CHANGE

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

JO 7110.65U
CHG 1

Effective Date:
July 26, 2012

SUBJ: Air Traffic Control

1. Purpose of This Change. This change transmits revised pages to Federal Aviation Administration Order JO 7110.65U, 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 Retain this transmittal until superseded by a new basic order.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.

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

Date: June 1, 2012

Explanation of Changes
Change 1

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

a. 1–1–8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

This change specifies the ATCPO as the central collection point for any changes to this order. This change cancels and incorporates N JO 7110.573, Recommendations for Procedural Changes, effective January 6, 2012.

b. 4–4–6. DIRECT CLEARANCES

This change ensures the new functions in the Traffic Flow Management (TFM) system software are not used until ERAM is completely operational in the entire National Airspace System. This change cancels and incorporates N JO 7110.568, Traffic Flow Management (TFM) System, effective November 15, 2011.

c. 5–2–9. VFR CODE ASSIGNMENTS
5–2–13. CODE MONITOR

This change assigns code 1202 for use by gliders not in contact with an ATC facility. The change also provides general flight characteristics of gliders and some of their limitations. This change cancels and incorporates N JO 7110.577, Visual Flight Rules (VFR) Glider Codes, effective March 7, 2012.

d. 5–5–7. PASSING OR DIVERGING

This change incorporates the provisions of a 2010 interpretation that clarified that passing or diverging criteria applies to terminal when using single sensor display configuration with both short range or long range radar.

e. 5–9–6. PARALLEL DEPENDENT ILS/MLS APPROACHES
5–9–7. SIMULTANEOUS INDEPENDENT ILS/MLS APPROACHES – DUAL & TRIPLE
5–9–8. SIMULTANEOUS INDEPENDENT DUAL ILS/MLS APPROACHES – HIGH UPDATE RADAR

This change incorporates specially–designed instrument approach procedures at airports currently conducting simultaneous dependent approaches. This change allows air traffic control personnel to conduct simultaneous dependent to appropriately spaced runways where approach charts specifically authorize simultaneous operations with adjacent runways. This change deletes references to ILS/MLS approaches and changes localizer/azimuth course to final approach course. This change cancels and incorporates N JO 7110.574, Simultaneous Dependent and Independent Approaches, effective January 18, 2012.

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

PAGE CONTROL CHART

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Chapter 1. General

Section 1. Introduction

1–1–1. PURPOSE OF THIS ORDER

This order prescribes 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 7110.65T, Air Traffic Control, dated February 11, 2010, 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 7110.65U	8/25/11	2/9/12
Change 1	2/9/12	7/26/12
Change 2	7/26/12	3/7/13
Change 3	3/7/13	8/22/13
JO 7110.65V	8/22/13	2/6/14

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 (N885F)	664–7727	(703) 604–7727
*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 N–885F 2000 Navy Pentagon Washington, D.C. 20350–2000
U.S. Air Force	HQ AFFSA/A3A Bldg 4 Room 240 6500 S. MacArthur Blvd Oklahoma City, OK 73169 Email: hqaffsa.a3a@tinker.af.mil
U.S. Army	Director USAASA (MOAS–AS) 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060–5582

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

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

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

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

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

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

1–1–13. DISTRIBUTION

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

Section 10. Arrival Procedures and Separation

3–10–1. LANDING INFORMATION

Provide current landing information, as appropriate, to arriving aircraft. Landing information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code. Runway, wind, and altimeter may be omitted if a pilot uses the phrase "have numbers." Issue landing information by including the following:

NOTE–
Pilot use of "have numbers" does not indicate receipt of the ATIS broadcast.

a. Specific traffic pattern information (may be omitted if the aircraft is to circle the airport to the left).

PHRASEOLOGY–
ENTER LEFT/RIGHT BASE.

STRAIGHT–IN.

MAKE STRAIGHT–IN.

STRAIGHT–IN APPROVED.

RIGHT TRAFFIC.

MAKE RIGHT TRAFFIC.

RIGHT TRAFFIC APPROVED. CONTINUE.

b. Runway in use.

c. Surface wind.

d. Altimeter setting.

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

e. Any supplementary information.

f. Clearance to land.

g. Requests for additional position reports. Use prominent geographical fixes which can be easily recognized from the air, preferably those depicted on sectional charts. This does not preclude the use of the legs of the traffic pattern as reporting points.

NOTE–
At some locations, VFR checkpoints are depicted on sectional aeronautical and terminal area charts. In selecting geographical fixes, depicted VFR checkpoints are preferred unless the pilot exhibits a familiarity with the local area.

h. Ceiling and visibility if either is below basic VFR minima.

i. Low level wind shear or microburst advisories when available.

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

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

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

k. If the pilot does not indicate the appropriate ATIS code, and when a runway has been shortened, controllers must ensure that pilots receive the runway number combined with a shortened announcement for all arriving aircraft.

3–10–2. FORWARDING APPROACH INFORMATION BY NONAPPROACH CONTROL FACILITIES

a. Forward the following, as appropriate, to the control facility having IFR jurisdiction in your area. You may eliminate those items that, because of local conditions or situations, are fully covered in a letter of agreement or a facility directive.

1. When you clear an arriving aircraft for a visual approach.

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

2. Aircraft arrival time.

3. Cancellation of IFR flight plan.

4. Information on a missed approach, unreported, or overdue aircraft.

5. Runway in use.

6. Weather as required.

REFERENCE–
FAAO JO 7110.65, Para 2–6–6, Reporting Weather Conditions.

b. When the weather is below 1,000 feet or 3 miles or the highest circling minimums, whichever is greater, issue current weather to aircraft executing an instrument approach if it changes from that on the ATIS or that previously forwarded to the center/approach control.

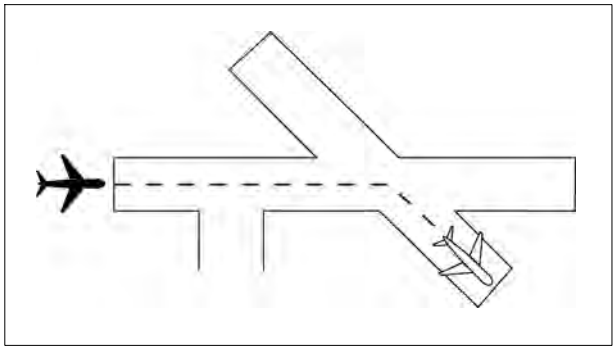
3–10–3. SAME RUNWAY SEPARATION

a. Separate an arriving aircraft from another aircraft using the same runway by ensuring that the arriving aircraft does not cross the landing threshold until one of the following conditions exists or unless authorized in para 3–10–10, Altitude Restricted Low Approach.

1. The other aircraft has landed and is clear of the runway. (See FIG 3–10–1.) Between sunrise and sunset, if you can determine distances by reference to suitable landmarks and the other aircraft has landed, it need not be clear of the runway if the following minimum distance from the landing threshold exists:

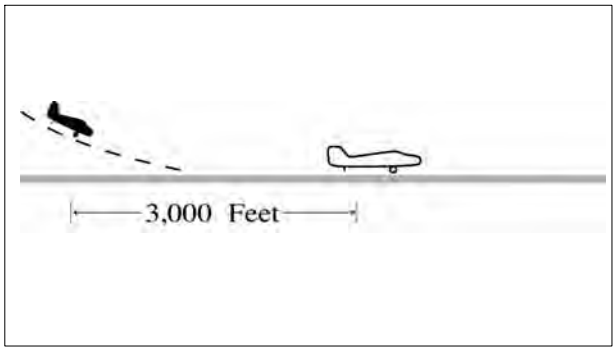
REFERENCE–
P/CG Term– Clear of the Runway.

FIG 3–10–1
Same Runway Separation



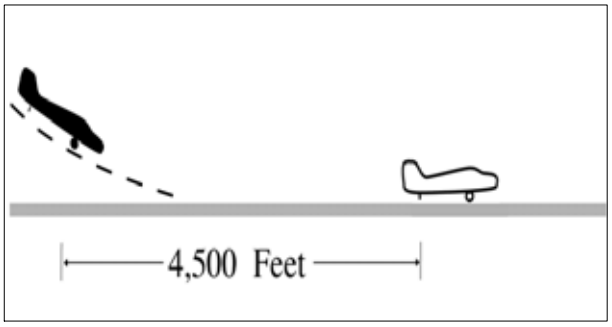
(a) When a Category I aircraft is landing behind a Category I or II– *3,000 feet*.
(See FIG 3–10–2.)

FIG 3–10–2
Same Runway Separation



(b) When a Category II aircraft is landing behind a Category I or II– *4,500 feet.*
(See FIG 3–10–3.)

FIG 3–10–3
Same Runway Separation



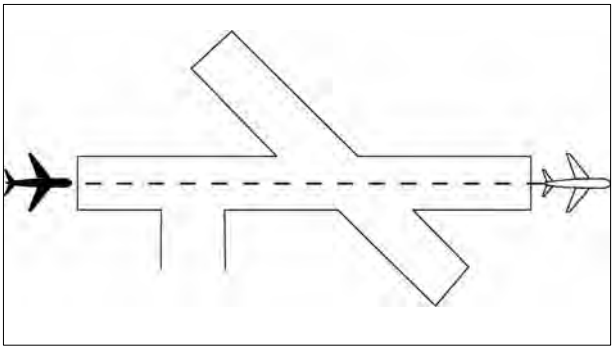
2. The other aircraft has departed and crossed the runway end. (See FIG 3–10–4). If you can determine distances by reference to suitable landmarks and the other aircraft is airborne, it need not have crossed the runway end if the following minimum distance from the landing threshold exists:

(a) Category I aircraft landing behind Category I or II– *3,000 feet*.

(b) Category II aircraft landing behind Category I or II– *4,500 feet.*

(c) When either is a category III aircraft– *6,000 feet*. (See FIG 3–10–5.)

FIG 3–10–4
Same Runway Separation



(c) For celestial navigation routes, all altitudes– 260 miles.

4. Degree-distance fixes used to define a route must be considered compulsory reporting points except that an aircraft may be authorized by ATC to omit reports when traffic conditions permit.

5. Military aircraft using degree-distance route definition procedures must conduct operations in accordance with the following:

(a) Unless prior coordination has been effected with the appropriate air traffic control facility, flight plan the departure and the arrival phases to conform with the routine flow of traffic when operating within 75 miles of the departure and the arrival airport. Use defined routes or airways or direct courses between NAVAIDs or as otherwise required to conform to the normal flow of traffic.

(b) Flight plans must be filed at least 2 hours before the estimated time of departure.

b. The following special military operations are authorized to define routes, or portions of routes, by degree-distance fixes:

1. Airborne radar navigation, radar bomb scoring (RBS), and airborne missile programming conducted by the USAF, USN, and RAF.

2. Celestial navigation conducted by the USAF, USN, and RAF.

3. Target aircraft operating in conjunction with air defense interceptors, and air defense interceptors while en route to and from assigned airspace.

4. Missions conducted above FL 450.

5. USN fighter and attack aircraft operating in positive control airspace.

6. USN/USMC aircraft, TACAN equipped, operating within the Honolulu FIR/Hawaiian airways area.

7. USAF/USN/USMC aircraft flight planned to operate on MTRs.

8. USAF Air Mobility Command (AMC) aircraft operating on approved station-keeping equipment (SKE) routes in accordance with the conditions and limitations listed in FAA Exemption No. 4371 to 14 CFR Section 91.177(a)(2) and 14 CFR Section 91.179(b)(1).

