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

ORDER
JO 7110.663

Effective Date:
November 4, 2022

SUBJ: Merging, Converging, Parallel Route Sequencing (MCPRS) with Converging Runway Display Aid (CRDA)

1. Purpose of This Order. This order defines and establishes procedures using the Converging Runway Display Aid (CRDA) tool or its enhancements for merging, converging, or parallel route sequencing.

2. Background. CRDA was originally designed to aid in the reduction of approved separation during Dependent Converging Instrument Approaches (DCIA). This aid now helps facilitate the sequencing of aircraft on several types of merging routes, including curved path approaches merging with straight-in approaches, dual Standard Terminal Arrival Routes (STARs) that merge into one route, crossing/merging arrival routes, departure routes from different airports that merge at the same exit fix, and parallel runway operations.

3. Audience. This order applies to the Air Traffic Organization (ATO) service units: Air Traffic Services, Mission Support Services, and System Operations Services.

4. Where Can I Find This Order? This order is available on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices/ and the FAA Web site at http://www.faa.gov/regulations_policies/orders_notices/.

5. Definitions.

a. **Ghost Target Data Block.** Limited data block associated with the ghost target (see Figure 1).

b. **Ghost Target.** An artificial-aircraft symbol (see Figure 1) whose position is the translated (x, y) position of an aircraft with respect to a reference point and a reference line (or path) onto another reference point and reference line (or path).

Note: The position symbol of the ghost target is site adaptable and may not be a slant.

c. **Parent Aircraft.** Aircraft used to generate ghost target.

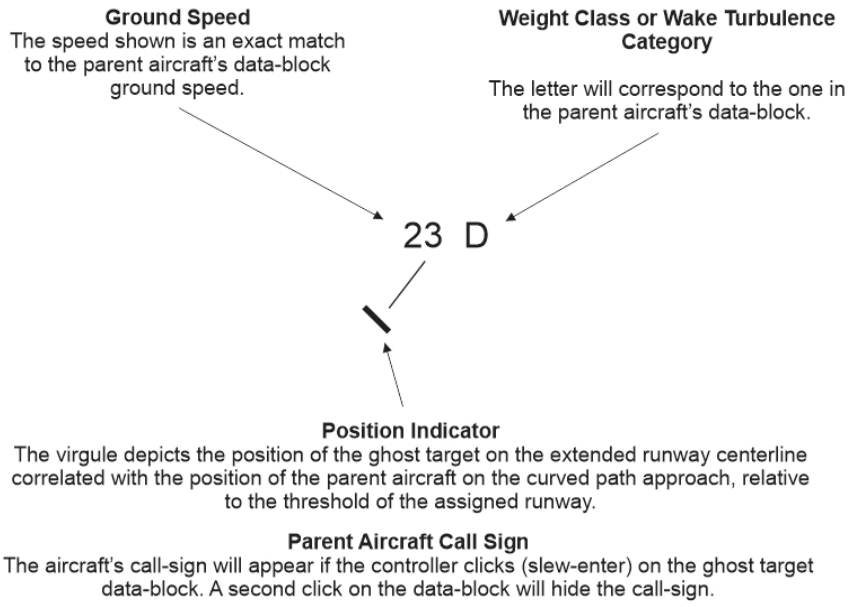

Figure 1. Ghost Target and Data Block Information

6. Allowable uses of CRDA during sequencing of flights on merging, converging, or parallel routes.

a. The provisions of FAA Order JO 7110.65, Air Traffic Control; or orders establishing approved separation (such as JO 7110.110B for DCIAs); or orders or waivers for use during EoR (established on RNP approaches) operations apply during the use of CRDA for sequencing flights on merging, converging, or parallel routes. CRDA may be used to assist in obtaining the required separation.

b. CRDA may be used as a sequencing tool on any merging, converging, or parallel route including:

(1) Between a curved path approach (or conventional downwind) and the same runway straight-in approach (Fig 2).

(2) Between merging/crossing arrival routes; e.g. STARs (Fig 3).

(3) Between merging approach transitions to the same and/or parallel runways (Fig 4).

(4) Between departure routes from different airports that merge at the same fix (Fig 5).

(5) Between crossing routes (Fig 6).

