

Explanation of Changes Change 2

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

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

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

This change adds language to clarify submission guidelines for changes to FAA Order JO 7110.65. It changes “Cutoff date for Submission” to “Cutoff date for Completion” to clarify that even after changes are submitted to the correspondence mailbox, several months of coordination are often still required before they are completed and submitted internally for publication. It also adds a Note referencing FAA Order JO 7000.5, Procedures for Submitting Changes to Air Traffic Control Publications.

b. 1-2-6. ABBREVIATIONS 5-9-7. SIMULTANEOUS INDEPENDENT APPROACHES- DUAL & TRIPLE

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

This change incorporates Established on RNP into simultaneous independent approaches, for both dual and triple operations. This change also incorporates Track-to-Fix legs into the existing widely-spaced criteria. This change cancels and incorporates Notice JO 7110.748, effective May 7, 2018.

c. 2-1-1. ATC SERVICE

This change incorporates the ATO policy that ATC services are not being provided to model aircraft or to any UAS operating at or below 400ft AGL. This change cancels and incorporates Notice JO 7110.746, effective April 16, 2018.

d. 2-1-13. FORMATION FLIGHTS

This change outlines controller responsibilities regarding formation flight join-up and clarifies

controller responsibility during formation flight break-up. The language regarding pilot responsibilities during formation flight was also changed to language currently published in FAA Order JO 7610.4, the Pilot/Controller Glossary (P/CG), and in ICAO Annex 2. This change cancels and incorporates Notice JO 7110.750, effective May 3, 2018.

e. 2-9-2. OPERATING PROCEDURES

This change clarifies the requirements for ensuring pilots receive the most current pertinent Automatic Terminal Information Service (ATIS) information. The change adds clarity to the language regarding requirements to inform pilots of pertinent conditions that may impact operations. It places emphasis on broadcasting the message’s change in conditions, when known, along with the ATIS code. This change helps reiterate the need to provide pilots with information relevant to conditions that could have an adverse effect on operations in and around the airport/terminal area.

f. 4-5-2. FLIGHT DIRECTION

8-1-4. TYPES OF SEPARATION

8-9-2. VERTICAL SEPARATION

8-9-4. LATERAL SEPARATION

8-9-5. COMPOSITE SEPARATION MIN-IMA

8-9-6. COMPOSITE SEPARATION ALTITUDE ASSIGNMENT

8-9-7. COMPOSITE SEPARATION APPLICATION

Composite Separation is not used in Offshore/Oceanic airspace for which the FAA exercises control. Research also reveals that the Japan Civil Aviation Bureau’s (JCAB) implementation of the Trajectorized Oceanic Traffic Data Processing System will not support composite separation; therefore, Air Traffic Procedures has proposed the deletion of all composite separation references from FAA Order JO 7110.65.

g. 4-5-7. ALTITUDE INFORMATION

This change clarifies that after receiving a descend via clearance, aircraft navigating a published route inbound to a STAR can begin vertical navigation (VNAV) prior to being established on the procedure. Guidance and Notes were revised or reordered to achieve clarity and brevity.

h. 5-5-2. TARGET SEPARATION

This change corrects the reference from “digitized targets” to “digital targets” on “digital” displays.

i. 5-5-4. MINIMA

This change expands 3-nautical mile (NM) operations in Microprocessor En Route Automated Radar Tracking System (MEARTS) facilities when using ASR-9 with Mode S or ASR-11 MSSR Beacon as the preferred sensor site from 40 NM to 60 NM and raises the ceiling up to FL 230.

j. 5-5-9. SEPARATION FROM OBSTRUCTIONS

This change adds a provision that allows the use of 3-miles radar separation from obstructions when

using a single sensor ASR-9 with Mode S or a single sensor ASR-11 with its MSSR beacon system when less than 60 miles from the antenna, or when operating in a FUSION environment, for a FUSION target symbol – 3 NM separation, and when ISR is displayed – 5 NM separation.

k. 5-6-2. METHODS

This change corrects a phraseology example, matching it to the prescribed phraseology.

l. Entire publication

Editorial changes include a fix to some font sizes, fixing a reference error in paragraph 5-8-5 and 3-9-10, a universal change for “interfacility” and “intrafacility,” and a clarification of “Alaska Only” for paragraph 4-7-6. Also fixed a formatting issue with Phraseology in 7-4-2 and 7-4-3. In 5-9-9, an incorrect word was replaced. Additional editorial/format changes were made where necessary. Revision bars were not used because of the insignificant nature of these changes.