4–4–4. ALTERNATIVE ROUTES

When any part of an airway or route is unusable because of NAVAID status, clear aircraft other than /E, /F, /G, or /R, via one of the following alternative routes:

a. A route depicted on current U.S. Government charts/publications. Use the word “substitute” immediately preceding the alternative route in issuing the clearance.

b. A route defined by specifying NAVAID radials, courses, or azimuths.

c. A route defined as direct to or between NAVAIDs.

d. Vectors.

NOTE–
Inform area navigation aircraft that will proceed to the NAVAID location of the NAVAID outage.

4–4–5. CLASS G AIRSPACE

Include routes through Class G airspace only when requested by the pilot.

NOTE–
1. *Flight plans filed for random RNAV routes through Class G airspace are considered a request by the pilot.*

2. *Flight plans containing MTR segments in/through Class G airspace are considered a request by the pilot.*

4–4–6. DIRECT CLEARANCES

a. Unless operational necessity dictates, do not issue a routing clearance that will take an aircraft off of its flight plan route if:

1. The aircraft is part of a known traffic management initiative.

2. The part of the route under consideration for the direct routing is within a protected segment. If a flight routing within a protected segment is amended, coordination must be accomplished as follows:

(a) ATCS: with TMU.

(b) Terminal facility TMU: with overlying ARTCC TMU.

(c) ARTCC TMU (for amendments outside their facility): with ATCSCC.

b. *EN ROUTE*. Do not issue revised routing clearances that will take an aircraft off its flight plan route past the last fix in your facility’s airspace, unless

requested by the pilot or operational necessity dictates.

NOTE–
Nothing in this paragraph must preclude a controller from issuing a routing clearance that conforms to a letter of agreement or standard operating procedure within their own facility or between facilities, is required to maintain separation or comply with traffic flow management initiatives.

Section 8. Approach Clearance Procedures

4–8–1. APPROACH CLEARANCE

a. Clear aircraft for "standard" or "special" instrument approach procedures only. 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. An aircraft conducting an ILS/MLS approach when the glideslope/glidepath is reported out of service must be advised at the time an approach clearance is issued. Standard Instrument Approach Procedures must commence at an Initial Approach Fix or an Intermediate Approach Fix if there is not an Initial Approach Fix. Area Navigation (RNAV) Standard Instrument Approach Procedures may begin at an Intermediate Approach Fix for aircraft that have filed an Advanced RNAV equipment suffix when the conditions of subpara b4 are met. Where adequate radar coverage exists, radar facilities may vector aircraft to the final approach course in accordance with para 5–9–1, Vectors to Final Approach Course.

PHRASEOLOGY–
CLEARED (type) APPROACH.

(For a straight-in-approach– IFR),

CLEARED STRAIGHT-IN (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/MLS approach when the glideslope/glidepath is out of service),

CLEARED (type) APPROACH, GLIDESLOPE/GLIDEPATH UNUSABLE.

EXAMPLE–
"Cleared Approach."
"Cleared V–O–R Approach."
"Cleared V–O–R Runway Three Six Approach."
"Cleared F–M–S Approach."
"Cleared F–M–S Runway Three Six Approach."
"Cleared I–L–S Approach."
"Cleared Localizer Back Course Runway One Three Approach."
"Cleared R–NAV Runway Two Two Approach."
"Cleared GPS Runway Two Approach."
"Cleared BRANCH ONE R–NAV Arrival and R–NAV Runway One Three Approach."
"Cleared I–L–S Runway Three Six Approach, glideslope unusable."
"Cleared M–L–S Approach."
"Cleared M–L–S Runway Three Six Approach."
"Cleared M–L–S Runway Three Six Approach, glidepath unusable."

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; e.g., "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. *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 or the azimuth on an MLS 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. For example, Instrument Approach Procedures published on a chart as either HI–VOR/DME or TACAN 1 would be stated as either "HI V–O–R/D–M–E 1 Runway Six Left Approach" or "HI TACAN 1 Runway Six Left Approach." The use of numerical identifiers in the approach name, or alphabetical identifiers with a letter from the end of the*

alphabet; e.g., X, Y, Z, such as "HI TACAN 1 Rwy 6L or HI TACAN 2 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; e.g., 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 for a procedure turn when vectored to a final approach fix or position, 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; i.e., "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; i.e., the aircraft would not be expected to overfly and return to the IAF or feeder route.*

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

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

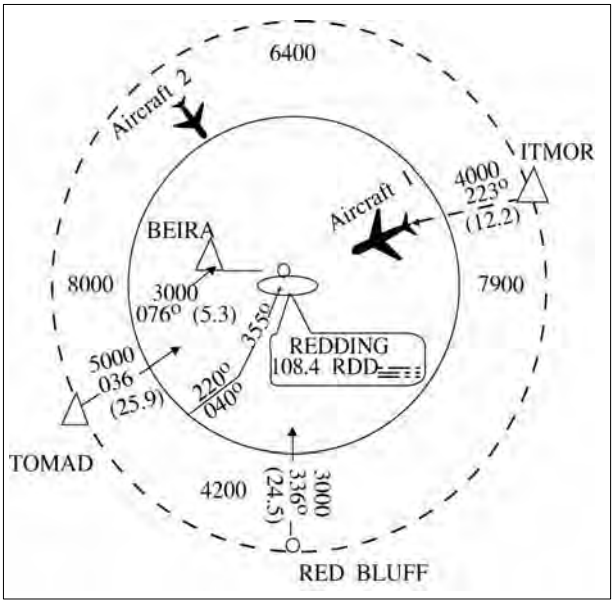
b. For aircraft operating on unpublished routes, issue the approach clearance only after the aircraft is: (See FIG 4–8–1.)

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

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.

FIG 4–8–1
Approach Clearance Example



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.*

3. Established on a heading or course that will intercept the initial segment at the initial approach fix, or intermediate segment at the intermediate fix when no initial approach fix is published, for a GPS or RNAV instrument approach procedure at an angle not greater than 90 degrees. Angles greater than 90 degrees may be used when a hold in lieu of procedure turn pattern is depicted at the fix for the instrument approach procedure. (See FIG 4–8–2.)

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

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

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

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

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

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

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

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

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

5–2–7. EMERGENCY CODE ASSIGNMENT

Assign codes to emergency aircraft as follows:

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

PHRASEOLOGY–
SQUAWK MAYDAY ON 7700.

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

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

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

PHRASEOLOGY–
RADAR CONTACT (position). IF FEASIBLE, SQUAWK (code).

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

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

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

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

5–2–8. RADIO FAILURE

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

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

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–9. VFR CODE ASSIGNMENTS

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

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

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

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

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

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

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

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

PHRASEOLOGY–
SQUAWK VFR.

or

SQUAWK 1200.

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

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

3. *Gliders not in contact with an ATC facility should squawk 1202 in lieu of 1200. Gliders operate under some flight and maneuvering limitations. They may go from essentially stationary targets while climbing and thermaling to moving targets very quickly. They can be expected to make radical changes in flight direction to find lift and cannot hold altitude in a response to an ATC request. Gliders may congregate together for short periods of time to climb together in thermals and may cruise together in loose formations while traveling between thermals.*

REFERENCE–
FAAO 7110.66, National Beacon Code Allocation Plan.

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

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

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

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

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

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

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

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–11. AIR DEFENSE EXERCISE BEACON CODE ASSIGNMENT

EN ROUTE

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

NOTE–
1. *NORAD will ensure exercise FAKER aircraft flight*

plans are filed containing discrete beacon codes from the Department of Defense code allocation specified in FAA Order JO 7610.4, Special Operations, Appendix 6.

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

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–12. STANDBY OR LOW SENSITIVITY OPERATION

You may instruct an aircraft operating on an assigned code to change transponder to "standby" or "low sensitivity" position:

NOTE–
National standards no longer require improved transponder to be equipped with the low sensitivity feature. Therefore, aircraft with late model transponders will be unable to respond to a request to "squawk low."

a. When approximately 15 miles from its destination and you no longer desire operation of the transponder.

b. When necessary to reduce clutter in a multi-target area, or to reduce "ring-around" or other phenomena, provided you instruct the aircraft to return to "normal sensitivity" position as soon as possible thereafter.

PHRASEOLOGY–
SQUAWK STANDBY,

or

SQUAWK LOW/NORMAL.

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–13. CODE MONITOR

Continuously monitor the Mode 3/A radar beacon codes assigned for use by aircraft operating within your area of responsibility when nonautomated beacon decoding equipment (e.g., 10–channel decoder) is used to display the target symbol.

REFERENCE–
FAAO JO 7110.65, Para 5–2–6, Function Code Assignments.

NOTE–
In addition to alphanumeric and control symbology processing enhancements, the MEARTS, STARS, and the TPX–42 systems are equipped with automatic beacon decoders. Therefore, in facilities where the automatic beacon decoders are providing the control slash video, there is no requirement to have the nonautomated decoding equipment operating simultaneously.

REFERENCE–
FAAO JO 7210.3, Para 3–7–4, Monitoring of Mode 3/A Radar Beacon Codes.

a. This includes the appropriate IFR code actually assigned and, additionally, **Code 1200**, **Code 1202, Code 1255**, and **Code 1277** unless your area of responsibility includes only Class A airspace. During periods when ring-around or excessive VFR target presentations derogate the separation of IFR traffic, the monitoring of VFR **Code 1200**, **Code 1202, Code 1255**, and **Code 1277** may be temporarily discontinued.

b. Positions of operation which contain a restricted or warning area or VR route within or immediately adjacent to their area of jurisdiction must monitor **Code 4000** and any other code used in lieu of **4000** within the warning/restricted area or VR route. If by local coordination with the restricted/warning area or VR route user a code other than 4000 is to be exclusively used, then this code must be monitored.

c. If a normally assigned beacon code disappears, check for a response on the following codes in the order listed and take appropriate action:

NOTE–
*When **Codes 7500** and/or **7600** have been preselected, it will be necessary for the ID–SEL–OFF switches for these codes to be left in the off position so that beacon target for an aircraft changing to one of these codes will disappear, thereby alerting the controller to make the check. This check will not be required if automatic alerting capability exists.*

1. Code 7500 (hijack code).

REFERENCE–
FAAO JO 7110.65, Para 10–2–6, Hijacked Aircraft.

2. Code 7600 (loss of radio communications code).

5–2–14. FAILURE TO DISPLAY ASSIGNED BEACON CODE OR INOPERATIVE/ MALFUNCTIONING TRANSPONDER

a. Inform an aircraft with an operable transponder that the assigned beacon code is not being displayed.

PHRASEOLOGY–
(Identification) RESET TRANSPONDER, SQUAWK (appropriate code).

b. Inform an aircraft when its transponder appears to be inoperative or malfunctioning.

PHRASEOLOGY–
(Identification) YOUR TRANSPONDER APPEARS INOPERATIVE/MALFUNCTIONING, RESET, SQUAWK (appropriate code).

c. Ensure that the subsequent control position in the facility or the next facility, as applicable, is notified when an aircraft transponder is malfunctioning/inoperative.

