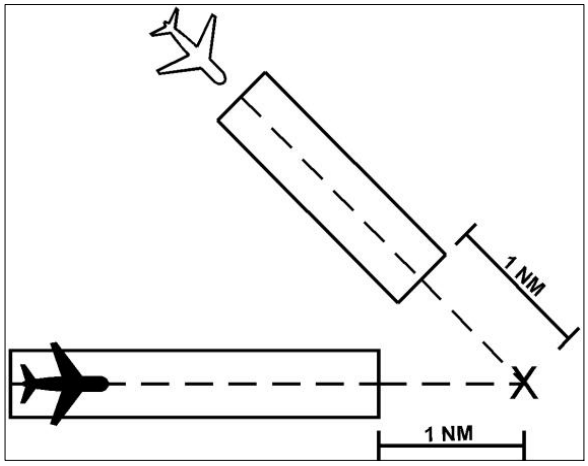
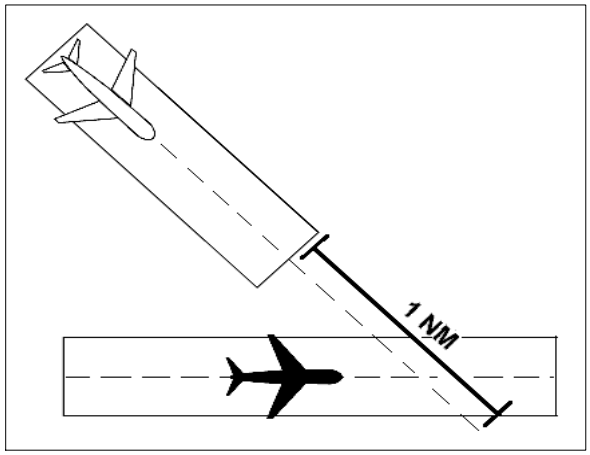


FIG 3–9–18
Converging Runway Separation



WAKE TURBULENCE APPLICATION

c. Separate aircraft taking off behind a landing or departing aircraft on a converging runway if projected flight paths will cross (See FIG 3–9–19 and FIG 3–9–20):

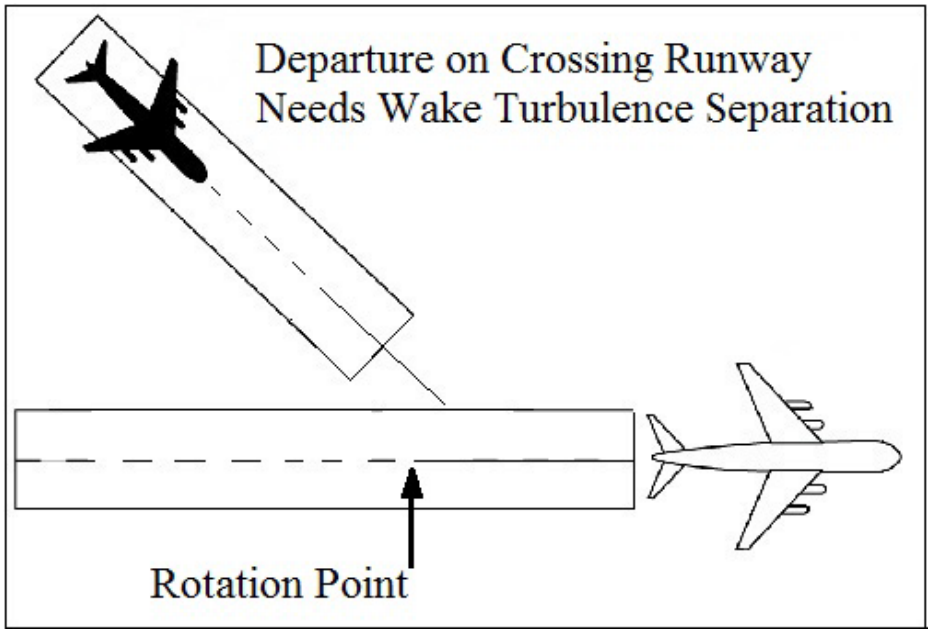
1. Category B, C, D, E, F, G, H, or I aircraft behind Category A aircraft – *3 minutes*.

2. Category B, C, D, E, F, G, H, or I aircraft behind Category B or D aircraft – *2 minutes*.

3. Category E, F, G, H, or I aircraft behind Category C aircraft – *2 minutes*.

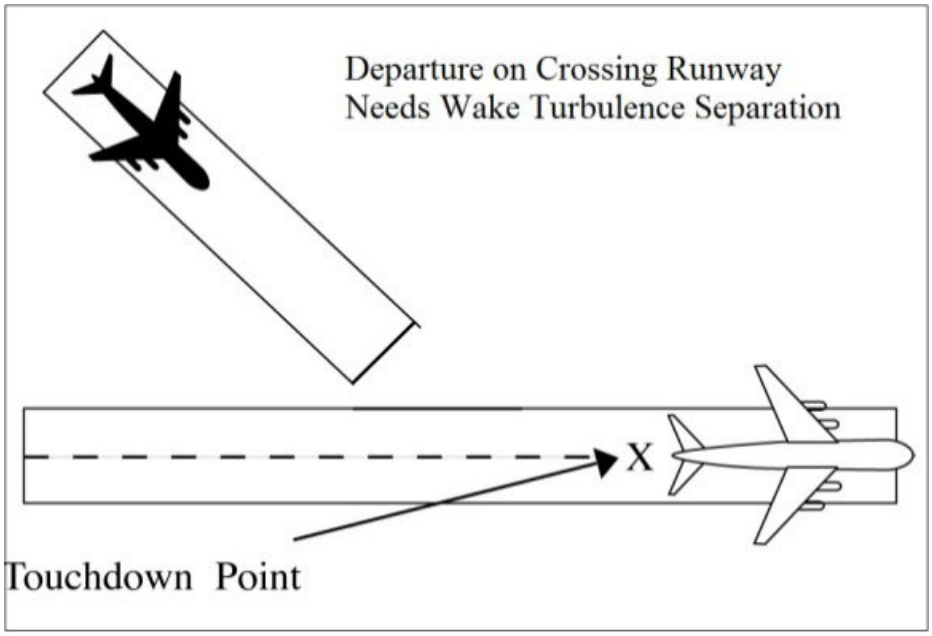
4. Category I aircraft behind Category E aircraft – *2 minutes*.

FIG 3–9–19
Converging Runway Separation



NOTE–
Takeoff clearance to the following aircraft should not be issued until the time interval has passed from when the preceding aircraft began takeoff roll.

FIG 3–9–20
Converging Runway Separation



d. Do not approve pilot requests to deviate from the required time interval if the preceding aircraft requires wake turbulence separation**.**

REFERENCE–
FAA Order JO 7110.65, Para 5–8–3, Successive or Simultaneous Departures.
FAA Order JO 7110.65, Para 5–8–5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.
FAA Order JO 7110.65, Para 5–5–4, Minima, Subpara g.

3–9–10. TAKEOFF CLEARANCE

a. When issuing a clearance for takeoff, first state the runway number followed by the takeoff clearance.

PHRASEOLOGY–
RUNWAY (number), CLEARED FOR TAKEOFF.

EXAMPLE–
"RUNWAY TWO SEVEN, CLEARED FOR TAKEOFF."

NOTE–
Turbine–powered aircraft may be considered ready for takeoff when they reach the runway unless they advise otherwise.

REFERENCE–
FAA Order JO 7110.65, Para 4–3–1, Departure Terminology.

b. When clearing an aircraft for takeoff from an intersection, state the runway intersection.

PHRASEOLOGY–
RUNWAY (number) AT (taxiway designator) CLEARED FOR TAKEOFF.

c. When two or more aircraft call the tower ready for departure, one or more at the full length of a runway and one or more at an intersection, state the location of the aircraft at the full length of the runway when clearing that aircraft for takeoff.

PHRASEOLOGY–
RUNWAY (number), FULL LENGTH, CLEARED FOR TAKEOFF.

EXAMPLE–
"American Four Eighty Two, Runway Three Zero full length, cleared for takeoff."

d. The controller must ensure that all runways along the taxi route that lead to the departure runway are crossed before the takeoff clearance is issued, except as stated in paragraph 3–9–10e.

h. Whenever a runway length has been temporarily or permanently shortened, state the word "shortened" immediately following the runway number as part of the landing clearance. This information must be issued in conjunction with the landing clearance.

1. The addition of "shortened" must be included in the landing clearance for the duration of the construction project when the runway is temporarily shortened.

2. The addition of "shortened" must be included in the landing clearance until the Chart Supplement is updated to include the change(s) when the runway is permanently shortened.

PHRASEOLOGY–
RUNWAY (number) SHORTENED, CLEARED TO LAND.

EXAMPLE–
"Runway Two-Seven shortened, cleared to land."

i. If landing clearance is temporarily withheld, insert the word "shortened" immediately after the runway number to advise the pilot to continue.

PHRASEOLOGY–
RUNWAY (number) SHORTENED, CONTINUE.

EXAMPLE–
"Runway Two-Seven shortened, continue."

REFERENCE–
FAA Order JO 7210.3, Para 10-3-12, Airport Construction.
FAA Order JO 7210.3, Para 10-3-13, Change in Runway Length Due to Construction.

3–10–6. ANTICIPATING SEPARATION

a. Landing clearance to succeeding aircraft in a landing sequence need not be withheld if you observe the positions of the aircraft and determine that prescribed runway separation will exist when the aircraft crosses the landing threshold. Issue traffic information to the succeeding aircraft if a preceding arrival has not been previously reported and when traffic will be departing prior to their arrival.

EXAMPLE–
"American Two Forty-Five, Runway One-Eight, cleared to land, number two following a United Seven-Thirty-Seven two mile final. Traffic will depart prior to your arrival."

"American Two Forty-Five, Runway One-Eight, cleared to land. Traffic will depart prior to your arrival."

NOTE–
Landing sequence number is optional at tower facilities where the arrival sequence to the runway is established by the approach control.

b. Anticipating separation must not be applied when conducting LUAW operations, except as authorized in subparagraph 3–10–5e2. Issue applicable traffic information when using this provision.

EXAMPLE–
"American Two Forty-Five, Runway One-Eight, cleared to land. Traffic will be a Boeing Seven-Fifty-Seven holding in position."

REFERENCE–
P/CG Term– Clear of the Runway.

3–10–7. LANDING CLEARANCE WITHOUT OBSERVATION

When an arriving aircraft reports at a position where it should be seen but has not been visually observed or is not observed on the TDW, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.

PHRASEOLOGY–
NOT IN SIGHT, RUNWAY (number) CLEARED TO LAND.

3–10–8. WITHHOLDING LANDING CLEARANCE

Do not withhold a landing clearance indefinitely even though it appears a violation of Title 14 of the Code of Federal Regulations has been committed. The apparent violation might be the result of an emergency situation. In any event, assist the pilot to the extent possible.

3–10–9. RUNWAY EXITING

a. Instruct aircraft where to turn-off the runway after landing, when appropriate, and advise the aircraft to hold short of a runway or taxiway if required for traffic.

PHRASEOLOGY–
TURN LEFT/RIGHT (taxiway/runway),

or

IF ABLE, TURN LEFT/RIGHT (taxiway/runway)

and if required

HOLD SHORT OF (runway).

NOTE–
Runway exiting or taxi instructions should not normally be issued to an aircraft prior to, or immediately after, touchdown.

b. Taxi instructions must be provided to the aircraft by the local controller when:

1. Compliance with ATC instructions will be required before the aircraft can change to ground control, or

2. The aircraft will be required to enter an active runway in order to taxi clear of the landing runway.

EXAMPLE–
"Skywest Ten Forty-two, turn right next taxiway, cross runway two one, contact ground point seven."

"Skywest Ten Forty-two, turn right on Alfa/next taxiway, cross Bravo, hold short of Charlie, contact ground point seven."

NOTE–
1. *An aircraft is expected to taxi clear of the runway unless otherwise directed by ATC. Pilots must not exit the landing runway on to an intersecting runway unless authorized by ATC. In the absence of ATC instructions, an aircraft should taxi clear of the landing runway by clearing the hold position marking associated with the landing runway even if that requires the aircraft to protrude into or enter another taxiway/ramp area. This does not authorize an aircraft to cross a subsequent taxiway or ramp after clearing the landing runway.*

REFERENCE–
P/CG Term– Clear of the Runway.

2. *The pilot is responsible for ascertaining when the aircraft is clear of the runway by clearing the runway holding position marking associated with the landing runway.*

c. Ground control and local control must protect a taxiway/runway/ramp intersection if an aircraft is required to enter that intersection to clear the landing runway.

REFERENCE–
FAA Order JO 7210.3, Para 10–1–7, Use of Active Runways.

d. Request a read back of runway hold short instructions when not received from the pilot.

EXAMPLE–
"American Four Ninety–two, turn left at Taxiway Charlie, hold short of Runway 27 Right."

or

"American Four Ninety–two, turn left at Charlie, hold short of Runway 27 Right."

Section 3. Departure Procedures

4–3–1. DEPARTURE TERMINOLOGY

Avoid using the term “takeoff” except to actually clear an aircraft for takeoff or to cancel a takeoff clearance. Use such terms as “depart,” “departure,” or “fly” in clearances when necessary.

REFERENCE–
FAA Order JO 7110.65, Para 3–9–10, Takeoff Clearance.
FAA Order JO 7110.65, Para 3–9–11, Cancellation of Takeoff Clearance.

4–3–2. DEPARTURE CLEARANCES

Include the following items in IFR departure clearances:

NOTE–
When considered necessary, controllers or pilots may initiate read backs of a clearance. Some pilots may be required by company rule to do so.

a. Always include the airport of departure when issuing a departure clearance for relay to an aircraft by an FSS, dispatcher, etc.

b. Clearance Limit.

1. Specify the destination airport when practicable, even though it is outside controlled airspace. Issue short range clearances as provided for in any procedures established for their use.

(a) When the clearance limit is an airport, the word “airport” must follow the airport name.

PHRASEOLOGY–
CLEARED TO (destination) AIRPORT

(b) When the clearance limit is a NAVAID and the NAVAID type is known, the type of NAVAID must follow the NAVAID name.

PHRASEOLOGY–
CLEARED TO (NAVAID name and type)

(c) When the clearance limit is an intersection or waypoint and the type is known, the type must follow the intersection or waypoint name.

PHRASEOLOGY–
CLEARED TO (intersection or waypoint name and type)

2. For Air Force One (AF1) operations, do not specify the destination airport.

NOTE–
Presidential detail is responsible for ensuring the accuracy of the destination airport.

PHRASEOLOGY–
DESTINATION AS FILED.

c. Departure Procedures.

1. Specify direction of takeoff/turn or initial heading to be flown after takeoff as follows:

(a) Locations with Airport Traffic Control Service–Specify direction of takeoff/turn or initial heading as necessary, consistent with published:

(1) Departure Procedures (DP). If an aircraft is vectored off a published Standard Instrument Departure (SID) or Obstacle Departure Procedure (ODP), that vector cancels the DP and ATC becomes responsible for separation from terrain and /or obstructions. IFR aircraft must be assigned an altitude.

(2) Diverse Vector Areas (DVA). The assignment of an initial heading using a DVA can be given to the pilot as part of the initial clearance, but must be given no later than with the takeoff clearance. Once airborne,

an aircraft assigned headings within the DVA can be vectored below the MVA/MIA. Controllers cannot interrupt an aircraft's climb in the DVA until the aircraft is at or above the MVA/MIA.

NOTE–
1. *It is important for controllers to understand that there can be differences in published climb gradients applicable to individual departure procedures serving the same airport or runway. Assigning a different departure procedure without the pilot being able to re–brief may result in the pilot rejecting the new procedure.*

2. *When a departure clearance includes a SID, concurrent use of a diverse vector area (DVA) is not permitted.*

REFERENCE–
AIM, Para 5–2–7, Departure Control.
AIM, Para 5–2–9, Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID).

(b) Locations without Airport Traffic Control Service, but within a Class E surface area – specify direction of takeoff/turn or initial heading if necessary. Obtain/solicit the pilot's concurrence concerning a turn or heading before issuing them in a clearance.

NOTE–
Direction of takeoff and turn after takeoff can be obtained/solicited directly from the pilot, or relayed by an FSS, dispatcher, etc., as obtained/solicited from the pilot.

(c) At all other airports– Do not specify direction of takeoff/turn after takeoff. If necessary to specify an initial heading to be flown after takeoff, issue the initial heading so as to apply only within controlled airspace.

2. Where an ODP has been published for a location and pilot compliance is necessary to ensure separation, include the procedure as part of the ATC clearance. Additionally, when an ODP is included in the clearance and the Visual Climb over Airport (VCOA) is requested by the pilot or assigned by ATC when it is the only procedure published in the ODP, include an instruction to remain within the published visibility of the VCOA.

EXAMPLE–
"Depart via the (airport name)(runway number) obstacle departure procedure. Remain within (number of miles) miles of the (airport name) during visual climb" if applicable. Or,
"Depart via the (graphic ODP name) obstacle departure procedure. Remain within (number of miles) miles of the (airport name) during visual climb" if applicable.

NOTE–
1. *Pilots will advise ATC of their intent to use the VCOA option when requesting their IFR clearance.*

2. *Some aircraft are required by 14 CFR 91.175 to depart a runway under IFR using the ODP absent other instructions from ATC.*

3. *IFR takeoff minimums and obstacle departure procedures are prescribed for specific airports/runways and published in either a textual, or graphic form with the label (OBSTACLE) in the procedure title, and documented on an appropriate FAA Form 8260. To alert pilots of their existence, instrument approach procedure charts are annotated with a symbol:*

3. Compatibility with a procedure issued may be verified by asking the pilot if items obtained/ solicited will allow him/her to comply with local traffic pattern, terrain, or obstruction avoidance.

