CHANGE

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

JO 7110.65V
CHG 2

Effective Date:
January 8, 2015

SUBJ: Air Traffic Control

1. Purpose of This Change. This change transmits revised pages to Federal Aviation Administration Order JO 7110.65V, Air Traffic Control, and the Briefing Guide.

2. Audience. This change applies to all Air Traffic Organization (ATO) personnel and anyone using ATO directives.

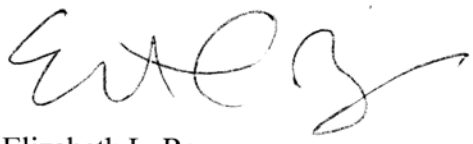
3. Where Can I Find This Change? This change is available on the FAA Web site at http://faa.gov/air_traffic/publications and https://employees.faa.gov/tools_resources/orders_notices/.

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

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

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 Retain this transmittal until superseded by a new basic order.

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



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Date: 11/12/14

Distribution: ZAT-710, ZAT-464

Initiated By: AJV-0
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Explanation of Changes
Change 2

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

a. 2–1–10. NAVAID MALFUNCATIONS

This change makes reference to Paragraph 4–8–1, Approach Clearance, incorporates GPS NOTAM testing, GPS anomaly reporting procedures, and accounts for WAAS anomalies.

b. 2–1–14. COORDINATE USE OF AIRSPACE

This change makes clear that the controller directly issuing a control instruction to an aircraft, or issuing a control instruction to an aircraft by relaying through a source other than another radar controller, has the responsibility to ensure that all required coordination is accomplished prior to issuing that instruction.

c. 2–7–2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL

This change provides ATC with clarity and information regarding DOD aircraft that are authorized, under CFR Exemption 2861A, to operate on "single altimeter settings in restricted areas, MOAs, and ATC assigned airspace." A reference is also added to FAA JO 7610.4 Appendix 20, which will contain a copy of "Grant of Exemption 2861A - Single Altimeter Setting for Frequent Transit of FL180." This DCP does not change any existing procedures.

d. 2–9–3. CONTENT

The ATC Handbook Revision Steering Committee proposed new language in the ATIS content section of FAA JO 7110.65. The new guidance suggests a preference when instrument approaches are advertised on the ATIS. This is not meant to override any operational need where there may be a reason to utilize an approach other than as suggested, including visual approaches.

e. 3–9–8. INTERSECTING RUNWAY SEPARATION

3–9–9. NON–INTERSECTION CONVERGING RUNWAY OPERATIONS

This change incorporates Nonintersecting Converging Runway Operations into FAA Order JO 7110.65. The separation minima may be determined through applicable portions Paragraph 3-9-8, Intersecting Runway Separation, and 3-9-9, Nonintersecting Converging Runway Operations. This DCP cancels and incorporates FAA notice N JO 7110.652, Converging Runway Operations, effective January 15, 2014.

f. 4–8–1. APPROACH CLEARANCE

This change contains editorial revisions that account for changes made to subparagraph f concerning RNP approaches with RF legs. Additionally, due to comments received by industry stakeholders, specific guidance concerning clearing aircraft to the fix beginning or within an RF leg was moved from a note to procedural direction and additional direction is provided that controllers must not assign crossing speeds in excess of charted speed restrictions. Additionally, GPS anomaly procedures are revised to account for newer technologies and leverages real time experience since the incorporation of GPS in the NAS.

g. 5–4–5. TRANSFERRING CONTROLLER HANDOFF

5–4–6. RECEIVING CONTROLLER HANDOFF

This change clarifies who has coordination responsibility when control instructions are issued to an aircraft after transfer of radar identification. Additionally, it amends the obligation for controller to controller notification of required radar monitoring.

h. 5–9–4. ARRIVAL INSTRUCTIONS

This change adds a revised Figure 5-9-6, and corrects examples to account for straight in approach clearances, relocates the Figure to the

location directly related to the content involved, and removes obsolete approach procedure names.

i. 7–5–3. SEPARATION

This change clearly explains separation standards to be used for Special VFR fixed wing aircraft, Special VFR Helicopters, and IFR aircraft.

j. 7–9–4. SEPARATION

This change removes “fixed–wing” from subparagraph b.

k. 8-1-9. RVSM OPERATIONS

This change adds Paragraph 8-1-9, RVSM Operations to FAA JO 7110.65.

l. 10–3–1. OVERDUE AIRCRAFT

Changes to this section are made to clarify those situations that require the issuance of an ALNOT.

m. 10–3–2. INFORMATION TO BE FORWARDED TO ARTCC
10–3–3. INFORMATION TO BE FORWARDED TO THE RCC
10–3–4. ALNOT
10–3–6. AIRCRAFT POSITION PLOTS
10–3–7. ALNOT CANCELLATION

Pertinent information to be forwarded by facilities to the ARTCC is added to this section to assist the SAR providers in the conduct of the SAR mission. Information is added to clarify what type of data is used to identify the last known position of an aircraft. Clarification is also provided to explain the responsibility for cancelling an ALNOT and what information should be included in the cancellation.

n. Entire Publication

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

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Chapter 1. General

Section 1. Introduction

1–1–1. PURPOSE OF THIS ORDER

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

1–1–2. AUDIENCE

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

1–1–3. WHERE TO FIND THIS ORDER

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

1–1–4. WHAT THIS ORDER CANCELS

FAA Order JO 7110.65U, Air Traffic Control, dated February 9, 2012, and all changes to it are canceled.

1–1–5. EXPLANATION OF CHANGES

The significant changes to this order are identified in the Explanation of Changes page(s). It is advisable to retain the page(s) throughout the duration of the basic order.

1–1–6. SUBMISSION CUTOFF AND EFFECTIVE DATES

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

TBL 1–1–1
Publication Schedule

Basic or Change	Cutoff Date for Submission	Effective Date of Publication
JO 7110.65V	8/22/13	4/3/14
Change 1	4/3/14	7/24/14
Change 2	7/24/14	1/8/15
Change 3	1/8/15	6/25/15
JO 7110.65W	6/25/15	12/10/15

1–1–7. DELIVERY DATES

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

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

TBL 1–1–2
Military Distribution Contacts

Military Headquarters	DSN	Commercial
U.S. Army USAASA	656–4868	(703) 806–4868
U.S. Air Force		Contact Local *NGA Customer Account Representative
U.S. Navy CNO (N980A)	224–8534	(703) 695–8534
*NGA–National Geospatial/Intelligence Agency		

1–1–8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

Any recommended changes to this order must be submitted to the Vice President, Mission Support Services, Attn: ATC Procedures Office.

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

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

1–1–9. PROCEDURAL LETTERS OF AGREEMENT

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

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

1–1–10. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS

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

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

TBL 1–1–3
Military Operations Interface Offices

Branch	Address
U.S. Navy	Department of the Navy Chief of Naval Operations N980A, NAATSEA 2000 Navy Pentagon (5D453) Washington, D.C. 20350–2000
U.S. Air Force	HQ AFFSA/A3A Bldg 4 Room 240 6500 S. MacArthur Blvd Oklahoma City, OK 73169 Email: hqaffsa.a3a@tinker.af.mil
U.S. Army	Director USAASA (MOAS–AS) 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060–5582

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

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

1–1–11. SAFETY MANAGEMENT SYSTEM (SMS)

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

1–1–12. REFERENCES TO FAA NON–AIR TRAFFIC ORGANIZATIONS

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

1–1–13. DISTRIBUTION

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

2–1–9. REPORTING ESSENTIAL FLIGHT INFORMATION

Report as soon as possible to the appropriate FSS, airport manager's office, ARTCC, approach control facility, operations office, or military operations office any information concerning components of the NAS or any flight conditions which may have an adverse effect on air safety.

NOTE–
FSSs are responsible for classifying and disseminating Notices to Airmen.

REFERENCE–
FAAO JO 7110.65, Para 3–3–3 Timely Information.
FAAO JO 7110.65, Para 5–1–6 Service Limitations.
FAAO JO 7210.3, Para 3–1–2, Periodic Maintenance.
USN, See OPNAVINST 3721.30.

2–1–10. NAVAID MALFUNCTIONS

a. When an aircraft reports a ground–based NAVAID malfunction, take the following actions:

1. Request a report from a second aircraft.

2. If the second aircraft reports normal operations, continue use and inform the first aircraft. Record the incident on FAA Form 7230–4 or appropriate military form.

3. If the second aircraft confirms the malfunction or in the absence of a second aircraft report, activate the standby equipment or request the monitor facility to activate.

4. If normal operation is reported after the standby equipment is activated, continue use, record the incident on FAA Form 7230–4 or appropriate military form, and notify technical operations personnel (the Systems Engineer of the ARTCC when an en route aid is involved).

5. If continued malfunction is reported after the standby equipment is activated or the standby equipment cannot be activated, inform technical operations personnel and request advice on whether or not the aid should be shut down. In the absence of a second aircraft report, advise the technical operations personnel of the time of the initial aircraft report and the estimated time a second aircraft report could be obtained.

b. When an aircraft reports a GPS or WAAS anomaly, request the following information and/or take the following actions:

1. Record the following minimum information:

(a) Aircraft make, model, and call sign.

(b) Location or position, and altitude at the time where GPS or WAAS anomaly was observed.

(c) Date/time of occurrence.

2. Request a report from a second aircraft.

3. Record the incident on FAA Form 7230–4 or appropriate military form.

4. Inform other aircraft of the anomaly as specified in paragraph 4-8-1j or k, as applicable.

PHRASEOLOGY–
ATTENTION ALL AIRCRAFT, GPS REPORTED UNRELIABLE (OR WAAS UNAVAILABLE) IN VICINITY/AREA (position).

EXAMPLE–
"Attention all aircraft, GPS reported unreliable (or WAAS unavailable) in the area 30 miles south of Waco VOR."

c. When a pilot reports a WAAS anomaly, determine from the pilot what indications he or she observes and record the information in accordance with sub-paragraph b above.

2–1–11. USE OF MARSA

a. MARSA may only be applied to military operations specified in a letter of agreement or other appropriate FAA or military document.

NOTE–
Application of MARSA is a military command prerogative. It will not be invoked indiscriminately by individual units or pilots. It will be used only for IFR operations requiring its use. Commands authorizing MARSA will ensure that its implementation and terms of use are documented and coordinated with the control agency having jurisdiction over the area in which the operations are conducted. Terms of use will assign responsibility and provide for separation among participating aircraft.

b. ATC facilities do not invoke or deny MARSA. Their sole responsibility concerning the use of MARSA is to provide separation between military aircraft engaged in MARSA operations and other nonparticipating IFR aircraft.

c. DOD must ensure that military pilots requesting special-use airspace/ATCAAs have coordinated with the scheduling agency, have obtained approval for entry, and are familiar with the appropriate MARSA procedures. ATC is not responsible for determining which military aircraft are authorized to enter special-use airspace/ATCAAs.

REFERENCE–
FAAO JO 7110.65, Para 9–2–13, Military Aerial Refueling.

2–1–12. MILITARY PROCEDURES

Military procedures in the form of additions, modifications, and exceptions to the basic FAA procedure are prescribed herein when a common procedure has not been attained or to fulfill a specific requirement. They must be applied by:

a. ATC facilities operated by that military service.

EXAMPLE–
1. *An Air Force facility providing service for an Air Force base would apply USAF procedures to all traffic regardless of class.*

2. *A Navy facility providing service for a Naval Air Station would apply USN procedures to all traffic regardless of class.*

b. ATC facilities, regardless of their parent organization (FAA, USAF, USN, USA), supporting a designated military airport exclusively. This designation determines which military procedures are to be applied.

EXAMPLE–
1. *An FAA facility supports a USAF base exclusively; USAF procedures are applied to all traffic at that base.*

2. *An FAA facility provides approach control service for a Naval Air Station as well as supporting a civil airport; basic FAA procedures are applied at both locations by the FAA facility.*

3. *A USAF facility supports a USAF base and provides approach control service to a satellite civilian airport; USAF procedures are applied at both locations by the USAF facility.*

REFERENCE–
FAAO JO 7110.65, Para 1–2–5, Annotations.

c. Other ATC facilities when specified in a letter of agreement.

EXAMPLE–
A USAF unit is using a civil airport supported by an FAA facility– USAF procedures will be applied as specified in a letter of agreement between the unit and the FAA facility to the aircraft of the USAF unit. Basic FAA procedures will be applied to all other aircraft.

2–1–13. FORMATION FLIGHTS

a. Control formation flights as a single aircraft. When individual control is requested, issue advisory information which will assist the pilots in attaining separation. When pilot reports indicate separation has been established, issue control instructions as required.

NOTE–
1. *Separation responsibility between aircraft within the formation during transition to individual control rests with the pilots concerned until standard separation has been attained.*

2. *Formation join-up and breakaway will be conducted in VFR weather conditions unless prior authorization has been obtained from ATC or individual control has been approved.*

REFERENCE–
FAAO JO 7110.65, Para 5–5–8, Additional Separation for Formation Flights.
P/CG Term– Formation Flight.

b. Military and civil formation flights in RVSM airspace.

1. Utilize RVSM separation standards for a formation flight, which consists of all RVSM approved aircraft.

2. Utilize non–RVSM separation standards for a formation flight above FL 290, which does not consist of all RVSM approved aircraft.

3. If aircraft are requesting to form a formation flight to FL 290 or above, the controller who issues the clearance creating the formation flight is responsible for ensuring that the proper equipment suffix is entered for the lead aircraft.

4. If the flight departs as a formation, and is requesting FL 290 or above, the first center sector must ensure that the proper equipment suffix is entered.

5. If the formation flight is below FL 290 and later requests FL 290 or above, the controller receiving the RVSM altitude request must ensure the proper equipment suffix is entered.

6. Upon break–up of the formation flight, the controller initiating the break–up must ensure that all aircraft or flights are assigned their proper equipment suffix.

2–1–14. COORDINATE USE OF AIRSPACE

a. Ensure that the necessary coordination has been accomplished before you allow an aircraft under your control to enter another controller's area of jurisdiction.

b. Before you issue a control instruction directly to a pilot that will change the aircraft's heading, route, speed, or altitude, you must ensure that coordination has been completed with all controllers whose area of jurisdiction is affected by those instructions unless otherwise specified by a letter of agreement or facility directive. If your control instruction will be relayed to the pilot through a source other than another radar controller (FSS, ARINC, another pilot, etc.), you are still responsible to ensure that all required coordination is completed.

NOTE–
1. *It is good operating practice for controllers to confirm that required coordination has been/will be effected, especially in unusual circumstances, such as recently modified sector configurations, airspace changes, route changes, etc.*

2. *Ensuring that all required coordination has been completed does not necessarily imply that the controller issuing the control instruction directly to the pilot has to perform the coordination action.*

REFERENCE–
FAAO JO 7110.65, Para 2–1–15, Control Transfer.
FAAO JO 7110.65, Para 5–5–10, Adjacent Airspace.
FAAO JO 7110.65, Para 5–4–5, Transferring Controller Handoff.
FAAO JO 7110.65, Para 5–4–6, Receiving Controller Handoff.

2–1–15. CONTROL TRANSFER

a. Transfer control of an aircraft in accordance with the following conditions:

1. At a prescribed or coordinated location, time, fix, or altitude; or,

2. At the time a radar handoff and frequency change to the receiving controller have been completed and when authorized by a facility directive or letter of agreement which specifies the type and extent of control that is transferred.

REFERENCE–
FAAO JO 7110.65, Para 2–1–14, Coordinate Use of Airspace.
FAAO JO 7110.65, Para 5–4–5, Transferring Controller Handoff.
FAAO JO 7110.65, Para 5–4–6, Receiving Controller Handoff.

b. Transfer control of an aircraft only after eliminating any potential conflict with other aircraft for which you have separation responsibility.

c. Assume control of an aircraft only after it is in your area of jurisdiction unless specifically coordinated or as specified by letter of agreement or a facility directive.

2–1–16. SURFACE AREAS

a. Coordinate with the appropriate nonapproach control tower on an individual aircraft basis before issuing a clearance which would require flight within a surface area for which the tower has responsibility unless otherwise specified in a letter of agreement.

REFERENCE–
FAAO JO 7210.3, Para 4–3–1, Letters of Agreement.
14 CFR Section 91.127, Operating on or in the Vicinity of an Airport in Class E Airspace.
P/CG Term– Surface Area.

b. Coordinate with the appropriate control tower for transit authorization when you are providing radar traffic advisory service to an aircraft that will enter another facility's airspace.

NOTE–
The pilot is not expected to obtain his/her own authorization through each area when in contact with a radar facility.

c. Transfer communications to the appropriate facility, if required, prior to operation within a surface area for which the tower has responsibility.

REFERENCE–
FAAO JO 7110.65, Para 2–1–17, Radio Communications Transfer.
FAAO JO 7110.65, Para 3–1–1, Surface Area Restrictions.
FAAO JO 7110.65, Para 7–6–1, Application.
14 CFR Section 91.129, Operations in Class D Airspace.

2–1–17. RADIO COMMUNICATIONS

a. Transfer radio communications before an aircraft enters the receiving controller's area of jurisdiction unless otherwise coordinated or specified by a letter of agreement or a facility directive.

b. Transfer radio communications by specifying the following:

NOTE–
Radio communications transfer procedures may be specified by a letter of agreement or contained in the route description of an MTR as published in the DOD Planning AP/1B (AP/3).

1. The facility name or location name and terminal function to be contacted. *TERMINAL*: Omit the location name when transferring communications to another controller within your facility, or, when the tower and TRACON share the same name (for example, Phoenix Tower and Phoenix TRACON).

EXCEPTION. Controllers must include the name of the facility when instructing an aircraft to change frequency for final approach guidance.

2. Frequency to use except the following may be omitted:

(a) FSS frequency.

(b) Departure frequency if previously given or published on a SID chart for the procedure issued.

(c) *TERMINAL:*

(1) Ground or local control frequency if in your opinion the pilot knows which frequency is in use.

(2) The numbers preceding the decimal point if the ground control frequency is in the 121 MHz bandwidth.

EXAMPLE–
"Contact Tower."
"Contact Ground."
"Contact Ground Point Seven."
"Contact Ground, One Two Zero Point Eight."
"Contact Huntington Radio."
"Contact Departure."
"Contact Los Angeles Center, One Two Three Point Four."

3. Time, fix, altitude, or specifically when to contact a facility. You may omit this when compliance is expected upon receipt.

NOTE–
AIM, para 5–3–1, ARTCC Communications, informs pilots that they are expected to maintain a listening watch on the transferring controller's frequency until the time, fix, or altitude specified.

PHRASEOLOGY–
CONTACT (facility name or location name and terminal function), (frequency).

If required,

AT (time, fix, or altitude).

c. Controllers must, within a reasonable amount of time, take appropriate action to establish/restore communications with all aircraft for which a communications transfer or initial contact to his/her sector is expected/required.

NOTE–
For the purposes of this paragraph, a reasonable amount of time is considered to be 5 minutes from the time the aircraft enters the controller's area of jurisdiction or comes within range of radio/communications coverage. Communications include two–way VHF or UHF radio contact, data link, or high frequency (HF) radio through an approved third–party provider such as ARINC.

d. In situations where an operational advantage will be gained, and following coordination with the receiving controller, you may instruct aircraft on the ground to monitor the receiving controller's frequency.

EXAMPLE–
"Monitor Tower."
"Monitor Ground."
"Monitor Ground Point Seven."
"Monitor Ground, One Two Zero Point Eight."

e. In situations where a sector has multiple frequencies or when sectors are combined using multiple frequencies and the aircraft will remain under your jurisdiction, transfer radio communication by specifying the following:

PHRASEOLOGY–
(Identification) CHANGE TO MY FREQUENCY (state frequency).

EXAMPLE–
"United two twenty-two change to my frequency one two three point four."

REFERENCE–
AIM, Para 4–2–3, Contact Procedures.

f. Avoid issuing a frequency change to helicopters known to be single-piloted during air-taxiing, hovering, or low-level flight. Whenever possible, relay necessary control instructions until the pilot is able to change frequency.

NOTE–
Most light helicopters are flown by one pilot and require the constant use of both hands and feet to maintain control. Although Flight Control Friction Devices assist the pilot, changing frequency near the ground could result in inadvertent ground contact and consequent loss of control. Pilots are expected to advise ATC of their single-pilot status if unable to comply with a frequency change.

REFERENCE–
AIM, Para 4–3–14, Communications.

g. In situations where the controller does not want the pilot to change frequency but the pilot is expecting or may want a frequency change, use the following phraseology.

PHRASEOLOGY–
REMAIN THIS FREQUENCY.

REFERENCE–
FAAO JO 7110.65, Para 4–7–1, Clearance Information.
FAAO JO 7110.65, Para 5–12–9, Communication Transfer.

2–1–18. OPERATIONAL REQUESTS

Respond to a request from another controller, a pilot or vehicle operator by one of the following verbal means:

a. Restate the request in complete or abbreviated terms followed by the word "APPROVED." The phraseology "APPROVED AS REQUESTED" may be substituted in lieu of a lengthy readback.

PHRASEOLOGY–
(Requested operation) APPROVED.

or

APPROVED AS REQUESTED.

b. State restrictions followed by the word "APPROVED."

PHRASEOLOGY–
(Restriction and/or additional instructions, requested operation) APPROVED.

c. State the word "UNABLE" and, time permitting, a reason.

PHRASEOLOGY–
UNABLE (requested operation).

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

2–1–19. WAKE TURBULENCE

a. Apply wake turbulence procedures to aircraft operating behind heavy jets/B757s and, where indicated, to small aircraft behind large aircraft.

NOTE–
Para 5–5–4, Minima, specifies increased radar separation for small type aircraft landing behind large, heavy, or B757 aircraft because of the possible effects of wake turbulence.

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

REFERENCE–
FAAO 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 Heavy or B757 aircraft to:

REFERENCE–
AC 90–23, Aircraft Wake Turbulence, Pilot Responsibility, Para 12.

1. *TERMINAL.* VFR aircraft not being radar vectored but are behind heavy jets or B757s.

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

REFERENCE–
FAAO 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 heavy aircraft, include the word *heavy* in the description.

NOTE–
Wake turbulence may be encountered by aircraft in flight as well as when operating on the airport movement area. Because wake turbulence is unpredictable, the controller is not responsible for anticipating its existence or effect. Although not mandatory during ground operations, controllers may use the words jet blast, propwash, or rotorwash, in lieu of wake turbulence, when issuing a caution advisory.

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

PHRASEOLOGY–
CAUTION WAKE TURBULENCE (traffic information).

REFERENCE–
FAAO 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–
FAAO 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, Boeing Seven Twenty 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.

7. If unable to provide vector service, inform the pilot.

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

8. 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–Rone three one five."
"Traffic, eight minutes west of Chicago Heights V–O–R, westbound, Mooney, eight thousand, estimated Joliet V–O–Rtwo 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–
FAAO JO 7110.65, Para 3–1–6 Traffic Information.
FAAO JO 7110.65, Para 7–2–1 Visual Separation.
FAAO JO 7110.65, Para 7–6–10 VFR Departure Information.

2–1–22. 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.

2–1–23. 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.

2–1–24. WHEELS DOWN CHECK

USA/USAF/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:

1. To aircraft conducting ASR, PAR, or radar monitored approaches, before the aircraft starts descent on final approach.

2. To aircraft conducting instrument approaches and remaining on the radar facility's frequency, before the aircraft passes the outer marker/final approach fix.

PHRASEOLOGY–
WHEELS SHOULD BE DOWN.

2–1–25. SUPERVISORY NOTIFICATION

Ensure supervisor/controller-in-charge (CIC) is aware of conditions which impact sector/position operations including, but not limited to, the following:

a. Weather.

b. Equipment status.

c. Potential sector overload.

d. Emergency situations.

e. Special flights/operations.

f. Possible suspicious aircraft/pilot activity as prescribed in FAA Order JO 7610.4, paragraph 7–3–1.

2–1–26. PILOT DEVIATION NOTIFICATION

When it appears that the actions of a pilot constitute a pilot deviation, notify the pilot, workload permitting.

PHRASEOLOGY–

(Identification) POSSIBLE PILOT DEVIATION ADVISE YOU CONTACT (facility) AT (telephone number).

REFERENCE–

FAAO 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, Para 84, Pilot Deviations.

2–1–27. TCAS RESOLUTION ADVISORIES

a. When an aircraft under your control jurisdiction informs you that it is responding to a TCAS Resolution Advisory (RA), do not issue control instructions that are contrary to the RA procedure that a crew member has advised you that they are executing. Provide safety alerts regarding terrain or obstructions and traffic advisories for the aircraft responding to the RA and all other aircraft under your control jurisdiction, as appropriate.

b. Unless advised by other aircraft that they are also responding to a TCAS RA, do not assume that other aircraft in the proximity of the responding aircraft are involved in the RA maneuver or are aware of the responding aircraft's intended maneuvers. Continue to provide control instructions, safety alerts, and traffic advisories as appropriate to such aircraft.

c. Once the responding aircraft has begun a maneuver in response to an RA, the controller is not responsible for providing standard separation between the aircraft that is responding to an RA and any other aircraft, airspace, terrain or obstructions. Responsibility for standard separation resumes when one of the following conditions are met:

1. The responding aircraft has returned to its assigned altitude, or

2. A crew member informs you that the TCAS maneuver is completed and you observe that standard separation has been reestablished, or

3. The responding aircraft has executed an alternate clearance and you observe that standard separation has been reestablished.

NOTE–

1. *AC 120–55A, Air Carrier Operational Approval and Use of TCAS II, suggests pilots use the following phraseology to notify controllers during TCAS events. When a TCAS RA may affect an ATC clearance, inform ATC when beginning the maneuver, or as soon as workload permits.*

EXAMPLE–

1. *"New York Center, United 321, TCAS climb."*

NOTE–

2. *When the RA has been resolved, the flight crew should advise ATC they are returning to their previously assigned clearance or subsequent amended clearance.*

EXAMPLE–

2. *"New York Center, United 321, clear of conflict, returning to assigned altitude."*

2–1–28. RVSM OPERATIONS

Controller responsibilities must include but not be limited to the following:

a. Non–RVSM aircraft operating in RVSM airspace.

1. Ensure non-RVSM aircraft are not permitted in RVSM airspace unless they meet the criteria of excepted aircraft and are previously approved by the operations supervisor/CIC. The following aircraft are excepted: DOD, DOD-certified aircraft operated by NASA (T38, F15, F18, WB57, S3, and U2 aircraft only), MEDEVAC, manufacturer aircraft being flown for development/certification, and Foreign State aircraft. These exceptions are accommodated on a workload or traffic-permitting basis.

NOTE–

The operations supervisor/CIC is responsible for system acceptance of a non–RVSM aircraft beyond the initial sector–to–sectorcoordination following the pilot request to access the airspace. Operations supervisor/CIC responsibilities are defined in FAAO JO 7210.3, Chapter 6, Section 9, Reduced Vertical Separation Minimum (RVSM).

2. Ensure sector–to–sector coordination for all non–RVSM aircraft operations within RVSM airspace.

3. Inform the operational supervisor/CIC when a non–RVSM exception flight is denied clearance into RVSM airspace or is removed from RVSM airspace.

b. Non–RVSM aircraft transitioning RVSM airspace.

Ensure that operations supervisors/CICs are made aware when non–RVSM aircraft are transitioning through RVSM airspace.

c. Apply appropriate separation standards and remove any aircraft from RVSM airspace that advises it is unable RVSM due to equipment while en route.

d. Use "negative RVSM" in all verbal ground–to–ground communications involving non–RVSM aircraft while cleared to operate within RVSM airspace.

EXAMPLE–
"Point out Baxter21 climbing to FL 360, negative RVSM."

e. For the following situations, use the associated phraseology:

1. To deny clearance into RVSM airspace.

PHRASEOLOGY–
"UNABLE CLEARANCE INTO RVSM AIRSPACE."

2. To request a pilot to report when able to resume RVSM.

PHRASEOLOGY–
"REPORT ABLE TO RESUME RVSM."

f. In the event of a change to an aircraft's navigational capability amend the equipment suffix in order to properly identify non–RVSM aircraft on the controller display.

2–1–29. TERRAIN AWARENESS WARNING SYSTEM (TAWS) ALERTS

a. When an aircraft under your control jurisdiction informs you that it is responding to a TAWS (or other on–board low altitude) alert, do not issue control instructions that are contrary to the TAWS procedure that a crew member has advised you that they are executing. Provide safety alerts regarding terrain or obstructions and traffic advisories for the aircraft responding to the TAWS alert and all other aircraft under your control jurisdiction, as appropriate.

b. Once the responding aircraft has begun a maneuver in response to TAWS alert, the controller is not responsible for providing standard separation between the aircraft that is responding to a TAWS alert and any other aircraft, airspace, terrain or obstructions. Responsibility for standard separation resumes when one of the following conditions are met:

1. The responding aircraft has returned to its assigned altitude, or

2. A crew member informs you that the TAWS maneuver is completed and you observe that standard separation has been reestablished, or

3. The responding aircraft has executed an alternate clearance and you observe that standard separation has been reestablished.

