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1. **PARAGRAPH NUMBER AND TITLE:** 1-1-7. DELIVERY DATES

2. **BACKGROUND:** Headquarters, Air Force Flight Standards Agency (AFFSA), is the office of primary responsibility for Air Force air traffic control operations. Subordinate units throughout the country, and those overseas, informed personnel at HQ AFFSA that their units/flights had not received the most recent publication and that the contact information listed in the order appeared to be incorrect. After reviewing the information in the order, it was determined that the information was incorrect and HQ AFFSA requested a document change proposal to provide these facilities with the correct address/information to obtain late orders/publication. This change will resolve the potential of facilities not having current publications available for reference and reduces/eliminates a potential impact on flight safety.

3. **CHANGE:**

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<td>U.S. Navy CNO (N885F)</td>
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* NGA – National Geospatial Intelligence Agency

**NEW**

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13-1-17. URET AIRSPACE CONFIGURATION ELEMENTS

2. BACKGROUND: Several years ago the FAA began replacing the En Route legacy computer system known as Host, with a new NextGen enabling system known as En Route Automation Modernization (ERAM). The installation of ERAM was accomplished using a waterfall implementation process over the span of many years. During this transition period the guidance for air traffic control services operating under ERAM was found in FAA Order JO 7110.311. Now that the transition nears completion, FAA Order 7110.311C is being incorporated
into FAA Order JO 7110.65. During this process certain outdated terms that are no longer used in the field were identified. The decision was made to use this opportunity to update the handbook by eliminating or amending the outdated terminology.

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OLD

2-10-1. EN ROUTE SECTOR TEAM POSITION RESPONSIBILITIES

Title through c1(f)

(g) Scan radar display. Correlate with flight progress strip information or User Request Evaluation Tool (URET) data, as applicable.

c1(h)

(i) Ensure strip marking and/or URET entries are completed on instructions or clearances you issue or receive.

c1(j) through c1(k)

Add

c2 through c2a

(b) At URET facilities, use URET information to plan, organize, and expedite the flow of traffic.

c2(c) through c2(h)

(i) Scan flight progress strips and/or URET data. Correlate with radar data.

(j) Manage flight progress strips and/or URET flight data.

Add

c2(m)

(n) Where authorized, perform URET data entries to keep the activation status of designated URET Airspace Configuration Elements current.

NEW

2-10-1. EN ROUTE SECTOR TEAM POSITION RESPONSIBILITIES

No Change

(g) Scan radar display. Correlate with flight progress strip information or EDST data, as applicable.

No Change

(i) Ensure strip marking and/or electronic flight data entries are completed on instructions or clearances you issue or receive.

No Change

(l) At ERAM facilities, ensure the situation display accurately reflects the status of all SAAs that impact their area of control responsibility.

No Change

(b) Where available, use EDST to plan, organize, and expedite the flow of traffic.

No Change

(i) Scan flight progress strips and/or EDST data. Correlate with radar data.

(j) Manage flight progress strips and/or electronic flight data.

No Change

(l) As appropriate, ensure strip marking and/or EDST data entries are completed on instructions issued or received, and record instructions issued or received by the radar position when aware of them.

(n) Where authorized, perform EDST data entries to keep the activation status of designated Airspace Configuration Elements current.

(o) At ERAM facilities, scan the radar associate display for electronically distributed information, evaluate the information, and take action as appropriate.

No Change

(d) Ensure flight data processing equipment is operational, except for URET capabilities.
OLD

4-5-3. EXCEPTIONS

Title through a2

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

NEW

4-5-3. EXCEPTIONS

Delete

OLD

4-6-3. DELAYS

Title through b1

Add

NEW

4-6-3. DELAYS

REFERENCE-
FAA07110.65, Para 5-14-9, ERAM Computer Entry of Hold Information

OLD

5-1-6. SERVICE LIMITATIONS

Title through a3

b. EN ROUTE. When the position symbol associated with the full data block falls more than one history behind the actual aircraft target or there is no target symbol displayed, the Mode C information in the full data block must not be used for the purpose of determining separation.

NEW

5-1-6. SERVICE LIMITATIONS

b. EN ROUTE. When the position symbol associated with the data block falls more than one history behind the actual aircraft target or there is no target symbol displayed, the Mode C information in the data block must not be used for the purpose of determining separation.

OLD

5-2-2. DISCRETE ENVIRONMENT

Title through c

2. When an IFR aircraft, or a VFR aircraft that has been assigned a beacon code by the host computer and whose flight plan will terminate in another facility’s area, cancels ATC service or does not activate the flight plan, send a remove strips (RS) message on that aircraft via host keyboard, the FDIO keyboard, or call via service F.

NEW

5-2-2. DISCRETE ENVIRONMENT

2. When an IFR aircraft, or a VFR aircraft that has been assigned a beacon code by the ARTCC computer and whose flight plan will terminate in another facility’s area, cancels ATC service or does not activate the flight plan, ensure that appropriate action is taken to remove strips (RS message) on that aircraft.

OLD

5-3-3. BEACON IDENTIFICATION METHODS

Title through c

d. EN ROUTE. During narrowband operations, an aircraft may be considered identified when the full data block is automatically associated with the beacon target symbol of an aircraft that is squawking a discrete code assigned by the computer.

NEW

5-3-3. BEACON IDENTIFICATION METHODS

d. EN ROUTE. An aircraft may be considered identified when the full data block is automatically associated with the beacon target symbol of an aircraft that is squawking a discrete code assigned by the computer.

NOTE-
Paired LDBs in ERAM do not display a beacon code.
5-3-8. TARGET MARKERS

EN ROUTE

Retain data blocks that are associated with the appropriate target symbol in order to maintain continuous identity of aircraft. Retain the data block until the aircraft has exited the sector or delegated airspace, and all potential conflicts have been resolved; including an aircraft that is a point out. The data block shall display flight identification and altitude information, as a minimum. The displayed altitude may be assigned, interim, or reported.

Add

ERAM: When you have separation responsibility for an aircraft and a paired track exists, display a full data block (FDB).

5-4-3. METHODS

a1 through a3

NOTE−
EN ROUTE. Interfacility handoff capabilities are available that can be manually initiated and accepted when operating on the backup RDP while FDP is available. The backup RDP by itself does not have the capabilities for interfacility handoffs. Therefore, handoffs between facilities must be made via landline voice communications when operating with the backup RDP only.

a4 through b3

NOTE−
1. When physically pointing to the target, you do not have to state the aircraft position.

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

5-4-5. TRANSFERRING CONTROLLER HANDOFF

Title through b

NOTE−
Those en route facilities using host software that provides capability for passing interim altitude shall include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.
OLD
5-4-7. POINT OUT
Title through a2

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

OLD
5-4-11 EN ROUTE FOURTH LINE DATA BLOCK USAGE

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

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

b through k EXAMPLE

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

OLD
5-5-4. MINIMA
Title through b

c. Stage A/DARC, Terminal Mosaic/Multi-Sensor Mode

NOTE through c2

3. For areas meeting all of the following conditions:

c3(a) through c3(e)

NEW
5-4-7. POINT OUT
No Change
Delete

NEW
5-4-11 EN ROUTE FOURTH LINE DATA BLOCK USAGE

a. The fourth line of the data block must be displayed. When used for forwarding control information, only the specified messages listed in this section may be used. Any additional control information must be forwarded via other communications methods. Free text may be used by individual sector teams for recording information the team deems appropriate for managing the sector, but must be removed prior to initiation of identification transfer.

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

FAAO JO 7110.65, Para 5–4–8, Automated Information Transfer (AIT):

FAAO JO 7110.65, Para 5–4–9, Interfacility Automated Information Transfer.

No Change

1. The acceptance of a handoff by the receiving controller must constitute receipt of the information contained within the en route fourth line data block. This information must not be modified outside of the controller’s area of jurisdiction unless verbally coordinated or specified in a Letter of Agreement or Facility Directive. It is the responsibility of the receiving controller to advise the transferring controller if any information is not understood, or needs to be revised.

NEW
5-5-4. MINIMA
No Change

c. EBUS, Terminal Mosaic/Multi-Sensor Mode

No Change

3. Facility directives may specify 3 miles for areas meeting all of the following conditions:

No Change
(d) Below FL 180
(e) Facility directives specifically define the area where the separation can be applied. Facility directives may specify 3 miles.

REFERENCE:
FAAO JO 7210.3, Para 8-2-1, Single Site Coverage Stage A Operations.
FAAO JO 7210.3, Para 11-8-15, Single Site Coverage ATTS Operations.

(c4(a) through c4(d))

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(d) Up to and including FL 230.
(e) Facility directives specifically define the area where the separation can be applied and define the requirements for displaying the area on the controller’s display.

REFERENCE:
FAAO JO 7210.3, Para 8-2-1, Three Mile Airspace Operations
FAAO JO 7210.3, Para 11-8-15, Single Site Coverage ATTS Operations

No Change

(d, ERAM:

1. Below FL 600-5 miles.
2. At or above FL 600-10 miles
3. Below FL 230 where all the following conditions are met – 3 miles:
   (a) Significant operational advantages can be obtained.
   (b) Within 40 miles of the preferred sensor, and within the 3 NM separation area.
   (e) The preferred sensor is providing reliable beacon targets.
   (d) Facility directives specifically define the 3 NM separation area.
   (e) The 3 NM separation area is displayable on the video map.
   (f) Involved aircraft are displayed using the 3 NM target symbol.

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

   (a) The aircraft are on diverging routes/courses, and/or
   (b) The leading aircraft is and will remain faster than the following aircraft; and
   (c) Separation constantly increasing and the first center controller will establish 5 NM or other appropriate form of separation prior to the aircraft departing the first center sector; and
   (d) The procedure is covered by a letter of agreement between the facilities involved and limited to specified routes and/or sectors/positions.

REFERENCE:
FAAO JO 7210.3, Para 8-2-1, Three Mile Airspace Operations
FAAO JO 7210.3, Para 11-8-15, Single Site Coverage ATTS Operations

(d) and (e) Reletter to (e) and (f)
OLD

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:

a1 and a2

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

NEW

5-5-9. SEPARATION FROM OBSTRUCTIONS

a. TERMINAL. Separate aircraft from obstructions depicted on the radar display by the following minima:

No Change

b. TERMINAL. Vertical separation of aircraft above an obstruction depicted on the radar display may be discontinued after the aircraft has passed it.

c. EAS. Apply the radar separation minima specified in Para 5-5-4, Minima.

OLD

5-5-10. ADJACENT AIRSPACE

Title through a2

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

b1 and b2

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

OLD

5-5-11. EDGE OF SCOPE

Title through b

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

OLD

5-6-2. METHODS

a through g

h. During stage A operation, update the route of flight in the computer unless an operational advantage is gained and coordination is accomplished.

NEW

5-5-10. ADJACENT AIRSPACE

No Change

3. EAS:

No Change

5-5-11. EDGE OF SCOPE

No Change

c. EAS:

NEW

5-6-2. METHODS

No Change

h. When flight data processing is available, update the route of flight in the computer unless an operational advantage is gained and coordination is accomplished.

OLD

5-14-1. CONFLICT ALERT (CA) AND MODE C INTRUDER (MCI) ALERT

Title through a

NOTE—DARC does not have CA/MCI alert capability.

NEW

5-14-1. CONFLICT ALERT (CA) AND MODE C INTRUDER (MCI) ALERT

No Change

Delete
5-14-3. COMPUTER ENTRY OF ASSIGNED ALTITUDE

The data block must always reflect the current status of the aircraft unless otherwise specified in a facility directive. Whenever an aircraft is cleared to maintain an altitude different from that in the flight plan database, enter into the computer one of the following:

NOTE—
A facility directive may be published deleting the interim altitude computer entry requirements of subpara b. The directive would apply to those conditions where heavy traffic or sector complexity preclude meeting these entry requirements.

REFERENCE—
FAAO JO 7210.3, Para 8–2–7, Waiver to Interim Altitude Requirements.

NEW

5-14-3. COMPUTER ENTRY OF FLIGHT PLAN INFORMATION

a. Altitude

1. The altitude field(s) of the data block must always reflect the current status of the aircraft unless otherwise specified in an appropriate facility directive.

NOTE—
As it applies to altitude, the current status of the aircraft, for the transferring controller, indicates the clearance given by air traffic control, directly to and read back by an aircraft. This ensures the aircraft has received the clearance and is expected to comply with the instructions. The current status of the aircraft, for the receiving controller, indicates the specific verbally coordinated altitude, if that differs from the altitude coordinated by automated means.

2. Assigned and Interim altitude information must not be modified outside of the controller’s area of jurisdiction unless verbally coordinated or specified in a Letter of Agreement or Facility Directive.

3. Whenever an aircraft is cleared to maintain an altitude different from that in the flight plan database, enter into the computer one of the following:

(a) The new assigned altitude if the aircraft will (climb or descend to and) maintain the new altitude, or

(b) An interim altitude if the aircraft will (climb or descend to and) maintain the new altitude for a short period of time and subsequently be recleared to the altitude in the flight plan database or a new altitude or a new interim altitude, or
NOTE—Use of the interim altitude function will ensure that the data block reflects the actual status of the aircraft and eliminate superfluous altitude updates.

(c) A Local Interim Altitude (LIA), entered by the transferring controller when the assigned altitude differs from the coordinated altitude unless verbally coordinated or specified in a Letter of Agreement or Facility Directive.

NOTE—A facility directive may be published, in accordance with JO 7210.3, Paragraph 8-2-7, Waiver to Interim Altitude Requirements, deleting the interim altitude computer entry requirements of subpara 3(b).

b. Flight Plan Route Data

This information must not be modified outside of the controller’s area of jurisdiction unless verbally coordinated or specified in a Letter of Agreement or Facility Directive.

5-14-5. SELECTED ALTITUDE LIMITS

b. 2,200 feet above the highest and below the lowest flight level of the sector where 2,000 feet vertical separation is applicable.

NOTE—1. The data block, for purposes of this paragraph, must contain the beacon code and Mode C altitude at a minimum.

5-14-8. CONTROLLER INITIATED COAST TRACKS

2. DARC does not have the capability to initiate coast tracks

b. Prior to initiating a coast track, ensure the following:

1. A departure message or progress report corresponding with the aircraft’s current position is entered into the computer.
2. The track being started is within the Posted Time Update Interval (PTUI) of the aircraft’s Computer-estimated position and the Flight Plan Track Position Difference (FTPD) distance of the aircraft’s flight plan route.

**NOTE—**
FTPD is an automation parameter, normally set to 15 miles, that is compared with the tracked target’s perpendicular distance from the stored flight plan route. If the track is within the parameter miles, it is eligible for “FLAT tracking.” PTUI is an automation parameter, normally set to 3 minutes, that is compared against the difference between the calculated time of arrival and the actual time of arrival over a fix. If the difference is greater than PTUI, the flight plan’s stored data will be revised and fix-time update messages will be generated.

### OLD

Add

### NEW

5-14-9, ERAM COMPUTER ENTRY OF HOLD INFORMATION

a. When an aircraft is issued holding instructions, the delay is ATC initiated, and the EFC is other than “no delay expected:”

1. Enter a hold message.

2. Maintain a paired track.

3. Enter an EFC time via a hold message, the Hold Data Menu, or the Hold View.

4. Enter non-published holding instructions via a hold message or the Hold Data Menu.

**NOTE—**
The ERAM hold message allows automatic calculation and reporting of aggregate delays.

b. Unless otherwise specified in a facility directive, verbally coordinate non-published holding instructions when handing off an aircraft in hold status to another ERAM sector.

c. An EFC time entered into the Hold Data Menu, Hold View, or the hold message constitutes coordination of the EFC between ERAM sectors.

**REFERENCE—**
FAAO JO 7210.3, Para 8-2-9, ERAM Hold Information Facility Directive Requirements
OLD
Add

NEW
5-14-10. ERAM VISUAL INDICATOR OF SPECIAL ACTIVITY AIRSPACE (SAA) STATUS

Sector controllers shall ensure the situation display accurately reflects the status of all SAAs that impact their area of control responsibility. When “SAA DOWN” is displayed in the Outage View, manually create visual indicators on the situation display to reflect changes to airspace status.

NOTE—
The “SAA DOWN” message in the Outage View means that SAA status is no longer being updated. The status of each SAA at the time of the failure, whether “on” or “off”, will continue to be displayed. Status changes will not be automatically updated on the display until the outage is resolved.

OLD
10-2-5. EMERGENCY SITUATIONS
Title through e

NEW
10-2-5. EMERGENCY SITUATIONS
No Change

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

OLD
11-1-2. DUTIES AND RESPONSIBILITIES
Title through a3

NEW
11-1-2. DUTIES AND RESPONSIBILITIES
No Change

4. Where authorized, perform URET data entries to keep the activation status of designated URET Airspace Configuration Elements current.

5. Perform assigned actions in the event of a URET outage or degradation, in accordance with the requirements of FAA Order 7210.3, Facility Operation and Administration, and as designated by facility directive.

OLD

NEW
4. Where authorized, perform EDST data entries to keep the activation status of designated EDST Airspace Configuration Elements current.

5. Perform assigned actions in the event of an EDST outage or degradation, in accordance with the requirements of FAA Order 7210.3, Facility Operation and Administration, and as designated by facility directive.

5. Where authorized, perform data entries to keep the activation status of designated EDST Airspace Configuration Elements current.

6. Perform assigned actions in the event of an EDST outage or degradation, in accordance with the requirements of FAA Order 7210.3, Facility Operation and Administration, and as designated by facility directive.

b7 through c3

No Change
4. Where authorized, perform **URET** data entries to keep the activation status of designated **URET** Airspace Configuration Elements current.

5. Perform assigned actions in the event of a **URET** outage or degradation, in accordance with the requirements of FAA Order 7210.3, Facility Operation and Administration, and as designated by facility directive.

**OLD**

CHAPTER 13. DECISION SUPPORT TOOLS

Section 1. User Request Evaluation Tool (URET)

13-1-1. DESCRIPTION

**URET** is an en route decision support tool that is used by the sector team in performing its strategic planning responsibilities. **URET** uses flight plan data, forecast winds, aircraft performance characteristics, and track data to derive expected aircraft trajectories, and to predict conflicts between aircraft and between aircraft and special use or designated airspace. It also provides trial planning and enhanced flight data management capabilities.

**NEW**

Section 1. ERAM Decision Support Tools (EDST)

13-1-1. DESCRIPTION

**EDST** is used by the sector team in performing its strategic planning responsibilities. **EDST** uses flight plan data, forecast winds, aircraft performance characteristics, and track data to derive expected aircraft trajectories, and to predict conflicts between aircraft and between aircraft and special use or designated airspace. It also provides trial planning and enhanced flight data management capabilities. **Under ERAM, the EDST capabilities constitute the initial En Route decision support tools.**

**OLD**

13-1-2. CONFLICT DETECTION AND RESOLUTION

a. Actively scan **URET** information for predicted aircraft-to-aircraft and aircraft-to-airspace alerts.

b. When a **URET** alert is displayed, evaluate the alert and take appropriate action as early as practical, in accordance with duty priorities.

c. Prioritize the evaluation and resolution of **URET** alerts to ensure the safe, expeditious, and efficient flow of air traffic.

*NOTE— **URET** alerts are based on radar separation standards. Caution should be used when situations include nonstandard formations.*

d. When a **URET** alert is displayed and when sector priorities permit, give consideration to the following in determining a solution:

  d1 and d2

**NEW**

13-1-2. CONFLICT DETECTION AND RESOLUTION

a. Actively scan **EDST** information for predicted aircraft-to-aircraft and aircraft-to-airspace alerts.

b. When a **conflict probe** alert is displayed, evaluate the alert and take appropriate action as early as practical, in accordance with duty priorities.

c. Prioritize the evaluation and resolution of **conflict probe** alerts to ensure the safe, expeditious, and efficient flow of air traffic.

*NOTE— **Conflict probe** alerts are based on standard radar separation. **Conflict probe** does not account for instances in which greater separation may be needed (e.g., non-standard formations, A380) or where reduced separation is permitted (e.g., 3-mile airspace).*

d. When a **conflict probe** alert is displayed and when sector priorities permit, give consideration to the following in determining a solution:

  No Change
e. When the **URET** Stop Probe feature is activated for an aircraft, **Conflict Probe** for that aircraft shall be restarted before transfer of control, unless otherwise coordinated.

**NOTE**—
The requirement in paragraph 13-1-2e does not apply to aircraft entering a non-**URET** facility.

### OLD

#### 13-1-3. TRIAL PLANNING

When **URET** is operational at the sector and when sector priorities permit, use the trial plan capability to evaluate:

### OLD

#### 13-1-4. **URET**-BASED CLEARANCES

When the results of a trial plan based upon a user request indicate the absence of alerts, every effort should be made to grant the user request, unless the change is likely to adversely affect operations at another sector.

### OLD

#### 13-1-5. **URET**, **DEPARTURE LIST** (DL), AND **FLIGHT DATA MANAGEMENT**

**Title** through **e**

**b.** Actively scan **URET** to identify automated notifications that require sector team action.

**c** through **e**

**f.** When **URET** is operational, sector teams shall post flight progress strips for any non-radar flights.

**g.** When **URET** is operational, a flight progress strip shall be posted for any flight plan not contained in the **Host Computer System**.

**h.** When **URET** is operational, sector teams shall post any flight progress strip(s) that are deemed necessary for safe or efficient operations. The sector team shall comply with all applicable facility directives to maintain posted flight progress strips.

**i.** The **URET** Drop Track Delete option shall be used in accordance with facility directives.

### NEW

#### 13-1-3. TRIAL PLANNING

When **EDST** is operational at the sector and when sector priorities permit, use the trial plan capability to evaluate:

#### 13-1-4. **CONFLICT PROBE**-BASED CLEARANCES

No Change

#### 13-1-5. **THE AIRCRAFT LIST** (ACL), **DEPARTURE LIST** (DL), AND **FLIGHT DATA MANAGEMENT**

**Title** through **a**

**b.** Actively scan **EDST** to identify automated notifications that require sector team action.

**c through e**

**f.** Sector teams shall post flight progress strips for any non-radar flights.

**g.** A flight progress strip shall be posted for any flight plan not contained in the **EAS**.

**h.** Sector teams shall post any flight progress strip(s) that are deemed necessary for safe or efficient operations. The sector team shall comply with all applicable facility directives to maintain posted flight progress strips.

**i.** The Drop Track Delete option shall be used in accordance with facility directives.
NEW

13-1-6. MANUAL COORDINATION AND THE COORDINATION MENU

a. Where automated coordination with a facility is not available (e.g., an international facility, a VFR tower), use the Coordination Menu or a flight progress strip to annotate manual coordination status, in accordance with facility directives.

b. When the Coordination Menu is used and the flight plan is subsequently changed, remove the yellow coding from the Coordination Indicator after any appropriate action has been taken.

13-1-7. HOLDING

For flights in hold, use the ERAM Hold Data Menu/Hold View, the EDST Hold Annotations Menu, a flight progress strip, or a facility approved worksheet, to annotate holding instructions, in accordance with facility directives.

13-1-8. RECORDING OF CONTROL DATA

No Change

c. When the ACL or DL Free Text Area is used to enter control information, authorized abbreviations must be used. You may use:

3. The EDST equivalents for control information symbols authorized in TBL 13-1-3.

No Change

d. When the ACL or DL Free Text Area is used to enter control information, the Free Text Area must remain open and visible. When no longer relevant, the information entered into the Free Text Area must be updated or deleted.

No Change
OLD

13-1-9. ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION

a. The **URET** Inappropriate Altitude for Direction of Flight (IAFDOF) feature shall be used in the automatic mode (i.e., IAFDOF Manual shall remain deselected) unless otherwise authorized in a facility directive.

b. Completion of any required coordination for IAFDOF shall be acknowledged on the ACL by removing the IAFDOF coding.

c. Completion of appropriate coordination for an Unsuccessful Transmission Message (UTM) shall be acknowledged on the ACL by removing the UTM coding.

d. Issuance of the Expect Departure Clearance Time (EDCT) to the pilot or other control facility shall be acknowledged on the DL by removing the EDCT coding.

e. IAFDOF, UTM, or EDCT coding shall be acknowledged only after the appropriate action has been completed.