PHRASEOLOGY–
FLY RUNWAY HEADING.

DEPART (direction or runway).

TURN LEFT/RIGHT.

WHEN ENTERING CONTROLLED AIRSPACE (instruction), FLY HEADING (degrees) UNTIL REACHING (altitude, point, or fix) BEFORE PROCEEDING ON COURSE.

FLY A (degree) BEARING/AZIMUTH FROM/TO (fix) UNTIL (time),

or

UNTIL REACHING (fix or altitude),

and if required,

BEFORE PROCEEDING ON COURSE.

EXAMPLE–
"Verify right turn after departure will allow compliance with local traffic pattern,"or "Verify this clearance will allow compliance with terrain or obstruction avoidance."

NOTE–
If a published IFR departure procedure is not included in an ATC clearance, compliance with such a procedure is the pilot's prerogative.

4. SIDs:

(a) Assign a SID (including transition if necessary). Assign an ADR/ADAR, when applicable or the route filed by the pilot, when a SID is not established for the departure route to be flown, or the pilot has indicated that he/she does not wish to use a SID.

NOTE–
Departure procedure descriptive text contained within parentheses (for example, "Jimmy One (RNAV) Departure") is not included in departure clearance phraseology.

PHRASEOLOGY–
(SID name and number) DEPARTURE.

(SID name and number) DEPARTURE, (transition name) TRANSITION.

EXAMPLE–
"BARII Three Departure."
"BARII Three Departure, SINKR Transition."

NOTE–
If a pilot does not wish to use a SID issued in an ATC clearance, or any other SID published for that location, he/she is expected to advise ATC.

(b) If it is necessary to assign a crossing altitude which differs from the SID altitude emphasize the change to the pilot.

PHRASEOLOGY–
(SID name and number) DEPARTURE, EXCEPT CROSS (revised altitude information).

EXAMPLE–
"BRUWN Seven Departure, except cross HURBE at five thousand."
"CCOBB Three Departure, except cross SAAMS waypoint at six thousand."

(c) Specify altitudes when they are not included in the SID.

PHRASEOLOGY–
(SID name and number) DEPARTURE. CROSS (fix) AT (altitude).

EXAMPLE–
"HHOWE Four Departure. Cross WNNGZ intersection at five thousand. Cross HHOWE intersection at niner thousand."
"KAYLN Three Departure. Cross FDRCH waypoint at or above niner thousand. Cross KAYLN waypoint at or above one zero thousand. Cross SMUUV waypoint at one two thousand."

d. Route of flight. Specify one or more of the following:

1. Airway, route, course, heading, azimuth, arc, or vector.

2. The routing a pilot can expect if any part of the route beyond a short range clearance limit differs from that filed.

PHRASEOLOGY–
EXPECT FURTHER CLEARANCE VIA (airways, routes, or fixes.)

e. Altitude. Use one of the following in the order of preference listed.

NOTE–
Turbojet aircraft equipped with afterburner engines may occasionally be expected to use afterburning during their climb to the en route altitude. When so advised by the pilot, the controller may be able to plan his/her traffic to accommodate the high performance climb and allow the pilot to climb to his/her planned altitude without restriction.

REFERENCE–
P/CG, Climb Via, Top Altitude

1. To the maximum extent possible, Air Force One will be cleared unrestricted climb to:

(a) 9,000’ AGL or higher.

(b) If unable 9,000’ AGL or higher, then the highest available altitude below 9,000’ AGL.

2. Assign the altitude requested by the pilot.

3. Assign an altitude, as near as possible to the altitude requested by the pilot, and

(a) Inform the pilot when to expect clearance to the requested altitude unless instructions are contained in the specified SID, or

(b) If the requested altitude is not expected to be available, inform the pilot what altitude can be expected and when/where to expect it.

4. Use one of the following when the SID contains published crossing restrictions:

(a) Instruct aircraft to “Climb via SID.”

(b) Instruct the aircraft to “Climb via SID except maintain (altitude)” when a top altitude is not published or when it is necessary to issue an interim altitude.

EXAMPLE–
“Cleared to Johnston Airport, Scott One departure, Jonez transition, Q One Forty−five. Climb via SID.”

“Cleared to Johnston Airport, Scott One departure, Jonez transition, Q One Forty−five, Climb via SID except maintain flight level one eight zero.”

“Cleared to Johnston Airport, Scott One departure, Jonez transition, Q One Forty−five, Climb Via SID except maintain flight level one eight zero, expect flight level three five zero one zero minutes after departure.”

NOTE–
1. *Use of “Climb via SID Except Maintain” to emphasize a published procedural constraint is an inappropriate use of this phraseology.*

2. *Considering the principle that the last ATC clearance issued has precedence over the previous, the phraseology “maintain (altitude)” alone cancels previously issued altitude restrictions, including SID/STAR altitude restrictions, unless they are restated or modified.*

REFERENCE–
FAA Order JO 7110.65, Para 4−2−5, Route or Altitude Amendments.
AIM, Para 4−4−10, Adherence to Clearance.

5. When a SID does not contain published crossing restrictions and/or is a SID with a Radar Vector segment or a Radar Vector SID; or a SID is constructed with a Radar Vector segment and contains published crossing restrictions after the vector segment, instruct aircraft to “MAINTAIN (altitude).”

NOTE–
1. *14 CFR section 91.185, says that in the event of a two-way radio communication failure, in VFR conditions or if VFR conditions are encountered after the failure, the pilot must continue the flight under VFR and land as soon as practicable. That section also says that when the failure occurs in IFR conditions the pilot must continue flight at the highest of the following altitudes or flight levels for the route segment being flown:*

a. *The altitude or flight level assigned in the last ATC clearance received.*

b. *The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in 14 CFR section 91.121(c)) for IFR operations. (This altitude should be consistent with MEAs, MOCAs, etc.)*

c. *The altitude or flight level ATC has advised may be expected in a further clearance.*

2. *If the expected altitude is the highest of the preceding choices, the pilot should begin to climb to that expected altitude at the time or fix specified in the clearance. The choice to climb to the expected altitude is not applicable if the pilot has proceeded beyond the specified fix or if the time designated in the clearance has expired.*

PHRASEOLOGY–

CLIMB AND MAINTAIN (the altitude as near as possible to the pilot's requested altitude). EXPECT (the requested altitude or an altitude different from the requested altitude) AT (time or fix),

and if applicable,

(pilot's requested altitude) IS NOT AVAILABLE.

EXAMPLE–

1. *A pilot has requested flight level 350. Flight level 230 is immediately available and flight level 350 will be available at the Appleton zero five zero radial 35 mile fix. The clearance will read:*
"Climb and maintain flight level two three zero. Expect flight level three five zero at Appleton zero five zero radial three five mile fix."

2. *A pilot has requested 9,000 feet. An altitude restriction is required because of facility procedures or requirements. Assign the altitude and advise the pilot at what fix/time the pilot may expect the requested altitude. The clearance could read:*
"Climb and maintain five thousand. Expect niner thousand one zero minutes after departure."

3. *A pilot has requested 17,000 feet which is unavailable. You plan 15,000 feet to be the pilot's highest altitude prior to descent to the pilot's destination but only 13,000 feet is available until San Jose VOR. Advise the pilot of the expected altitude change and at what fix/time to expect clearance to 15,000 feet. The clearance will read:*
"Climb and maintain one three thousand. Expect one five thousand at San Jose. One seven thousand is not available."

REFERENCE–

FAA Order JO 7110.65, Para 4–3–3, Abbreviated Departure Clearance.
FAA Order JO 7110.65, Para 5–8–2, Initial Heading.
FAA Order JO 7110.65 Para 4–2–5, Route or Altitude Amendments.
AIM, Para 4–4–10, Adherence to Clearance.

4–3–3. ABBREVIATED DEPARTURE CLEARANCE

a. Issue an abbreviated departure clearance if its use reduces verbiage and the following conditions are met:

REFERENCE–

FAA Order JO 7110.65, Para 4–2–8, IFR-VFR and VFR-IFR Flights.

1. The route of flight filed with ATC has not been changed by the pilot, company, operations officer, input operator, or in the stored flight plan program prior to departure.

NOTE–

A pilot will not accept an abbreviated clearance if the route of flight filed with ATC has been changed by him/her or the company or the operations officer before departure. He/she is expected to inform the control facility on initial radio contact if he/she cannot accept the clearance. It is the responsibility of the company or operations officer to inform the pilot when they make a change.

2. All ATC facilities concerned have sufficient route of flight information to exercise their control responsibilities.

NOTE–

The route of flight information to be provided may be covered in letters of agreement.

3. When the flight will depart IFR, destination airport information is relayed between the facilities concerned prior to departure.

EXAMPLE–

1. *A tower or flight service station relay of destination airport information to the center when requesting clearance:*
"Request clearance for United Four Sixty-One to O'Hare."

2. *A center relay to the tower or flight service station when initiating a clearance:*
"Clearance for United Four Sixty-One to O'Hare."

NOTE–
Pilots are expected to furnish the facility concerned with destination airport information on initial radio call-up. This will provide the information necessary for detecting any destination airport differences on facility relay.

4. The assigned altitude, according to the provisions in paragraph 4–3–2, Departure Clearances, subparagraph e, is stated in the clearance.

b. If it is necessary to modify a filed route of flight in order to achieve computer acceptance due, for example, to incorrect fix or airway identification, the contraction "FRC," meaning "Full Route Clearance Necessary," or "FRC/(fix)," will be added to the remarks. "FRC" or "FRC/(fix)" must always be the first item of intra-center remarks. When "FRC" or "FRC/(fix)" appears on a flight progress strip, the controller issuing the ATC clearance to the aircraft must issue a full route clearance to the specified fix, or, if no fix is specified, for the entire route.

EXAMPLE–
"Cleared to Missoula International Airport, Chief Two Departure to Angley; direct Salina; then as filed; maintain one seven thousand."

NOTE–
Changes, such as those made to conform with traffic flows and preferred routings, are only permitted to be made by the pilot (or his/her operations office) or the controller responsible for initiating the clearance to the aircraft.

c. Specify the destination airport in the clearance.

d. When no changes are required in the filed route, state the phrase: "Cleared to (destination) airport, ([SID name and number] and SID transition, as appropriate); then, as filed." If a SID is not assigned, follow with "As filed." If required, add any additional instructions or information, including requested altitude if different than assigned.

e. Use one of the following when the SID contains published crossing restrictions:

1. Instruct aircraft to "Climb via SID."

2. Instruct aircraft to "Climb via SID except maintain (altitude)" when a top altitude is not published or when it is necessary to issue an interim altitude.

NOTE–
Use of "Climb via SID Except Maintain" to emphasize a published procedural constraint is an inappropriate use of this phraseology.

f. Instruct aircraft to MAINTAIN (altitude) when:

1. No SID is assigned.

2. A SID does not contain published crossing restrictions and/or is a SID with a Radar Vector segment or is a Radar Vector SID.

3. A SID is constructed with a Radar Vector segment and contains published crossing restrictions after the vector segment.

PHRASEOLOGY–
CLEARED TO (destination) AIRPORT;

and as appropriate,

(SID name and number) DEPARTURE,
THEN AS FILED.

When the SID does not contain published crossing restrictions and/or is a SID with a Radar Vector segment or a Radar Vector SID; or is a SID with a radar vector segment and contains published crossing restrictions after the vector segment.

MAINTAIN (altitude); (additional instructions or information).

Or when a SID contains published crossing restrictions,

CLIMB VIA SID.

CLIMB VIA SID EXCEPT MAINTAIN (altitude); (additional instructions or information).

If a SID is not assigned,

CLEARED TO (destination) AIRPORT AS FILED.
MAINTAIN (altitude);

and if required,

(additional instructions or information).

EXAMPLE–
"Cleared to Reynolds Airport; David Two Departure, Kingham Transition; then, as filed. Maintain niner thousand. Expect flight level four one zero, one zero minutes after departure."

"Cleared to Reynolds Airport; David Two Departure, Kingham Transition; then, as filed. Climb via SID."

"Cleared to Reynolds Airport; David Two Departure, Kingham Transition; then, as filed. Climb via SID except maintain flight level two four zero. Expect flight level four one zero, one zero minutes after departure.

"Cleared to Reynolds Airport as filed. Maintain niner thousand. Expect flight level four one zero, one zero minutes after departure."

NOTE–
1. *SIDs are excluded from "cleared as filed" procedures.*

2. *If a pilot does not wish to accept an ATC clearance to fly a SID, he/she is expected to advise ATC or state "NO SID" in his/her flight plan remarks.*

REFERENCE–
P/CG, Climb Via, Top Altitude.

g. When a filed route will require revisions, the controller responsible for initiating the clearance to the aircraft must either:

1. Issue a FRC/FRC until a fix.

2. Specify the assigned altitude to maintain, or Climb Via SID, or Climb Via SID except maintain (altitude), as appropriate.

PHRASEOLOGY–
CLEARED TO (destination) AIRPORT.

Or when the SID does not contain published crossing restrictions and/ or is a SID with a Radar Vector segment or a Radar Vector SID

(SID name and number) DEPARTURE,
(transition name) TRANSITION; THEN, AS FILED, EXCEPT CHANGE ROUTE TO READ (amended route portion).
MAINTAIN (altitude);

Or when the SID contains published crossing restrictions,

CLIMB VIA SID

CLIMB VIA SID EXCEPT MAINTAIN (altitude).
and if required,

(additional instructions or information).

If a SID is not assigned,

CLEARED TO (destination) AIRPORT AS FILED,
EXCEPT CHANGE ROUTE TO READ (amended route portion). MAINTAIN (altitude);

and if required,

(additional instructions or information).

EXAMPLE–
"Cleared to Reynolds Airport; South Boston One Departure; then, as filed, except change route to read South Boston Victor Twenty Greensboro. Maintain eight thousand, report leaving four thousand."

"Cleared to Reynolds Airport; South Boston One Departure; then, as filed, except change route to read South Boston Victor Twenty Greensboro; climb via SID."

"Cleared to Reynolds Airport; South Boston One Departure; then, as filed, except change route to read South Boston Victor Twenty Greensboro; climb via SID except maintain flight level one eight zero, expect flight level three one zero one zero minutes after departure."

"Cleared to Reynolds Airport as filed, except change route to read South Boston Victor Twenty Greensboro. Maintain eight thousand, report leaving four thousand."

"Cleared to Reynolds Airport via Victor Ninety-one Albany, then as filed. Maintain six thousand."

h. In a nonradar environment specify one, two, or more fixes, as necessary, to identify the initial route of flight.

1. Specify the destination airport, when practicable, followed by the word "airport" even though it is outside controlled airspace.

PHRASEOLOGY–
CLEARED TO (destination) AIRPORT

2. When the clearance limit is a NAVAID, the type of NAVAID must follow the NAVAID name.

PHRASEOLOGY–
CLEARED TO (NAVAID name and type)

3. When the clearance limit is an intersection or waypoint and the type is known, the type must follow the intersection or waypoint name.

PHRASEOLOGY–
CLEARED TO (intersection or waypoint name and type)

EXAMPLE–
The filed route of flight is from Hutchinson V10 Emporia, thence V10N and V77 to St. Joseph. The clearance will read: "Cleared to Watson Airport as filed via Emporia, maintain Seven Thousand."

i. Do not apply these procedures when a pilot requests a detailed clearance or to military operations conducted within ALTRV, stereo routes, operations above FL 600, and other military operations requiring special handling.

NOTE–
Departure clearance procedures and phraseology for military operations within approved altitude reservations, military operations above FL 600, and other military operations requiring special handling are contained in separate procedures in this order or in a LOA, as appropriate.

REFERENCE–
FAA Order JO 7110.65, Para 4–2–7, ALTRV Clearance.
FAA Order JO 7110.65, Para 9–2–14, Military Operations Above FL 600.

4–3–4. DEPARTURE RELEASE, HOLD FOR RELEASE, RELEASE TIMES, DEPARTURE RESTRICTIONS, AND CLEARANCE VOID TIMES

Assign departure restrictions, clearance void times, or release times to separate departures from other traffic or to restrict or regulate the departure flow. Departures from an airport without an operating control tower must be issued either a departure release, a hold for release, or a release time.

REFERENCE–
FAA Order JO 7110.65, Para 10–3–1, Overdue Aircraft.
FAA Order JO 7110.65, Para 10–4–1, Traffic Restrictions.
FAA Order JO 7110.65, Para 10–4–3, Traffic Resumption.

a. Departure Release. When conditions allow, release the aircraft as soon as possible.

PHRASEOLOGY–
To another controller,
(aircraft identification) RELEASED.

To a flight service specialist, or Flight Data Communication Specialist (FDCS).

ADVISE (aircraft identification) RELEASED FOR DEPARTURE.

To a pilot at an airport without an operating control tower,
(aircraft identification) RELEASED FOR DEPARTURE.

b. Hold For Release (HFR).

1. "Hold for release" instructions must be used to inform a pilot or a controller that a departure clearance is not valid until additional instructions are received.

REFERENCE–
P/CG Term – Hold for Release.

2. When issuing hold for release instructions, include departure delay information.

PHRASEOLOGY–
(aircraft identification) HOLD FOR RELEASE, EXPECT (time in hours and/or minutes) DEPARTURE DELAY.

c. Release Times.

1. Release times must be issued to pilots when necessary to specify the earliest time an aircraft may depart.

NOTE–
A release time is a departure restriction issued to a pilot (either directly or through authorized relay) to separate a departing aircraft from other traffic.

2. The facility issuing a release time to a pilot must issue a time check. A release time using a specified number of minutes does not require a time check.

PHRASEOLOGY–
(aircraft identification) RELEASED FOR DEPARTURE AT (time in hours and/or minutes),

and if required,

IF NOT OFF BY (time), ADVISE (facility) NOT LATER THAN (time) OF INTENTIONS.

TIME (time in hours, minutes, and nearest quarter minute).