BRIEFING GUIDE

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

Table of Contents

Paragraph Number	Title	Page
1-1-6	SUBMISSION CUTOFF AND EFFECTIVE DATES	BG-3
1-1-8	RECOMMENDATIONS FOR PROCEDURAL CHANGES	BG-3
1-2-6	ABBREVIATIONS	BG-4
2-1-1	ATC SERVICE	BG-7
2-1-13	FORMATION FLIGHTS	BG-7
2-9-2	OPERATING PROCEDURES	BG-9
4-5-2	FLIGHT DIRECTION	BG-11
4-5-7	ALTITUDE INFORMATION	BG-16
5-5-2	TARGET SEPARATION	BG-20
5-5-4	MINIMA	BG-20
5-5-9	SEPARATION FROM OBSTRUCTIONS	BG-21
5-6-2	METHODS	BG-21
5-9-7	SIMULTANEOUS INDEPENDENT APPROACHES- DUAL & TRIPLE ...	BG-4
5-9-10	SIMULTANEOUS INDEPENDENT APPROACHES TO WIDELY-SPACED PARALLEL RUNWAYS WITHOUT FINAL MONITORS	BG-4
8-1-4	TYPES OF SEPARATION	BG-11
8-9-2	VERTICAL SEPARATION	BG-11
8-9-4	LATERAL SEPARATION	BG-11
8-9-5	COMPOSITE SEPARATION MINIMA	BG-11
8-9-6	COMPOSITE SEPARATION ALTITUDE ASSIGNMENT	BG-11
8-9-7	COMPOSITE SEPARATION APPLICATION	BG-11

1. PARAGRAPH NUMBER AND TITLE:

1-1-6. SUBMISSION CUTOFF AND EFFECTIVE DATES

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

2. BACKGROUND: FAA change-submitting organizations are unclear over the precise meaning of the “Cutoff Date for Submission” when it comes to submitting changes to cyclical orders and other publications. Many organizations assumed that changes could be submitted to the correspondence mailbox on, or close to, the Cutoff Date for Submission and be incorporated into the next publication effective date. In reality, submitted changes require additional time for coordination prior to the cutoff date.

3. CHANGE:

OLD

1-1-6. SUBMISSION CUTOFF AND EFFECTIVE DATES

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

Add

NEW

1-1-6. EFFECTIVE DATES AND SUBMISSIONS FOR CHANGES

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

b. The “Cutoff Date for Completion” in the table below refers to the deadline for a proposed change to be fully coordinated and signed. Change initiators must submit their proposed changes well in advance of this cutoff date to meet the publication effective date. The process to review and coordinate changes often takes several months after the change is initially submitted.

OLD

TBL 1-1-1

Publication Schedule

Basic or Change	Cutoff Date for <u>Submission</u>	Effective Date of <u>Publication</u>
JO 7110.65X	4/27/17	10/12/17
Change 1	10/12/17	3/29/18
Change 2	3/29/18	9/13/18
Change 3	9/13/18	2/28/19
JO 7110.65Y	2/28/19	8/15/19

NEW

TBL 1-1-1

Publication Schedule

Basic or Change	Cutoff Date for <u>Completion</u>	Effective Date of Publication
JO 7110.65X	4/27/17	10/12/17
Change 1	10/12/17	3/29/18
Change 2	3/29/18	9/13/18
Change 3	9/13/18	2/28/19
JO 7110.65Y	2/28/19	8/15/19

OLD

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

Title through b

c. Proposed changes must be submitted, electronically, to the Air Traffic Procedures Correspondence Mailbox at 9-AJV-8-HQ-Correspondence@faa.gov. The submission should include a description of the recommended change, and the proposed language to be used in the order.

Add

NEW

1-1-8. RECOMMENDATIONS FOR PROCEDURAL CHANGES

No Change

No Change

NOTE-

For details on the submission process as well as additional AJV-8 processing responsibilities, please see FAA Order JO 7000.5 Procedures for Submitting Changes to Air Traffic Control Publications.

1. PARAGRAPH NUMBER AND TITLE:

1-2-6. ABBREVIATIONS

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

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

2. BACKGROUND: The use of Required Navigation Performance (RNP) approach transitions to have aircraft join the final approach course is becoming increasingly common throughout the National Airspace System. Established on RNP (EoR) operations with Radius-to-Fix (RF) legs are approved to widely-spaced parallel runways (more than 9,000 feet centerline spacing) without monitors. A Safety Risk Management Panel completed the required safety risk analysis for conducting RF/Track-to-Fix (TF) EoR operations to dual parallel runways with centerline spacing of 3,600 feet or greater, triple parallel runways with centerline 3,900 feet or greater, and adding TF legs to the widely-spaced runway criteria. Based on the safety risk analysis, EoR can be incorporated into simultaneous instrument approaches to parallel runways during dual and triple operations.

3. CHANGE:

OLD
1-2-6. ABBREVIATIONS

Add
Add
Add

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

TERMINAL

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

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

Add
Add

NOTE-

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

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

Add

Add

a2 through a3(c)

Add

NEW

1-2-6. ABBREVIATIONS

EoR **Established on RNP**
RF **Radius-to-Fix**
TF **Track-to-Fix**

NEW

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

No Change
No Change

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

(a) during turn-on to parallel final approach, or

(b) until aircraft are established on a published segment of an approach authorized for Established on RNP (EoR) operations.

Delete

Delete

NOTE-

Aircraft are considered EoR on an initial or intermediate segment of an instrument approach authorized for EoR operations after the approach clearance has been issued, read back by the pilot and the aircraft is observed on the published procedure (lateral and vertical path, and within any procedure specified speed restriction), and is conducting a simultaneous independent parallel approach with an authorized simultaneous instrument approach to a parallel runway.

REFERENCE-

FAA Order JO 7210.3, Para 10-4-6, Simultaneous Independent Approaches

P/CG Term - Required Navigation Performance (RNP)

P/CG Term - Established on RNP Concept

No Change

(d) Parallel approaches to airports where the airport field elevation is more than 2,000 feet MSL require the use of the final monitor aid (FMA) system and an approved FAA aeronautical study.