NOTE – **URET** accuracy in assigning alert notification is dependent upon entry/update of a flight’s interim altitude.

OLD

13-1-10. CURRENCY OF TRAJECTORY INFORMATION

Title through b

NEW

13-1-9. ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION

a. The **EDST** Inappropriate Altitude for Direction of Flight (IAFDOF) feature must be used in the automatic mode (i.e., IAFDOF Manual must remain deselected) unless otherwise authorized in a facility directive.

b. Completion of any required coordination for IAFDOF must be acknowledged on the ACL by removing the IAFDOF coding.

c. Completion of appropriate coordination for an Unsuccessful Transmission Message (UTM) must be acknowledged on the ACL by removing the UTM coding.

d. Issuance of the Expect Departure Clearance Time (EDCT) to the pilot or other control facility must be acknowledged on the DL by removing the EDCT coding.

e. IAFDOF, UTM, or EDCT coding must be acknowledged only after the appropriate action has been completed.

NEW

13-1-10. CURRENCY OF TRAJECTORY INFORMATION

No Change

NOTE – **Conflict probe** accuracy in assigning alert notification is dependent upon entry/update of a flight’s interim altitude.

OLD

13-1-11. DELAY REPORTING

a. Adhere to all applicable delay reporting directives while URET is operational.

b. Delay information shall be recorded. Delay information may be automatically recorded via use of the **URET** Hold Annotations Menu, or manually on flight progress strips or facility-approved worksheets, in accordance with the facility-defined standard.

NEW

13-1-11. DELAY REPORTING

a. Adhere to all applicable delay reporting directives.

b. Delay information shall be recorded. Delay information may be automatically recorded via use of the **EDST** Hold Annotations Menu, **ERAM Hold Data Menu**, **ERAM Hold View**, or manually on flight progress strips or facility-approved worksheets, in accordance with the facility-defined standard.
c. When using URET to automatically record delay information, the URET hold annotations shall be deleted when the aircraft is cleared from holding.

NOTE—Delay information cannot be accurately recorded unless URET annotations are deleted when the aircraft is cleared from holding.

OLD

13-1-12. OVERDUE AIRCRAFT
Upon receipt of the URET overdue aircraft notification take appropriate actions set forth in Chapter 10, Section 3, Overdue aircraft.

NOTE—URET overdue aircraft notification is based on radar track data. Updating an aircraft’s route of fight will remove the overdue aircraft notification.

NEW

13-1-12. OVERDUE AIRCRAFT
Upon receipt of the overdue aircraft notification take appropriate actions set forth in Chapter 10, Section 3, Overdue aircraft.

NOTE—EDST overdue aircraft notification is based on radar track data. Updating an aircraft’s route of fight will remove the overdue aircraft notification.

OLD

13-1-14. FORECAST WINDS
In the event that current forecast wind data are not available, continue use of URET with appropriate recognition that alert and trajectory data may be affected.

NEW

13-1-14. FORECAST WINDS
In the event that current forecast wind data are not available, continue use of conflict probe and trial planning with appropriate recognition that alert and trajectory data may be affected.

OLD

13-1-15. INTERFACILITY CONNECTIVITY
In the event of a loss of connectivity to a neighboring URET system, continue use of URET with appropriate recognition that alert data may be affected.

NEW

13-1-15. INTERFACILITY CONNECTIVITY
In the event of a loss of connectivity to an adjacent ERAM facility, continue use of EDST with appropriate recognition that alert data may be affected.

OLD

13-1-16. PRIMARY HOST OUTAGES
In the event of a primary HOST outage, URET data may be used to support situational awareness while the facility transitions to the backup RDP capabilities or non radar procedures.

NOTE—Without primary system input, URET data cannot be updated and becomes stale.

NEW

13-1-16. SURVEILLANCE AND FLIGHT DATA OUTAGES
In the event of a surveillance or flight data outage, electronic flight data may be used to support situational awareness while the facility transitions to alternate automation capabilities or non radar procedures.


OLD

13-1-17. URET AIRSPACE CONFIGURATION ELEMENTS

a. **URET** Airspace Configuration Elements are:
   a1 through a2

3. **URET** adapted restrictions.

b. Where assigned as a sector responsibility by facility directive, the sector team shall update **URET** Airspace Configuration Elements to reflect current status.

Add

c. For Airspace Configuration Elements designated as a sector responsibility, notify the operational supervisor when the status of an Airspace Configuration Element has been modified in **URET**.

NEW

13-1-17. AIRSPACE CONFIGURATION ELEMENTS

a. Airspace Configuration Elements are:
   No Change

3. Adapted restrictions.

b. Where assigned as a sector responsibility by facility directive, the sector team shall update Airspace Configuration Elements to reflect current status.

**NOTE**—
Unless otherwise covered in an LOA or facility directive, activating or scheduling the SAA in the Airspace Status View does NOT constitute coordination for activation of airspace.

c. For Airspace Configuration Elements designated as a sector responsibility, notify the operational supervisor when the status of an Airspace Configuration Element has been modified.

1. PARAGRAPH NUMBER AND TITLE:

1-2-6. ABBREVIATIONS
2-1-6. SAFETY ALERTS
5-2-13. CODE MONITOR
5-2-17. VALIDATION OF MODE C
5-4-6. RECEIVING CONTROLLER HANDOFF
5-5-2. TARGET SEPARATION
5-5-4. MINIMA
5-15-1. APPLICATION
Chapter 5, Section 16. TPX-42
7-6-1. BASIC RADAR SERVICE TO VFR AIRCRAFT
7-7-3. SEPARATION
7-8-3. SEPARATION
7-9-4. SEPARATION

2. BACKGROUND: Terminal areas use mono-pulse secondary surveillance radar (ASR 9, Mode S and ASR-11 Beacon System). FUSION utilizes all available surveillance sources (airport surveillance radar (ASR), air route surveillance radar (ARSR), ADS-B, etc.) to display a single tracked target for air traffic control separation services. FUSION performance characteristics is equivalent to the current single-sensor radar display system. The performance of this system will be used as the baseline radar system to ensure minimal degradation of current separation operations within the NAS. The Surveillance and Broadcast Services Air Traffic CHI Workgroup was established to ensure functional standardization and usability of multiple surveillance sources integration in both terminal and en route domains. A recently signed Safety Risk Management Document (SRMD) addendum supports and authorizes 3NM ADS-B to ADS-B and ADS-B to Radar separation when operating in Fusion mode. Facilities may determine the necessity of the use of ADS-B CHI in airspace where the only surveillance source is being provided by ADS-B based upon the number of equipped aircraft and affected operations.
3. CHANGE:

**OLD**

1-2-6. ABBREVIATIONS
Programmable Indicator Data Processor (PIDP)

**NEW**

1-2-6. ABBREVIATIONS
Delete

**OLD**

2-1-6. SAFETY ALERTS
Title through NOTE 1

2. Recognition of situations of unsafe proximity may result from MSAW/E–MSAW/LAAS, automatic altitude readouts, Conflict/Mode C Intruder Alert, observations on a PAR scope, or pilot reports.

**NEW**

2-1-6. SAFETY ALERTS

2. Recognition of situations of unsafe proximity may result from MSAW/E–MSAW, automatic altitude readouts, Conflict/Mode C Intruder Alert, observations on a PAR scope, or pilot reports.

**OLD**

5-2-13. CODE MONITOR
Title through REFERENCE

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.

**NEW**

5-2-13. CODE MONITOR

No Change

NOTE—
In addition to alphanumeric and control symbology processing enhancements, the MEARTS and STARS 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.

**OLD**

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.)

**NEW**

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. When an X is displayed adjacent to the Mode C, the Mode C altitude readout must be validated after the X is no longer displayed in the data block. (CTRD 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.)

**OLD**

5-4-6. RECEIVING CONTROLLER HANDOFF
Title through f

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

**NEW**

5-4-6. RECEIVING CONTROLLER HANDOFF

No Change

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

5-5-2. TARGET SEPARATION

a. Apply radar separation:

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

2. Between the ends of beacon control slashes.

NOTE—At TPX−42 sites, the bracket video feature must be activated to display the beacon control slash.

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

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

REFERENCE—FAAO JO 7110.65, Para 5−9−7, Simultaneous Independent ILS/MLS Approaches− Dual & Triple.

NEW

5-5-2. TARGET SEPARATION

Apply radar separation:

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

b. Between the ends of beacon control slashes.

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

d. All−digital displays. Between the centers of digitized targets. Do not allow digitized targets to touch.

REFERENCE—FAAO JO 7110.65, Para 5−9−7, Simultaneous Independent Approaches− Dual & Triple.

OLD

5-5-4. MINIMA

Title through b2

Add

b3

Add

NEW

5-5-4. MINIMA

No Change

NOTE—In the event of an unexpected ISR on one or more aircraft, the ATCS working that aircraft must transition from 3-mile to 5-mile separation, or establish some other form of approved separation (visual or vertical) as soon as feasible. This action must be timely, but taken in a reasonable fashion, using the controller’s best judgment, as not to reduce safety or the integrity of the traffic situation. For example, if ISR appears when an aircraft is established on final with another aircraft on short final, it would be beneficial from a safety perspective to allow the trailing aircraft to continue the approach and land rather than terminate a stabilized approach.

No Change

4. ADS−B may be integrated as an additional surveillance source when operating in FUSION mode. The display of ADS−B targets is permitted and does not require radar reinforcement.

NOTE—ADS−B surveillance must only be used when operating in FUSION.
5. The use of ADS-B only information may be used to support all radar requirements associated with any published instrument procedure that is annotated “Radar Required”.

6. The ADS-B Computer Human Interface (CHI) may be implemented by facilities on a sector by sector or facility wide basis when the determination is made that utilization of the ADS-B CHI provides an operational advantage to the controller.

OLD
Section 15. Automated Radar Terminal Systems (ARTS)– Terminal

NEW

OLD
5-15-1. APPLICATION
ARTS/STARS may be used for identifying aircraft assigned a discrete beacon code, maintaining identity of targets, and performing handoffs of these targets between controllers.

NEW
5-15-1. APPLICATION
CARTS/STARS may be used for identifying aircraft assigned a discrete beacon code, maintaining identity of targets, and performing handoffs of these targets between controllers. All procedures for the terminal domain related to air traffic control services using CARTS or STARS apply to the FUSION target.

NOTE—USAF/USN. Where PIDP/DAIR equipment is capable of performing the functions described in this section, it may be used accordingly.

OLD
Section 16. TPX-42– Terminal

NEW
Section 16. TPX-42– Terminal

5-16-1. APPLICATION
Each TPX–42 facility shall utilize the equipment to the maximum extent possible consistent with local operating conditions.

5-16-2. RESPONSIBILITY
This equipment does not relieve the controller of the responsibility to ensure proper identification, maintenance of identity, handoff of the correct radar beacon target associated with numeric data, and the separation of aircraft.

5-16-3. FUNCTIONAL USE
TPX–42 may be used for the following functions:

a. Tagging.

b. Altitude information.

REFERENCE—FAA Order 7110.65, Para 5–2–23, Altitude Filters.
c. Coordination.
d. Target identity confirmation.

5–16–4. SYSTEM REQUIREMENTS
Use the TPX−42 system as follows:
a. TPX−42 facilities must inform adjacent facilities of scheduled and unscheduled shutdowns.
b. To the maximum extent practicable, tags should be utilized for all controlled aircraft.

5–16–5. INFORMATION DISPLAYED
a. Inhibiting portions of the tag must be in accordance with facility directives, which must ensure maximum required use of the equipment.
b. Mode C altitude information must not be inhibited unless a ground malfunction causes repeated discrepancies of 300 feet or more between the automatic altitude readouts and pilot reported altitudes.

5–16–6. INHIBITING LOW ALTITUDE ALERT SYSTEM (LAAS)
Assign a beacon code to a VFR aircraft or to an aircraft that has canceled its IFR flight plan to inhibit LAAS processing unless the aircraft has specifically requested LAAS.

OLD

7-6-1. BASIC RADAR SERVICE TO VFR AIRCRAFT-TERMINAL

Title through b REFERENCE

OLD

7–7–3. SEPARATION

Title through b

NEW

7-7-3. SEPARATION

No Change

NOTE–
1. When ISR is being displayed, target resolution is prohibited.
2. Apply the provisions of Paragraph 5-5-4, Minima, subparagraphs f and g, when wake turbulence separation is required.

NOTE–
Apply the provisions of Paragraph 5-5-4, Minima, subparagraphs f and g, when wake turbulence separation is required.
1. **PARAGRAPH NUMBER AND TITLE:**

1–2–6. ABBREVIATIONS

8–1–7. OCEANIC NAVIGATIONAL ERROR REPORTING (ONER) PROCEDURES

2. **BACKGROUND:** FAA JO 7110.65, Para 8-1-7, requires facilities to refer to FAAO 7110.82 for procedures on how to process Oceanic Navigational Error (ONER) Reports. FAAO 7110.82 was effective June 3, 2009, and replaced the terminology ONER with Oceanic Error Report.

3. **CHANGE:**

    **OLD**

    1–2–6. ABBREVIATIONS

    Oceanic Navigational Error Report (ONER)

    **NEW**

    1–2–6. ABBREVIATIONS

    Delete
OLD

8–1–7. OCEANIC NAVIGATIONAL ERROR REPORTING (ONER) PROCEDURES

FAAO 7110.82, Monitoring of Navigation, Longitudinal Separation, and Altitude Keeping Performance in Oceanic Airspace, contains procedures for reporting and processing navigational errors observed by ATC radar for aircraft exiting oceanic airspace.

NOTE—
FAAO 7110.82 establishes procedures for processing ONER procedures, Oceanic Altitude Deviation Reports, Erosion of Longitudinal Separation Reports, Letter of Authorization Verification Reports, and for collecting system data for analysis. This data is needed for risk modeling activities to support separation standard reductions.

NEW

8–1–7. OCEANIC ERROR REPORT PROCEDURES

FAAO 7110.82 establishes procedures for reporting Gross Navigation Errors (GNE), height errors, time(longitudinal) errors, intervention, and Special Area of Operations (SAO) verification in oceanic airspace. This data is needed for risk modeling activities to support separation standard reductions.

Delete

1. PARAGRAPH NUMBER AND TITLE: 2–1–6. SAFETY ALERT

2. BACKGROUND: The original phraseology for Safety Alert in the 7110.65A, paragraph 33 read: “(Ident) Traffic alert, advise you turn right/left heading (degrees) and /or climb/descend to (altitude) immediately”. Paragraph 33, was later changed to 2-1-6, and then modified in FAA JO 7110.65M on 2/2/00, to incorporate “traffic alert” at the beginning of the transmission. The phraseology instructs controllers to give the position of the aircraft, while the example omits the position information. A number of controllers are not discerning the difference between the phraseology and example in paragraph 2-1-6b.

3. CHANGE:

OLD

2–1–6. SAFETY ALERT

Title through b PHRASEOLOGY

EXAMPLE—

“Traffic Alert, Cessna Three Four Juliet, advise you turn left immediately.”

or

“Traffic Alert, Cessna Three-Four Juliet, advise you turn left and climb immediately.”

REFERENCE—

FAAO JO 7110.65, Para 5–14–1, Conflict Alert (CA) and Mode C Intruder (MCI) Alert.
FAAO JO 7110.65, Para 5–14–2, En Route Minimum Safe Altitude Warning (E–MSAW).
FAAO JO 7110.65, Para 5–15–6, CA/MCI.
FAAO JO 7110.65, Para 5–2–23, Altitude Filters.

NEW

2–1–6. SAFETY ALERT

No Change

EXAMPLE—

“Traffic Alert, Cessna Three Four Juliet, 12’o clock, 1 mile advise you turn left immediately.”

or

“Traffic Alert, Cessna Three-Four Juliet, 12’o clock, 1 mile advise you turn left and climb immediately.”

REFERENCE—

FAAO JO 7110.65, Para 5–14–1, Conflict Alert (CA) and Mode C Intruder (MCI) Alert.
FAAO JO 7110.65, Para 5–14–2, En Route Minimum Safe Altitude Warning (E–MSAW).
FAAO JO 7110.65, Para 5–15–6, CA/MCI.
FAAO JO 7110.65, Para 5–2–23, Altitude Filters.
FAAO JO 7110.65, Para 2–1–21, Traffic Advisories
1. PARAGRAPH NUMBER AND TITLE:
2-1-19. WAKE TURBULENCE
2-1-20. WAKE TURBULENCE CAUTIONARY ADVISORIES
2-4-14. WORDS AND PHRASES
2-4-21. DESCRIPTION OF AIRCRAFT TYPES
3-3-5. BRAKING ACTION ADVISORIES
3-7-3. GROUND OPERATIONS
3-10-10. ALTITUDE RESTRICTED LOW APPROACH
4-8-11. PRACTICE APPROACHES
5-5-7. PASSING OR DIVERGING
7-2-1. VISUAL SEPARATION

2. BACKGROUND: In 2008, the FAA European Organization for the Safety of Air Navigation (EuroControl), the Joint Aviation Authorities, and the aircraft manufacturer modified existing separation standards for the Airbus A380-800 (A388) aircraft. The separation standards apply to terminal and enroute facilities. Although a “J” indicator for the A388 has been identified by ICAO in its October 9, 2006, guidance, the FAA has not rendered a final determination in support of such an indicator. Accordingly, existing flight data processing systems and records have not yet been modified to reflect a “J” indicator for the A388 on electronic flight lists or printed flight progress strips. Studies indicate that wake vortices generated by the A388 may be more substantial than those of aircraft in the “Heavy” Aircraft Weight Class, thus requiring the special designation, “Super” and additional wake turbulence separation during certain segments of flight. The A388 must identify itself as, “Super” in radio communications with air traffic control. Recent analysis of the current U.S. weight-based wake turbulence categories and associated separation minima has indicated that the Antonov An225 is more appropriately aligned with the A388 than as a U.S. heavy aircraft.

3. CHANGE:

OLD

2–1–19. WAKE TURBULENCE

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

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

OLD

2–1–20. WAKE TURBULENCE CAUTIONARY ADVISORIES

a. Issue wake turbulence cautionary advisories, including the position, altitude if known, and direction of flight to aircraft operating behind Heavy or B757 aircraft to:

NEW

2–1–19. WAKE TURBULENCE

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

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

NEW

2–1–20. WAKE TURBULENCE CAUTIONARY ADVISORIES

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

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

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

REFERENCE—

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

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

OLD

2-4-14. WORDS AND PHRASES

Title through a

Add

b. The word “heavy” must be used as part of the identification in all communications with or about heavy jet aircraft as follows:

TERMINAL. In all communications with or about heavy jet aircraft.

EN ROUTE. The use of the word heavy may be omitted except as follows:

Add

1. In communications with a terminal facility about heavy jet operations.

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

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

4 through EXAMPLE

NEW

2-4-14. WORDS AND PHRASES

No Change

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

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

Delete

Delete

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

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

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

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

No Change
**NOTE—**
Most airlines will use the word “heavy” following the company prefix and flight number when establishing communications or when changing frequencies within a terminal facility’s area.

b5

**OLD**

2-4-21. DESCRIPTION OF AIRCRAFT TYPES

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

a through b

1. Manufacturer’s model or designator

b2 through c

1. Manufacturer’s model or designator.

c2 through EXAMPLE

Add

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

**EXAMPLE—**

“Heavy L-Ten-Eleven.”

“Heavy C-Five.”

“Heavy Boeing Seven Forty-Seven.”

**NEW**

2-4-21. DESCRIPTION OF AIRCRAFT TYPES

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

No Change

1. Manufacturer’s model or type designator.

No Change

1. Manufacturer’s model or type designator.

No Change

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

**EXAMPLE—**

“Super A-Three-Eighty” or “Super A-three-eighty-eight.”

“Heavy C-Seventeen.”

“Heavy Boeing Seven Forty-Seven.”

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

**EXAMPLE—**

“Heavy L-Ten-Eleven.”

“Heavy C-Five.”

“Heavy Boeing Seven Forty-Seven.”

**OLD**

3-3-5. BRAKING ACTION ADVISORIES

Title through b

1. Issue the latest braking action report for the runway in use to each arriving and departing aircraft early enough to be of benefit to the pilot. When possible, include reports from heavy jet aircraft when the arriving or departing aircraft is a heavy.

**NEW**

3-3-5. BRAKING ACTION ADVISORIES

No Change

1. Issue the latest braking action report for the runway in use to each arriving and departing aircraft early enough to be of benefit to the pilot. When possible, include reports from super or heavy aircraft when the arriving or departing aircraft is a super or heavy.

**OLD**

3-7-3. GROUND OPERATIONS

Title through a

a. Heavy jet aircraft to use greater than normal taxiing power.

**NEW**

3-7-3. GROUND OPERATIONS

No Change

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

3-10-10. ALTITUDE RESTRICTED LOW APPROACH

A low approach with an altitude restriction of not less than 500 feet above the airport may be authorized except over an aircraft in takeoff position or a departure aircraft. Do not clear aircraft for restricted altitude low approaches over personnel unless airport authorities have advised these personnel that the approaches will be conducted. Advise the approaching aircraft of the location of applicable ground traffic, personnel, or equipment.

NOTE—
1. The 500 feet restriction is a minimum. Higher altitudes should be used when warranted. For example, 1,000 feet is more appropriate for heavy aircraft operating over unprotected personnel or small aircraft on or near the runway.

NEW

3-10-10. ALTITUDE RESTRICTED LOW APPROACH

No Change

NOTE—
1. The 500 feet restriction is a minimum. Higher altitudes should be used when warranted. For example, 1,000 feet is more appropriate for super or heavy aircraft operating over unprotected personnel or small aircraft on or near the runway.

OLD

4-8-11. PRACTICE APPROACHES

Title through a1(b)

2. Where procedures require application of IFR separation to VFR aircraft practicing instrument approaches, standard IFR separation in accordance with Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 must be provided. Controller responsibility for separation begins at the point where the approach clearance becomes effective. Except for heavy aircraft/B757, 500 feet vertical separation may be applied between VFR aircraft and between a VFR and an IFR aircraft.

NEW

4-8-11. PRACTICE APPROACHES

No Change

2. Where procedures require application of IFR separation to VFR aircraft practicing instrument approaches, standard IFR separation in accordance with Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 must be provided. Controller responsibility for separation begins at the point where the approach clearance becomes effective. Except for super or heavy aircraft, 500 feet vertical separation may be applied between VFR aircraft and between a VFR and an IFR aircraft.

OLD

5-5-7. PASSING OR DIVERGING

Title through a2(b)

3. Although approved separation may be discontinued, the requirements of Para 5-5-4, Minima, subparagraphs f and g apply when operating behind a heavy jet/B757.

REFERENCE through b4

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, subparagraph f must be applied when operating behind a heavy jet/B757.

NEW

5-5-7. PASSING OR DIVERGING

No Change

3. Although approved separation may be discontinued, the requirements of Para 5-5-4, Minima, subparagraph g must be applied when wake turbulence separation is required.

5. You have advised the pilots if either aircraft is classified as a super or heavy aircraft.

6. Although vertical separation may be discontinued, the requirements of Para 5-5-4, Minima, subparagraph g must be applied when wake turbulence separation is required.
OLD

7-2-1. VISUAL SEPARATION
Aircraft may be separated by visual means, as provided in this paragraph, when other approved separation is assured before and after the application of visual separation. To ensure that other separation will exist, consider aircraft performance, wake turbulence, closure rate, routes of flight, and known weather conditions. Reported weather conditions must allow the aircraft to remain within sight until other separation exists. Do not apply visual separation between successive departures when departure routes and/or aircraft performance preclude maintaining separation.