(aircraft identification) RELEASED FOR DEPARTURE IN (number of minutes) MINUTES

and if required,

IF NOT OFF IN (number of minutes) MINUTES, ADVISE (facility) OF INTENTIONS WITHIN (number of minutes) MINUTES.

d. When expect departure clearance times (EDCT) are assigned through traffic management programs, excluding overriding call for release (CFR) operations as described in subparagraph e, the departure terminal must, to the extent possible, plan ground movement of aircraft destined to the affected airport(s) so that flights are sequenced to depart no earlier than 5 minutes before, and no later than 5 minutes after the EDCT. Do not release aircraft on their assigned EDCT if a ground stop (GS) applicable to that aircraft is in effect, unless approval has been received from the originator of the GS.

1. If an aircraft has begun to taxi or requests taxi in a manner consistent with meeting the EDCT, the aircraft must be released. Additional coordination is not required.

2. If an aircraft requests taxi or clearance for departure inconsistent with meeting the EDCT window, ask the pilot to verify the EDCT.

(a) If the pilot's EDCT is the same as the FAA EDCT, the aircraft is released consistent with the EDCT.

(b) If the pilot's EDCT is not the same as the FAA EDCT, refer to Trust and Verify note below.

3. If an aircraft requests taxi too late to meet the EDCT, contact the ATCSCC through the appropriate TMU.

NOTE–
(Trust & Verify) EDCTs are revised by Air Carriers and Traffic Management for changing conditions en route or at affected airport(s). Terminal controllers' use of aircraft reported EDCT for departure sequencing should be verified with the appropriate TMU prior to departure if this can be accomplished without the aircraft incurring delay beyond the EDCT reported by the aircraft. The preferred method for verification is the Flight Schedule Monitor (FSM). If the EDCT cannot be verified without incurring additional delay, the aircraft should be released based on the pilot reported EDCT. The aircraft operator is responsible for operating in a manner consistent to meet the EDCT.

e. Call for Release (CFR). When CFR is in effect, release aircraft so they are airborne within a window that extends from 2 minutes prior and ends 1 minute after the assigned time, unless otherwise coordinated.

NOTE–
1. *Subparagraph e applies to all facilities.*

2. *Coordination may be verbal, electronic, or written.*

f. Clearance Void Times.

1. When issuing clearance void times at airports without an operating control tower, provide alternative instructions requiring the pilots to advise ATC of their intentions no later than 30 minutes after the clearance void time if not airborne.

2. The facility delivering a clearance void time to a pilot must issue a time check. A void time issued using a specified number of minutes does not require a time check.

NOTE–
If the clearance void time expires, it does not cancel the departure clearance or IFR flight plan. It withdraws the pilot's authority to depart IFR until a new departure release/release time has been issued by ATC and acknowledged by the pilot.

PHRASEOLOGY–
CLEARANCE VOID IF NOT OFF BY (clearance void time),

and if required,
IF NOT OFF BY (clearance void time), ADVISE (facility) NOT LATER THAN (time) OF INTENTIONS.

TIME (time in hours, minutes, and the nearest quarter minute).

Or

CLEARANCE VOID IF NOT OFF IN (number of minutes) MINUTES

and if required,

IF NOT OFF IN (number of minutes) MINUTES, ADVISE (facility) OF INTENTIONS WITHIN (number of minutes) MINUTES.

4–3–5. GROUND STOP

Do not release an aircraft if a ground stop (GS) applicable to that aircraft is in effect, without the approval of the originator of the GS.

4–3–6. DELAY SEQUENCING

When aircraft elect to take delay on the ground before departure, issue departure clearances to them in the order in which the requests for clearance were originally made if practicable.

4–3–7. FORWARD DEPARTURE DELAY INFORMATION

Inform approach control facilities and/or towers of anticipated departure delays.

4–3–8. COORDINATION WITH RECEIVING FACILITY

a. Coordinate with the receiving facility before the departure of an aircraft if the departure point is less than 15 minutes flying time from the transferring facility's boundary unless an automatic transfer of data between automated systems will occur, in which case, the flying time requirement may be reduced to 5 minutes or replaced with a mileage from the boundary parameter when mutually agreeable to both facilities.

NOTE–
Agreements requiring additional time are encouraged between facilities that need earlier coordination. However, when agreements establish mandatory radar handoff procedures, coordination needs only be effected in a timely manner prior to transfer of control.

REFERENCE–
FAA Order JO 7110.65, Chapter 5, Section 4, Transfer of Radar Identification, Para 5–4–1, Application.

b. The actual departure time or a subsequent strip posting time must be forwarded to the receiving facility unless assumed departure times are agreed upon and that time is within 3 minutes of the actual departure time.

4–3–9. VFR RELEASE OF IFR DEPARTURE

When an aircraft which has filed an IFR flight plan requests a VFR departure through a terminal facility, FSS, ARTCC Flight Data Unit, or air/ground communications station:

a. After obtaining, if necessary, approval from the facility/sector responsible for issuing the IFR clearance, you may authorize an IFR flight planned aircraft to depart VFR. Inform the pilot of the proper frequency and, if appropriate, where or when to contact the facility responsible for issuing the clearance.

PHRASEOLOGY–
VFR DEPARTURE AUTHORIZED. CONTACT (facility) ON (frequency) AT (location or time if required) FOR CLEARANCE.

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

4–3–10. FORWARDING DEPARTURE TIMES

TERMINAL

Unless alternate procedures are prescribed in a letter of agreement or automatic departure messages are being transmitted between automated facilities, forward departure times to the facility from which you received the clearance and also to the terminal departure controller when that position is involved in the departure sequence.

NOTE–

1. *Letters of agreement prescribing assumed departure times or mandatory radar handoff procedures are alternatives for providing equivalent procedures.*

2. *The letters "DM" flashing in the data block signify unsuccessful transmission of a departure message.*

the clearance provision to cross the Lakeview VOR at or above FL 200, and after passing Lakeview VOR, the pilot is expected to descend at the rates specified in the AIM until reaching the assigned altitude of 6,000 feet.

EXAMPLE–
"United Four Seventeen, cross Lakeview V–O–R at and maintain six thousand."

NOTE–
The pilot is authorized to conduct descent "at pilot's discretion," but must comply with the clearance provision to cross Lakeview VOR at 6,000 feet.

EXAMPLE–
"United Four Seventeen, descend now to flight level two seven zero, cross Lakeview V–O–R at or below one zero thousand, descend and maintain six thousand."

NOTE–
The pilot is expected to promptly execute and complete descent to FL 270 upon receipt of the clearance. After reaching FL 270, the pilot is authorized to descend "at pilot's discretion" until reaching Lakeview VOR. The pilot must comply with the clearance provision to cross Lakeview VOR at or below 10,000 feet. After Lakeview VOR, the pilot is expected to descend at the rates specified in the AIM until reaching 6,000 feet.

NOTE–
1. *A descent clearance which specifies a crossing altitude authorizes descent at pilot's discretion for that portion of the flight to which the crossing altitude restriction applies.*

2. *Any other time that authorization to descend at pilot's discretion is intended, it must be specifically stated by the controller.*

3. *The pilot may need to know of any future restrictions that might affect the descent, including those that may be issued in another sector, in order to properly plan a descent at pilot's discretion.*

4. *Controllers need to be aware that the descent rates in the AIM are only suggested and aircraft will not always descend at those rates.*

REFERENCE–
P/CG Term– Pilot's Discretion.

e. When a portion of a climb/descent may be authorized at the pilot's discretion, specify the altitude the aircraft must climb/descend to followed by the altitude to maintain at the pilot's discretion.

PHRASEOLOGY–
CLIMB/DESCEND NOW TO (altitude), THEN CLIMB/DESCEND AT PILOT'S DISCRETION MAINTAIN (altitude).

EXAMPLE–
"United Three Ten, descend now to flight level two eight zero, then descend at pilot's discretion maintain flight level two four zero."

NOTE–
1. *The pilot is expected to commence descent upon receipt of the clearance and to descend as prescribed in the AIM, paragraph 4–4–10, Adherence to Clearance, until FL 280. At that point, the pilot is authorized to continue descent to FL 240 within context of the term "at pilot's discretion" as described in the AIM.*

2. *Controllers need to be aware that the descent rates are only suggested and aircraft will not always descend at those rates.*

f. When the "pilot's discretion" portion of a climb/descent clearance is being canceled by assigning a new altitude, inform the pilot that the new altitude is an "amended altitude."

EXAMPLE–
"American Eighty Three, amend altitude, descend and maintain Flight Level two six zero."

NOTE–
American Eighty Three, at FL 280, has been cleared to descend at pilot's discretion to FL 240. Subsequently, the altitude assignment is changed to FL 260. Therefore, pilot's discretion is no longer authorized.

g. Altitude assignments involving more than one altitude.

PHRASEOLOGY–
MAINTAIN BLOCK (altitude) THROUGH (altitude).

h. Instructions to vertically navigate SIDs/STARs with published crossing restrictions (Climb Via/Descend Via).

1. When established on the SID/STAR.

2. When navigating a published route inbound to the STAR.

3. When cleared direct to a waypoint/fix without a published altitude, assign a crossing altitude.

PHRASEOLOGY–
DESCEND VIA (STAR name and number).

DESCEND VIA (STAR name and number), (runway transition number) (or landing direction).

DESCEND VIA (STAR name and number), (runway number).

CLIMB VIA (SID name and number).

CLIMB VIA (SID name and number), (en route transition).

PROCEED DIRECT (fix/waypoint), CROSS (waypoint/fix) at (altitude) THEN DESCEND VIA (STAR name and number).

EXAMPLE–
"Descend via EAGUL Six arrival."

"Descend via WYNDE Eight Arrival, Runway 28 right transition."

"Descend via LENDY One Arrival, Runway 22 left."

"Climb via DDANY Three Departure."

"Proceed direct DENIS, cross DENIS at or above flight level two zero zero, then descend via the MMELL One arrival."

"Climb Via NIITZ Three departure, SSKEE transition."

"Descend via CHSLY Five Arrival, landing south."

NOTE–
Pilots must comply with all published speed restrictions on SIDs/STARs, independent of a climb via or descend via clearance.

Clearance to "descend via" authorizes pilots:
1. *To begin descent to the first published altitude on the procedure prior to the aircraft reaching the beginning of the STAR.*
2. *To descend at pilot discretion to meet published restrictions on a STAR. Pilots navigating on a STAR must maintain the last assigned altitude until receiving clearance to descend via. Once leaving an altitude, the pilot may not return to that altitude without an ATC clearance.*
3. *When cleared direct to a waypoint, to descend at pilot discretion to meet restrictions on the procedure. ATC assumes obstacle clearance responsibility for aircraft not yet established or taken off of a procedure.*
4. *To adjust speeds prior to reaching waypoints with published speed restrictions.*

NOTE–
When cleared for SIDs that contain published speed restrictions, the pilot must comply with those speed restrictions independent of any "climb via" clearance. Clearance to "climb via" authorizes pilots:
1. *When used in the IFR departure clearance, in a PDC, DCL or when subsequently cleared after departure to a waypoint depicted on a SID, to join a procedure after departure or resume a procedure.*
2. *When vertical navigation is interrupted and an altitude is assigned to maintain which is not contained on the published procedure, to climb from that previously-assigned altitude at pilot's discretion to the altitude depicted for the next waypoint. ATC must ensure obstacle clearance until the aircraft is established on the lateral and vertical path of the SID.*
3. *Once established on the depicted departure, to climb and to meet all published or assigned altitude and speed restrictions.*

REFERENCE–
FAA Order JO 7110.65, Para 4–4–2, Route Structure Transitions.
FAA Order JO 7110.65, Para 4–5–6, Minimum En Route Altitudes.
FAA Order JO 7110.65, Para 5–5–9, Separation From Obstructions.
P/CG – Climb Via, Descend Via.

NOTE–
Pilots cleared for vertical navigation using the phraseology "descend via" or "climb via" must inform ATC, upon initial contact, of the altitude leaving, the runway transition or landing direction if assigned (STARs), and any assigned restrictions not published on the procedure.

EXAMPLE–
"Delta One Twenty-one leaving flight level one niner zero, descending via the EAGUL Five arrival runway two six transition."

"Delta One Twenty-one leaving flight level one niner zero for one two thousand, descending via the EAGUL Five arrival, runway two six transition."

"JetBlue six zero two leaving flight level two one zero descending via the IVANE Two arrival landing south."

"Jet Blue Seven Eleven leaving two thousand climbing via the NUBLE Four departure."

"Jet Blue Seven Eleven leaving two thousand for one zero thousand, climbing via the NUBLE Four departure."

REFERENCE–
AIM, Para 5-2-8, Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID).
P/CG – Top Altitude, Bottom Altitude.
AIM, Para 5-4-1, Standard Terminal Arrival (STAR) Procedures.

INTERPRETATION–
7110.65, 4–5–7, Altitude Information (12–1–2015)

4. After a "climb via" or "descend via" clearance has been issued, if the aircraft is cleared direct to a waypoint/fix, the "climb via" or "descend via" clearance must be restated. The name of the SID or STAR does not need to be restated.

PHRASEOLOGY–
CLEARED/PROCEED DIRECT (waypoint/fix), THEN CLIMB VIA SID.

5. When vectoring or approving an aircraft to deviate, state an altitude to maintain and advise the pilot if you intend on clearing the aircraft to resume the "climb via" or "descend via" procedure.

NOTE–
Once an aircraft is established on a SID or STAR and is climbing or descending via, if the aircraft is cleared direct to a downstream fix, or cleared to deviate, the aircraft is considered to be off the procedure.

PHRASEOLOGY–
DEVIATION (restrictions as necessary) APPROVED, MAINTAIN (altitude), EXPECT TO RESUME STAR/SID AT (waypoint/fix).

CLEARED/PROCEED DIRECT (waypoint/fix), CROSS (waypoint/fix) (altitude), THEN CLIMB VIA SID.

EXAMPLE–
"Deviation right of course approved, maintain one four thousand, expect to resume STAR at Glaxi."

"Proceed direct Mkgee, cross Mkgee at or above six thousand, then Climb Via SID."

6. A "descend via" clearance must not be used where procedures contain only published "expect" altitude and/or speed restrictions.

NOTE–
Pilots are not expected to comply with published "expect" restrictions in the event of lost communications, unless ATC has specifically advised the pilot to expect these restrictions as part of a further clearance.

7. "Descend via" may be used on procedures that contain both "expect" and required altitude and speed restrictions only if altitude and/or speed restrictions or alternate restrictions are issued for the fix/waypoint associated with all expect restrictions.

8. "Descend via" clearances may also be issued if an aircraft is past all fixes/waypoints that have expect restrictions.

9. If it is necessary to assign a crossing altitude which differs from the STAR or SID altitude, emphasize the change to the pilot.

PHRASEOLOGY–
DESCEND VIA (STAR name and number) ARRIVAL, EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

EXAMPLE–
"United Four Fifty-four descend via the HARIS One Arrival, except cross HARIS at or above one six thousand."

NOTE–
The aircraft should track laterally and vertically on the HARIS One Arrival and should descend so as to cross HARIS at or above 16,000; remainder of the arrival must be flown as published.

PHRASEOLOGY–
CLIMB VIA SID, EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

CLIMB VIA (SID name and number), EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

EXAMPLE–
1. *"Climb via SID except cross MKALA at or above seven thousand."*

NOTE–
In Example 1, the aircraft will comply with the assigned SID departure lateral path and any published speed and altitude restrictions and climb so as to cross MKALA at or above 7,000; remainder of the departure must be flown as published.

EXAMPLE–
2. *(There is a published altitude at DVINE WP): "Proceed direct DVINE, Climb via the SUZAN Two departure except cross MKALA at or above seven thousand."*

NOTE–
In Example 2, the aircraft will join the SUZAN Two departure at DVINE, at the published altitude, and then comply with the published lateral path and any published speed or altitude restrictions. The aircraft will climb so as to cross MKALA at or above 7,000; remainder of the departure must be flown as published.

10. When an aircraft has been issued an interim altitude and after departure ATC can subsequently clear the aircraft to climb to the original top altitude published in a SID that contains published crossing restrictions, instruct aircraft to "climb via SID." When issuing a different altitude and compliance with published restrictions is still required, instruct aircraft to "climb via SID except maintain (altitude)."

PHRASEOLOGY–
CLIMB VIA SID.

CLIMB VIA SID EXCEPT MAINTAIN (altitude).

EXAMPLE–
1. *(An aircraft was issued the TEDDD One departure, "climb via SID" in the IFR departure clearance. An interim altitude of 10,000 was issued instead of the published top altitude of FL 230; after departure ATC is able to issue the published top altitude): "Climb via SID."*

NOTE–
In Example 1, the aircraft will track laterally and vertically on the TEDDD One departure and initially climb to 10,000; Once re-issued the "climb via" clearance the interim altitude is canceled aircraft will continue climb to FL230 while complying with published restrictions.

EXAMPLE–
2. *(Using Example 1, after departure ATC is able to issue an altitude higher than the published top altitude): "Climb via SID except maintain flight level two six zero."*

NOTE–
In Example 2, the aircraft will track laterally and vertically on the TEDDD One departure and initially climb to 10,000; once issued "climb via" clearance to FL260 the aircraft will continue climb while complying with published restrictions.

11. If it is necessary to assign an interim altitude or assign a bottom or top altitude not contained on a STAR or SID, the provisions of subparagraph 4–5–7h may be used in conjunction with subparagraph 4–5–7a.

PHRASEOLOGY–
DESCEND VIA THE (STAR name and number) ARRIVAL EXCEPT AFTER (fix) MAINTAIN (revised altitude information).

EXAMPLE–
"United Four Fifty-four descend via the EAGUL Five Arrival, except after GEENO maintain one zero thousand."