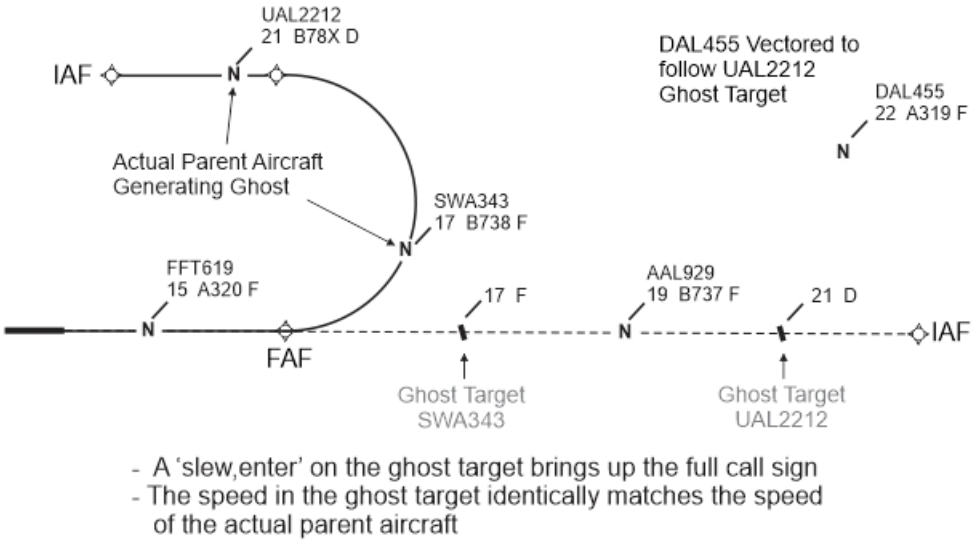

Figure 2. Example of a Merge on Final - Curved Path (RNP)

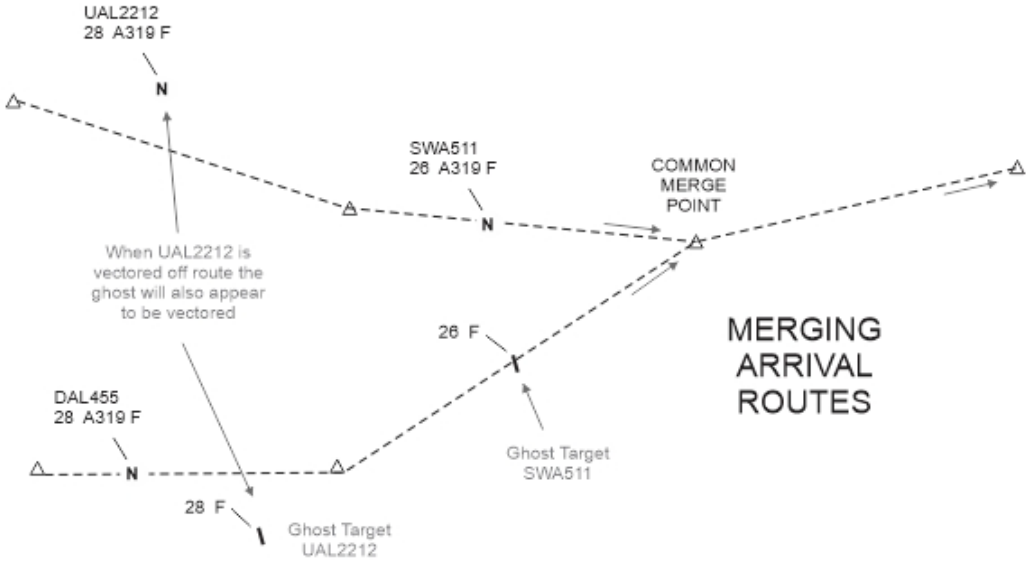

Figure 3. Example of Arrival Routes – STAR to STAR

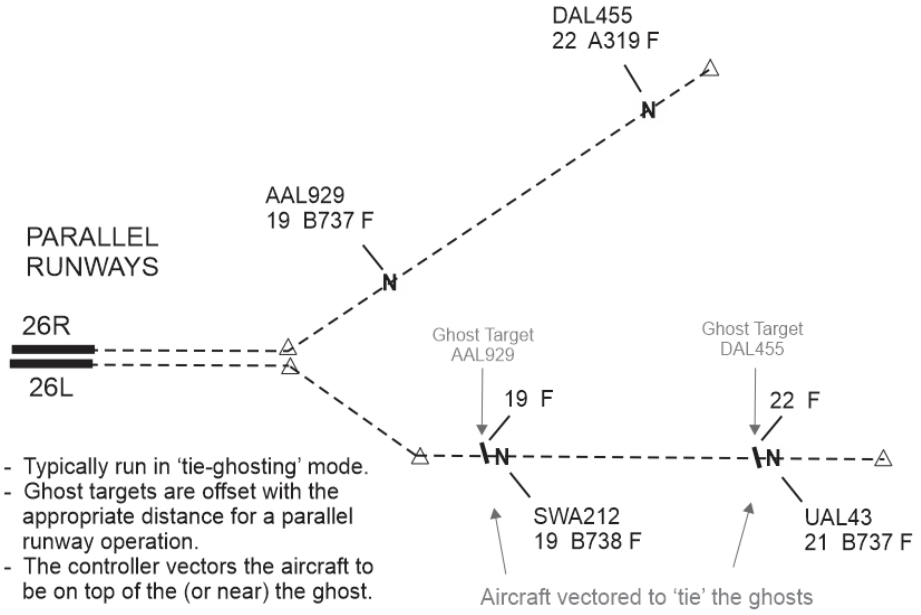

Figure 4. Example of Parallel Runways – 'Tie-Ghosting'