2–1–30. "BLUE LIGHTNING" EVENTS

Ensure that the supervisor/controller–in–charge (CIC) is notified of reports of possible human trafficking. These may be referred to as "Blue Lightning" events.

Section 7. Altimeter Settings

2–7–1. CURRENT SETTINGS

a. Current altimeter settings must be obtained from direct-reading instruments or directly from weather reporting stations.

REFERENCE–
FAAO JO 7210.3, Chapter 2, Section 10, Wind/Altimeter Information.

b. If a pilot requests the altimeter setting in millibars, ask the nearest weather reporting station for the equivalent millibar setting.

c. USAF/USA. Use the term "Estimated Altimeter" for altimeter settings reported or received as estimated.

REFERENCE–
FAAO JO 7110.65, Para 3–9–1 Departure Information.
FAAO JO 7110.65, Para 3–10–1 Landing Information.
FAAO JO 7110.65, Para 4–7–10 Approach Information.

2–7–2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL

a. *TERMINAL.* Identify the source of an altimeter setting when issued for a location other than the aircraft's departure or destination airport.

b. *EN ROUTE.* Identify the source of all altimeter settings when issued.

PHRASEOLOGY–
(If the altimeter is one hour old or less),
THE (facility name) ALTIMETER (setting).

or

(If the altimeter is more than one hour old),
THE (facility name) ALTIMETER (setting) MORE THAN ONE HOUR OLD.

c. Issue the altimeter setting:

1. To en route aircraft at least one time while operating in your area of jurisdiction. Issue the setting for the nearest reporting station along the aircraft's route of flight:

NOTE–
14 CFR Section 91.121(1) requires that the pilot set his/her altimeter to the setting of a station along his/her route of flight within 100 miles of the aircraft if one is available. However, issuance of the setting of an adjacent station during periods that a steep gradient exists will serve to inform the pilot of the difference between the setting he/she is using and the pressure in the local area and better enable him/her to choose a more advantageous setting within the limitations of 14 CFR Section 91.121.

2. *TERMINAL.* To all departures. Unless specifically requested by the pilot, the altimeter setting need not be issued to local aircraft operators who have requested this omission in writing or to scheduled air carriers.

REFERENCE–
FAAO JO 7110.65, Para 3–9–1 Departure Information.

3. *TERMINAL.* To arriving aircraft on initial contact or as soon as possible thereafter. The tower may omit the altimeter if the aircraft is sequenced or vectored to the airport by the approach control having jurisdiction at that facility.

REFERENCE–
FAAO JO 7110.65, Para 4–7–10 Approach Information.
FAAO JO 7110.65, Para 5–10–2 Approach Information.

4. *EN ROUTE.* For the destination airport to arriving aircraft, approximately 50 miles from the destination, if an approach control facility does not serve the airport.

5. In addition to the altimeter setting provided on initial contact, issue changes in altimeter setting to aircraft executing a nonprecision instrument approach as frequently as practical when the official weather report includes the remarks "pressure falling rapidly."

d. If the altimeter setting must be obtained by the pilot of an arriving aircraft from another source, instruct the pilot to obtain the altimeter setting from that source.

NOTE–
1. *The destination altimeter setting, whether from a local or remote source, is the setting upon which the instrument approach is predicated.*

2. *Approach charts for many locations specify the source of altimeter settings as non–FAA facilities, such as UNICOMs.*

e. When issuing clearance to descend below the lowest usable flight level, advise the pilot of the altimeter setting of the weather reporting station nearest the point the aircraft will descend below that flight level.

f. Department of Defense (DOD) aircraft that are authorized to operate in restricted areas, MOAs, and ATC assigned airspace areas on "single altimeter

settings" (CFR Exemption 2861A), must be issued altimeter settings in accordance with standard procedures while the aircraft are en route to and from the restricted areas, MOAs, and ATC assigned airspace areas.

NOTE–
The DOD is responsible for conducting all "single altimeter setting" operations within the boundaries of MOAs, restricted areas, and ATCAAs. Under an LOA, the DOD provides safe altitude clearance between DOD aircraft and other aircraft operating within, above, and below the MOAs, restricted areas, and ATCAAs with appropriate clearance of terrain.

REFERENCE–
FAAO JO 7610.4, Appendix 20, Grant of Exemption No. 2861A - Single Altimeter Setting For Frequent Transit of FL180.

g. When the barometric pressure is greater than 31.00 inches Hg., issue the altimeter setting and:

1. En Route/Arrivals. Advise pilots to remain set on altimeter 31.00 until reaching final approach segment.

2. Departures. Advise pilots to set altimeter 31.00 prior to reaching any mandatory/crossing altitude or 1,500 feet AGL, whichever is lower.

PHRASEOLOGY–
ALTIMETER, THREE ONE TWO FIVE, SET THREE ONE ZERO ZERO UNTIL REACHING THE FINAL APPROACH FIX.

or

ALTIMETER, THREE ONE ONE ZERO, SET THREE ONE ZERO ZERO PRIOR TO REACHING ONE THOUSAND THREE HUNDRED.

NOTE–
1. *Aircraft with Mode C altitude reporting will be displayed on the controller's radar scope with a uniform altitude offset above the assigned altitude. With an actual altimeter of 31.28 inches Hg, the Mode C equipped aircraft will show 3,300 feet when assigned 3,000 feet. This will occur unless local directives authorize entering the altimeter setting 31.00 into the computer system regardless of the actual barometric pressure.*

2. *Flight Standards will implement high barometric pressure procedures by NOTAM defining the geographic area affected.*

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

REFERENCE–
AIM, Para 7–2–2, Procedures.
FAAO JO 7110.65, Para 3–10–1, Landing Information.

Section 9. Automatic Terminal Information Service Procedures

2–9–1. APPLICATION

Use the ATIS, where available, to provide advance noncontrol airport/terminal area and meteorological information to aircraft.

a. Identify each ATIS message by a phonetic letter code word at both the beginning and the end of the message. Automated systems will have the phonetic letter code automatically appended. Exceptions may be made where omissions are required because of special programs or equipment.

1. Each alphabet letter phonetic word must be used sequentially, except as authorized in subpara a2, beginning with "Alpha," ending with "Zulu," and repeated without regard to the beginning of a new day. Identify the first resumed broadcast message with "Alpha" or the first assigned alphabet letter word in the event of a broadcast interruption of more than 12 hours.

2. Specific sequential portions of the alphabet may be assigned between facilities or an arrival and departure ATIS when designated by a letter of agreement or facility directive.

REFERENCE–
FAAO JO 7210.3, Para 10–4–1, Automatic Terminal Information Service (ATIS).

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

c. Arrival and departure messages, when broadcast separately, need only contain information appropriate for that operation.

2–9–2. OPERATING PROCEDURES

Maintain an ATIS message that reflects the most current arrival and departure information.

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

1. Upon receipt of any new official weather regardless of whether there is or is not a change in values.

2. When runway braking action reports are received that indicate runway braking is worse than that which is included in the current ATIS broadcast.

3. When there is a change in any other pertinent data, such as runway change, instrument approach in use, new or canceled NOTAMs/PIREPs/HIWAS update, etc.

b. When a pilot acknowledges that he/she has received the ATIS broadcast, controllers may omit those items contained in the broadcasts if they are current. Rapidly changing conditions will be issued by ATC, and the ATIS will contain the following:

EXAMPLE–
"Latest ceiling/visibility/altimeter/wind/(other conditions) will be issued by approach control/tower."

c. Broadcast on all appropriate frequencies to advise aircraft of a change in the ATIS code/message.

d. Controllers must ensure that pilots receive the most current pertinent information. Ask the pilot to confirm receipt of the current ATIS information if the pilot does not initially state the appropriate ATIS code. Controllers must ensure that changes to pertinent operational information is provided after the initial confirmation of ATIS information is established. Issue the current weather, runway in use, approach information, and pertinent NOTAMs to pilots who are unable to receive the ATIS.

EXAMPLE–
"Verify you have information ALPHA."

"Information BRAVO now current, visibility three miles."

"Information CHARLIE now current, Ceiling 1500 Broken."

"Information CHARLIE now current, advise when you have CHARLIE."

2–9–3. CONTENT

Include the following in ATIS broadcast as appropriate:

a. Airport/facility name, phonetic letter code, time of weather sequence (UTC). Weather information consisting of wind direction and velocity, visibility, obstructions to vision, present weather, sky condition, temperature, dew point, altimeter, a density altitude advisory when appropriate and other pertinent remarks included in the official weather observation. Wind direction, velocity, and altimeter must be reported from certified direct reading instruments. Temperature and dew point should be reported from certified direct reading sensors when available. Always include weather observation remarks of lightning, cumulonimbus, and towering cumulus clouds.

NOTE–
ASOS/AWOS is to be considered the primary source of wind direction, velocity, and altimeter data for weather observation purposes at those locations that are so equipped. The ASOS Operator Interface Device (OID) displays the magnetic wind as "MAG WND" in the auxiliary data location in the lower left–hand portion of the screen. Other OID displayed winds are true and are not to be used for operational purposes.

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

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

2. *"MANPADS alert. Exercise extreme caution. MANPADS attack observed by tower one–half mile northwest of airfield at one–two–five–zero Zulu." "Advise on initial contact if you want to divert."*

REFERENCE–
FAAO JO 7110.65, Para 10–2–13, MANPADS Alert.
FAAO JO 7210.3, Para 2–1–9, Handling MANPADS Incidents.

c. 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.

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

EXAMPLE–
UNAUTHORIZED LASER ILLUMINATION EVENT, AT 0100z, 8 MILE FINAL RUNWAY 18R AT 3,000 FEET, GREEN LASER FROM THE SOUTHWEST.

REFERENCE–
FAAO JO 7110.65, Para 10–2–14 Unauthorized Laser Illumination of Aircraft.
FAAO JO 7210.3, Para 2–1–27, Reporting Unauthorized Laser Illumination of Aircraft.

d. The ceiling/sky condition, visibility, and obstructions to vision may be omitted if the ceiling is above 5,000 feet and the visibility is more than 5 miles.

EXAMPLE–
A remark may be made, "The weather is better than five thousand and five."

e. Instrument/visual approach/es in use. Specify landing runway/s unless the runway is that to which the instrument approach is made. Before advertising non-precision approaches, priority should be given to available precision, then APV approaches.

f. Departure runway/s (to be given only if different from landing runway/s or in the instance of a "departure only" ATIS).

g. Taxiway closures which affect the entrance or exit of active runways, other closures which impact airport operations, other NOTAMs and PIREPs pertinent to operations in the terminal area. Inform pilots of where hazardous weather is occurring and how the information may be obtained. Include available information of known bird activity.

REFERENCE–
FAAO JO 7110.65, Para 2–1–22, Bird Activity Information.

h. When a runway length has been temporarily or permanently shortened, ensure that the word "WARNING" prefaces the runway number, and that the word "shortened" is also included in the text of the message.

1. Available runway length, as stated in the NOTAM, must be included in the ATIS broadcast. This information must be broadcast for the duration of the construction project.

2. For permanently shortened runways, facilities must continue to broadcast this information for a minimum of 30 days or until the Airport/Facility Directory (A/FD) has been updated, whichever is longer.

PHRASEOLOGY–
WARNING, RUNWAY (number) HAS BEEN SHORTENED, (length in feet) FEET AVAILABLE.

EXAMPLE–
"Warning, Runway One-Zero has been shortened, niner-thousand eight hundred and fifty feet available."

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

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

EXAMPLE–
"Runway Two Seven, MU forty–two, forty–one, twenty–eight at one zero one eight Zulu, ice."

REFERENCE–
FAAO JO 7110.65, Para 3–3–5, Braking Action Advisories.

j. Other optional information as local conditions dictate in coordination with ATC. This may include such items as VFR arrival frequencies, temporary airport conditions, LAHSO operations being conducted, or other perishable items that may appear only for a matter of hours or a few days on the ATIS message.

k. Low level wind shear/microburst when reported by pilots or is detected on a wind shear detection system.

REFERENCE–
FAAO JO 7110.65, Para 3–1–8, Low Level Wind Shear/Microburst Advisories.

l. A statement which advises the pilot to read back instructions to hold short of a runway. The air traffic manager may elect to remove this requirement 60 days after implementation provided that removing the statement from the ATIS does not result in increased requests from aircraft for read back of hold short instructions.

m. Instructions for the pilot to acknowledge receipt of the ATIS message by informing the controller on initial contact.

EXAMPLE–
"Boston Tower Information Delta. One four zero zero Zulu. Wind two five zero at one zero. Visibility one zero. Ceiling four thousand five hundred broken. Temperature three four. Dew point two eight. Altimeter three zero one zero. ILS–DME Runway Two Seven Approach in use. Departing Runway Two Two Right. Hazardous Weather Information for (geographical area) available on HIWAS, Flight Watch, or Flight Service Frequencies. Advise on initial contact you have Delta."

b. The 3−minute interval is not required when:

1. A pilot has initiated a request to deviate from that interval unless the preceding departing aircraft is a heavy aircraft/B757.

NOTE−
A request for takeoff does not initiate a waiver request; the request for takeoff must be accomplished by a request to deviate from the 3−minute interval.

2. USA NOT APPLICABLE. The intersection is 500 feet or less from the departure point of the preceding aircraft and both aircraft are taking off in the same direction.

3. Successive touch−and−go and stop−and−go operations are conducted with a small aircraft following another small aircraft weighing more than 12,500 lbs. or a large aircraft in the pattern, or a small aircraft weighing more than 12,500 lbs. or a large aircraft departing the same runway, provided the pilot of the small aircraft is maintaining visual separation/spacing behind the preceding large aircraft. Issue a wake turbulence cautionary advisory and the position of the large aircraft.

EXAMPLE−
"Caution wake turbulence, DC−9 on base leg."

4. Successive touch-and-go and stop-and-go operations are conducted with any aircraft following a heavy aircraft/B757 in the pattern, or heavy aircraft/B757 departing the same runway, provided the pilot of the aircraft is maintaining visual separation/spacing behind the preceding heavy aircraft/B757. Issue a wake turbulence cautionary advisory and the position of the heavy aircraft/B757.

EXAMPLE−
"Caution wake turbulence, heavy Lockheed C5A departing runway two three."

5. If action is initiated to reduce the separation between successive touch-and-go or stop-and-go operations, apply 3 minutes separation.

c. When applying the provision of subpara b:

1. Issue a wake turbulence advisory before clearing the aircraft for takeoff.

2. Do not clear the intersection departure for an immediate takeoff.

3. Issue a clearance to permit the trailing aircraft to deviate from course enough to avoid the flight path of the preceding large departure when applying subpara b1 or b2.

4. Separation requirements in accordance with para 3−9−6, Same Runway Separation, must also apply.

REFERENCE−
FAAO JO 7110.65, Para 3−9−6, Same Runway Separation.

3−9−8. INTERSECTING RUNWAY OPERATIONS

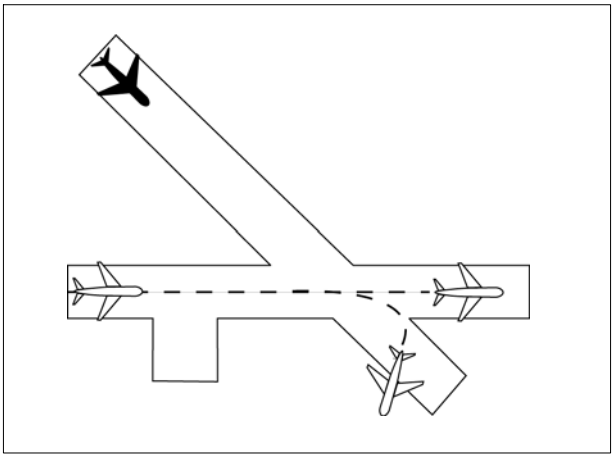
a. Issue traffic information to each aircraft operating on intersecting runways.

b. Separate departing aircraft from another aircraft using an intersecting runway by ensuring that the departure does not begin takeoff roll until one of the following exists:

REFERENCE−
FAAO JO 7110.65, Para 2−1−21, Traffic Advisories.

1. The preceding aircraft has departed and passed the intersection or is turning to avert any conflict. (See FIG 3-9-5).

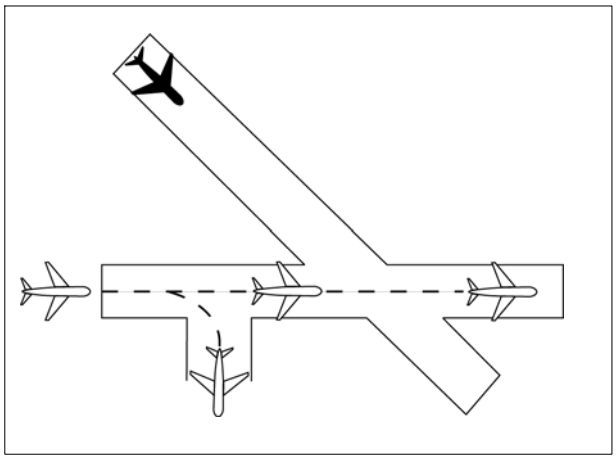
FIG 3−9−5
Intersecting Runway Separation



2. A preceding arriving aircraft is clear of the landing runway, completed the landing roll and will hold short of the intersection, or has passed the intersection. (See FIG 3-9-6).

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

FIG 3–9–6
Intersecting Runway Separation



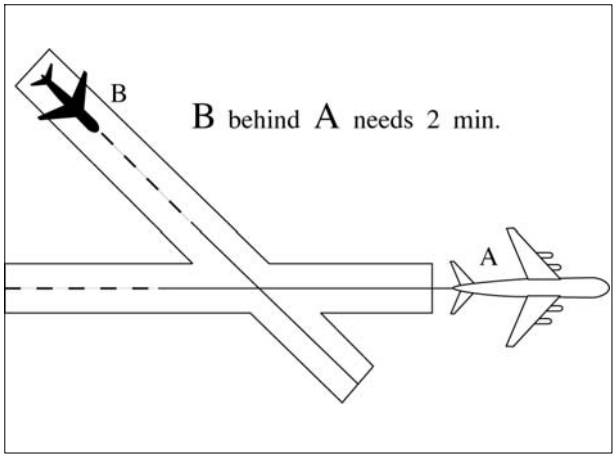
WAKE TURBULENCE APPLICATION

3. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by *2 minutes* when departing:

NOTE–
Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

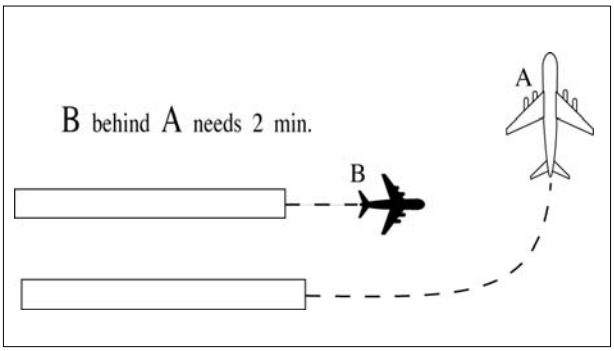
(a) Intersecting runways if projected flight paths will cross. (See FIG 3–9–7).

FIG 3–9–7
Intersecting Runways



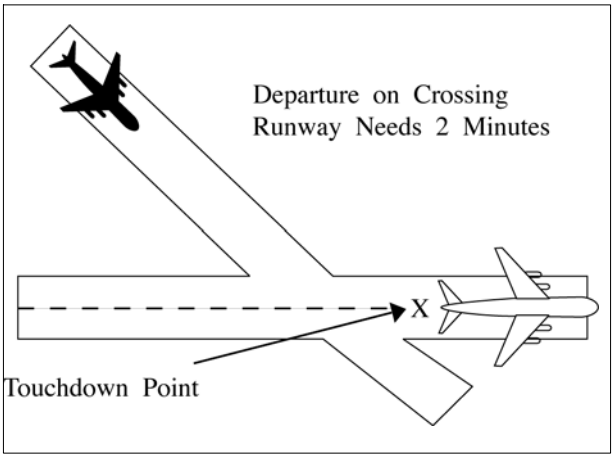
(b) A parallel runway separated by 2,500 feet or more if projected flight paths will cross. (See FIG 3–9–8.)

FIG 3–9–8
Parallel Runway



4. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on an intersecting g runway if the departure will fly through the airborne path of the arrival– *2 minutes.* (See FIG 3–9–9.)

FIG 3–9–9
Departure on Intersecting Runway



5. Air traffic controllers must not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

REFERENCE–
FAAO JO 7110.65, Para 5–8–3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5–8–5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.

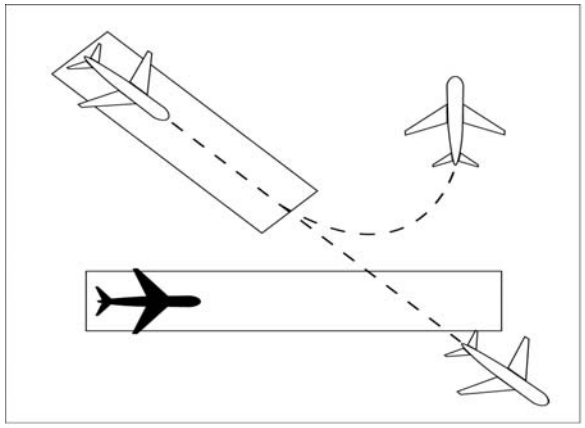
3–9–9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

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–
FAAO 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 3–9–10).

FIG 3–9–10
Intersecting 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 3–9–11 and FIG 3-9-12).

FIG 3–9–11
Intersecting Runway Separation

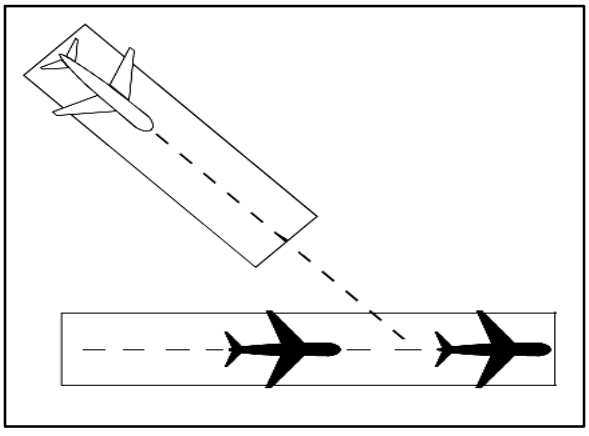
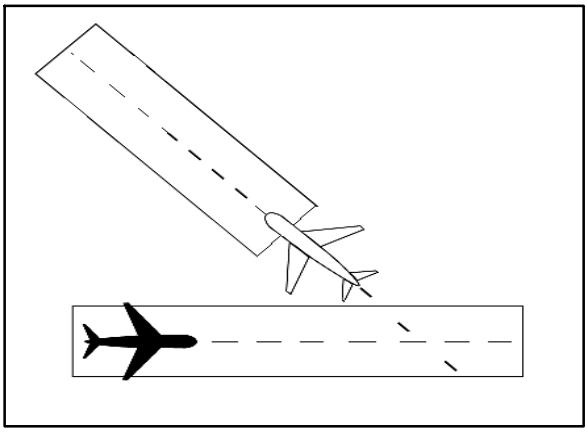


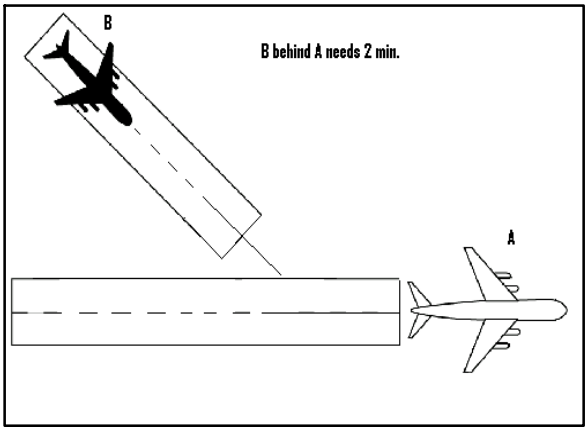
FIG 3–9–12
Intersecting Runway Separation



WAKE TURBULENCE APPLICATION

b. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by *2 minutes* when departing a crossing runway if projected flight paths will cross. (See FIG 3–9–13).

FIG 3–9–13
Intersecting Runway Separation

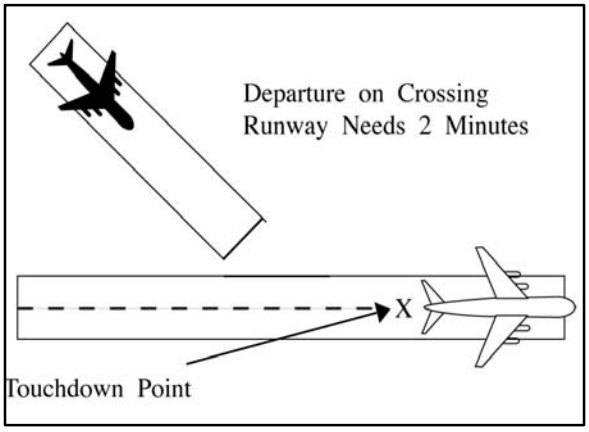


NOTE–
Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

c. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a crossing runway if the

departure will fly through the airborne path of the arrival- *2 minutes.* (See FIG 3–9–14).

FIG 3–9–14
Intersecting Runway Separation



d. Air traffic controllers must not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

REFERENCE–
FAAO JO 7110.65, Para 5-8-3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5-8-5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.

e. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway within 1 NM of either departure end, apply the provisions of Paragraph 3-9-8, Intersecting Runway Separation. (See FIG 3-9-15).

REFERENCE–
FAAO JO 7210.3, Para 10-3-14, Go-Around/Missed Approach

FIG 3–9–15
Intersecting Runway Separation

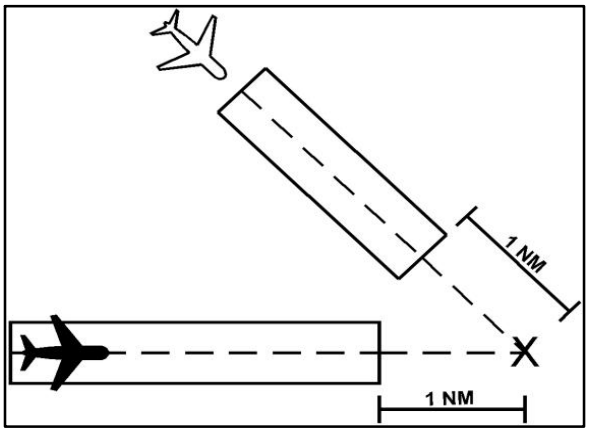
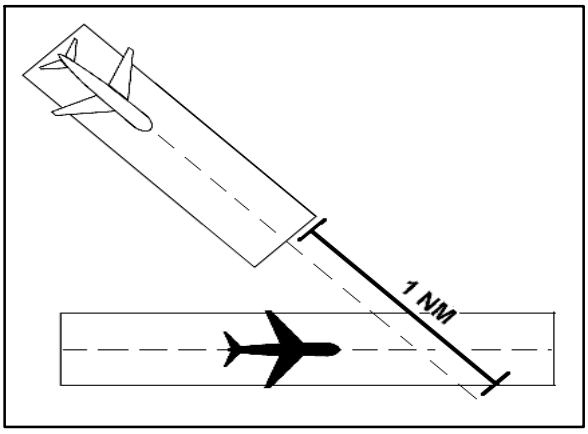


FIG 3–9–16
Intersecting Runway Separation



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–
FAAO 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.

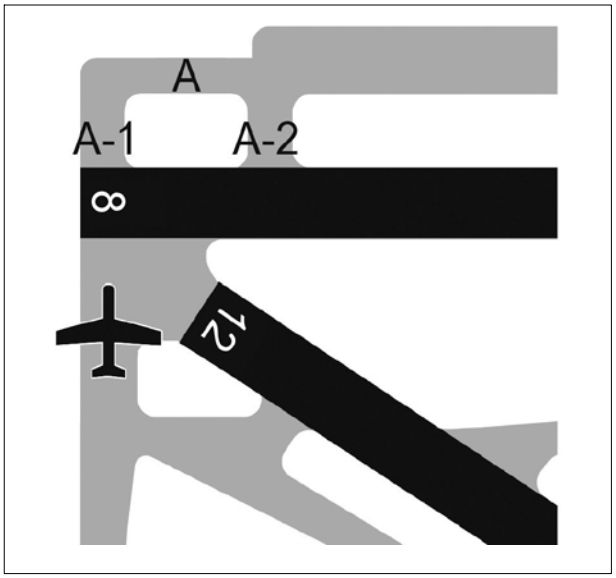
c. When two or more aircraft call the tower ready for departure, one or more at the full length of a runway and one or more at an intersection, state the location of the aircraft at the full length of the runway when clearing that aircraft for takeoff.