NOTE–
The aircraft should track laterally and vertically on the EAGUL Five Arrival and should descend so as to comply with all speed and altitude restrictions until reaching GEENO and then maintain 10,000. Upon reaching 10,000, aircraft should maintain 10,000 until cleared by ATC to continue to descend.

REFERENCE–
FAA Order JO 7110.65, Para 4–7–1, Clearance Information.
AIM, Para 5–4–1, Standard Terminal Arrival (STAR) Procedures.

PHRASEOLOGY–
CLIMB VIA SID EXCEPT AFTER (waypoint name), MAINTAIN (altitude).

EXAMPLE–
"Climb via SID except after BARET, maintain flight level one niner zero."

NOTE–
1. *Considering the principle that the last ATC clearance issued has precedence over the previous, the phraseology "maintain (altitude)" alone cancels previously issued altitude restrictions, including SID/STAR altitude restrictions unless they are restated or modified, and authorizes an unrestricted climb or descent. Speed restrictions remain in effect unless the controller explicitly cancels the speed restrictions.*

2. *Restate "climb/descend via" and then use "except" or "except maintain" phraseology to modify published restrictions or assign a new top/bottom altitude. Use "resume" phraseology with "maintain" to rejoin a route and assign a new altitude where compliance with published altitude restrictions is not required.*

REFERENCE–
FAA Order JO 7110.65, Para 4–2–5, Route or Altitude Amendments.
FAA Order JO 7110.65, Para 5–6–2, Methods.
AIM, Para 4–4–10 Adherence to Clearance.
AIM, Para 5–2–8. Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID).

i. When a pilot is unable to accept a clearance, issue revised instructions to ensure positive control and approved separation.

NOTE–
1. *14 CFR section 91.123 states that a pilot is not allowed to deviate from an ATC clearance "that has been obtained…unless an amended clearance is obtained" (except when an emergency exists).*

2. *A pilot is therefore expected to advise the controller if a clearance cannot be accepted when the clearance is issued. "We will try" and other such acknowledgements do not constitute pilot acceptance of an ATC clearance.*

3. *Controllers are expected to issue ATC clearances which conform with normal aircraft operational capabilities and do not require "last minute" amendments to ensure approved separation.*

4. *"Expedite" is not to be used in lieu of appropriate restrictions to ensure separation.*

REFERENCE–
FAA Order JO 7110.65, Para 10–1–3, Providing Assistance.

4–5–8. ANTICIPATED ALTITUDE CHANGES

If practicable, inform an aircraft when to expect climb or descent clearance or to request altitude change from another facility.

PHRASEOLOGY–
EXPECT HIGHER/LOWER IN (number of miles or minutes) MILES/MINUTES,

or

AT (fix). REQUEST ALTITUDE/FLIGHT LEVEL CHANGE FROM (name of facility).

If required,

AT (time, fix, or altitude).

REFERENCE–
FAA Order JO 7110.65, Para 2–2–6, IFR Flight Progress Data.

4–5–9. ALTITUDE CONFIRMATION– NONRADAR

a. Request a pilot to confirm assigned altitude on initial contact and when position reports are received unless:

NOTE–
For the purpose of this paragraph, "initial contact" means a pilot's first radio contact with each sector/position.

1. The pilot states the assigned altitude, or

2. You assign a new altitude to a climbing or descending aircraft, or

3. *TERMINAL*. The aircraft was transferred to you from another sector/position within your facility (intrafacility).

PHRASEOLOGY–
(In level flight situations),

VERIFY AT (altitude/flight level).

(In climbing/descending situations),

(if aircraft has been assigned an altitude below the lowest useable flight level),

VERIFY ASSIGNED ALTITUDE (altitude).

(If aircraft has been assigned a flight level at or above the lowest useable flight level),

VERIFY ASSIGNED FLIGHT LEVEL (flight level).

b. *USA*. Reconfirm all pilot altitude read backs.

PHRASEOLOGY–
(If altitude read back is correct),
AFFIRMATIVE (altitude).

(If altitude read back is not correct),
NEGATIVE. CLIMB/DESCEND AND MAINTAIN (altitude),

or

NEGATIVE. MAINTAIN (altitude).

Section 6. Holding Aircraft

4–6–1. CLEARANCE TO HOLDING FIX

Consider operational factors such as length of delay, holding airspace limitations, navigational aids, altitude, meteorological conditions when necessary to clear an aircraft to a fix other than the destination airport. Issue the following:

a. Clearance limit (if any part of the route beyond a clearance limit differs from the last routing cleared, issue the route the pilot can expect beyond the clearance limit).

PHRASEOLOGY–
EXPECT FURTHER CLEARANCE VIA (routing).

EXAMPLE–
"Expect further clearance via direct Stillwater V–O–R, Victor Two Twenty-six SNAPY intersection, direct Newark."

b. Holding instructions.

1. Holding instructions may be eliminated when you inform the pilot that no delay is expected.

2. When the assigned procedure or route being flown includes a charted pattern, you may omit all holding instructions except the charted holding direction and the statement "as published." Always issue complete holding instructions when the pilot requests them.

NOTE–
The most generally used holding patterns are depicted on U.S. Government or commercially produced low/high altitude en route, area, and STAR Charts.

PHRASEOLOGY–
CLEARED TO (fix), HOLD (direction), AS PUBLISHED,

or

CLEARED TO (fix), NO DELAY EXPECTED.

c. EFC. Do not specify this item if no delay is expected.

1. When additional holding is expected at any other fix in your facility's area, state the fix and your best estimate of the additional delay. When more than one fix is involved, state the total additional en route delay (omit specific fixes).

NOTE–
Additional delay information is not used to determine pilot action in the event of two-way communications failure. Pilots are expected to predicate their actions solely on the provisions of 14 CFR section 91.185.

PHRASEOLOGY–
EXPECT FURTHER CLEARANCE (time),

and if required,

ANTICIPATE ADDITIONAL (time in minutes/hours) MINUTE/HOUR DELAY AT (fix),

or

ANTICIPATE ADDITIONAL (time in minutes/hours) MINUTE/HOUR EN ROUTE DELAY.

EXAMPLE–
1. *"Expect further clearance one niner two zero, anticipate additional three zero minute delay at SWEET."*

2. *"Expect further clearance one five one zero, anticipate additional three zero minute en route delay."*

2. When additional holding is expected in an approach control area, state the total additional terminal delay.

PHRASEOLOGY–
EXPECT FURTHER CLEARANCE (time),

and if required,

ANTICIPATE ADDITIONAL (time in minutes/hours) MINUTE/HOUR TERMINAL DELAY.

3. *TERMINAL.* When terminal delays exist or are expected, inform the appropriate center or approach control facility so that the information can be forwarded to arrival aircraft.

4. When delay is expected, issue items in subparagraphs a and b at least 5 minutes before the aircraft is estimated to reach the clearance limit. If the traffic situation requires holding an aircraft that is less than 5 minutes from the holding fix, issue these items immediately.

NOTE–
1. *The AIM indicates that pilots should start speed reduction when 3 minutes or less from the holding fix. The additional 2 minutes contained in the 5-minute requirement are necessary to compensate for different pilot/controller ETAS at the holding fix, minor differences in clock times, and provision for sufficient planning and reaction times.*

2. *When holding is necessary, the phrase "delay indefinite" should be used when an accurate estimate of the delay time and the reason for the delay cannot immediately be determined; i.e., disabled aircraft on the runway, terminal or center sector saturation, weather below landing minimums, etc. In any event, every attempt should be made to provide the pilot with the best possible estimate of his/her delay time and the reason for the delay. Controllers/supervisors should consult, as appropriate, with personnel (other sectors, weather forecasters, the airport management, other facilities, etc.) who can best provide this information.*

PHRASEOLOGY–
DELAY INDEFINITE, (reason if known), EXPECT FURTHER CLEARANCE (time). (After determining the reason for the delay, advise the pilot as soon as possible.)

EXAMPLE–
"Cleared to DREWE, hold west, as published, expect further clearance via direct Sidney V–O–R one three one five, anticipate additional two zero minute delay at WOODY."

"Cleared to ASTON, hold west on Victor two twenty-five, seven mile leg, left turns, expect further clearance one niner two zero, anticipate additional one five minute terminal delay."

"Cleared to WAYNE, no delay expected."

"Cleared to WALLY, hold north, as published, delay indefinite, snow removal in progress, expect further clearance one one three zero."

4–6–2. CLEARANCE BEYOND FIX

a. If no delay is expected, issue a clearance beyond the clearance limit as soon as possible and, whenever possible, at least 5 minutes before the aircraft reaches the fix.

b. Include the following items when issuing clearance beyond a clearance limit:

1. Clearance limit or approach clearance.

2. Route of flight. Specify one of the following:

(a) Complete details of the route (airway, route, course, fix(es), azimuth course, heading, arc, or vector.)

(b) The phrase "via last routing cleared." Use this phrase only when the most recently issued routing to the new clearance limit is valid and verbiage will be reduced.

PHRASEOLOGY–
VIA LAST ROUTING CLEARED.

Chapter 5. Radar

Section 1. General

5–1–1. PRESENTATION AND EQUIPMENT PERFORMANCE

a. Provide radar services only if you are personally satisfied that the radar presentation and equipment performance is adequate for the service being provided.

NOTE–
The provision of radar services is not limited to the distance and altitude parameters obtained during the commissioning flight check. FAA Order 8200.1, United States Standard Flight Inspection Manual, Chapter 14, Surveillance, describes the surveillance flight inspection procedures.

b. Notify the OS/CIC of any radar malfunctions or unexpected outages. Advise adjacent facilities when appropriate.

REFERENCE–
FAA Order JO 7110.65, Para 2–1–9, Reporting Essential Flight Information.
FAA Order JO 7210.3, Chapter 3, Chapter 7, Chapter 10 Section 5, and Chapter 12 Section 6.

5–1–2. ATC SURVEILLANCE SOURCE USE

Use approved ATC surveillance sources. TERMINAL. When operating in FUSION mode, the provisions of 5–1–2a are not applicable, unless required by facility directive.

REFERENCE–
FAA Order JO 7110.65, Para 5–2–13, Inoperative or Malfunctioning Interrogator.

a. Secondary radar may be used as the sole display source as follows:

1. In Class A airspace.

REFERENCE–
FAA Order JO 7110.65, Para 5–2–14, Failed Transponder or ADS–B Out Transmitter.
14 CFR Section 91.135, Operations in Class A Airspace.

2. Outside Class A airspace, or where mix of Class A airspace/non–Class A airspace exists, only when:

(a) Additional coverage is provided by secondary radar beyond that of the primary radar, or

(b) The primary radar is temporarily unusable or out of service. Advise pilots when these conditions exist, or

PHRASEOLOGY–
PRIMARY RADAR UNAVAILABLE (describe location). RADAR SERVICES AVAILABLE ON TRANSPONDER OR ADS–B EQUIPPED AIRCRAFT ONLY.

NOTE–
1. *Advisory may be omitted when provided on ATIS and pilot indicates having ATIS information.*

2. *This provision is to authorize secondary radar only operations where there is no primary radar available and the condition is temporary.*

(c) A secondary radar system is the only source of radar data for the area of service. *TERMINAL*. Advise pilots when these conditions exist.

NOTE–
Advisory may be omitted when provided on ATIS or by other appropriate notice to pilots.

b. *TERMINAL*. Do not use secondary radar only to conduct surveillance (ASR) final approaches unless an emergency exists and the pilot concurs.

c. Targets derived from ADS–B and WAM may be used for the provision of all ATC services when operating in STARS Fusion, STARS FMA, STARS Multi-Sensor Mode, and the EAS, including those associated with any published instrument procedure annotated “radar required.”

NOTE–
Targets derived from WAM cannot be used to provide 3 NM separation in the EAS. 3 NM targets are not derived from WAM within the EAS.

REFERENCE–
FAA Order JO 7110.65, Para 4–1–2, Exceptions.
FAA Order JO 7110.65, Para 4–4–2, Route Structure Transitions.
FAA Order JO 7110.65, Para 5–5–1, Application.
FAA Order JO 7110.65, Para 6–5–4, Minima Along Other Than Established Airways or Routes.
FAA Order JO 7110.65, Chapter 6, Nonradar.
FAA Order JO 7110.65, Para 5–5–4, Minima.
FAA Order JO 7210.3, Para 3–6–2, ATC Surveillance Source Use.

5–1–3. ELECTRONIC ATTACK (EA) ACTIVITY

a. Refer all EA activity requests to the appropriate center supervisor.

REFERENCE–
FAA Order JO 7610.4, Chapter 2, Section 3, Electronic Attack (EA) Mission Coordination.

NOTE–
EA activity can subsequently result in a request to apply EA videos to the radar system which may necessitate the decertification of the narrowband search radar. The Systems Engineer should be consulted concerning the effect of EA on the operational use of the narrowband radar prior to approving/disapproving requests to conduct EA activity.

b. When EA activity interferes with the operational use of radar:

1. *EN ROUTE.* Request the responsible military unit or aircraft, if initial request was received directly from pilot, to suspend the activity.

2. *TERMINAL.* Request suspension of the activity through the ARTCC. If immediate cessation of the activity is required, broadcast the request directly to the EA aircraft on the emergency frequency. Notify the ARTCC of direct broadcast as soon as possible.

c. When previously suspended activity will no longer interfere:

1. *EN ROUTE.* Inform the NORAD unit or aircraft that it may be resumed.

2. *TERMINAL.* Inform the ARTCC or aircraft that it may be resumed. Obtain approval from the ARTCC prior to broadcasting a resume clearance directly to the aircraft.

d. In each stop request, include your facility name, type of EA activity (chaff dispensing– “stream”/“burst” or electronic jamming– “buzzer”), radar band affected and, when feasible, expected duration of suspension.

PHRASEOLOGY–
BIG PHOTO (identification, if known) (name) CENTER/TOWER/APPROACH CONTROL.

To stop EA activity:

STOP STREAM/BURST IN AREA (area name) (degree and distance from facility),

or

STOP BUZZER ON (frequency band or channel).

To resume EA activity:

RESUME STREAM/BURST,

or

RESUME BUZZER ON (frequency band or channel).

Current equipment limitations preclude a target from being displayed in the single sensor mode; however, a position symbol and data block, including altitude information, will still be displayed. Therefore, low altitude alerts must be provided in accordance with paragraph 2−1−6, Safety Alert.

b. *TERMINAL*. FUSION:

1. Fusion target symbol – *3 miles.*

2. When displaying ISR in the data block- *5 miles.*

NOTE−
In the event of an unexpected ISR on one or more aircraft, the ATCS working that aircraft must transition from 3-mile to 5-mile separation, or establish some other form of approved separation as soon as feasible. This action must be timely, but taken in a reasonable fashion, using the controller's best judgment, as not to reduce safety or the integrity of the traffic situation. For example, if ISR appears when an aircraft is established on final with another aircraft on short final, it would be beneficial from a safety perspective to allow the trailing aircraft to continue the approach and land rather than terminate a stabilized approach.

3. If TRK appears in the data block, handle in accordance with paragraph 5−3−7, Identification Status, subparagraph b, and take appropriate steps to establish nonradar separation.

4. The ADS-B Computer Human Interface (CHI) may be implemented by facilities on a sector by sector or facility wide basis when the determination is made that utilization of the ADS-B CHI provides an operational advantage to the controller.

c. STARS Multi−Sensor Mode – *5 miles*.

NOTE−
STARS Multi−Sensor Mode displays target symbols derived from radar, ADS−B, and WAM.

d. ERAM:

1. Below FL 600- *5 miles.*

2. At or above FL 600- *10 miles.*

3. Up to and including FL 230 where all the following conditions are met – *3 miles:*

(a) Within the 3 NM separation area, and:

(1) Within 40 NM of the preferred radar; or

(2) Within 60 NM of the preferred radar when using an MSSR; or

(3) When operating in track−based display mode.

(b) The preferred sensor and/or ADS−B is providing reliable targets.

(c) Facility directives specifically define the 3 NM separation area.

(d) The 3 NM separation area is displayable on the video map.

(e) Involved aircraft are displayed using the 3 NM target symbol.

NOTE−
ADS−B allows the expanded use of 3 NM separation in approved areas. It is not required for and does not affect the use of radar for 3 NM separation.

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.

REFERENCE–
FAA Order JO 7210.3, Para 8–2–1, Three Mile Airspace Operations.

e. MEARTS Mosaic Mode:

1. Below FL 600- *5 miles.*

2. At or above FL 600- *10 miles.*

3. For areas meeting all of the following conditions – *3 miles*:

(a) Radar site adaptation is set to single sensor mode.

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

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

(b) Significant operational advantages can be obtained.

(c) Within 40 NM of the sensor or within 60 NM of the sensor when using an MSSR and within the 3 NM separation area.

(d) Up to and including FL230.

(e) Facility directives specifically define the area where the separation can be applied and define the requirements for displaying the area on the controller's PVD/MDM.

4. MEARTS Mosaic Mode Utilizing Single Source Polygon (San Juan CCF and Honolulu Control Facility only) when meeting all of the following conditions – *3 miles*:

(a) Up to and including FL230 within 40 miles from the antenna or within 60 NM when using an MSSR and targets are from the adapted sensor.

(b) The single source polygon must be displayed on the controller's PVD/MDM.

(c) Significant operational advantages can be obtained.

(d) Facility directives specifically define the single source polygon area where the separation can be applied and specify procedures to be used.

(e) Controller must commence a transition to achieve either vertical separation or 5 mile lateral separation in the event that either target is not from the adapted sensor.