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–15. INOPERATIVE OR MALFUNCTIONING INTERROGATOR

Inform aircraft concerned when the ground interrogator appears to be inoperative or malfunctioning.

PHRASEOLOGY–
(Name of facility or control function) BEACON INTERROGATOR INOPERATIVE/MALFUNCTIONING.

REFERENCE–
FAAO JO 7110.65, Para 5–1–3, Radar Use.
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–16. FAILED TRANSPONDER IN CLASS A AIRSPACE

Disapprove a request or withdraw previously issued approval to operate in Class A airspace with a failed transponder solely on the basis of traffic conditions or other operational factors.

REFERENCE–
FAAO JO 7110.65, Para 5–1–3, Radar Use.
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–17. VALIDATION OF MODE C READOUT

Ensure that Mode C altitude readouts are valid after accepting an interfacility handoff, initial track start, track start from coast/suspend tabular list, missing, or unreasonable Mode C readouts. For TPX–42 and equivalent systems ensure that altitude readout is valid immediately after identification. (TCDD–/BANS–equipped tower cabs are not required to validate Mode C readouts after receiving interfacility handoffs from TRACONs according to the procedures in para 5–4–3, Methods, subpara a4.)

a. Consider an altitude readout valid when:

1. It varies less than 300 feet from the pilot reported altitude, or

PHRASEOLOGY–
(If aircraft is known to be operating below the lowest useable flight level),

SAY ALTITUDE.

or

(If aircraft is known to be operating at or above the lowest useable flight level),

SAY FLIGHT LEVEL.

2. You receive a continuous readout from an aircraft on the airport and the readout varies by less than 300 feet from the field elevation, or

NOTE–
A continuous readout exists only when the altitude filter limits are set to include the field elevation.

REFERENCE–
FAAO JO 7110.65, Para 5–2–23, Altitude Filters.
FAAO JO 7110.65, Para 5–14–5, Selected Altitude Limits.
FAAO JO 7210.3, Para 11–2–3 , Display Data.

3. You have correlated the altitude information in your data block with the validated information in a data block generated in another facility (by verbally coordinating with the other controller) and your readout is exactly the same as the readout in the other data block.

b. When unable to validate the readout, do not use the Mode C altitude information for separation.

c. Whenever you observe an invalid Mode C readout below FL 180:

1. Issue the correct altimeter setting and confirm the pilot has accurately reported the altitude.

PHRASEOLOGY–
(Location) ALTIMETER (appropriate altimeter), VERIFY ALTITUDE.

2. If the altitude readout continues to be invalid:

(a) Instruct the pilot to turn off the altitude-reporting part of his/her transponder and include the reason; and

(b) Notify the operations supervisor-in-charge of the aircraft call sign.

PHRASEOLOGY–
STOP ALTITUDE SQUAWK. ALTITUDE DIFFERS BY (number of feet) FEET.

d. Whenever you observe an invalid Mode C readout at or above FL 180, unless the aircraft is descending below Class A airspace:

1. Confirm that the pilot is using 29.92 inches of mercury as the altimeter setting and has accurately reported the altitude.

PHRASEOLOGY–
CONFIRM USING TWO NINER NINER TWO AS YOUR ALTIMETER SETTING.

(If aircraft is known to be operating at or above the lowest useable flight level),

VERIFY FLIGHT LEVEL.

2. If the Mode C readout continues to be invalid:

(a) Instruct the pilot to turn off the altitude-reporting part of his/her transponder and include the reason; and

(b) Notify the operational supervisor-in-charge of the aircraft call sign.

PHRASEOLOGY–
STOP ALTITUDE SQUAWK. ALTITUDE DIFFERS BY (number of feet) FEET.

e. Whenever possible, inhibit altitude readouts on all consoles when a malfunction of the ground equipment causes repeated invalid readouts.

5–2–18. ALTITUDE CONFIRMATION–MODE C

Request a pilot to confirm assigned altitude on initial contact unless:

NOTE–
For the purpose of this paragraph, "initial contact" means a pilot's first radio contact with each sector/position.

a. The pilot states the assigned altitude, or

b. You assign a new altitude to a climbing or a descending aircraft, or

c. The Mode C readout is valid and indicates that the aircraft is established at the assigned altitude, or

d. *TERMINAL.* The aircraft was transferred to you from another sector/position within your facility (intrafacility).

PHRASEOLOGY–
(In level flight situations),VERIFY AT (altitude/flight level).

(In climbing/descending situations),

(if aircraft has been assigned an altitude below the lowest useable flight level),

VERIFY ASSIGNED ALTITUDE (altitude).

or

(If aircraft has been assigned a flight level at or above the lowest useable flight level),

VERIFY ASSIGNED FLIGHT LEVEL (flight level).

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–19. ALTITUDE CONFIRMATION–NON–MODE C

a. Request a pilot to confirm assigned altitude on initial contact unless:

NOTE–
For the purpose of this paragraph, "initial contact" means a pilot's first radio contact with each sector/position.

1. The pilot states the assigned altitude, or

2. You assign a new altitude to a climbing or a descending aircraft, or

3. *TERMINAL.* The aircraft was transferred to you from another sector/position within your facility (intrafacility).

PHRASEOLOGY–
(In level flight situations),VERIFY AT (altitude/flight level).

(In climbing/descending situations),VERIFY ASSIGNED ALTITUDE/FLIGHT LEVEL (altitude/flight level).

b. USA. Reconfirm all pilot altitude read backs.

PHRASEOLOGY–
(If the altitude read back is correct),

AFFIRMATIVE (altitude).

(If the altitude read back is not correct),

NEGATIVE. CLIMB/DESCEND AND MAINTAIN (altitude),

or

NEGATIVE. MAINTAIN (altitude).

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–20. AUTOMATIC ALTITUDE REPORTING

Inform an aircraft when you want it to turn on/off the automatic altitude reporting feature of its transponder.

PHRASEOLOGY–
SQUAWK ALTITUDE,

or

STOP ALTITUDE SQUAWK.

NOTE–
Controllers should be aware that not all aircraft have a capability to disengage the altitude squawk independently from the beacon code squawk. On some aircraft both functions are controlled by the same switch.

REFERENCE–
FAAO JO 7110.65, Para 5–2–17, Validation of Mode C Readout.
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.
P/CG Term– Automatic Altitude Report.

5–2–21. INFLIGHT DEVIATIONS FROM TRANSPONDER/MODE C REQUIREMENTS BETWEEN 10,000 FEET AND 18,000 FEET

Apply the following procedures to requests to deviate from the Mode C transponder requirement by aircraft operating in the airspace of the 48 contiguous states and the District of Columbia at and above 10,000 feet MSL and below 18,000 feet MSL, excluding the airspace at and below 2,500 feet AGL.

NOTE–
1. *14 CFR Section 91.215(b) provides, in part, that all U.S. registered civil aircraft must be equipped with an operable, coded radar beacon transponder when operating in the altitude stratum listed above. Such transponders must have a Mode 3/A 4096 code capability, replying to Mode 3/A interrogation with the code specified by ATC, or a Mode S capability, replying to Mode 3/A interrogations with the code specified by ATC. The aircraft must also be equipped with automatic pressure altitude reporting equipment having a Mode C capability that automatically replies to Mode C interrogations by transmitting pressure altitude information in 100–foot increments.*

2. *The exception to 14 CFR Section 91.215 (b) is 14 CFR Section 91.215(b)(5) which states: except balloons, gliders, and aircraft without engine–driven electrical systems.*

REFERENCE–
FAAO JO 7210.3, Chapter 19 , Temporary Flight Restrictions.

a. Except in an emergency, do not approve inflight requests for authorization to deviate from 14 CFR Section 91.215(b)(5)(i) requirements originated by aircraft without transponder equipment installed.

b. Approve or disapprove other inflight deviation requests, or withdraw approval previously issued to such flights, solely on the basis of traffic conditions and other operational factors.

c. Adhere to the following sequence of action when an inflight VFR deviation request is received from an aircraft with an inoperative transponder or Mode C, or is not Mode C equipped:

1. Suggest that the aircraft conduct its flight in airspace unaffected by the CFRs.

2. Suggest that the aircraft file an IFR flight plan.

3. Suggest that the aircraft provide a VFR route of flight and maintain radio contact with ATC.

d. Do not approve an inflight deviation unless the aircraft has filed an IFR flight plan or a VFR route of flight is provided and radio contact with ATC is maintained.

e. You may approve an inflight deviation request which includes airspace outside your jurisdiction without the prior approval of the adjacent ATC sector/facility providing a transponder/Mode C status report is forwarded prior to control transfer.

f. Approve or disapprove inflight deviation requests within a reasonable period of time or advise when approval/disapproval can be expected.

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–22. BEACON TERMINATION

Inform an aircraft when you want it to turn off its transponder.

PHRASEOLOGY–

STOP SQUAWK.

(For a military aircraft when you do not know if the military service requires that it continue operating on another mode),

STOP SQUAWK (mode in use).

REFERENCE–
FAAO JO 7110.65, Para 5–3–3, Beacon Identification Methods.

5–2–23. ALTITUDE FILTERS

TERMINAL

Set altitude filters to display Mode C altitude readouts to encompass all altitudes within the controller's jurisdiction. Set the upper limits no lower than 1,000 feet above the highest altitude for which the controller is responsible. In those stratified positions, set the lower limit to 1,000 feet or more below the lowest altitude for which the controller is responsible. When the position's area of responsibility includes down to an airport field elevation, the facility will normally set the lower altitude filter limit to encompass the field elevation so that provisions of para 2–1–6, Safety Alert, and para 5–2–17, Validation of Mode C Readout, subpara a2 may be applied. Air traffic managers may authorize temporary suspension of this requirement when target clutter is excessive.

selected. Current equipment limitations preclude a target from being displayed in the single sensor mode; however, a position symbol and data block, including altitude information, will still be displayed. Therefore, low altitude alerts must be provided in accordance with para 2−1−6, Safety Alert.

WAKE TURBULENCE APPLICATION

e. Separate aircraft operating directly behind, or directly behind and less than 1,000 feet below, or following an aircraft conducting an instrument approach by:

NOTE−
1. *When applying wake turbulence separation criteria, directly behind means an aircraft is operating within 2,500 feet of the flight path of the leading aircraft over the surface of the earth.*

2. *Consider parallel runways less than 2,500 feet apart as a single runway because of the possible effects of wake turbulence.*

1. Heavy behind heavy− *4 miles.*

2. Large/heavy behind B757− *4 miles*.

3. Small behind B757− *5 miles.*

4. Small/large behind heavy − *5 miles.*

WAKE TURBULENCE APPLICATION

f. *TERMINAL*. In addition to subpara e, separate an aircraft landing behind another aircraft on the same runway, or one making a touch-and-go, stop-and-go, or low approach by ensuring the following minima will exist at the time the preceding aircraft is over the landing threshold:

NOTE−
Consider parallel runways less than 2,500 feet apart as a single runway because of the possible effects of wake turbulence.