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 para 3–9–9e.

FIG 3–9–17
Runway/Taxiway Proximity

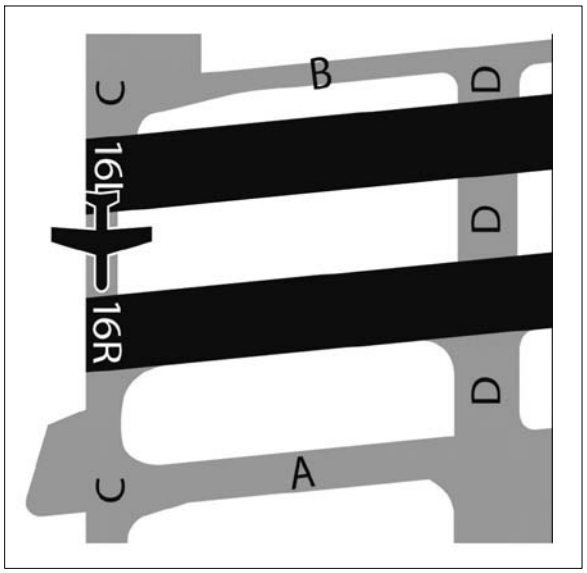


e. At those airports where the airport configuration does not allow for an aircraft to completely cross one runway and hold short of the departure runway and/or where airports do not have runway hold markings between runways, state the runway to be crossed with the takeoff clearance if the aircraft is not able to complete a runway crossing before reaching its departure runway.

PHRASEOLOGY–
CROSS RUNWAY (number), RUNWAY (number) CLEARED FOR TAKEOFF.

EXAMPLE–
"CROSS RUNWAY TWO FOUR LEFT, RUNWAY TWO FOUR RIGHT, CLEARED FOR TAKEOFF."

FIG 3–9–18
Runway/Taxiway Proximity



REFERENCE–
FAAO JO 7210.3, Para 10–3–9, Takeoff Clearance.
P/CG Term– Clear of the Runway.

f. Do not use the term "full length" when the runway length available for departure has been temporarily shortened. On permanently shortened runways, do not use the term "full length" until the Airport/Facility Directory is updated to include the change(s).

NOTE–
The use of the term "full length" could be interpreted by the pilot(s) as the available runway length prior to the runway being shortened.

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

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

2. The addition of "shortened" must be included in the takeoff clearance until the Airport/Facility Directory is updated to include the change(s) when the runway is permanently shortened.

PHRASEOLOGY–
RUNWAY (number) SHORTENED, CLEARED FOR TAKEOFF.

EXAMPLE–
"Runway Two-Seven shortened, cleared for takeoff."

PHRASEOLOGY–
RUNWAY (number) AT (taxiway designator) INTERSECTION DEPARTURE SHORTENED, CLEARED FOR TAKEOFF.

EXAMPLE–
"Runway Two-Seven at Juliet, intersection departure shortened, cleared for takeoff."

REFERENCE–
FAAO JO 7210.3, Para 10-3-11, Airport Construction
FAAO JO 7210.3, Para 10-3-12, Change in Runway Length Due to Construction

h. *USAF.* When an aircraft is cleared for takeoff, inform it of the closest traffic within 6 miles on final approach to the same runway. If the approaching aircraft is on a different frequency, inform it of the departing aircraft.

i. *USA/USN/USAF.* Issue surface wind and takeoff clearance to aircraft.

PHRASEOLOGY–
RUNWAY (number), WIND (surface wind in direction and velocity). CLEARED FOR TAKEOFF.

3–9–11. CANCELLATION OF TAKEOFF CLEARANCE

Cancel a previously issued clearance for takeoff and inform the pilot of the reason if circumstances require. Once an aircraft has started takeoff roll, cancel the takeoff clearance only for the purpose of safety.

NOTE–
In no case should a takeoff clearance be canceled after an aircraft has started its takeoff roll solely for the purpose of meeting traffic management requirements/EDCT.

PHRASEOLOGY–
CANCEL TAKEOFF CLEARANCE (reason).

Section 8. Approach Clearance Procedures

4–8–1. APPROACH CLEARANCE

a. Clear aircraft for "standard" or "special" instrument approach procedures only.

1. To require an aircraft to execute a particular instrument approach procedure, specify in the approach clearance the name of the approach as published on the approach chart. Where more than one procedure is published on a single chart and a specific procedure is to be flown, amend the approach clearance to specify execution of the specific approach to be flown. If only one instrument approach of a particular type is published, the approach needs not be identified by the runway reference.

2. An aircraft conducting an ILS or LDA approach must be advised at the time an approach clearance is issued when the glideslope is reported out of service, unless the title of the published approach procedure allows (for example, ILS or LOC Rwy 05).

3. Standard instrument approach procedures (SIAP) must begin at an initial approach fix (IAF) or an intermediate fix (IF) if there is not an IAF.

4. Where adequate radar coverage exists, radar facilities may vector aircraft to the final approach course in accordance with Paragraph 5-9-1, Vectors to Final Approach Course, and Paragraph 5-9-2, Final Approach Course Interception.

5. Where adequate radar coverage exists, radar facilities may clear an aircraft to any fix 3 NM or more prior to the FAF, along the final approach course, at an intercept angle not greater than 30 degrees.

PHRASEOLOGY–
CLEARED (type) APPROACH.

(To authorize a pilot to execute his/her choice of instrument approach),

CLEARED APPROACH.

(Where more than one procedure is published on a single chart and a specific procedure is to be flown),

CLEARED (specific procedure to be flown) APPROACH.

(To authorize a pilot to execute an ILS or an LDA approach when the glideslope is out of service)

CLEARED (ILS/LDA) APPROACH, GLIDESLOPE UNUSABLE.
(When the title of the approach procedure contains "or LOC")

CLEARED LOCALIZER APPROACH

EXAMPLE–
"Cleared Approach."
"Cleared V–O–R Approach."
"Cleared V–O–R Runway Three-Six Approach."
"Cleared L–D–A Approach."
"Cleared L–D–A Runway Three-Six Approach."
"Cleared I–L–S Approach."
"Cleared Localizer Approach."
"Cleared Localizer Back Course Runway One-Three Approach."
"Cleared RNAV Z Runway Two-Two Approach."
"Cleared GPS Runway Two Approach."
"Cleared BRANCH ONE Arrival and RNAV Runway One-Three Approach."
"Cleared I–L–S Runway Three-Six Approach, glideslope unusable."
"Cleared S–D–F Approach."
"Cleared G–L–S Approach."

NOTE–
1. *Clearances authorizing instrument approaches are issued on the basis that, if visual contact with the ground is made before the approach is completed, the entire approach procedure will be followed unless the pilot receives approval for a contact approach, is cleared for a visual approach, or cancels their IFR flight plan.*

2. *Approach clearances are issued based on known traffic. The receipt of an approach clearance does not relieve the pilot of his/her responsibility to comply with applicable Parts of Title 14 of the Code of Federal Regulations and the notations on instrument approach charts which levy on the pilot the responsibility to comply with or act on an instruction; for example, "Straight-in minima not authorized at night," "Procedure not authorized when glideslope/glidepath not used," "Use of procedure limited to aircraft authorized to use airport," or "Procedure not authorized at night."*

3. *In some cases, the name of the approach, as published, is used to identify the approach, even though a component of the approach aid, other than the localizer on an ILS is inoperative. Where more than one procedure to the same runway is published on a single chart, each must adhere to all final approach guidance contained on that chart, even though each procedure will be treated as a separate entity*

when authorized by ATC. The use of alphabetical identifiers in the approach name with a letter from the end of the alphabet; for example, X, Y, Z, such as "HI TACAN Z Rwy 6L or HI TACAN Y Rwy 6L," or "RNAV (GPS) Z Rwy 04 or RNAV (GPS) Y Rwy 04," denotes multiple straight-in approaches to the same runway that use the same approach aid. Alphabetical suffixes with a letter from the beginning of the alphabet; for example, A, B, C, denote a procedure that does not meet the criteria for straight-in landing minimums authorization.

4. *14 CFR Section 91.175(j) requires a pilot to receive a clearance to conduct a procedure turn when vectored to a final approach course or fix, conducting a timed approach, or when the procedure specifies "NO PT."*

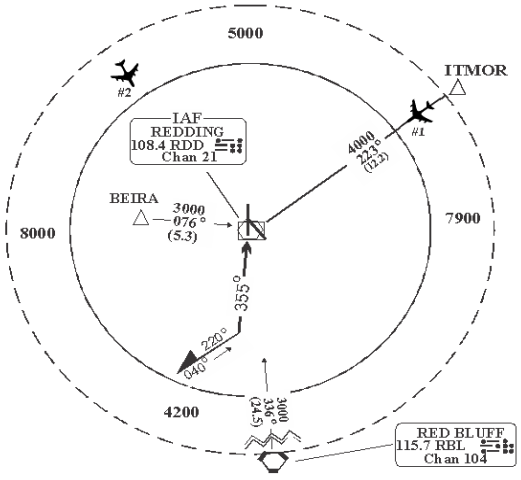
5. *An aircraft which has been cleared to a holding fix and prior to reaching that fix is issued a clearance for an approach, but not issued a revised routing; that is, "proceed direct to...." may be expected to proceed via the last assigned route, a feeder route (if one is published on the approach chart), and then to commence the approach as published. If, by following the route of flight to the holding fix, the aircraft would overfly an IAF or the fix associated\ with the beginning of a feeder route to be used, the aircraft is expected to commence the approach using the published feeder route to the IAF or from the IAF as appropriate; that is, the aircraft would not be expected to overfly and return to the IAF or feeder route.*

6. *Approach name items contained within parenthesis; for example, RNAV (GPS) Rwy 04, are not included in approach clearance phraseology.*

REFERENCE–
FAAO 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).

b. For aircraft operating on unpublished routes, issue the approach clearance only after the aircraft is: (See FIG 4–8–1.)

FIG 4–8–1
Approach Clearance Example



1. Established on a segment of a published route or instrument approach procedure, or

EXAMPLE–
Aircraft 1: *The aircraft is established on a segment of a published route at 5,000 feet. "Cleared V-O-R Runway Three Four Approach."*

2. Assigned an altitude to maintain until the aircraft is established on a segment of a published route or instrument approach procedure.

EXAMPLE–
Aircraft 2: *The aircraft is inbound to the VOR on an unpublished direct route at 7,000 feet. The minimum IFR altitude for IFR operations (14 CFR Section 91.177) along this flight path to the VOR is 5,000 feet. "Cross the Redding V-O-R at or above five thousand, cleared V-O-R Runway Three Four Approach."*

NOTE–
1. *The altitude assigned must assure IFR obstruction clearance from the point at which the approach clearance is issued until established on a segment of a published route or instrument approach procedure.*

2. *If the altitude assignment is VFR-on-top, it is conceivable that the pilot may elect to remain high until arrival over the final approach fix which may require the pilot to circle to descend so as to cross the final approach fix at an altitude that would permit landing.*

c. Except for visual approaches, do not clear an aircraft direct to the FAF unless it is also an IAF, wherein the aircraft is expected to execute the depicted procedure turn or hold-in-lieu of procedure turn.

d. For RNAV-equipped aircraft operating on unpublished routes, issue approach clearance for conventional or RNAV SIAP including approaches with RF legs only after the aircraft is: (See FIG 4-8-2).

1. Established on a heading or course direct to the IAF at an intercept angle not greater than 90 degrees and is assigned an altitude in accordance with b2. Radar monitoring is required to the IAF for RNAV (RNP) approaches when no hold-in-lieu of procedure turn is executed.

EXAMPLE–
Aircraft 1 can be cleared direct to CENTR. The intercept angle at that IAF is 90 degrees or less. The minimum altitude for IFR operations (14 CFR, section 91.177) along the flight path to the IAF is 3,000 feet. If a hold in lieu of procedure turn pattern is depicted at an IAF and a TAA is not defined, the aircraft must be instructed to conduct a straight-in approach if ATC does not want the pilot to execute a hold-in-lieu procedure turn. "Cleared direct CENTR, maintain at or above three thousand until CENTR, cleared straight-in RNAV Runway One Eight Approach."

2. Established on a heading or course direct to the IF at an angle not greater than 90 degrees, provided the following conditions are met:

(a) Assign an altitude in accordance with b2 that will permit a normal descent to the FAF.

NOTE–
Controllers should expect aircraft to descend at approximately 150-300 feet per nautical mile when applying guidance in subpara d2(a).

(b) Radar monitoring is provided to the IF.

(c) The SIAP must identify the intermediate fix with the letters "IF."

(d) For procedures where an IAF is published, the pilot is advised to expect clearance to the IF at least 5 miles from the fix.

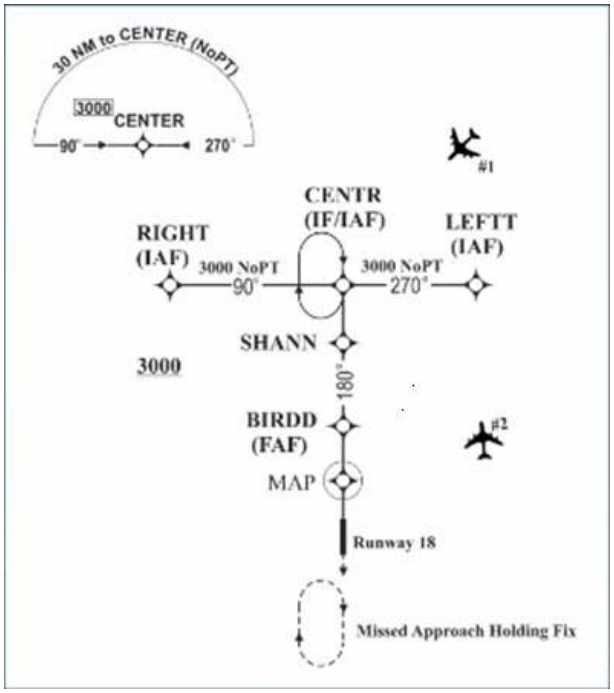
EXAMPLE–
"Expect direct CENTR for RNAV Runway One-Eight Approach."

3. Established on a heading or course direct to a fix between the IF and FAF, at an intercept angle not greater than 30 degrees, and assigned an altitude in accordance with b2.

EXAMPLE–
Aircraft 1 is more than 5 miles from SHANN. The minimum altitude for IFR operations (14 CFR Section 91.177) along the flight path to SHANN is 3,000 feet. SHANN is a step down fix between the IF/IAF ***(CENTR) and the FAF. To*** *clear Aircraft 1 to SHANN, ATC must ensure the intercept angle for the intermediate segment at SHANN is not greater than 30 degrees and must be cleared to an altitude that will allow a normal descent to the FAF. "Cleared direct SHANN, cross SHANN at or above three thousand, cleared RNAV Runway One-Eight Approach."*

REFERENCE–
FAAO 7110.65, Par 5-6-2, Methods
FAAO 7110.65, Chapter 5, Section 9, Radar Arrivals

FIG 4–8–2
Approach Clearance Example For RNAV Aircraft



EXAMPLE–
Aircraft 2 *cannot be cleared direct to CENTR unless the aircraft is allowed to execute the hold-in-lieu-of procedure turn. The intercept angle at that IF/IAF is greater than 90 degrees. The minimum altitude for IFR operations (14 CFR Section 91.177) along the flight path to the IAF is 3,000 feet. "Cleared direct CENTR, maintain at or above three thousand until CENTR, cleared RNAV Runway One Eight approach." The pilot is expected to proceed direct CENTR and execute the hold-in-lieu of procedure turn.*

Aircraft 2 *can be cleared direct LEFTT. The intercept angle at that IAF is 90 degrees or less. The minimum altitude for IFR operations (14 CFR Section 91.177) along the flight path to the IAF is 3,000 feet. "Cleared direct LEFTT, maintain at or above three thousand until LEFTT, cleared RNAV Runway One-Eight Approach." The pilot does not have to be cleared for a straight-in approach since no*

hold-in-lieu of procedure turn pattern is depicted at LEFTT.

REFERENCE–
FAAO JO 7110.65, Chapter 5, Section 9, Radar Arrivals

e. For both RNAV and conventional approaches, intercept angles greater than 90 degrees may be used when a procedure turn, a hold-in-lieu of procedure turn pattern, or arrival holding is depicted and the pilot will execute the procedure. If a procedure turn, hold-in-lieu of procedure turn, or arrival holding pattern is depicted and the angle of intercept is 90 degrees or less, the aircraft must be instructed to conduct a straight-in approach if ATC does not want the pilot to execute a procedure turn or hold-in-lieu of procedure turn. (See FIG 4–8–3)

PHRASEOLOGY–
CLEARED STRAIGHT-IN (type) APPROACH

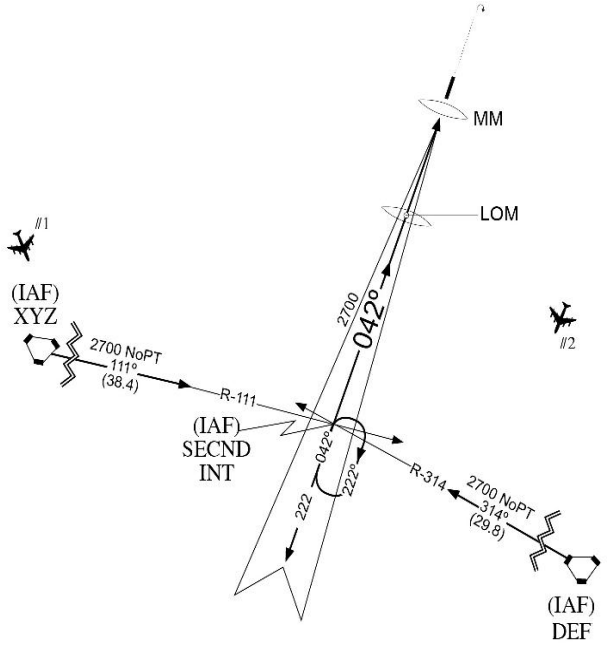
NOTE–
1. *Restate "cleared straight-in" in the approach clearance even if the pilot was advised earlier to expect a straight-in approach.*

2. *Some approach charts have an arrival holding pattern depicted at the IAF using a "thin line" holding symbol. It is charted where holding is frequently required prior to starting the approach procedure so that detailed holding instructions are not required. The arrival holding pattern is not authorized unless assigned by ATC.*

EXAMPLE–
"Cleared direct SECND, maintain at or above three thousand until SECND, cleared straight-in ILS Runway One-Eight approach."

REFERENCE–
AIM, Paragraph 5-4-5, Instrument Approach Procedure Charts
AIM, Paragraph 5-4-9, Procedure Turn and Hold-in-Lieu of Procedure Turn

FIG 4–8–3
Approach Clearance Example for RNAV Aircraft On a Conventional Approach



EXAMPLE–
Aircraft 1 *can be cleared direct to XYZ VORTAC, or SECND because the intercept angle is 90 degrees or less.*

Aircraft 2 *cannot be cleared to XYZ VORTAC because the intercept angle is greater than 90 degrees.*

Aircraft 2 *can be cleared to SECND if allowed to execute the hold-in-lieu of procedure turn pattern.*

f. Clear RNAV-equipped aircraft conducting RNAV instrument approach procedures that contain radius to fix (RF) legs:

1. Via published transitions, or

2. In accordance with paragraph d.

3. Do not clear aircraft direct to any waypoint beginning or within an RF leg.

4. Do not assign fix/waypoint crossing speeds in excess of charted speed restrictions.

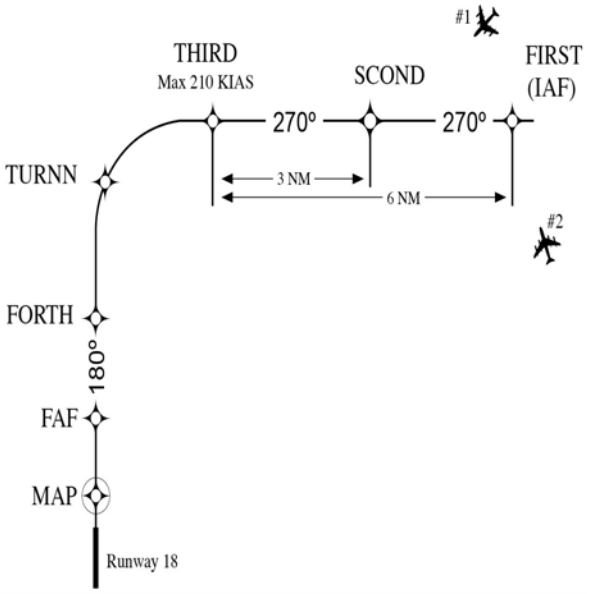
NOTE–
1. *RNAV approaches (containing RF legs) that commence*

at 10,000 feet or above require special procedures that will be site specific and specified in a facility directive.

2. *An RF leg is defined as a curved segment indicating a constant radius circular path about a defined turn center that begins at a waypoint. RF legs may have maximum airspeeds charted for procedural containment that must be followed.*

3. *If an aircraft is vectored off the procedure, expect the aircraft to request a return to an IAF.*

FIG 4–8–4
Radius to Fix (RF) and Track to Fix (TF)



NOTE–
1. *The segment between THIRD and FORTH in FIG 4-8-4 is an RF leg.*

2. *The straight segments between waypoints in FIG 4-8-4 are TF legs.*

g. Except when applying radar procedures, timed or visual approaches, clear an aircraft for an approach to an airport when the preceding aircraft has landed or canceled IFR flight plan.

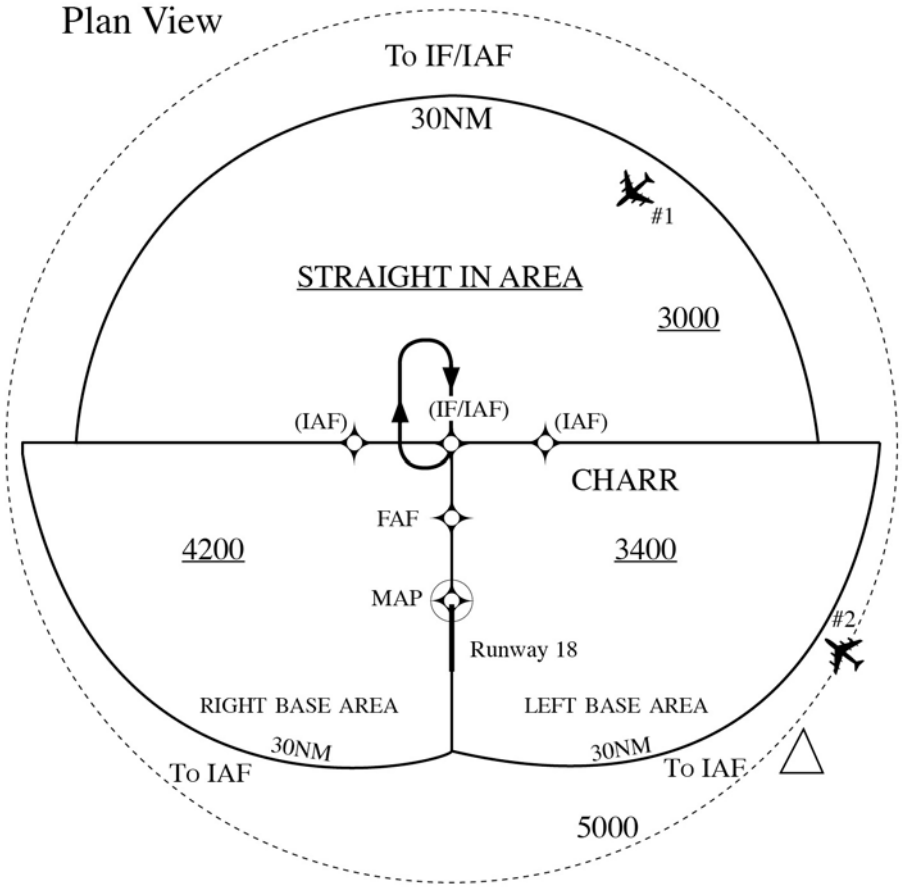
h. Where instrument approaches require radar monitoring and radar services are not available, do not use the phraseology "cleared approach," which allows the pilot his/her choice of instrument approaches.

i. Where a terminal arrival area (TAA) has been established to support RNAV approaches, use the procedures under subpara b1 and b2 above. (See FIG 4–8–5.)

EXAMPLE–
Aircraft 1: *The aircraft has crossed the TAA boundary and is therefore established on a segment of the approach. "Cleared R–NAV Runway One Eight Approach."*

Aircraft 2: *The aircraft is inbound to the CHARR IAF on an unpublished direct route at 7,000 feet. The minimum IFR altitude for IFR operations (14 CFR Section 91.177) along this flight path to the IAF is 5,000 feet. "Cleared direct CHARR, maintain at or above five thousand until entering the TAA, cleared RNAV Runway One-Eight Approach."*

FIG 4–8–5
Basic "T" and TAA Design



j. When GPS TESTING NOTAMs are published and testing is actually occurring, inform pilots requesting or cleared for a RNAV approach that GPS may not be available and request intentions. Do not resume RNAV approach operations until certain that GPS interference is no longer a factor or such GPS testing exercise has ceased.

k. During times when pilots report GPS anomalies, request the pilot's intentions and/or clear that aircraft for an alternative approach, if available and operational. Announce to other aircraft requesting an RNAV approach that GPS is reported unavailable and request intentions.

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

l. When clearing an aircraft for an RNAV approach, and a GPS NOTAM is published (a WAAS NOTAM is not issued), both GPS and WAAS may become unavailable. Therefore, when a GPS anomaly is reported, request the pilot's intentions.

NOTE–
WAAS UNAVAILABLE NOTAMs are published to indicate a failure of a WAAS system component. Airborne GPS/WAAS equipment may revert to GPS–only operation which satisfies the requirements for basic RNAV (GPS) approaches to the airport of intended landing or filed alternate airport, if airborne equipment is approved for such operations.

4–8–2. CLEARANCE LIMIT

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

PHRASEOLOGY–
CLEARED TO (destination) AIRPORT

4–8–3. RELAYED APPROACH CLEARANCE

TERMINAL

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

4–8–4. ALTITUDE ASSIGNMENT FOR MILITARY HIGH ALTITUDE INSTRUMENT APPROACHES

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

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

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

4–8–5. SPECIFYING ALTITUDE

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

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

4–8–6. CIRCLING APPROACH

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

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

PHRASEOLOGY–
CIRCLE TO RUNWAY (number),

or

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

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

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

4–8–7. SIDE–STEP MANEUVER

TERMINAL

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

EXAMPLE–
"Cleared I–L–S Runway seven left approach. Side-step to runway seven right."

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

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

4–8–8. COMMUNICATIONS RELEASE

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

PHRASEOLOGY–
CHANGE TO ADVISORY FREQUENCY APPROVED.

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

4–8–9. MISSED APPROACH

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

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

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

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

4–8–10. APPROACH INFORMATION

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

a. Initial approach altitude.

b. Direction and distance from the holding fix within which procedure turn is to be completed.

c. Altitude at which the procedure turn is to be made.

d. Final approach course and altitude.

e. Missed approach procedures if considered necessary.

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

4–8–11. PRACTICE APPROACHES

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

NOTE–
Those en route facilities using host software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.

c. Ensure that, prior to transferring communications:

1. Potential violations of adjacent airspace and potential conflicts between aircraft in their own area of jurisdiction are resolved.

2. Coordination has been accomplished with all controllers through whose area of jurisdiction the aircraft will pass prior to entering the receiving controller's area of jurisdiction unless otherwise specified by a LOA or a facility directive.

3. Restrictions issued to ensure separation are passed to the receiving controller.

d. After transferring communications, continue to comply with the requirements of subparas c1 and 2.

e. Comply with restrictions issued by the receiving controller unless otherwise coordinated.

f. Comply with the provisions of para 2–1–17, Radio Communications Transfer, subparas a and b. To the extent possible, transfer communications when the transfer of radar identification has been accepted.