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

No Change

Add

NOTE-

Except when conducting an EoR operation, no two aircraft will be assigned the same altitude during turn-on to final. All three aircraft will be assigned altitudes which differ by a minimum of 1,000 feet. Example: 3,000, 4,000, 5,000; 7,000, 8,000, 9,000.

b through c6 *NOTE*

No Change

Add

7. Communications transfer to the tower controller's frequency must be completed prior to losing 1,000 feet vertical or 3 miles radar separation between aircraft.

OLD

NEW

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

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

Title through b1(a)

No Change

(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.

(b) conducting **EoR operations, until aircraft are established on a published segment of an approach authorized for EoR operations.**

Add

NOTE-

Aircraft are considered EoR on an initial or intermediate segment of an instrument approach authorized for EoR operations after the approach clearance has been issued, read back by the pilot and the aircraft is observed on the published procedure (lateral and vertical path, and within any procedure specified speed restriction), and is conducting a simultaneous independent parallel approach with an authorized simultaneous instrument approach to a parallel runway.

REFERENCE-
FAA Order JO 7210.3, Para 10-4-7, Simultaneous Widely-Spaced Parallel Operations

REFERENCE-
FAA Order JO 7210.3, Para 10-4-7, Simultaneous Widely-Spaced Parallel Operations
P/CG Term - Required Navigation Performance (RNP)
P/CG Term - Established on RNP Concept

1. PARAGRAPH NUMBER AND TITLE: 2-1-1. ATC SERVICE

2. BACKGROUND: Air Traffic Control (ATC) facilities are not equipped to track or visually observe an Unmanned Aircraft System (UAS) operating at or below 400ft AGL. Currently, ATC services are not being provided to 14 CFR Part 101 and PART 107 operators. There are no requirements for 14 CFR Part 101 and Part 107 operators to maintain two-way radio communication with ATC. 14 CFR Part 101 and Part 107 require the UAS to remain clear of all other aircraft. In addition, 14 CFR Part 101 and Part 107 require UAS operations to be conducted in a manner that would not endanger the safety of the NAS. The Air Traffic Organization (ATO) is extending that policy to include any UAS operating at or below 400ft AGL.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>2-1-1. ATC SERVICE</p> <p style="text-align: center;">Title through d3 REFERENCE</p> <p>e. Air Traffic Control services are not provided for model aircraft operating in the NAS.</p> <p><i><u>NOTE-</u></i> <i><u>This does not relieve model aircraft operators from the requirements of section 336 of Public Law 112-95 and 14 CFR Part 101 including the notification requirement.</u></i></p> <p><i><u>NOTE-</u></i> <i><u>This does not prohibit ATC from providing services to civil and public UAS.</u></i></p> <p style="text-align: center;">Add</p>	<p>2-1-1. ATC SERVICE</p> <p style="text-align: center;">No Change</p> <p>e. Air Traffic Control services are not provided for model aircraft operating in the NAS <u>or to any UAS operating in the NAS at or below 400ft AGL.</u></p> <p style="text-align: center;">Delete</p> <p><i><u>NOTE-</u></i> <u>1. This does not prohibit ATC from providing services to civil and public UAS.</u></p> <p><u>2. The provisions of this paragraph apply to model aircraft operating at any altitude. For all other UAS, this paragraph applies only to those UAS operating entirely at or below 400ft AGL.</u></p>

1. PARAGRAPH NUMBER AND TITLE: 2-1-13. FORMATION FLIGHTS

2. BACKGROUND: Since the original publication of the Air Traffic Control Handbook, 7110.65, on January 1, 1976, there have only been two updates to the formation flight paragraph. The first occurred on April 1, 1979, in FAA Order 7110.65A, Change 5, when language was removed from the main paragraph and added back as two separate notes. The second change was the addition of the RVSM information on August 4, 2005, in FAA Order 7110.65P, Change 3. Over the years the exact meaning of the language in this paragraph has caused confusion. In addition to formal interpretations being issued in 1995, 2001, 2014, and 2017, and an official clarification in 1998, there have been numerous other requests for clarification and guidance from facilities and the service centers regarding different aspects of the paragraph.

3. CHANGE:

OLD

2-1-13. FORMATION FLIGHTS

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

NEW

2-1-13. FORMATION FLIGHTS

Control formation flights as a single aircraft. **Separation responsibility between aircraft within the formation rests with the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control during join-up and breakaway.**

Add

REFERENCE-
P/CG Term - Formation Flight
FAA Order JO 7610.4, Chapter 12, Section 11. Formation Flight
ICAO Annex 2, 3.1.8 Formation Flights

Add

a. Support formation flight join-up for two aircraft when all of the following occur:

Add

1. Requested by any participating pilot.

Add

2. All participating pilots concur.

Add

3. Either of the participating pilots reports the other/s in sight.

Add

EXAMPLE-
“ROOK01 has EAGLE03 in sight, request formation join-up with EAGLE03 at flight level two zero zero. EAGLE03 will be the lead.”
“EAGLE03 verify requesting flight join-up with ROOK01.”
If affirmative:
“ROOK01 climb and maintain flight level two zero zero. Report (advise) when formation join-up is complete.”

