



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

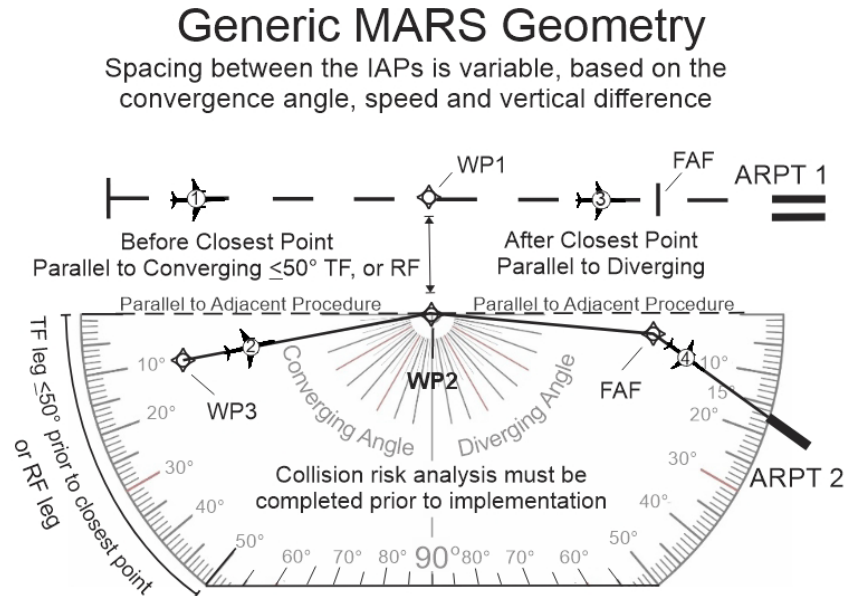
**ORDER  
JO 7110.666**

Air Traffic Organization Policy

Effective date:  
05/07/2026

**SUBJ:** Multiple Air Route Separation (MARS)

- 1. Purpose of This Order.** This order defines and establishes procedures to implement and utilize Multiple Air Route Separation (MARS).
- 2. Audience.** This order applies to the Air Traffic Organization (ATO) service units: Air Traffic Services, Mission Support Services, and System Operations Services.
- 3. Where Can I Find This Order.** This order is available on the MyFAA employee website at [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://employees.faa.gov/tools_resources/orders_notices/) and on the FAA website at [http://www.faa.gov/regulations\\_policies/orders\\_notices/](http://www.faa.gov/regulations_policies/orders_notices/).



**Figure 1. Generic MARS Paired IAPs**

- 4. Simultaneous independent approaches to single or multiple airports without separate monitors may be conducted where instrument approach charts specifically authorize**

simultaneous approaches, and the IAPs and air traffic control procedures are contained in a facility Standard Operating Procedures (SOP) order and/or Letter of Agreement (LOA).

**5.** Apply the following minimum separation when conducting MARS operations:

**a.** Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft until both aircraft are established on a segment of an approach authorized for MARS operations.

**b.** Provide minimum applicable radar separation between aircraft on the same IAP.

**c.** Apply FAA Order JO 7110.65, 5–9–11, Transitional Procedure, to MARS operations.

**NOTE–**

*Aircraft are considered established on an IAP on an initial or intermediate segment of an approach authorized for MARS operations after the approach clearance has been issued, read back by the pilot, 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 approach with an authorized simultaneous IAP to a separate airport.*

**REFERENCE–**

*FAA Order JO 7110.65, Section 5. Radar Separation.*

*FAA Order JO 7110.65, Para 5–9–11 Transitional Procedure.*

**6.** The following conditions are required when applying the minimum separation on MARS-paired IAPs:

**a.** Straight-in landings will be made.

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

**c.** Instrument approach procedures are annotated with “Simultaneous Approach Authorized.”

**d.** Pilots are informed that simultaneous approaches are in use on initial contact or as soon as practicable thereafter. This information may be provided through the ATIS.

**e.** Separate radar and local controllers are required for each IAP.

**f.** Transfer of communication to the tower controller’s frequency must be specified in a facility directive and/or LOA.

**7.** The following procedures must be used by the radar controllers:

**NOTE–**

*There is no requirement for the establishment of an NTZ.*

a. When TCA is displayed, evaluate the reason for the alert without delay and take appropriate action.

b. If rejoining the approach is feasible, instruct the pilot to return to the correct approach course when the aircraft is observed to overshoot the turn-on or continue a track that deviates from the approach course in the direction of the adjacent approach course.

**PHRASEOLOGY–**

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

c. If rejoining the approach is not feasible, cancel the approach clearance and instruct the pilot to turn away from the conflicting aircraft on the adjacent approach segment for resequencing.

**PHRASEOLOGY–**

*YOU HAVE CROSSED THE APPROACH COURSE. CANCEL APPROACH CLEARANCE (additional instructions as necessary).*

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

**PHRASEOLOGY–**

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

8. 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. 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 approach course. Weather conditions in the vicinity of the approach segments may dictate a change of approach in use.