NOTE–
Before the ARTS/STARS "modify/quick look" function is used to transfer radar identification, a facility directive which specifies communication transfer points is required.

g. Advise the receiving controller of pertinent information not contained in the data block or flight progress strip unless covered in a LOA or facility directive. Pertinent information includes:

1. Assigned heading.

2. Air speed restrictions.

3. Altitude information issued.

4. Observed track or deviation from the last route clearance.

5. The beacon code if different from that normally used or previously coordinated.

6. Any other pertinent information.

h. Ensure that the data block is associated with the appropriate target.

i. Initiate verbal coordination to verify the position of primary or nondiscrete targets when using the automated handoff functions except for intrafacility handoffs using single-sensor systems or multisensor systems operating in a mosaic RDP mode.

j. Initiate verbal coordination before transferring control of a track when "CST," "FAIL," "NONE," "NB," "NX," "IF," "NT", or "TRK" is displayed in the data block.

k. Advise the receiving controller if radar monitoring is required.

l. Issue restrictions to the receiving controller which are necessary to maintain separation from other aircraft within your area of jurisdiction before releasing control of the aircraft.

m. Consider the target being transferred as identified on the receiving controller's display when the receiving controller acknowledges receipt verbally or has accepted an automated handoff.

n. Accomplish the necessary coordination with any intervening controllers whose area of jurisdiction is affected by the receiving controller's delay in the climb or the descent of an aircraft through the vertical limits of your area of jurisdiction when the receiving controller advises you of that delay before accepting the transfer of radar identification unless otherwise specified by a LOA or a facility directive.

5–4–6. RECEIVING CONTROLLER HANDOFF

The receiving controller must:

a. Ensure that the target position corresponds with the position given by the transferring controller or that there is an appropriate association between an automated data block and the target being transferred before accepting a handoff.

REFERENCE–
FAAO JO 7110.65, Para 2–1–14, Coordinate Use of Airspace.
FAAO JO 7110.65, Para 2–1–15, Control Transfer.
FAAO JO 7110.65, Para 5–4–5, Transferring Controller Handoff.

b. Issue restrictions that are needed for the aircraft to enter your sector safely before accepting the handoff.

c. Comply with restrictions issued by the transferring controller unless otherwise coordinated.

d. After accepting a handoff from another controller, confirm the identity of primary target by

advising the aircraft of its position, and of a beacon target by observing a code change, an "ident" reply, or a "standby" squawk unless one of these was used during handoff. These provisions do not apply at those towers and GCAs which have been delegated the responsibility for providing radar separation within designated areas by the parent approach control facility and the aircraft identification is assured by sequencing or positioning prior to the handoff.

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

e. When using appropriate equipment, consider a discrete beacon target's identity to be confirmed when:

1. The data block associated with the target being handed off indicates the computer assigned discrete beacon code is being received, or

2. You observe the deletion of a discrete code that was displayed in the data block, or

NOTE–
When the aircraft generated discrete beacon code does not match the computer assigned beacon code, the code generated will be displayed in the data block. When the aircraft changes to the assigned discrete code, the code disappears from the data block. In this instance, the observance of code removal from the data block satisfies confirmation requirements.

3. You observe the numeric display of a discrete code that an aircraft has been instructed to squawk or reports squawking.

f. Initiate verbal coordination prior to accepting control of a track when "CST," "NAT," "NT," "NONE," "NB," "NX," "OLD," "OL," "AMB," "AM," "TU", or "TRK" is displayed in the data block.

1. When an automated interfacility handoff action is initiated and "AMB" or "AM" is displayed in the full data block, advise the other facility that a disparity exists between the position declared by their computer and that declared by your ARTS/PIDP/STARS system.

2. When an automated inter–facility handoff action is initiated and "NAT," "NT," "TU", or "TRK" is displayed in the full data block, advise the other facility if a disparity exists between the position declared by their computer and the actual target position.

g. Advise the transferring controller, prior to accepting the transfer of radar identification, that you will delay the climb or the descent of an aircraft through the vertical limits of the transferring controller's area of jurisdiction, unless otherwise specified in a LOA or a facility directive.

NOTE–
Those en route facilities using HOST software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.

h. If you decide, *after* accepting the transfer of radar identification, to delay the aircraft's climb or descent through the vertical limits of the transferring controller's area of jurisdiction, advise the transferring controller of that decision as soon as possible.

NOTE–
Those en route facilities using HOST software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.

5–4–7. POINT OUT

a. The transferring controller must:

1. Obtain verbal approval before permitting an aircraft to enter the receiving controller's delegated airspace. *TERMINAL.* Automated approval may be utilized in lieu of verbal, provided the appropriate automation software is operational (automated point out function), and the procedures are specified in a facility directive/LOA.

2. Obtain the receiving controller's approval before making any changes to an aircraft's flight path, altitude, speed, or data block information after the point out has been approved.

NOTE–
Those en route facilities using HOST software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.

3. Comply with restrictions issued by the receiving controller unless otherwise coordinated.

4. Be responsible for subsequent radar handoffs and communications transfer, including flight data revisions and coordination, unless otherwise agreed to by the receiving controller or as specified in a LOA.

b. The receiving controller must:

1. Ensure that the target position corresponds with the position given by the transferring controller or that there is an association between a computer data block and the target being transferred prior to approving a point out.

2. Be responsible for separation between point out aircraft and other aircraft for which he/she has separation responsibility.

3. Issue restrictions necessary to provide separation from other aircraft within his/her area of jurisdiction.

5–4–8. AUTOMATED INFORMATION TRANSFER (AIT)

Transfer radar identification, altitude control, and/or en route fourth line control information, without verbal coordination under the following conditions:

a. During radar handoff; and

b. Via information displayed in full data blocks; and

c. Within the same facility, except as provided in Paragraph 5–4–9, Interfacility Automated Information Transfer; and

d. When following procedures specified in your facility AIT directive.

REFERENCE–
FAAO JO 7110.65, Para 5–4–11, En Route Fourth Line Data Block Usage.

5–4–9. INTERFACILITY AUTOMATED INFORMATION TRANSFER

EN ROUTE

Transfer radar identification without verbal coordination under the following conditions:

a. During radar handoff; and

b. Via information displayed in full data blocks; and

c. On aircraft at assigned altitude in level flight; and

d. Only the first sector within the receiving facility must utilize the procedure; and

e. When following procedures specified in your facility AIT directive and LOA.

5–4–10. PREARRANGED COORDINATION

Prearranged coordination allowing aircraft under your control to enter another controller's area of jurisdiction may only be approved provided procedures are established and published in a facility directive/LOA in accordance with FAAO JO 7210.3, Paragraph 3–6–7, Prearranged Coordination.

NOTE–
Under no circumstances may one controller permit an aircraft to enter another's airspace without proper coordination. Coordination can be accomplished by several means; i.e., radar handoff, automated information transfer, verbal, point–out, and by prearranged coordination procedures identified in a facility directive that clearly describe the correct application. Airspace boundaries should not be permitted to become barriers to the efficient movement of traffic. In addition, complete coordination, awareness of traffic flow, and understanding of each position's responsibility concerning penetration of another's airspace cannot be overemphasized.

REFERENCE–
FAAO JO 7110.65, Para 2–1–14, Coordinate Use of Airspace.
FAAO JO 7110.65, Para 5–4–3, Methods.
FAAO JO 7110.65, Para 5–4–8, Automated Information Transfer (AIT).
FAAO JO 7210.3, Para 3–6–7, Prearranged Coordination.

5–4–11. EN ROUTE FOURTH LINE DATA BLOCK USAGE

a. The en route fourth line data block must be used to forward only the specified control information listed below. Any additional control information must be forwarded via other communication methods. En route fourth line data block free text area may be used by individual sector teams for recording any additional information the team deems appropriate for managing the sector, but must be removed prior to initiation of identification transfer.

REFERENCE–
FAAO JO 7110.65, Para 5–4–5, Transferring Controller Handoff, subpara b.

b. The en route fourth line data block area must be used for coordination purposes only in association with radar identified aircraft.

c. When automated information transfer (AIT) procedures are applied, en route fourth line usage for transfer of control information must be specifically defined within facility AIT directive.

REFERENCE–
FAAO JO 7110.65, Para 5–4–8, Automated Information Transfer (AIT).
FAAO JO 7210.3, Para 4–3–8, Automated Information Transfer (AIT).

d. Coordination format for assigned headings must use the designation character “H” preceding a three−digit number.

EXAMPLE−
H080, H270

e. Aircraft assigned a heading until receiving a fix or joining a published route must be designated with assigned heading format followed by the fix or route.

EXAMPLE−
H080/ALB, 080/J121, PH/ALB

NOTE−
1. *The notation “PH” may be used to denote present heading.*

2. *The character “H” may be omitted as a prefix to the heading assignment only if necessary due to character field limitations, and it does not impede understanding.*

f. Coordination format for weather deviations must use the designated characters:
D-deviation
L-left
R-right
N-north
E-east
S-south
W-west
/F – direct next NAVAID/waypoint
D+2 headings – deviate between.

NOTE−
1. *Two digits specify turns in degrees and must include direction character(s). Three digits specify heading(s).*

2. *The inclusion of a /NAVAID, /waypoint, or /F indicates that the pilot has been authorized to deviate for weather and must rejoin the route at the next NAVAID, waypoint, or fix in the route of flight in accordance with the phraseology in paragraph 2-6-4.*

EXAMPLE−
D90/ATL, DL/KD75U, D090/F

3. *The absence of a NAVAID, waypoint, or /F indicates that the pilot has been authorized to deviate for weather only, and the receiving controller must provide a clearance to rejoin the route in accordance with paragraph 2-1-15c.*

EXAMPLE−
DN, D20L, D30R, D080+120

g. Coordination format for assigned airspeeds must use the designation character “S” preceding a three−digit number.

NOTE−
A “+” notation may be added to denote an assigned speed at or greater than the displayed value. A “−” notation may be added to denote an assigned speed at or less than the displayed value.

EXAMPLE−
S210, S250, S250+, S280−

h. Aircraft assigned a Mach number must use the designation “M” preceding the two−digit assigned value.

EXAMPLE−
M80, M80+, M80−

REFERENCE−
*FAAO JO 7110.65, Para 5−4−**1**, En Route Fourth Line Data Block Usage, subpara gNOTE.*

i. Aircraft authorized to conduct celestial navigation training within 30 NM of the route centerline specified within the en route clearance.

EXAMPLE−
CELNAV

j. Coordination format for aircraft requesting an altitude change must use the designation characters “RQ” preceding a three−digit number.

EXAMPLE−
RQ170, RQ410

k. Coordination format for aircraft requesting a route change must use the designation “RQ/” preceding a specific fix identifier.

EXAMPLE−
RQ/LAX, RQ/NEUTO

l. The acceptance of a handoff by the receiving controller must constitute receipt of the information contained within the en route fourth line data block. It is the responsibility of the receiving controller to advise the transferring controller if any information is not understood, or needs to be revised.

NOTE−
Due to system and character limitations the usage of these standardized entries may require additional support via facility directive in order to provide complete coordination.

m. All other control information must be coordinated via other methods.

d. Instructions to do one of the following:

NOTE–
The principal purpose of this paragraph is to ensure that frequency changes are made prior to passing the final approach fix. However, at times it will be desirable to retain an aircraft on the approach control frequency to provide a single-frequency approach or other radar services. When this occurs, it will be necessary to relay tower clearances or instructions to preclude changing frequencies prior to landing or approach termination.

1. Monitor local control frequency, reporting to the tower when over the approach fix.

2. Contact the tower on local control frequency.

REFERENCE–
FAAO JO 7110.65, Para 4–8–8 Communications Release.

3. Contact the final controller on the appropriate frequency if radar service will be provided on final on a different frequency.

REFERENCE–
FAAO JO 7110.65, Para 5–10–8 Final Controller Changeover.

4. When radar is used to establish the final approach fix, inform the pilot that after being advised that he/she is over the fix he/she is to contact the tower on local control frequency.

EXAMPLE–
"Three miles from final approach fix. Turn left heading zero one zero. Maintain two thousand until established on the localizer. Cleared I–L–S runway three six approach. I will advise when over the fix."

"Over final approach fix. Contact tower one one eight point one."

NOTE–
ARSR may be used for establishment of initial approach and intermediate approach fixes only. ASR must be used to establish the final approach fix.

REFERENCE–
FAAO JO 7110.65, Para 5–9–2 Final Approach Course Interception.
FAAO JO 7110.65, Para 5–9–7 Simultaneous Independent ILS/MLS Approaches– Dual & Triple.

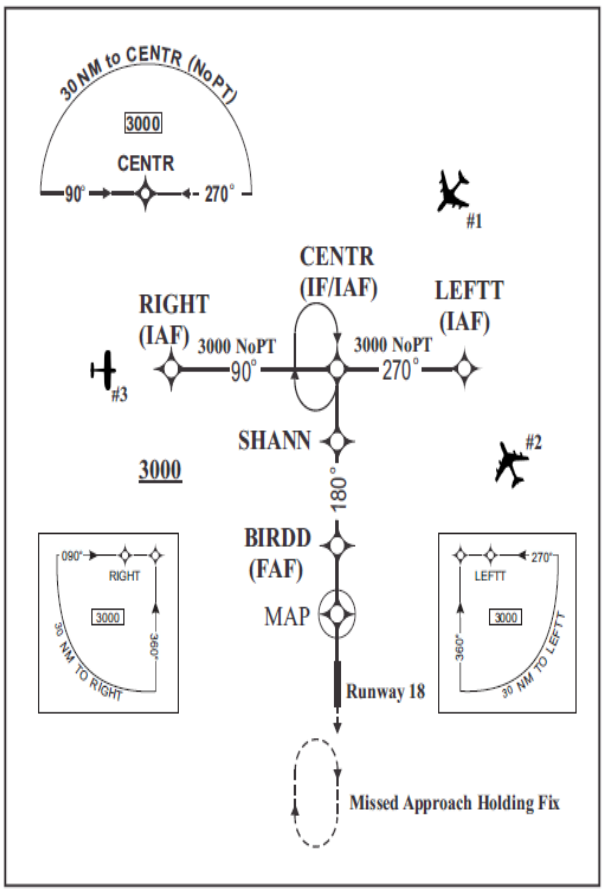
e. Where a Terminal Arrival Area (TAA) has been established to support RNAV approaches, inform the aircraft of its position relative to the appropriate IAF and issue the approach clearance. (See NO TAG.)

EXAMPLE–
1. *Aircraft 1: The aircraft is in the straight in area of the TAA. "Seven miles from CENTR, Cleared R–NAV Runway One Eight Approach."*

2. *Aircraft 2: The aircraft is in the left base area of the TAA. "One five miles from LEFTT, Cleared R-NAV Runway One Eight Approach."*

3. *Aircraft 3: The aircraft is in the right base area of the TAA. "Four miles from RIGHT, Cleared R-NAV Runway One Eight Approach."*

FIG 5–9–6
Basic "T" Design



5–9–5. APPROACH SEPARATION RESPONSIBILITY

a. The radar controller performing the approach control function is responsible for separation of radar arrivals unless visual separation is provided by the tower, or a letter of agreement/facility directive authorizes otherwise. Radar final controllers ensure that established separation is maintained between aircraft under their control and other aircraft established on the same final approach course.

NOTE–
The radar controller may be a controller in an ARTCC, a terminal facility, or a tower controller when authorized to perform the approach control function in a terminal area.

REFERENCE–
FAAO JO 7110.65, Para 2–1–19, Wake Turbulence.
FAAO JO 7110.65, Section 5, Radar Separation, Para 5–5–1, Application.
FAAO JO 7110.65, Para 7–2–1, Visual Separation.
FAAO JO 7110.65, Para 5–5–4, Minima.
FAAO JO 7210.3, Para 2–1–15, Authorization for Separation Services by Towers.

b. When timed approaches are being conducted, the radar controller must maintain the radar separation specified in para 6–7–5, Interval Minima, until the aircraft is observed to have passed the final approach fix inbound (nonprecision approaches) or the OM or the fix used in lieu of the outer marker (precision approaches) and is within 5 miles of the runway on the final approach course or until visual separation can be provided by the tower.

REFERENCE–
FAAO JO 7110.65, Para 5–4–6, Receiving Controller Handoff.
FAAO JO 7110.65, Para 5–9–2, Final Approach Course Interception.
FAAO JO 7110.65, Para 5–9–6, Parallel Dependent ILS/MLS Approaches.
FAAO JO 7110.65, Para 6–7–2, Approach Sequence.

5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

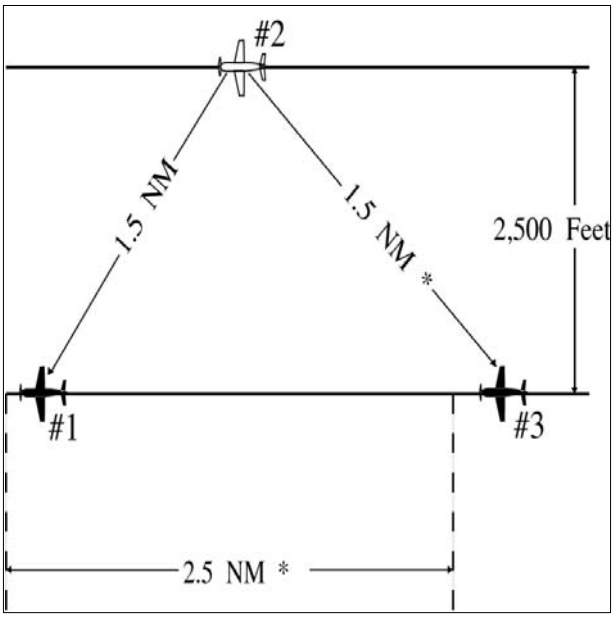
TERMINAL

a. Apply the following minimum separation when conducting simultaneous dependent approaches:

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn on.

2. Provide a minimum of 1.5 miles radar separation diagonally between successive aircraft on adjacent final approach courses when runway centerlines are at least 2,500 feet but no more than 4,300 feet apart.

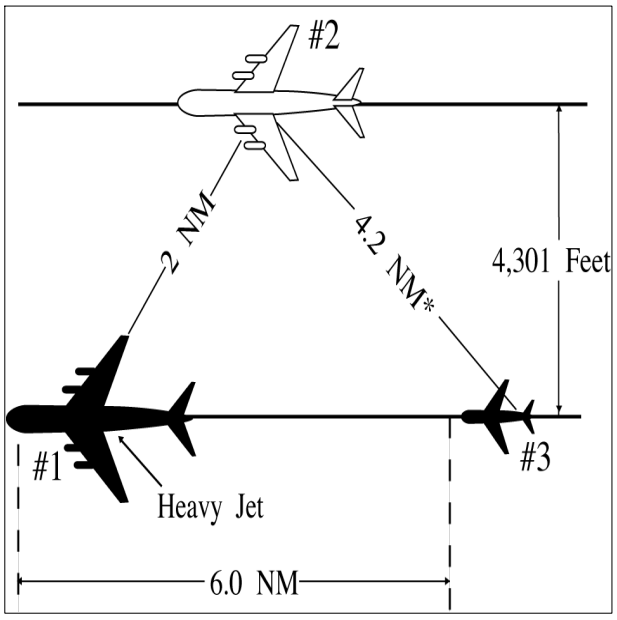
FIG 5–9–7
Simultaneous Dependent Approaches



EXAMPLE–
*In FIG 5-9-7, Aircraft 2 is 1.5 miles from Aircraft 1, and Aircraft 3 is 1.5 miles or more from Aircraft 2. *The resultant separation between Aircraft 1 and 3 is at least 2.5 miles.*

3. Provide a minimum of 2 miles radar separation diagonally between successive aircraft on adjacent final approach courses where runway centerlines are more than 4,300 feet but no more than 9,000 feet apart.

FIG 5–9–8
Simultaneous Dependent Approaches



EXAMPLE–
*In FIG 5-9-8, Aircraft 2 is 2 miles from heavy Aircraft 1. Aircraft 3 is a small aircraft and is 6 miles from Aircraft 1. *The resultant separation between Aircraft 2 and 3 is at least 4.2 miles.*

4. Provide the minimum applicable radar separation between aircraft on the same final approach course.

REFERENCE–
FAAO JO 7110.65, Section 5, Radar Separation, Para 5–5–4, Minima.

b. The following conditions are required when applying the minimum radar separation on adjacent final approach courses allowed in subparagraph a:

NOTE–
1. *Simultaneous dependent approaches involving an RNAV approach may only be conducted when (GPS) appears in the approach title or a chart note states that GPS is required.*

2. *Simultaneous dependent approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches to adjacent runways.*

1. Apply this separation standard only after aircraft are established on the parallel final approach course.

2. Straight-in landings will be made.

3. Missed approach procedures do not conflict.

4. Aircraft are informed that approaches to both runways are in use. This information may be provided through the ATIS.

5. Approach control must have the interphone capability of communicating directly with the local controller at locations where separation responsibility has not been delegated to the tower.

NOTE–
The interphone capability is an integral part of this procedure when approach control has the sole separation responsibility.

REFERENCE–
FAAO JO 7110.65, Para 5–9–5, Approach Separation Responsibility.
FAAO JO 7210.3, Para 2–1–15, Authorization for Separation Services by Towers.

c. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight, such as surface wind direction and velocity, wind shear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5–9–2, Final Approach Course Interception.

5–9–7. SIMULTANEOUS INDEPENDENT APPROACHES– DUAL & TRIPLE

TERMINAL

a. Apply the following minimum separation when conducting simultaneous independent approaches:

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn-on to parallel final approach.

NOTE–
1. *During triple parallel approaches, no two aircraft will be assigned the same altitude during turn-on. All three aircraft will be assigned altitudes which differ by a minimum of 1,000 feet. Example: 3,000, 4,000, 5,000; 7,000, 8,000, 9,000.*

2. *Communications transfer to the tower controller's frequency must be completed prior to losing vertical separation between aircraft.*

2. Dual parallel runway centerlines are at least 4,300 feet apart.

3. Triple parallel runway centerlines are at least 5,000 feet apart and the airport field elevation is less than 1,000 feet MSL.

4. A high-resolution color monitor with alert algorithms, such as the final monitor aid or that required in the precision runway monitor program must be used to monitor approaches where:

(a) Triple parallel runway centerlines are at least 4,300 but less than 5,000 feet apart and the airport field elevation is less than 1,000 feet MSL.

(b) Triple parallel approaches to airports where the airport field elevation is 1,000 feet MSL or more require the high resolution color monitor with alert algorithms and an approved FAA aeronautical study.

5. Provide the minimum applicable radar separation between aircraft on the same final approach course.

REFERENCE–
FAAO JO 7110.65, Para 5–5–4, Minima.

b. The following conditions are required when applying the minimum separation on adjacent dual or triple final approach courses allowed in subparagraph a:

NOTE–
Simultaneous independent approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches to adjacent runways.

REFERENCE–
FAAO JO 7210.3, Para 10-4-6, Simultaneous Approaches (Dependent/Independent)

1. Straight-in landings will be made.

2. All appropriate communication, navigation, and surveillance systems are operating normally.

3. Inform aircraft that simultaneous independent approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.

4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

5. An NTZ at least 2,000 feet wide is established an equal distance between extended runway final approach courses and must be depicted on the monitor display. The primary responsibility for navigation on the final approach course rests with the pilot. Control instructions and information are issued only to ensure separation between aircraft and to prevent aircraft from penetrating the NTZ.

6. Monitor all approaches regardless of weather. Monitor local control frequency to receive any aircraft transmission. Issue control instructions as necessary to ensure aircraft do not enter the NTZ.

NOTE–
1. *Separate monitor controllers, each with transmit/receive and override capability on the local control frequency, must ensure aircraft do not penetrate the depicted NTZ. Facility directives must define responsibility for providing the minimum applicable longitudinal separation between aircraft on the same final approach course.*

2. *The aircraft is considered the center of the primary radar return for that aircraft, or, if an FMA or other color final monitor aid is used, the center of the digitized target of that aircraft, for the purposes of ensuring an aircraft does not penetrate the NTZ. The provisions of para 5–5–2, Target Separation, apply also.*

c. The following procedures must be used by the final monitor controllers:

1. Instruct the aircraft to return to the correct final approach course when aircraft are observed to overshoot the turn-on or to continue on a track which will penetrate the NTZ.

PHRASEOLOGY–
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO THE FINAL APPROACH COURSE,
or
TURN (left/right) AND RETURN TO THE FINAL APPROACH COURSE.

2. Instruct aircraft on the adjacent final approach course to alter course to avoid the deviating aircraft when an aircraft is observed penetrating or in the controller's judgment will penetrate the NTZ.

PHRASEOLOGY–
TRAFFIC ALERT, (call sign), TURN (right/left) IMMEDIATELY HEADING (degrees), CLIMB AND MAINTAIN (altitude).

3. Terminate radar monitoring when one of the following occurs:

(a) Visual separation is applied.

(b) The aircraft reports the approach lights or runway in sight.

(c) The aircraft is 1 mile or less from the runway threshold, if procedurally required and contained in facility directives.

4. Do not inform the aircraft when radar monitoring is terminated.

5. Do not apply the provisions of Paragraph 5-13-1, Monitor on PAR Equipment, for simultaneous independent approaches.

d. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when simultaneous independent approaches are being conducted to parallel runways. Factors include, but are not limited to, wind direction/velocity, windshear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5–1–13, Radar Service Termination.
FAAO JO 7110.65, Para 5–9–2, Final Approach Course Interception.

5–9–8. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES – HIGH UPDATE RADAR

TERMINAL

Simultaneous close parallel approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches to adjacent runways.

a. Authorize simultaneous independent close parallel approaches to dual runways with centerlines separated by at least 3,000 feet with one final approach course offset by 2.5 degrees using a precision runway monitor system with a 1.0 second radar update system and when centerlines are separated by 3,400 to 4,300 feet when precision runway monitors are utilized with a radar update rate of 2.4 seconds or less; and

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn-on to parallel final approach.

NOTE–
Communications transfer to the tower controller's frequency must be completed prior to losing vertical separation between aircraft.

2. Provide the minimum applicable radar separation between aircraft on the same final approach course.

REFERENCE–
FAAO JO 7110.65, Para 5–5–4, Minima.

b. The following conditions are required when applying the minimum separation on dual final approach courses allowed in subparagraph a:

1. Straight-in landings will be made.

2. All appropriate communication, navigation, and surveillance systems are operating normally.

3. Inform aircraft that closely-spaced simultaneous approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.

4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

5. An NTZ at least 2,000 feet wide is established an equal distance between extended runway final approach courses and must be depicted on the monitor display. The primary responsibility for navigation on the final approach course rests with the pilot. Control instructions and information are issued only to ensure separation between aircraft and to prevent aircraft from penetrating the NTZ.

6. Monitor all approaches regardless of weather. Monitor local control frequency to receive any aircraft transmission. Issue control instructions as necessary to ensure aircraft do not enter the NTZ.

7. Separate monitor controllers, each with transmit/receive and override capability on the local control frequency, must ensure aircraft do not penetrate the depicted NTZ. Facility directives must define the responsibility for providing the minimum applicable longitudinal separation between aircraft on the same final approach course.

NOTE–
The aircraft is considered the center of the digitized target for that aircraft for the purposes of ensuring an aircraft does not penetrate the NTZ.

c. The following procedures must be used by the final monitor controllers:

1. A controller must provide position information to an aircraft that is (left/right) of the

depicted localizer centerline, and in their opinion is continuing on a track that may penetrate the NTZ.

PHRASEOLOGY–
(Aircraft call sign) I SHOW YOU (left/right) OF THE FINAL APPROACH COURSE.

2. Instruct the aircraft to return immediately to the correct final approach course when aircraft are observed to overshoot the turn-on or continue on a track which will penetrate the NTZ.

PHRASEOLOGY–
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO THE FINAL APPROACH COURSE.
or
TURN (left/right) AND RETURN TO THE FINAL APPROACH COURSE.

3. Instruct aircraft on the adjacent final approach course to alter course to avoid the deviating aircraft when an aircraft is observed penetrating or in the controller's judgment will penetrate the NTZ.

NOTE–
An instruction that may include a descent to avoid the deviating aircraft should only be used when there is no other reasonable option available to the controller. In such a case, the descent must not put the aircraft below the MVA.

PHRASEOLOGY–
TRAFFIC ALERT, (call sign), TURN (left/right) IMMEDIATELY HEADING (DEGREES), CLIMB AND MAINTAIN (altitude).

4. Terminate radar monitoring when one of the following occurs:

(a) Visual separation is applied.

(b) The aircraft reports the approach lights or runway in sight.

(c) The aircraft has landed or, in the event of a missed approach, is one-half mile beyond the departure end of the runway.

5. Do not inform the aircraft when radar monitoring is terminated.

6. Do not apply the provisions of Paragraph 5-13-1, Monitor on PAR Equipment, for closely-spaced simultaneous approaches.

d. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when closely-spaced simultaneous approaches are being conducted to parallel runways. Factors include, but are not limited to, wind direction/velocity, windshear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of the approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5–1–13, Radar Service Termination.
FAAO JO 7110.65, Para 5–9–2, Final Approach Course Interception.