Add

b. If multiple single aircraft request to join-up, multiple formations are joining as one, or aircraft are joining an established formation, obtain confirmation of required items listed in subparagraph 2-1-13a, from the lead aircraft.

Add

REFERENCE-
P/CG Term - Formation Flight

Add

c. After join-up, aircraft beacon code assignment will be determined by formation type.

Add

1. For a standard formation only the aircraft acting as the lead will squawk an ATC assigned beacon code. Ensure all other aircraft squawk standby.

Add

2. For a nonstandard formation, each aircraft should squawk an ATC assigned beacon code. Controller discretion allows aircraft in a nonstandard formation to squawk standby if operationally advantageous.

Add REFERENCE-
FAA Order JO 7610.4, Paragraph 12-11-6, Nonstandard Formation Tactics, subparagraph b3.

Add EXAMPLE-
“N123JP squawk standby.”
Or
“N123SP have N123JP squawk standby.”

Add **d. When formation break-up is requested, issue control instructions and/or clearances which will result in approved separation through the lead or directly to the requesting aircraft in the formation.**

Add EXAMPLE-
“N5871S requesting flight break-up with N731K. N731K is changing destination to PHL.”
“N731K squawk 5432, turn right, fly heading zero-seven-zero.”

“Center, BAMA21. BAMA23 is requesting to RTB.”
“BAMA21 have BAMA23 squawk 5544, descend and maintain flight level one-niner-zero and change to my frequency.”

“Center, BAMA21. BAMA23 is requesting to RTB.”
“BAMA23 squawk 5544. BAMA23 Radar contact (position if required). Cleared to SSC via direct. Descend and maintain flight level one-niner-zero.”

NOTE-

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

Delete

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

Delete

b

Re-letter as **e**.

1. PARAGRAPH NUMBER AND TITLE: 2-9-2. OPERATING PROCEDURE

2. BACKGROUND: Guidance in FAA Order JO 7110.65 regarding ensuring pilots receive the most current pertinent Automatic Terminal Information Service (ATIS) information has caused confusion and appears contradictory at times. Over the past several years there have been two interpretations issued on this topic. In 2014, the National Transportation Safety Board (NTSB) issued a recommendation related to “pertinent remarks.” This resulted in the issuance of a Mandatory Briefing Item to address the NTSB’s recommendations. Additionally, an Air Traffic Safety Action Program Information Request was generated as a result of questions regarding ATIS operating procedures.

3. CHANGE:

OLD

2-9-2. OPERATING PROCECURES

Title through b *EXAMPLE*

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

Add

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

EXAMPLE-
“Verify you have information ALPHA.”

“Information BRAVO now current, visibility three miles.”

“Information CHARLIE now current, Ceiling 1500 Broken.”

“Information CHARLIE now current, advise when you have CHARLIE.”

Add

NEW

2-9-2. OPERATING PROCECURES

No Change

c. **Controllers must ensure that pilots receive the most current pertinent information by taking the following actions, as applicable:**

1. When a pilot does not state the appropriate ATIS code on initial contact, ask the pilot to confirm receipt of the current ATIS information.

EXAMPLE-
“Verify you have information CHARLIE.”
“Information CHARLIE current. Advise when you have CHARLIE.”

2. When a pilot is unable to receive the ATIS, issue the current weather, runway in use, approach/departure information, pertinent NOTAMs, and airport conditions.

EXAMPLE-
“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. Braking Action advisories are in effect.”

d. **Advise aircraft of changes to the ATIS code by broadcasting the change on all appropriate frequencies. The broadcast must include changes to pertinent operational information, when known, that necessitated the ATIS change.**

EXAMPLE-
“Attention all aircraft, information ALPHA current.”

“Attention all aircraft, information BRAVO current. MICROBURST advisories in effect.”

“Attention all aircraft, information CHARLIE current. Numerous flocks of ducks in the immediate vicinity of (name) airport, altitude unknown.”

REFERENCE-
FAA Order JO 7110.65, Para 2-9-3, Content

Add

NOTE-

1. No additional acknowledgement is required when a controller broadcasts information subsequent to the pilot's initial acknowledgement of the ATIS. Requiring each aircraft to acknowledge receipt of pertinent changes (broadcast) after initial confirmation of the ATIS could significantly impact workload.

Add

2. Pertinent conditions are those that have a clear decisive relevance to the safety of air traffic. As noted in Paragraph 2-1-2, Duty Priority, there are many variables involved that make it virtually impossible to develop a standard list of changes that are classified as relevant to every conceivable situation. Each set of circumstances must be evaluated on its own merit, and when more than one action is required, controllers must exercise their best judgment based on the facts and circumstances known to them.