NEW

7-2-1. VISUAL SEPARATION
Aircraft may be separated by visual means, as provided in this paragraph, when other approved separation is assured before and after the application of visual separation. To ensure that other separation will exist, consider aircraft performance, wake turbulence, closure rate, routes of flight, and known weather conditions. Reported weather conditions must allow the aircraft to remain within sight until other separation exists. Do not apply visual separation between successive departures when departure routes and/or aircraft performance preclude maintaining separation. *Visual separation is not authorized when the lead aircraft is a super.*

1. PARAGRAPH NUMBER AND TITLE: 2-3-8. AIRCRAFT EQUIPMENT SUFFIX

2. BACKGROUND: When the new aircraft equipment suffix table was introduced in 2013, the automation was designed to translate the NAS equipment suffix of an aircraft that loses Mode C altitude reporting capability to a slant H (/H). The automation would also translate the NAS equipment suffix of an aircraft that loses Mode A beacon reporting capability (loss of transponder) to a /H. This dual assignment of /H produced numerous interfacility handoff failures in facilities operating on ERAM involving aircraft that had only lost Mode C altitude reporting. This situation was caused by ERAM interpreting /H as “No Transponder”, therefore would not process the handoff if it determined that the aircraft was transmitting a beacon code.

3. CHANGE:

OLD

2-3-8. AIRCRAFT EQUIPMENT SUFFIX
Title through c EXAMPLE
d. Utilize aircraft equipment suffix /H to indicate “RVSM−capable, no transponder."

NOTE−
/H is for ATC use only. Users are not authorized to file this suffix

NEW

2-3-8. AIRCRAFT EQUIPMENT SUFFIX
No Change
d. Utilize aircraft equipment suffix /Q to indicate “RVSM−capable, no transponder."

NOTE−
/Q is for ATC use only. Users are not authorized to file this suffix
1. PARAGRAPH NUMBER AND TITLE:
3-9-6. SAME RUNWAY SEPARATION
3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES
3-9-8. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH OPERATIONS
3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS
3-10-3. SAME RUNWAY SEPARATION
3-10-4. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH OPERATIONS
5-5-4. MINIMA
5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES
5-8-5. DEPARTURES AND ARRIVALS ON PARALLEL OR NONINTERSECTING DIVERGING RUNWAYS
6-1-4. ADJACENT AIRPORT OPERATION
6-1-5. ARRIVAL MINIMA
6-7-5. ARRIVAL MINIMA
7-4-3. CLEARANCE FOR VISUAL APPROACH
7-4-4. APPROACHES TO MULTIPLE RUNWAYS
7-6-7. SEQUENCING

2. BACKGROUND: This change revises wake turbulence separation criteria in two separate areas: Super aircraft, which consists of the Airbus A380-800 and Antonov A225, and the integration of some of the provisions contained in FAA Order JO 7110.659B, Wake Turbulence Recategorization.

3. CHANGE:

**OLD**

3-9-6. SAME RUNWAY SEPARATION

Title through WAKE TURBULENCE APPLICATION

c. Do not issue clearances which imply or indicate approval of rolling takeoffs by heavy jet aircraft except as provided in para 3–1–14, Ground Operations When Volcanic Ash is Present.
d. Do not issue clearances to a small aircraft to line up and wait on the same runway behind a departing heavy jet aircraft to apply the necessary intervals.

**NEW**

3-9-6. SAME RUNWAY SEPARATION

No Change

c. Do not issue clearances which imply or indicate approval of rolling takeoffs by super or heavy aircraft except as provided in Para 3–1–14, Ground Operations When Volcanic Ash is Present.
d. Do not issue clearances to a small aircraft to line up and wait on the same runway behind a departing super or heavy aircraft to apply the necessary intervals.

**REFERENCE**—AC 90–23, Aircraft Wake Turbulence.

e. The minima in para 5-5-4, Minima, may be applied in lieu of the 2 minute requirement in subpara f. When para 5-5-4, Minima, are applied, ensure that the appropriate radar separation exists at or prior to the time an aircraft becomes airborne when taking off behind a heavy jet/B757.

**NOTE**—The pilot may request additional separation; i.e., 2 minutes vs. 4 miles, but should make this request before taxing on the runway.

f. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by 2 minutes, when departing:
**NOTE**–
Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

1. The same runway. (See FIG 3-9-4).

![FIG 3-9-4
2 Minute Separation](image)

2. A parallel runway separated by less than 2,500 feet.

   g. Separate an aircraft from a heavy jet/B757 when operating on a runway with a displaced landing threshold if projected flight paths will cross–2 minutes when:

   1. A departure follows a heavy jet/B757 arrival.
   2. An arrival follows a heavy jet/B757 departure.

   ![FIG 3-9-4
Same Runway Separation](image)

**NOTE**–
Takeoff clearance to the following aircraft should not be issued until the time interval has passed after the preceding aircraft begins takeoff roll.

1. Heavy, large, or small behind super – 3 minutes.

   Delete

2. Heavy, large, or small behind heavy – 2 minutes.

   g. Separate a small aircraft behind a B757 by 2 minutes when departing the same runway.

   Delete

   ![FIG 3-9-4
Same Runway Separation](image)
h. Air traffic controllers must not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

Add

Add

Add

i. Separate a small aircraft behind a large aircraft that has departed or made a low/missed approach when utilizing opposite direction takeoffs on the same runway by 3 minutes unless a pilot has initiated a request to deviate from the 3-minute interval. In the latter case, issue a wake turbulence advisory before clearing the aircraft for takeoff. Controllers must not initiate or suggest a waiver of the 3-minute rule.

Add

Add

NOTE—
A request for takeoff does not initiate a waiver request.

REFERENCE—
FAAO JO 7110.65, Appendix A, Appendix B, and Appendix C, Aircraft Information.

j. Separate aircraft behind a heavy jet/B757 that has departed or made a low/missed approach when utilizing opposite direction takeoffs or landings on the same or parallel runways separated by less than 2,500 feet – 3 minutes.

k. Inform an aircraft when it is necessary to hold in order to provide the required 3-minute interval.

PHRASEOLOGY—
HOLD FOR WAKE TURBULENCE.

REFERENCE—

l. Separate a small aircraft behind a large aircraft (except B757) that has departed or made a low/missed approach when utilizing opposite direction takeoffs on the same runway by 3 minutes unless a pilot has initiated a request to deviate from the time interval. In the latter case, issue a wake turbulence cautionary advisory before clearing the aircraft for takeoff. Controllers must not initiate or suggest a waiver of the time interval.

h. Separate aircraft when operating on a runway with a displaced landing threshold if projected flight paths will cross when either a departure follows an arrival or an arrival follows a departure by the following minima:

1. Heavy, large, or small behind super – 3 minutes.

2. Heavy, large, or small behind heavy – 2 minutes.


i. Separate an aircraft behind another aircraft that has departed or made a low/missed approach when utilizing opposite direction takeoffs or landings on the same or parallel runways separated by less than 2,500 feet by the following minima:

1. Heavy, large, or small behind super – 4 minutes.

2. Heavy, large, or small behind heavy – 3 minutes

Delete

No Change

j. Separate a small aircraft behind a B757 that has departed or made a low/missed approach when utilizing opposite direction takeoffs or landings on the same runway by – 3 minutes.

k. Do not approve pilot requests to deviate from the required intervals contained in subparagraphs f through j.

No Change

No Change

l. Separate a small aircraft behind a large aircraft (except B757) that has departed or made a low/missed approach when utilizing opposite direction takeoffs on the same runway by 3 minutes unless a pilot has initiated a request to deviate from the time interval. In the latter case, issue a wake turbulence cautionary advisory before clearing the aircraft for takeoff. Controllers must not initiate or suggest a waiver of the time interval.
OLD
3–9–7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES

a. Apply the following wake turbulence criteria for intersection departures:

1. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding departing large aircraft by ensuring that the small aircraft does not start takeoff roll until at least 3 minutes after the large aircraft has taken off.

2. Separate any aircraft taking off from an intersection on the same runway (same or opposite direction takeoff), parallel runways separated by less than 2,500 feet, and parallel runways separated by less than 2,500 feet with runway thresholds offset by 500 feet or more, by ensuring that the aircraft does not start takeoff roll until at least 3 minutes after a heavy aircraft/B757 has taken off.

NOTE—
Parallel runways separated by less than 2,500 feet with runway thresholds offset by less than 500 feet must apply para 3–9–6, Same Runway Separation, subparagraph f.

3. Separate a small aircraft weighing 12,500 lbs. or less taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding small aircraft weighing more than 12,500 lbs. by ensuring that the following small aircraft does not start takeoff roll until at least 3 minutes after the preceding aircraft has taken off.

4. Inform an aircraft when it is necessary to hold in order to provide the required 3–minute interval.

NEW
3–9–7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES

No Change

1. Separate a small aircraft weighing 12,500 lbs. or less taking off from an intersection on the same runway (same or opposite direction takeoff) behind a departing small aircraft weighing more than 12,500 lbs. by ensuring that the aircraft does not start takeoff roll until at least 3 minutes after the preceding aircraft has taken off.

2. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a departing large aircraft (except B757) by ensuring that the aircraft does not start takeoff roll until at least 3 minutes after the preceding aircraft has taken off.

3. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a departing B757 by ensuring that the aircraft does not start takeoff roll until at least 3 minutes after the preceding aircraft has taken off.

4. Separate aircraft departing from an intersection on the same runway (same or opposite direction takeoff), parallel runways separated by less than 2,500 feet, and parallel runways separated by less than 2,500 feet with the runway thresholds offset by 500 feet or more, by ensuring that the aircraft does not start takeoff roll until the following intervals exist after the preceding aircraft has taken off:

NOTE—
Apply Para 3–9–6, Same Runway Separation, subparagraph f to parallel runways separated by less than 2,500 feet with runway thresholds offset by less than 500 feet.
Add

Add

Add

**PHRASEOLOGY—**
*HOLD FOR WAKE TURBULENCE.*

**NOTE—**
Aircraft conducting touch-and-go and stop-and-go operations are considered to be departing from an intersection.

**REFERENCE—**
FAAO JO 7110.65, Para 3–8–2, Touch–and–Go or Stop–and–Go or Low Approach.

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

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

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

b2

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

**EXAMPLE—**
"Caution wake turbulence, DC–9 on base leg."

Delete

**NOTE—**
Not authorized with a Super as the lead or departure aircraft.

**REFERENCE—**
FAAO JO 7110.65, Para 5–5–4, Minima, Subparagraph g.
FAAO JO 7110.65, Para 7–2–1, Visual Separation
4. Successive touch-and-go and stop-and-go operations are conducted with any aircraft following a heavy aircraft/B757 in the pattern, or heavy aircraft/B757 departing the same runway, provided the pilot of the aircraft is maintaining visual separation.spacing behind the preceding heavy aircraft/B757. Issue a wake turbulence cautionary advisory and the position of the heavy aircraft/B757.

EXAMPLE–
“Caution wake turbulence, heavy Lockheed C5A departing runway two three.”

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

c through c2

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

OLD
3-9-8. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH OPERATIONS

Title through WAKE TURBULENCE APPLICATION

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

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

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

NEW
3-9-8. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH OPERATIONS

3. Separate IFR/VFR aircraft taking off behind a departing or landing aircraft on an intersecting runway if flight paths will cross (see FIG 3-9-7 and FIG 3-9-8), or an aircraft departing a parallel runway separated by 2,500 feet or more if projected flights will cross (see FIG 3-9-9):

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

(a) Heavy, large, or small behind super – 3 minutes.
FIG 3-9-7
Intersecting Runways

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

Add

(b) Heavy, large, or small behind heavy – 2 minutes.

(c) Small behind B757 – 2 minutes.

FIG 3-9-7
Departure Behind Departure on Intersecting Runway
FIG 3-9-8  
Parallel Runway

Add

FIG 3-9-8  
Departure Behind Arrival on Intersecting Runway

Delete

FIG 3-9-9  
Departure on Intersecting Runway

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

Add

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

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

Delete

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

OLD

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

Title through WAKE TURBULENCE APPLICATION

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

Add

Add

Add

NEW

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

No Change

b. Separate IFR/VFR aircraft taking off behind a departing aircraft on a crossing runway if projected flight paths will cross (See FIG 3-9-13):

1. Heavy, large, or small behind super – 3 minutes.

Add

2. Heavy, large, or small behind heavy – 2 minutes.

Add

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

   c. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a crossing runway if the departure will fly through the airborne path of the arrival–2 minutes. (See FIG 3-9-14).

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

   c. Separate IFR/VFR aircraft departing behind a landing aircraft on a crossing runway if the departure will fly through the airborne path of the arrival (See FIG 3-9-14);

   1. Heavy, large, or small behind super – 3 minutes.

   2. Heavy, large, or small behind heavy – 2 minutes.

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

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

---

**FIG 3-9-14**  
**Intersecting Runway Separation**

![Diagram 1](image1)

**Delete**

**Add**

**FIG 3-9-14**  
**Intersecting Runway Separation**

![Diagram 2](image2)

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

**REFERENCE**—
FAAO JO 7110.65, Para 5-8-3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5-8-5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.
FAAO JO 7110.65, Para 5-5-4, Minima, Subparagraph g.
OLD

3-10-3. SAME RUNWAY SEPARATION

Title through b

1. The heavy jet/B757 to aircraft landing behind a departing/arriving heavy jet/B757 on the same or parallel runways separated by less than 2,500 feet.

2. The large aircraft to a small aircraft landing behind a departing/arriving large aircraft on the same or parallel runways separated by less than 2,500 feet.

OLD

3-10-4. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH SEPARATION

Title through WAKE TURBULENCE APPLICATION

1. All aircraft landing on a crossing runway behind an arriving heavy jet/B757 if the arrival flight path will cross the takeoff path behind the heavy jet/B757 rotation point. (See FIG 3–10–11.)

REFERENCE–

NEW

3-10-3. SAME RUNWAY SEPARATION

No Change

1. The super or heavy to aircraft landing behind a departing/arriving super or heavy on the same or parallel runways separated by less than 2,500 feet.

2. The B757/large aircraft to a small aircraft landing behind a departing/arriving B757/large aircraft on the same or parallel runways separated by less than 2,500 feet.

NEW

3-10-4. INTERSECTING RUNWAY/INTERSECTING FLIGHT PATH SEPARATION

No Change

1. All aircraft landing on a crossing runway behind a departing super or heavy, or a small aircraft landing on a crossing runway behind a departing B757, if the arrival flight path will cross the takeoff path behind the departing aircraft rotation point. (See FIG 3–10–11.)

2. All VFR aircraft landing on a crossing runway behind an arriving super or heavy, and VFR small aircraft landing on a crossing runway behind a B757, if the arrival flight path will cross. (See FIG 3-10-12.)
OLD

5-5-4. MINIMA

Title through e

f. 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.

NEW

5-5-4. MINIMA

No Change

g. Separate aircraft operating directly behind or following an aircraft conducting an instrument approach by the minima specified and in accordance with the following:

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

1. When operating within 2,500 feet of the flight path of the leading aircraft over the surface of the earth and less than 1,000 feet below:

   (a) TERMINAL. Behind super:
       (1) Heavy - 6 miles.
       (2) Large - 7 miles.
       (3) Small - 8 miles.

   (b) EN ROUTE. Behind super - 5 miles, unless the super is operating at or below FL240 and below 250 knots, then:
       (1) Heavy - 6 miles.
       (2) Large - 7 miles.
       (3) Small - 8 miles.

   (c) Behind heavy:
       (1) Heavy - 4 miles.
       (2) Large or small - 5 miles.

2. Separate small aircraft behind a B757 by 4 miles when operating within 2,500 feet of the flight path of the leading aircraft over the surface of the earth and/or less than 500 feet below.

3. TERMINAL. When departing parallel runways separated by less than 2,500 feet, the 2,500 feet requirement in subparagraph 2 is not required when a small departs the parallel runway behind a B757. Issue a wake turbulence cautionary advisory and instructions that will establish lateral separation in accordance with subparagraph 2. Do not issue instructions that will allow the small to pass behind the B757.
4. Small/large behind heavy – 5 miles.

   g. In addition to subpara f, 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.

   If the landing threshold cannot be determined, apply the above minima as constant or increasing at the closest point that can be determined prior to 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.

   **NEW**
   **5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES**

   **NOTE—**
   This procedure does not apply when a small aircraft is taking off from an intersection on the same runway behind a large aircraft or when an aircraft is departing behind a heavy jet/B757.

   **OLD**

   **5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES**

   **NOTE—**
   This procedure does not apply when a small aircraft is taking off from an intersection on the same runway behind a large aircraft or when an aircraft is departing behind a heavy jet/B757.

   **OLD**

   **5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES**

   **NOTE—**
   This procedure does not apply when a small aircraft is taking off from an intersection on the same runway behind a large aircraft or when an aircraft is departing behind a heavy jet/B757.

   **NEW**

   **5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES**

   **NOTE—**
   This procedure does not apply when wake turbulence separation is required.
REFERENCE –
FAAO JO 7110.65, Para 3–9–8, Intersecting Runway/Intersecting Flight Path Operations.
FAAO JO 7110.65, Para 5–5–4, Minima.

b1 through FIG 5-8-5

NOTE –
This procedure does not apply when aircraft are departing behind a heavy jet/B757.

NOTE –
This procedure does not apply when wake turbulence separation is required.

OLD
5-8-5. DEPARTURES AND ARRIVALS ON PARALLEL OR NONINTERSECTING DIVERING RUNWAYS

NOTE –
In the event of a missed approach by a heavy jet/B757, apply the procedures in Para 3-9-6, Same Runway Separation, or Para 3-9-8, Intersecting Runway/Intersecting Flight Path Operations, ensure that the heavy jet does not overtake or cross in front of an aircraft departing from the adjacent parallel runway.

NEW
5-8-5. DEPARTURES AND ARRIVALS ON PARALLEL OR NONINTERSECTING DIVERING RUNWAYS

NOTE –
In the event of a missed approach by an aircraft requiring wake turbulence separation behind it, apply the procedures in Para 3-9-6, Same Runway Separation, Para 3-9-8, Intersecting Runway/Intersecting Flight Path Operations, ensure that the larger aircraft does not overtake or cross in front of an aircraft departing from the adjacent parallel runway.

OLD
6-1-4. ADJACENT AIRPORT OPERATION

Title through WAKE TRUBLENCE APPLICATION

The ATC facility providing service to heavy jets/B757s and having control jurisdiction at adjacent airports must separate arriving or departing IFR aircraft on a course that will cross behind the flight path of a heavy jet/B757 – 2 minutes.

NEW
6-1-4. ADJACENT AIRPORT OPERATION

The ATC facility having control jurisdiction at adjacent airports must separate arriving or departing IFR aircraft on a course that will cross the flight path of an aircraft requiring wake turbulence separation in accordance with the following:

a. Heavy, large, or small behind super – 3 minutes.

b. Heavy, large, or small behind heavy – 2 minutes.

c. Small behind B757 - 2 minutes.
OLD

FIG 6–1–1
Adjacent Airport Operation – Arrival

NEW

FIG 6–1–1
Adjacent Airport Operation – Arrival

OLD

FIG 6–1–2
Adjacent Airport Operation – Departure
OLD
6-1-5. ARRIVAL MINIMA

**Title through**

**WAKE TURBULENCE APPLICATION**

Separate IFR aircraft landing behind an arriving heavy jet/B757 by 2 minutes when arriving:

- **a.** The same runway (use 3 minutes for a small aircraft behind a heavy jet/B757).
- **b.** A parallel runway separated by less than 2,500 feet.
- **c.** A crossing runway if projected flight paths will cross. (See FIG 6-1-3.)

NEW
6-1-5. ARRIVAL MINIMA

No Change

**a.** Separate IFR aircraft landing behind an arriving aircraft to the same runway:

Delete

Delete

Delete

**1. Behind super:**

- **(a)** Heavy or large – 3 minutes.
- **(b)** Small – 4 minutes.

**2. Behind heavy:**

- **(a)** Heavy or large – 2 minutes.
- **(b)** Small – 3 minutes.

**3. Small behind B757 – 3 minutes.**

**b.** Separate IFR aircraft landing behind an arriving aircraft to a parallel runway separated by less than 2,500 feet, or a crossing runway if projected flight paths will cross:

**1. Heavy, large, or small behind super – 3 minutes.**

**2. Heavy, large, or small behind heavy – 2 minutes.**

**3. Small behind B757 – 2 minutes.**
OLD

FIG 6-1-3
Arrival Minima
Landing Behind an Arriving Heavy Jet/B757

NEW

FIG 6-1-3
Arrival Minima Landing Behind an Arriving Aircraft Requiring Wake Turbulence Separation

OLD

6-7-5. INTERVAL MINIMA
Use a 2-minute or a 5-mile radar interval (except for a small aircraft behind a heavy aircraft: use a 3-minute or a 6-mile radar interval) as the minimum between successive approaches and increase the interval, as necessary, taking into account the:

NOTE–
Increased separation is required for small aircraft behind heavy aircraft because of the possible effects of wake turbulence.

NEW

6-7-5. INTERVAL MINIMA
Use the following time or radar interval as the minimum interval between successive approaches:

Delete
REFERENCE—
FAAO JO 7110.65, Para 5–9–5, Approach Separation
Responsibility.
FAAO JO 7110.65, Para 6–7–1, Application.
FAAO JO 7110.65, Para 6–7–2, Approach Sequence.

Add
Add
Add
Add
Add
Add
Add
Add
Add
Add
Add
Add
Add
Add

a through d

OLD
7-4-3. CLEARANCE FOR VISUAL APPROACH

Title through c3

d. All aircraft following a heavy jet/B757 must be informed of the airplane manufacturer and/or model.

EXAMPLE—
“Cessna Three Four Juliet, following a Boeing 757, 12 o’clock, six miles.”

or

“Cessna Three Four Juliet, following a Seven fifty seven, 12 o’clock, six miles.”

REFERENCE—
FAAO JO 7110.65, Para 2–4–21, Description of Aircraft Types.

Add
Add
Add
Add
Add
Add
Add
Add

OLD
7-4-4. APPROACHES TO MULTIPLE RUNWAYS

Title through b1

2. When the aircraft flight paths intersect, ensure another form of approved separation is maintained until visual separation is provided.

c

NEW
7-4-4. APPROACHES TO MULTIPLE RUNWAYS

No Change

2. When the aircraft flight paths intersect, ensure approved separation is maintained until visual separation is provided.

No Change

b. Behind heavy:

1. Heavy – 2 minutes or 4 miles.
2. Large – 2 minutes or 5 miles.
3. Small – 3 minutes or 6 miles.

c. Small behind B757 – 2 minutes or 4 miles.

d. Increase the interval, as necessary, taking into account the:

Renumber d1 through d4

NOTE—
Visual separation is not authorized when the lead aircraft is a super.

REFERENCE—
FAAO JO 7110.65, Para 7-2-1.
1. Parallel runways separated by less than 2,500 feet. Unless standard separation is provided by ATC, an aircraft must report sighting a preceding aircraft making an approach (instrument or visual) to the adjacent parallel runway. When an aircraft reports another aircraft in sight on the adjacent final approach course and visual separation is applied, controllers must advise the succeeding aircraft to maintain visual separation. However, do not permit a heavy/B757 aircraft to overtake another aircraft. Do not permit a large aircraft to overtake a small aircraft.

(c2 through c4(a)

(b) When aircraft flight paths intersect, another form of approved separation must be maintained until visual separation is provided.

OLD

7-6-7. SEQUENCING

Title through c1

2. When parallel runways are less than 2,500 feet apart, do not permit a heavy jet/B757 to overtake any aircraft, nor a large aircraft to overtake a small aircraft established on final within the facility’s area of responsibility.

NEW

7-6-7. SEQUENCING

No Change

2. When parallel runways are less than 2,500 feet apart, do not permit a super or heavy aircraft to overtake any aircraft, nor a B757 or other large aircraft to overtake a small aircraft established on final within the facility’s area of responsibility.

1. PARAGRAPH NUMBER AND TITLE: 3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

2. BACKGROUND: During development of the Arrival Departure Windows (ADW) tool, it was discovered that there are configurations in which FAA Order JO 7110.65, paragraph 3-9-9, could safely support independent operations without an ADW.