WAKE TURBULENCE APPLICATION

NOTE–
Wake turbulence procedures specify increased separation minima required for certain categories of aircraft because of the possible effects of wake turbulence.

f. *EN ROUTE.* Provide wake turbulence separation as follows:

1. Separate aircraft operating directly behind, following an aircraft conducting an instrument approach and/or operating within 2,500 feet and less than 1,000 feet below, by the following:

(a) Behind super – *5 miles,* unless the super is operating at or below FL240 and below 250 knots, then:

(1) Heavy - *6 miles.*

(2) Large - *7 miles.*

(3) Small - *8 miles.*

(b) Behind heavy:

(1) Heavy - *4 miles.*

FAA Order JO 7110.65, Para 5–2–15, Validation of Mode C Altitude Readout.
FAA Order JO 7110.65, Para 7–7–3, Separation.
FAA Order JO 7110.65, Para 7–8–3, Separation.
FAA Order JO 7110.65, Para 7–9–4, Separation.

b. Assign an altitude to an aircraft after the aircraft previously at that altitude has been issued a climb/descent clearance and is observed (valid Mode C), or reports leaving the altitude.

NOTE–
1. *Consider known aircraft performance characteristics, pilot furnished and/or Mode C detected information which indicate that climb/descent will not be consistent with the rates recommended in the AIM.*

2. *It is possible that the separation minima described in paragraph 4–5–1, Vertical Separation Minima, paragraph 7–7–3, Separation, paragraph 7–8–3, Separation, or paragraph 7–9–4, Separation, might not always be maintained using subparagraph b. However, correct application of this procedure will ensure that aircraft are safely separated because the first aircraft must have already vacated the altitude prior to the assignment of that altitude to the second aircraft.*

REFERENCE–
FAA Order JO 7110.65, Para 2–1–3, Procedural Preference.
FAA Order JO 7110.65, Para 4–5–1, Vertical Separation Minima.
FAA Order JO 7110.65, Para 5–2–15, Validation of Mode C Altitude Readout.
FAA Order JO 7110.65, Para 6–6–1, Application.

5–5–6. EXCEPTIONS

a. Do not use Mode C to effect vertical separation with an aircraft on a cruise clearance, contact approach, or as specified in paragraph 5–14–4, System Requirements, subparagraph f3.

REFERENCE–
FAA Order JO 7110.65, Para 6–6–2, Exceptions.
FAA Order JO 7110.65, Para 7–4–7, Contact Approach.
P/CG Term – Cruise.

b. Assign an altitude to an aircraft only after the aircraft previously at that altitude is observed at or passing through another altitude separated from the first by the appropriate minima when:

1. Severe turbulence is reported.

2. Aircraft are conducting military aerial refueling.

REFERENCE–
FAA Order JO 7110.65, Para 9–2–13, Military Aerial Refueling.

3. The aircraft previously at that altitude has been issued a climb/descent at pilot's discretion.

c. *EN ROUTE*. When the position symbol associated with the data block falls more than one history behind the actual aircraft target or there is no target symbol displayed, the Mode C information in the data block must not be used for the purpose of determining separation.

5–5–7. PASSING OR DIVERGING

a. *TERMINAL*. In accordance with the following criteria, all other approved separation may be discontinued and passing or diverging separation applied when:

1. Single Site ASR or FUSION Mode

(a) Aircraft are on opposite/reciprocal courses and you have observed that they have passed each other; or aircraft are on same or crossing courses/assigned radar vectors and one aircraft has crossed the projected course of the other, and the angular difference between their courses/assigned radar vectors is at least 15 degrees.

NOTE–
Two aircraft, both assigned courses and/or radar vectors with an angular difference of at least 15 degrees, is considered a correct application of this paragraph.

(b) The tracks are monitored to ensure that the primary targets, beacon control slashes, FUSION target symbols, or full digital terminal system primary and/or beacon target symbols will not touch.

REFERENCE–
FAA Order JO 7110.65, Para 1–2–2, Course Definitions.

2. Single Site ARSR or FUSION Mode when target refresh is only from an ARSR or when in FUSION Mode – ISR is displayed.

(a) Aircraft are on opposite/reciprocal courses and you have observed that they have passed each other; or aircraft are on same or crossing courses/assigned radar vectors and one aircraft has crossed the projected course of the other, and the angular difference between their courses/assigned radar vectors is at least 45 degrees.

NOTE–
Two aircraft, both assigned courses and/or radar vectors with an angular difference of at least 45 degrees, is considered a correct application of this paragraph.

(b) The tracks are monitored to ensure that the primary targets, beacon control slashes, FUSION target symbols, or full digital terminal system primary and/or beacon target symbols will not touch.

3. Although approved separation may be discontinued, the requirements of paragraph 5–5–4, Minima, subparagraph g must be applied when wake turbulence separation is required.

REFERENCE–
FAA Order JO 7110.65, Para 1–2–2, Course Definitions.

b. *EN ROUTE*, *TERMINAL (when STARS Multi-Sensor Mode is selected).* Vertical separation between aircraft may be discontinued when they are on opposite courses as defined in paragraph 1–2–2, Course Definitions; and

1. You are in communications with both aircraft involved; and

2. You tell the pilot of one aircraft about the other aircraft, including position, direction, type; and

3. One pilot reports having seen the other aircraft and that the aircraft have passed each other; and

4. You have observed that the radar targets have passed each other; and

5. You have advised the pilots if either aircraft is classified as a super or heavy aircraft.

6. Although vertical separation may be discontinued, the requirements of paragraph 5–5–4, Minima, subparagraph g must be applied when wake turbulence separation is required.

EXAMPLE–
"Traffic, twelve o'clock, Embraer One Seventy, opposite direction. Do you have it in sight?"

(If the answer is in the affirmative):

"Report passing the traffic."

(When pilot reports passing the traffic and the radar targets confirm that the traffic has passed, issue appropriate control instructions.)

5–5–8. ADDITIONAL SEPARATION FOR FORMATION FLIGHTS

Because of the distance allowed between formation aircraft and lead aircraft, additional separation is necessary to ensure the periphery of the formation is adequately separated from other aircraft, adjacent airspace, or obstructions. Provide supplemental separation for formation flights as follows:

a. Separate a standard formation flight by adding 1 mile to the appropriate radar separation minima.

REFERENCE–
FAA Order JO 7110.65, Para 2–1–13, Formation Flights.
FAA Order JO 7110.65, Para 5–5–1, Application.
FAA Order JO 7110.65, Para 7–7–3, Separation.
P/CG Term – Formation Flight.

b. Separate two standard formation flights from each other by adding 2 miles to the appropriate separation minima.

3. Informed of its position unless the aircraft is RNAV, FMS, or DME equipped and being vectored toward a VORTAC/TACAN or waypoint and within the service volume of the NAVAID.

PHRASEOLOGY–
(Position with respect to course/fix along route),
RESUME OWN NAVIGATION,

or

FLY HEADING (degrees). WHEN ABLE, PROCEED DIRECT (name of fix),

or
RESUME (SID/STAR/transition/procedure).

REFERENCE–
FAA Order JO 7110.65, Chapter 4, Section 1, NAVAID Use Limitations.
FAA Order JO 7110.65, Para 4–5–7, Altitude Information.

f. Aircraft instructed to resume a procedure which contains published crossing restrictions (SID/STAR) must be issued/reissued all applicable restrictions or be instructed to Climb Via/Descend Via.

PHRASEOLOGY–
CLEARED DIRECT (NAVAID, fix, waypoint) CROSS (NAVAID, fix, waypoint) AT/AT OR ABOVE/AT OR BELOW (altitude), then CLIMB VIA/DESCEND VIA (SID/STAR)

EXAMPLE–
"Cleared direct Luxor, then descend via the Ksino One arrival."
"Cleared direct HITME, cross HITME at or above one one thousand, then climb via the Boach Five departure."

g. Aircraft may not be vectored off an Obstacle Departure Procedure (ODP), or issued an altitude lower than published altitude on an ODP, until at or above the MVA/MIA, at which time the ODP is canceled.

NOTE–
Once an aircraft has been vectored off an Obstacle Departure Procedure, the procedure is canceled and ATC cannot clear the aircraft to resume the ODP.

REFERENCE–
P/CG – Obstacle Departure Procedure.

h. Aircraft vectored off an RNAV route must be recleared to the next waypoint or as requested by the pilot.

i. When flight data processing is available, update the route of flight in the computer unless an operational advantage is gained and coordination is accomplished.

j. Inform the pilot when a vector will take the aircraft across a previously assigned nonradar route.

PHRASEOLOGY–
EXPECT VECTOR ACROSS (NAVAID radial) (airway/route/course) FOR (purpose).

REFERENCE–
FAA Order JO 7110.65, Para 7–6–1, Application.

5–6–3. VECTORS BELOW MINIMUM ALTITUDE

a. TERMINAL. As described in facility directives, when vectoring a departing IFR aircraft, or one executing a missed approach, when ISR is not displayed in the full data block and before it reaches the minimum altitude for IFR operations if separation from prominent obstacles shown on the radar scope is applied in accordance with one of the following:

1. The flight path is 3 miles or more from the obstacle and the aircraft is climbing to an altitude at least 1,000 feet above the obstacle, vector the aircraft to maintain at least 3 miles separation from the obstacle until the aircraft reports leaving an altitude above the obstacle, or;

2. The flight path is less than 3 miles from the obstacle and the aircraft is climbing to an altitude at least 1,000 feet above the obstacle, vector the aircraft to increase lateral separation from the obstacle until the 3 mile minimum is achieved or until the aircraft reports leaving an altitude above the obstacle, or;

3. Radar facilities may vector aircraft below the MVA/MIA, provided:

(a) No prominent obstacles are within 10 NM of the departure end of runway (DER).

(b) Aircraft must be allowed an uninterrupted climb to meet the MVA/MIA within 10 NM of the DER.

NOTE–
ATC assumes responsibility for terrain and obstacle avoidance when IFR aircraft are below the minimum IFR altitude (MVA, MIA, MEA) and are taken off departure/missed approach procedures, or if issued go-around instructions, except after conducting a visual approach. ATC does not assume this responsibility when utilizing a Diverse Vector Area (DVA) or when operating on SIDs with or without a published range of headings in the departure route description.

b. After reaching the first MVA/MIA sector, all subsequent MVA/MIA sectors encountered must be met.

REFERENCE–
P/CG Term – Obstacle.
P/CG Term – Obstruction.
P/CG Term – Prominent Obstacle.

c. At those locations where diverse vector areas (DVA) have been established, radar facilities may vector aircraft below the MVA/MIA within the DVA described in facility directives.

d. At those locations using radar SIDs, radar facilities may vector aircraft below the MVA/MIA, in accordance with facility directives.

e. At locations that vector aircraft conducting a go–around or missed approach, use authorized headings and display those prominent obstacles stipulated in facility directives until reaching the MVA/MIA.

REFERENCE–
FAA Order JO 7110.65, Para 5–8–1, Procedures.
FAA Order JO 7210.3, Para 3–8–6, Establishing Diverse Vector Area/s (DVA).
FAA Order JO 7210.3, Para 10–3–16, Go-Around/Missed Approach and Non–Intersecting Converging Runway Operations.

Section 12. PAR Approaches– Terminal

5–12–1. GLIDEPATH NOTIFICATION

Inform the aircraft when it is approaching glidepath (approximately 10 to 30 seconds before final descent).

PHRASEOLOGY–
APPROACHING GLIDEPATH.

5–12–2. DECISION ALTITUDE (DA) NOTIFICATION

Provide the DA to any pilot who requests it.

PHRASEOLOGY–
DECISION ALTITUDE (number of feet).

5–12–3. DESCENT INSTRUCTION

When an aircraft reaches the point where final descent is to start, instruct it to begin descent.

PHRASEOLOGY–
BEGIN DESCENT.

5–12–4. GLIDEPATH AND COURSE INFORMATION

a. Issue course guidance and inform the aircraft when it is on glidepath and on course, and frequently inform the aircraft of any deviation from glidepath or course. Transmissions with aircraft on precision final approach should occur approximately every 5 seconds.

PHRASEOLOGY–
HEADING (heading).

ON GLIDEPATH.

ON COURSE,

or

SLIGHTLY/WELL ABOVE/BELOW GLIDEPATH.

SLIGHTLY/WELL LEFT/RIGHT OF COURSE.

NOTE–
Controllers should not key the radio transmitter continuously during radar approaches to preclude a lengthy communications block. The decision on how often transmitters are unkeyed is the controller's prerogative.

b. Issue trend information as required, to indicate target position with respect to the azimuth and elevation cursors and to describe target movement as appropriate corrections are issued. Trend information may be modified by the terms "RAPIDLY" or "SLOWLY," as appropriate.

EXAMPLE–
"Going above/below glidepath."
"Going right/left of course."
"Above/below glidepath and coming down/up."
"Above/below glidepath and holding."
"Left/right of course and holding/correcting."

REFERENCE–
FAA Order JO 7110.65, Para 5–12–7, Position Advisories.

5–12–5. DISTANCE FROM TOUCHDOWN

Inform the aircraft of its distance from touchdown at least once each mile on final approach.

PHRASEOLOGY–
(Number of miles) MILES FROM TOUCHDOWN.

5–12–6. DECISION ALTITUDE

Inform the aircraft when it reaches the published decision altitude.

PHRASEOLOGY–
AT DECISION ALTITUDE.

5–12–7. POSITION ADVISORIES

a. Continue to provide glidepath and course information prescribed in paragraph 5–12–4, Glidepath and Course Information, subparagraphs a and b, until the aircraft passes over threshold.

NOTE–
Glidepath and course information provided below decision altitude is advisory only. 14 CFR section 91.175 outlines pilot responsibilities for descent below decision altitude.

b. Inform the aircraft when it is passing over the approach lights.

PHRASEOLOGY–
OVER APPROACH LIGHTS.

c. Inform the aircraft when it is passing over the landing threshold and inform it of its position with respect to the final approach course.

PHRASEOLOGY–
OVER LANDING THRESHOLD, (position with respect to course).

REFERENCE–
FAA Order JO 7110.65, Para 5–10–14, Final Approach Abnormalities.

5–12–8. APPROACH GUIDANCE TERMINATION

a. Discontinue precision approach guidance when:

1. Requested by the pilot.

2. In your opinion, continuation of a safe approach to the landing threshold is questionable.

3. The aircraft passes over landing threshold.

4. The pilot reports the runway/approach lights in sight and requests to or advises that he/she will proceed visually.

NOTE–
A pilot's report of "runway in sight" or "visual" is not a request to proceed visually.

b. When precision approach guidance is discontinued in accordance with subparagraph a, advise the aircraft of its position and to proceed visually.

PHRASEOLOGY–
(Distance) MILE(S) FROM TOUCHDOWN, PROCEED VISUALLY (additional instructions/clearance as required).

c. After a pilot has reported the runway/approach lights in sight and requested to or advised that he/she will proceed visually, and has been instructed to proceed visually, all PAR approach procedures must be discontinued.

d. Continue to monitor final approach and frequency. Pilots must remain on final controller's frequency until touchdown or otherwise instructed.

REFERENCE–
FAA Order JO 7110.65, Para 5–10–14, Final Approach Abnormalities.

Section 4. Approaches

7–4–1. VISUAL APPROACH

A visual approach is an ATC authorization for an aircraft on an IFR flight plan to proceed visually and clear of clouds to the airport of intended landing. A visual approach is not a standard instrument approach procedure and has no missed approach segment. An aircraft unable to complete a landing from a visual approach must be handled as any go-around and appropriate IFR separation must be provided until the aircraft lands or the pilot cancels their IFR flight plan.

a. At airports with an operating control tower, aircraft executing a go-around may be directed to:

1. Enter the traffic pattern for landing. An altitude assignment is not required. The pilot is expected to climb to pattern altitude and is responsible to maintain terrain and obstruction avoidance. ATC must provide approved separation or visual separation from other IFR aircraft, or

2. Proceed as otherwise instructed by ATC. The pilot is expected to comply with assigned instructions, and responsible to maintain terrain and obstruction avoidance until reaching an ATC assigned altitude. ATC is responsible to provide instructions to the pilot to facilitate a climb to the minimum altitude for instrument operations. ATC must provide approved separation or visual separation from other IFR aircraft.

NOTE–
The pilot is responsible for their own terrain and obstruction avoidance during a go-around after conducting a visual approach. The facility can assign headings towards the lowest terrain and obstructions.

b. At airports without an operating control tower, aircraft executing a go–around are expected to complete a landing as soon as possible or contact ATC for further clearance. ATC must maintain approved separation from other IFR aircraft.

REFERENCE–
FAA Order JO 7110.65, Para 2–1–4, Operational Priority.
FAA Order JO 7110.65, Para 2–1–20, Wake Turbulence Cautionary Advisories.
FAA Order JO 7110.65, Para 3–10–2, Forwarding Approach Information by Nonapproach Control Facilities.
FAA Order JO 7110.65, Para 7–2–1, Visual Separation.
FAA Order JO 7110.65, Para 7–4–4, Approaches to Multiple Runways.
FAA Order JO 7210.3, Para 10–3–16, Go-Around/Missed Approach and Non–Intersecting Converging Runway Operations.
P/CG Term – Go-around.
AIM, Para 5–4–23, Visual Approach.

7–4–2. VECTORS FOR VISUAL APPROACH

A vector for a visual approach may be initiated if the reported ceiling at the airport of intended landing is at least 500 feet above the MVA/MIA and the visibility is 3 miles or greater. At airports without weather reporting service there must be reasonable assurance (e.g. area weather reports, PIREPs, etc.) that descent and flight to the airport can be made visually, and the pilot must be informed that weather information is not available.

PHRASEOLOGY–
(Ident) FLY HEADING

or
TURN RIGHT/LEFT HEADING (degrees) VECTOR FOR VISUAL APPROACH TO (airport name).

(If appropriate)

WEATHER NOT AVAILABLE.

NOTE–
At airports where weather information is not available, a pilot request for a visual approach indicates that descent and flight to the airport can be made visually and clear of clouds.