1. PARAGRAPH NUMBER AND TITLE:

4-5-2. FLIGHT DIRECTION

8-1-4. TYPES OF SEPARATION

8-9-2. VERTICAL SEPARATION

8-9-4. LATERAL SEPARATION

8-9-5. COMPOSITE SEPARATION

8-9-6. COMPOSITE SEPARATION ALTITUDE ASSIGNMENT

8-9-7. COMPOSITE SEPARATION APPLICATION

2. BACKGROUND: FAA Order JO 7110.65, Air Traffic Control, Chapter 8, Oceanic/Offshore Procedures, outlines air traffic control services in oceanic controlled airspace. Section 9 of this chapter discusses composite separation, which is defined in this order as “a method of separating aircraft in a composite route system where, by management of route and altitude assignments, a combination of half the lateral minimum specified for the area concerned and half the vertical minimum is applied.” According to Paragraph 8-9-5, ATC provides composite separation within the Central East Pacific (CEP), the North Pacific composite route systems, and where designated by facility directive in the Pacific Organized Track System at and above flight level 290 as (a) 1,000 feet vertical separation and (b) 50 nautical miles lateral separation. Paragraphs 8-9-6 and 8-9-7 provide greater detail on composite separation altitude assignments and application. Similar references to composite separation and its use can be found in International Civil Aviation Organization (ICAO) Document 7030, Regional Supplementary Procedures. A Safety and Technical Training (AJI) Safety Engineering Team, from AJI-314, facilitated a Safety Risk Management (SRM) panel on behalf of the Oceanic/Offshore Standards and Procedures Group (AJV-84). The SRM panel identified and assessed potential safety risks associated with this change. Additionally, AJV-84 intends to follow a similar proposal for ICAO Doc 7030.

3. CHANGE:

OLD
TBL 4-5-1
Altitude Assignment

Aircraft Operating	On course degrees magnetic	Assign	Examples
Below 3,000 feet above surface	Any course	Any altitude	
At and below FL 410	0 through 179	Odd cardinal altitude or flight levels at intervals of 2,000 feet	3,000, 5,000, FL 310, FL 330
	180 through 359	Even cardinal altitude or flight levels at intervals of 2,000 feet	4,000, 6,000, FL 320, FL 340
Above FL 410	0 through 179	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 450	FL 450, FL 490, FL 530
	180 through 359	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 430	FL 430, FL 470, FL 510
One way routes (<u>except in composite systems</u>)	Any course	Any cardinal altitude or flight level below FL 410 or any odd cardinal flight level above FL 410	FL 270, FL 280, FL 290, FL 300, FL 310, FL 410, FL 430, FL 450
Within an ALTRV	Any course	Any altitude or flight level	
<u>In transition to/from or within Oceanic airspace where composite separation is authorized</u>	<u>Any course</u>	<u>Any odd or even cardinal flight level including those above FL 290</u>	<u>FL 280, FL 290, FL 300, FL 310, FL 320, FL 330, FL 340</u>
In aerial refueling tracks and anchors	Any course	Altitude blocks as requested. Any altitude or flight level	050B080, FL 180B220, FL 280B310

NEW
TBL 4-5-1
Altitude Assignment

Aircraft Operating	On course degrees magnetic	Assign	Examples
Below 3,000 feet above surface	Any course	Any altitude	
At and below FL 410	0 through 179	Odd cardinal altitude or flight levels at intervals of 2,000 feet	3,000, 5,000, FL 310, FL 330
	180 through 359	Even cardinal altitude or flight levels at intervals of 2,000 feet	4,000, 6,000, FL 320, FL 340
Above FL 410	0 through 179	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 450	FL 450, FL 490, FL 530
	180 through 359	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 430	FL 430, FL 470, FL 510
One way routes	Any course	Any cardinal altitude or flight level below FL 410 or any odd cardinal flight level above FL 410	FL 270, FL 280, FL 290, FL 300, FL 310, FL 410, FL 430, FL 450
Within an ALTRV	Any course	Any altitude or flight level	
In aerial refueling tracks and anchors	Any course	Altitude blocks as requested. Any altitude or flight level	050B080, FL 180B220, FL 280B310

OLD
8-1-4. TYPES OF SEPARATION
Title through b2
c. Composite separation:
d

NEW
8-1-4. TYPES OF SEPARATION
 No Change
 Delete
 Re-letter as c.

OLD

8-9-2. VERTICAL SEPARATION

Provide vertical separation in accordance with Chapter 4, IFR, Section 5, Altitude Assignment and Verification, except when aircraft operate within airspace where composite separation and procedures are authorized, apply the minima specified in para 8-9-5, Composite Separation Minima.

OLD

8-9-4. LATERAL SEPARATION

Title through b

c. When aircraft operate within airspace where composite separation and procedures are authorized, apply the minimum specified in para 8-9-5, Composite Separation Minima.

d. Apply 100 NM to aircraft not covered by subparas a, b or c.

OLD

8-9-5. COMPOSITE SEPARATION MINIMA

Provide composite separation within the Central East Pacific (CEP) and North Pacific (NOPAC) composite route systems and where designated by facility directive in the Pacific Organized Track System (PACOTS) at and above FL 290 as follows:

a. 1,000 feet vertical separation; and

b. 50 NM lateral separation.

OLD

8-9-6. COMPOSITE SEPARATION ALTITUDE ASSIGNMENT

a. Aircraft operating at or above FL 300 in a composite route system may be cleared at even flight levels. Additionally, aircraft may be cleared at even flight levels while joining, crossing, or leaving a composite route system provided such aircraft leaving the system are cleared to an appropriate odd cardinal flight level when noncomposite vertical or lateral separation is achieved.

b. Aircraft (operating at or above FL 300) leaving a composite route system at an even cardinal flight level do not have to be assigned an odd cardinal flight level provided:

1. The aircraft is being provided radar service; and

NEW

8-9-2. VERTICAL SEPARATION

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

NEW

8-9-4. LATERAL SEPARATION

No Change

Delete

c. Apply 100 NM to aircraft not covered by subparagraphs a and b.