**REFERENCE–**

*FAA Order JO 7110.65, Para 5–9–2, Final Approach Course Interception.*

*FAA Order JO 7110.65, Para 4–8–1, Approach Clearance.*

**9. Implementation Criteria.** MARS IAPs may be conducted as authorized in a facility SOP and/or LOA when:

a. The allowable spacing between authorized paired IAPs depends on balancing various operational variables and will be determined through a final collision risk assessment of the approach pairing's geometry. These variables include intercept angle, aircraft speeds, and altitude offsets. The current national collision risk assessment has demonstrated that the closest point of approach typically falls within a range of less than 16,000 feet and potentially as low as 7,000 feet.

**b.** Provide individual handling to an aircraft when the crew informs you the aircraft does not have the appropriate airborne equipment, or they choose not to conduct a simultaneous approach.

**c.** Prior to implementing MARS operations air traffic managers must:

(1) Document all approach and/or transition pairings to be used during MARS operations.

(2) Document the separation to be used before and after the use of MARS separation.

(3) Ensure approved MARS approach pairings comply with MARS procedure criteria identified in FAA Order 8260.3 TERPS.

(4) Obtain a finding from Flight Standards Flight Research Analysis Group showing a total collision risk of  $1 \times 10^{-9}$  or less for each applicable IAP pair.

(5) Obtain authorization from the Service Area Director of Air Traffic Operations for the approved instrument approach pairings.

(6) Ensure facility directives/LOAs list the authorized approach pairs and, at a minimum, addresses breakout procedures, visual approaches, and

(7) Training requirements: all controllers in facilities where MARS procedures are applicable must be verbally briefed and familiarized with their MARS procedures. Additionally, controllers providing radar approach services and will be applying MARS-authorized procedures, must receive hands-on simulation training with a focus on identifying and evaluating lateral deviations and, if necessary, taking appropriate actions without delay.

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For Jon M. Stowe  
Acting Director, Policy, AJV-P  
Mission Support Services  
Air Traffic Organization

## Appendix A. Administrative Information

**1. Distribution.** This order is distributed to ATO Service Units: Air Traffic Services (AJT), Mission Support Services (AJV), System Operations (AJR); ATO Safety and Technical Training (AJI); Air Traffic Safety Oversight Service (AOV); the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.

**2. Background.** Established on Required Navigation Performance (EoR) operations, as provided for in Federal Aviation Administration (FAA) Order JO 7110.65, Air Traffic Control, allows discontinuance of standard radar separation when aircraft are established on designated segments of authorized approach procedures to parallel runways at a single airport. MARS expands the application of EoR to authorized approach procedures including non-parallel runway configurations at single or multiple airports.

**3. Authority to Change This Order.** The issuance, revision, or cancellation of the material in this order is the responsibility of AJV-P.

### 4. Definitions.

**a. MARS.** Simultaneous Independent operations in reduced separation between aircraft established on MARS-authorized Instrument Approach Procedures (IAPs).

**b. Authorized and Paired Instrument Approach Procedures (IAPs).** Identified pairs of IAP segments flowing in the same direction (not opposite direction) authorized to be flown in MARS reduced separation.

**c. Track Conformance Alerting (TCA).** A form of visual indication that may be adapted in the Standard Terminal Automation Replacement System (STARS) by the Operational Support Facility. Utilizing a geographic volume of Airspace, qualifying filters can generate a change in data block color when an aircraft's digitized radar target enters a specified volume of airspace using STARS. When used in MARS operations, a change in data block is generated when an aircraft deviates off its assigned IAP into the airspace volume.

**5. Suggestions for Improvements.** Please forward all comments on deficiencies, clarifications, or improvements regarding the contents of this order to [9-AJV-P-HQ-Correspondence@faa.gov](mailto:9-AJV-P-HQ-Correspondence@faa.gov):

Your suggestions are welcome. FAA Form 1320-19, Directive Feedback Information, is located in Appendix B of this order for your convenience.

**6. Records Management.** Refer to FAA Order 0000.1, *FAA Standard Subject Classification System*; FAA Order 1350.14, *Records Management*; or your office Records Management Officer (RMO)/Directives Management Officer (DMO) for guidance regarding retention or disposition of records.

### Appendix B. Directive Feedback Information

Please submit any written comments or recommendation for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it.

Subject: FAA Order JO 7110.666, Multiple Air Route Separation (MARS)

To: Policy, AJV-P, Air Traffic Organization

*Please mark all appropriate line items:*

An error (procedural or typographical) has been noted in paragraph \_\_\_\_\_ on page \_\_\_\_\_.

Recommend paragraph \_\_\_\_\_ on page \_\_\_\_\_ be changed as follows:

In a future change to this order, please cover the following subject:  
*(Briefly describe what you want added.)*

Other comments:

I would like to discuss the above. Please contact me.

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Routing Symbol: \_\_\_\_\_

**FAA Form 1320-19 (10-98)**