1. Small behind large− *4 miles*.

2. Small behind B757− *5 miles.*

3. Small behind heavy− *6 miles.*

g. *TERMINAL*. 2.5 nautical miles (NM) separation is authorized between aircraft established on the final approach course within 10 NM of the landing runway when operating in single sensor slant range mode and aircraft remains within 40 miles of the antenna and:

1. The leading aircraft's weight class is the same or less than the trailing aircraft;

2. Heavy aircraft and the Boeing 757 are permitted to participate in the separation reduction as the trailing aircraft only;

3. An average runway occupancy time of 50 seconds or less is documented;

4. CTRDs are operational and used for quick glance references;

REFERENCE−
FAAO JO 7110.65, Para 3−1−9, Use of Tower Radar Displays.

5. Turnoff points are visible from the control tower.

REFERENCE−
FAAO JO 7110.65, Para 2−1−19, Wake Turbulence.
FAAO JO 7110.65, Para 3−9−6, Same Runway Separation.
FAAO JO 7110.65, Para 5−5−7, Passing or Diverging.
FAAO JO 7110.65, Para 5−5−9, Separation from Obstructions.
FAAO JO 7110.65, Para 5−8−3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5−9−5, Approach Separation Responsibility.
FAAO JO 7110.65, Para 7−6−7, Sequencing.
FAAO JO 7110.65, Para 7−7−3, Separation.
FAAO JO 7110.65 Para 7−8−3, Separation.
FAAO JO 7210.3, Para 10−4−8 , Reduced Separation on Final.

5−5−5. VERTICAL APPLICATION

Aircraft not laterally separated, may be vertically separated by one of the following methods:

a. Assign altitudes to aircraft, provided valid Mode C altitude information is monitored and the applicable separation minima is maintained at all times.

REFERENCE−
FAAO JO 7110.65, Para 4−5−1, Vertical Separation Minima.
FAAO JO 7110.65, Para 5−2−17, Validation of Mode C Readout.
FAAO JO 7110.65, Para 7−7−3, Separation.
FAAO JO 7110.65, Para 7−8−3, Separation.
FAAO JO 7110.65, Para 7−9−4, Separation.

b. Assign an altitude to an aircraft after the aircraft previously at that altitude has been issued a climb/descent clearance and is observed (valid Mode C), or reports leaving the altitude.

NOTE−
1. *Consider known aircraft performance characteristics, pilot furnished and/or Mode C detected information which indicate that climb/descent will not be consistent with the rates recommended in the AIM.*

2. *It is possible that the separation minima described in para 4−5−1, Vertical Separation Minima, para 7−7−3, Separation, para 7−8−3, Separation, or para 7−9−4, Separation, might not always be maintained using subpara b. However, correct application of this procedure*

will ensure that aircraft are safely separated because the first aircraft must have already vacated the altitude prior to the assignment of that altitude to the second aircraft.

REFERENCE–
FAAO JO 7110.65, Para 2–1–3, Procedural Preference.
FAAO JO 7110.65, Para 4–5–1, Vertical Separation Minima.
FAAO JO 7110.65, Para 5–2–17, Validation of Mode C Readout.
FAAO JO 7110.65, Para 6–6–1, Application.

5–5–6. EXCEPTIONS

a. Do not use Mode C to effect vertical separation with an aircraft on a cruise clearance, contact approach, or as specified in para 5–15–4, System Requirements, subpara e3.

REFERENCE–
FAAO JO 7110.65, Para 6–6–2, Exceptions.
FAAO JO 7110.65, Para 7–4–6, Contact Approach.
P/CG Term– Cruise.

b. Assign an altitude to an aircraft only after the aircraft previously at that altitude is observed at or passing through another altitude separated from the first by the appropriate minima when:

1. Severe turbulence is reported.

2. Aircraft are conducting military aerial refueling.

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

3. The aircraft previously at that altitude has been issued a climb/descent at pilot's discretion.

5–5–7. PASSING OR DIVERGING

a. *TERMINAL*. When displaying a single site adapted short range or long range radar, and in accordance with the following criteria, all other approved separation may be discontinued and passing or diverging separation applied when

1. Aircraft are on opposite/reciprocal courses and you have observed that they have passed each other; or aircraft are on same or crossing courses/assigned radar vectors and one aircraft has crossed the projected course of the other, and the angular difference between their courses/assigned radar vectors is at least 15 degrees.

NOTE–
Two aircraft, both assigned radar vectors with an angular difference of at least 15 degrees, is considered a correct application of this paragraph.

2. The tracks are monitored to ensure that the primary targets, beacon control slashes, or full digital terminal system primary and/or beacon target symbols will not touch.

REFERENCE–
FAAO JO 7110.65, Para 1–2–2, Course Definitions.

NOTE–
1. *Apply en route separation rules when using multisensory radar.*

2. *Although all other approved separation may be discontinued, the requirements of para 5-5-4, Minima, subparas e and f must apply when operating behind a heavy jet/B757.*

b. *EN ROUTE*. Vertical separation between aircraft may be discontinued when they are on opposite courses as defined in para 1–2–2, Course Definitions; and

1. You are in communications with both aircraft involved; and

2. You tell the pilot of one aircraft about the other aircraft, including position, direction, type; and

3. One pilot reports having seen the other aircraft and that the aircraft have passed each other; and

4. You have observed that the radar targets have passed each other; and

5. You have advised the pilots if either aircraft is classified as a heavy jet/B757 aircraft.

6. Although vertical separation may be discontinued, the requirements of para 5–5–4, Minima, subparas e and f must be applied when operating behind a heavy jet/B757.

EXAMPLE–
"Traffic, twelve o'clock, Boeing Seven Twenty Seven, opposite direction. Do you have it in sight?"

(If the answer is in the affirmative):

"Report passing the traffic."

(When pilot reports passing the traffic and the radar targets confirm that the traffic has passed, issue appropriate control instructions.)

5–5–8. ADDITIONAL SEPARATION FOR FORMATION FLIGHTS

Because of the distance allowed between formation aircraft and lead aircraft, additional separation is necessary to ensure the periphery of the formation is adequately separated from other aircraft, adjacent

airspace, or obstructions. Provide supplemental separation for formation flights as follows:

a. Separate a standard formation flight by adding 1 mile to the appropriate radar separation minima.

REFERENCE–
FAAO JO 7110.65, Para 2–1–13, Formation Flights.
FAAO JO 7110.65, Para 5–5–1, Application.
FAAO JO 7110.65, Para 7–7–3, Separation.
P/CG Term– Formation Flight.

b. Separate two standard formation flights from each other by adding 2 miles to the appropriate separation minima.

c. Separate a nonstandard formation flight by applying the appropriate separation minima to the perimeter of the airspace encompassing the nonstandard formation or from the outermost aircraft of the nonstandard formation whichever applies.

d. If necessary for separation between a nonstandard formation and other aircraft, assign an appropriate beacon code to each aircraft in the formation or to the first and last aircraft in-trail.

NOTE–
The additional separation provided in para 5–5–8, Additional Separation for Formation Flights, is not normally added to wake turbulence separation when a formation is following a heavier aircraft since none of the formation aircraft are likely to be closer to the heavier aircraft than the lead aircraft (to which the prescribed wake turbulence separation has been applied).

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

5–5–9. SEPARATION FROM OBSTRUCTIONS

a. Except in En Route Stage A/DARC or Stage A/EDARC, separate aircraft from obstructions depicted on the radar display by the following minima:

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

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

b. Except in En Route Stage A/DARC or Stage A/EDARC, vertical separation of aircraft above an obstruction depicted on the radar display may be discontinued after the aircraft has passed it.

c. En Route Stage A/DARC or Stage A/EDARC, apply the radar separation minima specified in para 5–5–4, Minima, subpara b1.

5–5–10. ADJACENT AIRSPACE

a. If coordination between the controllers concerned has not been effected, separate radar-controlled aircraft from the boundary of adjacent airspace in which radar separation is also being used by the following minima:

REFERENCE–
FAAO JO 7110.65, Para 2–1–14, Coordinate Use of Airspace.

1. When less than 40 miles from the antenna– *1 ½ miles.*

2. When 40 miles or more from the antenna– *2 ½ miles.*

3. En route Stage A/DARC or Stage A/EDARC:

(a) Below Flight Level 600– *2 ½ miles.*

(b) Flight Level 600 and above– *5 miles.*

b. Separate radar-controlled aircraft from the boundary of airspace in which nonradar separation is being used by the following minima:

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

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

3. En route Stage A/DARC or Stage A/EDARC:

(a) Below Flight Level 600– *5 miles.*

(b) Flight Level 600 and above– *10 miles.*

c. The provisions of subparas a and b do not apply to VFR aircraft being provided Class B, Class C, or TRSA services. Ensure that the targets of these aircraft do not touch the boundary of adjacent airspace.

d. VFR aircraft approaching Class B, Class C, Class D, or TRSA airspace which is under the control jurisdiction of another air traffic control facility should either be provided with a radar handoff or be advised that radar service is terminated, given their position in relation to the Class B, Class C, Class D, or TRSA airspace, and the ATC frequency, if known, for the airspace to be entered. These actions should be accomplished in sufficient time for the pilot to obtain the required ATC approval prior to entering the airspace involved, or to avoid the airspace.

5–5–11. EDGE OF SCOPE

Separate a radar-controlled aircraft climbing or descending through the altitude of an aircraft that has been tracked to the edge of the scope/display by the following minima until nonradar separation has been established:

a. When less than 40 miles from the antenna– *3 miles* from edge of scope.

b. When 40 miles or more from the antenna– *5 miles* from edge of scope.

c. En route Stage A/DARC or Stage A/EDARC:

1. Below Flight Level 600– *5 miles.*

2. Flight Level 600 and above– *10 miles*.

5–5–12. BEACON TARGET DISPLACEMENT

When using a radar target display with a previously specified beacon target displacement to separate a beacon target from a primary target, adjacent airspace, obstructions, or terrain, add a 1 mile correction factor to the applicable minima. The maximum allowable beacon target displacement which may be specified by the facility air traffic manager is $^1/_2$ mile.

REFERENCE–
FAAO JO 7210.3, Para 3–7–4, Monitoring of Mode 3/A Radar Beacon Codes.

5–5–13. GPA 102/103 CORRECTION FACTOR

When using a radar display whose primary radar video is processed by the GPA 102/103 modification to a joint-use radar system, apply the following correction factors to the applicable minima:

a. If less than 40 miles from the antenna– add *1 mile.*

b. If 40 miles or more but not over 200 miles from the antenna– add *3 miles.*

5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

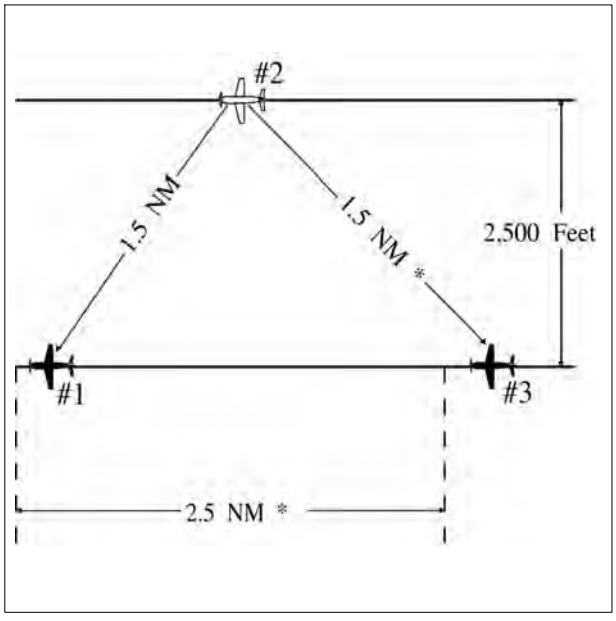
TERMINAL

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.