NEW

Delete

Delete

Delete

Delete

NEW

Delete

Delete

Delete

Delete

2. The aircraft will be cleared for descent and approach to an airport within the facility’s domestic FIR; and

Delete

3. There is an operational advantage.

Delete

c. Aircraft operating on unidirectional routes or traffic flows may be assigned altitudes other than the appropriate altitude for direction of flight provided that 2,000 feet vertical separation is maintained between aircraft operating on the same route.

Delete

OLD

NEW

8-9-7. COMPOSITE SEPARATION APPLICATION

Delete

Provide composite separation in the CEP and the North Pacific (NOPAC) composite route systems and where designated by facility directive in the Pacific Organized Track System (PACOTS) as follows:

Delete

a. Clear an aircraft to join an outer route of the composite route system at other than the normal entry point provided:

Delete

1. Longitudinal or noncomposite vertical separation exists between that aircraft and any other aircraft on that route; and

Delete

2. Composite separation exists between that aircraft and any other aircraft on the next adjacent route.

Delete

b. Clear an aircraft to leave an outer route of the composite route system at other than the normal exit point provided its course diverges so that lateral spacing from the route system increases until noncomposite separation exists between that aircraft and any other aircraft in the composite route system.

Delete

c. Clear an aircraft to change from one route to an adjacent route within the composite route system provided:

Delete

1. Longitudinal or noncomposite vertical separation is maintained between that aircraft and any other aircraft on the route being vacated until that aircraft is established on the route to which it is proceeding; and

Delete

2. Longitudinal or noncomposite vertical separation exists between that aircraft and any other aircraft on the route to which that aircraft is proceeding; and

Delete

3. Composite separation exists between that aircraft and any other aircraft on the next adjacent route. Delete

d. Clear an aircraft to cross the composite route system provided longitudinal or noncomposite vertical or lateral separation exists between that aircraft and any other aircraft in the composite route system. Delete

e. Clear aircraft to transition to or from the composite route system from an Oceanic Transition Route (OTR) provided: Delete

1. The OTR is charted on aeronautical charts; and Delete

2. Composite separation is maintained between that aircraft and any other aircraft within the composite route system; and Delete

NOTE- Delete
An aircraft is within the confines of a composite route system when the aircraft joins or crosses the outer route of the composite route system or passes a composite route entry point.

3. Composite separation is maintained between that aircraft and any other aircraft on adjacent OTRs. Delete

f. Clear an aircraft to change altitude on a route if noncomposite separation exists between that aircraft and others operating on that route regardless of other aircraft operating on adjacent routes in the system. Pilot’s discretion climbs and descents are not authorized when applying composite separation. Delete

NOTE- Delete
Although composite separation is not applied between aircraft on different tracks at FL 280 and FL 290, this paragraph applies to climbs and descents between FL 280 and altitudes within the composite altitude stratum (FL 300 and above).

8-9-8

Renumber as **8-9-5.**

1. PARAGRAPH NUMBER AND TITLE: 4-5-7. ALTITUDE INFORMATION

2. BACKGROUND: Users and controllers agree that after a climb or descend via clearance is issued, vertical navigation (VNAV) can begin anytime at the discretion of the pilot. A recent inquiry by a foreign air carrier uncovered that while the guidance regarding VNAV for aircraft established on a STAR is clear, the guidance is not clear for aircraft navigating a published route inbound to but not yet established on a procedure.

3. CHANGE:

OLD

4-5-7. ALTITUDE INFORMATION

Title through g

h. Instructions to vertically navigate on a STARs/SIDs with published crossing restrictions.

Add

Add

Add

PHRASEOLOGY-
DESCEND VIA (STAR name and number).

TERMINAL: *DESCEND VIA (STAR name and number and runway number).*

CLIMB VIA (SID name and number).

EXAMPLE-
“Descend via the Eagul Five arrival.”

“Cross Gramm at or above flight level one eight zero, then descend via the Riivr Two arrival.”

TERMINAL: *“Descend via the Lendy One Arrival, Runway 22 left.”*

“Climb via the Dawgs Four Departure.”

NOTE-
When cleared for STARs that contain published speed restrictions, the pilot must comply with those speed restrictions independent of any descend via clearance. Clearance to “descend via” authorizes pilots:

1. *To descend at pilot discretion to meet published restrictions and laterally navigate on a STAR. Pilots navigating on a STAR must maintain the last assigned altitude until receiving clearance to descend via. Once departing an altitude the pilot may not return to that altitude without an ATC clearance.*

NEW

4-5-7. ALTITUDE INFORMATION

No Change

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

1. When established on the SID/STAR.

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

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

PHRASEOLOGY-
DESCEND VIA (STAR name and number).

DESCEND VIA (STAR name and number and runway transition number)

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

CLIMB VIA (SID name and number).

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

EXAMPLE-
“Descend via the Eagul Five arrival.”

“Descend via the Wynde Eight Arrival, Runway 28 right transition.”