5–9–9. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES – HIGH UPDATE RADAR NOT REQUIRED.

TERMINAL

a. Simultaneous close parallel approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches to parallel runways.

b. Apply the following minimum separation when conducting simultaneous independent close parallel approaches:

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn-on to parallel final approach courses.

NOTE–
Communications transfer to the tower controller's frequency will be completed prior to losing vertical separation between aircraft.

2. Parallel runway centerlines are separated by a minimum of 3,600 feet or more, and the airport elevation is less than 2,000 feet MSL.

3. Provide the minimum applicable radar separation between aircraft on the same final approach course.

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

c. A high-resolution color monitor with alert algorithms, such as the final monitor aid, must be used to monitor close parallel approaches.

d. The following conditions are required when applying the minimum separation on parallel final approach courses allowed in subparagraph a:

1. Straight-in landings will be made.

2. All appropriate communication, navigation, and surveillance systems are operating normally.

3. Inform aircraft that simultaneous closely spaced approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.

4. Clear the aircraft to descend to the appropriate glideslope intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

NOTE–
Not applicable to curved and segmented approaches.

5. A NTZ at least 2,000 feet wide is established an equal distance between extended runway final approach courses and must be depicted on the monitor display. The primary responsibility for navigation on the final approach course rests with the pilot. Control instructions and information are issued only to ensure separation between aircraft and to prevent aircraft from penetrating the NTZ.

6. Monitor all approaches regardless of weather. Monitor local control frequency to receive any aircraft transmission. Issue control instructions as necessary to ensure aircraft do not enter the NTZ.

NOTE–
1. *Separate monitor controllers, each with transmit/receive and override capability on the local control frequency, will ensure aircraft do not penetrate the depicted NTZ. Facility directives must define responsibility for providing the minimum applicable longitudinal separation between aircraft on the same final approach course.*

2. *The aircraft is considered the center of the primary radar return for that aircraft, or, if an FMA or other color final monitor aid is used, the center of the digitized target of that aircraft, for the purposes of ensuring an aircraft does not penetrate the NTZ. The provisions of Paragraph 5-5-2, Target Separation, also apply.*

e. The following procedures must be used by the final monitor controllers:

1. Instruct the aircraft to return to the correct final approach course when aircraft are observed to overshoot the turn-on or to continue on a track that will penetrate the NTZ.

PHRASEOLOGY–
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO THE FINAL APPROACH COURSE,

or

TURN (left/right) AND RETURN TO THE FINAL APPROACH COURSE.

2. Instruct aircraft on the adjacent final approach course to alter course to avoid the deviating aircraft when an aircraft is observed penetrating or in the controller's judgment will penetrate the NTZ.

PHRASEOLOGY–
TRAFFIC ALERT, (call sign), TURN (right/left) IMMEDIATELY HEADING (degrees), CLIMB AND MAINTAIN (altitude).

3. Terminate radar monitoring when one of the following occurs:

(a) Visual separation is applied.

(b) The aircraft reports the approach lights or runway in sight.

(c) The aircraft is 1 mile or less from the runway threshold, if procedurally required, and contained in facility directives.

4. Do not inform the aircraft when radar monitoring is terminated.

5. Do not apply the provisions of Paragraph 5-13-1, Monitor on PAR Equipment, for simultaneous independent close parallel approaches.

f. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when simultaneous independent close parallel approaches are being conducted to parallel runways. Factors include, but are not limited to, wind direction/velocity, wind-shear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5-1-13, Radar Service Termination.
FAAO JO 7110.65, Para 5-9-2, Final Approach Course Interception.

5–9–10. SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA)– HIGH UPDATE RADAR

TERMINAL

a. Simultaneous offset independent approaches SOIA may be conducted at FAA designated airports that have an authorization issued by the Director, Terminal Operations, Headquarters, in coordination with AFS with parallel runways that have centerlines

separated by less than 3,000 feet with one final approach course offset by 2.5 to 3.0 degrees using a high update rate surveillance system with a 1.0−second radar update; and

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn−on to final approaches.

NOTE−
Communications transfer to the tower controller's frequency must be completed prior to losing vertical separation between aircraft.

2. Provide the minimum applicable radar separation between aircraft on the same final approach course.

3. Provide the minimum applicable radar separation between the trailing offset aircraft of a leading SOIA pair and the lead straight-in aircraft in the subsequent SOIA pair when the parallel runways have centerlines separated by less than 2,500 feet.

REFERENCE−
FAAO JO 7110.65, Para 5−5−4, Minima.

b. The following conditions are required when applying the minimum separation between lead straight-in and offset trailing approaches with glideslope courses or vertical navigation authorized in subparagraph a above:

1. Straight−in landings will be made.

2. All appropriate communication, navigation, and surveillance systems are operating normally.

3. Inform aircraft that closely spaced simultaneous approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.

4. Clear the aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

NOTE−
Not applicable to curved and segmented MLS approaches.

5. A No Transgression Zone (NTZ) at least 2,000 feet wide is established an equal distance between extended runway final approach courses and must be depicted on the monitor display. The NTZ begins prior to the point where adjacent inbound aircraft first lose vertical separation and extends to a point coincident with the location of the offset approach MAP. The primary responsibility for navigation on the final approach course rests with the pilot. Control instructions and information are issued only to ensure separation between aircraft and to prevent aircraft from penetrating the NTZ.

6. Monitor all approaches regardless of weather. Monitor local control frequency to receive any aircraft transmission. Issue control instructions as necessary to ensure aircraft do not enter the NTZ.

7. Separate monitor controllers, each with transmit/receive and override capability on the local control frequency, must ensure aircraft do not penetrate the depicted NTZ. Facility directives must define the responsibility for providing the minimum applicable longitudinal separation between aircraft on the same final approach course and the minimum applicable longitudinal separation between the trailing offset aircraft of a leading SOIA pair and the lead straight in aircraft in the subsequent SOIA pair when the parallel runways have centerlines separated by less than 2,500 feet.

NOTE−
The aircraft is considered the center of the digitized target for that aircraft for the purposes of ensuring an aircraft does not penetrate the NTZ.

c. The following procedures must be used by the final monitor controllers:

1. A controller must provide position information to an aircraft that is (left/right) of the depicted final approach course centerline, and in their opinion is continuing on a track that may penetrate the NTZ.

PHRASEOLOGY−
(Aircraft call sign) I SHOW YOU (left/right) OF THE FINAL APPROACH COURSE.

2. Instruct the aircraft to return immediately to the correct final approach course when aircraft are observed to overshoot the turn−on or continue on a track which will penetrate the NTZ.

PHRASEOLOGY−
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO FINAL APPROACH COURSE.

or

TURN (left/right) AND RETURN TO THE LOCALIZER/AZIMUTH COURSE.

3. Instruct aircraft on the adjacent final approach course to alter course to avoid the deviating aircraft when an aircraft is observed penetrating or in the controller's judgment will penetrate the NTZ.

NOTE–
An instruction that may include a descent to avoid the deviating aircraft should only be used when there is no other reasonable option available to the controller. In such a case, the descent must not put the aircraft below the MVA.

PHRASEOLOGY–
TRAFFIC ALERT, (call sign), TURN (left/right) IMMEDIATELY HEADING (DEGREES), CLIMB AND MAINTAIN (altitude).

4. Terminate radar monitoring when one of the following occurs:

(a) The lead straight in aircraft passes the end of the NTZ nearest the runway threshold.

(b) The trailing offset aircraft passes the end of the NTZ nearest the runway threshold and has reported the lead straight in aircraft in sight.

(c) The aircraft begins the visual segment of the approach.

5. Do not inform the aircraft when radar monitoring is terminated.

6. Do not apply the provisions of paragraph 5-13-1, Monitor on PAR Equipment, for closely-spaced simultaneous approaches.

d. Advise the pilot of the trailing offset aircraft of traffic on the adjacent lead straight-in approach course, if that traffic will be a factor in the visual segment of the approach. The provisions of Paragraphs 7-2-1, Visual Separation, subparagraph a2, concerning visual separation between aircraft being provided by the tower must not be applied to aircraft conducting SOIAs.

NOTE–
Once advised, the pilot is authorized to continue past the offset approach MAP if all of the following conditions are met: The pilot has the straight-in approach traffic in sight and expects the traffic to remain in sight; the pilot advises ATC that the traffic is in sight; and the pilot has the runway environment in sight. Otherwise, it is the pilot's responsibility to execute a missed approach at the offset approach MAP.

e. Ensure that the trailing offset aircraft is positioned to facilitate the flight crew's ability to see the lead straight in traffic from the nominal clear-of-clouds point to the offset approach MAP so that the flight crew can remain separated from that traffic visually from the offset approach MAP to the runway threshold.

NOTE–
After accepting a clearance for an offset PRM approach, pilots must remain on the offset approach course until passing the offset approach MAP prior to alignment with the runway centerline. Between the offset approach MAP and the runway threshold, the pilot of the offset approach aircraft assumes visual separation responsibility from the aircraft on the straight-in approach, which means maneuvering the aircraft as necessary to avoid the straight in approach traffic until landing, and providing wake turbulence avoidance, if necessary.

f. In the visual segment between the offset approach MAP and the runway threshold, if the pilot of the trailing offset aircraft loses visual contact with the lead straight-in traffic, the pilot must advise ATC as soon as practical and follow the published missed approach procedure. If necessary, issue alternate missed approach instructions.

g. Wake turbulence requirements between aircraft on adjacent final approach courses inside the offset approach MAP are as follows (standard in-trail wake separation must be applied between aircraft on the same approach course):

1. When runways are at least 2,500 feet apart, there are no wake turbulence requirements between aircraft on adjacent final approach courses.

2. For runways less than 2,500 feet apart, whenever the ceiling is greater than or equal to 500 feet above the MVA, wake vortex spacing between aircraft on adjacent final approach courses need not be applied.

3. For runways less than 2,500 feet apart, whenever the ceiling is less than 500 feet above the MVA, wake vortex spacing between aircraft on adjacent final approach courses, as described in para 5–5–4, Minima, must be applied unless acceptable mitigating techniques and operational procedures have been documented and verified by an AFS safety assessment and authorized by Director, Terminal Safety and Operations Support. The wake turbulence mitigation techniques employed will be based on each airport's specific runway geometry and meteorological conditions and implemented through local facility directives.

4. Issue all applicable wake turbulence advisories.

REFERENCE–
FAAO JO 8260.49, Para 13.0, Wake Turbulence Requirements.
FAAO JO 7210.3, Para 10–4–6, Simultaneous ILS/MLS Approaches.
FAAO JO 7110.65, Para 2–1–20, Wake Turbulence Cautionary Advisories.
FAAO JO 7110.65, Para 5–5–4, Minima.

h. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when conducting SOIA to parallel runways. Factors include but are not limited to wind direction/velocity, wind–shear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of the approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5–1–13, Radar Service Termination.
FAAO JO 7110.65, Para 5–9–2, Final Approach Course Interception.

5–9–11. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS

Simultaneous independent approaches to widely-spaced parallel runways may only be conducted where instrument approach charts specifically authorize simultaneous approaches to adjacent runways.

TERMINAL

a. Apply the following minimum separation when conducting simultaneous independent approaches to runway centerlines that are separated by more than 9,000 feet with a field elevation at or below 5,000 feet MSL, or 9,200 feet between runway centerlines with a field elevation above 5,000 feet MSL:

1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft during turn-on to parallel final approach.

2. Provide the minimum applicable radar separation between aircraft on the same final approach course.

REFERENCE–
FAAO JO 7110.65, para 5-5-4, Minima.

b. The following conditions are required when applying the minimum separation on widely–spaced parallel courses allowed in subpara a:

1. Straight-in landings will be made.

2. The approach system, radar, and appropriate frequencies are operating normally.

3. Inform aircraft that simultaneous approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.

4. Clear an aircraft to descend to the appropriate glideslope/glidepath intercept altitude soon enough to provide a period of level flight to dissipate excess speed. Provide at least 1 mile of straight flight prior to the final approach course intercept.

5. Separate final and local controllers are required for each final. Aircraft on the final must be on the appropriate final controller frequency for that runway.

6. Transfer of communication and monitor responsibility to the tower controller's frequency must be specified in a facility directive and/or Letter of Agreement.

c. The following procedures must be used by the final approach controllers:

NOTE–
There is no requirement for the establishment of a NTZ.

1. Instruct the aircraft to return to the correct final approach course when that aircraft is observed to overshoot the turn-on or continue on a track which deviates from the final approach course in the direction of the adjacent approach course.

PHRASEOLOGY–
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO LOCALIZER/AZIMUTH COURSE,
or
TURN (left/right) AND RETURN TO THE LOCALIZER/AZIMUTH COURSE.

2. Instruct aircraft on adjacent final approach course to alter course to avoid the deviating aircraft when an aircraft is observed, or in the controller's judgment, has deviated from the final approach course in the direction of the adjacent approach course.

PHRASEOLOGY–
TRAFFIC ALERT, (call sign), TURN (left/right) IMMEDIATELY HEADING (degrees), CLIMB AND MAINTAIN (altitude)

3. Terminate radar monitoring when one of the following occurs:

(a) Visual separation is applied.

(b) The aircraft reports the approach lights or runway in sight.

(c) The aircraft is 1 mile or less from the runway threshold, if procedurally required, and contained in facility directives.

4. Do not inform the aircraft when radar monitoring is terminated.

d. Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when simultaneous approaches are being conducted to parallel runways. Factors include, but are not limited to, wind direction/velocity, wind-shear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of approach in use.

REFERENCE–
FAAO JO 7110.65, Para 5-1-13, Radar Service Termination.
FAAO JO 7110.65, Para 5-9-2, Final Approach Course Interception.

Section 5. Special VFR (SVFR)

7–5–1. AUTHORIZATION

a. SVFR operations in weather conditions less than basic VFR minima are authorized:

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

1. At any location not prohibited by 14 CFR Part 91, Appendix D or when an exemption to 14 CFR Part 91 has been granted and an associated LOA established. 14 CFR Part 91 does not prohibit SVFR helicopter operations.

2. Only within the lateral boundaries of Class B, Class C, Class D, or Class E surface areas, below 10,000 feet MSL.

3. Only when requested by the pilot.

4. On the basis of weather conditions reported at the airport of intended landing/departure.

REFERENCE–
FAAO JO 7110.65, Para 7–5–6 Climb to VFR.
FAAO JO 7110.65, Para 7–5–7 Ground Visibility Below One Mile.

5. When weather conditions are not reported at the airport of intended landing/departure and the pilot advises that VFR cannot be maintained and requests SVFR.

PHRASEOLOGY–
CLEARED TO ENTER/OUT OF/THROUGH, (name) SURFACE AREA

and if required,

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

MAINTAIN SPECIAL V–F–R CONDITIONS,

and if required,

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

or as applicable under an exemption from 14 CFR Part 91,

CLEARED FOR (coded arrival or departure procedure) ARRIVAL/DEPARTURE, (additional instructions as required).

REFERENCE–
FAAO JO 7110.65, Para 2–4–22 Airspace Classes.

b. SVFR operations may be authorized for aircraft operating in or transiting a Class B, Class C, Class D, or Class E surface area when the primary airport is reporting VFR but the pilot advises that basic VFR cannot be maintained.

NOTE–
The basic requirements for issuance of a SVFR clearance in subpara a apply with the obvious exception that weather conditions at the controlling airport are not required to be less than basic VFR minima.

7–5–2. PRIORITY

a. SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

EXAMPLE–
1. *A SVFR aircraft has been cleared to enter a Class B, Class C, Class D, or Class E surface area and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the SVFR aircraft is allowed to proceed to the airport and land, rather than leave, a Class B, Class C, Class D, or Class E surface area or be repositioned to provide IFR priority.*

2. *A SVFR aircraft is number one for takeoff and located in such a position that the number two aircraft, an IFR flight, cannot taxi past to gain access to the runway. Less overall delay might accrue to the IFR aircraft by releasing the SVFR departure rather than by having the aircraft taxi down the runway to a turnoff point so the IFR aircraft could be released first.*

NOTE–
The priority afforded IFR aircraft over SVFR aircraft is not intended to be so rigidly applied that inefficient use of airspace results. The controller has the prerogative of permitting completion of a SVFR operation already in progress when an IFR aircraft becomes a factor if better overall efficiency will result.

b. Inform an aircraft of the anticipated delay when a SVFR clearance cannot be granted because of IFR traffic. Do not issue an EFC or expected departure time.

PHRASEOLOGY–
EXPECT (number) MINUTES DELAY, (additional instructions as necessary).

REFERENCE–
FAAO JO 7110.65, Para 2–1–4 Operational Priority.
FAAO JO 7110.65, Para 5–6–1 Application.

7–5–3. SEPARATION

a. Apply non-radar or visual separation between:

1. SVFR fixed wing aircraft.

2. SVFR fixed-wing aircraft and SVFR Helicopters.

3. SVFR fixed-wing aircraft and IFR aircraft.

NOTE–
1. *Vertical separation is authorized between SVFR fixed wing aircraft and IFR aircraft as prescribed in FAA JO 7110.65, Paragraph 7-5-4 Altitude Assignments*

2. *Due to the requirements for SVFR fixed-wing aircraft to maintain 1-mile flight visibility and to remain clear of clouds, radar separation is not authorized during SVFR fixed-wing operations. Radar vectors are authorized, as prescribed in para 5-6-1, Application, subparagraph f, to expedite the entrance, exit, and transition of SVFR fixed-wing aircraft through the appropriate surface area.*

REFERENCE–
FAAO JO 7110.65, Chapter 6, Nonradar
FAAO JO 7110.65, para 7-2-1 Visual Separation
FAAO JO 7110.65, para 7-5-4 Altitude Assignment

b. Apply non-radar, visual, or IFR radar separation between:

1. SVFR Helicopters.

2. SVFR Helicopters and IFR aircraft.

NOTE–
1. *Vertical separation is authorized between SVFR helicopters and IFR aircraft as prescribed in FAA JO 7110.65, Paragraph 7-5-4 Altitude Assignments*

2. *Radar separation as prescribed in Chapter 5 may be applied provided that the facility conducting the operation is authorized to provide radar separation services in accordance with FAAO 7210.3, paragraph 10-5-3, Functional Use of Certified Tower Radar Displays (CTRD), subparagraph b5, and subparagraph d. Facilities that are not delegated airspace or separation responsibility must use CTRDs in accordance with FAAO 7110.65, paragraph 3-1-9, Use of Tower Radar Displays, subparagraph b.*

c. Alternate SVFR helicopter separation minima may be established when warranted by the volume and/or complexity of local helicopter operations. Alternate SVFR helicopter separation minima must be established with an LOA with the helicopter operator which must specify, as a minimum, that SVFR helicopters are to maintain visual reference to the surface and adhere to the following aircraft separation minima:

1. Between a SVFR helicopter and an arriving or departing IFR aircraft:

(a) $^1/_2$ mile. If the IFR aircraft is less than 1 mile from the landing airport.

(b) 1 mile. If the IFR aircraft is 1 mile or more from the airport.

2. 1 mile between SVFR helicopters. This separation may be reduced to 200 feet if:

(a) Both helicopters are departing simultaneously on courses that diverge by at least 30 degrees and:

(1) The tower can determine this separation by reference to surface markings; or

(2) One of the departing helicopters is instructed to remain at least 200 feet from the other.

NOTE–
1. *Vertical separation is authorized between SVFR helicopters and IFR aircraft as prescribed in FAAO 7110.65, 7-5-4, Altitude Assignments.*

2. *Radar separation as prescribed in Chapter 5 may be applied provided that the facility conducting the operation is authorized to provide radar separation services in accordance with FAAO 7210.3, paragraph 10-5-3, Functional Use of Certified Tower Radar Displays (CTRD), subparagraph b5, and subparagraph d. Facilities that are not delegated airspace or separation responsibility must use CTRDs in accordance with FAAO 7110.65, paragraph 3-1-9, Use of Tower Radar Displays, subparagraph b.*

REFERENCE–
FAAO JO 7110.65, Para 2–1–4 Operational Priority.
FAAO JO 7110.65, para 7-2-1, Visual Separation
FAAO JO 7110.65, para 7-5-4 Altitude Separation
FAAO JO 7110.65, Chapter 6, Nonradar
FAAO JO 7210.3, para 10-5-3, Functional Use of Certified Tower Radar Displays

7–5–4. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the SVFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the MSA prescribed in 14 CFR Section 91.119.

PHRASEOLOGY–
MAINTAIN SPECIAL V–F–R CONDITIONS AT OR BELOW (altitude).

NOTE–
1. *SVFR aircraft are not assigned fixed altitudes to*

maintain because of the clearance from clouds requirement.

2. *The MSAs are:*

(a) Over congested areas, an altitude at least 1,000 feet above the highest obstacle, and

(b) Over other than congested areas, an altitude at least 500 feet above the surface.

(c) Helicopters may be operated at less than the minimum altitudes prescribed in (a) and (b) above.

REFERENCE–
FAAO JO 7110.65, Para 2–1–4 Operational Priority.
FAAO JO 7110.65, Para 5–6–1 Application.
14 CFR Section 91.119, Minimum Safe Altitudes: General.

7–5–5. LOCAL OPERATIONS

a. Authorize local SVFR operations for a specified period (series of landings and takeoffs, etc.) upon request if the aircraft can be recalled when traffic or weather conditions require. Where warranted, LOAs may be consummated.

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

REFERENCE–
FAAO JO 7210.3, Para 4–3–2, Appropriate Subjects.

b. Control facilities may also authorize an FSS to transmit SVFR clearances so that only one aircraft at a time operates in the Class B, Class C, Class D, or Class E surface areas unless pilots agree that they will maintain visual separation with other aircraft operating in the Class B, Class C, Class D, or Class E surface areas. Such authorization concerning visual separation by pilots must be contained in a LOA between the control facility and the FSS.

REFERENCE–
FAAO JO 7210.3, Para 4–3–3, Developing LOA.
FAAO JO 7110.65, Para 2–1–4 Operational Priority.

7–5–6. CLIMB TO VFR

Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

PHRASEOLOGY–
CLIMB TO V–F–R WITHIN (name) SURFACE AREA/WITHIN (a specified distance) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V–F–R CONDITIONS UNTIL REACHING V–F–R.

REFERENCE–
FAAO JO 7110.65, Para 2–1–4 Operational Priority.
FAAO JO 7110.65, Para 2–4–22 Airspace Classes.
FAAO JO 7110.65, Para 7–5–1 Authorization.

7–5–7. GROUND VISIBILITY BELOW ONE MILE

14 CFR Part 91 does not prohibit helicopter SVFR flight when the visibility is less than 1 mile. Treat requests for SVFR fixed wing operations as follows when the ground visibility is officially reported at an airport as less than 1 mile:

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

b. Inform arriving aircraft, operating outside of a Class B, Class C, Class D, or Class E surface area, that ground visibility is less than 1 mile and that, unless an emergency exists, a clearance cannot be issued.

c. Inform arriving aircraft, operating VFR/SVFR within a Class B, Class C, Class D, or Class E surface area, that ground visibility is less than 1 mile and request the pilot to advise intentions.

PHRASEOLOGY–
(Name of airport) VISIBILITY LESS THAN ONE MILE. ADVISE INTENTIONS.

NOTE–
Clear an aircraft to land at an airport with an operating control tower, traffic permitting, if the pilot reports the airport in sight. The pilot is responsible to continue to the airport or exit the surface area. 14 CFR Section 91.157 prohibits VFR aircraft (other than helicopters) from landing at any airport within a surface area when ground visibility is less than 1 mile. A pilot could inadvertently encounter conditions that are below SVFR minimums after entering a surface area due to rapidly changing weather. The pilot is best suited to determine the action to be taken since pilots operating under SVFR between sunrise and sunset are not required to be instrument rated, and the possibility exists that flight visibility may not be the same as ground visibility. 14 CFR Section 91.3 authorizes a pilot encountering an inflight emergency requiring immediate action to deviate from any rule of 14 CFR Part 91 to the extent required to meet that emergency. Flight into adverse weather conditions may require the pilot to execute the emergency authority granted in 14 CFR Section 91.3 and continue inbound to land.

d. Authorize scheduled air carrier aircraft in the U.S. to conduct operations if ground visibility is not less than $^{1}/_{2}$ statute mile.

NOTE–
14 CFR Part 121 permits landing or takeoff by domestic scheduled air carriers where a local surface restriction to visibility is not less than 1/2 statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be

accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of 14 CFR Part 121.

e. Clear an aircraft to fly through the Class B, Class C, Class D, or Class E surface area if the aircraft reports flight visibility is at least 1 statute mile.

REFERENCE–
FAAO JO 7110.65, Para 2–1–4 Operational Priority.
FAAO JO 7110.65, Para 7–5–1 Authorization.

7–5–8. FLIGHT VISIBILITY BELOW ONE MILE

Treat requests for SVFR fixed-wing operations as follows when weather conditions are not reported at an airport and the pilot advises the flight visibility is less than 1 mile:

NOTE–
14 CFR Part 91 prescribes the visibility for basic VFR and SVFR operations as the official reported ground visibility at airports where provided and landing or takeoff "flight visibility" where there is no official reported ground visibility.

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

b. Inform arriving aircraft operating outside of a Class B, Class C, Class D or Class E surface area that a clearance cannot be issued unless an emergency exists.

c. Request the intentions of an arriving aircraft operating within a Class B, Class C, Class D, or Class E surface area.

NOTE–
Clear an aircraft to land at an airport with an operating control tower, traffic permitting, if the pilot reports the airport in sight. The pilot is responsible to continue to the airport or exit the surface area. 14 CFR Section 91.157 prohibits VFR aircraft (other than helicopters) from landing at any airport within a surface area when flight visibility is less than 1 mile. A pilot could inadvertently encounter conditions that are below SVFR minimums after entering a surface area due to rapidly changing weather. The pilot is best suited to determine the action to be taken since pilots operating under SVFR between sunrise and sunset are not required to be instrument rated, and the possibility exists that flight visibility may not be the same as ground visibility. 14 CFR Section 91.3 authorizes a pilot encountering an inflight emergency requiring immediate action to deviate from any rule of 14 CFR Part 91 to the extent required to meet that emergency. Flight into adverse weather conditions may require the pilot to execute the emergency authority granted in 14 CFR Section 91.3 and continue inbound to land.

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

Section 9. Class B Service Area– Terminal

7–9–1. APPLICATION

Apply Class B services and procedures within the designated Class B airspace.

a. No person may operate an aircraft within Class B airspace unless:

1. The aircraft has an operable two-way radio capable of communications with ATC on appropriate frequencies for that Class B airspace.

2. The aircraft is equipped with the applicable operating transponder and automatic altitude reporting equipment specified in para (a) of 14 CFR Section 91.215, except as provided in para (d) of that section.

7–9–2. VFR AIRCRAFT IN CLASS B AIRSPACE

a. VFR aircraft must obtain an ATC clearance to operate in Class B airspace.

REFERENCE–
FAAO JO 7110.65, Para 2–1–18, Operational Requests.
FAAO JO 7110.65, Para 2–4–22, Airspace Classes.

PHRASEOLOGY–
CLEARED THROUGH/TO ENTER/OUT OF BRAVO AIRSPACE,

and as appropriate,

VIA (route). MAINTAIN (altitude) WHILE IN BRAVO AIRSPACE.

or

CLEARED AS REQUESTED.

(Additional instructions, as necessary.)

REMAIN OUTSIDE BRAVO AIRSPACE. (When necessary, reason and/or additional instructions.)

NOTE–
1. *Assignment of radar headings, routes, or altitudes is based on the provision that a pilot operating in accordance with VFR is expected to advise ATC if compliance will cause violation of any part of the CFR.*

2. *Separation and sequencing for VFR aircraft is dependent upon radar. Efforts should be made to segregate VFR traffic from IFR traffic flows when a radar outage occurs.*

b. Approve/deny requests from VFR aircraft to operate in Class B airspace based on workload, operational limitations and traffic conditions.

c. Inform the pilot when to expect further clearance when VFR aircraft are held either inside or outside Class B airspace.

d. Inform VFR aircraft when leaving Class B airspace.

PHRASEOLOGY–
LEAVING (name) BRAVO AIRSPACE,

and as appropriate,

RESUME OWN NAVIGATION, REMAIN THIS FREQUENCY FOR TRAFFIC ADVISORIES, RADAR SERVICE TERMINATED, SQUAWK ONE TWO ZERO ZERO.

7–9–3. METHODS

a. To the extent practical, clear large turbine engine-powered airplanes to/from the primary airport using altitudes and routes that avoid VFR corridors and airspace below the Class B airspace floor where VFR aircraft are operating.