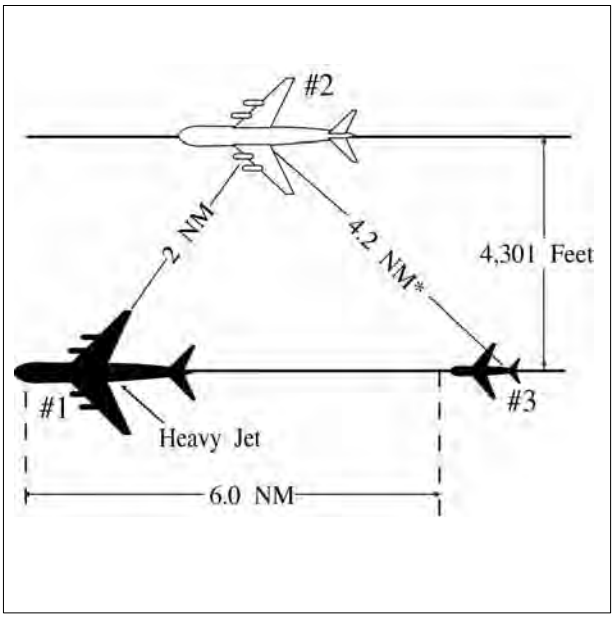
FIG 5–9–7
Simultaneous Dependent Approaches



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 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 Safety and Operations Support in coordination with AFS with parallel runways that have centerlines separated by less than 3,000 feet with one localizer 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 LDA aircraft of a leading SOIA pair and the ILS aircraft in the subsequent SOIA pair when the parallel runways have centerlines separated by less than 2500 feet.

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

b. The following conditions are required when applying the minimum separation on ILS/MLS and offset LDA with glideslope courses authorized in subpara a above:

1. Straight–in landings will be made.

2. ILS, MLS, LDA, glideslope, DME, radar, and appropriate frequencies are operating normally.

3. Inform aircraft that closely spaced simultaneous ILS/MLS 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 LDA 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 LDA aircraft of a leading SOIA pair and the ILS aircraft in the subsequent SOIA pair when the parallel runways have centerlines separated by less than 2500 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 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 LOCALIZER/AZIMUTH 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 ILS aircraft passes the end of the NTZ nearest the runway threshold.

(b) The LDA aircraft passes the end of the NTZ nearest the runway threshold and has reported the ILS 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 para 5–13–1, Monitor on PAR Equipment, for simultaneous ILS, MLS, ILS and MLS, or SOIA approaches.

d. Advise the pilot of the LDA aircraft of traffic on the adjacent ILS approach course, if that traffic will be a factor in the visual segment of the approach. The provisions of para 7–2–1, Visual Separation, subpara 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 LDA MAP if all of the following conditions are met: The pilot has the ILS 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 LDA MAP.

e. Ensure that the LDA aircraft is positioned to facilitate the flight crew's ability to see the ILS traffic from the nominal clear–of–clouds point to the LDA MAP so that the flight crew can remain separated from that traffic visually from the LDA MAP to the runway threshold.

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

f. In the visual segment between the LDA MAP and the runway threshold, if the pilot of the LDA aircraft loses visual contact with the ILS 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 LDA 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.

5–9–10. 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.

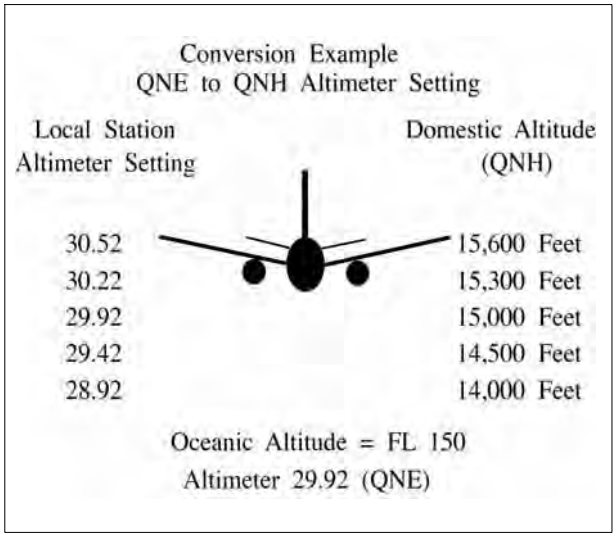
REFERENCE–
FAAO JO 7110.65, Para 5-1-13, Radar Service Termination.
FAAO JO 7110.65, Para 5-9-2, Final Approach Course Interception.

Section 5. Offshore/Oceanic Transition Procedures

8–5–1. ALTITUDE/FLIGHT LEVEL TRANSITION

When vertical separation is applied between aircraft crossing the offshore/oceanic airspace boundary below FL 180, control action must be taken to ensure that differences between the standard altimeter setting (QNE) and local altimeter setting (QNH) do not compromise separation. (See FIG 8–5–1.)

FIG 8–5–1
Standard and Local Altimeter Setting Differences



8–5–2. COURSE DIVERGENCE

When aircraft are entering oceanic airspace, separation will exist in oceanic airspace when:

a. Aircraft are established on courses that diverge by at least 15 degrees until oceanic lateral separation is established, and

b. The aircraft are horizontally radar separated and separation is increasing at the edge of known radar coverage.

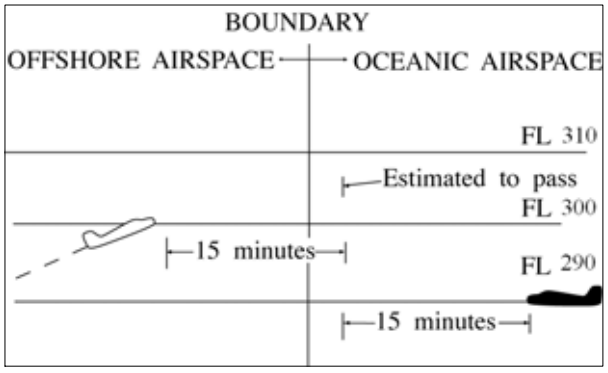
8–5–3. OPPOSITE DIRECTION

When transitioning from an offshore airspace area to oceanic airspace, an aircraft may climb through opposite direction oceanic traffic provided vertical separation above that traffic is established:

a. Before the outbound crosses the offshore/oceanic boundary; and

b. 15 minutes before the aircraft are estimated to pass. (See FIG 8–5–2.)

FIG 8–5–2
Transitioning From Offshore to Oceanic Airspace Opposite Direction



8–5–4. SAME DIRECTION

When transitioning from an offshore airspace area to oceanic airspace or while within oceanic airspace, apply 5 minutes minimum separation when a following aircraft on the same course is climbing through the altitude of the preceding aircraft if the following conditions are met:

a. The preceding aircraft is level at the assigned altitude and is maintaining a speed equal to or greater than the following aircraft; and

b. The minimum of *5 minutes* is maintained between the preceding and following aircraft; and

c. The following aircraft is separated by not more than 4,000 feet from the preceding aircraft when the climb clearance is issued; and

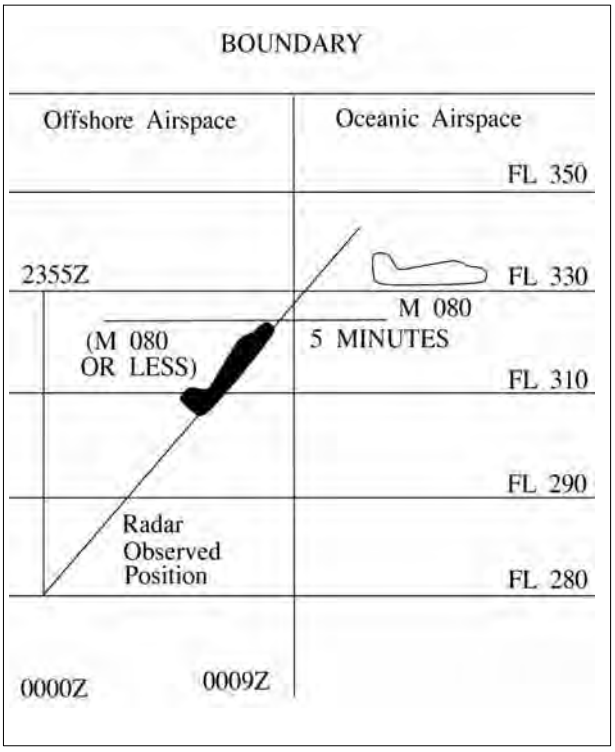
d. The following aircraft commences climb within *10 minutes* after passing:

1. An exact reporting point (DME fix or intersection formed from NAVAIDs) which the preceding aircraft has reported; or

2. A radar observed position over which the preceding aircraft has been observed; and

e. The following aircraft is in direct communication with air traffic control until vertical separation is established. (See FIG 8–5–3.)

FIG 8–5–3
Transitioning From Offshore to Oceanic Airspace Same Direction



Section 8. Caribbean ICAO Region

8–8–1. APPLICATION

Provide air traffic control services in the Caribbean ICAO Region with the procedures and minima contained in this section except when noted otherwise.

8–8–2. VERTICAL SEPARATION

Provide vertical separation in accordance with Chapter 4, IFR, Section 5, Altitude Assignment and Verification.

8–8–3. LONGITUDINAL SEPARATION

Provide longitudinal separation between aircraft as follows:

a. Supersonic flight:

1. *10 minutes* provided both aircraft are in level flight at the same Mach number or the aircraft are of the same type and are both operating in cruise climb, and one of the following;

(a) Both aircraft have reported over a common point; or,

(b) If both aircraft have not reported over a common point, the appropriate time interval being applied between aircraft exists and will exist at the common point; or,

(c) If a common point does not exist, the appropriate time interval being applied between aircraft exists and will exist at significant points along each track.

2. *15 minutes* between all other aircraft.

b. Turbojet operations at or above FL 200 in the Miami Oceanic, Houston Oceanic and San Juan CTAs/FIRs and all altitudes in the West Atlantic Route System (WATRS) and New York Oceanic CTA/FIR *(subsonic flight)*:

1. Apply the prescribed minima in accordance with para 8–3–3, Mach Number Technique; or

2. In the New York CTA/FIR, where tracks diverge from the common point and the following aircraft is maintaining a greater Mach number than the preceding aircraft:

(a) At least *10 minutes* longitudinal separation exists at the point where the tracks diverge; and

(b) At least *5 minutes* longitudinal separation will exist where minimum lateral separation is achieved *(whichever is estimated to occur first)*;

(1) At or before the next significant point (normally within ten degrees of longitude along track(s)), or

(2) Within *90 minutes* of the time the following aircraft passes the common point, or

(3) Within *600 NM* of the common point; or

3. Apply *15 minutes* between all other turbojet aircraft.

c. Turbojet operations below FL 200 *(subsonic flight)*:

Apply *20 minutes* between turbojet aircraft operating below FL 200 in the San Juan Oceanic *(outside the WATRS area)*, Miami Oceanic and Houston Oceanic CTAs/FIRs.

d. Nonturbojet operations.