“Descend via the Lendy One Arrival, Runway 22 left.”

“Climb via the Dawgs Four Departure.”

“Proceed direct Denis, cross Denis at or above flight level two zero zero, then descend via the Mmell One arrival.”

NOTE-
Pilots must comply with all published speed restrictions on SIDs/STARs, independent of a climb via or descend via clearance.
Clearance to “descend via” authorizes pilots:

1. *To descend at pilot discretion to meet published restrictions on a STAR. Pilots navigating on a STAR must maintain the last assigned altitude until receiving clearance to descend via. **Once leaving an altitude, the pilot may not return to that altitude without an ATC clearance.***

2. When cleared to a waypoint depicted on a STAR, to descend from a previously assigned altitude at pilot's discretion to the altitude depicted for that waypoint. ATC assigned altitudes must ensure obstacle clearance.

3. Once established on the depicted arrival, to descend and to meet all published or assigned altitude and/or speed restrictions. Where speed restrictions are published at the waypoint/fix pilots will begin slowing to comply with the restrictions prior to reaching the waypoint/fix.

NOTE-

When cleared for SIDs that contain published speed restrictions, the pilot must comply with those speed restrictions independent of any "climb via" clearance. Clearance to "climb via" authorizes pilots:

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

REFERENCE-

FAA Order JO 7110.65, Para 4-4-2, Route Structure Transitions
 FAA Order JO 7110.65, Para 4-5-6, Minimum En Route Altitudes
 FAA Order JO 7110.65, Para 5-5-9, Separation From Obstructions
 PCG, Climb Via, Descend Via.

NOTE-

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

2. When cleared direct to a waypoint, to descend at pilot discretion to meet restrictions on the procedure. ATC assumes obstacle clearance responsibility for aircraft not yet established or taken off of a procedure.

3. To adjust speeds prior to reaching waypoints with published speed restrictions.

No Change

No Change

No Change

EXAMPLE-

No Change

“Delta One Twenty One leaving flight level one niner zero, descending via the Eagul Five arrival runway two-six transition.”

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

“JetBlue six zero two leaving flight level two one zero descending via the Ivane Two arrival landing south.”

“Cactus Seven Eleven leaving two thousand climbing via the Laura Two departure.”

“Cactus Seven Eleven leaving two thousand for one-six thousand, climbing via the Laura Two departure.”

REFERENCE-

No Change

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

1. Assign an altitude to cross the waypoint/fix, if no altitude is depicted at the waypoint/fix, for aircraft on a direct routing to a STAR or SID waypoint/fix.

Delete

EXAMPLE-

Delete

1. “Proceed direct Denis, cross Denis at or above flight level two zero zero, then descend via the Mmell One arrival.”

NOTE-

Delete

In Example 1 the aircraft will maintain FL200 or higher until reaching Denis. The pilot will then comply with the Mmell One arrival lateral path and published speed restrictions and will descend at pilot discretion to comply with published altitude restrictions. The aircraft may begin slowing prior to Denis to comply with any published speed restrictions at that waypoint.

EXAMPLE-

Delete

2. “Proceed direct Rockr, cross Rockr at or above one-zero thousand, climb via the Bizee Two departure.”

NOTE-

Delete

In Example 2 the aircraft will join the Bizee Two departure at Rockr and will then comply with departure published lateral path, published speed and altitude restrictions.

h1 to h7

ReNUMBER **h1** as **h9**.

1. PARAGRAPH NUMBER AND TITLE: 5-5-2. TARGET SEPARATION

2. BACKGROUND: “Digital Target” and “Digitized Target” both refer to processed, graphical information that represent an aircraft’s position on approved displays. Terminal Controller Workstations (TCW) used in Standard Terminal Automation Replacement System (STARS) are “digital displays”. Radar Alphanumeric Display Subsystem (RADS) displays are “analog” displays. “Digital targets” are displayed on TCWs and “digitized targets” are displayed on RADS.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>5-5-2. TARGET SEPARATION</p> <p style="text-align: center;">Title through c</p> <p>d. All-digital displays. Between the centers of <u>digitized</u> targets. Do not allow <u>digitized</u> targets to touch.</p> <p><i>REFERENCE-</i> <i>FAA Order JO 7110.65, Para 5-9-7, Simultaneous Independent Approaches- Dual & Triple</i></p>	<p>5-5-2. TARGET SEPARATION</p> <p style="text-align: center;">No Change</p> <p>d. All-digital displays. Between the centers of <u>digital</u> targets; do not allow <u>digital</u> targets to touch.</p> <p style="text-align: center;">No Change</p>