REFERENCE–
FAA Order JO 7110.65, Para 5–9–1, Vectors to Final Approach Course.
FAA Order JO 7110.65, Para 7–2–1, Visual Separation.
FAA Order JO 7110.65, Para 7–4–3, Clearance for Visual Approach.
FAA Order JO 7110.65, Para 7–4–4, Approaches to Multiple Runways.
FAA Order JO 7110.65, Para 7–6–7, Sequencing.
FAA Order JO 7110.65, Para 7–7–3, Separation.

7–4–3. CLEARANCE FOR VISUAL APPROACH

ARTCCs and approach controls may clear aircraft for visual approaches using the following procedures:

NOTE–
Towers may exercise this authority when authorized by a LOA with the facility that provides the IFR service, or by a facility directive at collocated facilities.

a. Controllers may initiate, or pilots may request, a visual approach even when an aircraft is being vectored for an instrument approach and the pilot subsequently reports:

1. The airport or the runway in sight at airports with operating control towers.

2. The airport in sight at airports without a control tower.

b. Resolve potential conflicts with all other aircraft, advise an overtaking aircraft of the distance to the preceding aircraft and speed difference, and ensure that weather conditions at the airport are VFR or that the pilot has been informed that weather is not available for the destination airport. Upon pilot request, advise the pilot of the frequency to receive weather information where AWOS/ASOS is available.

REFERENCE–
FAA Order JO 7110.65, Para 7–2–1, Visual Separation.

INTERPRETATION–
7110.65 7–4–3b, Clearance for Visual Approach and 4–7–10b(2), Approach Information (12–1–2014)

c. Clear an aircraft for a visual approach when:

1. The aircraft is number one in the approach sequence, or

2. At locations with an operating control tower, the aircraft is to follow a preceding aircraft and the pilot reports the preceding aircraft in sight and is instructed to follow it to the same runway, or

NOTE–
The pilot need not report the airport/runway in sight.

3. At locations with an operating control tower, the pilot reports the airport or runway in sight but not the preceding aircraft. Radar separation must be maintained until visual separation is provided.

4. At locations without an operating control tower or where part-time towers are closed, do not specify a runway when issuing a visual approach clearance, issue a visual approach clearance to the airport only.

PHRASEOLOGY–
(at locations with an operating control tower)

(Call sign) (control instructions as required) CLEARED VISUAL APPROACH RUNWAY number);

or

(at locations without an operating control tower)

(Call sign) (control instructions as required) CLEARED VISUAL APPROACH TO (airport name)

(and if appropriate)

WEATHER NOT AVAILABLE

b. When you receive the nearest location of the explosive detection K–9 team, relay the information to the pilot.

c. If the aircraft wishes to divert to the airport location provided, obtain an estimated arrival time from the pilot and advise your supervisor.

10–2–13. MANPADS ALERT

When a threat or attack from Man–Portable Air Defense Systems (MANPADS) is determined to be real, notify and advise aircraft as follows:

a. Do not withhold landing clearance. To the extent possible, issue information on MANPADS threats, confirmed attacks, or post–event activities in time for it to be useful to the pilot. The pilot or parent company will determine the pilot's actions.

b. MANPADS information will be disseminated via the ATIS and/or controller-to-pilot transmissions.

c. Disseminate via controller-to-pilot transmission until the appropriate MANPADS information is broadcast via the ATIS and pilots indicate they have received the appropriate ATIS code. MANPADS information will include nature and location of threat or incident, whether reported or observed and by whom, time (if known), and when transmitting to an individual aircraft, a request for pilot's intentions.

PHRASEOLOGY–

ATTENTION (aircraft identification), MANPADS ALERT. EXERCISE EXTREME CAUTION. MANPADS THREAT/ ATTACK/POST–EVENT ACTIVITY OBSERVED/ REPORTED BY (reporting agency) (location) AT (time, if known). (When transmitting to an individual aircraft) SAY INTENTIONS.

EXAMPLE–

"Attention Jet Blue Four Seventeen, MANPADS alert. Exercise extreme caution. MANPADS threat reported by TSA, LaGuardia vicinity. Say intentions."

"Attention all aircraft, MANPADS alert. Exercise extreme caution. MANPADS post-event activity observed by tower south of airport at two-one-zero-zero Zulu."

d. Report MANPADS threat/attack/post–event activity via the ATIS and/or controller-to-pilot transmissions until notified otherwise by the Domestic Events Network (DEN) Air Traffic Security Coordinator (ATSC).

REFERENCE–

FAA Order JO 7110.65, Para 2–9–3, Content.
FAA Order JO 7210.3, Para 2–1–10, Handling MANPADS Incidents.
FAA Order JO 7610.4, Para 3–1–3, Responsibilities.

10–2–14. UNAUTHORIZED LASER ILLUMINATION OF AIRCRAFT

a. When a laser event is reported to an air traffic facility, broadcast on all appropriate frequencies a general caution warning every five minutes for 20 minutes following the last report.

PHRASEOLOGY–

UNAUTHORIZED LASER ILLUMINATION EVENT, (location), (altitude).

b. Terminal facilities must include reported unauthorized laser illumination events on the ATIS broadcast for one hour following the last report. Include the time, location, altitude, color, and direction of the laser as reported by the pilot.

NOTE–

All personnel can expect aircrews to regard lasers as an inflight emergency and may take evasive action to avoid laser illumination. Additionally, other aircraft may request clearance to avoid the area.

REFERENCE–

FAA Order JO 7110.65, Para 2–9–3, Content.
FAA Order JO 7210.3, Para 2–1–30, Reporting Unauthorized Laser Illumination of Aircraft.

10–2–15. EMERGENCY AIRPORT RECOMMENDATION

a. Consider the following factors when recommending an emergency airport:

1. Remaining fuel in relation to airport distances.

2. Weather conditions.

NOTE–
Depending on the nature of the emergency, certain weather phenomena may deserve weighted consideration when recommending an airport; e.g., a pilot may elect to fly farther to land at an airport with VFR instead of IFR conditions.

3. Airport conditions.

4. NAVAID status.

5. Aircraft type.

6. Pilot's qualifications.

7. Vectoring or homing capability to the emergency airport.

NOTE–
In the event of an Emergency Autoland system activation, the system will select a suitable airport and advise ATC. The Emergency Autoland system does not consider closed runways, equipment on the runway, construction, or other possible airport hazards when selecting a suitable airport.

b. Consideration to the provisions of subparagraph a and paragraph 10–2–16, Guidance to Emergency Airport, must be used in conjunction with the information derived from any automated emergency airport information source.

10–2–16. GUIDANCE TO EMERGENCY AIRPORT

a. When necessary, use any of the following for guidance to the airport:

1. Radar.

2. Following another aircraft.

3. NAVAIDs.

4. Pilotage by landmarks.

5. Compass headings.

b. Consideration to the provisions of paragraph 10–2–15, Emergency Airport Recommendation, must be used in conjunction with the information derived from any automated emergency airport information source.

10–2–17. EMERGENCY OBSTRUCTION VIDEO MAP (EOVM)/EMERGENCY ALTITUDE MAP (EAM)

a. The Terminal Area EOVM and En Route Air Traffic Control Services EAM are intended to facilitate advisory service to an aircraft in an emergency situation wherein an appropriate terrain/obstacle clearance minimum altitude cannot be maintained. It must only be used, and the service provided under the following conditions:

1. The pilot has declared an emergency, or

2. The controller has determined that an emergency condition exists or is imminent because of the pilot's inability to maintain an appropriate terrain/obstacle clearance minimum altitude.

NOTE–
Appropriate terrain/obstacle clearance minimum altitudes may be defined as Minimum IFR Altitude (MIA), Minimum En Route Altitude (MEA), Minimum Obstruction Clearance Altitude (MOCA), or Minimum Vectoring Altitude (MVA).

b. When providing emergency vectoring service, the controller must advise the pilot that any headings issued are emergency advisories intended only to direct the aircraft toward and over an area of lower terrain/obstacle elevation.

(a) Evidence exists that would ease apprehension about the safety of the aircraft and its occupants; or

(b) The concerned aircraft lands. Cancel the ALERFA message by a message addressed to the same stations as the ALERFA message.

2. A DETRESFA ends when the:

(a) Aircraft successfully lands; or

(b) RCC advises of a successful rescue; or

(c) RCC advises of termination of SAR activities. Cancel the DETRESFA by a message addressed to the same stations as the DETRESFA message.

i. A separate chronological record should be kept on each ALERFA and DETRESFA together with a chart which displays the projected route of the aircraft, position reports received, route of interceptor aircraft, and other pertinent information.

10–6–4. INFLIGHT CONTINGENCIES

a. If an aircraft over water requests weather, sea conditions, ditching information, and/or assistance from surface vessels, or if the controller feels that this information may be necessary for aircraft safety, it should be requested from the RCC. Also, an appropriate AMVER SURPIC should be asked for if requested by the aircraft or deemed beneficial by control personnel.

NOTE–
The AMVER Center can deliver, in a matter of minutes, a SURPIC of vessels in the area of a SAR incident, including their predicted positions and their characteristics.

b. In all cases of aircraft ditching, the airspace required for SAR operations must be determined by the RCC. The ACC must block that airspace until the RCC advises the airspace is no longer required. An International Notice to Airmen (NOTAM) must be issued describing the airspace affected.

c. The following actions will be taken in the event an aircraft must make an emergency descent:

1. In the event an aircraft requests an emergency descent:

(a) Issue a clearance to the requested altitude if approved separation can be provided.

(b) Advise the aircraft of the traffic, and request its intentions if traffic prevents an unrestricted descent.

PHRASEOLOGY–
ATC ADVISES (aircraft identification) UNABLE TO APPROVE UNRESTRICTED DESCENT.
TRAFFIC (traffic information).
REQUEST INTENTIONS.

2. In the event an aircraft is making or will make an emergency descent without a clearance:

(a) Advise other aircraft of the emergency descent.

PHRASEOLOGY–
ATC ADVISES (aircraft identification/all aircraft) BE ALERT FOR EMERGENCY DESCENT IN THE VICINITY OF (latitude/longitude) FROM (altitude/FL) TO (altitude/FL).

(b) Advise other aircraft when the emergency descent is complete.

PHRASEOLOGY–
(Aircraft identification/all aircraft) EMERGENCY DESCENT AT (location) COMPLETED.

3. Upon notification that an aircraft is making an emergency descent through other traffic, take action immediately to safeguard all aircraft concerned.

4. When appropriate, broadcast by ATC communications, by radio navigation aids, and/or through aeronautical communication stations/services an emergency message to all aircraft in the vicinity of the descending aircraft. Include the following information:

(a) Location of emergency descent.

(b) Direction of flight.

(c) Type aircraft.

(d) Route if appropriate.

(e) Altitude vacated.

(f) Other information.

EXAMPLE–

"Attention all aircraft in the vicinity of TROUT, a northbound A-Three Twenty on A–T–S Route Alfa Seven Hundred is making an emergency descent from flight level three three zero." (Repeat as you deem appropriate.)

5. If traffic conditions permit, provide traffic information to the affected aircraft.

6. Immediately after an emergency broadcast or traffic information has been made, issue appropriate clearances or instructions, as necessary, to all aircraft involved.

10–6–5. SERVICES TO RESCUE AIRCRAFT

a. Provide IFR separation between the SAR and the aircraft in distress, except when visual or radar contact has been established by the search and rescue aircraft and the pilots of both aircraft concur, IFR separation may be discontinued.

b. Clear the SAR aircraft to a fixed clearance limit rather than to the aircraft in distress, which is a moving fix. Issue route clearances that are consistent with that of the distressed aircraft.

c. Advise the rescue aircraft, as soon as practicable, of any factors that could adversely affect its mission; e.g., unfavorable weather conditions, anticipated problems, the possibility of not being able to approve an IFR descent through en route traffic, etc.

d. Advise the appropriate rescue agency of all pertinent information as it develops.

e. Forward immediately any information about the action being taken by the RCC, other organizations, or aircraft to the aircraft concerned.

f. Advise the aircraft operator of the current status of the SAR operation as soon as practicable.

g. Since prompt, correct, and complete information is the key to successful rescue operations, ensure that this information is swiftly and smoothly supplied to those organizations actively engaged in rescue operations.

Appendix A. Standard Operating Practice (SOP) for the Transfer of Position Responsibility

1. PURPOSE

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

2. DISCUSSION

a. In all operational facilities, the increase in traffic density and the need for the expeditious movement of traffic without compromising safety have emphasized the importance of the position relief process.

b. The contents, methods, and practices used for position relief and briefings vary among personnel, and pertinent information is often forgotten or incompletely covered. Major problems occur whenever there is a heavy reliance upon memory, unsupported by routines or systematic reminders. This SOP addresses the complete task of transferring position responsibility and the associated relief briefing.

c. Position relief unavoidably provides workload for specialists at the time of relief. The intent of this SOP is to make the transfer of position responsibility take place smoothly and to ensure a complete transfer of information with a minimum amount of workload. The method takes advantage of a self−briefing concept in which the relieving specialist obtains needed status information by reading from the Status Information Area/s to begin the relief process. Up to the moment information related to the control of aircraft or vehicular movements requires verbal exchanges between specialists during the relief process. The method also specifies the moment when the transfer of position responsibility occurs.

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

3. TERMS

The following terms are important for a complete understanding of this SOP:

a. Status Information Area (SIA). Manual or automatic displays of the current status of position related equipment and operational conditions or procedures.

b. Written Notes. Manually recorded items of information kept at designated locations on the position of operation. They may be an element of the Status Information Area/s.

c. Checklist. An ordered listing of items to be covered during a position relief.

4. PRECAUTIONS

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

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

c. Extra care should be taken when more than one specialist relieves or is being relieved from a position at the same time; e.g., combining or decombining positions. Such simultaneous reliefs should be approached with caution.

5. RESPONSIBILITIES

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

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

2. Relayed to the position having responsibility for accurately displaying the status information.

b. The relieving specialist must be responsible for ensuring that, prior to accepting responsibility for the position, any unresolved questions pertaining to the operation of the position are resolved.

c. The relieving specialist and the specialist being relieved must share equal responsibility for the completeness and accuracy of the position relief briefing.

d. The specialists engaged in a position relief must conduct the relief process at the position being relieved unless other procedures have been established and authorized by the facility air traffic manager.

NOTE–
The "sharing" of this responsibility means that the specialist being relieved is obligated to provide a complete, accurate briefing and the relieving specialist is obligated to ensure that a briefing takes place and is to his/her total satisfaction.

e. Specialists engaged in a position relief briefing for transfer of position responsibility must reference the position relief checklist developed by the facility in accordance with FAA Order JO 7210.3, paragraph 2–2–4, Duty Familiarization and the Transfer of Position Responsibility.

NOTE–
The position relief checklist may be printed or electronic.

6. STEP–BY–STEP PROCESS

a. PREVIEW THE POSITION

Relieving Specialist	Specialist Being Relieved
1. Follow checklist and review the Status Information Area(s).	
NOTE– *This sub-step may be replaced by an authorized pre–position briefing provided an equivalent review of checklist items is accomplished.*	
2. Observe position equipment, operational situation, and the work environment. **3.** Listen to voice communications and observe other operational actions. **4.** Observe current and pending aircraft and vehicular traffic and correlate with flight and other movement information. **5.** Indicate to the specialist being relieved that the position has been previewed and that the verbal briefing may begin.	
NOTE– *Substeps 6a2, 3, and 4 may be conducted concurrently or in any order.*	

b. VERBAL BRIEFING

Relieving Specialist	Specialist Being Relieved
	1. Brief the relieving specialist on the abnormal status of items not listed on the Status Information Area(s) as well as on any items of special interest calling for verbal explanation or additional discussion. **2.** Brief on reported weather and other weather related information. **3.** Brief on traffic if applicable. **4.** Brief communication status of all known aircraft except for ERAM facilities using Voice Communication Indicator (VCI).
5. Ask questions necessary to ensure a complete understanding of the operational situation.	
	6. Completely answer any questions asked.

c. ASSUMPTION OF POSITION RESPONSIBILITY

Relieving Specialist	Specialist Being Relieved
1. Make a statement or otherwise indicate to the specialist being relieved that position responsibility has been assumed.	
	2. Release the position to the relieving specialist and mentally note the time.

d. REVIEW THE POSITION

Relieving Specialist	Specialist Being Relieved
1. Check, verify, and update the information obtained in steps 6a and b. **2.** Check position equipment in accordance with existing directives.	
	3. Review checklist, Status Information Area/s, written notes, and other prescribed sources of information and advise the relieving specialist of known omissions, updates, or inaccuracies. **4.** Observe overall position operation to determine if assistance is needed. **5.** If assistance is needed, provide or summon it as appropriate. **6.** Advise the appropriate position regarding known Status Information Area(s) omissions, updates, or inaccuracies. **7.** Sign-on the relieving specialist with the time as noted in step 6c2. **8.** Sign off the position in accordance with existing directives or otherwise indicate that the relief process is complete.

PILOT/CONTROLLER GLOSSARY

PURPOSE

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

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

c. Terms used in this glossary that apply to flight service station (FSS) roles are included when they differ from air traffic control functions. These terms are followed by "[FSS]."

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

EXPLANATION OF CHANGES

e. Terms Added:
COMBINED CONTROL FACILITY (CCF)

f. Terms Deleted:
COMBINED CENTER–RAPCON (CERAP)

g. Terms Modified:
REMOTE COMMUNICATIONS AIR/GROUND FACILITY (RCAG)
SIMULTANEOUS (PARALLEL) DEPENDENT APPROACHES

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

C

CALCULATED LANDING TIME– A term that may be used in place of tentative or actual calculated landing time, whichever applies.

CALIBRATED AIRSPEED (CAS) – The indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.

CALL FOR RELEASE– Wherein the overlying ARTCC requires a terminal facility to initiate verbal coordination to secure ARTCC approval for release of a departure into the en route environment.

CALL UP– Initial voice contact between a facility and an aircraft, using the identification of the unit being called and the unit initiating the call.
(Refer to AIM.)

CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE– That portion of Canadian domestic airspace within which MNPS separation may be applied.