3. CHANGE:

OLD

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

Title through d

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

NEW

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

No Change

e. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway at a distance of 1 NM or less from either departure end, apply the provisions of Paragraph 3-9-8, Intersecting Runway Separation, unless: The facility is using aids specified in a facility directive, (may include, but are not limited to, Arrival/Departure Window (ADW), ASDE-X Virtual Runway Intersection Point (VRIP), cut-off points or automation). (See FIG 3-9-15 and FIG 3-9-16).
1. PARAGRAPH NUMBER AND TITLE: 4-3-2. DEPARTURE CLEARANCES

2. BACKGROUND: In 2012, in response to industry concerns, the Aeronautical Charting Forum (ACF) formed a work group to improve the understanding and use of Visual Climb Over Airport (VCOA). The VCOA option provides an alternative means of departure for those aircraft that are unable to achieve the minimum climb gradient published for the runway and the departure routing. Since the VCOA is a part of the published Obstacle Departure Procedure (ODP), when the ODP is included in the ATC clearance, pilots have the option of using the VCOA option without advising ATC. This lack of specificity can pose a safety concern.

3. CHANGE:

OLD
4-3-2. DEPARTURE CLEARANCES
Title through c2
Add
Add

NEW
4-3-2. DEPARTURE CLEARANCES
No Change
3. Do not solicit use of the Visual Climb over Airport (VCOA) option.
NOTE—
Pilots will specifically advise ATC of their intent to use the VCOA option.
Renumber to c4 and c5

1. PARAGRAPH NUMBER AND TITLE: 4-8-1. APPROACH CLEARANCE

2. BACKGROUND: Confusion exists concerning the issuance of approach clearances in accordance with FAAO JO 7110.65, Paragraph 4-8-1, Approach Clearance. The FAAO JO 7110.65 Revision Steering Committee convened in August 2014 and was asked to review and modify this paragraph in a manner that would eliminate this confusion as one of the Top 15 document change proposal taskings for FY2015. Separately, a question was raised by the Air Traffic Procedures Advisory Committee (ATPAC) about whether controllers are authorized to assign altitudes below altitudes published on approach charts. This change clarifies that they are, provided there is an MVA or MIA that allows it, and the aircraft is assigned an altitude to maintain until reaching a point that it is vertically established on the approach.

3. CHANGE:

OLD
4-8-1. APPROACH CLEARANCE
Title through a5 PHRASEOLOGY

NEW
4-8-1. APPROACH CLEARANCE
No Change
EXAMPLE—
“Cleared Approach.”
“Cleared V-O-R Approach.”
“Cleared V-O-R Runway Three-Six Approach.”
“Cleared L-D-A Approach.”
“Cleared L-D-A Runway Three-Six Approach.”
“Cleared I-L-S Approach.”
“Cleared Localizer Approach.”
“Cleared Localizer Back Course Runway One-Three Approach.”
“Cleared RNAV Z Runway Two-Two Approach.”
“Cleared GPS Runway Two Approach.”
“Cleared BRANCH ONE Arrival and RNAV Runway One-Three Approach.”
“Cleared I-L-S Runway Three-Six Approach, glideslope unusable.”
“Cleared S-D-F Approach.”
“Cleared G-L-S Approach.”

NOTE 1 and 2

3. In some cases, the name of the approach, as published, is used to identify the approach, even though a component of the approach aid, other than the localizer on an ILS is inoperative. Where more than one procedure to the same runway is published on a single chart, each must adhere to all final approach guidance contained on that chart, even though each procedure will be treated as a separate entity when authorized by ATC. The use of alphabetical identifiers in the approach name with a letter from the end of the alphabet; for example, X, Y, Z, such as “HI TACAN Z Rwy 6L or HI TACAN Y Rwy 6L,” or “RNAV (GPS) Z Rwy 04 or RNAV (GPS) Y Rwy 04,” denotes multiple straight-in approaches to the same runway that use the same approach aid. Alphabetical suffixes with a letter from the beginning of the alphabet; for example, A, B, C, denote a procedure that does not meet the criteria for straight-in landing minimums authorization.

Add

4. 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.

Add

5. The use of alphabetical identifiers in the approach name with a letter from the end of the alphabet; for example, X, Y, Z, such as “HI TACAN Z Rwy 6L or RNAV(GPS) Y Rwy 04”, denotes multiple straight-in approaches to the same runway that use the same approach aid.

Add

6. Alphabetical suffixes with a letter from the beginning of the alphabet; for example, A, B, C, denote a procedure that does not meet the criteria for straight-in landing minimums authorization.

EXAMPLE—
“Cleared Approach.”
“Cleared (V-O-R/I-L-S/Localizer) Approach.”
“Cleared L-D-A Runway Three-Six Approach.”
“Cleared Localizer Back Course Runway One-Three Approach.”
“Cleared (GPS/RNAV Z) Runway Two-Two Approach.”
“Cleared BRANCH ONE Arrival and (ILS/RNAV) Runway One-Three Approach.”
“Cleared I-L-S Runway Three-Six Approach, glideslope unusable.”
“Cleared S-D-F Approach.”
“Cleared G-L-S Approach.”

No Change

3. In some cases, the name of the approach, as published, is used to identify the approach, even though a component of the approach aid, other than the localizer on an ILS is inoperative.
NOTE 4

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

NOTE 6

REVIEW:
FAA 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).

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

FIG 4-8-1
Approach Clearance Example

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

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

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

No Change

b. For aircraft operating on unpublished routes, issue the approach clearance only after the aircraft is:

Delete

1. Established on a segment of a published route or instrument approach procedure, or (See FIG 4-8-1)

EXAMPLE-
The aircraft is established on a segment of a published route at 5,000 feet. “Cleared V-O-R Runway Three Four Approach.”
2. Assigned an altitude to maintain until the aircraft is established on a segment of a published route or instrument approach procedure.

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

Add

2. Assigned an altitude to maintain until the aircraft is established on a segment of a published route or instrument approach procedure. *(See FIG 4-8-2.)*

**EXAMPLE—**
Aircraft 1 is cleared direct LEFTT. The MVA in the area is 3,000 feet, and the aircraft is at 4,000 feet. “Cross LEFTT at or above three thousand five hundred, cleared RNAV Runway One Eight Approach.”

The MVA in the area is 3,000 feet and Aircraft 2 is at 3,000 feet. “Cleared direct LEFTT direct CENTR, maintain three thousand until CENTR, cleared straight-in RNAV Runway One Eight Approach.”

Add
**NOTE 1 and 2**

Add

Add

**c**

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

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

**EXAMPLE**—

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

**FIG 4-8-2**

Approach Clearance Example

No Change

**3.** An aircraft is not established on an approach until at or above an altitude published on that segment of the approach.

**REFERENCE—**

FAA O 8260.3 United States Standard for Terminal Instrument Procedures (TERPS), Para 10-2

No Change

**d.** Intercept angles greater than 90 degrees may be used when a procedure turn, a hold-in-lieu of procedure turn pattern, or arrival holding is depicted and the pilot will execute the procedure.

Delete

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

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

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

   (b) Radar monitoring is provided to the IF.

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

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

   **EXAMPLE**—“Expect direct CENTR for RNAV Runway One-Eight Approach.”

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

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

   **REFERENCE**—FAAO 7110.65, Par 5-6-2, Methods
   FAAO 7110.65, Chapter 5, Section 9, Radar Arrivals
EXAMPLE—

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

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

REFERENCE—

FAA JO 7110.65, Chapter 5, Section 9, Radar Arrivals
e. For both RNAV and conventional approaches, intercept angles greater than 90 degrees may be used when a procedure turn, a hold-in-lieu of procedure turn pattern, or arrival holding is depicted and the pilot will execute the procedure. If a procedure turn, hold-in-lieu of procedure turn, or arrival holding pattern is depicted and the angle of intercept is 90 degrees or less, the aircraft must be instructed to conduct a straight-in approach if ATC does not want the pilot to execute a procedure turn or hold-in-lieu of procedure turn. (See FIG 4–8–3)

PHRASEOLOGY—
CLEARED STRAIGHT-IN (type) APPROACH

NOTE—
1. Restate “cleared straight-in” in the approach clearance even if the pilot was advised earlier to expect a straight-in approach.
2. Some approach charts have an arrival holding pattern depicted at the IAF using a “thin line” holding symbol. It is charted where holding is frequently required prior to starting the approach procedure so that detailed holding instructions are not required. The arrival holding pattern is not authorized unless assigned by ATC.

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

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

e. If a procedure turn, hold-in-lieu of procedure turn, or arrival holding pattern is depicted and the angle of intercept is 90 degrees or less, the aircraft must be instructed to conduct a straight-in approach if ATC does not want the pilot to execute a procedure turn or hold-in-lieu of procedure turn. (See FIG 4–8–3)
EXAMPLE—

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

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

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

1. Via published transitions, or
2. In accordance with paragraph d.
3. Do not clear aircraft direct to any waypoint beginning or within an RF leg.
4. Do not assign fix/waypoint crossing speeds in excess of charted speed restrictions.
NOTE–
1. RNAV approaches (containing RF legs) that commence at 10,000 feet or above require special procedures that will be site specific and specified in a facility directive.
2. An RF leg is defined as a curved segment indicating a constant radius circular path about a defined turn center that begins at a waypoint. RF legs may have maximum airspeeds charted for procedural containment that must be followed.
3. If an aircraft is vectored off the procedure, expect the aircraft to request a return to an IAF.

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

NOTE–
1. The segment between THIRD and FORTH in FIG 4-8-4 is an RF leg.
2. The straight segments between waypoints in FIG 4-8-4 are TF legs.
   g. Except when applying radar procedures, timed or visual approaches, clear an aircraft for an approach to an airport when the preceding aircraft has landed or canceled IFR flight plan.
   h. Where instrument approaches require radar monitoring and radar services are not available, do not use the phraseology “cleared approach,” which allows the pilot his/her choice of instrument approaches.
   i. Where a terminal arrival area (TAA) has been established to support RNAV approaches, use the procedures under subpara b1 and b2 above. (See FIG 4–8–5.)
EXAMPLE—

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

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

**FIG 4-8-5**

Basic “T” and TAA Design

---

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

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

**REFERENCE—**

FAAO JO 7110.65, Para 2–1–10, NAVAID Malfunctions.
FAAO JO 7110.65, Para 4–7–12, Airport Conditions.
1. When clearing an aircraft for an RNAV approach, and a GPS NOTAM is published (a WAAS NOTAM is not issued), both GPS and WAAS may become unavailable. Therefore, when a GPS anomaly is reported, request the pilot’s intentions.

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

**PHRASEOLOGY—**
CLEARED STRAIGHT-IN (type) APPROACH

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

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

**EXAMPLE—**
“Cleared direct SECND, maintain at or above three thousand until SECND, cleared straight-in ILS Runway One-Eight approach.”

**REFERENCE—**
AIM, Paragraph 5-4-5, Instrument Approach Procedure Charts.
AIM, Paragraph 5-4-9, Procedure Turn and Hold-in-lieu of Procedure Turn.
Add

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

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

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

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

Add

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

Add

RNAV APPLICATION

Briefing Guide

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

Add

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

Add

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

Add

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

Add

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

Add

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

Add

(b) Radar monitoring is provided to the IF.

Add

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

Add

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

Add

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

Add

3. Established on a heading or course direct to a fix between the IF and FAF, at an intercept angle not greater than 30 degrees, and assigned an altitude in accordance with b2.
EXAMPLE--
Aircraft 1 is more than 5 miles from SHANN. The minimum altitude for IFR operations (14 CFR Section 91.177) along the flight path to SHANN is 3,000 feet. SHANN is a step down fix between the IF/IAF (CENTR) and the FAF. To clear Aircraft 1 to SHANN, ATC must ensure the intercept angle for the intermediate segment at SHANN is not greater than 30 degrees and must be cleared to an altitude that will allow a normal descent to the FAF. “Cleared direct SHANN, cross SHANN at or above three thousand, cleared RNAV Runway One-Eight Approach.”

REFERENCE--
FAA 7110.65, Par 5-6-2, Methods.
FAA 7110.65, Chapter 5, Section 9, Radar Arrivals

FIG 4-8-4
Approach Clearance Example
For RNAV Aircraft
EXAMPLE—
Aircraft 2 cannot be cleared direct to CENTR unless the aircraft is allowed to execute the hold-in-lieu of procedure turn. The intercept angle at that IF/IAF is greater than 90 degrees. The minimum altitude for IFR operations (14 CFR Section 91.177) along the flight path to the IAF is 3,000 feet. “Cleared direct CENTR, maintain at or above three thousand until CENTR, cleared RNAV Runway One-Eight approach.” The pilot is expected to proceed direct CENTR and execute the hold-in-lieu of procedure turn.

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

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

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

1. Via published transitions, or
2. In accordance with paragraph d.
3. Do not clear aircraft direct to any waypoint beginning or within an RF leg.
4. Do not assign fix/waypoint crossing speeds in excess of charted speed restrictions.

NOTE—
1. RNAV approaches (containing RF legs) that commence at 10,000 feet or above require special procedures that will be site specific and specified in a facility directive.

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

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

**FIG 4–8–5**
Radius to Fix (RF) and Track to Fix (TF)

Add

**NOTE**—
1. The segment between THIRD and FORTH in FIG 4–8–5 is an RF leg.
2. The straight segments between waypoints in FIG 4–8–5 are TF legs.

Add

j. Where a terminal arrival area (TAA) has been established to support RNAV approaches, use the procedures under subpara b1 and b2 above. (See FIG 4–8–6.)

Add

**EXAMPLE**—

Aircraft 1: The aircraft has crossed the TAA boundary and is therefore established on a segment of the approach. “Cleared R-NAV Runway One-Eight Approach.”

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

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

Add

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

Add

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

Add

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

Add

NOTE—
WAAS UNAVAILABLE NOTAMs are published to indicate a failure of a WAAS system component. Airborne GPS/WAAS equipment may revert to GPS-only operation which satisfies the requirements for basic RNAV (GPS) approaches to the airport of intended landing or filed alternate airport, if airborne equipment is approved for such operations.
1. **PARAGRAPH NUMBER AND TITLE:**
- 4-8-11. PRACTICE APPROACHES
- 7-3-1. VFR-ON-TOP
- 10-6-5. SERVICES TO RESCUE AIRCRAFT

2. **BACKGROUND:** FAA Order JO 7110.65 uses several terms when describing aircraft separation applied by controllers. The use of undefined terms introduces a variety of interpretations and the possibility of altering the intent of the paragraph. “Standard IFR separation” is not defined in this order and its use may infer that various standards of separation exist. Guidance for the application of IFR separation is contained in Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 of this order. Removing extraneous and undefined words reduces the chance of misinterpretation.

3. **CHANGE:**

   **OLD**
   
   4-8-11. PRACTICE APPROACHES
   
   *Title through a1(b)*
   
   2. Where procedures require application of IFR separation to VFR aircraft practicing instrument approaches, standard IFR separation in accordance with Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 must be provided. Controller responsibility for separation begins at the point where the approach clearance becomes effective. Except for heavy aircraft/B757, 500 feet vertical separation may be applied between VFR aircraft and between a VFR and an IFR aircraft.

   **NEW**
   
   4-8-11. PRACTICE APPROACHES
   
   *No Change*
   
   2. Where procedures require application of IFR separation to VFR aircraft practicing instrument approaches, IFR separation in accordance with Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 must be provided. Controller responsibility for separation begins at the point where the approach clearance becomes effective. Except for heavy aircraft/B757, 500 feet vertical separation may be applied between VFR aircraft and between a VFR and an IFR aircraft.

   **OLD**
   
   7-3-1. VFR-ON-TOP
   
   *Title through NOTE 1.*
   
   2. Although standard IFR separation is not applied, controllers must continue to provide traffic advisories and safety alerts, and apply merging target procedures to aircraft operating VFR-on-top.

   **NEW**
   
   7-3-1. VFR-ON-TOP
   
   *No Change*
   
   2. Although IFR separation is not applied, controllers must continue to provide traffic advisories and safety alerts, and apply merging target procedures to aircraft operating VFR-on-top.

   **OLD**

   10-6-5. SERVICES TO RESCUE AIRCRAFT
   
   *a.* Provide standard IFR separation between the SAR and the aircraft in distress, except when visual or radar contact has been established by the search and rescue aircraft and the pilots of both aircraft concur, IFR separation may be discontinued.

   **NEW**

   10-6-5. SERVICES TO RESCUE AIRCRAFT
   
   *a.* Provide IFR separation between the SAR and the aircraft in distress, except when visual or radar contact has been established by the search and rescue aircraft and the pilots of both aircraft concur, IFR separation may be discontinued.
1. PARAGRAPH NUMBER AND TITLE: 5–4–2. TERMS

2. BACKGROUND: On February 29, 1996, a change was made to FAA JO 7110.65J, Paragraph 5-4-2c, TERMS, that defined a point out as a “physical or automated action” taken by a controller in lieu of “an action” taken by a controller. The background for the change explained this was done only to improve understanding. Upon review of paragraph 5-4-2 it has been determined that the original language of “an action” is preferable and is consistent with the wording used in the definition of a “handoff” in paragraph 5-4-2a.

3. CHANGE:

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–4–2. TERMS</td>
<td>5–4–2. TERMS</td>
</tr>
<tr>
<td><strong>Title</strong> through b</td>
<td>No Change</td>
</tr>
<tr>
<td>c. <em>Point out.</em> A physical or automated action taken by a controller to transfer the radar identification of an aircraft to another controller and radio communications will not be transferred.</td>
<td>c. <em>Point out.</em> An action taken by a controller to transfer the radar identification of an aircraft to another controller and radio communications will not be transferred.</td>
</tr>
</tbody>
</table>

1. PARAGRAPH NUMBER AND TITLE: 5–6–1. APPLICATION

2. BACKGROUND: With the advent of NextGEN, the number of RNAV equipped aircraft within the NAS has increased, and RNAV procedures have become the industry standard. Throughout FAA Order JO 7110.65, there are several sections that cover the proper handling of RNAV aircraft regarding routing assignments and the ability to issue amended routes.

3. CHANGE:

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–6–1. APPLICATION</td>
<td>5–6–1. APPLICATION</td>
</tr>
<tr>
<td>Vector aircraft:</td>
<td>No Change</td>
</tr>
<tr>
<td>a. In controlled airspace for separation, safety, noise abatement, operational advantage, confidence maneuver, or when a pilot requests. Allow aircraft operating on an RNAV route to remain on their own navigation to the extent possible.</td>
<td>a. In controlled airspace for separation, safety, noise abatement, operational advantage, confidence maneuver, or when a pilot requests.</td>
</tr>
</tbody>
</table>

1. PARAGRAPH NUMBER AND TITLE: 5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

2. BACKGROUND: The Flight Standards Service recently released technical report DOT-FAA-AFS-400-83, Reduction of Diagonal Separation from 1.5 Nautical Miles (NM) to 1.0 NM for Parallel Dependent Approaches. The report, generated at the request of Air Traffic, now permits the use of 1 NM radar separation diagonally when runway centerlines are separated by at least 2,500 feet but no more than 3,600 feet, and the legacy 1.5 NM radar separation diagonally will now be required when runway centerlines are separated by more than 3,600 feet but no more than 4,300 feet. The application of 1 NM or 1.5 NM diagonal minima ensures aircraft remain staggered on adjacent approaches. This reduces the risk of collision from aircraft inadvertently deviating from the final approach path.
3. CHANGE:

OLD

5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

Title through a1

Add

NEW

5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

No Change

2. Provide a minimum of 1 mile radar separation diagonally between successive aircraft on adjacent final approach courses when runway centerlines are at least 2,500 feet but no more than 3,600 feet apart.

FIG 5-9-7

Simultaneous Dependent Approaches

EXAMPLE—

In FIG 5-9-7, Aircraft 2 is 1.0 mile from Aircraft 1. Approved radar separation must be maintained between Aircraft 1 and Aircraft 3.

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.

3. Provide a minimum of 1.5 miles radar separation diagonally between successive aircraft on adjacent final approach courses when runway centerlines are more than 3,600 feet but no more than 4,300 feet apart.
5-9-7. Simultaneous Independent Approaches - Dual & Triple


---

**EXAMPLE**--

In FIG 5–9–8, 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.

**EXAMPLE**--

In FIG 5–9–8, Aircraft 2 is 1.5 miles from Aircraft 1, and Aircraft 3 is 1.5 miles or more from Aircraft 2.

*Approved radar separation must be maintained between aircraft on the same final.

4. 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.

**EXAMPLE**--

In FIG 5–9–9, Aircraft 2 is 1.5 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.

**EXAMPLE**--

In FIG 5–9–9, Aircraft 2 is 1.5 miles from 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.

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

Re-Label FIG 5-9-9

---
operating with dual parallel runways or triple parallel runways. Additionally, they account for the inclusion of offset approaches to further reduce the RCLS without the need for high update radars and allows for the removal of the simultaneous independent close parallel approaches without high update radar paragraph due to the duplicative content.

3. CHANGE:

OLD

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

Title through a1 NOTE

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

Add

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

Add

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.

NEW

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

No Change

2. Dual parallel runway centerlines are at least 3,600 feet apart, or dual parallel runway centerlines are at least 3,000 feet apart with a 2.5° to 3.0° offset approach to either runway and the airport field elevation is 2,000 feet MSL or less.

NOTE -
Airport field elevation requirement does not apply to dual parallel runways that are 4,300 feet or more apart.

3. Triple parallel approaches may be conducted under one of the following conditions:

   (a) Parallel runway centerlines are at least 3,900 feet apart and the airport field elevation is 2,000 feet MSL or less; or

   (b) Parallel runway centerlines are at least 3,000 feet apart, a 2.5° to 3.0° offset approach to both outside runways, and the airport field elevation is 2,000 feet MSL or less; or

   (c) Parallel runway centerlines are at least 3,000 feet apart, a single 2.5° to 3.0° offset approach to either outside runway while parallel approaches to the remaining two runways are separated by at least 3,900 feet, and the airport field elevation is 2,000 feet MSL or less.

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

   b. A color digital display set to a 4 to 1 (4:1) aspect ratio (AR) with visual and aural alerts, such as the STARS final monitor aid (FMA), and a surveillance update rate at least 4.8 seconds must be used to monitor approaches where:

   1. Dual parallel runway centerlines are at least 3,000 and no more than 4,300 feet apart.

   2. Triple parallel runway centerlines are at least 3,000 but less than 5,000 feet apart and the airport field elevation is 2,000 feet MSL or less.
(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.

Add

Add

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

REFERENCE—
FAAO JO 7110.65, Para 5-5-5, 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.

b1 and b2

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.

Add

b4

Add

b5 through c1

PHRASEOLOGY—

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.

3. Triple parallel approaches to airports where the airport field elevation is more than 2,000 feet MSL require use of the FMA system and an approved FAA aeronautical study.

NOTE—
FMA is not required to monitor the NTZ for runway centerlines greater than 4,300 feet for dual runways, and 5,000 feet or greater for triple operations.

c. FUSION must be discontinued on the FMA displays and set to a single-sensor, when conducting final monitoring activities.

Delete

No Change

d. The following conditions must be met when conducting dual or triple simultaneous independent approaches:

NOTE—
Simultaneous independent approaches may only be conducted where instrument approach charts specifically authorize simultaneous approaches.

Re-Letter d1 and d2

3. Inform aircraft that simultaneous independent approaches are in use, or when runway centerlines are less than 4,300 feet PRM approaches are in use, prior to aircraft departing an outer fix. This information may be provided through the ATIS.

REFERENCE—
P/CG Term—Precision Runway Monitor (PRM) System.

Reletter d4

NOTE—
Not applicable to approaches with RF legs.