1. Apply *20 minutes* between aircraft operating in the WATRS; or

2. Apply *20 minutes* between aircraft operating below FL 200 in the Miami Oceanic, Houston Oceanic and San Juan CTAs/FIRs; or

3. Apply *30 minutes* between aircraft operating outside of the WATRS in the New York CTA/FIR.

NOTE–
The WATRS area is defined as beginning at a point 27°00'N/77°00'W direct to 20°00'N/67°00'W direct to 18°00'N/62°00'W direct to 18°00'N/60°00'W direct to 38°30'N/60°00'W direct to 38°30'N/69°15'W, thence counterclockwise along the New York Oceanic CTA/FIR boundary to the Miami Oceanic CTA/FIR boundary, thence southbound along the Miami Oceanic CTA/FIR boundary to the point of beginning.

8–8–4. LATERAL SEPARATION

In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 4, Lateral Separation, apply the following:

a. *50 NM* between Required Navigation Performance (RNP 4 or RNP 10) approved aircraft which:

1. Operate on routes or in areas within WATRS, the San Juan CTA/FIR or the Atlantic portion of the Miami Oceanic CTA/FIR; or

2. Operate in the New York Oceanic CTA/FIR outside of WATRS; or

3. Operate in the Houston Oceanic CTA/FIR or the Gulf of Mexico portion of the Miami CTA/FIR..

NOTE–
This reduced lateral separation must not be used if track–keeping capability of the aircraft has been reduced for any reason.

b. *60 NM* between:

1. Supersonic aircraft operating above FL 275 within the New York oceanic CTA/FIR.

2. Supersonic aircraft operating at or above FL 450 not covered in subpara 1 above.

3. Aircraft which meet the MNPS and which:

(a) Operate within MNPS airspace; or

(b) Are in transit to or from MNPS airspace; or

(c) Operate for part of their flight within, above, or below MNPS airspace.

NOTE–
This reduced lateral separation must not be used if track–keeping capability of the aircraft has been reduced for any reason.

c. *90 NM* between aircraft not approved for RNP 4 or RNP 10 and which:

1. Operate within *WATRS*; or

2. Operate west of 55° West between the U.S., Canada, or Bermuda and points in the Caribbean ICAO Region.

d. *100 NM* between aircraft operating west of 55°West not covered by subparas a, b or c above.

e. *120 NM* between aircraft operating east of 55°West.

8–8–5. VFR CLIMB AND DESCENT

a. In the Houston, Miami, and San Juan CTAs, IFR flights may be cleared to climb and descend in VFR conditions only:

1. When requested by the pilot; and

2. Between sunrise and sunset.

b. Apply the following when the flight is cleared:

1. If there is a possibility that VFR conditions may become impractical, issue alternative instructions.

2. Issue traffic information to aircraft that are not separated in accordance with the minima in this section.

Section 2. Emergency Assistance

10–2–1. INFORMATION REQUIREMENTS

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

NOTE–
In the event of an ELT signal see para 10–2–10, Emergency Locator Transmitter (ELT) Signals.

1. Aircraft identification and type.

2. Nature of the emergency.

3. Pilot's desires.

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

NOTE–
Normally, do not request this information from military fighter-type aircraft that are at low altitudes (i.e., on approach, immediately after departure, on a low level route, etc.). However, request the position of an aircraft that is not visually sighted or displayed on radar if the location is not given by the pilot.

1. Aircraft altitude.

2. Fuel remaining in time.

3. Pilot reported weather.

4. Pilot capability for IFR flight.

5. Time and place of last known position.

6. Heading since last known position.

7. Airspeed.

8. Navigation equipment capability.

9. NAVAID signals received.

10. Visible landmarks.

11. Aircraft color.

12. Number of people on board.

13. Point of departure and destination.

14. Emergency equipment on board.

10–2–2. FREQUENCY CHANGES

Although 121.5 MHz and 243.0 MHz are emergency frequencies, it might be best to keep the aircraft on the initial contact frequency. Change frequencies only when there is a valid reason.

10–2–3. AIRCRAFT ORIENTATION

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

a. Radar.

b. DF.

c. NAVAIDs.

d. Pilotage.

e. Sighting by other aircraft.

10–2–4. ALTITUDE CHANGE FOR IMPROVED RECEPTION

When you consider it necessary and if weather and circumstances permit, recommend that the aircraft maintain or increase altitude to improve communications, radar, or DF reception.

NOTE–
Aircraft with high-bypass turbofan engines (such as B747) encountering volcanic ash clouds have experienced total loss of power to all engines. Damage to engines due to volcanic ash ingestion increases as engine power is increased, therefore, climb while in the ash cloud is to be avoided where terrain permits.

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

10–2–5. EMERGENCY SITUATIONS

Consider that an aircraft emergency exists and inform the RCC or ARTCC and alert the appropriate DF facility when any of the following exist:

NOTE–
1. *USAF facilities are only required to notify the ARTCC.*

2. *The requirement to alert DF facilities may be deleted if radar contact will be maintained throughout the duration of the emergency.*

a. An emergency is declared by either:

1. The pilot.

2. Facility personnel.

3. Officials responsible for the operation of the aircraft.

b. There is unexpected loss of radar contact and radio communications with any IFR or VFR aircraft.

c. Reports indicate it has made a forced landing, is about to do so, or its operating efficiency is so impaired that a forced landing will be necessary.

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

e. An emergency transponder code is displayed or reported.

NOTE–
EN ROUTE. During Stage A operation, ***Code 7700*** *causes EMRG to blink in field E of the data block.*

f. Intercept or escort aircraft services are required.

g. The need for ground rescue appears likely.

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

REFERENCE–
FAAO JO 7110.65, Para 10–1–3, Providing Assistance.
FAAO JO 7110.65, Para 10–2–10, Emergency Locator Transmitter (ELT) Signals.

10–2–6. HIJACKED AIRCRAFT

Hijack attempts or actual events are a matter of national security and require special handling. Policy and procedures for hijack situations are detailed in FAAO JO 7610.4, Special Operations. FAAO JO 7610.4 describes reporting requirements, air crew procedures, air traffic procedures and escort or interceptor procedures for hijack situations.

REFERENCE–
FAAO JO 7610.4, Chapter 7, Hijacked/Suspicious Aircraft Reporting and Procedures.
FAAO JO 7110.65, Para 5–2–13, Code Monitor.

10–2–7. VFR AIRCRAFT IN WEATHER DIFFICULTY

a. If VFR aircraft requests assistance when it encounters or is about to encounter IFR weather conditions, determine the facility best able to provide service. If a frequency change is necessary, advise the pilot of the reason for the change, and request the aircraft contact the appropriate control facility. Inform that facility of the situation. If the aircraft is unable to communicate with the control facility, relay information and clearances.

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

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

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

10–2–8. RADAR ASSISTANCE TO VFR AIRCRAFT IN WEATHER DIFFICULTY

a. If a VFR aircraft requests radar assistance when it encounters or is about to encounter IFR weather conditions, ask the pilot if he/she is qualified for and capable of conducting IFR flight.

b. If the pilot states he/she is qualified for and capable of IFR flight, request him/her to file an IFR flight plan and then issue clearance to destination airport, as appropriate.

c. If the pilot states he/she is not qualified for or not capable of conducting IFR flight, or if he/she refuses to file an IFR flight plan, take whichever of the following actions is appropriate:

1. Inform the pilot of airports where VFR conditions are reported, provide other available pertinent weather information, and ask if he/she will elect to conduct VFR flight to such an airport.

2. If the action in subpara 1 above is not feasible or the pilot declines to conduct VFR flight to another airport, provide radar assistance if the pilot:

(a) Declares an emergency.

(b) Refuses to declare an emergency and you have determined the exact nature of the radar services the pilot desires.

3. If the aircraft has already encountered IFR conditions, inform the pilot of the appropriate terrain/obstacle clearance minimum altitude. If the aircraft is below appropriate terrain/obstacle clearance minimum altitude and sufficiently accurate position information has been received or radar identification is established, furnish a heading or radial on which to climb to reach appropriate terrain/obstacle clearance minimum altitude.

Section 2. Ocean21 – Oceanic

The following procedures are applicable to the operation of the Ocean21 Oceanic Air Traffic Control (ATC) System.

13–2–1. DESCRIPTION

a. The Ocean21 ATC System is utilized in designated en route/oceanic airspace. Ocean21 includes both surveillance and flight data processing, which provides the controllers with automated decision support tools to establish, monitor and maintain separation between aircraft, and aircraft to airspace and terrain.

b. Ocean21 capabilities include:

1. MEARTS based radar surveillance processing.

2. Conflict Prediction and Reporting.

3. Automatic Dependent Surveillance–Broadcast (ADS–B).

4. Automatic Dependent Surveillance–Contract (ADS–C).

5. Controller Pilot Data Link Communications (CPDLC).

6. ATC Interfacility Data Communications (AIDC).

7. Additional Decision Support Tools used primarily for situational awareness.

8. Electronic Flight Data including Electronic Flight Strips.

13–2–2. CONFLICT DETECTION AND RESOLUTION

The controller must use the most accurate information available to initiate, monitor, and maintain separation.

a. Apply the following procedures in airspace where conflict probe is being utilized as a decision support tool:

1. Conflict Probe Results.

(a) Controllers must assume that the conflict probe separation calculations are accurate.

(b) Unless otherwise prescribed in subpara a3, controllers must utilize the results from conflict probe to initiate and maintain the prescribed separation minima.

2. Conflict Resolution.

(a) When a controller is alerted to a conflict, which will occur in his/her sector, take the appropriate action to resolve the conflict.

(b) The controller responsible for resolving a conflict must evaluate the alert and take appropriate action as early as practical, in accordance with duty priorities, alert priority, and operational considerations.

(c) Unless otherwise specified in facility directives, the controller must take immediate action to resolve any “red” conflicts.

3. Overriding Conflict Probe.

(a) Controllers must not override conflict probe except for the following situations:

(1) The application of a separation standard not recognized by conflict probe listed in subpara a8(a), or as identified by facility directive.

(2) When action has been taken to resolve the identified conflict and separation has been ensured, or

(3) Control responsibility has been delegated to another sector or facility, or

(4) Other situations as specified in facility directives.

(b) Controllers must continue to ensure that separation is maintained until the overridden conflict is resolved.

4. Use of Probe when Issuing Clearances. Utilize conflict probe results when issuing a clearance to ensure that any potential conflict has been given thorough consideration.

5. Use of Probe when Accepting Manual Transfers. Prior to manually accepting an aircraft transfer from an external facility ensure that the coordinated flight profile is accurately entered, conflict probe initiated and, if necessary, action is taken to resolve any potential conflicts.

6. Trial Probe. The controller can utilize trial probe to assess whether there are any potential conflicts with a proposed clearance or when performing manual coordination.

NOTE–
Once initiated, trial probe does not take into account any changes made to the proposed profile or to any other flight profile in the system. It is an assessment by conflict probe of the current situation at the time the controller enters the trial probe. A trial probe does not alleviate the controller from performing a conflict probe when issuing a clearance or accepting a transfer.

7. System Unable to Perform Conflict Probe for a Specific Aircraft.

(a) If a flight's profile becomes corrupted, conflict probe may not be able to correctly monitor separation for that flight. Take the necessary steps to correct an aircraft's flight plan when conflict probe could not be performed.