NOTE–
Pilots operating in accordance with VFR are expected to advise ATC if compliance with assigned altitudes, headings, or routes will cause violation of any part of the CFR.

b. Vector aircraft to remain in Class B airspace after entry. Inform the aircraft when leaving and reentering Class B airspace if it becomes necessary to extend the flight path outside Class B airspace for spacing.

NOTE–
14 CFR Section 91.131 states that "Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport for which a Class B airspace area is designated must operate at or above the designated floors of the Class B airspace area while within the lateral limits of that area." Such authorization should be the exception rather than the rule.

REFERENCE–
FAAO JO 7110.65, Para 5–1–10, Deviation Advisories.

c. Aircraft departing controlled airports within Class B airspace will be provided the same services as those aircraft departing the primary airport.

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

7–9–4. SEPARATION

a. Standard IFR services to IFR aircraft.

b. VFR aircraft must be separated from VFR/IFR aircraft/ helicopter/rotorcraft that weigh more than 19,000 pounds and turbojets by no less than:

1. 1 $^{1}/_{2}$ miles separation, or

2. 500 feet vertical separation, or

NOTE–
Apply the provisions of paragraph 5–5–4, Minima, when wake turbulence separation is required.

3. Visual separation, as specified in paragraph 7–2–1, Visual Separation, paragraph 7–4–2, Vectors for Visual Approach, and paragraph 7–6–7, Sequencing.

NOTE–
Issue wake turbulence cautionary advisories in accordance with paragraph 2–1–20, Wake Turbulence Cautionary Advisories.

c. For the application of Class Bravo airspace separation requirements, the V-22 Osprey must be treated as a helicopter/rotorcraft.

d. VFR aircraft must be separated from all VFR/IFR aircraft which weigh 19,000 pounds or less by a minimum of:

1. Target resolution, or

NOTE–
When ISR is being displayed, target resolution is prohibited.

2. 500 feet vertical separation, or

NOTE–
1. *Apply the provisions of para 5–5–4, Minima, when wake turbulence separation is required.*

2. *Aircraft weighing 19,000 pounds or less include all aircraft in SRS Categories I and II plus G73, STAR, S601, BE30, SW3, B190 and C212.*

3. Visual separation, as specified in para 7–2–1, Visual Separation, para 7–4–2, Vectors for Visual Approach, and para 7–6–7, Sequencing.

NOTE–
Issue wake turbulence cautionary advisories in accordance with para 2–1–20, Wake Turbulence Cautionary Advisories.

REFERENCE–
P/CG Term– Lateral Separation.
P/CG Term– Radar Separation.
P/CG Term– Target Resolution.
P/CG Term– Visual Separation.

7–9–5. TRAFFIC ADVISORIES

a. Provide mandatory traffic advisories and safety alerts, between all aircraft.

b. Apply merging target procedures in accordance with para 5–1–8, Merging Target Procedures.

7–9–6. HELICOPTER TRAFFIC

VFR helicopters need not be separated from VFR or IFR helicopters. Traffic advisories and safety alerts must be issued as appropriate.

7–9–7. ALTITUDE ASSIGNMENTS

a. Altitude information contained in a clearance, instruction, or advisory to VFR aircraft must meet MVA, MSA, or minimum IFR altitude criteria.

b. Issue altitude assignments, if required, consistent with the provisions of 14 CFR Section 91.119.

NOTE–
The MSAs are:
1. *Over congested areas, an altitude at least 1,000 feet above the highest obstacle,*
2. *Over other than congested areas, an altitude at least 500 feet above the surface.*

REFERENCE–
FAAO JO 7110.65, Para 4–5–2, Flight Direction.
FAAO JO 7110.65, Para 4–5–3, Exceptions.
FAAO JO 7110.65, Para 4–5–6, Minimum En Route Altitudes.

c. Aircraft assigned altitudes which are contrary to 14 CFR Section 91.159 must be advised to resume altitudes appropriate for the direction of flight when the altitude assignment is no longer required or when leaving Class B airspace.

PHRASEOLOGY–
RESUME APPROPRIATE VFR ALTITUDES.

7–9–8. APPROACH INTERVAL

The tower must specify the approach interval.

Chapter 8. Offshore/Oceanic Procedures

Section 1. General

8–1–1. ATC SERVICE

Provide air traffic control service in oceanic controlled airspace in accordance with the procedures in this chapter except when other procedures/minima are prescribed in a directive or a letter of agreement.

REFERENCE–
FAAO JO 7110.65, Procedural Letters of Agreement, Para 1–1–9

8–1–2. OPERATIONS IN OFFSHORE AIRSPACE AREAS

Provide air traffic control service in offshore airspace areas in accordance with procedures and minima in this chapter. For those situations not covered by this chapter, the provisions in this Order must apply.

8–1–3. VFR FLIGHT PLANS

VFR flights in Oceanic FIRs may be conducted in meteorological conditions equal to or greater than those specified in 14 CFR Section 91.155, Basic VFR weather minimums. Operations on a VFR flight plan are permitted only between sunrise and sunset and only within:

a. Miami, Houston, and San Juan Oceanic Control Areas (CTAs) below FL 180.

b. Within the Oakland FIR when operating less than 100 NM seaward from the shoreline within controlled airspace.

c. All Oceanic FIR airspace below the Oceanic CTAs.

8–1–4. TYPES OF SEPARATION

Separation must consist of at least one of the following:

a. Vertical separation;

b. Horizontal separation, either;

1. Longitudinal; or

2. Lateral;

c. Composite separation;

d. Radar separation, as specified in Chapter 5, Radar, where radar coverage is adequate.

8–1–5. ALTIMETER SETTING

Within oceanic control areas, unless directed and/or charted otherwise, altitude assignment must be based on flight levels and a standard altimeter setting of 29.92 inches Hg.

8–1–6. RECEIPT OF POSITION REPORTS

When a position report affecting separation is not received, take action to obtain the report no later than *10 minutes* after the control estimate, unless otherwise specified.

8–1–7. OCEANIC NAVIGATIONAL ERROR REPORTING (ONER) PROCEDURES

FAAO 7110.82, Monitoring of Navigation, Longitudinal Separation, and Altitude Keeping Performance in Oceanic Airspace, contains procedures for reporting and processing navigational errors observed by ATC radar for aircraft exiting oceanic airspace.

NOTE–
FAAO 7110.82 establishes procedures for processing ONER procedures, Oceanic Altitude Deviation Reports, Erosion of Longitudinal Separation Reports, Letter of Authorization Verification Reports, and for collecting system data for analysis. This data is needed for risk modeling activities to support separation standard reductions.

8–1–8. USE OF CONTROL ESTIMATES

Control estimates are the estimated position of aircraft, with reference to time as determined by the ATC automation system in use or calculated by the controller using known wind patterns, previous aircraft transit times, pilot progress reports, and pilot estimates. These estimates may be updated through the receipt of automated position reports and/or manually updated by the controller. Control estimates must be used when applying time–based separation minima.

8–1–9. RVSM OPERATIONS

Controller responsibilities for non–RVSM aircraft operating in RVSM airspace must include but not be limited to the following:

a. Ensure non–RVSM aircraft are not permitted in RVSM airspace unless they meet the criteria of excepted aircraft and are previously approved by the operations supervisor/CIC.

b. In addition to those aircraft listed in Chapter 2, Section 1, Paragraph 2-1-28 RVSM Operations in this order, the following aircraft operating within oceanic airspace or transiting to/from oceanic airspace are excepted:

1. Aircraft being initially delivered to the State of Registry or Operator;

2. Aircraft that was formerly RVSM approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval;

3. Aircraft being utilized for mercy or humanitarian purposes;

4. Within the Oakland, Anchorage, and Arctic FIR's, an aircraft transporting a spare engine mounted under the wing.

(a) These exceptions are accommodated on a workload or traffic-permitting basis.

(b) All other requirements contained in paragraph 2-1-28 are applicable to this section.

REFERENCE–
FAAO JO 7110.65, Para 2-1-28, RVSM Operations

Section 3. Overdue Aircraft

10–3–1. OVERDUE AIRCRAFT/OTHER SITUATIONS

a. Consider an aircraft to be overdue, initiate the procedures stated in this section and issue an ALNOT when neither communications nor radar contact can be established and 30 minutes have passed since:

NOTE–
The procedures in this section also apply to an aircraft referred to as "missing" or "unreported."

1. Its ETA over a specified or compulsory reporting point or at a clearance limit in your area.

2. Its clearance void time.

3. A VFR or IFR aircraft arriving at an airport not served by an air traffic control tower or flight service station fails to cancel a flight plan after receiving instructions on how to cancel.

NOTE–
If you have reason to believe that an aircraft is overdue prior to 30 minutes, take the appropriate action immediately.

b. Consider an aircraft to be in an emergency status and initiate ALNOT procedures in this section immediately when there is an abnormal simultaneous loss of radar and communications with an IFR aircraft or VFR/SVFR aircraft receiving flight following services. This situation may be applicable to an aircraft operating in a non-radar environment and an unexpected/abnormal loss of communications occurs.

c. The ARTCC in whose area the aircraft is reported as overdue, missing or lost will make these determinations and takes any subsequent action required.

d. If you have reason to believe that an aircraft is overdue prior to 30 minutes, take the appropriate action immediately.

e. The center in whose area the aircraft is first unreported or overdue will make these determinations and takes any subsequent action required.

REFERENCE–
FAAO JO 7110.65, Para 4–3–4 Departure Restrictions, Clearance Void Times, Hold for Release, and Release Times.

10–3–2. INFORMATION TO BE FORWARDED TO ARTCC

TERMINAL

When an aircraft is considered to be in emergency status that may require SAR procedures, or an IFR aircraft is overdue, the terminal facility must alert the appropriate ARTCC and forward the following information, as available:

a. Flight plan, including color of aircraft, if known.

b. Time of last transmission received, by whom, and frequency used.

c. Last position report and how determined.

d. Aircraft beacon code.

e. Number of persons on board.

f. Fuel status.

g. Facility working aircraft and frequency.

h. Last known position, how determined, time, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

i. Position of other aircraft near aircraft's route of flight, when requested.

j. Whether or not an ELT signal has been heard or reported in the vicinity of the last known position.

k. Other pertinent information.

REFERENCE–
FAAO JO 7110.65, Para 10–1–4 Responsibility.
FAAO JO 7110.65, Para 10–2–5 Emergency Situations.

NOTE–
FSSs serve as the central points for collecting and disseminating information on an overdue or missing aircraft which is not on an IFR flight plan. Non–FSS ATC facilities that receive telephone calls or other inquiries regarding these flights must refer these calls and inquiries to the appropriate AFSS/FSS.

10–3–3. INFORMATION TO BE FORWARDED TO RCC

EN ROUTE

When an aircraft is considered to be in emergency status or an IFR aircraft is overdue, the ARTCC must

alert the RCC and forward the following information, as available:

a. Facility and person calling.

b. Flight plan, including color of aircraft, if known.

c. Time of last transmission received, by whom, and frequency used.

d. Last position report and how determined.

e. Aircraft beacon code.

f. Action taken by reporting facility and proposed action.

g. Number of persons on board.

h. Fuel status.

i. Facility working aircraft and frequency.

j. Last known position, how determined, time, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

k. Position of other aircraft near aircraft's route of flight, when requested.

l. Whether or not an ELT signal has been heard or reported in the vicinity of the last known position.

m. Other pertinent information.

REFERENCE–
FAAO JO 7110.65, Para 10–1–4 Responsibility.
FAAO JO 7110.65, Para 10–2–5 Emergency Situations.

NOTE–
FSSs serve as the central points for collecting and disseminating information on an overdue or missing aircraft which is not on an IFR flight plan. Non–FSS ATC facilities that receive telephone calls or other inquiries regarding these flights must refer these calls and inquiries to the appropriate FSS.

10–3–4. ALNOT

EN ROUTE

a. In addition to routing to the regional office operations center for the area in which the facility is located, issue an ALNOT to all centers and Area B circuits, generally 50 miles on either side of the route of flight from the last reported position to destination. Include the original or amended flight plan, as appropriate, and the last known position of the aircraft. At the recommendation of the RCC or at your discretion, the ALNOT may be issued to cover the maximum range of the aircraft.

NOTE–
1. *An ALNOT must be issued before the RCC can begin search and rescue procedures.*

2. *Flight plan information on military aircraft is available at the FSS serving as a tie-in station for the departure or destination airport. FAA tie-in stations for airports in the continental U.S. are listed in FAAO JO 7350.8, Location Identifiers. In the West Flight Services Area Office, tie–in stations are listed in service area publications entitled, "Flight Plan Routing and Airport Search Directory." For flights with overseas departure points, the information is available through the destination FSS or the appropriate IFSS.*

b. Upon receipt of an INREQ or ALNOT, check the position records to determine whether the aircraft has contacted your facility. Notify the originator of the results or status of this check within one hour of the time the alert was received. Retain the alert in an active status, and immediately notify the originator of subsequent contact, until cancellation is received.

c. Include pertinent information in the ALNOT that will aid the RCC and SAR Teams in conducting the SAR mission. When known, include:

1. Last known position.

2. Time.

3. Aircraft beacon code.

d. When information is obtained not previously contained in the ALNOT, issue an amended ALNOT to update information that will assist the SAR providers.

10–3–5. RESPONSIBILITY TRANSFER TO RCC

EN ROUTE

Transfer responsibility for further search to the RCC when one of the following occurs:

a. Thirty minutes have elapsed after the estimated aircraft fuel exhaustion time.

b. The aircraft has not been located within one hour after ALNOT issuance.

c. The ALNOT search has been completed with negative results.

10–3–6. LAST KNOWN POSITION DETERMINATION

a. To assist the RCC and SAR Teams in the conduct of the SAR mission, provide the most accurate latitude and longitude available to the FAA using en route and terminal radar sensor data near the aircraft's last known position.

b. If necessary to prevent an undue delay, utilize any available method to determine the initial latitude and longitude. Follow-up as soon as possible with a formal latitude and longitude using the appropriate terminal or en route facility data extraction tools.

c. If available, solicit the assistance of other aircraft known to be operating near the aircraft in distress.

d. Forward this information to the RCC or the ARTCC as appropriate.

10–3–7. ALNOT CANCELLATION

EN ROUTE

a. When directed by the RCC, cancel the ALNOT when the aircraft is located or the search is abandoned.

b. Include pertinent information in the cancellation that will aid the RCC, SAR Teams, and FAA SAR management to include the location where the aircraft or wreckage was found.

PILOT/CONTROLLER GLOSSARY

PURPOSE

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

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

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

EXPLANATION OF CHANGES

d. Terms Added:
APPROACH WITH VERTICAL GUIDANCE (APV)
DESIGNATED COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) AREA

e. Terms Modified:
COMMON TRAFFIC ADVISORY FREQUENCY (CTAF)

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

APD–
(See AUTOMATED PROBLEM DETECTION.)

APDIA–
(See AUTOMATED PROBLEM DETECTION INHIBITED AREA.)

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

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

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

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

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

APPROACH HOLD AREA– The locations on taxiways in the approach or departure areas of a runway designated to protect landing or departing aircraft. These locations are identified by signs and markings.

APPROACH LIGHT SYSTEM–
(See AIRPORT LIGHTING.)

APPROACH SEQUENCE– The order in which aircraft are positioned while on approach or awaiting approach clearance.
(See LANDING SEQUENCE.)
(See ICAO term APPROACH SEQUENCE.)

APPROACH SEQUENCE [ICAO]– The order in which two or more aircraft are cleared to approach to land at the aerodrome.

APPROACH SPEED– The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

APPROACH WITH VERTICAL GUIDANCE (APV)– A term used to describe RNAV approach procedures that provide lateral and vertical guidance but do not meet the requirements to be considered a precision approach.

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

APPROPRIATE AUTHORITY–

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

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

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

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

APRON– A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling,

parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.
(See ICAO term APRON.)

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

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

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

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

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

AREA NAVIGATION (RNAV) APPROACH CONFIGURATION:

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

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

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

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

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

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

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

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

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

ARMY AVIATION FLIGHT INFORMATION BULLETIN– A bulletin that provides air operation

data covering Army, National Guard, and Army Reserve aviation activities.

ARO–
(See AIRPORT RESERVATION OFFICE.)

ARRESTING SYSTEM– A safety device consisting of two major components, namely, engaging or catching devices and energy absorption devices for the purpose of arresting both tailhook and/or nontailhook-equipped aircraft. It is used to prevent aircraft from overrunning runways when the aircraft cannot be stopped after landing or during aborted takeoff. Arresting systems have various names; e.g., arresting gear, hook device, wire barrier cable.
(See ABORT.)
(Refer to AIM.)

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

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

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

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

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

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

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

ARSR–
(See AIR ROUTE SURVEILLANCE RADAR.)

ARTCC–
(See AIR ROUTE TRAFFIC CONTROL CENTER.)

ARTS–
(See AUTOMATED RADAR TERMINAL SYSTEMS.)

ASDA–
(See ACCELERATE-STOP DISTANCE AVAILABLE.)

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

ASDE–
(See AIRPORT SURFACE DETECTION EQUIPMENT.)

ASF–
(See AIRPORT STREAM FILTER.)

ASLAR–
(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

ASP–
(See ARRIVAL SEQUENCING PROGRAM.)

ASR–
(See AIRPORT SURVEILLANCE RADAR.)

ASR APPROACH–
(See SURVEILLANCE APPROACH.)

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

ATC–
(See AIR TRAFFIC CONTROL.)

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

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

ATC CLEARANCE–
(See AIR TRAFFIC CLEARANCE.)

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

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

ATC PREFERRED ROUTE NOTIFICATION– URET notification to the appropriate controller of the need to determine if an ATC preferred route needs to be applied, based on destination airport.

(See ROUTE ACTION NOTIFICATION.)

(See USER REQUEST EVALUATION TOOL.)

ATC PREFERRED ROUTES– Preferred routes that are not automatically applied by Host.

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

ATC SECURITY SERVICES – Communications and security tracking provided by an ATC facility in support of the DHS, the DOD, or other Federal security elements in the interest of national security. Such security services are only applicable within designated areas. ATC security services do not include ATC basic radar services or flight following.

ATC SECURITY SERVICES POSITION – The position responsible for providing ATC security services as defined. This position does not provide ATC, IFR separation, or VFR flight following services, but is responsible for providing security services in an area comprising airspace assigned to one or more ATC operating sectors. This position may be combined with control positions.

ATC SECURITY TRACKING – The continuous tracking of aircraft movement by an ATC facility in support of the DHS, the DOD, or other security elements for national security using radar (i.e., radar tracking) or other means (e.g., manual tracking) without providing basic radar services (including traffic advisories) or other ATC services not defined in this section.

ATCAA–

(See ATC ASSIGNED AIRSPACE.)

ATCRBS–

(See RADAR.)

ATCSCC–

(See AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER.)

ATCT–

(See TOWER.)

ATD–

(See ALONG–TRACK DISTANCE.)

ATIS–

(See AUTOMATIC TERMINAL INFORMATION SERVICE.)

ATIS [ICAO]–

(See ICAO Term AUTOMATIC TERMINAL INFORMATION SERVICE.)

ATS ROUTE [ICAO]– A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

Note: The term “ATS Route” is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure, etc.

ATTENTION ALL USERS PAGE (AAUP)- The AAUP provides the pilot with additional information relative to conducting a specific operation, for example, PRM approaches and RNAV departures.

AUTOLAND APPROACH–An autoland system aids by providing control of aircraft systems during a precision instrument approach to at least decision altitude and possibly all the way to touchdown, as well as in some cases, through the landing rollout. The autoland system is a sub-system of the autopilot system from which control surface management occurs. The aircraft autopilot sends instructions to the autoland system and monitors the autoland system performance and integrity during its execution.

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

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

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

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

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

(See USER REQUEST EVALUATION TOOL.)

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

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

a. ARTS IIIA. The Radar Tracking and Beacon Tracking Level (RT&BTL) of the modular, programmable automated radar terminal system. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. This more sophisticated computer-driven system upgrades the existing ARTS III system by providing improved tracking, continuous data recording, and fail-soft capabilities.

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

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

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

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

AUTOMATIC ALTITUDE REPORT–
(See ALTITUDE READOUT.)

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

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

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

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

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

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

be based on airborne and ground transmitters in the VHF/UHF frequency spectrum.

(See BEARING.)

(See NONDIRECTIONAL BEACON.)

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

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

(See ICAO term AUTOMATIC TERMINAL INFORMATION SERVICE.)

(Refer to AIM.)

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

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

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

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

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

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

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

(See EN ROUTE FLIGHT ADVISORY SERVICE.)

(See TRANSCRIBED WEATHER BROADCAST.)

(See WEATHER ADVISORY.)

(Refer to AIM.)

AWW–

(See SEVERE WEATHER FORECAST ALERTS.)

aircraft are held short of the applicable runway holding position marking.

b. A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there are no restrictions to its continued movement beyond the applicable runway holding position marking.

c. Pilots and controllers shall exercise good judgement to ensure that adequate separation exists between all aircraft on runways and taxiways at airports with inadequate runway edge lines or holding position markings.

CLEARANCE–
(See AIR TRAFFIC CLEARANCE.)

CLEARANCE LIMIT– The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance.
(See ICAO term CLEARANCE LIMIT.)

CLEARANCE LIMIT [ICAO]– The point to which an aircraft is granted an air traffic control clearance.

CLEARANCE VOID IF NOT OFF BY (TIME)– Used by ATC to advise an aircraft that the departure clearance is automatically canceled if takeoff is not made prior to a specified time. The pilot must obtain a new clearance or cancel his/her IFR flight plan if not off by the specified time.
(See ICAO term CLEARANCE VOID TIME.)

CLEARANCE VOID TIME [ICAO]– A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

CLEARED APPROACH– ATC authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure.
(See CLEARED (Type of) APPROACH.)
(See INSTRUMENT APPROACH PROCEDURE.)
(Refer to 14 CFR Part 91.)
(Refer to AIM.)

CLEARED (Type of) APPROACH– ATC authorization for an aircraft to execute a specific instrument approach procedure to an airport; e.g., "Cleared ILS Runway Three Six Approach."
(See APPROACH CLEARANCE.)
(See INSTRUMENT APPROACH PROCEDURE.)
(Refer to 14 CFR Part 91.)
(Refer to AIM.)

CLEARED AS FILED– Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include the altitude, DP, or DP Transition.
(See REQUEST FULL ROUTE CLEARANCE.)
(Refer to AIM.)

CLEARED FOR TAKEOFF– ATC authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

CLEARED FOR THE OPTION– ATC authorization for an aircraft to make a touch-and-go, low approach, missed approach, stop and go, or full stop landing at the discretion of the pilot. It is normally used in training so that an instructor can evaluate a student's performance under changing situations.
(See OPTION APPROACH.)
(Refer to AIM.)

CLEARED THROUGH– ATC authorization for an aircraft to make intermediate stops at specified airports without refiling a flight plan while en route to the clearance limit.

CLEARED TO LAND– ATC authorization for an aircraft to land. It is predicated on known traffic and known physical airport conditions.

CLEARWAY– An area beyond the takeoff runway under the control of airport authorities within which terrain or fixed obstacles may not extend above specified limits. These areas may be required for certain turbine-powered operations and the size and upward slope of the clearway will differ depending on when the aircraft was certificated.
(Refer to 14 CFR Part 1.)

CLIMB TO VFR– ATC authorization for an aircraft to climb to VFR conditions within Class B, C, D, and E surface areas when the only weather limitation is restricted visibility. The aircraft must remain clear of clouds while climbing to VFR.
(See SPECIAL VFR CONDITIONS.)
(Refer to AIM.)

CLIMBOUT– That portion of flight operation between takeoff and the initial cruising altitude.

CLIMB VIA– An abbreviated ATC clearance that requires compliance with the procedure lateral path, associated speed restrictions, and altitude restrictions along the cleared route or procedure.

CLOSE PARALLEL RUNWAYS– Two parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3000 feet (750 feet for SOIA operations) that are authorized to conduct simultaneous independent approach operations. PRM and simultaneous close parallel appear in approach title. Dual communications, special pilot training, an Attention All Users Page (AAUP), NTZ monitoring by displays that have aural and visual alerting algorithms are required. A high update rate surveillance sensor is required for certain runway or approach course spacing.

CLOSED RUNWAY– A runway that is unusable for aircraft operations. Only the airport management/ military operations office can close a runway.

CLOSED TRAFFIC– Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.

CLOUD– A cloud is a visible accumulation of minute water droplets and/or ice particles in the atmosphere above the Earth's surface. Cloud differs from ground fog, fog, or ice fog only in that the latter are, by definition, in contact with the Earth's surface.

CLT–
(See CALCULATED LANDING TIME.)

CLUTTER– In radar operations, clutter refers to the reception and visual display of radar returns caused by precipitation, chaff, terrain, numerous aircraft targets, or other phenomena. Such returns may limit or preclude ATC from providing services based on radar.
(See CHAFF.)
(See GROUND CLUTTER.)
(See PRECIPITATION.)
(See TARGET.)
(See ICAO term RADAR CLUTTER.)

CMNPS–
(See CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATION AIRSPACE.)

COASTAL FIX– A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

CODES– The number assigned to a particular multiple pulse reply signal transmitted by a transponder.
(See DISCRETE CODE.)

COMBINED CENTER-RAPCON– An air traffic facility which combines the functions of an ARTCC and a radar approach control facility.
(See AIR ROUTE TRAFFIC CONTROL CENTER.)
(See RADAR APPROACH CONTROL FACILITY.)

COMMON POINT– A significant point over which two or more aircraft will report passing or have reported passing before proceeding on the same or diverging tracks. To establish/maintain longitudinal separation, a controller may determine a common point not originally in the aircraft's flight plan and then clear the aircraft to fly over the point.
(See SIGNIFICANT POINT.)

COMMON PORTION–
(See COMMON ROUTE.)

COMMON ROUTE– That segment of a North American Route between the inland navigation facility and the coastal fix.

OR

COMMON ROUTE– Typically the portion of a RNAV STAR between the en route transition end point and the runway transition start point; however, the common route may only consist of a single point that joins the en route and runway transitions.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF)– A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency and is identified in appropriate aeronautical publications.
(See DESIGNATED COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) AREA.)
(Refer to AC 90-42, Traffic Advisory Practices at Airports Without Operating Control Towers.)

COMPASS LOCATOR– A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). It can be used for navigation at distances of approximately 15 miles or as authorized in the approach procedure.

a. Outer Compass Locator (LOM)– A compass locator installed at the site of the outer marker of an instrument landing system.

(See OUTER MARKER.)

b. Middle Compass Locator (LMM)– A compass locator installed at the site of the middle marker of an instrument landing system.

(See MIDDLE MARKER.)

(See ICAO term LOCATOR.)

COMPASS ROSE– A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction.

COMPLY WITH RESTRICTIONS– An ATC instruction that requires an aircraft being vectored back onto an arrival or departure procedure to comply with all altitude and/or speed restrictions depicted on the procedure. This term may be used in lieu of repeating each remaining restriction that appears on the procedure.

COMPOSITE FLIGHT PLAN– A flight plan which specifies VFR operation for one portion of flight and IFR for another portion. It is used primarily in military operations.

(Refer to AIM.)

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

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

COMPULSORY REPORTING POINTS– Reporting points which must be reported to ATC. They are designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes. These points are geographical locations which are defined by navigation aids/fixes. Pilots should discontinue position reporting over compulsory reporting points when informed by ATC that their aircraft is in "radar contact."

CONFIDENCE MANEUVER– A confidence maneuver consists of one or more turns, a climb or descent, or other maneuver to determine if the pilot in command (PIC) is able to receive and comply with ATC instructions.

CONFLICT ALERT– A function of certain air traffic control automated systems designed to alert radar controllers to existing or pending situations between tracked targets (known IFR or VFR aircraft) that require his/her immediate attention/action.

(See MODE C INTRUDER ALERT.)

CONFLICT RESOLUTION– The resolution of potential conflictions between aircraft that are radar identified and in communication with ATC by ensuring that radar targets do not touch. Pertinent traffic advisories shall be issued when this procedure is applied.

Note: This procedure shall not be provided utilizing mosaic radar systems.

CONFORMANCE– The condition established when an aircraft's actual position is within the conformance region constructed around that aircraft at its position, according to the trajectory associated with the aircraft's Current Plan.

CONFORMANCE REGION– A volume, bounded laterally, vertically, and longitudinally, within which an aircraft must be at a given time in order to be in conformance with the Current Plan Trajectory for that aircraft. At a given time, the conformance region is determined by the simultaneous application of the lateral, vertical, and longitudinal conformance bounds for the aircraft at the position defined by time and aircraft's trajectory.