Re-Letter d5 through e1

No Change

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 your judgment will penetrate the NTZ.
1. PARAGRAPH NUMBER AND TITLE:
5-9-8. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES-HIGH UPDATE RADAR
5-9-9. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES– HIGH UPDATE RADAR NOT REQUIRED
5-9-10. SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA)—HIGH UPDATE RADAR
5-9-11. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY–SPACED PARALLEL RUNWAYS WITHOUT FINAL MonITORS

2. BACKGROUND: The Flight Standards Service (AFS) released DOT-FAA-AFS-450-69, Simultaneous Independent Close Parallel Approaches - High Update Radar Not Required, in September 2011; DOT-FAA-AFS-400-84, Separation Requirements for Simultaneous Offset Independent Dual Instrument Approaches - High Update Radar Not Required, in July 2014; and DOT-FAA-AFS-400-85, Separation Requirements for Triple Simultaneous Independent Close Parallel Approaches - High Update Radar Surveillance Not Required in September 2014. These three technical reports form the framework for the changes to the ATC order concerning parallel dual and triple operations. Additionally, they account for the inclusion of offset approaches to further reduce runway centerline spacing without the need for high update radars and allows for the removal of the simultaneous independent close parallel approaches without high update radar due to the duplicative content. In a July 2014 memo from AFS-400, the requirement to radar monitor aircraft on simultaneous closely spaced approaches to a point 1/2 mile from the departure end of runway in the event of a missed approach is deemed no longer necessary, and is therefore removed as a requirement in paragraph 5-9-8. Also the requirement to radar monitor until the aircraft has landed was clarified to require monitoring until one mile from the threshold, since it is not possible to observe targets to the surface. Lastly, after review, it became clear that certain provisions concerning monitoring in the existing paragraph 5-9-11 were not consistent with this paragraph and needed to be removed.

3. CHANGE:

OLD
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.

NEW
5-9-8. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES - PRECISION RUNWAY MONITOR (PRM) APPROACHES

TERMINAL

a. PRM approaches may only be conducted when charted in the approach title, and where instrument approach charts specifically authorize simultaneous approaches.

b. PRM approaches must be assigned when conducting instrument approaches to dual and triple parallel runways with runway centerlines separated by less than 4,300 feet.
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:

b1 and b2

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

Add

b5 through b7

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.

g. 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.

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

No Change

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

No Change

e. The following conditions must be met when conducting dual and triple PRM approaches:

Re-Letter e1 and e2

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

Re-Letter e4

NOTE—
Not applicable to approaches with RF legs.

Re-Letter e5 through e7

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

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

1. Provide position information to an aircraft that is (left/right) of the depicted final approach course centerline, and in your judgment is continuing on a track that may penetrate the NTZ.

No Change

No Change

No Change
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.

   c3 NOTE through c4(b)

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

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

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

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

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

   TERMINAL

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

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

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

   NOTE–

Communications transfer to the tower controller’s frequency will be completed prior to losing vertical separation between aircraft.
2. Parallel runway centerlines are separated by a minimum of 3,600 feet or more, and the airport elevation is less than 2,000 feet MSL.

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

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

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

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

1. Straight-in landings will be made.

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

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

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

NOTE—
Not applicable to curved and segmented approaches.

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

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

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

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

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

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

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

or

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

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

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

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

(a) Visual separation is applied.

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

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

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

5. Do not apply the provisions of Paragraph 5-13-1, Monitor on PAR Equipment, for simultaneous independent close parallel approaches.
Consideration should be given to known factors that may in any way affect the safety of the instrument approach phase of flight when simultaneous independent close parallel approaches are being conducted to parallel runways. Factors include, but are not limited to, wind direction/velocity, wind-shear alerts/reports, severe weather activity, etc. Closely monitor weather activity that could impact the final approach course. Weather conditions in the vicinity of the final approach course may dictate a change of approach in use.

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

**OLD**

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

**TERMINAL**

a. Simultaneous offset independent approaches SOIA may be conducted at FAA designated airports that have an authorization issued by the Director, Terminal Operations, Headquarters, in coordination with AFS with parallel runways that have centerlines separated by less than 3,000 feet with one final approach course offset by 2.5 to 3.0 degrees using a high update rate surveillance system with a 1.0–second radar update; and

**NEW**

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

No Change

a. Simultaneous offset independent approaches (SOIA) may be conducted at FAA designated airports that have an authorization issued by the Director, Operations-Headquarters, AJT-2, in coordination with AFS with parallel runways that have centerlines separated by less than 3,000 feet with one final approach course offset by 2.5 to 3.0 degrees using a high update rate surveillance system with a 1.0–second radar update; and

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.

**NOTE**

Not applicable to curved and segmented approaches

**b4**

**PHRASEOLOGY** through **c2**
PHRASEOLOGY—
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO FINAL APPROACH COURSE.
Or
TURN (left/right) AND RETURN TO THE LOCALIZER/AZIMUTH COURSE.

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

3 NOTE through c5

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

d through g2

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.

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

Add

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 through a2 REFERENCE

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

b1 through b4

Add

PHRASEOLOGY—
YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO FINAL APPROACH COURSE.
Or
TURN (left/right) AND RETURN TO THE 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 your judgment will penetrate the NTZ.

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

No Change

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 the Director, Operations-Headquarters, AJT-2. 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.

NEW 5–9–10. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS

TERMINAL

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

Delete

Re-letter b through b2 REFERENCE

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

Re-Letter c1 through c4

NOTE—
Not applicable to approaches with RF legs.
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.

Re-letter g5

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

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

**NOTE**—There is no requirement for establishment of a 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 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.

**e.** 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 5-9-2, Final Approach Course Interception.

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1. PARAGRAPH NUMBER AND TITLE: 5-9-11. TRANSITIONAL PROCEDURES

2. BACKGROUND: Current guidance permits reduced separation between aircraft on final during simultaneous dependent, simultaneous independent, or approved same runway operations. Existing procedures do not allow for an approved transition from reduced separation to approved separation, without a loss of separation that results in a low Measure of Compliance (MOC).

3. CHANGE:

**OLD**

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

**NEW**

5-9-11. TRANSITIONAL PROCEDURES

Add

When aircraft are conducting simultaneous dependent, independent, or any approaches allowing for reduced separation, and one of the aircraft executes a go-around or has its approach clearance terminated and prior to losing the approved reduced separation, control instructions must be expeditiously issued to increase separation between the applicable aircraft. These control instructions must establish approved separation (for example, altitude and/or lateral separation via divergence). In addition, wake turbulence cautionary advisories must be issued in accordance with FAAO JO 7110.65, Paragraph 2-1-20, Wake Turbulence Cautionary Advisories.
BRIEFING GUIDE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
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<td>BG-5</td>
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<td>4-7-5</td>
<td>MILITARY TURBOJET EN ROUTE DESCENT</td>
<td>BG-5</td>
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<tr>
<td>4-7-12</td>
<td>AIRPORT CONDITIONS</td>
<td>BG-26</td>
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<td>4-7-13</td>
<td>SWITCHING ILS/MLS RUNWAYS</td>
<td>BG-5</td>
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<tr>
<td>4-8-1</td>
<td>APPROACH CLEARANCE</td>
<td>BG-26 &amp; 29</td>
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<td>4-8-9</td>
<td>MISSED APPROACH</td>
<td>BG-26</td>
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<td>4-8-10</td>
<td>APPROACH INFORMATION</td>
<td>BG-26</td>
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<td>5-1-3</td>
<td>RADAR USE</td>
<td>BG-31</td>
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<td>5-1-13</td>
<td>RADAR SERVICE TERMINATION</td>
<td>BG-5</td>
</tr>
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<td>5-4-3</td>
<td>METHODS</td>
<td>BG-31</td>
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<td>5-4-6</td>
<td>RECEIVING CONTROLLER HANDOFF</td>
<td>BG-32</td>
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<td>METHODS</td>
<td>BG-33</td>
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<td>FINAL APPROACH COURSE INTERCEPTION</td>
<td>BG-5</td>
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<td>5-9-4</td>
<td>ARRIVAL INSTRUCTIONS</td>
<td>BG-5</td>
</tr>
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<td>5-9-5</td>
<td>APPROACH SEPARATION RESPONSIBILITY</td>
<td>BG-5</td>
</tr>
<tr>
<td>5-9-6</td>
<td>SIMULTANEOUS DEPENDENT APPROACHES</td>
<td>BG-5</td>
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<tr>
<td>5-9-9</td>
<td>SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA) – HIGH UPDATE RADAR</td>
<td>BG-5</td>
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<tr>
<td>5-9-10</td>
<td>SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS</td>
<td>BG-36</td>
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<td>5-13-1</td>
<td>MONITOR ON PAR EQUIPMENT</td>
<td>BG-5</td>
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<td>5-13-3</td>
<td>MONITOR INFORMATION</td>
<td>BG-5</td>
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<td>7-2-1</td>
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<td>BG-37</td>
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<td>7-4-4</td>
<td>APPROACHES TO MULTIPLE RUNWAYS</td>
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<td>8-7-3</td>
<td>LONGITUDINAL SEPARATION</td>
<td>BG-42</td>
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<td>LONGITUDINAL SEPARATION</td>
<td>BG-42</td>
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<td>8-9-3</td>
<td>LONGITUDINAL SEPARATION</td>
<td>BG-42</td>
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<td>9-1-2</td>
<td>SPECIAL HANDLING</td>
<td>BG-47</td>
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<td>MANPADS ALERT</td>
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<td>11-1-1</td>
<td>DUTY RESPONSIBILITY</td>
<td>BG-47</td>
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<tr>
<td>11-1-2</td>
<td>DUTIES AND RESPONSIBILITIES</td>
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<td>11-1-3</td>
<td>TIME BASED FLOW MANAGEMENT (TBFM)</td>
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<td>13-1-8</td>
<td>RECORDING OF CONTROL DATA</td>
<td>BG-5</td>
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<tr>
<td>13-1-9</td>
<td>ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION</td>
<td>BG-50</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Aircraft Information Fixed-Wing Aircraft</td>
<td>BG-51</td>
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<tr>
<td>Appendix B</td>
<td>Aircraft Information Helicopters/Rotorcrafts</td>
<td>BG-51</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Aircraft Information Specific Amateur–Built/Experimental Aircraft</td>
<td>BG-51</td>
</tr>
</tbody>
</table>
1. **PARAGRAPH NUMBER AND TITLE:** 1-1-9. REQUESTS FOR INTERPRETATIONS OR CLARIFICATIONS

2. **BACKGROUND:** Currently, there is no defined process for the submission of interpretation or clarification requests regarding the content of FAA Order JO 7110.65, Air Traffic Control. This proposed change formalizes the process as it now exists and delineates responsibilities for interpretation and clarification responses.

3. **CHANGE:**

   **OLD**
   
   Add 1-1-9. REQUESTS FOR INTERPRETATIONS OR CLARIFICATIONS TO THIS ORDER
   
   Add a. Interpretation requests from field air traffic personnel must be submitted as follows:
   
   Add 1. The request must be submitted, in writing, by an Air Traffic Facility/District manager to their Service Area Director.
   
   Add 2. The Service Area Director must review the request and determine if more than one interpretation on the intent of the language can be inferred.
   
   Add 3. If it is determined that an interpretation is required, the Service Area Director must submit the request, in writing, to the Air Traffic Procedures Directorate, for a response.
   
   Add b. If a request does not require an interpretation but further clarification is needed it must be forwarded to the Service Center Operations Support Group for a response.
   
   Add 1. The Service Center Operations Support Group may consult with the Air Traffic Procedures Directorate when preparing their response.
   
   Add 2. The Service Center Operations Support Group must provide a written response to the requestor and forward the response to the Air Traffic Procedures Directorate.
   
   Add c. Interpretation requests from all other sources must be submitted, in writing, to the Air Traffic Procedures Directorate through the Air Traffic Procedures correspondence mailbox.
   
   Add NOTE—Interpretations can be accessed through the Air Traffic Control Interpretation link at the following website: [https://my.faa.gov/org/linebusiness/ato/mission_support/air_traffic_procedures.html](https://my.faa.gov/org/linebusiness/ato/mission_support/air_traffic_procedures.html).

   **NEW**
   
   **1-1-9 through 1-1-13**

   **NOTE—**
   
   **1-1-10 through 1-1-14**

   **1-1-9 through 1-1-13**

   **1-1-10 through 1-1-14**
1. **PARAGRAPH NUMBER AND TITLE:** 1-2-6. ABBREVIATIONS

2. **BACKGROUND:** FAA Order JO 7110.65W added a requirement to provide 10 NM separation in front and behind an aircraft when the data block indicates “NOWGT.” The abbreviation description for “NOWGT” was inadvertently omitted from the new basic order.

3. **CHANGE:**

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
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</thead>
<tbody>
<tr>
<td>1-2-6. ABBREVIATIONS</td>
<td>1-2-6. ABBREVIATIONS</td>
</tr>
<tr>
<td>Add</td>
<td>NOWGT. No weight. The weight class or wake category has not been determined</td>
</tr>
</tbody>
</table>

1. **PARAGRAPH NUMBER AND TITLE:**
   1-2-6. ABBREVIATIONS
   2-3-10. CONTROL SYMBOLOGY
   2-4-17. NUMBERS USAGE
   2-5-2. NAVAID TERMS
   2-5-3. NAVAID FIXES
   3-3-2. CLOSED/UNSAFE RUNWAY INFORMATION
   3-7-5. PRECISION APPROACH CRITICAL AREA
   4-1-1. ALTITUDE AND DISTANCE LIMITATIONS
   4-6-4. HOLDING INSTRUCTIONS
   4-7-5. MILITARY TURBOJET EN ROUTE DESCENT
   4-7-13. SWITCHING ILS/MLS RUNWAYS
   5-1-13. RADAR SERVICE TERMINATION
   5-9-2. FINAL APPROACH COURSE INTERCEPTION
   5-9-4. ARRIVAL INSTRUCTIONS
   5-9-5. APPROACH SEPARATION RESPONSIBILITY
   5-9-6. SIMULTANEOUS DEPENDENT APPROACHES
   5-9-9. SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA) – HIGH UPDATE RADAR
   5-13-1. MONITOR ON PAR EQUIPMENT
   5-13-3. MONITOR INFORMATION
   13-1-8. RECORDING OF CONTROL DATA

2. **BACKGROUND:** Microwave Landing System (MLS) is an all-weather, precision landing system originally intended to replace or supplement instrument landing systems (ILS). The FAA suspended the MLS program in 1994 in favor of the GPS (Wide Area Augmentation System WAAS). The FAA’s inventory of instrument flight procedures no longer includes any MLS locations.

3. **CHANGE:**

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2-6. ABBREVIATIONS</td>
<td>1-2-6. ABBREVIATIONS</td>
</tr>
<tr>
<td>TBL 1-2-1</td>
<td>TBL 1-2-1</td>
</tr>
<tr>
<td>FAA Order JO 7110.65 Abbreviations</td>
<td>FAA Order JO 7110.65 Abbreviations</td>
</tr>
<tr>
<td>Microwave Landing System (MLS)</td>
<td>Delete</td>
</tr>
</tbody>
</table>
2–3–10. CONTROL SYMBOLOGY

TBL 2-3-12

Miscellaneous Abbreviations

MLS approach

2–4–17. NUMBERS USAGE

Title through k2

3. Issue MLS/TACAN frequencies by stating the assigned two-- or three--digit channel number.

EXAMPLE--

“M–L–S channel Five Three Zero.”

2–5–2. NAVAID TERMS

Title through b

1. VOR/VORTAC/TACAN/MLS/GPS Way-point. State the name of the NAVAID or GPS Waypoint followed by the separate digits of the radial/azimuth/bearing (omitting the word “degrees”) and the word “radial/azimuth/bearing.”

EXAMPLE--

“Appleton Zero Five Zero Radial.”

“Lindburg Runway Two Seven M–L–S, Two Six Zero Azimuth.”

2. Arcs about VOR-DME/VORTAC/TACAN/MLS NAVAIDs. State the distance in miles from the NAVAID followed by the words “mile arc,” the direction from the NAVAID in terms of the eight principal points of the compass, the word “of,” and the name of the NAVAID.

EXAMPLE--

“Two Zero mile arc southwest of Q–Hare Runway Two Seven Left M–L–S.”

2–5–3. NAVAID FIXES

Describe fixes determined by reference to a radial/localizer/azimuth and distance from a VOR-DME/VORTAC/TACAN/ILS-DME or MLS as follows:

EXAMPLE--

“Appleton Zero Five Zero radial Three Seven mile fix.” “Reno localizer back course Four mile fix.”

“Hobby Runway One Two M–L–S Zero Niner Zero azimuth One Two mile fix.”
OLD

3–3–2. CLOSED/UNSAFE RUNWAY INFORMATION

Title through b

c. Except as permitted by para 4–8–7, Side-step Maneuver, where parallel runways are served by separate ILS/MLS systems and one of the runways is closed, the ILS/MLS associated with the closed runway should not be used for approaches unless not using the ILS/MLS would have an adverse impact on the operational efficiency of the airport.

NEW

3–3–2. CLOSED/UNSAFE RUNWAY INFORMATION

No Change

c. Except as permitted by para 4–8–7, Side-step Maneuver, where parallel runways are served by separate ILS systems and one of the runways is closed, the ILS associated with the closed runway should not be used for approaches unless not using the ILS would have an adverse impact on the operational efficiency of the airport.

OLD

3–7–5. PRECISION APPROACH CRITICAL AREA

Title through c

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

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

NEW

3–7–5. PRECISION APPROACH CRITICAL AREA

No Change

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

No Change

OLD

4–1–1. ALTITUDE AND DISTANCE LIMITATIONS

When specifying a route other than an established airway or route, do not exceed the limitations in the table on any portion of the route which lies within controlled airspace. (For altitude and distance limitations, see TBL 4–1–1, TBL 4–1–2, TBL 4–1–3, and TBL 4–1–4.) (For correct application of altitude and distance limitations see FIG 4–1–1 and FIG 4–1–2.)

REFERENCE–
FAAO JO 7110.65, Para 4–1–5, Fix Use.
FAAO JO 7110.65, Para 5–6–2, Methods.

TBL 4-1-1 through TBL 4-1-3

TBL 4-1-4
MLS
Usable Height and Distance

NEW

4–1–1. ALTITUDE AND DISTANCE LIMITATIONS

When specifying a route other than an established airway or route, do not exceed the limitations in the table on any portion of the route which lies within controlled airspace. (For altitude and distance limitations, see TBL 4–1–1, TBL 4–1–2 and TBL 4–1–3.) (For correct application of altitude and distance limitations see FIG 4–1–1 and FIG 4–1–2.)

No Change

No Change

Delete
### Height (feet) above transmitter | Distance (miles from transmitter)
---|---
20,000 | 20 (for glideslope)
20,000 | 20 (for azimuth)

*Use the current flight check height/altitude limitations if different from the above minima.

### OLD

4–6–4. HOLDING INSTRUCTIONS

**Title through e**

**NOTE**– It is mandatory for the controller to issue left or right turns every time a holding pattern is issued for MLS.

### OLD

4–7–5. MILITARY TURBOJET EN ROUTE DESCENT

**Title through b3**

**EXAMPLE**– “Expect ILS/MLS approach to runway eight; radar vectors to localizer/azimuth course. Weather (reported weather).”

### OLD

4–7–10. APPROACH INFORMATION

**Title through e**

**d.** Advise pilots when the ILS/MLS on the runway in use is not operational if that ILS/MLS is on the same frequency as an operational ILS/MLS serving another runway.

### OLD

4–7–13. SWITCHING ILS/MLS RUNWAYS TERMINAL

When a change is made from one ILS to another or from one MLS to another at airports equipped with multiple systems which are not used simultaneously, coordinate with the facilities which use the fixes formed by reference to these NAVAIDs.

### OLD

5–1–13. RADAR SERVICE TERMINATION

**Title through b**

**NOTE**–

1. Termination of radar monitoring when conducting simultaneous ILS/MLS approaches is prescribed in Para 5–9–7, Simultaneous Independent ILS/MLS Approaches– Dual & Triple.

### NEW

4–6–4. HOLDING INSTRUCTIONS

No Change

Delete

### NEW

4–7–5. MILITARY TURBOJET EN ROUTE DESCENT

No Change

**EXAMPLE**– “Expect ILS approach to runway eight; radar vectors to localizer course. Weather (reported weather).”

### NEW

4–7–10. APPROACH INFORMATION

No Change

**d.** Advise pilots when the ILS on the runway in use is not operational if that ILS is on the same frequency as an operational ILS serving another runway.

### NEW

4–7–13. SWITCHING ILS RUNWAYS

No Change

When a change is made from one ILS to another at airports equipped with multiple systems which are not used simultaneously, coordinate with the facilities which use the fixes formed by reference to these NAVAIDs.

### NEW

5–1–13. RADAR SERVICE TERMINATION

No Change

**NOTE**–

1. Termination of radar monitoring when conducting simultaneous ILS approaches is prescribed in Para 5–9–7, Simultaneous Independent Approaches– Dual & Triple.
### OLD

5–9–2. FINAL APPROACH COURSE INTERCEPTION

Title through a

### OLD

TBL 5–9–1

Approach Course Interception Angle

<table>
<thead>
<tr>
<th>Distance from interception point to approach gate</th>
<th>Maximum interception angle</th>
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<tbody>
<tr>
<td>Less than 2 miles or triple simultaneous ILS/MLS approaches in use</td>
<td>20 degrees</td>
</tr>
<tr>
<td>2 miles or more</td>
<td>30 degrees (45 degrees for helicopters)</td>
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</tbody>
</table>

### NEW

5–9–2. FINAL APPROACH COURSE INTERCEPTION

No Change

### NEW

TBL 5–9–1

Approach Course Interception Angle

<table>
<thead>
<tr>
<th>Distance from interception point to approach gate</th>
<th>Maximum interception angle</th>
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</thead>
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<tr>
<td>Less than 2 miles or triple simultaneous approaches in use</td>
<td>20 degrees</td>
</tr>
<tr>
<td>2 miles or more</td>
<td>30 degrees (45 degrees for helicopters)</td>
</tr>
</tbody>
</table>
OLD
5–9–4. ARRIVAL INSTRUCTIONS
Title through c1

2. Assigned an altitude to maintain until the aircraft is established on a segment of a published route or instrument approach procedure. (See FIG 5–9–2 thru FIG 5–9–4.)

FIG 5–9–2
Arrival Instructions

NEW
5–9–4. ARRIVAL INSTRUCTIONS
No Change

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

EXAMPLE—
The aircraft is being vectored to a published segment of the MLS final approach course, 3 miles from Alpha at 4,000 feet. The MVA for this area is 4,000 feet.

“Three miles from Alpha. Turn left heading two one zero. Maintain four thousand until established on the azimuth course. Cleared M–L–S runway one eight approach.” (See FIG 5–9–2.)
EXAMPLE—
The aircraft is en route to Delta waypoint at 6,000 feet. The MVA for this area is 4,000 feet. "Cross Delta at or above four thousand. Cleared M–L–S runway one eight approach." (See FIG 5–9–3.)
EXAMPLE—
The aircraft is being vectored to an MLS curved approach, 3 miles from X-ray at 3,000 feet. “Three miles from X-ray. Turn right heading three three zero. Maintain three thousand until established on the azimuth course. Cleared M–L–S runway one eight approach.” (See FIG 5–9–4.)

FIG 5-9-5
EXAMPLE through c2 NOTE 2

NOTE—
3. Aircraft being vectored to the intermediate fix in FIG 5–9–5 must meet all the provisions described in subpara 4–8–1b4.

D through D4 NOTE

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

e. Where a Terminal Arrival Area (TAA) has been established to support RNAV approaches, inform the aircraft of its position relative to the appropriate IAF and issue the approach clearance. (See FIG 5–9–6.)

EXAMPLE 1 through EXAMPLE 3
FIG 5-9-6

OLD
5–9–5. APPROACH SEPARATION RESPONSIBILITY

Title through b

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

NEW
5–9–5. APPROACH SEPARATION RESPONSIBILITY

No Change

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

OLD
5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

Title through a2

EXAMPLE—
In FIG 5–9–7, Aircraft 2 is 1.0 mile from Aircraft 1. Approved radar separation must be maintained between Aircraft 1 and Aircraft 3.

a3
FIG 5-9-8

NEW
5–9–6. SIMULTANEOUS DEPENDENT APPROACHES

No Change

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

EXAMPLE—
In FIG 5–9–4, Aircraft 2 is 1.0 mile from Aircraft 1. Approved radar separation must be maintained between Aircraft 1 and Aircraft 3.