1. PARAGRAPH NUMBER AND TITLE: 5-5-4. MINIMA

2. BACKGROUND: FAA Order JO 7110.65 Chapter 5, Section 5, Radar Separation, was changed to allow ASR-11 MSSR terminal facilities to utilize 3-mile separation to 60 NM from the sensor antenna after an analytical study was completed by the FAA Flight Systems Laboratory. The study concluded that the performance of the ASR-11 MSSR was equivalent to the performance of an ASR-9 with Mode S. ASR-9 with Mode S terminal facilities had previously been certified for operations to 60 NM from the sensor site. FAA Order JO 7110.65 was changed to allow En Route Automation Modernization (ERAM) facilities to expand their 3 nautical mile (NM) operations out to 60 NM and up to and including FL 230 when utilizing ASR-9 with Mode S or ASR-11 MSSR. Currently, Microprocessor En Route Automated Radar Tracking System (MEARTS) facilities have the option of utilizing a separation standard minima of 3 NM if certain criteria are first met, but only out to 40 NM from the sensor site and up to but not including FL 180. Since MEARTS receives surveillance data directly from ASR-9 with Mode S and ASR-11 MSSR sensor sites, increasing the usability of the existing installed infrastructure by increasing the usable mileage from 40 NM to 60 NM and raising the ceiling to FL 230 will increase the efficiency of the National Airspace System (NAS), with no impact on overall safety.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>5-5-4. MINIMA</p> <p style="text-align: center;">Title through e3(b)</p> <p>(c) Within 40 <u>miles</u> of the <u>antenna</u>.</p> <p>(d) <u>Below FL 180.</u></p> <p style="text-align: center;">e3(e) through e4</p> <p>(a) <u>Less than</u> 40 miles from the antenna, <u>below FL180</u>, and targets are from the adapted sensor.</p>	<p>5-5-4. MINIMA</p> <p style="text-align: center;">No Change</p> <p>(c) Within 40 <u>NM</u> of the <u>sensor or within 60 NM of the sensor when using ASR-9 with Mode S or ASR-11 MSSR Beacon and within the 3 NM separation area.</u></p> <p>(d) <u>Up to and including FL230.</u></p> <p style="text-align: center;">No Change</p> <p>(a) <u>Up to and including FL230 within</u> 40 miles from the antenna <u>or within 60 NM when using ASR-9 with Mode S or ASR-11 MSSR Beacon</u> and targets are from the adapted sensor.</p>

1. PARAGRAPH NUMBER AND TITLE: 5-5-9. SEPARATION FROM OBSTRUCTION

2. BACKGROUND: FAA Order 8260.3C, United States Standard for Terminal Instrument Procedures (TERPS) permits a 3 mile separation standard from obstructions within 60 NM of the radar antenna when using a Monopulse Secondary Surveillance Radar (MSSR) system. An MSSR has been characterized as the ASR-9 with Mode S, and the ASR-11 with its MSSR beacon system. The Flight Systems Laboratory, AFS-450, completed a safety study, DOT-FAA-AFS-450-59, in 2011 that permits the use of 3 NM separation from obstacles when less than 60 NM from the radar antenna under specific circumstances. Paragraph 5-5-4, Minima, has already been revised to account for previous safety studies and the criteria in TERPS. On March 2, 2017, AFS-400 provided Air Traffic Procedures with a technical memorandum revising the original report. It recognized that the assumption of no ATC intervention until reaching a 3 NM buffer boundary is not consistent with ATC practices. The conclusions indicate the aircraft would be able to maintain a reasonable physical separation from the obstruction when using the requested ±2 Azimuth Change Pulse (ACP) azimuth tolerance which is required for system certification. All other conditions in the technical report remain in place.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>5-5-9. SEPARATION FROM OBSTRUCTION</p> <p style="text-align: center;">Title through a2</p> <p style="padding-left: 40px;">Add</p> <p style="padding-left: 40px;">Add</p> <p style="padding-left: 40px;">Add</p> <p style="padding-left: 40px;">Add</p> <p style="padding-left: 40px;">Add</p>	<p>5-5-9. SEPARATION FROM OBSTRUCTION</p> <p style="text-align: center;">No Change</p> <p style="padding-left: 40px;"><u>3. For single sensor ASR-9 with Mode S, when less than 60 miles from the antenna – 3 miles.</u></p> <p style="padding-left: 40px;"><u>4. For single sensor ASR-11 MSSR Beacon, when less than 60 miles from the antenna – 3 miles.</u></p> <p style="padding-left: 40px;">5. FUSION:</p> <p style="padding-left: 80px;"><u>(a) Fusion target symbol – 3 miles.</u></p> <p style="padding-left: 80px;"><u>(b) When ISR is displayed – 5 miles.</u></p> <p><i><u>NOTE-</u></i> <i><u>When operating in FUSION, distances from the antenna listed in paragraph 5-5-9, a1 through a4, do not apply.</u></i></p>

1. PARAGRAPH NUMBER AND TITLE: 5-6-2. METHODS

2. BACKGROUND: A change to this paragraph was originally published on May 26, 2016. After publication, it was identified that the phraseology examples do not match the prescribed phraseology.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>5-6-2. METHODS</p> <p style="text-align: center;">Title through f</p> <p><i>PHRASEOLOGY-</i> <i>PROCEED DIRECT (NAVAID, fix, waypoint) CROSS (NAVAID, fix waypoint) AT/AT OR ABOVE/AT OR BELOW (altitude) then CLIMB VIA/DESCEND VIA (SID/STAR)</i></p>	<p>5-6-2. METHODS</p> <p style="text-align: center;">No Change</p> <p><i>PHRASEOLOGY-</i> <i>CLEARED DIRECT (NAVAID, fix, waypoint) CROSS (NAVAID, fix, waypoint) AT/AT OR ABOVE/AT OR BELOW (altitude) then CLIMB VIA/DESCEND VIA (SID/STAR)</i></p>