Federal Aviation Administration

EN ROUTE - STAGE IV

Refresher Unit 04
RDP Separation

Course 55055

OK-09-5106

FOREWORD

Purpose. This Air Traffic Refresher Unit provides for the systematic review of current Air Traffic Control operational procedures.

This publication is for use in the technical training of FAA Air Traffic Control Specialists. It does not replace, substitute for, or supersede official regulations, procedures, or directives.

Review. Training programs established under the Government Employees Training Act are based on actual needs, and a review of these training needs is conducted at least once every three years.

Recommended Changes. Suggested changes and corrections to this training material should be forwarded to:

DOT, FAA, Mike Monroney Aeronautical Center
En Route Training Section, AMA-511
P.O. Box 25082
Oklahoma City, OK 73125

PREFACE

This refresher unit replaces all previous versions of ER-11-4, RDP Separation, and reflects the latest technical changes found in the referenced source documents through February 2010, including FAA Order JO 7110.65. See “Stage IV Changes 02/11/10” on the lesson materials download page. The contents of this unit are current as of the date shown on the cover. The material herein will be kept current through unit replacement. This unit is not to be used as a Standard Operating Practice (SOP). In all cases, a controller’s good judgment is uppermost in applying the procedures advocated.

INSTRUCTIONS

1. Write your answers to the questions in the Question Section on a separate piece of paper. This will allow the unit to be reused.

2. Compare your answers with those in the Answer and Discussion Section.

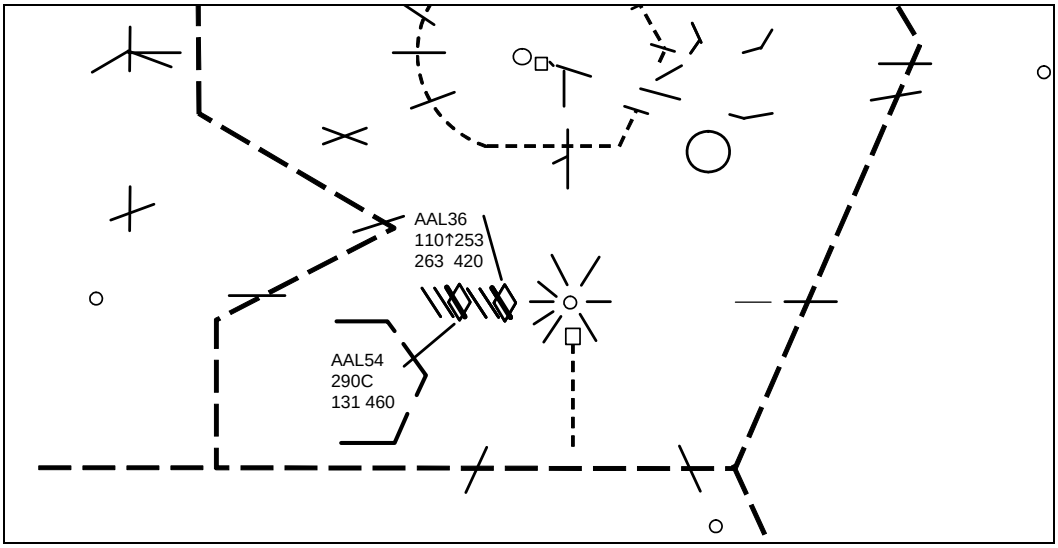
3. If you answer any questions incorrectly, study the discussion paragraph(s).

4. Review the references given in the Answer and Discussion Section.

5. An informal discussion of this unit with other specialists may help clarify any ambiguities.

RDP SEPARATION
Question Section

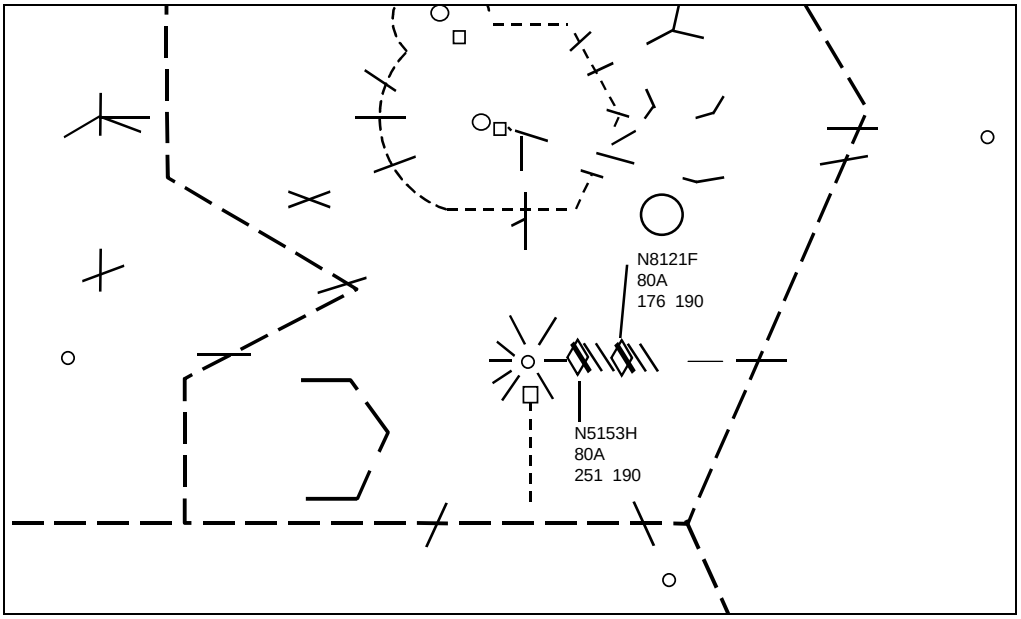
DIRECTIONS: REFER TO THE SIMULATED STAGE A DISPLAY DEPICTED ON THE RADAR SCOPE ABOVE EACH QUESTION TO ANSWER ITEMS 1, 3 THROUGH 5, 7, AND 8. COMPLETE ITEM 2 BY WRITING YOUR ANSWER USING THE APPROPRIATE WORD(S) OR PHRASE(S) AND COMPLETE ITEM 6 BY WRITING A SHORT ANSWER OF ONE OR TWO SENTENCES.