NEW

No Change

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

EXAMPLE—
In FIG 5–9–4, Aircraft 2 is 1.0 mile from Aircraft 1. Approved radar separation must be maintained between Aircraft 1 and Aircraft 3.

No Change

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

EXAMPLE—
In FIG 5–9–4, Aircraft 2 is 1.0 mile from Aircraft 1. Approved radar separation must be maintained between Aircraft 1 and Aircraft 3.
**EXAMPLE—**  
In FIG 5−9−8, Aircraft 2 is 1.5 miles from Aircraft 1, and Aircraft 3 is 1.5 miles or more from Aircraft 2. Approved radar separation must be maintained between aircraft on the same final.

**EXAMPLE—**  
In FIG 5−9−9, Aircraft 2 is 1.5 miles from Aircraft 1, and Aircraft 3 is 1.5 miles or more from Aircraft 2. Approved radar separation must be maintained between aircraft on the same final.

**OLD**  
5−9−9. SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA)—HIGH UPDATE RADAR

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 Turbulance Cautionary Advisories.  
FAAO JO 7110.65, Para 5−5−4, Minima

**NEW**  
5−9−9. SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA)—HIGH UPDATE RADAR

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 Independent Approaches.  
FAAO JO 7110.65, Para 2−1−20, Wake Turbulance Cautionary Advisories.  
FAAO JO 7110.65, Para 5−5−4, Minima

**OLD**  
5−13−1. MONITOR ON PAR EQUIPMENT

**NOTE—**  
1. The provisions of this section do not apply to monitoring simultaneous ILS, MLS, or ILS and MLS approaches.

**NOTE 2 through 2c**

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

**NEW**  
5−13−1. MONITOR ON PAR EQUIPMENT

**NOTE—**  
1. The provisions of this section do not apply to monitoring simultaneous approaches.

**REFERENCE—**  
FAAO JO 7110.65, Para 5−9−7, Simultaneous Independent Approaches—Dual & Triple.

**OLD**  
5−13−3. MONITOR INFORMATION

**Title through e**

f. Provide azimuth monitoring only at locations where the MLS glidepath and the PAR glidepath are not coincidental.

**REFERENCE—**  
FAAO JO 7110.65, Para 5−1−13, Radar Service Termination.

**NEW**  
5−13−3. MONITOR INFORMATION

Delete
OLD
13–1–8. RECORDING OF CONTROL DATA

Title through e NOTE

TBL 13–1–2
Miscellaneous Abbreviations

MLS - MLS approach

TBL 13–1–3
EDST Equivalents for Control Information Symbols

ARC mi. dir.– DME arc of VORTAC, TACAN, or MLS

NEW
13–1–8. RECORDING OF CONTROL DATA

No Change

TBL 13–1–2
Miscellaneous Abbreviations

Delete

TBL 13–1–3
EDST Equivalents for Control Information Symbols

ARC mi. dir. – DME arc of VORTAC or TACAN

1. PARAGRAPH NUMBER AND TITLE: 2–3–6. AIRCRAFT TYPE

2. BACKGROUND: The International Civil Aviation Organization (ICAO) formulates aircraft type designators for the world’s aircraft that will most likely receive air traffic services. ICAO provides this information through ICAO Document 8643, Aircraft Type Designators, which is updated at least annually. FAA supplements the ICAO information and publishes it through two documents: FAA Order JO 7340.2, Contractions, and FAA Order JO 7110.65, Air Traffic Control. These FAA documents didn’t contain all the aircraft listed by ICAO and the FAA documents contained dissimilar information.

3. CHANGE:

OLD

2–3–6. AIRCRAFT TYPE

Use the approved codes listed in Appendix A through C to indicate aircraft type.

NEW

2–3–6. AIRCRAFT TYPE

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

1. PARAGRAPH NUMBER AND TITLE:

2–6–2. HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE

2–9–3. CONTENT

2. BACKGROUND: The proposed change to realign the En Route Flight Advisory Service (EFAS), known as “Flight Watch” in air-to-ground communications, to the Inflight position is part of an effort by Flight Service to modernize and streamline service delivery in order to increase efficiencies and value for its stakeholders. When EFAS was introduced in 1972, EFAS specialists received advanced training in aviation weather which included translating data received from radar and satellite displays. At the time, only flight service stations providing EFAS services had access to these products. Currently, all CONUS flight service specialists have access to common weather displays, such as radar and satellite imagery, as well as other weather products which were previously available only to EFAS specialists. Today, a pilot contacting Flight Watch for updated weather information is not able to obtain NOTAM information or flight planning services and must contact Flight Service on a different frequency. With this new approach, a pilot can obtain all services that Flight Service has to offer with one call. The elimination of overlapping services will allow for a smarter, more strategic allocation of limited resources.
3. CHANGE:

**OLD**

2–6–2. HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE (HIWAS)

**Title** through a NOTE

**PHRASEOLOGY**–

ATTENTION ALL AIRCRAFT. HAZARDOUS WEATHER INFORMATION (SIGMET, Convective SIGMET, AIRMET, Urgent Pilot Weather Report (UUA), or Center Weather Advisory (CWA), Number or Numbers) FOR (geographical area) AVAILABLE ON HIWAS, FLIGHT WATCH, OR FLIGHT SERVICE FREQUENCIES.

b. Controllers outside of commissioned HIWAS areas must:

1. Advise pilots of the availability of hazardous weather advisories. Pilots requesting additional information should be directed to contact the nearest Flight Watch or Flight Service.

b2

**PHRASEOLOGY**–

ATTENTION ALL AIRCRAFT. HAZARDOUS WEATHER INFORMATION FOR (geographical area) AVAILABLE FROM FLIGHT WATCH OR FLIGHT SERVICE.

**NEW**

2–6–2. HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE (HIWAS)

**Title** through a NOTE

**PHRASEOLOGY**–

ATTENTION ALL AIRCRAFT. HAZARDOUS WEATHER INFORMATION (SIGMET, Convective SIGMET, AIRMET, Urgent Pilot Weather Report (UUA), or Center Weather Advisory (CWA), Number or Numbers) FOR (geographical area) AVAILABLE ON HIWAS OR FLIGHT SERVICE FREQUENCIES.

b. Controllers outside of commissioned HIWAS areas must:

1. Advise pilots of the availability of hazardous weather advisories. Pilots requesting additional information should be directed to contact the nearest Flight Service.

**NEW**

2–9–3. CONTENT

**Title** through l

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

**EXAMPLE**–

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

**NEW**

2–9–3. CONTENT

No Change

**EXAMPLE**–

“Boston Tower Information Delta. One four zero zero Zulu. Wind two five zero at one zero. Visibility one zero. Ceiling four thousand five hundred broken. Temperature three four. Dew point two eight. Altimeter three zero one zero. ILS–DME Runway Two Seven Approach in use. Departing Runway Two Two Right. Hazardous Weather Information for (geographical area) available on HIWAS or Flight Service Frequencies. Advise on initial contact you have Delta.”
1. **PARAGRAPH NUMBER AND TITLE:** 2-6-4. WEATHER AND CHAFF SERVICES

2. **BACKGROUND:** Instrument flight procedures with published crossing restrictions have been in use for many years. Continued evolution and expanded use of these procedures results in the need to clarify the actions required when an aircraft is issued a clearance to deviate for weather off a procedure that contains published altitude restrictions. Existing guidance does not capture the need to issue an altitude to maintain after aircraft are cleared to deviate from Climb Via or Descend Via clearances, or even the need to issue an altitude when deviating after a basic crossing altitude has been issued. Without an assigned altitude or a published fix to rejoin, Flight Management Systems may no longer process crossing altitudes and in the case of Climb or Descend Via clearances, VNAV may revert to a SID/STAR’s top or bottom altitude.

3. **CHANGE:**

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
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</thead>
<tbody>
<tr>
<td>2-6-4 WEATHER AND CHAFF SERVICES</td>
<td>No Change</td>
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<tr>
<td>Title through g1</td>
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<td>g2 through g4</td>
<td>Renumber g3 through g5</td>
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</table>

**2. When approving a weather deviation for an aircraft that had previously been issued a crossing altitude, including Climb Via or Descend Via clearances, issue an altitude to maintain along with the clearance to deviate. If you intend on clearing the aircraft to resume the procedure, advise the pilot.**

**PHRASEOLOGY—**

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

**NOTE—**

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

**REFERENCE—**

FAAO JO 7110.65, Para 4-2-5, Route or Altitude Amendments
FAAO JO 7110.65, Para 5-6-2, Methods
1. PARAGRAPH NUMBER AND TITLE: 2-10-1. EN ROUTE SECTOR TEAM POSITION RESPONSIBILITIES

2. BACKGROUND: In support of the ATO positive safety culture, several changes are being made to sections in this Order and in FAA Order JO 7210.3, Facility Operations and Administration, to shift away from allusions to “blame” and remove terms such as “operational error/deviation.” This change also clarifies the same concept may be applied to en route or oceanic sector teams.

3. CHANGE:

OLD

2-10-1. EN ROUTE SECTOR TEAM POSITION RESPONSIBILITIES
   a. En Route Sector Team Concept and Intent:

   1. There are no absolute divisions of responsibilities regarding position operations. The tasks to be completed remain the same whether one, two, or three people are working positions within a sector. The team, as a whole, has responsibility for the safe and efficient operation of that sector.

   2. The intent of the team concept is not to hold the team accountable for the action of individual members, in the event of an operational accident/incident.

NEW

2-10-1. EN ROUTE OR OCEANIC SECTOR TEAM POSITION RESPONSIBILITIES
   a. En Route or Oceanic Sector Team Concept and Intent: There are no absolute divisions of responsibilities regarding position operations. The tasks to be completed remain the same whether one, two, or three people are working positions within a sector. The team, as a whole, has responsibility for the safe and efficient operation of that sector.

1. PARAGRAPH NUMBER AND TITLE: 2-10-2. TERMINAL RADAR/NONRADAR TEAM RESPONSIBILITIES

2. BACKGROUND: In support of the ATO positive safety culture, several changes are being made to sections in this Order and in FAA Order JO 7210.3, Facility Operations and Administration, to shift away from allusions to “blame” and to remove terms such as “operational error/deviation."

3. CHANGE:

OLD

2-10-2. TERMINAL RADAR/NONRADAR TEAM RESPONSIBILITIES
   a. Terminal Radar Team Concept and Intent:

NEW

2-10-2. TERMINAL RADAR/NONRADAR TEAM RESPONSIBILITIES
   a. Terminal Radar Team Concept and Intent: There are no absolute divisions of responsibilities regarding position operations. The tasks to be completed remain the same whether one, two, or three people are working positions within a facility/sector. The team, as a whole, has responsibility for the safe and efficient operation of that facility/sector.
1. There are no absolute divisions of responsibilities regarding position operations. The tasks to be completed remain the same whether one, two, or three people are working positions within a facility/sector. The team, as a whole, has responsibility for the safe and efficient operation of that facility/sector.

2. The intent of the team concept is not to hold the team accountable for the action of individual members in the event of an operational error/deviation.

1. PARAGRAPH NUMBER AND TITLE: 2-10-3. TOWER TEAM RESPONSIBILITIES

2. BACKGROUND: This change reflects support of the ATO positive safety culture. In keeping with that culture, several changes are being made to sections in this Order and in FAA Order JO 7210.3, Facility Operation and Administration, to shift away from allusions to “blame” and to remove terms such as “operational error/deviation.”

3. CHANGE:

OLD

2–10–3. TOWER TEAM RESPONSIBILITIES
a. Tower Team Concept and Intent:

NEW

2–10–3. TOWER TEAM RESPONSIBILITIES
a. Tower Team Concept and Intent: There are no absolute divisions of responsibilities regarding position operations. The tasks to be completed remain the same whether one, two, or three people are working positions within a facility/sector. The team, as a whole, has responsibility for the safe and efficient operation of that facility/sector.

2. The intent of the team concept is not to hold the team accountable for the action of individual members in the event of an operational error/deviation.

Delete

Delete
1. PARAGRAPH NUMBER AND TITLE: 3-3-7. FAR FIELD MONITOR (FFM) REMOTE STATUS UNIT

2. BACKGROUND: A change in CFR 14 Section 91.175 (k) published in 2005 eliminated the need for middle markers as a component for an Instrument Landing System (ILS). Meanwhile, Flight Standards Service policy allows for the elimination of outer markers (OM) and inner markers (IM) where they no longer serve their original need. Many of these NAVAIDS have since been decommissioned. It has become necessary to revise FAA Order JO 7110.65, Para 3-3-7, FAR FIELD MONITOR (FFM) REMOTE STATUS UNIT to reflect these changes.

3. CHANGE:

   OLD

   3-3-7. FAR FIELD MONITOR (FFM) REMOTE STATUS UNIT

   Title through e

   1. The aircraft is outside the middle marker (MM), check for encroachment those portions of the critical area that can be seen from the tower. It is understood that the entire critical area may not be visible due to low ceilings and poor visibility. The check is strictly to determine possible causal factors for the out-of-tolerance situation. If the alarm has not cleared prior to the aircraft’s arriving at the MM, immediately issue an advisory that the FFM remote status sensing unit indicates the localizer is unreliable.

   2. The aircraft is between the MM and the inner marker (IM), immediately issue an advisory that the FFM remote status sensing unit indicates the localizer is unreliable.

   PHRASEOLOGY

   3. The aircraft has passed the IM, there is no action requirement. Although the FFM has been modified with filters which dampen the effect of false alarms, you may expect alarms when aircraft are located between the FFM and the localizer antenna either on landing or on takeoff.

   NEW

   3-3-7. FAR FIELD MONITOR (FFM) REMOTE STATUS UNIT

   No Change

   1. The aircraft is outside the middle marker (MM) or in the absence of a MM, 1/2 mile final, check for encroachment of those portions of the critical area that can be seen from the tower. It is understood that the entire critical area may not be visible due to low ceilings and poor visibility. The check is strictly to determine possible causal factors for the out-of-tolerance situation. If the alarm has not cleared prior to the aircraft’s arriving at the MM or in the absence of a MM, 1/2 mile final, immediately issue an advisory that the FFM remote status sensing unit indicates the localizer is unreliable.

   2. The aircraft is between the MM or 1/2 mile final and the inner marker (IM), or if the IM is not installed, the CAT II Missed Approach Point (MAP), immediately issue an advisory that the FFM remote status sensing unit indicates the localizer is unreliable.

   No Change

   3. The aircraft has passed the IM or the CAT II MAP (if the IM is not installed) there is no action requirement. Although the FFM has been modified with filters which dampen the effect of false alarms, you may expect alarms when aircraft are located between the FFM and the localizer antenna either on landing or on takeoff.
1. PARAGRAPH NUMBER AND TITLE: 3-8-1. SEQUENCE/SPACING APPLICATION

2. BACKGROUND: The following is a response to the Runway Safety Group Root Cause Analysis Team review of a runway incursion event at Kansas City Downtown (KMKC). The cause was a helicopter pilot that elected to hover over the runway after being issued a cleared for the option.

3. CHANGE:

**OLD**

3–8–1. SEQUENCE/SPACING APPLICATION

**NOTE**–

1. The “Cleared for the Option” procedure will permit an instructor pilot/flight examiner/pilot the option to make a touch-and-go, low approach, missed approach, stopand-go, or full stop landing. This procedure will only be used at those locations with an operational control tower and will be subject to ATC approval.

**NEW**

3–8–1. SEQUENCE/SPACING APPLICATION

**NOTE**–

1. The “Cleared for the Option” procedure will permit an instructor pilot/flight examiner/pilot the option to make a touch-and-go, low approach, missed approach, stop-and-go, or full stop landing. This procedure will only be used at those locations with an operational control tower and will be subject to ATC approval. **After ATC approval of the option, the pilot should inform ATC as soon as possible of any delay on the runway during their stop-and-go or full stop landing.**

**NOTE 2 and NOTE 3**

Add

REFERENCE–

FAA JO 7110.65, Para 3–7–2, Taxi and Ground Movement Operations.

1. PARAGRAPH NUMBER AND TITLE: 3-9-6. SAME RUNWAY SEPARATION

2. BACKGROUND: Paragraph 3-9-6 refers to departing aircraft and how to separate a departing aircraft from previous departing or arriving aircraft. In subparagraph “a” references are made to FIG 3-9-1 and FIG 3-9-2 and both of these figures show the departure aircraft on the runway, shaded, with the previous departing aircraft depicted in outline form. In subparagraph “b” a reference is made to FIG 3-9-3 that is intended to depict a departing aircraft from a preceding arriving aircraft. The preceding arriving aircraft is correctly depicted in outline form, consistent with previous figures in this chapter. However, while the departure is shaded consistent with the two previous figures in this chapter, it is not depicted on the runway.
3. CHANGE:

OLD

3-9-6. SAME RUNWAY SEPARATION
Title through a
Fig 3-9-2
Same Runway Separation

NOTE—
Aircraft same runway separation (SRS) categories are specified in Appendices A, B, and C and based upon the following definitions:

CATEGORY I — small aircraft weighing 12,500 lbs. or less, with a single propeller driven engine, and all helicopters.

CATEGORY II — small aircraft weighing 12,500 lbs. or less, with propeller driven twin-engines.

CATEGORY III — all other aircraft.

NEW

3-9-6. SAME RUNWAY SEPARATION
No Change

NOTE—
Aircraft same runway separation (SRS) categories are specified in FAA Order JO 7360.1, Aircraft Type Designators and based upon the following definitions:

CATEGORY I — small single-engine propeller driven aircraft weighing 12,500 lbs. or less, and all helicopters.

CATEGORY II — small twin-engine propeller driven aircraft weighing 12,500 lbs. or less.

CATEGORY III — all other aircraft.

OLD

Fig 3-9-3
Preceding Landing Aircraft Clear of Runway

NEW

Fig 3-9-3
Preceding Landing Aircraft Clear of Runway
1. PARAGRAPH NUMBER AND TITLE: 3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS

2. BACKGROUND: The placement of paragraph 3-9-9, 2e may result in the conclusion that the procedures are only required for operations requiring wake turbulence application. In fact, the provisions of this paragraph should be applied for all converging runway operations.

3. CHANGE:

OLD

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATION
Title through a2
FIG–3–9–12
Intersecting Runway Separation
Add

NEW

3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATION
No Change

b. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway at a distance of 1NM or less from either departure end, apply the provisions of Pragraph 3–9–8, Intersecting Runway Separation, unless: The facility is using aids specified in a facility directive, (may include but are not limited to, Arrival/Departure Window (ADW), ASDE–X Virtual Runway Intersection Point (VRIP), cut–off points or automation). (See FIG 3–9–15 and FIG 3–9–16).

REFERENCE–
FAAO JO 7210.3, Para 10-3-14, Go-Around/Missed Approach
No Change
FIG 3–9–13
Intersecting Runway Separation
Add

**FIG 3–9–14**
Intersecting Runway Separation

b. Separate IFR/VFR aircraft taking off behind a departing aircraft on a crossing runway if projected flight paths will cross (See FIG 3–9–13).

1. Heavy, large, or small behind super – 3 minutes.
2. Heavy, large, or small behind heavy – 2 minutes.

**FIG 3–9–13**
Intersecting Runway Separation

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

c. Separate IFR/VFR aircraft taking off behind a departing aircraft on a crossing runway if projected flight paths will cross (See FIG 3–9–15).

No Change

**FIG 3–9–15**
Intersecting Runway Separation

No Change

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

**REFERENCE—**
FAAO JO 7110.65, Para 5-8-3, Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5-8-5, Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.
FAAO JO 7110.65, Para 5-5-4, Minima, Subparagraph g.
e. If the extended centerline of a runway crosses a converging runway or the extended centerline of a converging runway at a distance of 1NM or less from either departure end, apply the provisions of Paragraph 3-9-8, Intersecting Runway Separation, unless: The facility is using aids specified in a facility directive, (may include but are not limited to, Arrival/Departure Window (ADW), ASDE-X Virtual Runway Intersection Point (VRIP), cut-off points or automation). (See FIG 3-9-15 and FIG 3-9-16.)

Delete

FIG 3–9–15
Intersecting Runway Separation

Delete

FIG 3–9–16
Intersecting Runway Separation

Delete
1. PARAGRAPH NUMBER AND TITLE: 3-10-5. LANDING CLEARANCE

2. BACKGROUND: Airport traffic control towers responsible for sequencing arriving aircraft employ various techniques to establish a landing sequence. Occasionally, control instructions necessary to sequence aircraft are not compatible with the phraseology “CONTINUE” specified in the example in FAA Order JO 7110.65 paragraph 3-10-5. Examples of incompatible phraseology with the word “CONTINUE” include: “EXTEND DOWNWIND, TURN BASE NOW, TURN BASE IN ONE MILE, BASE APPROVED, MAKE LEFT THREE-SIXTY”, etc. When an inbound aircraft is issued a restriction such as “TOWER WILL CALL BASE” and a controller subsequently issues the instruction “CONTINUE, TRAFFIC HOLDING IN POSITION”, pilots have reported uncertainty on the meaning of “CONTINUE” in this situation. Some pilots believe it means continue flying the current leg of the traffic pattern, some think it means fly a normal pattern. Similarly, some controllers report being unsure whether instructing an aircraft to “CONTINUE” deletes a previously issued control instruction.

3. CHANGE:

OLD

3–10–5. LANDING CLEARANCE

EXAMPLE—
“Delta One, Runway One–Eight, continue, traffic holding in position.”
“Delta One, Runway One–Eight, cleared to land. Traffic holding in position.”

NEW

3–10–5. LANDING CLEARANCE

EXAMPLE—
“Delta One, Runway One–Eight, continue, traffic holding in position.”
“Delta One, Runway One–Eight, cleared to land. Traffic holding in position.”
“Twin Cessna Four Four Golf, Runway One-Niner base approved, traffic holding in position.”
“Baron Two Five Foxtrot, Runway One-Niner Right extend downwind, tower will call your base, traffic holding in position.”

1. PARAGRAPH NUMBER AND TITLE: 4-2-5. ROUTE OR ALTITUDE AMENDMENTS

2. BACKGROUND: Flight Standards Service recommends 4-2-5b, Note 2 be stated better to avoid any potential misinterpretation. It is not a good idea to have “mandatory” used in the same sentence with “crossing altitudes.” This could potentially mislead the audience into believing all altitudes on an ODP are “mandatory altitudes,” as opposed to what is correctly specified in the ODP text or graphic.

3. CHANGE:

OLD

4-2-5. ROUTE OR ALTITUDE AMENDMENTS

Title through b NOTE 1

2. Crossing altitudes and speed restrictions on ODPs are mandatory and cannot be canceled by ATC.

NEW

4-2-5. ROUTE OR ALTITUDE AMENDMENTS

No Change

2. Crossing altitudes and speed restrictions on Obstacle Departure Procedure/s (ODP/s) cannot be canceled or amended by ATC.
1. PARAGRAPH NUMBER AND TITLE: 4-3-2. DEPARTURE CLEARANCES

2. BACKGROUND: Flight Standards Service (AFS-420) has identified that paragraph 4-3-2 (c) (2) only refers to textually described obstacle departure procedures (ODP).

3. CHANGE:

OLD

4-3-2. DEPARTURE CLEARANCES
Title through c1(c)

2. Where only textually described obstacle departure procedures (ODP) have been published for a location and pilot compliance is necessary to ensure separation, include the procedure as part of the ATC clearance.

NEW

4-3-2. DEPARTURE CLEARANCES

2. Where an obstacle departure procedure (ODP) has been published for a location and pilot compliance is necessary to ensure separation, include the procedure as part of the ATC clearance.

EXAMPLE—
“Depart via the (airport name)(runway number) departure procedure.”
Or
“Depart via the (graphic ODP name) obstacle departure procedure.”

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

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

Add

Add

Add

3. Do not solicit use of the Visual Climb over Airport (VCOA) option.

NOTE—
Pilots will specifically advise ATC of their intent to use the VCOA option.