(b) In addition, after verifying flight plan data accuracy, utilize other decision support tools to establish and maintain the appropriate separation minima until such time that conflict probe can be utilized.

8. Conflict Probe Limitations.

(a) Conflict Probe does not support the following separation minima:

(1) Subpara 8–4–2a2 – Nonintersecting paths.

(2) Subpara 8–4–2d – Intersecting flight paths with variable width protected airspace.

(3) Subpara 8–4–3a – Reduction of Route Protected Airspace, below FL 240.

(4) Subpara 8–4–3b – Reduction of Route Protected Airspace, at and above FL 240.

(5) Subpara 8–4–4a1 – Same NAVAID: VOR/VORTAC/TACAN.

(6) Subpara 8–4–4a2 – Same NAVAID: NDB.

(7) Subpara 8–4–4c – Dead Reckoning.

(8) Para 8–5–4 – Same Direction.

(9) Para 8–6–3 – Temporary Moving Airspace Reservations.

(10) Para 8–8–5 – VFR Climb and Descent.

b. Additional Decision Support Tools: These support tools include: range/bearing, time of passing, intercept angle, the aircraft situation display (ASD) and electronic flight data.

1. The results provided by these additional decision support/controller tools can be used by the controller for maintaining situational awareness and monitoring flight profile information, and for establishing and maintaining separation standards not supported by probe, or when probe is unavailable.

2. Under no circumstances must the controller utilize any of the additional decision support tools to override probe results when the applicable separation standard is supported by probe and none of the other conditions for overriding probe apply.

13–2–3. INFORMATION MANAGEMENT

a. Currency of Information: The sector team is responsible for ensuring that manually entered data is accurate and timely. Ensure that nonconformant messages are handled in a timely manner and that the flight's profile is updated as necessary.

NOTE–
Conflict probe accuracy requires timely updates of data used to model each flight's trajectory. If this data is not current, the aircraft flight profile and probe results may be misleading.

b. Data Block Management.

1. Ensure that the data block reflects the most current flight information and controller applied indicators as specified in facility directives.

2. Ensure that appropriate and timely action is taken when a special condition code is indicated in the data block.

c. Electronic Flight Strip Management.

1. Electronic flight strips must be maintained in accordance with facility directives and the following:

(a) Annotations. Ensure that annotations are kept up to date.

(b) Reduced Separation Flags. Ensure the flags listed below are selected appropriately for each flight:

(1) M– Mach Number Technique (MNT).

(2) R– Reduced MNT.

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

a. Terms Added:
PROTECTED SEGMENT

b. Terms Deleted:
OMEGA

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

O

OBSTACLE– An existing object, object of natural growth, or terrain at a fixed geographical location or which may be expected at a fixed location within a prescribed area with reference to which vertical clearance is or must be provided during flight operation.

OBSTACLE DEPARTURE PROCEDURE (ODP)– A preplanned instrument flight rule (IFR) departure procedure printed for pilot use in textual or graphic form to provide obstruction clearance via the least onerous route from the terminal area to the appropriate en route structure. ODPs are recommended for obstruction clearance and may be flown without ATC clearance unless an alternate departure procedure (SID or radar vector) has been specifically assigned by ATC.

(See IFR TAKEOFF MINIMUMS AND DEPARTURE PROCEDURES.)

(See STANDARD INSTRUMENT DEPARTURES.)

(Refer to AIM.)

OBSTACLE FREE ZONE– The OFZ is a three dimensional volume of airspace which protects for the transition of aircraft to and from the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible NAVAID locations that are fixed by function. Additionally, vehicles, equipment, and personnel may be authorized by air traffic control to enter the area using the provisions of FAAO JO 7110.65, Para 3–1–5, VEHICLES/EQUIPMENT/PERSONNEL ON RUNWAYS. The runway OFZ and when applicable, the inner-approach OFZ, and the inner-transitional OFZ, comprise the OFZ.

a. Runway OFZ. The runway OFZ is a defined volume of airspace centered above the runway. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet beyond each end of the runway. The width is as follows:

1. For runways serving large airplanes, the greater of:

(a) 400 feet, or

(b) 180 feet, plus the wingspan of the most demanding airplane, plus 20 feet per 1,000 feet of airport elevation.

2. For runways serving only small airplanes:

(a) 300 feet for precision instrument runways.

(b) 250 feet for other runways serving small airplanes with approach speeds of 50 knots, or more.

(c) 120 feet for other runways serving small airplanes with approach speeds of less than 50 knots.

b. Inner-approach OFZ. The inner-approach OFZ is a defined volume of airspace centered on the approach area. The inner-approach OFZ applies only to runways with an approach lighting system. The inner-approach OFZ begins 200 feet from the runway threshold at the same elevation as the runway threshold and extends 200 feet beyond the last light unit in the approach lighting system. The width of the inner-approach OFZ is the same as the runway OFZ and rises at a slope of 50 (horizontal) to 1 (vertical) from the beginning.

c. Inner-transitional OFZ. The inner transitional surface OFZ is a defined volume of airspace along the sides of the runway and inner-approach OFZ and applies only to precision instrument runways. The inner-transitional surface OFZ slopes 3 (horizontal) to 1 (vertical) out from the edges of the runway OFZ and inner-approach OFZ to a height of 150 feet above the established airport elevation.

(Refer to AC 150/5300-13, Chapter 3.)

(Refer to FAAO JO 7110.65, Para 3–1–5, VEHICLES/EQUIPMENT/PERSONNEL ON RUNWAYS.)

OBSTRUCTION– Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, Subpart C.

OBSTRUCTION LIGHT– A light or one of a group of lights, usually red or white, frequently mounted on a surface structure or natural terrain to warn pilots of the presence of an obstruction.

OCEANIC AIRSPACE– Airspace over the oceans of the world, considered international airspace, where oceanic separation and procedures per the International Civil Aviation Organization are applied. Responsibility for the provisions of air traffic control

service in this airspace is delegated to various countries, based generally upon geographic proximity and the availability of the required resources.

OCEANIC DISPLAY AND PLANNING SYSTEM– An automated digital display system which provides flight data processing, conflict probe, and situation display for oceanic air traffic control.

OCEANIC NAVIGATIONAL ERROR REPORT– A report filed when an aircraft exiting oceanic airspace has been observed by radar to be off course. ONER reporting parameters and procedures are contained in FAAO 7110.82, Monitoring of Navigational Performance In Oceanic Areas.

OCEANIC PUBLISHED ROUTE– A route established in international airspace and charted or described in flight information publications, such as Route Charts, DOD Enroute Charts, Chart Supplements, NOTAMs, and Track Messages.

OCEANIC TRANSITION ROUTE– An ATS route established for the purpose of transitioning aircraft to/from an organized track system.

ODAPS–
(See OCEANIC DISPLAY AND PLANNING SYSTEM.)

ODP–
(See OBSTACLE DEPARTURE PROCEDURE.)

OFF COURSE– A term used to describe a situation where an aircraft has reported a position fix or is observed on radar at a point not on the ATC-approved route of flight.

OFF-ROUTE VECTOR– A vector by ATC which takes an aircraft off a previously assigned route. Altitudes assigned by ATC during such vectors provide required obstacle clearance.

OFFSET PARALLEL RUNWAYS– Staggered runways having centerlines which are parallel.

OFFSHORE/CONTROL AIRSPACE AREA– That portion of airspace between the U.S. 12 NM limit and the oceanic CTA/FIR boundary within which air traffic control is exercised. These areas are established to provide air traffic control services. Offshore/Control Airspace Areas may be classified as either Class A airspace or Class E airspace.

OFT–
(See OUTER FIX TIME.)

OM–
(See OUTER MARKER.)

ON COURSE–

a. Used to indicate that an aircraft is established on the route centerline.

b. Used by ATC to advise a pilot making a radar approach that his/her aircraft is lined up on the final approach course.
(See ON-COURSE INDICATION.)

ON-COURSE INDICATION– An indication on an instrument, which provides the pilot a visual means of determining that the aircraft is located on the centerline of a given navigational track, or an indication on a radar scope that an aircraft is on a given track.

ONE-MINUTE WEATHER– The most recent one minute updated weather broadcast received by a pilot from an uncontrolled airport ASOS/AWSS/AWOS.

ONER–
(See OCEANIC NAVIGATIONAL ERROR REPORT.)

OPERATIONAL–
(See DUE REGARD.)

OPERATIONS SPECIFICATIONS [ICAO]– The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

OPPOSITE DIRECTION AIRCRAFT– Aircraft are operating in opposite directions when:

a. They are following the same track in reciprocal directions; or

b. Their tracks are parallel and the aircraft are flying in reciprocal directions; or

c. Their tracks intersect at an angle of more than 135°.

OPTION APPROACH– An approach requested and conducted by a pilot which will result in either a touch-and-go, missed approach, low approach, stop-and-go, or full stop landing.
(See CLEARED FOR THE OPTION.)
(Refer to AIM.)

ORGANIZED TRACK SYSTEM– A series of ATS routes which are fixed and charted; i.e., CEP, NOPAC, or flexible and described by NOTAM; i.e., NAT TRACK MESSAGE.

OROCA– An off-route altitude which provides obstruction clearance with a 1,000 foot buffer in nonmountainous terrain areas and a 2,000 foot buffer in designated mountainous areas within the United States. This altitude may not provide signal coverage from ground-based navigational aids, air traffic control radar, or communications coverage.

OTR–
(See OCEANIC TRANSITION ROUTE.)

OTS–
(See ORGANIZED TRACK SYSTEM.)

OUT– The conversation is ended and no response is expected.

OUTER AREA (associated with Class C airspace)– Nonregulatory airspace surrounding designated Class C airspace airports wherein ATC provides radar vectoring and sequencing on a full-time basis for all IFR and participating VFR aircraft. The service provided in the outer area is called Class C service which includes: IFR/IFR–standard IFR separation; IFR/VFR–traffic advisories and conflict resolution; and VFR/VFR–traffic advisories and, as appropriate, safety alerts. The normal radius will be 20 nautical miles with some variations based on site-specific requirements. The outer area extends outward from the primary Class C airspace airport and extends from the lower limits of radar/radio coverage up to the ceiling of the approach control's delegated airspace excluding the Class C charted area and other airspace as appropriate.
(See CONFLICT RESOLUTION.)
(See CONTROLLED AIRSPACE.)

OUTER COMPASS LOCATOR–
(See COMPASS LOCATOR.)

OUTER FIX– A general term used within ATC to describe fixes in the terminal area, other than the final approach fix. Aircraft are normally cleared to these fixes by an Air Route Traffic Control Center or an Approach Control Facility. Aircraft are normally cleared from these fixes to the final approach fix or final approach course.

OR

OUTER FIX– An adapted fix along the converted route of flight, prior to the meter fix, for which crossing times are calculated and displayed in the metering position list.

OUTER FIX ARC– A semicircle, usually about a 50–70 mile radius from a meter fix, usually in high altitude, which is used by CTAS/HOST to calculate outer fix times and determine appropriate sector meter list assignments for aircraft on an established arrival route that will traverse the arc.

OUTER FIX TIME– A calculated time to depart the outer fix in order to cross the vertex at the ACLT. The time reflects descent speed adjustments and any applicable delay time that must be absorbed prior to crossing the meter fix.