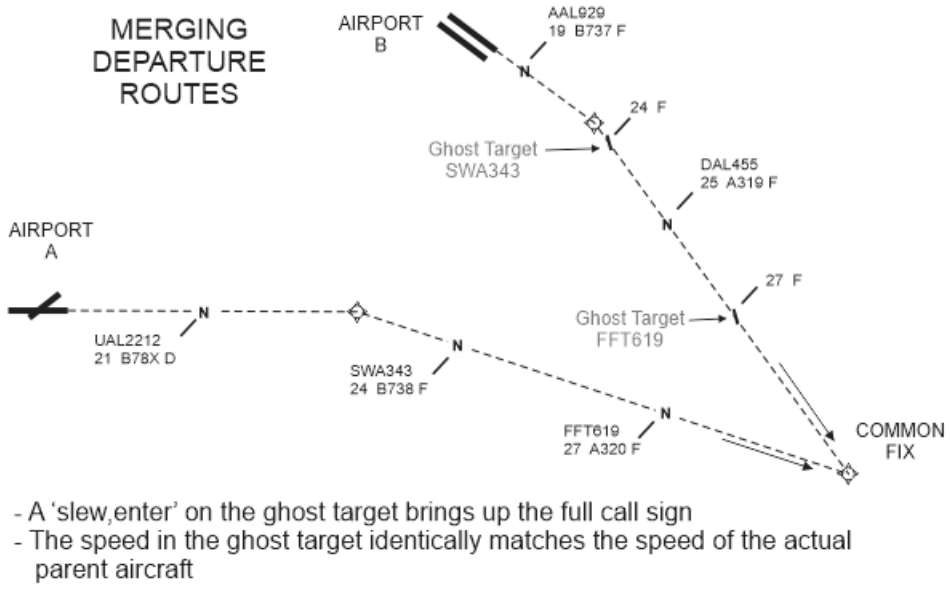

Figure 5. Example of Merging Departure Routes – SID to SID

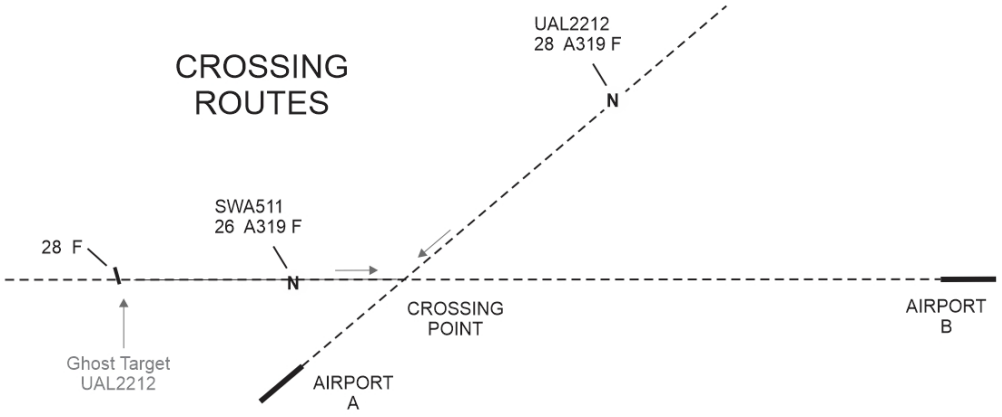

Figure 6. Example of Crossing Routes

7. Implementation Criteria.

a. The facility Air Traffic Manager (ATM) must establish a facility implementation team to determine:

(1) The suitability of each adaptation.

(2) An implementation plan.

(3) Training requirements.

b. The facility ATM must prepare a facility directive approved by the service center Operations Support Group (OSG), specifying at a minimum:

(1) Each applicable merging or crossing route or parallel runway adaptation.

(2) Applicable separation standards.

(3) Restrictions or exclusions deemed appropriate.

(4) Coordination requirements.

(5) Training requirements.

8. Distribution.

This order is distributed to ATO Service Units: Air Traffic Services (AJT), Mission Support Services (AJV), and 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.

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