EXAMPLE—
“Depart via the (airport name) (runway number) departure procedure.”

NOTE—
IFR takeoff minimums and departure procedures are prescribed for specific airports/runways and published in a tabular form supplement to the FAA instrument approach procedure chart and appropriate FAA Form 8260. These procedures are identified on instrument approach procedure charts with a symbol:

Delete
1. BACKGROUND: In response to aviation industry concerns over cold weather effect on indicated altitudes versus that of an aircraft’s true altitude, the FAA completed an analysis to determine if current 14 CFR Part 97 instrument approach procedures in the United States National Airspace System are at risk of compromised required obstacle clearances (ROC) during time of extreme cold temperature. As a result of the study, all airports with runways greater than 2500 feet with instrument approach procedures were analyzed to determine which approach procedures needed compensation based on a formula that articulated the potential for a degree of ROC that could be compromised. A safety risk management panel (SRMP) was conducted on the impact to ATC operations, and a condition of the SRMP was to add content to the pertinent FAA documents to assist in pilot and controller awareness of the need to apply cold temperature compensation.

3. CHANGE:

OLD
4–7–12. AIRPORT CONDITIONS
Title through a

NOTE–
1. Airport conditions information, in the provision of en route approach control service, does not include information pertaining to the airport surface environment other than the landing area(s) or obstruction information for aircraft that will be cleared for an instrument approach. Accordingly, D NOTAMs that contain the keywords TAXIWAY (TWY), RAMP, APRON, or SERVICE (SVC) are not required to be issued. Additionally, Obstruction NOTAMs (OBST) are not required to be issued if an aircraft will be cleared for an instrument approach.

NOTE 2 through b

NEW
4–7–12. AIRPORT CONDITIONS
Title through a

NOTE–
1. Airport conditions information, in the provision of en route approach control service, does not include information pertaining to cold temperature compensation or the airport surface environment other than the landing area(s) or obstruction information for aircraft that will be cleared for an instrument approach. Accordingly, D NOTAMs that contain the keywords TAXIWAY (TWY), RAMP, APRON, or SERVICE (SVC) are not required to be issued. Additionally, Obstruction NOTAMs (OBST) are not required to be issued if an aircraft will be cleared for an instrument approach.

NOTE 1

OLD
4–8–1. APPROACH CLEARANCE
Title through a5

Add

NEW
4–8–1. APPROACH CLEARANCE
Title through a

6. Controllers must not disapprove a pilot request to cold temperature compensate in conjunction with the issuance of an approach clearance.

No Change
2. Approach clearances are issued based on known traffic. The receipt of an approach clearance does not relieve the pilot of his/her responsibility to comply with applicable Parts of Title 14 of the Code of Federal Regulations and the notations on instrument approach charts which levy on the pilot the responsibility to comply with or act on an instruction; for example, “Straight-in minima not authorized at night,” “Procedure not authorized when glideslope/glidepath not used,” “Use of procedure limited to aircraft authorized to use airport,” or “Procedure not authorized at night.”

**NOTE 3 through NOTE 9**
Add

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

**OLD**

4-8-9. MISSED APPROACH
Title through **NOTE 2**
Add

**NEW**

4-8-9. MISSED APPROACH
No Change

**NOTE—**
3. Pilots must advise ATC when intending to apply cold temperature compensation and of the amount of compensation required. Pilots will not apply altitude compensation, unless authorized, when assigned an altitude if provided an initial heading to fly or radar vectors in lieu of published missed approach procedures. Consideration should be given to vectoring aircraft at or above the requested compensating altitude if possible.

**REFERENCE—**
AIM, Paragraph 5-5-5, Missed Approach
OLD
4-8-10. APPROACH INFORMATION
Title through e
Add

NEW
4-8-10. APPROACH INFORMATION
No Change
f. Applicable notations on instrument approach charts which levy on the pilot the responsibility to comply with or act on an instruction: for example, “Straight-in minima not authorized at night,” “Procedure not authorized when glideslope/glidepath not used,” “Use of procedure limited to aircraft authorized to use airport,” “Procedure not authorized at night,” or a Snowflake icon indicating mandatory cold temperature compensation.

REFERENCE:
AIM, Paragraph 5-1-17, Cold Temperature Operations
AIM, Paragraph 5-5-4, Instrument Approach
AIM, Paragraph 5-5-5, Missed Approach

1. PARAGRAPH NUMBER AND TITLE: 4-8-1. APPROACH CLEARANCE

2. BACKGROUND: In the January 2015 change to this paragraph, sub-paragraph f was revised. Content involving Radius to Fix (RF) legs was revised by removing mileage distances that were stated for the segment prior to commencing an RF leg. However, the associated FIG 4-8-5 was not changed at the time the content was revised.

3. CHANGE:

OLD
4-8-1. APPROACH CLEARANCE
Title through i4 NOTE

NEW
4-8-1. APPROACH CLEARANCE
No Change
OLD

FIG 4–8–5
Radius to Fix (RF) and Track to Fix (TF)

NEW

FIG 4–8–5
Radius to Fix (RF) and Track to Fix (TF)
1. PARAGRAPH NUMBER AND TITLE: 5-1-3. RADAR USE

2. BACKGROUND: FAA Order JO 7110.310, Automatic Dependent Surveillance-Broadcast (ADS-B) Air Traffic Control (ATC) Services at Air Route Traffic Control Centers (ARTCCs) Using En Route Automation Modernization (ERAM) and FAA Order JO 7110.313 Wide Area Multilateration (WAM) Air Traffic Control (ATC) Services at Air Route Traffic Control Centers (ARTCCs) approved ADS-B and WAM surveillance information for use in the En Route domain as a surveillance source. Safety analyses have been completed that support the use of ADS-B and WAM targets in all areas with or without existing radar coverage.

3. CHANGE:

OLD

5-1-3. RADAR USE

Use radar information derived from primary and secondary radar systems.

REFERENCE through b

Add

NEW

5-1-3. ATC SURVEILLANCE SOURCE USE

Use approved ATC surveillance sources.

No Change

c. All procedures and requirements relating to ATC services using secondary radar targets apply to ATC services provided to targets derived from ADS-B and WAM.

NOTE—
Targets derived from ADS-B and/or WAM cannot be used to provide 3NM separation in the EAS. 3NM targets are not derived from ADS-B and/or WAM within the EAS.

REFERENCE—
JO 7110.65, Para4-1-2, Exceptions.
JO 7110.65, Para 4-4-2, Route Structure Transitions
JO 7110.65, Para 5-5-1, Application
JO 7110.65, Para 6-5-4, Minima Along Other Than Established Airways or Routes
JO 7110.65, Chapter 6, Nonradar
JO 7110.65, Para 5-5-4, Minima
JO 7210.3 3-6-2 ATC Surveillance Source Use

1. PARAGRAPH NUMBER AND TITLE: 5-4-3. METHODS

2. BACKGROUND: Since 2009 the New York Air Route Traffic Control Center has been working under a waiver that allows the use of the Computer Identification Number (CID) in lieu of using the aircraft call sign or discreet beacon code for aircraft identification under paragraph 5-4-3, METHODS, sub-paragraph b.2. This DCP incorporates the provisions of the waiver so the use of the CID is available to all Enroute facilities.

3. CHANGE:

OLD

5-4-3. METHODS

Title through b2(a)

(b) The discrete beacon code of the aircraft during inter-facility point-outs only, if both the receiving and the transferring controllers agree.

NEW

5-4-3. METHODS

No Change

(b) The discrete beacon code of the aircraft during inter-facility point-outs only, if both the receiving and the transferring controllers agree, or
Add (c) EN ROUTE. The Computer Identification Number (CID) during intra-facility point-outs.

EXAMPLE—
“Point Out, Southwest of Richmond VOR, C-I-D 123...”

1. PARAGRAPH NUMBER AND TITLE: 5–4–6. RECEIVING CONTROLLER HANDOFF

2. BACKGROUND: Several years ago the FAA began replacing the En Route legacy computer system known as Host, with a new, NextGen enabling system known as En Route Automation Modernization (ERAM). The installation of ERAM was accomplished using a waterfall implementation process over the span of many years. During this transition period, the guidance for air traffic control services operating under ERAM was found in FAA Order JO 7110.311. Now that the transition nears completion, FAA Order 7110.311C is being incorporated into FAA Order JO 7110.65. During this process, certain outdated terms that are no longer used in the field were identified. The decision was made to use this opportunity to update the handbook by eliminating or amending the outdated terminology.

3. CHANGE:

OLD
5–4–6. RECEIVING CONTROLLER HANDOFF

Title through e3

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

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

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

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

NEW
5–4–6. RECEIVING CONTROLLER HANDOFF

No Change

f. Take the identified action prior to accepting control of a track when the following indicators are displayed in the data block:

1. “AMB” and “AM”: advise the other facility that a disparity exists between the position declared by their computer and that declared by your CARTS/PIDP/STARS system.

2. “NAT”, “NT,” or “TU”: advise the other facility if a disparity exists between the position declared by their computer and the actual target position.

Add

g. ERAM: Notify the FLM when a MISM is displayed in the data block.

h. Advise the transferring controller, prior to accepting the transfer of radar identification, that you will delay the climb or the descent of an aircraft through the vertical limits of the transferring controller’s area of jurisdiction, unless otherwise specified in a LOA or a facility directive.
NOTE—
Those en route facilities using HOST software that provides capability for passing interim altitude shall include the specific operations and procedures for use of this procedure in a LOA between the appropriate facilities.

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

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

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

1. PARAGRAPH NUMBER AND TITLE: 5-6-2. METHODS

2. BACKGROUND: Instrument flight procedures with published crossing restrictions have been in use for many years. Continued evolution of flight procedures has resulted in the need to clarify and supplement actions required when an aircraft is issued a clearance off a procedure that contains published altitude restrictions. Current guidance for when an aircraft is vectored off a procedure has not changed since 1980. Existing guidance does not capture the nuances surrounding Climb Via and Descend Via clearances when subsequent radar vectors are issued or aircraft are cleared to deviate from Climb Via/Descend Via procedures. Without an assigned altitude or a published fix to rejoin, Flight Management Systems may no longer calculate crossing altitudes and VNAV may revert to a SID/STAR’s top or bottom altitude. In a separate issue, Flight Standards AFS-420 identified an issue with regards to Obstacle Departure Procedures (ODP). In order to be consistent with language currently found in the AIM, they recommend adding guidance to this order for when an aircraft is vectored off an Obstacle Departure Procedure (ODP).

3. CHANGE:

OLD

b. When initiating a vector, advise the pilot of the purpose.

NEW

b. When initiating a vector, advise the pilot of the purpose, and if appropriate, what to expect when radar navigational guidance is terminated.
**PHRASEOLOGY—**
VECTOR TO (fix or airway).

VECTOR TO INTERCEPT (name of NAVAID) (specified) RADIAL.

VECTOR FOR SPACING.

VECTOR TO FINAL APPROACH COURSE,
or if the pilot does not have knowledge of the type of approach,

VECTOR TO (approach name) FINAL APPROACH COURSE.

**NOTE**
c. Issue with the vector an altitude to maintain and all appropriate altitude restrictions when:

1. The vector will take the aircraft off an assigned procedure which contains altitude instructions, i.e., instrument approach, nonradar SID, FMSP, etc.

c2
Add

d. If appropriate, advise the pilot what to expect when the vector is completed.

**PHRASEOLOGY—**
EXPECT TO RESUME (Route, SID, STAR, FMSP, etc.).

**NOTE—**
You must ensure that the pilot is made aware if he/she is expected to resume a previously issued route procedure.

e through e3

**PHRASEOLOGY—**
VECTOR TO (fix or airway).

VECTOR TO INTERCEPT (name of NAVAID) (specified) RADIAL.

VECTOR FOR SPACING.

(if appropriate) EXPECT DIRECT (NAVAID, waypoint, fix)

VECTOR TO FINAL APPROACH COURSE,
or if the pilot does not have knowledge of the type of approach,

VECTOR TO (approach name) FINAL APPROACH COURSE.

**NOTE**
c. When vectoring or approving course deviations, assign an altitude to maintain when:

1. The vector or approved deviation is off an assigned procedure which contains altitude instructions, i.e., instrument approach, etc.

No Change

c2
Add

3. The vector or approved deviation is off an assigned procedure that contains published altitude restrictions, i.e., SID, STAR, and a clearance to Climb Via/Descend Via has been issued.

d. When vectoring or approving an aircraft to deviate off of a procedure that includes published altitude restrictions, advise the pilot if you intend on clearing the aircraft to resume the procedure.

**PHRASEOLOGY—**
FLY HEADING (degrees), MAINTAIN (altitude), EXPECT TO RESUME (SID, STAR, etc.), DEVIATION (restrictions if necessary) APPROVED, MAINTAIN (altitude) EXPECT TO RESUME (SID, STAR, etc.) AT (NAVAID, fix, waypoint)

**NOTE—**
After a Climb Via or Descend Via clearance has been issued, a vector/deviation off of a SID/STAR cancels the altitude restrictions on the procedure. The aircraft’s Flight Management System (FMS) may be unable to process crossing altitude restrictions once the aircraft leaves the SID/STAR lateral path. Without an assigned altitude, the aircraft’s FMS may revert to leveling off at the altitude set by the pilot, which may be the SID/STAR’s published top or bottom altitude.

No Change
**PHRASEOLOGY--**
(Position with respect to course/fix along route),
RESUME OWN NAVIGATION,

or

FLY HEADING (degrees). WHEN ABLE, PROCEED DIRECT (name of fix),

or

RESUME (name/number FMSP/SID/transition STAR) procedure).

**REFERENCE--**
FAAO JO 7110.65, Chapter 4, Section 1, NAVAID Use Limitations.

f. Aircraft instructed to resume a procedure which contains restrictions (SID/STAR/FMSP, etc.) must be issued/reissued all applicable restrictions or must be advised to comply with those restrictions.

**PHRASEOLOGY--**
RESUME (name/number FMSP/SID/transition STAR), COMPLY WITH RESTRICTIONS.

**REFERENCE--**
FAAO JO 7110.65, Chapter 4, Section 1, NAVAID Use Limitations
FAAO JO 7110.65, Paragraph 4-5-7, Altitude Information

f. Aircraft instructed to resume a procedure which contains restrictions (SID/STAR, etc.) must be issued/reissued all applicable restrictions or must be advised to comply with those restrictions.

**PHRASEOLOGY--**
RESUME (name SID/transition STAR), COMPLY WITH RESTRICTIONS, PROCEED DIRECT (NAVAID, fix, waypoint) CROSS (NAVAID, fix, waypoint) AT OR ABOVE OR BELOW (altitude) CLIMB VIA DESCEND VIA (SID/STAR)

**EXAMPLE--**
“Resume the Mudde One Arrival, comply with restrictions.”
“Cleared direct Luxor, resume the Ksino One arrival, comply with restrictions.”

**EXAMPLE--**
“Resume the Mudde One Arrival, comply with restrictions.”
“Cleared direct Luxor, resume the Ksino One arrival, comply with restrictions.”
“Cleared direct HITME, cross HITME at or above one one thousand, climb via the Boach Five departure.”

**g.** Aircraft may not be vectored off an Obstacle Departure Procedure (ODP), or issued an altitude lower than published altitude on an ODP, until at or above the MVA/MIA, at which time the ODP is cancelled.

**NOTE--**
Once an aircraft has been vectored off an Obstacle Departure Procedure, the procedure is cancelled and ATC cannot clear the aircraft to resume the ODP.

**REFERENCE--**
P/CG, Obstacle Departure Procedure

**g**
Re-Letter to **h**

**i**
Re-Letter to **j**
1. **PARAGRAPH NUMBER AND TITLE:** 5-9-10. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS

2. **BACKGROUND:** The Flight Technologies and Procedures Division, AFS-400, removed the requirement to provide 1,000 feet vertical or 3 miles radar separation during turn on to widely spaced parallel finals and substituted procedural design to allow simultaneous independent parallel operations between RNAV (RNP) approaches with RF legs and a RNAV (RNP) approaches with RF legs and certain other straight-in approaches.

3. **CHANGE:**

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5-9-10. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS</strong></td>
<td><strong>5-9-10. SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS</strong></td>
</tr>
<tr>
<td><strong>Title through a</strong></td>
<td>No Change</td>
</tr>
<tr>
<td>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.</td>
<td>1. Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft:</td>
</tr>
<tr>
<td>Add</td>
<td>(a) during turn-on to parallel final approach, or</td>
</tr>
<tr>
<td>Add</td>
<td>(b) conducting an RNAV (RNP) approach that contains a Radius-to-Fix (RF) leg and an aircraft conducting a straight-in ILS/RNAV with vertical guidance/GLS or another RNAV (RNP) approach with an RF leg until both aircraft are established on their respective approach procedures. Ensure dual RNAV (RNP) approaches that contain RF legs are limited to aircraft approaching from opposite downwinds or base legs and all approach pairings must be conducted so that the approach courses do not overlap.</td>
</tr>
<tr>
<td>Add</td>
<td>REFERENCE— FAAO JO 7210.3, Paragraph 10-4-7, Simultaneous Widely-Spaced Parallel Operations</td>
</tr>
</tbody>
</table>
1. PARAGRAPH NUMBER AND TITLE: 7-2-1. VISUAL SEPARATION

2. BACKGROUND: Improper application of tower-applied and pilot-applied visual separation has been identified by the Air Traffic Organization (ATO) Safety Roundtable as an ATO Top 5 Issue for 2015. The Top 5 is a quantifiable list of hazards that contribute to the highest risk in the National Airspace System.

3. CHANGE:

OLD
7-2-1. VISUAL SEPARATION
Aircraft may be separated by visual means, as provided in this paragraph, when other approved separation is assured before and after the application of visual separation. To ensure that other separation will exist, consider aircraft performance, wake turbulence, closure rate, routes of flight, and known weather conditions. Reported weather conditions must allow the aircraft to remain within sight until other separation exists. Do not apply visual separation between successive departures when departure routes and/or aircraft performance preclude maintaining separation.

REFERENCE
a1
(a) Maintain communication with at least one of the aircraft involved or ensure there is an ability to communicate immediately as prescribed in paragraph 3-9-3, Departure Control Instructions, subparagraph a2.

(b) The tower visually observes the aircraft, issues timely traffic advisories, and maintains visual separation between the aircraft. The use of tower-applied visual separation is not authorized when wake turbulence separation is required.

(c) Issue subsequent control instructions as necessary to ensure continued separation between the applicable aircraft.

NEW
7-2-1. VISUAL SEPARATION
Visual separation may be applied when other approved separation is assured before and after the application of visual separation. To ensure that other separation will exist, consider aircraft performance, wake turbulence, closure rate, routes of flight, known weather conditions, and aircraft position. Weather conditions must allow the aircraft to remain within sight until other separation exists.

(a) Maintain communication with at least one of the aircraft involved or ensure there is an ability to communicate immediately with applicable military aircraft as prescribed in Paragraph 3-9-3, Departure Control Instructions, subparagraph a2.

(b) The tower visually observes the aircraft, issues timely traffic advisories, and provides visual separation between the aircraft.

(c) Issue control instructions as necessary to ensure continued separation between the applicable aircraft.

(d) Do not apply visual separation between successive departures when departure routes and/or aircraft performance preclude maintaining separation.

(e) The use of tower-applied visual separation is not authorized when wake turbulence separation is required.

(f) Adjacent airports with operating ATCTs are not authorized to apply visual separation between their traffic and the other ATCT’s traffic.

NOTE—
Adjacent airports with operating ATCTs are not authorized to apply visual separation between their traffic and the other ATCT’s traffic.

a2(a) and a2(b)
(1) Tell the pilot about the other aircraft. Include position, direction, and, unless it is obvious, the other aircraft’s intention.

a2(b)(2) and a2(b)(3)

**PHRASEOLOGY**

TRAFFIC, (clock position and distance), (direction) BOUND, (type of aircraft), (intentions and other relevant information).

**DO YOU HAVE IT IN SIGHT?**

If the answer is in the affirmative,

MAINTAIN VISUAL SEPARATION.

Add

(c) If the pilot advises he/she has the traffic in sight and will maintain visual separation from it (the pilot must use that entire phrase), the controller need only “approve” the operation instead of restating the instructions.

**PHRASEOLOGY**

APPROVED.

**NOTE**

Pilot-applied visual separation between aircraft is achieved when the controller has instructed the pilot to maintain visual separation and the pilot acknowledges or when the controller has approved pilot-initiated visual separation.

**REFERENCE**

FAAO JO 7110.65, Para 5-4-5, Transferring Controller Handoff

(d) If the aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied.

**PHRASEOLOGY**

TRAFFIC, (clock position and distance), (direction) BOUND, (type of aircraft), HAS YOU IN SIGHT AND WILL MAINTAIN VISUAL SEPARATION.

(e) Advise the pilots if the radar targets appear likely to merge.

**NOTE**

**EXAMPLE**

“Radar targets appear likely to merge.”

b. TERMINAL. Control of aircraft maintaining visual separation may be transferred to an adjacent position/sector/facility. Coordination procedures must be specified in an LOA or facility directive.

(1) Tell the pilot about the other aircraft. Include position, direction, **type** and, unless it is obvious, the other aircraft’s intention.

No Change

**PHRASEOLOGY**

(ACID), TRAFFIC, (clock position and distance), (direction) BOUND, (type of aircraft), (intentions and other relevant information).

If required,

(ACID), REPORT TRAFFIC IN SIGHT or DO YOU HAVE IT IN SIGHT?

If the pilot reports traffic in sight, or the answer is in the affirmative,

(ACID), MAINTAIN VISUAL SEPARATION

**NOTE**

Towers must use the procedures contained in Paragraph 3-1-6, Traffic Information, Subparagraph b or c, as appropriate.

(c) If the pilot reports the traffic in sight and will maintain visual separation from it (the pilot must state both), the controller may “approve” the operation instead of restating the instructions.

**PHRASEOLOGY**

(ACID), APPROVED.

**NOTE**

Pilot-applied visual separation between aircraft is achieved when the controller has instructed the pilot to maintain visual separation and the pilot acknowledges with their call sign or when the controller has approved pilot-initiated visual separation.

No Change

(d) If aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied.

**PHRASEOLOGY**

(ACID), TRAFFIC, (clock position and distance), (direction) BOUND, (type of aircraft), HAS YOU IN SIGHT AND WILL MAINTAIN VISUAL SEPARATION.

(e) Advise the pilots if the targets appear likely to merge.

**EXAMPLE**

“Targets appear likely to merge.”

(d) Control of aircraft maintaining visual separation may be transferred to an adjacent position/sector/facility. Coordination procedures must be specified in an LOA or facility directive.
REFERENCE

c. EN ROUTE. Visual separation may be used up to but not including FL 180 when the following conditions are met:

1. Direct communication is maintained with one of the aircraft involved and there is an ability to communicate with the other.
2. A pilot sees another aircraft and is instructed to maintain visual separation from it as follows:

(a) Tell the pilot about the other aircraft including position, direction and unless it is obvious, the other aircraft’s intentions.

(b) Obtain acknowledgment from the pilot that the other aircraft is in sight.

(c) Instruct the pilot to maintain visual separation from that aircraft.

(d) Advise the pilot if the radar targets appear likely to converge.

(e) If the aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied.


b. EN ROUTE. Visual separation may be used up to but not including FL 180 when the following conditions are met:

No Change

No Change

(a) Tell the pilot about the other aircraft including position, direction, and type. If it is not obvious, include the other aircraft’s intentions.

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

No Change

No Change

PHRASEOLOGY–

(ACID), TRAFFIC, (clock position and distance), (direction) BOUND, (type of aircraft), (intentions and other relevant information). If required, (ACID), REPORT TRAFFIC IN SIGHT or DO YOU HAVE IT IN SIGHT? If the pilot reports traffic in sight, or the answer is in the affirmative, (ACID), MAINTAIN VISUAL SEPARATION

(d) If the pilot reports the traffic in sight and will maintain visual separation (the pilot must state both), the controller may “approve” the operation instead of restating the instructions.