CARDINAL ALTITUDES– "Odd" or "Even" thousand-foot altitudes or flight levels; e.g., 5,000, 6,000, 7,000, FL 250, FL 260, FL 270.
(See ALTITUDE.)
(See FLIGHT LEVEL.)

CARDINAL FLIGHT LEVELS–
(See CARDINAL ALTITUDES.)

CAT–
(See CLEAR-AIR TURBULENCE.)

CATCH POINT– A fix/waypoint that serves as a transition point from the high altitude waypoint navigation structure to an arrival procedure (STAR) or the low altitude ground–based navigation structure.

CBO–
(See COMMUNITY–BASED ORGANIZATION.)

CCF–
(See COMBINED CONTROL FACILITY.)

CEILING– The heights above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken," "overcast," or "obscuration," and not classified as "thin" or "partial."
(See ICAO term CEILING.)

CEILING [ICAO]– The height above the ground or water of the base of the lowest layer of cloud below 6,000 meters (20,000 feet) covering more than half the sky.

CENTER–
(See AIR ROUTE TRAFFIC CONTROL CENTER.)

CENTER'S AREA– The specified airspace within which an air route traffic control center (ARTCC) provides air traffic control and advisory service.
(See AIR ROUTE TRAFFIC CONTROL CENTER.)
(Refer to AIM.)

CENTER WEATHER ADVISORY– An unscheduled weather advisory issued by Center Weather Service Unit meteorologists for ATC use to alert pilots of existing or anticipated adverse weather conditions within the next 2 hours. A CWA may modify or redefine a SIGMET.

(See AIRMET.)
(See CONVECTIVE SIGMET.)
(See GRAPHICAL AIRMEN'S METEOROLOGICAL INFORMATION.)
(See SAW.)
(See SIGMET.)
(Refer to AIM.)

CENTRAL EAST PACIFIC– An organized route system between the U.S. West Coast and Hawaii.

CEP–

(See CENTRAL EAST PACIFIC.)

CERTIFICATE OF WAIVER OR AUTHORIZATION (COA)– An FAA grant of approval for a specific flight operation or airspace authorization or waiver.

CERTIFIED TOWER RADAR DISPLAY (CTRD)– An FAA radar display certified for use in the NAS.

CFR–

(See CALL FOR RELEASE.)

CHA

(See CONTINGENCY HAZARD AREA)

CHAFF– Thin, narrow metallic reflectors of various lengths and frequency responses, used to reflect radar energy. These reflectors, when dropped from aircraft and allowed to drift downward, result in large targets on the radar display.

CHART SUPPLEMENT– A series of civil/military flight information publications issued by FAA every 56 days consisting of the Chart Supplement U.S., Chart Supplement Alaska, and Chart Supplement Pacific.

CHART SUPPLEMENT ALASKA– A flight information publication designed for use with appropriate IFR or VFR charts which contains data on all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, airport diagrams, certain special notices, and non–regulatory procedures. Also included in this publication are selected entries needed to support the unique geographical operational conditions of Alaska. This publication is issued in one volume for the state of Alaska.

CHART SUPPLEMENT PACIFIC– A flight information publication designed for use with appropriate IFR or VFR charts which contains data on all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, airport diagrams, certain special notices, and non–regulatory procedures. Also included in this publication are Instrument Approach Procedures (IAP), Departure Procedures (DP), and Standard Terminal Arrival (STAR) charts, along with selected entries needed to support the unique geographical operational conditions of the Pacific Oceanic region. This publication is issued in one volume for the Hawaiian Islands and other selected Pacific Islands.

CHART SUPPLEMENT U.S.– A flight information publication designed for use with appropriate IFR or VFR charts which contains data on all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, airport diagrams, certain special notices, and non–regulatory procedures. This publication is issued for the conterminous U.S., Puerto Rico, and the Virgin Islands in seven volumes according to geographical area.

CHARTED VFR FLYWAYS– Charted VFR Flyways are flight paths recommended for use to bypass areas heavily traversed by large turbine-powered aircraft. Pilot compliance with recommended flyways and associated altitudes is strictly voluntary. VFR Flyway Planning charts are published on the back of existing VFR Terminal Area charts.

CHARTED VISUAL FLIGHT PROCEDURE APPROACH– An approach conducted while operating on an instrument flight rules (IFR) flight plan which authorizes the pilot of an aircraft to proceed visually and clear

of clouds to the airport via visual landmarks and other information depicted on a charted visual flight procedure. This approach must be authorized and under the control of the appropriate air traffic control facility. Weather minimums required are depicted on the chart.

CHASE– An aircraft flown in proximity to another aircraft normally to observe its performance during training or testing.

CHASE AIRCRAFT–
(See CHASE.)

CHOP– A form of turbulence.

a. Light Chop– Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude.

b. Moderate Chop– Turbulence similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude.
(See TURBULENCE.)

CIRCLE-TO-LAND MANEUVER– A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. At tower controlled airports, this maneuver is made only after ATC authorization has been obtained and the pilot has established required visual reference to the airport.
(See CIRCLE TO RUNWAY.)
(See LANDING MINIMUMS.)
(Refer to AIM.)

CIRCLE TO RUNWAY (RUNWAY NUMBER)– Used by ATC to inform the pilot that he/she must circle to land because the runway in use is other than the runway aligned with the instrument approach procedure. When the direction of the circling maneuver in relation to the airport/runway is required, the controller will state the direction (eight cardinal compass points) and specify a left or right downwind or base leg as appropriate; e.g., "Cleared VOR Runway Three Six Approach circle to Runway Two Two," or "Circle northwest of the airport for a right downwind to Runway Two Two."
(See CIRCLE-TO-LAND MANEUVER.)
(See LANDING MINIMUMS.)
(Refer to AIM.)

CIRCLING APPROACH–
(See CIRCLE-TO-LAND MANEUVER.)

CIRCLING MANEUVER–
(See CIRCLE-TO-LAND MANEUVER.)

CIRCLING MINIMA–
(See CONTROLLED AIRSPACE.)

CIVIL AIRCRAFT OPERATION (CAO)– Aircraft operations other than public use.

CLASS A AIRSPACE–
(See CONTROLLED AIRSPACE.)

CLASS B AIRSPACE–
(See CONTROLLED AIRSPACE.)

CLASS C AIRSPACE–
(See CONTROLLED AIRSPACE.)

CLASS D AIRSPACE–
(See CONTROLLED AIRSPACE.)

CLASS E AIRSPACE–
(See CONTROLLED AIRSPACE.)

CLASS G AIRSPACE– Airspace that is not designated in 14 CFR part 71 as Class A, Class B, Class C, Class D, or Class E controlled airspace is Class G (uncontrolled) airspace.
(See UNCONTROLLED AIRSPACE.)

CLEAR AIR TURBULENCE (CAT)– Turbulence encountered in air where no clouds are present. This term is commonly applied to high-level turbulence associated with wind shear. CAT is often encountered in the vicinity of the jet stream.
(See WIND SHEAR.)
(See JET STREAM.)

CLEAR OF THE RUNWAY–

a. Taxiing aircraft, which is approaching a runway, is clear of the runway when all parts of the aircraft are held short of the applicable runway holding position marking.

b. A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there are no restrictions to its continued movement beyond the applicable runway holding position marking.

c. Pilots and controllers must exercise good judgment to ensure that adequate separation exists between all aircraft on runways and taxiways at airports with inadequate runway edge lines or holding position markings.

CLEARANCE–
(See AIR TRAFFIC CLEARANCE.)

CLEARANCE LIMIT– The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance.
(See ICAO term CLEARANCE LIMIT.)

CLEARANCE LIMIT [ICAO]– The point to which an aircraft is granted an air traffic control clearance.

CLEARANCE VOID IF NOT OFF BY (TIME)– Used by ATC to advise an aircraft that the departure release is automatically canceled if takeoff is not made prior to a specified time. The expiration of a clearance void time does not cancel the departure clearance or IFR flight plan. It withdraws the pilot's authority to depart IFR until a new departure release/release time has been issued by ATC. Pilots who choose to depart VFR after their clearance void time has expired should not depart using the previously assigned IFR transponder code.
(See ICAO term CLEARANCE VOID TIME.)

CLEARANCE VOID TIME [ICAO]– A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

CLEARED APPROACH– ATC authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure.
(See CLEARED (Type of) APPROACH.)
(See INSTRUMENT APPROACH PROCEDURE.)
(Refer to 14 CFR part 91.)
(Refer to AIM.)

CLEARED (Type of) APPROACH– ATC authorization for an aircraft to execute a specific instrument approach procedure to an airport; e.g., "Cleared ILS Runway Three Six Approach."
(See APPROACH CLEARANCE.)
(See INSTRUMENT APPROACH PROCEDURE.)
(Refer to 14 CFR part 91.)
(Refer to AIM.)

CLEARED AS FILED– Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include the altitude, DP, or DP Transition.
(See REQUEST FULL ROUTE CLEARANCE.)
(Refer to AIM.)

CLEARED FOR TAKEOFF– ATC authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

CLEARED FOR THE OPTION– ATC authorization for an aircraft to make a touch-and-go, low approach, missed approach, stop and go, or full stop landing at the discretion of the pilot. It is normally used in training so that an instructor can evaluate a student's performance under changing situations. Pilots should advise ATC if they decide to remain on the runway, of any delay in their stop and go, delay clearing the runway, or are unable to comply with the instruction(s).

(See OPTION APPROACH.)

(Refer to AIM.)

CLEARED THROUGH– ATC authorization for an aircraft to make intermediate stops at specified airports without refiling a flight plan while en route to the clearance limit.

CLEARED TO LAND– ATC authorization for an aircraft to land. It is predicated on known traffic and known physical airport conditions.

CLEARWAY– An area beyond the takeoff runway under the control of airport authorities within which terrain or fixed obstacles may not extend above specified limits. These areas may be required for certain turbine-powered operations and the size and upward slope of the clearway will differ depending on when the aircraft was certificated.

(Refer to 14 CFR part 1.)

CLIMB TO VFR– ATC authorization for an aircraft to climb to VFR conditions within Class B, C, D, and E surface areas when the only weather limitation is restricted visibility. The aircraft must remain clear of clouds while climbing to VFR.

(See SPECIAL VFR CONDITIONS.)

(Refer to AIM.)

CLIMBOUT– That portion of flight operation between takeoff and the initial cruising altitude.

CLIMB VIA– An abbreviated ATC clearance that requires compliance with the procedure lateral path, associated speed restrictions, and altitude restrictions along the cleared route or procedure.

CLOSE PARALLEL RUNWAYS– Two parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3000 feet (750 feet for SOIA operations) for which ATC is authorized to conduct simultaneous independent approach operations. PRM and simultaneous close parallel appear in approach title. Dual communications, special pilot training, an Attention All Users Page (AAUP), NTZ monitoring by displays that have aural and visual alerting algorithms are required. A high update rate surveillance sensor is required for certain runway or approach course spacing.

CLOSED LOOP CLEARANCE– A vector or reroute clearance that includes a return to route point and updates ERAM to accurately reflect the anticipated route (e.g., a QU route pick that anticipates length of vector and includes the next fix that ties into the route of flight.)

CLOSED RUNWAY– A runway that is unusable for aircraft operations. Only the airport management/military operations office can close a runway.

CLOSED TRAFFIC– Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.

CLOUD– A cloud is a visible accumulation of minute water droplets and/or ice particles in the atmosphere above the Earth's surface. Cloud differs from ground fog, fog, or ice fog only in that the latter are, by definition, in contact with the Earth's surface.

CLT–

(See CALCULATED LANDING TIME.)

CLUTTER– In radar operations, clutter refers to the reception and visual display of radar returns caused by precipitation, chaff, terrain, numerous aircraft targets, or other phenomena. Such returns may limit or preclude ATC from providing services based on radar.
(See CHAFF.)
(See GROUND CLUTTER.)
(See PRECIPITATION.)
(See TARGET.)
(See ICAO term RADAR CLUTTER.)

CMNPS–
(See CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE.)

COA–
(See CERTIFICATE OF WAIVER OR AUTHORIZATION.)

COASTAL FIX– A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

CODES– The number assigned to a particular multiple pulse reply signal transmitted by a transponder.
(See DISCRETE CODE.)

COLD TEMPERATURE CORRECTION– A correction in feet, based on height above airport and temperature, that is added to the aircraft's indicated altitude to offset the effect of cold temperature on true altitude.

COLLABORATIVE TRAJECTORY OPTIONS PROGRAM (CTOP)– CTOP is a traffic management program administered by the Air Traffic Control System Command Center (ATCSCC) that manages demand through constrained airspace, while considering operator preference with regard to both route and delay as defined in a Trajectory Options Set (TOS).

COMBINED CONTROL FACILITY (CCF)– An air traffic facility that combines the functions of an ARTCC and a radar approach control facility.
(See AIR ROUTE TRAFFIC CONTROL CENTER.)
(See RADAR APPROACH CONTROL FACILITY.)

COMMON POINT– A significant point over which two or more aircraft will report passing or have reported passing before proceeding on the same or diverging tracks. To establish/maintain longitudinal separation, a controller may determine a common point not originally in the aircraft's flight plan and then clear the aircraft to fly over the point.
(See SIGNIFICANT POINT.)

COMMON PORTION–
(See COMMON ROUTE.)

COMMON ROUTE– That segment of a North American Route between the inland navigation facility and the coastal fix.
OR

COMMON ROUTE–
(See SEGMENTS OF A SID/STAR)

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF)– A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency and is identified in appropriate aeronautical publications.
(See DESIGNATED COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) AREA.)
(Refer to AC 90-66, Non–Towered Airport Flight Operations.)

RANDOM ALTITUDE– An altitude inappropriate for direction of flight and/or not in accordance with FAA Order JO 7110.65, paragraph 4–5–1, VERTICAL SEPARATION MINIMA.

RANDOM ROUTE– Any route not established or charted/published or not otherwise available to all users.

RC
(See RADIO–CONTROLLED.)

RC–
(See ROAD RECONNAISSANCE.)

RCAG–
(See REMOTE CENTER AIR/GROUND FACILITY.)

RCC–
(See RESCUE COORDINATION CENTER.)

RCO–
(See REMOTE COMMUNICATIONS OUTLET.)

RCR–
(See RUNWAY CONDITION READING.)

READ BACK– Repeat my message back to me.

RECEIVER AUTONOMOUS INTEGRITY MONITORING (RAIM)– A technique whereby a civil GNSS receiver/processor determines the integrity of the GNSS navigation signals without reference to sensors or non-DoD integrity systems other than the receiver itself. This determination is achieved by a consistency check among redundant pseudorange measurements.

RECEIVING CONTROLLER– A controller/facility receiving control of an aircraft from another controller/facility.

RECEIVING FACILITY–
(See RECEIVING CONTROLLER.)

RECONFORMANCE– The automated process of bringing an aircraft's Current Plan Trajectory into conformance with its track.

RECREATIONAL FLYER– Pilot of a UAS who is operating under 49 USC §44809, Exception for Limited Recreational Operations of Unmanned Aircraft.

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

REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AIRSPACE– RVSM airspace is defined as any airspace between FL 290 and FL 410 inclusive, where eligible aircraft are separated vertically by 1,000 feet. Authorization guidance for operations in this airspace is provided in Advisory Circular AC 91–85.

REFINED HAZARD AREA (RHA)– Used by ATC. Airspace that is defined and distributed after a failure of a launch or reentry operation to provide a more concise depiction of the hazard location than a Contingency Hazard Area.
(See AIRCRAFT HAZARD AREA.)
(See CONTINGENCY HAZARD AREA.)
(See TRANSITIONAL HAZARD AREA.)

REIL–
(See RUNWAY END IDENTIFIER LIGHTS.)

RELEASE TIME– A departure time restriction issued to a pilot by ATC (either directly or through an authorized relay) when necessary to separate a departing aircraft from other traffic.
(See ICAO term RELEASE TIME.)

RELEASE TIME [ICAO]– Time prior to which an aircraft should be given further clearance or prior to which it should not proceed in case of radio failure.

REMOTE AIRPORT INFORMATION SERVICE (RAIS)– A temporary service provided by facilities, which are not located on the landing airport, but have communication capability and automated weather reporting available to the pilot at the landing airport.

REMOTE CENTER AIR/GROUND FACILITY (RCAG)– An unmanned VHF/UHF transmitter/receiver facility which is used to expand ARTCC air/ground communications coverage and to facilitate direct contact between pilots and controllers. RCAG facilities are sometimes not equipped with emergency frequencies 121.5 MHz and 243.0 MHz.

(Refer to AIM.)

REMOTE COMMUNICATIONS OUTLET (RCO)– An unmanned communications facility remotely controlled by air traffic personnel. RCOs serve FSSs. Remote Transmitter/Receivers (RTR) serve terminal ATC facilities. An RCO or RTR may be UHF or VHF and will extend the communication range of the air traffic facility. There are several classes of RCOs and RTRs. The class is determined by the number of transmitters or receivers. Classes A through G are used primarily for air/ground purposes. RCO and RTR class O facilities are nonprotected outlets subject to undetected and prolonged outages. RCO (O's) and RTR (O's) were established for the express purpose of providing ground-to-ground communications between air traffic control specialists and pilots located at a satellite airport for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times. As a secondary function, they may be used for advisory purposes whenever the aircraft is below the coverage of the primary air/ground frequency.

REMOTE IDENTIFICATION (RID)– A system for electronic identification and secure oversight of UAS.

(See 4 CFR part 89)

(See AIM)

REMOTE PILOT– Pilot of a UAS who is not operating as a recreational flyer under 49 USC §44809, the Exception for Limited Recreational Operations of Unmanned Aircraft.

REMOTE PILOT IN COMMAND (RPIC)– The RPIC is directly responsible for and is the final authority as to the operation of the unmanned aircraft system.