OUTER MARKER– A marker beacon at or near the glideslope intercept altitude of an ILS approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.
(See INSTRUMENT LANDING SYSTEM.)
(See MARKER BEACON.)
(Refer to AIM.)

OVER– My transmission is ended; I expect a response.

OVERHEAD MANEUVER– A series of predetermined maneuvers prescribed for aircraft (often in formation) for entry into the visual flight rules (VFR) traffic pattern and to proceed to a landing. An overhead maneuver is not an instrument flight rules (IFR) approach procedure. An aircraft executing an overhead maneuver is considered VFR and the IFR flight plan is cancelled when the aircraft reaches the "initial point" on the initial approach portion of the maneuver. The pattern usually specifies the following:

a. The radio contact required of the pilot.

b. The speed to be maintained.

c. An initial approach 3 to 5 miles in length.

d. An elliptical pattern consisting of two 180 degree turns.

e. A break point at which the first 180 degree turn is started.

f. The direction of turns.

g. Altitude (at least 500 feet above the conventional pattern).

h. A "Roll-out" on final approach not less than 1/4 mile from the landing threshold and not less than 300 feet above the ground.

OVERLYING CENTER– The ARTCC facility that is responsible for arrival/departure operations at a specific terminal.

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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: 1−1−8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

2. BACKGROUND: The ATC Procedures Group (ATCPO) was established under the Air Traffic Organization (ATO) with guidance and direction from the Operations Support Group (OSG). The ATCPO is responsible for the development and stewardship of air traffic control procedures and operates collaboratively with Terminal, En Route, Flight Services, Traffic Management, Operations Security, DOD, and other organizations that generate procedures actions..

3. CHANGE:

OLD	NEW
1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES	**1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES**
Add	**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.	**a.** Personnel should submit recommended changes in procedures to facility management.
b. Recommendations from other sources should be submitted through appropriate FAA, military, or industry/user channels to Headquarters, FAA, Vice President, Mission Support Services, attention: Airspace Services.	**b**. Recommendations from other sources should be submitted through appropriate FAA, military, or industry/user channels.

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1. PARAGRAPH NUMBER AND TITLE: 4-4-6. DIRECT CLEARANCES

2. BACKGROUND: Scheduled upgrades to Traffic Flow Management (TFM) system software (referred to as "Release 5/6" or "R5/6") introduces new capabilities for TFM equipment to interface with ERAM. These capabilities are defined by new concepts and terms. Some of these new capabilities will be available in the TFM system before all En Route Centers are operating with ERAM. The development of TFM system equipment and software is not directly related to the development and implementation of ERAM, so the release schedules cannot be directly connected.

3. CHANGE:

OLD	NEW
4-4-6. DIRECT CLEARANCES	**4-4-6. DIRECT CLEARANCES**
a. Do not issue a routing clearance that will take an aircraft off of its flight plan route if the destination airport is included in a ground delay program (GDP), ground stop (GS), or Playbook route, when known, unless operational necessity dictates.	**a. Unless operational necessity dictates,** do not issue a routing clearance that will take an aircraft off of its flight plan route if**:**
Add	**1. The aircraft is part of a known traffic management initiative.**
Add	**2. The part of the route under consideration for the direct routing is within a protected segment. If a flight routing within a protected segment is amended, coordination must be accomplished as follows:**

Add	**(a) ATCS: with TMU.**
Add	**(b) Terminal facility TMU: with overlying ARTCC TMU.**
Add	**(c) ARTCC TMU (for amendments outside their facility): with ATCSCC.**

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1. PARAGRAPH NUMBER AND TITLE: 5−2−9. VFR CODE ASSIGNMENTS and 5−2−13. CODE MONITOR

2. BACKGROUND: An accident, many incidents, and an NTSB recommendation highlight the need for a national beacon code for gliders that are operating VFR and not in contact with air traffic control (ATC). ATC personnel will be informed of the code, what it represents, and under what limitations the users are typically operating. Several codes have been considered in the past, but have conflicted with other operations. Code 1202 is now available and being offered for VFR gliders.

3. CHANGE:

OLD	NEW
5-2-9. VFR CODE ASSIGNMENTS	**5-2-9. VFR CODE ASSIGNMENTS**
title thru **b NOTE 2**	No Change
NOTE−	***NOTE−***
Note 1 thru **2**	No Change
Add	**3.** ***Gliders not in contact with an ATC facility should squawk 1202 in lieu of 1200. Gliders operate under some flight and maneuvering limitations. They may go from essentially stationary targets while climbing and thermaling to moving targets very quickly. They can be expected to make radical changes in flight direction to find lift and cannot hold altitude in a response to an ATC request. Gliders may congregate together for short periods of time to climb together in thermals and may cruise together in loose formations while traveling between thermals.***

OLD	NEW
5−2−13. CODE MONITOR	**5−2−13. CODE MONITOR**
title thru **2nd REFERENCE**	No Change
a. This includes the appropriate IFR code actually assigned and, additionally, **Code 1200, Code 1255**, and **Code 1277** unless your area of responsibility includes only Class A airspace. During periods when ring-around or excessive VFR target presentations derogate the separation of IFR traffic, the monitoring of VFR **Code 1200**, **Code 1255**, and **Code 1277** may be temporarily discontinued.	**a.** This includes the appropriate IFR code actually assigned and, additionally, **Code 1200**, **Code 1202, Code 1255**, and **Code 1277** unless your area of responsibility includes only Class A airspace. During periods when ring-around or excessive VFR target presentations derogate the separation of IFR traffic, the monitoring of VFR **Code 1200**, **Code 1202, Code 1255**, and **Code 1277** may be temporarily discontinued.

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1. PARAGRAPH NUMBER AND TITLE: 5−5−7. PASSING OR DIVERGING

2. BACKGROUND: In a January 2010 interpretation, Headquarters clarified that the use of passing or diverging criteria applies to terminal when using single sensor display configuration with both short range or long range radar. This interpretation was not added to the handbook at that time.

3. CHANGE:

OLD	NEW
5-5-7. PASSING OR DIVERGING	**5-5-7. PASSING OR DIVERGING**
a. *TERMINAL*. In accordance with the following criteria, all other approved separation may be discontinued, and passing or diverging separation applied when:	**a.** *TERMINAL*. **When displaying a single site adapted short range or long range radar, and i**n accordance with the following criteria, all other approved separation may be discontinued and passing or diverging separation applied when:
a1 thru **a2 REFERENCE**	No Change
NOTE−	***NOTE−***
Add	**1.** ***Apply en route separation rules when using multisensory radar.***
Although all other approved separation may be discontinued, the requirements of para 5-5-4, Minima, subparas e and f must apply when operating behind a heavy jet/B757.	**2.** *Although all other approved separation may be discontinued, the requirements of para 5-5-4, Minima, subparas e and f must apply when operating behind a heavy jet/B757.*

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1. PARAGRAPH NUMBER AND TITLE:
5-9-6. PARALLEL DEPENDENT ILS/MLS APPROACHES,
5−9−7. SIMULTANEOUS INDEPENDENT ILS/MLS APPROACHES−DUAL & TRIPLE, and
5−9−8. SIMULTANEOUS INDEPENDENT DUAL ILS/MLS APPROACHES − HIGH UPDATE RADAR

2. BACKGROUND: This change incorporates data extrapolated from an SRMD conducted by the Performance Based Navigation Integration Group and four separate Flight Standards (AFS) studies. These studies, in chronological order, are: DOT-FAA-AFS-440-29 (Phases 1A and 2A), dated April 2007; DOT-FAA-AFS-450-41 (Phases 1B and 2B), dated December 2008; DOT-FAA-AFS-450-56 (Phases 3 and 4), dated July 2010; and DOT-FAA-AFS-450-73, dated August 2011. The studies identified a Target Level of Safety (TLS) for the simultaneous parallel approaches listed above and it has been determined that the procedures, and mitigation strategies incorporated, exceed this TLS.

3. CHANGE:

OLD	NEW
5-9-6. PARALLEL DEPENDENT ILS/MLS APPROACHES	**5-9-6. SIMULTANEOUS DEPENDENT APPROACHES**
TERMINAL	No Change
a. Apply the following minimum separation when conducting parallel dependent ILS, MLS, or ILS and MLS approaches:	**a.** Apply the following minimum separation when conducting **simultaneous** dependent approaches:
a1	No Change

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

FIG 5-9-7

Parallel Dependent ILS/MLS Approaches

FIG

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 Aircrafts1 and 3 is at least 2.5 miles.

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

FIG 5-9-8

Parallel Dependent ILS/MLS 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 Aircrafts 2 and 3 is at least 4.2 miles.*

a4

b. The following conditions are required when applying the minimum radar separation on adjacent localizer/azimuth courses allowed in subpara a:

Add

Add

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

No Change

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.*

No Change

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.

OLD

5-9-7. SIMULTANEOUS INDEPENDENT ILS/MLS APPROACHES - DUAL & TRIPLE

TERMINAL

a. Apply the following minimum separation when conducting simultaneous independent ILS, MLS, or ILS and MLS approaches:

a1 through **a5**

NEW

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

TERMINAL

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

No Change

b. The following conditions are required when applying the minimum separation on adjacent dual or triple ILS/MLS courses allowed in subpara a:

Add

Add

b1

2. ILS, MLS, radar, and appropriate frequencies are operating normally.

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

b4

NOTE-
Not applicable to curved and segmented MLS approaches.

b5 thru **c1**

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.

c2 thru **c4**

5. Do not apply the provisions of para 5-13-1, Monitor on PAR Equipment, for simultaneous ILS, MLS, or ILS and MLS 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 ILS, MLS, or ILS and MLS 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.

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)

No Change

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.

No Change

Delete

No Change

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.*

No Change

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.

OLD	NEW
5-9-8. SIMULTANEOUS INDEPENDENT DUAL ILS/MLS APPROACHES - HIGH UPDATE RADAR	**5-9-8. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES – HIGH UPDATE RADAR**
TERMINAL	No Change
Add	**Simultaneous close parallel approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches to adjacent runways.**
a. Authorize simultaneous independent ILS, MLS, or ILS and MLS approaches to parallel dual runways with centerlines separated by at least 3,000 feet with one localizer 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	**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
a1 thru **a2 REFERENCE**	No Change
b. The following conditions are required when applying the minimum separation on dual ILS/MLS courses allowed in subpara a:	**b.** The following conditions are required when applying the minimum separation on dual **final approach** courses allowed in subparagraph a:
b1	No Change
2. ILS, MLS, radar, and appropriate frequencies are operating normally.	**2. All appropriate communication, navigation, and surveillance systems are operating normally.**
3. Inform aircraft that closely spaced simultaneous ILS/MLS approaches are in use prior to aircraft departing an outer fix. This information may be provided through the ATIS.	**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.
b4	No Change
NOTE- *Not applicable to curved and segmented MLS approaches.*	Delete
b5 thru **c2**	No Change
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.*	***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**.*
c3 thru **c5**	No Change
6. Do not apply the provisions of para 5-13-1, Monitor on PAR Equipment, for simultaneous ILS, MLS, or ILS and MLS approaches.	**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 simultaneous ILS, MLS, or ILS and MLS 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.

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.