PHRASEOLOGY–

(ACID), APPROVED.

NOTE–
Pilot-applied visual separation between aircraft is achieved when the controller has instructed the pilot to maintain visual separation and the pilot acknowledges with their call sign or when the controller has approved pilot-initiated visual separation.

(e) Advise the pilot if the targets appear likely to converge.

(f) If aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied.

PHRASEOLOGY–

(ACID) TRAFFIC, (clock position and distance), (direction)–BOUND, (type of aircraft) ON CONVERGING COURSE, HAS YOU IN SIGHT AND WILL MAINTAIN VISUAL SEPARATION.

REFERENCE–
FAAO JO 7110.65, Para 7–4–1, Visual Approach.
FAAO JO 7110.65, Para 7–4–2, Vectors for Visual Approach.
(f) Advise the pilots if either aircraft is a heavy.

(g) Traffic advisories and wake turbulence cautionary advisories must be issued in accordance with para 2–1–20, Wake Turbulence Cautionary Advisories, and para 2–1–21, Traffic Advisories.

(h) If the pilot advises he/she has the traffic in sight and will maintain visual separation from it (the pilot must use that entire phrase), the controller need only “approve” the operation instead of restating the instructions.

**PHRASEOLOGY—**

TRAFFIC, (clock position and distance), (direction)–BOUND, (type of aircraft), (intentions and other relevant information).

If applicable,

**ON CONVERGING COURSE.**

**DO YOU HAVE IT IN SIGHT?**

If the answer is in the affirmative,

**MAINTAIN VISUAL SEPARATION.**

If the pilot advises he/she has the traffic in sight and will maintain visual separation from it (pilot must use that entire phrase):

(Call Sign) APPROVED.

If aircraft are on converging courses, advise the other aircraft:

TRAFFIC, (clock position and distance), (direction)–BOUND, (type of aircraft), HAS YOU IN SIGHT AND WILL MAINTAIN VISUAL SEPARATION.

**REFERENCE—**

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


**d.** Nonapproach control towers may be authorized to provide visual separation between aircraft within surface areas or designated areas provided other separation is assured before and after the application of visual separation. This may be applied by the nonapproach control tower providing the separation or by a pilot visually observing another aircraft and being instructed to maintain visual separation with that aircraft.

**c.** Nonapproach control towers may be authorized to provide visual separation between aircraft within surface areas or designated areas when approved separation is provided before and after the application of visual separation. The nonapproach control tower must apply the procedures contained in subparagraph a1 or a2, when applying visual separation.
PHRASEOLOGY—
VISUAL SEPARATION APPROVED BETWEEN
(identification) AND (identification).

and for departing aircraft,

(departing/succeeding aircraft) RELEASED YOUR
DISCRETION.

Add

NOTE—
Separation of IFR aircraft before and after application of
visual separation is an IFR control function (Approach/
Departure/En Route). A nonapproach control tower by
accepting authorization for visual separation becomes
responsible for ensuring that separation. Separation
requirements also apply to VFR aircraft when IFR, Class
B, Class C or TRSA separation is prescribed.

REFERENCE

1. PARAGRAPH NUMBER AND TITLE: 7-4-4. APPROACHES TO MULTIPLE RUNWAYS

2. BACKGROUND: Current procedures in FAA Order JO 7110.65, Paragraphs 7-4-4 c2 and c3 restrict controllers to use of radar vectors to achieve the required maximum 30-degree intercept to the final approach course. Advanced NextGen procedures provide a greater degree of course accuracy. However, current guidance does not permit their use with conventional and visual approach procedures while conducting approaches to multiple runways.

3. CHANGE:

OLD

7-4-4. APPROACHES TO MULTIPLE RUNWAYS

Title through c2

(a) Approved separation is provided until the aircraft are established on a heading which will intercept the extended centerline of the runway at an angle not greater than 30 degrees, and each aircraft has been issued and one pilot has acknowledged receipt of the visual approach clearance, and the other pilot has acknowledged receipt of the visual or instrument approach clearance.

NEW

7-4-4. APPROACHES TO MULTIPLE RUNWAYS

No Change

(a) Approved separation is provided until the aircraft are:
Add

(1) Established on a heading or established on a direct course to a fix or cleared on an RNAV/instrument approach procedure which will intercept the extended centerline of the runway at an angle not greater than 30 degrees, and,

(2) Issued an approach clearance and one pilot has acknowledged receipt of a visual approach clearance, and,

(3) The other pilot has acknowledged receipt of a visual or instrument approach clearance.

NOTE 1 and 2
Add

REFERENCE—
FAA Publication, Pilot's Handbook of Aeronautical Knowledge, Chapter 15 “Effect of Wind.”

c2(b) through c3(c)

(d) Each aircraft must be assigned headings which will allow the aircraft to intercept the extended centerline of the runway at an angle not greater than 30 degrees.

NOTE 1 and 2
Add

REFERENCE—
FAA Publication, Pilot's Handbook of Aeronautical Knowledge, Chapter 15 “Effect of Wind.”

c4

1. PARAGRAPH NUMBER AND TITLE:
8-7-3. LONGITUDINAL SEPARATION
8-8-3. LONGITUDINAL SEPARATION
8-9-3. LONGITUDINAL SEPARATION
8-10-3. LONGITUDINAL SEPARATION

2. BACKGROUND: ADS-B In Trail Procedure (ITP) is an additional capability fully compatible with the existing Advanced Technologies and Ocean Procedures (ATOP) oceanic automation system. The ADS-B ITP is a pilot-requested procedure that utilizes existing ADS-B aircraft equipage and air traffic control capabilities to allow more flights to achieve their preferred vertical profiles, and thereby increases both capacity and efficiency in the oceanic domain. The ADS-B ITP was designed to improve service to appropriately equipped aircraft by allowing pilots to request an altitude change when the existing separation minima do not allow aircraft to climb or descend through the altitude of a blocking aircraft.
3. CHANGE:

OLD

8-7-3. LONGITUDINAL SEPARATION
Title through c2
Add
Add
Add
Add
Add
Add

NEW

8-7-3. LONGITUDINAL SEPARATION
No Change
d. Clear an aircraft for an ADS-B In Trail Procedure (ITP) climb or descent provided the following conditions are satisfied:
1. The ITP climb or descent has been requested by the pilot;
2. The aircraft identification of each reference aircraft in the ITP request exactly matches the Item 7 - aircraft identification of the corresponding aircraft’s filed flight plan;
3. The reported ITP distance between the ITP aircraft and any reference aircraft is 15 NM or more;
4. Both the ITP aircraft and reference aircraft are either on:
   (a) same identical tracks and any turn at a waypoint shall be limited to less than 45 degrees;
   or
   (b) same tracks with no turns permitted that degrade required separation during the ITP.

NOTE–
Same identical tracks are where the angular difference is zero degrees.

5. No speed or route change clearance shall be issued to the ITP aircraft until the ITP climb or descent is completed;

6. The altitude difference between the ITP aircraft and any reference aircraft shall be 2000 ft or less;

7. No instruction to amend speed, altitude or route shall be issued to any reference aircraft until the ITP climb or descent is completed;

8. The maximum closing speed between the ITP aircraft and each reference aircraft shall be Mach 0.06; and

9. The ITP aircraft shall not be a reference aircraft in another ITP clearance.

NOTE–
ATOP is designed to check for the above criteria prior to allowing the minima to be provided.

Re–Letter e

OLD

8-8-3. LONGITUDINAL SEPARATION
Title through d3

NEW

8-8-3. LONGITUDINAL SEPARATION
No Change
e. Clear an aircraft for an ADS-B In Trail Procedure (ITP) climb or descent provided the following conditions are satisfied:

1. The ITP climb or descent has been requested by the pilot;

2. The aircraft identification of each reference aircraft in the ITP request exactly matches the Item 7 - aircraft identification of the corresponding aircraft’s filed flight plan;

3. The reported ITP distance between the ITP aircraft and any reference aircraft is 15 NM or more;

4. Both the ITP aircraft and reference aircraft are either on:
   a. same identical tracks and any turn at a waypoint shall be limited to less than 45 degrees; or
   b. same tracks with no turns permitted that degrade required separation during the ITP.

NOTE –
Same identical tracks are where the angular difference is zero degrees.

5. No speed or route change clearance shall be issued to the ITP aircraft until the ITP climb or descent is completed;

6. The altitude difference between the ITP aircraft and any reference aircraft shall be 2000 ft or less;

7. No instruction to amend speed, altitude or route shall be issued to any reference aircraft until the ITP climb or descent is completed;

8. The maximum closing speed between the ITP aircraft and each reference aircraft shall be Mach 0.06; and

9. The ITP aircraft shall not be a reference aircraft in another ITP clearance.

NOTE –
ATOP is designed to check for the above criteria prior to allowing the minima to be provided.

e

Reorder f

OLD
8-9-3. LONGITUDINAL SEPARATION
Title through a4
Add

NEW
8-9-3. LONGITUDINAL SEPARATION
No Change

b. Clear an aircraft for an ADS-B In Trail Procedure (ITP) climb or descent provided the following conditions are satisfied:
1. The ITP climb or descent has been requested by the pilot;

2. The aircraft identification of each reference aircraft in the ITP request exactly matches the Item 7 - aircraft identification of the corresponding aircraft's filed flight plan;

3. The reported ITP distance between the ITP aircraft and any reference aircraft is 15 NM or more;

4. Both the ITP aircraft and reference aircraft are either on:
   a. Same identical tracks and any turn at a waypoint shall be limited to less than 45 degrees; or
   b. Same tracks with no turns permitted that degrade required separation during the ITP.

   NOTE—Same identical tracks are where the angular difference is zero degrees.

5. No speed or route change clearance shall be issued to the ITP aircraft until the ITP climb or descent is completed;

6. The altitude difference between the ITP aircraft and any reference aircraft shall be 2000 ft or less;

7. No instruction to amend speed, altitude or route shall be issued to any reference aircraft until the ITP climb or descent is completed;

8. The maximum closing speed between the ITP aircraft and each reference aircraft shall be Mach 0.06; and

9. The ITP aircraft shall not be a reference aircraft in another ITP clearance.

   NOTE—ATOP is designed to check for the above criteria prior to allowing the minima to be provided.

Re–Letter c

NEW

8-10-3. LONGITUDINAL SEPARATION

b. Clear an aircraft for an ADS-B In Trail Procedure (ITP) climb or descent provided the following conditions are satisfied:

1. The ITP climb or descent has been requested by the pilot;
Add 2. The aircraft identification of each reference aircraft in the ITP request exactly matches the Item 7 - aircraft identification of the corresponding aircraft’s filed flight plan;

Add 3. The reported ITP distance between the ITP aircraft and any reference aircraft is 15 NM or more;

Add 4. Both the ITP aircraft and reference aircraft are either on:

Add (a) same identical tracks and any turn at a waypoint shall be limited to less than 45 degrees; or

Add (b) same tracks with no turns permitted that degrade required separation during the ITP.

Add NOTE–
Same identical tracks are where the angular difference is zero degrees.

Add 5. No speed or route change clearance shall be issued to the ITP aircraft until the ITP climb or descent is completed;

Add 6. The altitude difference between the ITP aircraft and any reference aircraft shall be 2000 ft or less;

Add 7. No instruction to amend speed, altitude or route shall be issued to any reference aircraft until the ITP climb or descent is completed;

Add 8. The maximum closing speed between the ITP aircraft and each reference aircraft shall be Mach 0.06; and

Add 9. The ITP aircraft shall not be a reference aircraft in another ITP clearance.

Add NOTE–
ATOP is designed to check for the above criteria prior to allowing the minima to be provided.

Re-Letter c

1. PARAGRAPH NUMBER AND TITLE: 9-1-2. SPECIAL HANDLING

2. BACKGROUND: A GENOT was issued on May 11, 2015, regarding the call sign addition FLIGHT VAL. Activities associated with FAA authorized non-FAA Service Providers conducting Flight Validation (FV) activities are similar to Flight Check activities. The Flight Procedure Implementation and Oversight Branch (AFS-460) felt that additional information should be added to FAA Order JO 7110.65, para 9-1-2 to increase Air Traffic awareness and understanding of the level of activity required.

3. CHANGE:

OLD 9-1-2. SPECIAL HANDLING

NEW 9-1-2. SPECIAL HANDLING
NOTE—
FAA flight inspection aircraft will file flight plans using the call sign “FLIGHT CHECK” during flight inspections or when inbound to conduct flight inspections. Flight plan remarks may indicate type NAVAID inspection to be accomplished; e.g. “FC OKC P.”

Add

2. Authorized non-FAA Service Providers conducting Flight Validation activities use the call sign “FLIGHT VAL.” Although these activities are similar to Flight Inspection activities, no additional priority is granted with this call sign.

1. PARAGRAPHER NUMBER AND TITLE: 10-2-13. MANPADS ALERT

2. BACKGROUND: Changes to reporting responsibilities and obsolete procedures have necessitated updates and clarifications to MANPADS paragraphs in FAA Order JO 7610.4, Special Operations; FAA Order JO 7210.3, Facility Operation and Administration; and FAA Order JO 7110.65, Air Traffic Control. The updates include requiring ATC facilities to report any MANPADS threat received to the the Domestic Events Network (DEN) Air Traffic Security Coordinator (ATSC).

3. CHANGE:

OLD
10-2-13. MANPADS ALERT


NEW
10-2-13. MANPADS ALERT

d. Report MANPADS threat/attack/post–event activity via the ATIS and/or controller–to–pilot transmissions until notified otherwise by the Domestic Events Network (DEN) Air Traffic Security Coordinator (ATSC).

REFERENCE—
FAAO JO 7110.65, Para 2–9–3, Content.
FAAO JO 7210.3, Para 2–1–9, Handling MANPADS Incidents.

REFERENCE—
FAAO JO 7110.65, Para 2–9–3, Content.
FAAO JO 7210.3, Para 2–1–9, Handling MANPADS Incidents.
FAAO JO 7610.4, Para 16-1-3, Responsibilities.

1. PARAGRAPH NUMBER AND TITLE: 11-1-1. DUTY RESPONSIBILITY
11-1-2. DUTIES AND RESPONSIBILITIES
11-1-3. TIME BASED FLOW MANAGEMENT (TBFM)

2. BACKGROUND: Traffic Management Advisor (TMA) was known as a comprehensive, automated method of planning efficient arrival trajectories from cruise altitude to the runway threshold. It increased situational awareness through its graphical displays, timelines, and load graphs. TMA trajectories have been optimized for each aircraft to permit an accurate estimated time of arrival at an airport and provide scheduled times of arrival (meter times) that optimize the flow of traffic into a terminal area. The next generation of TMA has begun. In this generation, all references to TMA have been changed, now referencing its new name: Time-Based Flow Management (TBFM).
3. CHANGE:

**OLD**

11–1–1. DUTY RESPONSIBILITY

*Title* through a

- Add

- Add

**NEW**

11–1–1. DUTY RESPONSIBILITY

No Change

b. TBFM must be used to the maximum extent feasible in preference to miles-in-trail initiatives.

**NOTE**—The benefits of TBFM are best realized through the coordinated effort of all facilities supporting Performance Based Navigation procedures or Traffic Management Initiatives (TMIs).

c. It is recognized that the ATCS is integral in the execution of the traffic management mission.

No Change

**OLD**

11–1–2. DUTIES AND RESPONSIBILITIES

*Title* through a

1. Ensure that an operational briefing is conducted at least once during the day and evening shifts. Participants must include, at a minimum, the STMCIC, Operations Supervisors (OS), Traffic Management Coordinator(s) (TMC), and other interested personnel as designated by facility management. Discussions at the meeting should include meteorological conditions (present and forecasted), staffing, equipment status, runways in use, AAR and traffic management initiatives (present and anticipated).

a2

3. Ensure that traffic management initiatives are carried out by Supervisory Traffic Management Coordinator—in—Charge (STMCIC).

a4 and a5

6. Ensure changes to restrictions based on the Restrictions Inventory and Evaluation are implemented in a timely manner.

b. FLM must:

b1

2. Coordinate with the TMU and ATCSs to develop appropriate traffic management initiatives for sectors and airports in their area of responsibility.

**NEW**

11–1–2. DUTIES AND RESPONSIBILITIES

No Change

1. Ensure an operational briefing is conducted at least once during the day and evening shifts. Participants must include, at a minimum, the STMCIC, Front Line Manager-in-Charge (FLMIC)/Controller-in-Charge (CIC) and other interested personnel as designated by facility management. Discussions at the meeting should include meteorological conditions (present and forecasted), staffing, equipment status, runways in use, *Airport Arrival Rate* (AAR)/Metering Parameters and Traffic Management Initiatives (TMIs) (present and anticipated).

No Change

3. Ensure that TMIs are carried out by personnel providing traffic management services.

No Change

6. Ensure changes to restrictions/metering are implemented in a timely manner.

b. FLM/CIC must:

No Change

2. Coordinate with the TMU and personnel providing air traffic services to develop appropriate TMIs for sectors and airports in their area of responsibility.
3. Continuously review traffic management initiatives affecting their area of responsibility and coordinate with TMU for extensions, revisions, or cancellations.

4. Ensure that traffic management initiatives are carried out by ATCSs.

b5 and b6

7. Ensure changes to restrictions based on the Restrictions Inventory and Evaluation are implemented in a timely manner.

c. ATCSs must:

1. Ensure that traffic management initiatives and programs are enforced within their area of responsibility. Traffic management initiatives and programs do not have priority over maintaining:

c1(a) and c1(b)

2. Keep the OS and TMU apprised of situations or circumstances that may cause congestion or delays.

3. Continuously review traffic management initiatives affecting their area of responsibility and coordinate with OS and TMU for extensions, revisions, or cancellations.

c4 through d

1. Support TMA operations and monitor TMA equipment to improve situational awareness for a system approach to traffic management initiatives.

d2 through e

1. Support TMA operations and monitor TMA equipment to improve situational awareness for a system approach to traffic management initiatives.

e2 through f

1. Monitor TMA equipment to improve situational awareness for a system approach to traffic management initiatives.

OLD

11–1–3. TIME BASED FLOW MANAGEMENT (TBFM)

During periods of metering, ATCS must:

a. Display TMA schedule information on the main display monitor (MDM).

b. Comply with TMA-generated metering times within +/- 1 minute.

NEW

11–1–3. TIME BASED FLOW MANAGEMENT (TBFM)

During periods of metering, personnel providing air traffic services must:

a. Display TBFM schedule information on the main display monitor (MDM).

b. Comply with TBFM-generated metering times within +/- 1 minute.
1. If TMA-generated metering time accuracy within +/- 1 minute cannot be used for specific aircraft due to significant jumps in the delay countdown timer (DCT), other traffic management initiatives may be used between those aircraft such as miles-in-trail (MIT) or minutes-in-trail (MINIT) to assist in delay absorption until stability resumes.

b2

c. When compliance is not possible, coordinate with FLM and adjacent facilities/sectors as appropriate.

NOTE—

TMA accuracy of generated metering times is predicated on several factors, including vectoring outside of TMA route conformance boundaries (route recovery logic), certain trajectory ground speed calculations, and when TMU resequences a specific flight or flight list. Caution should be used in these situations to minimize impact on surrounding sector traffic and complexity levels, flight efficiencies, and user preferences.

1. If TBFM-generated metering time accuracy within +/- 1 minute cannot be used for specific aircraft due to significant jumps in the delay countdown timer (DCT), other TMI systems may be used between those aircraft such as miles-in-trail (MIT) or minutes-in-trail (MINIT) to assist in delay absorption until stability resumes.

No Change

c. When compliance is not possible, coordinate with FLM/CIC, personnel providing traffic management services, and adjacent facilities/sectors as appropriate.

NOTE—

TBFM accuracy of generated metering times is predicated on several factors, including vectoring outside of TBFM route conformance boundaries (route recovery logic), certain trajectory ground speed calculations, and when TMU resequences a specific flight or flight list. Caution should be used in these situations to minimize impact on surrounding sector traffic and complexity levels, flight efficiencies, and user preferences.

1. PARAGRAPHS NUMBER AND TITLE: 13-1-9. ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION

2. BACKGROUND: In the Host Computer System, computer applied preferential routes (PARs, PDRs, PDARs) were developed to provide Air Traffic Control (ATC) directed preferred and/or mandated routes. The need for a controller to provide a modified clearance to an aircraft was provided by a “red route” or later a “highlighted route” on a flight strip. Only a single sector received this indication and it was expected the controller would issue the clearance or provide some alternative. En Route Decision Support Tool (EDST previously URET) introduced the concept of blue Embedded Route Text (ERT previously HERT) coding as a replacement for the red/highlighted indication on flight strips, and is integrated in En Route Automation Modernization (ERAM). Embedded Route Text (ERT) coding differs from previous method in that the ERT coding will show at every sector in the facility until the coding is acknowledged. However depending on facility settings, flight plans sent to other facilities could show the route merged; i.e., assumes that the ERT route has been issued. To function properly with the ERAM design, the acknowledgement of the ERT coding needs to be done in a timely manner. This is especially true to support terminal ARTS/STARS and FDIO processing.

3. CHANGE:

| OLD | 13-1-9. ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION Title through e |
| NEW | 13-1-9. ACKNOWLEDGEMENT OF AUTOMATED NOTIFICATION No Change |
f. Send/acknowledge Host Embedded Route Text (HERT) coding only after the appropriate clearance has been issued to the pilot or otherwise coordinated. Do not send/acknowledge HERT unless the sector has track control for the flight or it has been otherwise coordinated.

f. The first sector which displays Embedded Route Text (ERT) coding must issue and send/acknowledge the route prior to initiating a hand-off unless verbally coordinated or as specified in appropriate facility directives. Do not send/acknowledge ERT coding unless the sector has track control for the flight or it has been otherwise coordinated.

g. Remove ATC Preferred Route (APR) coding only after the route has been checked and any required action has been completed. Do not remove APR coding unless the sector has track control or it has been otherwise coordinated.

The first sector which displays ERT coding must issue and send/acknowledge the route prior to initiating a hand-off unless verbally coordinated or as specified in appropriate facility directives. Do not send/acknowledge ERT coding unless the sector has track control for the flight or it has been otherwise coordinated.

g. Remove ATC Preferred Route (APR) coding only after the route has been checked and any required action has been completed. Do not remove APR coding unless the sector has track control or it has been otherwise coordinated.

The first sector which displays ERT coding must issue and send/acknowledge the route prior to initiating a hand-off unless verbally coordinated or as specified in appropriate facility directives. Do not send/acknowledge ERT coding unless the sector has track control for the flight or it has been otherwise coordinated.

NOTE:
If coding is prematurely removed and the control of the aircraft is transferred before completing the appropriate action, the next sector may not receive the necessary APR notification.

Delete

1. PARAGRAPH NUMBER AND TITLE:
Appendix A - Aircraft Information Fixed-Wing Aircraft
Appendix B - Aircraft Information Helicopters/Rotorcrafts
Appendix C - Aircraft Information Specific Amateur–Built/Experimental Aircraft

2. BACKGROUND: The International Civil Aviation Organization (ICAO) formulates aircraft type designators for the world’s aircraft that will most likely receive air traffic services. ICAO provides this information through ICAO Document 8643, Aircraft Type Designators, which is updated at least annually. FAA supplements the ICAO information and publishes it through two documents: FAA Order JO 7340.2, Conventions, and FAA Order JO 7110.65, Air Traffic Control. These FAA documents didn’t contain all the aircraft listed by ICAO and the FAA documents contained dissimilar information.

3. CHANGE:

OLD
Appendix A - Aircraft Information Fixed-Wing Aircraft

NEW
Delete Entire Appendix

OLD
Appendix B - Aircraft Information Helicopters/ Rotorcrafts

NEW
Delete Entire Appendix

OLD
Appendix C - Aircraft Information Specific Amateur–Built/Experimental Aircraft

NEW
Delete Entire Appendix

OLD
Appendix D – Standard Operating Practice (SOP) for the Transfer of Position Responsibility

NEW
Appendix A – Standard Operating Practice (SOP) for the Transfer of Position Responsibility