CONSOLAN– A low frequency, long-distance NAVAID used principally for transoceanic navigations.

CONTACT–

a. Establish communication with (followed by the name of the facility and, if appropriate, the frequency to be used).

b. A flight condition wherein the pilot ascertains the attitude of his/her aircraft and navigates by visual reference to the surface.

(See CONTACT APPROACH.)

(See RADAR CONTACT.)

CONTACT APPROACH– An approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the instrument

approach procedure and proceed to the destination airport by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile.

(Refer to AIM.)

CONTAMINATED RUNWAY– A runway is considered contaminated whenever standing water, ice, snow, slush, frost in any form, heavy rubber, or other substances are present. A runway is contaminated with respect to rubber deposits or other friction-degrading substances when the average friction value for any 500-foot segment of the runway within the ALD fails below the recommended minimum friction level and the average friction value in the adjacent 500-foot segments falls below the maintenance planning friction level.

CONTERMINOUS U.S.– The 48 adjoining States and the District of Columbia.

CONTINENTAL UNITED STATES– The 49 States located on the continent of North America and the District of Columbia.

CONTINUE– When used as a control instruction should be followed by another word or words clarifying what is expected of the pilot. Example: "continue taxi," "continue descent," "continue inbound," etc.

CONTROL AREA [ICAO]– A controlled airspace extending upwards from a specified limit above the earth.

CONTROL SECTOR– An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot-communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector.

(See DISCRETE FREQUENCY.)

CONTROL SLASH– A radar beacon slash representing the actual position of the associated aircraft. Normally, the control slash is the one closest to the interrogating radar beacon site. When ARTCC radar is operating in narrowband (digitized) mode, the control slash is converted to a target symbol.

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

a. Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D, and Class E airspace.

b. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements in 14 CFR Part 91 (for specific operating requirements, please refer to 14 CFR Part 91). For IFR operations in any class of controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance. Each Class B, Class C, and Class D airspace area designated for an airport contains at least one primary airport around which the airspace is designated (for specific designations and descriptions of the airspace classes, please refer to 14 CFR Part 71).

c. Controlled airspace in the United States is designated as follows:

1. CLASS A– Generally, that airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska. Unless otherwise authorized, all persons must operate their aircraft under IFR.

2. CLASS B– Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspaces areas resemble upside-down wedding cakes), and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds."

3. CLASS C– Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually

consists of a surface area with a 5 nautical mile (NM) radius, a circle with a 10NM radius that extends no lower than 1,200 feet up to 4,000 feet above the airport elevation and an outer area that is not charted. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. VFR aircraft are only separated from IFR aircraft within the airspace.

(See OUTER AREA.)

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

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

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

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

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

CONTROLLER–

(See AIR TRAFFIC CONTROL SPECIALIST.)

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

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

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

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

CONVECTIVE SIGNIFICANT METEOROLOGICAL INFORMATION–

(See CONVECTIVE SIGMET.)

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

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

COPTER–

(See HELICOPTER.)

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

COUPLED APPROACH– An instrument approach performed by the aircraft autopilot, and/or visually depicted on the flight director, which is receiving position information and/or steering commands from onboard navigational equipment. In general, coupled non-precision approaches must be flown manually (autopilot disengaged) at altitudes lower than 50 feet AGL below the minimum descent altitude, and coupled precision approaches must be flown manually (autopilot disengaged) below 50 feet AGL unless authorized to conduct autoland operations. Coupled instrument approaches are commonly flown to the allowable IFR weather minima established by the operator or PIC, or flown VFR for training and safety.

COURSE–

a. The intended direction of flight in the horizontal plane measured in degrees from north.

b. The ILS localizer signal pattern usually specified as the front course or the back course.

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

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

CPDLC–

(See CONTROLLER PILOT DATA LINK COMMUNICATIONS.)

CPL [ICAO]–

(See ICAO term CURRENT FLIGHT PLAN.)

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

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

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

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

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

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

CROSSWIND–

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

(See TRAFFIC PATTERN.)

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

(See CROSSWIND COMPONENT.)

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

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

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

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

governing VFR flight operations. Also, this provides search and rescue protection until such time as the IFR flight plan is closed.

(See INSTRUMENT APPROACH PROCEDURE.)

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

CRUISING ALTITUDE– An altitude or flight level maintained during en route level flight. This is a constant altitude and should not be confused with a cruise clearance.

(See ALTITUDE.)

(See ICAO term CRUISING LEVEL.)

CRUISING LEVEL–

(See CRUISING ALTITUDE.)

CRUISING LEVEL [ICAO]– A level maintained during a significant portion of a flight.

CT MESSAGE– An EDCT time generated by the ATCSCC to regulate traffic at arrival airports. Normally, a CT message is automatically transferred from the traffic management system computer to the NAS en route computer and appears as an EDCT. In the event of a communication failure between the traffic management system computer and the NAS, the CT message can be manually entered by the TMC at the en route facility.

CTA–

(See CONTROLLED TIME OF ARRIVAL.)

(See ICAO term CONTROL AREA.)

CTAF–

(See COMMON TRAFFIC ADVISORY FREQUENCY.)

CTAS–

(See CENTER TRACON AUTOMATION SYSTEM.)

CTRD–

(See CERTIFIED TOWER RADAR DISPLAY.)

CURRENT FLIGHT PLAN [ICAO]– The flight plan, including changes, if any, brought about by subsequent clearances.

CURRENT PLAN– The ATC clearance the aircraft has received and is expected to fly.

CVFP APPROACH–

(See CHARTED VISUAL FLIGHT PROCEDURE APPROACH.)

CWA–

(See CENTER WEATHER ADVISORY and WEATHER ADVISORY.)

D

D-ATIS–

(See DIGITAL-AUTOMATIC TERMINAL INFORMATION SERVICE.)

DA [ICAO]–

(See ICAO Term DECISION ALTITUDE/DECISION HEIGHT.)

DAIR–

(See DIRECT ALTITUDE AND IDENTITY READOUT.)

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

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

DAS–

(See DELAY ASSIGNMENT.)

DATA BLOCK–

(See ALPHANUMERIC DISPLAY.)

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

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

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

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

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

(See ICAO term DECISION ALTITUDE/DECISION HEIGHT.)

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

(See CODES.)
(See RADAR.)

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

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

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

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

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

(See EXPECT FURTHER CLEARANCE (TIME).)

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

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

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

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

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

DEPARTURE TIME– The time an aircraft becomes airborne.

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

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

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

DESIRED COURSE–

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

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

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

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

DEVIATIONS–

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

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

DH–

(See DECISION HEIGHT.)

DH [ICAO]–

(See ICAO Term DECISION ALTITUDE/ DECISION HEIGHT.)

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

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

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

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

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

DIRECT ALTITUDE AND IDENTITY READOUT– The DAIR System is a modification to the

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

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

DISCRETE BEACON CODE–
(See DISCRETE CODE.)

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

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

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

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

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

DIVE BRAKES–
(See SPEED BRAKES.)

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

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

DME–
(See DISTANCE MEASURING EQUIPMENT.)

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

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

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

DOMESTIC AIRSPACE– Airspace which overlies the continental land mass of the United States plus

Hawaii and U.S. possessions. Domestic airspace extends to 12 miles offshore.

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

DOWNWIND LEG–
(See TRAFFIC PATTERN.)

DP–
(See INSTRUMENT DEPARTURE PROCEDURE.)

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

DSP–
(See DEPARTURE SEQUENCING PROGRAM.)

DT–
(See DELAY TIME.)

DTAS–
(See DIGITAL TERMINAL AUTOMATION SYSTEM.)

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

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

DVA–
(See DIVERSE VECTOR AREA.)

DVFR–
(See DEFENSE VISUAL FLIGHT RULES.)

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

DVRSN–
(See DIVERSION.)

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

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

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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: 2-1-10. NAVAID MALFUNCTIONS

2. BACKGROUND: On July 31, 2013, revised approach clearance procedures, as specified in FAA Order JO 7110.65, 4-8-1, were disseminated to all Terminal and En Route ATC facilities. Those procedures did not include GPS Testing NOTAMs, changes to GPS anomaly reporting, or account for WAAS. This resulted in a necessary change to accompany paragraph 2-1-10.

3. CHANGE:

OLD	NEW
2-1-10. NAVAID MALFUNCTIONS	**2-1-10. NAVAID MALFUNCTIONS**
Title through **a5**	No Change
b. When an aircraft reports a GPS anomaly, request the following information and/or take the following actions:	**b.** When an aircraft reports a GPS **or WAAS** anomaly, request the following information and/or take the following actions:
1. Record the following minimum information:	**1.** Record the following minimum information:
(a) Aircraft call sign and type.	**(a)** Aircraft **make, model, and** call sign.
(b) Location.	**(b)** Location **or position, and altitude at the time where GPS or WAAS anomaly was observed.**
(c) Altitude.	Delete
(d) Date/time of occurrence.	**(c)** Date/time of occurrence.
Add	**2. Request a report from a second aircraft.**
2. Record the incident on FAA Form 7230−4 or appropriate military form.	**3.** Record the incident on FAA Form 7230−4 or appropriate military form.
3. Broadcast the anomaly report to other aircraft as necessary.	**4. Inform** other aircraft **of the anomaly** as **specified in paragraph 4-8-1j or k,** as **applicable**.
PHRASEOLOGY– *ATTENTION ALL AIRCRAFT, GPS REPORTED UNRELIABLE IN VICINITY/AREA (position).*	***PHRASEOLOGY–*** *ATTENTION ALL AIRCRAFT, GPS REPORTED UNRELIABLE **(OR WAAS UNAVAILABLE)** IN VICINITY/AREA (position).*
EXAMPLE– *"Attention all aircraft, GPS reported unreliable in the area 30 miles south of Waco VOR."*	***EXAMPLE–*** *"Attention all aircraft, GPS reported unreliable **(or WAAS unavailable)** in the area 30 miles south of Waco VOR."*
c. When an aircraft reports a Wide Area Augmentation System (WAAS) anomaly, request the following information and/or take the following actions:	**c.** When a **pilot** reports a WAAS anomaly, **determine from the pilot what indications he or she observes and record** the information **in accordance with sub-paragraph b above.**
1. Determine if the pilot has lost all WAAS service.	Delete
PHRASEOLOGY– *ARE YOU RECEIVING ANY WAAS SERVICE?*	Delete
2. If the pilot reports receipt of any WAAS service, acknowledge the report and continue normal operations.	Delete
3. If the pilot reports loss of all WAAS service, report as a GPS anomaly using procedures in subpara 2−1−10b.	Delete

1. PARAGRAPH NUMBER AND TITLE: 2-1-14. COORDINATE USE OF AIRSPACE

2. BACKGROUND: A Corrective Action Request (CAR) was issued in March 2010 identifying issues concerning confusion regarding responsibility for point out coordination. Conflicting language was identified between this paragraph and Paragraphs 5-4-5, Transferring Controller Handoff, and 5-4-6, Receiving Controller Handoff. This change, along with amendments to paragraphs 5-4-5 and 5-4-6, is intended to identify which controller(s) has coordination responsibility.

3. CHANGE:

OLD	NEW
2-1-14. COORDINATE USE OF AIRSPACE	**2-1-14. COORDINATE USE OF AIRSPACE**
Title through **a**	No Change
b. Before you issue control instructions directly or relay through another source to an aircraft which is within another controller's area of jurisdiction that will change that aircraft's heading, route, speed, or altitude, ensure that coordination has been accomplished with each of the controllers listed below whose area of jurisdiction is affected by those instructions unless otherwise specified by a letter of agreement or a facility directive:	**b. Before you issue a control instruction directly to a pilot that will change the aircraft¿s heading, route, speed, or altitude, you must ensure that coordination has been completed with all controllers whose area of jurisdiction is affected by those instructions unless otherwise specified by a letter of agreement or facility directive. If your control instruction will be relayed to the pilot through a source other than another radar controller (FSS, ARINC, another pilot, etc.), you are still responsible to ensure that all required coordination is completed.**
1. The controller within whose area of jurisdiction the control instructions will be issued.	Delete
2. The controller receiving the transfer of control.	Delete
3. Any intervening controller(s) through whose area of jurisdiction the aircraft will pass.	Delete
c. If you issue control instructions to an aircraft through a source other than another controller (e.g., ARINC, FSS, another pilot) ensure that the necessary coordination has been accomplished with any controllers listed in subparas b1, 2, and 3, whose area of jurisdiction is affected by those instructions unless otherwise specified by a letter of agreement or a facility directive.	Delete
Add	***NOTE–*** ***1. It is good operating practice for controllers to confirm that required coordination has been/will be effected, especially in unusual circumstances, such as recently modified sector configurations, airspace changes, route changes, etc.*** ***2. Ensuring that all required coordination has been completed does not necessarily imply that the controller issuing the control instruction directly to the pilot has to perform the coordination action.***

1. PARAGRAPH NUMBER AND TITLE: 2-7-2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL

2. BACKGROUND: An inquiry was received regarding the currency of CFR Exemption 2861A, Single Altimeter Setting for Frequent Transit of FL180, to 14 CFR 91.121, Altimeter Settings. Research validates that Exemption 2861A is still current and active. The exemption requires an LOA between the affected FAA ATC facilities and DOD that authorizes certain DOD aircraft the option of using a "single altimeter setting" while operating within restricted areas, MOAs, and ATC assigned airspace. This exemption originally referred to 14 CFR 91.81, Altimeter Settings, but now applies to 14 CFR 91.121, Altimeter Settings. There is no change in CFR language or ATC procedures with this DCP.

3. CHANGE:

OLD	NEW
2-7-2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL	**2-7-2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL**
Title through **e**	No Change
f. Department of Defense (DOD) aircraft which operate on "single altimeter settings" (CFR Exemption 2861A) must be issued altimeter settings in accordance with standard procedures while the aircraft are en route to and from their restricted areas, MOAs, and ATC assigned airspace areas.	**f.** Department of Defense (DOD) aircraft **that are authorized to operate in restricted areas, MOAs, and ATC assigned airspace areas** on "single altimeter settings" (CFR Exemption 2861A)**,** must be issued altimeter settings in accordance with standard procedures while the aircraft are en route to and from **the** restricted areas, MOAs, and ATC assigned airspace areas.
Add	***NOTE–*** ***The DOD is responsible for conducting all "single altimeter setting" operations within the boundaries of MOAs, restricted areas, and ATCAAs. Under an LOA, the DOD provides safe altitude clearance between DOD aircraft and other aircraft operating within, above, and below the MOAs, restricted areas, and ATCAAs with appropriate clearance of terrain.***
Add	***REFERENCE–*** ***FAAO JO 7610.4, Appendix 20, Grant of Exemption No. 2861A - Single Altimeter Setting For Frequent Transit of FL180.***

1. PARAGRAPH NUMBER AND TITLE: 2-9-3. CONTENT

2. BACKGROUND: On September 5, 2013, the final report of the Performance-based Operations Aviation Rulemaking Committee (PARC)/Commercial Aviation Safety Team (CAST) identified several issues pertaining to the operational use of flight path management systems. This change is an effort to address the safety issues identified in the report. These include: the increased risk of Controlled Flight Into Terrain (CFIT) when flying conventional non-precision approaches; pilot abilities and increased systems management; and the recommendation that ATC begin to transition away from conventional procedures constructed upon ground-based navigation aids to increased use of RNAV-based navigation.

3. CHANGE:

OLD	NEW
2-9-3. CONTENT	**2-9-3. CONTENT**
Title through **d** ***EXAMPLE***	No Change
e. Instrument/visual approach/s in use. Specify landing runway/s unless the runway is that to which the instrument approach is made.	**e.** Instrument/visual approach/**e**s in use. Specify landing runway/s unless the runway is that to which the instrument approach is made. **Before advertising non-precision approaches, priority should be given to available precision, then APV approaches.**

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1. PARAGRAPH NUMBER AND TITLE:
3-9-8. INTERSECTING RUNWAY SEPARATION, and
3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

2. BACKGROUND: A Corrective Action Request was developed identifying airports where aircraft operating on nonintersecting converging runways were passing through the airborne intersection on the extended centerline of the runway within 14 seconds of each other. Additionally, on July 1, 2013, the National Transportation Safety Board issued Safety Recommendation A-13-024 identifying the same issue. The ATO tasked Air Traffic Managers at those facilities that have nonintersecting converging runways where the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway within 1 NM of either departure end to convene/complete a safety risk management panel to review these operations. The changes were created by a workgroup at the direction of the Office of Safety and Technical Training (AJI). The changes were incorporated via a notice. The notice was implemented at LAS, CLT, JFK, IAD, IAH, ORD, and BOS beginning January 15, 2014. Secondly, the change was implemented at DFW, MSP, DEN, BWI, HNL, MEM, MIA, PHL, SLC, and TPA beginning April 2, 2014. Lastly, the change was implemented at all additional affected airports beginning July 9, 2014.

3. CHANGE:

OLD	NEW
3-9-8. INTERSECTING RUNWAY SEPARATION	**3-9-8. INTERSECTING RUNWAY OPERATIONS**
Title through **a**	No Change
b. Separate departing aircraft from an aircraft using an intersecting runway, or nonintersecting runways when the flight paths intersect, by ensuring that the departure does not begin takeoff roll until one of the following exists:	**b.** Separate departing aircraft from another aircraft using an intersecting runway by ensuring that the departure does not begin takeoff roll until one of the following exists:
REFERENCE– *FAAO JO 7110.65, Para 2-1-21, Traffic Advisories.*	No Change
1. The preceding aircraft has departed and passed the intersection, has crossed the departure runway, or is turning to avert any conflict. (See FIG 3-9-5 and FIG 3-9-6).	**1.** The preceding aircraft has departed and passed the intersection or is turning to avert any conflict. (See FIG 3-9-5).
FIG 3-9-5 Intersecting Runway Separation	No Change
FIG 3-9-6 Intersecting Runway Separation	Delete

2. A preceding arriving aircraft is clear of the landing runway, completed the landing roll and will hold short of the intersection, passed the intersection, or has crossed over the departure runway. (See FIG 3-9-7 and FIG 3-9-8).

REFERENCE–
P/CG Term – Clear of Runway

FIG 3-9-7
Intersecting Runway Separation

FIG 3-9-8

WAKE TURBULENCE APPLICATION through **b3 note**

(a) Crossing runways if projected flight paths will cross. (See FIG 3–9–9).

FIG 3–9–9
Crossing Runways

(b) A parallel runway separated by 2,500 feet or more if projected flight paths will cross. (See FIG-3-9-10).

FIG 3-9-10
Parallel Runway

4. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a crossing runway if the departure will fly through the airborne path of the arrival- *2 minutes.* (See FIG 3–9–11).

FIG 3-9-11
Departure on Crossing Runway

OLD

Add

Add

Add

Add

2. A preceding arriving aircraft is clear of the landing runway, completed the landing roll and will hold short of the intersection, **or has** passed the intersection. (See FIG 3-9-**6**).

No Change

*FIG 3-9-**6***
Intersecting Runway Separation

Delete

No Change

(a) Intersecting runways if projected flight paths will cross. (See **FIG 3–9–7**).

FIG 3-9-7
Intersecting Runways

(b) A parallel runway separated by 2,500 feet or more if projected flight paths will cross. (See FIG-3-9-**8**).

FIG 3-9-8
Parallel Runway

4. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a**n intersecting** runway if the departure will fly through the airborne path of the arrival- *2 minutes.* (See FIG 3–9–**9**).

FIG 3-9-9
Departure on Intersecting Runway

NEW

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:

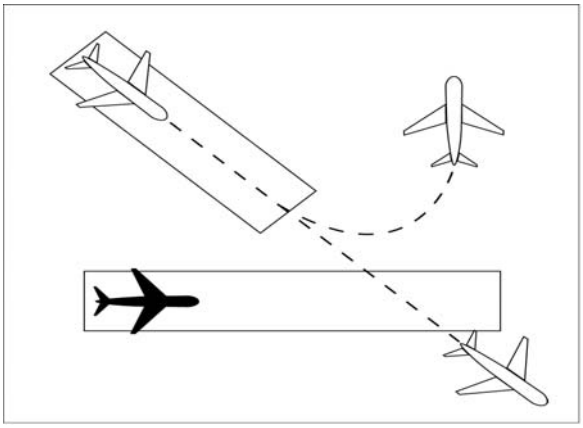
REFERENCE–
FAAO JO 7110.65, Para 2–1–21, Traffic Advisories.

1. The preceding aircraft has departed and crossed the departure runway, or is turning to avert any conflict. (See FIG 3–9–10).

Add

FIG 3-9-10

Intersecting Runway Separation



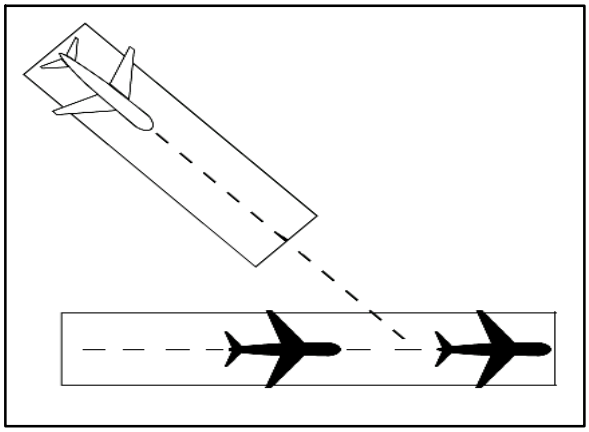
Add

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 3−9−11 and FIG 3-9-12).

Add

FIG 3-9-11

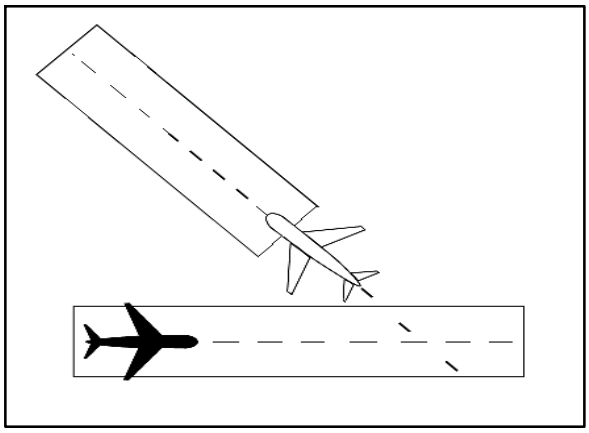
Intersecting Runway Separation



Add

FIG 3-9-12

Intersecting Runway Separation



Add

WAKE TURBULENCE APPLICATION

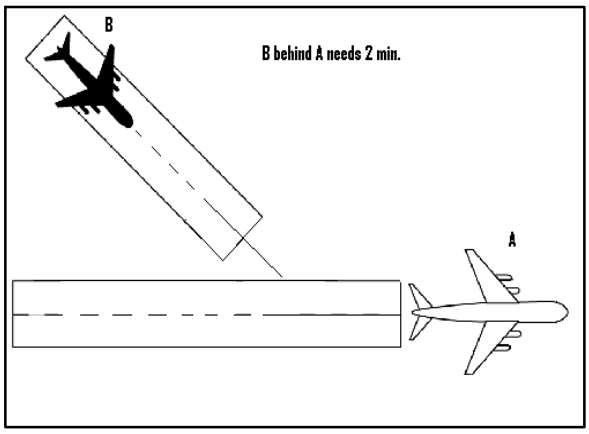
Add

b. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by *2 minutes* when departing a crossing runway if projected flight paths will cross. (See FIG 3−9−13).

Add

FIG 3-9-13

Intersecting Runway Separation



Add

NOTE−

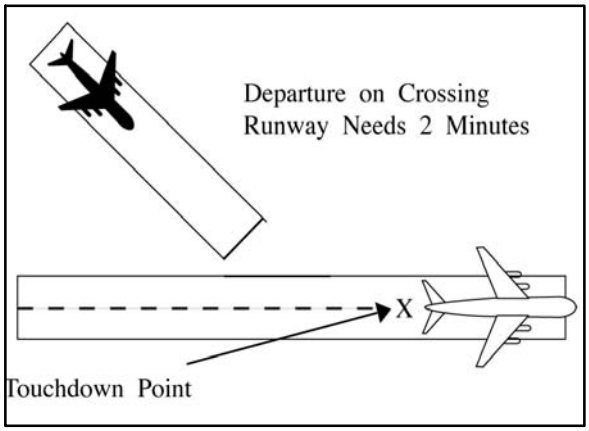
Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

Add

c. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a crossing runway if the departure will fly through the airborne path of the arrival- *2 minutes.* (See FIG 3−9−14).

Add

FIG 3-9-14
Intersecting Runway Separation



Add

d. Air traffic controllers must not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

Add

REFERENCE–
FAAO JO 7110.65, Para 5-8-3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5-8-5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.

Add

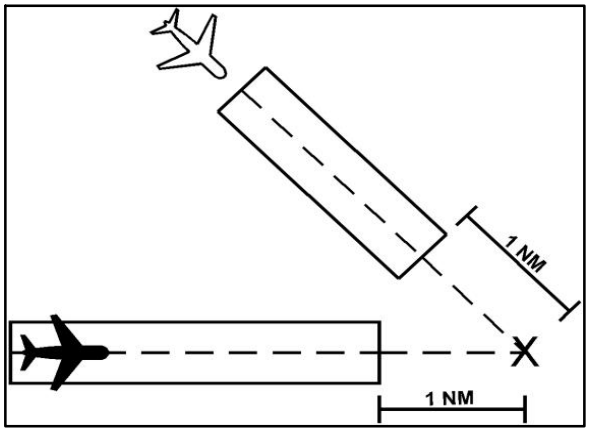
e. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway within 1 NM of either departure end, apply the provisions of Paragraph 3-9-8, Intersecting Runway Separation. (See FIG 3-9-15).

Add

REFERENCE–
FAAO JO 7210.3, Para 10-3-14, Go-Around/Missed Approach.

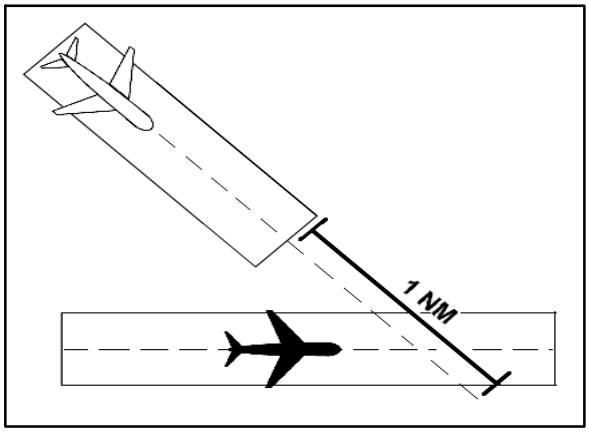
Add

FIG 3-9-15
Intersecting Runway Separation



Add

FIG 3-9-16
Intersecting Runway Separation



Paragraph 3-9-9 and **3-9-10** **Renumber to 3-9-10** and **3-9-11**

---

1. PARAGRAPH NUMBER AND TITLE: 4-8-1. APPROACH CLEARANCE

2. BACKGROUND: Since the implementation of the revised paragraph 4-8-1, industry stakeholders and the agency resolved concerns stemming from language incorporated into the original 4-8-1 change concerning Radius to Fix (RF) legs. These concerns have been resolved, and have resulted in some changes to AFS assumptions for conducting RNAV approaches with RF legs. This negates the need to retain the leg length procedures for RNP approaches with RF legs. Additionally, there have been changes coordinated between ATO and AFS concerning new GPS testing NOTAMs and GPS anomaly procedures to articulate a change in the structure of these NOTAMS from using "unreliable" to "may not be available."

3. CHANGE:

OLD	**NEW**
4-8-1. APPROACH CLEARANCE	**4-8-1. APPROACH CLEARANCE**
Title through **c**	No Change
d. For RNAV-equipped aircraft operating on unpublished routes, issue approach clearance for conventional or RNAV SIAP only after the aircraft is: (See FIG 4-8-2).	**d.** For RNAV-equipped aircraft operating on unpublished routes, issue approach clearance for conventional or RNAV SIAP **including approaches with RF legs** only after the aircraft is: (See FIG 4-8-2).
1. Established on a heading or course direct to the IAF at an intercept angle not greater than 90 degrees and is assigned an altitude in accordance with b2. Radar monitoring is required until the aircraft is established on a segment of the instrument approach procedure for RNAV (RNP) approaches when no procedure turn or hold-in-lieu of procedure turn will be executed.	**1.** Established on a heading or course direct to the IAF at an intercept angle not greater than 90 degrees and is assigned an altitude in accordance with b2. Radar monitoring is required **to the IAF** for RNAV (RNP) approaches when no hold-in-lieu of procedure turn **is** executed.