REMOTE TRANSMITTER/RECEIVER (RTR)–

(See REMOTE COMMUNICATIONS OUTLET.)

REPORT– Used to instruct pilots to advise ATC of specified information; e.g., "Report passing Hamilton VOR."

REPORTING POINT– A geographical location in relation to which the position of an aircraft is reported.

(See COMPULSORY REPORTING POINTS.)

(See ICAO term REPORTING POINT.)

(Refer to AIM.)

REPORTING POINT [ICAO]– A specified geographical location in relation to which the position of an aircraft can be reported.

REQUEST FULL ROUTE CLEARANCE– Used by pilots to request that the entire route of flight be read verbatim in an ATC clearance. Such request should be made to preclude receiving an ATC clearance based on the original filed flight plan when a filed IFR flight plan has been revised by the pilot, company, or operations prior to departure.

REQUIRED NAVIGATION PERFORMANCE (RNP)– A statement of the navigational performance necessary for operation within a defined airspace. The following terms are commonly associated with RNP:

a. Required Navigation Performance Level or Type (RNP-X). A value, in nautical miles (NM), from the intended horizontal position within which an aircraft would be at least 95-percent of the total flying time.

SIDESTEP MANEUVER– A visual maneuver accomplished by a pilot at the completion of an instrument approach to permit a straight-in landing on a parallel runway not more than 1,200 feet to either side of the runway to which the instrument approach was conducted.
(Refer to AIM.)

SIGMET– A weather advisory issued concerning weather significant to the safety of all aircraft. SIGMET advisories cover severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than 3 miles.
(See AIRMET.)
(See CONVECTIVE SIGMET.)
(See CWA.)
(See GRAPHICAL AIRMEN'S METEOROLOGICAL INFORMATION.)
(See ICAO term SIGMET INFORMATION.)
(See SAW.)
(Refer to AIM.)

SIGMET INFORMATION [ICAO]– Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations.

SIGNIFICANT METEOROLOGICAL INFORMATION–
(See SIGMET.)

SIGNIFICANT POINT– A point, whether a named intersection, a NAVAID, a fix derived from a NAVAID(s), or geographical coordinate expressed in degrees of latitude and longitude, which is established for the purpose of providing separation, as a reporting point, or to delineate a route of flight.

SIMULATED FLAMEOUT– A practice approach by a jet aircraft (normally military) at idle thrust to a runway. The approach may start at a runway (high key) and may continue on a relatively high and wide downwind leg with a continuous turn to final. It terminates in landing or low approach. The purpose of this approach is to simulate a flameout.
(See FLAMEOUT.)

SIMULTANEOUS CLOSE PARALLEL APPROACHES– A simultaneous, independent approach operation permitting ILS/RNAV/GLS approaches to airports having parallel runways separated by at least 3,000 feet and less than 4,300–feet between centerlines. Aircraft are permitted to pass each other during these simultaneous operations. Integral parts of a total system are radar, NTZ monitoring with enhanced FMA color displays that include aural and visual alerts and predictive aircraft position software, communications override, ATC procedures, an Attention All Users Page (AAUP), PRM in the approach name, and appropriate ground based and airborne equipment. High update rate surveillance sensor required for certain runway or approach course separations.

SIMULTANEOUS (CONVERGING) DEPENDENT APPROACHES- An approach operation permitting ILS/RNAV/GLS approaches to runways or missed approach courses that intersect where required minimum spacing between the aircraft on each final approach course is required.

SIMULTANEOUS (CONVERGING) INDEPENDENT APPROACHES- An approach operation permitting ILS/RNAV/GLS approaches to non-parallel runways where approach procedure design maintains the required aircraft spacing throughout the approach and missed approach and hence the operations may be conducted independently.

SIMULTANEOUS ILS APPROACHES– An approach system permitting simultaneous ILS approaches to airports having parallel runways separated by at least 4,300 feet between centerlines. Integral parts of a total system are ILS, radar, communications, ATC procedures, and appropriate airborne equipment.
(See PARALLEL RUNWAYS.)
(Refer to AIM.)

SIMULTANEOUS OFFSET INSTRUMENT APPROACH (SOIA)– An instrument landing system comprised of an ILS PRM, RNAV PRM or GLS PRM approach to one runway and an offset LDA PRM with glideslope or an RNAV PRM or GLS PRM approach utilizing vertical guidance to another where parallel runway spaced less than 3,000 feet and at least 750 feet apart. The approach courses converge by 2.5 to 3 degrees. Simultaneous close parallel PRM approach procedures apply up to the point where the approach course separation becomes 3,000 feet, at the offset MAP. From the offset MAP to the runway threshold, visual separation by the aircraft conducting the offset approach is utilized.

(Refer to AIM)

SIMULTANEOUS (PARALLEL) DEPENDENT APPROACHES- An approach operation permitting approaches to adjacent parallel runways where prescribed diagonal spacing must be maintained. Aircraft are not permitted to pass each other during simultaneous dependent operations.

SINGLE DIRECTION ROUTES– Preferred IFR Routes which are sometimes depicted on high altitude en route charts and which are normally flown in one direction only.

(See PREFERRED IFR ROUTES.)

(Refer to CHART SUPPLEMENT U.S.)

SINGLE FREQUENCY APPROACH– A service provided under a letter of agreement to military single-piloted turbojet aircraft which permits use of a single UHF frequency during approach for landing. Pilots will not normally be required to change frequency from the beginning of the approach to touchdown except that pilots conducting an en route descent are required to change frequency when control is transferred from the air route traffic control center to the terminal facility. The abbreviation “SFA” in the DoD FLIP IFR Supplement under “Communications” indicates this service is available at an aerodrome.

SINGLE-PILOTED AIRCRAFT– A military turbojet aircraft possessing one set of flight controls, tandem cockpits, or two sets of flight controls but operated by one pilot is considered single-piloted by ATC when determining the appropriate air traffic service to be applied.

(See SINGLE FREQUENCY APPROACH.)

SKYSPOTTER– A pilot who has received specialized training in observing and reporting inflight weather phenomena.

SLASH– A radar beacon reply displayed as an elongated target.

SLDI–

(See SECTOR LIST DROP INTERVAL.)

SLOW TAXI– To taxi a float plane at low power or low RPM.

SMALL UNMANNED AIRCRAFT SYSTEM (sUAS)– An unmanned aircraft weighing less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft.

SMAR–

(See SPECIAL MILITARY ACTIVITY ROUTE.)

SN–

(See SYSTEM STRATEGIC NAVIGATION.)

SPACE–BASED ADS–B (SBA)– A constellation of satellites that receives ADS–B Out broadcasts and relays that information to the appropriate surveillance facility. The currently deployed SBA system is only capable of receiving broadcasts from 1090ES–equipped aircraft, and not from those equipped with only a universal access transceiver (UAT). Also, aircraft with a top–of–fuselage–mounted transponder antenna (required for TCAS II installations) will be better received by SBA, especially at latitudes below 45 degrees.

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST.)

(See AUTOMATIC DEPENDENT SURVEILLANCE–BROADCAST OUT.)

SPACE LAUNCH AND REENTRY AREA– Locations where commercial space launch and/or reentry operations occur. For pilot awareness, a rocket–shaped symbol is used to depict space launch and reentry areas on sectional aeronautical charts.

INDEX

[References are to page numbers]

A

[References are to page numbers]

B

C

[References are to page numbers]

D

[References are to page numbers]

E

[References are to page numbers]

F

G

[References are to page numbers]

H

I

[References are to page numbers]

[References are to page numbers]

[References are to page numbers]

Q

R

[References are to page numbers]

S

[References are to page numbers]

T

[References are to page numbers]

U

V

[References are to page numbers]

W

BRIEFING GUIDE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Table of Contents

1. PARAGRAPH NUMBER AND TITLE:
2–1–24. TRANSFER OF POSITION RESPONSIBILITY
Appendix A. Standard Operating Practice (SOP) for the Transfer of Position Responsibility

2. BACKGROUND: A review of paragraph 2–1–24, Transfer of Position Responsibility, resulted in a determination that the language should be revised to include a subparagraph in Appendix A, clarifying transfer of position responsibilities.

3. CHANGE:

OLD	NEW
2–1–24. TRANSFER OF POSITION RESPONSIBILITY	**2–1–24. TRANSFER OF POSITION RESPONSIBILITY**
The transfer of position responsibility must be accomplished in accordance with the "Standard Operating Practice (SOP) for the Transfer of Position Responsibility," and appropriate facility directives each time operational responsibility for a position is transferred from one specialist to another.	The transfer of position responsibility must be accomplished in accordance with **Appendix A,** Standard Operating Practice (SOP) for the Transfer of Position Responsibility, and facility directives each time operational responsibility for a position is transferred from one specialist to another.

OLD	NEW
Appendix A. Standard Operating Practice (SOP) for the Transfer of Position Responsibility	**Appendix A. Standard Operating Practice (SOP) for the Transfer of Position Responsibility**
Title through **5d** ***NOTE***	No Change
Add	**e. Specialists engaged in a position relief briefing for transfer of position responsibility must reference the position relief checklist developed by the facility in accordance with FAA Order JO 7210.3, paragraph 2–2–4, Duty Familiarization and the Transfer of Position Responsibility.**
Add	***NOTE–*** ***The position relief checklist may be printed or electronic.***

---

1. PARAGRAPH NUMBER AND TITLE:
2–3–5. AIRCRAFT IDENTITY
2–4–20. AIRCRAFT IDENTIFICATION

2. BACKGROUND: Due to limitations of the National Airspace System's (NAS) flight processing systems of En Route Automation Modernization (ERAM), Standard Terminal Automation Replacement System (STARS), and Microprocessor En Route Automated Radar Tracking System (MEARTS), foreign registered aircraft call signs whose identification begins with a number cannot be processed. Accordingly, in May 2020, FAA Order JO 7110.127, National Airspace System (NAS) Processing of Foreign Aircraft Identifications with a Numeric Nationality Mark, was published providing instructions for amending those call signs so the aforementioned flight processing systems would accept and process the flight plans. The Advanced Technologies and Oceanic Procedures (ATOP) Oceanic control platform used at New York ARTCC, Oakland ARTCC, and Anchorage ARTCC will process call signs beginning with a number.

3. CHANGE:

OLD	NEW
2–3–5. AIRCRAFT IDENTITY	**2–3–5. AIRCRAFT IDENTITY**
Title through **a** ***NOTE***	No Change
Add	**b. Foreign Civil Aircraft Identifiers that begin with a number (excluding ATOP platforms). ATC personnel must:**
Add	**1. Amend aircraft identifications (ACIDs) containing six or fewer characters and beginning with a number by inserting the letter "Q" into Field 02 of the IFR flight plan as the first character.**
Add	***EXAMPLE–*** ***9HRA is amended to Q9HRA***
Add	**2. Amend ACIDs beginning with a number containing seven characters by replacing the first character with the letter "Q" in Field 02 of the IFR flight plan.**
Add	***EXAMPLE–*** ***2TRAVSA is amended to QTRAVSA***
Add	**3. Enter the original ACID into the remarks section of the flight plan.**
Add	***NOTE–*** ***Use caution not to modify or delete any existing remarks.***
Add	**4. Do not use the "Q" prefix (phonetic "Quebec") when communicating with the aircraft.**
Add	**5. Unless otherwise specified in a Standard Operating Procedure, verbally coordinate the aircraft's actual ACID when conducting intrafacility transfers of control.**
Add	**6. Verbally coordinate the aircraft's actual ACID when conducting interfacility transfers of control.**
Add	***NOTE–*** **1.** ***ATC personnel providing control services using ATOP automation systems are NOT required to amend ACIDs beginning with a number.***
Add	**2.** ***If operational considerations warrant them, facilities may develop local directives or orders requiring ATC personnel using ATOP to modify an ACID beginning with a number.***
Add	***REFERENCE–*** ***FAA Order JO 7340.2, Chapter 4, Aircraft Nationality Marks, National Emblems, and Common Marks.***
b through **c**	**Re–letter c** through **d**

OLD	NEW
2–4–20. AIRCRAFT IDENTIFICATION	**2–4–20. AIRCRAFT IDENTIFICATION**
Title through **b**	No Change
1. Civil. State the aircraft type or the manufacturer's name followed by the letters/numbers of the full aircraft registration, or state the letters or digits of the full aircraft registration. Do not abbreviate.	No Change
EXAMPLE– *"Citation C–G–L–R–B."* *"C–G–L–R–B."*	No Change
NOTE– **1.** *Letters may be spoken individually or phonetically.*	No Change
2. *Some foreign civil aircraft registrations begin with a number.*	**2.** *Some foreign civil aircraft registrations begin with a number* ***but show as a "Q" in the flight plan (the filed flight identification will be listed in the remarks section)****.* ***Do not verbally state the "Q" prefix in communication with the aircraft.***
REFERENCE– *FAA Order JO 7110.65, Para 2–4–9, Abbreviated Transmissions.*	***REFERENCE–*** ***FAA Order JO 7110.65, Para 2–3–5, Aircraft Identity.*** *FAA Order JO 7110.65, Para 2–4–9, Abbreviated Transmissions.* ***FAA Order JO 7340.2, Chapter 4, Aircraft Nationality Marks, National Emblems, and Common Marks.***

---

1. PARAGRAPH NUMBER AND TITLE:
3–1–4. COORDINATION BETWEEN LOCAL AND GROUND CONTROLLERS
3–1–7. POSITION DETERMINATION
3–6–2. IDENTIFICATION
3–10–7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION

2. BACKGROUND: Language related to determining the position of aircraft, vehicles, personnel, or equipment in paragraph 3–1–7 contains a note that suggests position reports may be used. The use of position reports is moved into the body of the paragraph to highlight the importance of using all available means to determine the position of an aircraft/vehicle before issuing control instructions. The introduction of Surface Awareness Initiative Displays (SAIDs) required the display system term in the note be removed as SAID is not usable for position determination/verification. References to airport surface detection equipment (ASDE) and tower display workstations (TDWs) are made to align with in-use NAS technology.

3. CHANGE:

OLD	NEW
3–1–4. COORDINATION BETWEEN LOCAL AND GROUND CONTROLLERS	**3–1–4. COORDINATION BETWEEN LOCAL AND GROUND CONTROLLERS**
Title through **b** ***REFERENCE***	No Change
c. When the runways in use for landing/departing aircraft are not visible from the tower or the aircraft using them are not visible on radar, advise the local/ground controller of the aircraft's location before releasing the aircraft to the other controller.	**c.** When the runways in use for landing/departing aircraft are not visible from the tower or the aircraft using them are not visible on **an ASDE**, advise the local/ground controller of the aircraft's location before releasing the aircraft to the other controller.

OLD	NEW
3–1–7. POSITION DETERMINATION	**3–1–7. POSITION DETERMINATION**
Determine the position of an aircraft, personnel or equipment before issuing taxi instructions, takeoff clearance, or authorizing personnel, and/or equipment to proceed onto the movement area.	Determine the position of an aircraft, **vehicles,** personnel**,** or equipment before issuing taxi instructions, takeoff clearance, or authoriz**ation** to proceed onto the movement area. **Pilot/operator position reports may be used when visual observation of aircraft, vehicles, personnel, or equipment is not possible. Procedures covering the use of ASDE are contained in Section 6 of this chapter.**
NOTE– *When possible, positions of aircraft, vehicles, equipment and/or personnel may be determined visually or through use of a display system. When ATC is unable to determine position visually or via a display system, position reports may be used.*	Delete

OLD	NEW
3–6–2. IDENTIFICATION	**3–6–2. IDENTIFICATION**
Title through **a2**	No Change
3. An identified target observed on the ASR or CTRD.	**3.** An identified target observed on the **TDW**.

OLD	NEW
3–10–7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION	**3–10–7. LANDING CLEARANCE WITHOUT OBSERVATION**
When an arriving aircraft reports at a position where he/she should be seen but has not been visually observed, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.	When an arriving aircraft reports at a position where **it** should be seen but has not been visually observed **or is not observed on the TDW,** advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.
PHRASEOLOGY– *NOT IN SIGHT, RUNWAY (number) CLEARED TO LAND.*	No Change
NOTE– *Aircraft observance on the CTRD satisfies the visually observed requirement.*	Delete

---

1. PARAGRAPH NUMBER AND TITLE: 3–7–2 TAXI AND GROUND MOVEMENT OPERATIONS

2. BACKGROUND: GENOT 25/29 N JO 7110.798, effective August 12, 2025, concerning paragraph 3–7–2, Taxi and Ground Movement Operations, was issued to bring improved clarity to the affected paragraph by rearranging the order in which the subparagraphs appeared. This change incorporates and cancels GENOT N JO 7110.798.

3. CHANGE:

OLD	NEW
3–7–2 TAXI AND GROUND MOVEMENT OPERATIONS	**3–7–2 TAXI AND GROUND MOVEMENT OPERATIONS**
Title through **g2(a)** ***REFERENCE***	No Change
(b) An aircraft/vehicle must not cross the runway holding position markings until an arriving aircraft has completed landing roll and:	**(b)** An aircraft/vehicle must not cross the runway holding position markings until an arriving aircraft has **passed the point at which the crossing is intended, or**
(1) Acknowledged the instruction to exit the runway prior to the point at which the crossing is intended, or	Delete
(2) Acknowledged the instruction to hold short of the point at which the crossing is intended, or	Delete
(3) Visually observed exiting the runway prior to the point at which the crossing is intended, or	Delete
(4) Passed the point at which the crossing is intended.	Delete
Add	**(c) An aircraft/vehicle must not cross the runway holding position markings until an arriving aircraft has completed landing roll and:**
Add	**(1) Acknowledged the instruction to exit the runway prior to the point at which the crossing is intended, or**
Add	**(2) Acknowledged the instruction to hold short of the point at which the crossing is intended, or**
Add	**(3) Is visually observed exiting the runway prior to the point at which the crossing is intended.**