EXAMPLE–
Aircraft 1 can be cleared direct to CENTR. The intercept angle at that IAF is 90 degrees or less. The minimum altitude for IFR operations (14 CFR, section 91.177) along the flight path to the IAF is 3,000 feet. If a hold in lieu of procedure turn pattern is depicted at an IAF and a TAA is not defined, the aircraft must be instructed to conduct a straight-in approach if ATC does not want the pilot to execute a hold-in-lieu procedure turn. "Cleared direct CENTR, maintain at or above three thousand until CENTR, cleared straight-in RNAV Runway One Eight Approach."

No Change

d2 through **f1**

No Change

2. On a heading or course direct to the IAF when a hold-in-lieu of procedure turn is published and the pilot will execute the procedure, or

2. In accordance with paragraph d.

3. On a heading or course direct to the IAF/IF, at intercept angles no greater than 90 degrees and the distance to the waypoint beginning the RF leg is 6NM or greater, or

3. Do not clear aircraft direct to any waypoint beginning or within an RF leg.

4. With radar monitoring, on a heading or course direct to any waypoint 3 miles or more from the waypoint that begins the RF leg, at an intercept angle no greater than 30 degrees. (See FIG 4-8-4.)

4. Do not assign fix/waypoint crossing speeds in excess of charted speed restrictions.

5. Do not clear aircraft direct to any waypoint beginning or within an RF leg.

Delete

NOTE* 1** through **Fig 4-8-4** ***NOTE 2

No Change

EXAMPLE–
Aircraft 1 can be cleared to SCOND because the distance to THIRD, where the RF leg begins is 3NM or greater and the intercept angle will be 30 degrees or less and is radar monitored.

Aircraft 2 can be cleared direct to FIRST because the intercept angle is 90 degrees or less and the distance from FIRST to THIRD is 6NM or greater.

Delete

g through **FIG4-8-5**

No Change

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

j. When GPS **TESTING** NOTAMs **are published and testing is actually occurring,** inform pilots requesting **or cleared for** a RNAV approach that GPS **may not be available and request intentions. Do not resume RNAV approach operations until certain that GPS interference is no longer a factor or such GPS testing exercise has ceased.**

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

k. During times when pilots report GPS anomalies, **request the pilot's intentions** and/**or** clear **that** aircraft for **an alternative** approach**, if available and operational. Announce to other aircraft requesting an RNAV approach that GPS is reported unavailable and request intentions.**

REFERENCE– *FAAO JO 7110.65, Para 2-1-10, NAVAID Malfunctions* *FAAO JO 7110.65, Para 4-7-12, Airport Conditions*	No Change
PHRASEOLOGY– *CLEARED (approach), GPS UNRELIABLE.*	Delete
l. For Wide Area Augmentation System (WAAS) UNAVAILABLE NOTAMs, advise aircraft requesting a GPS or RNAV approach that WAAS is unavailable and clear the aircraft for the approach. This advisory may be omitted if contained in the ATIS broadcast.	**l. When clearing an aircraft for an RNAV approach, and a GPS NOTAM is published (a WAAS NOTAM is not issued), both GPS and WAAS may become unavailable. Therefore, when a GPS anomaly is reported, request the pilot's intentions.**
PHRASEOLOGY– *CLEARED (approach), WAAS UNAVAILABLE.*	Delete
NOTE– ***1.*** *WAAS UNAVAILABLE NOTAMs indicate a failure of a WAAS system component. GPS/WAAS equipment reverts to GPS–only operation and satisfies the requirements for basic GPS equipment.* ***2.*** *WAAS UNRELIABLE NOTAMs indicate predictive coverage, are published for pilot preflight planning, and do not require any controller action.*	***NOTE–*** *WAAS UNAVAILABLE NOTAMs* ***are published to*** *indicate a failure of a WAAS system component.* ***Airborne*** *GPS/WAAS equipment* ***may*** *revert to GPS–only operation* ***which*** *satisfies the requirements for basic* ***RNAV (GPS) approaches to the airport of intended landing or filed alternate airport, if airborne equipment is approved for such operations.***

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1. PARAGRAPH NUMBER AND TITLE: 5-4-5. TRANSFERRING CONTROLLER HANDOFF

2. BACKGROUND: A Corrective Action Request (CAR) was issued in March 2010 identifying issues concerning confusion regarding responsibility for point out coordination. Conflicting language was identified between this paragraph and Paragraphs 2-1-14, Coordinate Use of Airspace, and 5-4-6, Receiving Controller Handoff. This change, along with amendments to paragraphs 2-1-14 and 5-4-6, is intended to identify which controller(s) has point out responsibility.

3. CHANGE:

OLD	**NEW**
5-4-5. TRANSFERRING CONTROLLER HANDOFF	**5-4-5. TRANSFERRING CONTROLLER HANDOFF**
Title through **c1**	No Change
2. Necessary coordination has been accomplished with all controllers through whose area of jurisdiction the aircraft will pass prior to entering the receiving controller's area of jurisdiction, except when such coordination is the receiving controller's responsibility as stated in para 5-4-6, Receiving Controller Handoff, and unless otherwise specified by a LOA or a facility directive.	**2. C**oordination has been accomplished with all controllers through whose area of jurisdiction the aircraft will pass prior to entering the receiving controller's area of jurisdiction unless otherwise specified by a LOA or a facility directive.
c3 through **j**	No Change
k. Advise the receiving controller that radar monitoring is required when the aircraft is on a direct route initiated by ATC that exceeds usable NAVAID distances.	**k.** Advise the receiving controller **if** radar monitoring is required.

1. PARAGRAPH NUMBER AND TITLE: 5-4-6. RECEIVING CONTROLLER HANDOFF

2. BACKGROUND: A Corrective Action Request (CAR) was issued in March 2010 identifying issues concerning confusion regarding responsibility for point out coordination. Conflicting language was identified between this paragraph and paragraphs 2-1-14, Coordinate Use of Airspace, and 5-4-5, Transferring Controller Handoff. Additionally, numerous interpretations have been issued intended to rectify this confusion. This change, along with amendments to paragraphs 2-1-14 and 5-4-5, is intended to clarify which controller(s) has point out responsibility.

3. CHANGE:

OLD	NEW
5-4-6. RECEIVING CONTROLLER HANDOFF	**5-4-6. RECEIVING CONTROLLER HANDOFF**
Title through **b**	No Change
c. Comply with restrictions issued by the initiating controller unless otherwise coordinated.	**c.** Comply with restrictions issued by the **transferring** controller unless otherwise coordinated.
d. Before you issue control instructions directly to an aircraft that is within another controller's area of jurisdiction that will change that aircraft's heading, route, speed, altitude, or beacon code, ensure that coordination has been accomplished with each of the controllers listed below whose area of jurisdiction is affected by those instructions unless otherwise specified by a LOA or a facility directive:	Delete
NOTE– *Those en route facilities using host software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.*	Delete
1. The controller within whose area of jurisdiction the control instructions will be issued.	Delete
2. Any intervening controller(s) through whose area of jurisdiction the aircraft will pass.	Delete
e through **i** ***NOTE***	Re–letter **d** through **h** ***NOTE***

i. If you decide, *after* accepting the transfer of radar identification, to delay the aircraft's climb or descent through the vertical limits of the transferring controller's area of jurisdiction, advise the transferring controller of that decision as soon as possible. *You* now have the responsibility to ensure that the necessary coordination is accomplished with any intervening controller(s) whose area of jurisdiction is affected by that delay, unless otherwise specified in a LOA or a facility directive.	**h.** If you decide, *after* accepting the transfer of radar identification, to delay the aircraft's climb or descent through the vertical limits of the transferring controller's area of jurisdiction, advise the transferring controller of that decision as soon as possible.
NOTE– *Those en route facilities using HOST software that provides capability for passing interim altitude must include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.*	No Change

---

1. PARAGRAPH NUMBER AND TITLE: 5-9-4. ARRIVAL INSTRUCTIONS

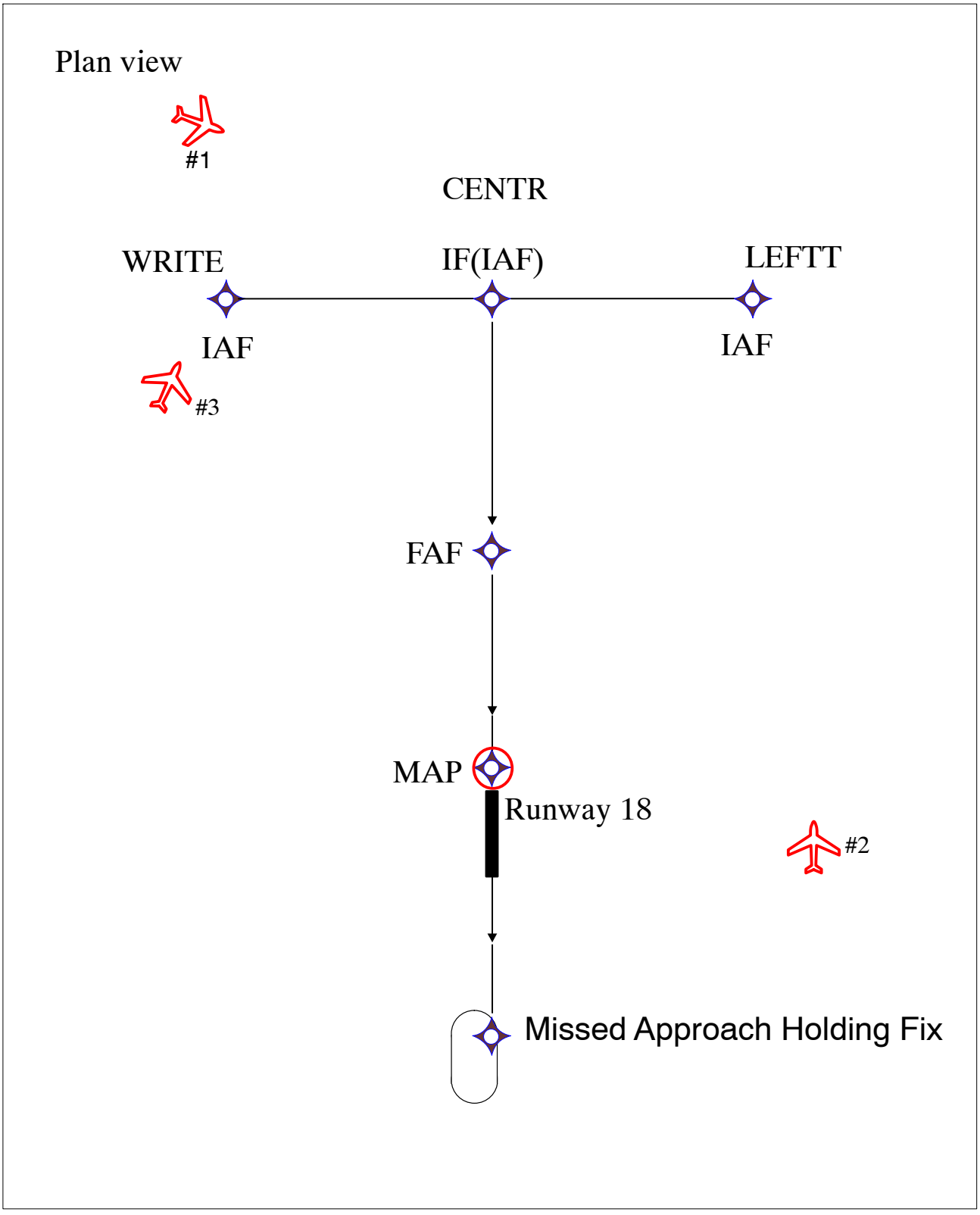
2. BACKGROUND: In the interest of providing commonality with the guidance contained in paragraph 4-8-1 concerning straight in approach clearances, we are revising a figure and examples within paragraph 5-9-4e related to Terminal Arrival Areas (TAA).

3. CHANGE:

OLD	NEW
5-9-4. ARRIVAL INSTRUCTIONS	**5-9-4. ARRIVAL INSTRUCTIONS**
EXAMPLE– **1.** *Aircraft 1: The aircraft is in the straight in area of the TAA. "Seven miles from CENTR, Cleared R−NAV Runway One Eight Approach."* **2.** *Aircraft 2: The aircraft is in the left base area of the TAA. "One five miles from LEFTT, Cleared GPS Runway One Eight Approach."* **3.** *Aircraft 3: The aircraft is in the right base area of the TAA. "Four miles from WRITE, Cleared FMS Runway One Eight Approach."*	***EXAMPLE–*** **1.** *Aircraft 1: The aircraft is in the straight in area of the TAA. "Seven miles from CENTR, Cleared R−NAV Runway One Eight Approach."* **2.** *Aircraft 2: The aircraft is in the left base area of the TAA. "One five miles from LEFTT, Cleared* ***R-NAV*** *Runway One Eight Approach."* **3.** *Aircraft 3: The aircraft is in the right base area of the TAA. "Four miles from* ***RIGHT****, Cleared* ***R-NAV*** *Runway One Eight Approach."*

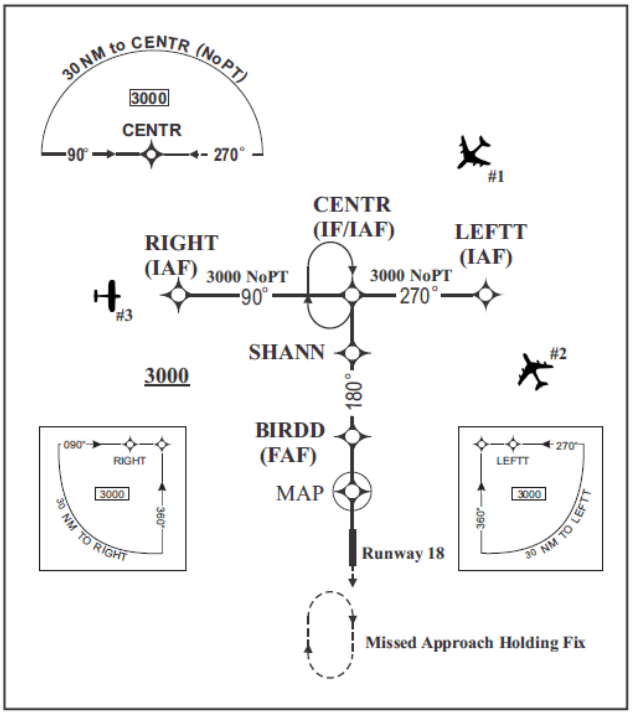
OLD

FIG 5−9−6
Basic "T" Design



NEW

FIG 5−9−6
Basic "T" Design



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1. PARAGRAPH NUMBER AND TITLE: 7-5-3. SEPARATION

2. BACKGROUND: On March 6, 2014, a workgroup convened to provide consensus and recommendations to clearly define and modify FAA JO 7110.65 requirements as they relate to SVFR operations in the NAS. The workgroup consisted of Air Traffic Services, Mission Support, Safety and Technical Training, Flight Standards, NATCA, and SUPCOM. The workgroup concluded that although paragraph 7-5-3 described the SVFR separation standards between fixed-wing aircraft, and Alternate SVFR minima for helicopters, it did not adequately address the separation minima to be used for SVFR helicopters. The changes to this paragraph do not provide use of pilot applied visual separation at airports without an operational control tower or alter the provisions of Paragraph 7-5-5, Local Operations.

3. CHANGE:

OLD	**NEW**
7-5-3. SEPARATION	**7-5-3. SEPARATION**
a. Apply approved separation between:	**a.** Apply **non-radar or visual** separation between:
1. SVFR aircraft.	**1.** SVFR **fixed−wing** aircraft.
2. SVFR aircraft and IFR aircraft.	**2.** SVFR **fixed-wing** aircraft **and SVFR Helicopters.**
Add	**3. SVFR fixed-wing aircraft and IFR aircraft.**

NOTE–
Approved separation between SVFR fixed−wing aircraft, and between SVFR fixed−wing aircraft and IFR fixed−wing aircraft, is prescribed in Chapter 6 and Chapter 7, para 7−5−4, Altitude Assignment. Radar vectors are authorized as prescribed in para 5−6−1, Application, subpara f.

Add

NOTE–
1. Vertical separation is authorized between SVFR fixed−wing aircraft and IFR aircraft as prescribed in FAA JO 7110.65, Paragraph 7-5-4, Altitude Assignments

2. Due to the requirements for SVFR fixed-wing aircraft to maintain 1-mile flight visibility and to remain clear of clouds, radar separation is not authorized during SVFR fixed-wing operations. Radar vectors are authorized, as prescribed in para 5-6-1, Application, subparagraph f, to expedite the entrance, exit, and transition of SVFR fixed-wing aircraft through the appropriate surface area.

Add

REFERENCE–
FAAO JO 7110.65, Chapter 6, Nonradar
FAAO JO 7110.65, para 7-2-1, Visual Separation
FAAO JO 7110.65, para 7-5-4, Altitude Assignment

Add

b. Apply non-radar, visual, or IFR radar separation between:

Add

1. SVFR Helicopters.

Add

2. SVFR Helicopters and IFR aircraft.

Add

NOTE–
1. Vertical separation is authorized between SVFR helicopters and IFR aircraft as prescribed in FAA JO 7110.65, Paragraph 7-5-4, Altitude Assignments.

2. Radar separation as prescribed in Chapter 5 may be applied provided that the facility conducting the operation is authorized to provide radar separation services in accordance with FAAO 7210.3, Paragraph 10-5-3, Functional Use of Certified Tower Radar Displays, subparagraph b5, and subparagraph d. Facilities that are not delegated airspace or separation responsibility must use CTRDs in accordance with FAAO 7110.65, Paragraph 3-1-9, Use of Tower Radar Displays, subparagraph b.

b. Alternate SVFR helicopter separation minima may be established when warranted by the volume and/or complexity of local helicopter operations. Alternate SVFR helicopter separation minima must be established with an LOA with the helicopter operator which must specify, as a minimum, that SVFR helicopters are to maintain visual reference to the surface and adhere to the following aircraft separation minima:

c. Alternate SVFR helicopter separation minima may be established when warranted by the volume and/or complexity of local helicopter operations. Alternate SVFR helicopter separation minima must be established with an LOA with the helicopter operator which must specify, as a minimum, that SVFR helicopters are to maintain visual reference to the surface and adhere to the following aircraft separation minima:

1. Between a SVFR helicopter and an arriving or departing IFR aircraft:

No Change

(a) $^{1}/_{2}$ mile. If the IFR aircraft is less than 1 mile from the landing airport.

No Change

(b) 1 mile. If the IFR aircraft is 1 mile or more from the airport.

No Change

2. 1 mile between SVFR helicopters. This separation may be reduced to 200 feet if:	No Change
(a) Both helicopters are departing simultaneously on courses that diverge by at least 30 degrees and:	No Change
(1) The tower can determine this separation by reference to surface markings; or	No Change
(2) One of the departing helicopters is instructed to remain at least 200 feet from the other.	No Change
NOTE– *Radar vectors are authorized as prescribed in para 5-6-1, Application.*	***NOTE–*** ***1. Vertical separation is authorized between SVFR helicopters and IFR aircraft as prescribed in FAAO 7110.65, paragraph 7-5-4, Altitude Assignments.*** ***2. Radar separation as prescribed in Chapter 5 may be applied provided that the facility conducting the operation is authorized to provide radar separation services in accordance with FAAO 7210.3, Paragraph 10-5-3, Functional Use of Certified Tower radar Displays, subparagraph b5, and subparagraph d. Facilities that are not delegated airspace or separation responsibility must use CTRDs in accordance with FAAO 7110.65, Paragraph 3-1-9, Use of Tower Radar Displays, subparagraph b.***
REFERENCE– *FAAO JO 7110.65, Para 2-1-4, Operational Priority.*	***REFERENCE–*** *FAAO JO 7110.65, Para 2-1-4, Operational Priority.* ***FAAO JO 7110.65, para 7-2-1, Visual Separation*** ***FAAO JO 7110.65, para 7-5-4 Altitude Separation*** ***FAAO JO 7110.65, Chapter 6, Nonradar*** ***FAAO JO 7210.3, para 10-5-3, Functional Use of Certified Tower Radar Displays***

---

1. PARAGRAPH NUMBER AND TITLE: 7-9-4. SEPARATION

2. BACKGROUND: The term “fixed–wing” was inadvertently added to subparagraph b.

3. CHANGE:

OLD	**NEW**
7-9-4. SEPARATION	**7-9-4. SEPARATION**
b. VFR fixed wing aircraft must be separated from VFR/IFR aircraft/ helicopter/rotorcraft that weigh more than 19,000 pounds and turbojets by no less than:	**b.** VFR aircraft must be separated from VFR/IFR aircraft/ helicopter/rotorcraft that weigh more than 19,000 pounds and turbojets by no less than:

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1. PARAGRAPH NUMBER AND TITLE: 8-1-9. RVSM OPERATIONS

2. BACKGROUND: FAA JO 7110.65, Paragraph 2-1-28, RVSM Operations, allows for operation of certain excepted non-RVSM aircraft within RVSM airspace. Due to the duration of flight and distance between appropriate landing facilities, provisions have been made to allow for additional exceptions within the oceanic and offshore environment. In addition to those exceptions in paragraph 2-1-28, the following non-RVSM aircraft may operate within RVSM airspace while operating within or transitioning to/from oceanic airspace: an aircraft being initially delivered to the State of Registry or Operator; an aircraft that was formerly RVSM–approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval; an aircraft being utilized for mercy or humanitarian purposes; within the Oakland, Anchorage, and Arctic FIRs, an aircraft transporting a spare engine mounted under the wing.

3. CHANGE:

OLD	NEW
Add	**8-1-9. RVSM OPERATIONS**
Add	**Controller responsibilities for non–RVSM aircraft operating in RVSM airspace must include but not be limited to the following:**
Add	**a. Ensure non–RVSM aircraft are not permitted in RVSM airspace unless they meet the criteria of excepted aircraft and are previously approved by the operations supervisor/CIC.**
Add	**b. In addition to those aircraft listed in Chapter 2, Section 1, Paragraph 2-1-28, RVSM Operations, in this order, the following aircraft operating within oceanic airspace or transiting to/from oceanic airspace are excepted:**
Add	**1. Aircraft being initially delivered to the State of Registry or Operator;**
Add	**2. Aircraft that was formerly RVSM approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval;**
Add	**3. Aircraft being utilized for mercy or humanitarian purposes;**
Add	**4. Within the Oakland, Anchorage, and Arctic FIRs, an aircraft transporting a spare engine mounted under the wing.**
Add	**(a) These exceptions are accommodated on a workload or traffic-permitting basis.**
Add	**(b) All other requirements contained in paragraph 2-1-28 are applicable to this section.**
Add	***REFERENCE–*** ***FAAO JO 7110.65, Para 2-1-28, RVSM Operations***

1. PARAGRAPH NUMBER AND TITLE:
10-3-1. OVERDUE AIRCRAFT
10-3-2. INFORMATION TO BE FORWARDED TO ARTCC
10-3-3. INFORMATION TO BE FORWARDED TO RCC
10-3-4. ALNOT
10-3-6. AIRCRAFT POSITION PLOTS
10-3-7. ALNOT CANCELLATION

2. BACKGROUND: To clarify that facilities must make required notifications to initiate Search and Rescue (SAR) operations as soon as possible, new guidance is provided directing ATC facilities to take immediate action to issue an Alert Notice (ALNOT) after a simultaneous loss of radar and communications under abnormal circumstances. There has been some confusion that facilities must wait 30 minutes prior to issuing an ALNOT; however, those circumstances would be related to a pilot's failure to cancel a flight plan, failure to report airborne after a clearance void time, etc. A simultaneous loss of radar and communications under abnormal circumstances with an en route IFR aircraft or a VFR aircraft receiving flight following services should be considered an emergency situation to be followed by an immediate ALNOT. Timely actions are needed in these circumstances to support the best possible outcome in the event of a survivable crash. In addition to the filing of a timely ALNOT, essential follow-up information to be included in an ALNOT and that information to be passed to the appropriate United States Coast Guard or United States Air Force Rescue Coordination Center (RCC) is clarified to aid the SAR providers in the SAR mission.

3. CHANGE:

OLD	NEW
10-3-1. OVERDUE AIRCRAFT	**10-3-1 OVERDUE AIRCRAFT/<u>OTHER SITUATIONS</u>**
a. Consider an aircraft to be overdue<u>,</u> initiate the procedures stated in this section <u>and</u> issue an ALNOT when neither communications nor radar contact can be established and 30 minutes have passed since:	**a.** Consider an aircraft to be overdue **<u>and</u>** initiate the procedures stated in this section **<u>to</u>** issue an ALNOT when neither communications nor radar contact can be established and 30 minutes have passed since:
NOTE through **a2**	No Change
Add	**<u>3. A VFR or IFR aircraft arriving at an airport not served by an air traffic control tower or flight service station fails to cancel a flight plan after receiving instructions on how to cancel.</u>**
Add	***<u>NOTE–</u>*** ***<u>If you have reason to believe that an aircraft is overdue prior to 30 minutes, take the appropriate action immediately.</u>***
Add	**<u>b. Consider an aircraft to be in an emergency status and initiate ALNOT procedures in this section immediately when there is an abnormal simultaneous loss of radar and communications with an IFR aircraft or VFR/SVFR aircraft receiving flight following services. This situation may be applicable to an aircraft operating in a non-radar environment and an unexpected/ abnormal loss of communications occurs.</u>**

Add

c. The ARTCC in whose area the aircraft is reported as overdue, missing, or lost will make these determinations and takes any subsequent action required.

b and **c**

Re−letter **d** and **e.**

OLD

10-3-2. INFORMATION TO BE FORWARDED TO ARTCC

TERMINAL

When an aircraft is considered to be in emergency status that may require SAR procedures, or an IFR aircraft is overdue, the terminal facility must alert the ARTCC and forward the following information, as available:

a through **c**

d. Action taken by reporting facility and proposed action.

e through **g**

h. Last known position, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

NEW

10-3-2. INFORMATION TO BE FORWARDED TO ARTCC

TERMINAL

When an aircraft is considered to be in emergency status that may require SAR procedures, or an IFR aircraft is overdue, the terminal facility must alert the **appropriate** ARTCC and forward the following information, as available:

No Change

d. Aircraft beacon code.

No Change

h. Last known position, **how determined, time,** estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

OLD

10-3-3. INFORMATION TO BE FORWARDED TO RCC

Title through **d**

Add

e through **h**

i. Last known position, estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

j through **l**

NEW

10-3-3. INFORMATION TO BE FORWARDED TO RCC

No Change

e. Aircraft beacon code.

Re−letter **f** through **i.**

j. Last known position, **how determined, time,** estimated present position, and maximum range of flight of the aircraft based on remaining fuel and airspeed.

Re-letter **k** through **m.**

OLD

10-3-4. ALNOT

Title through **b**

Add

Add

Add

NEW

10-3-4. ALNOT

No Change

c. Include pertinent information in the ALNOT that will aid the RCC and SAR teams in conducting the SAR mission. When known, include:

1. Last known position.

2. Time.

Add	**3. Aircraft beacon code.**
Add	**d. When information is obtained not previously contained in the ALNOT, issue an amended ALNOT to update information that will assist the SAR providers.**

OLD	NEW
10-3-6. AIRCRAFT POSITION PLOTS	**10-3-6. LAST KNOWN POSITION DETERMINATION**
Plot the flight path of the aircraft on a chart, including position reports, predicted positions, possible range of flight, and any other pertinent information. Solicit the assistance of other aircraft known to be operating near the aircraft in distress. Forward this information to the RCC or the ARTCC as appropriate.	Delete
Add	**a. To assist the RCC and SAR teams in the conduct of the SAR mission, provide the most accurate latitude and longitude available to the FAA using en route and terminal radar sensor data near the aircraft's last known position.**
Add	**b. If necessary to prevent an undue delay, utilize any available method to determine the initial latitude and longitude. Follow-up as soon as possible with a formal latitude and longitude using the appropriate terminal or en route facility data extraction tools.**
Add	**c. If available, solicit the assistance of other aircraft known to be operating near the aircraft in distress.**
Add	**d. Forward this information to the RCC or the ARTCC as appropriate.**

OLD	NEW
10-3-7. ALNOT CANCELLATION	**10-3-7. ALNOT CANCELLATION**
EN ROUTE	*EN ROUTE*
Cancel the ALNOT when the aircraft is located or the search is abandoned	**a. When directed by the RCC, c**ancel the ALNOT when the aircraft is located or the search is abandoned.
Add	**b. Include pertinent information in the cancellation that will aid the RCC, SAR teams, and FAA SAR management to include the location where the aircraft or wreckage was found.**