1. AAL54 and AAL36 are both eastbound, and altitude readouts have been verified. There is less than standard radar separation between the two aircraft. When may AAL54 be issued a single descent clearance to 13,000 feet?

2. Radar separation may be applied between an unidentified IFR aircraft and an identified IFR aircraft that is climbing or descending through the former's altitude, provided such separation takes place **NOT** less than _____ mile(s) from the edge of the radar display.

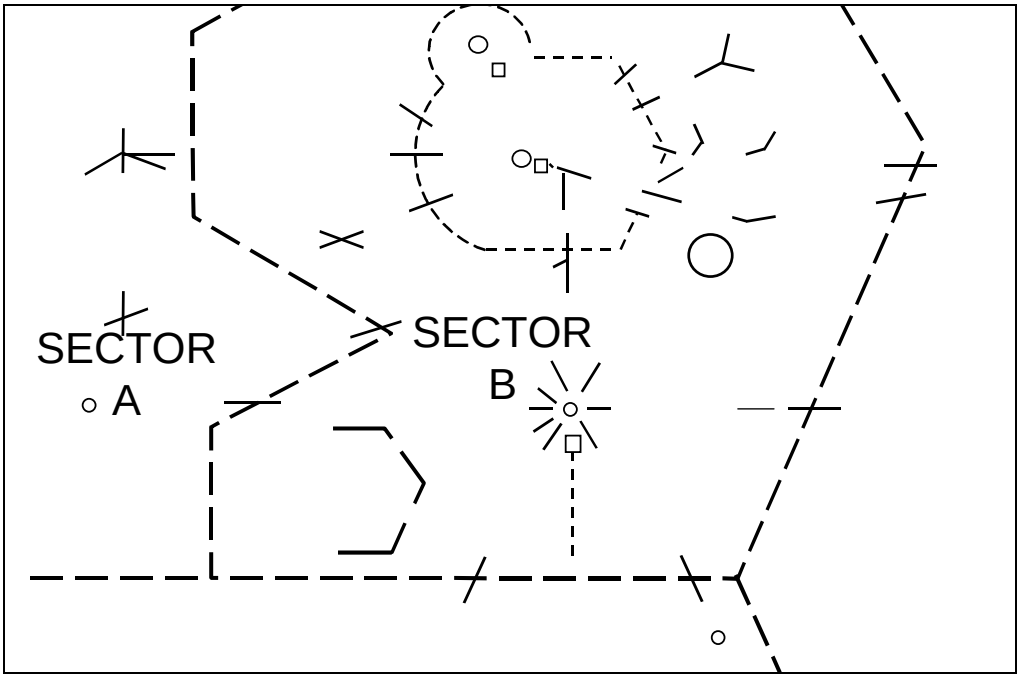
RDP SEPARATION
Question Section *(Continued)*



3. Both aircraft are C411 type and westbound. What is the minimum approved separation between aircraft if the separation takes place within 40 miles of the antenna and is single-site adapted?

RDP SEPARATION

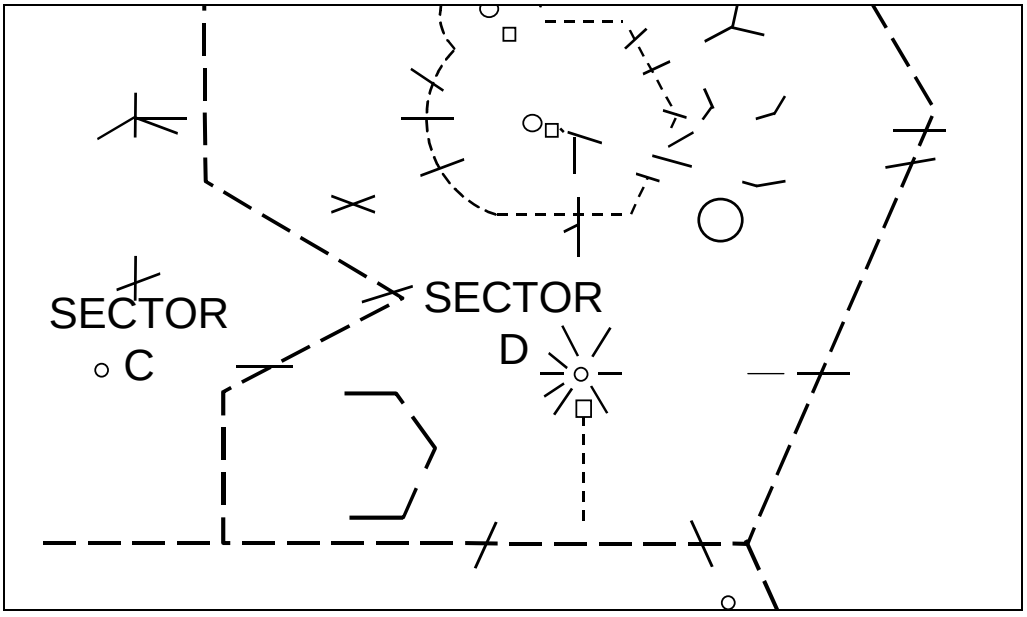
Question Section *(Continued)*



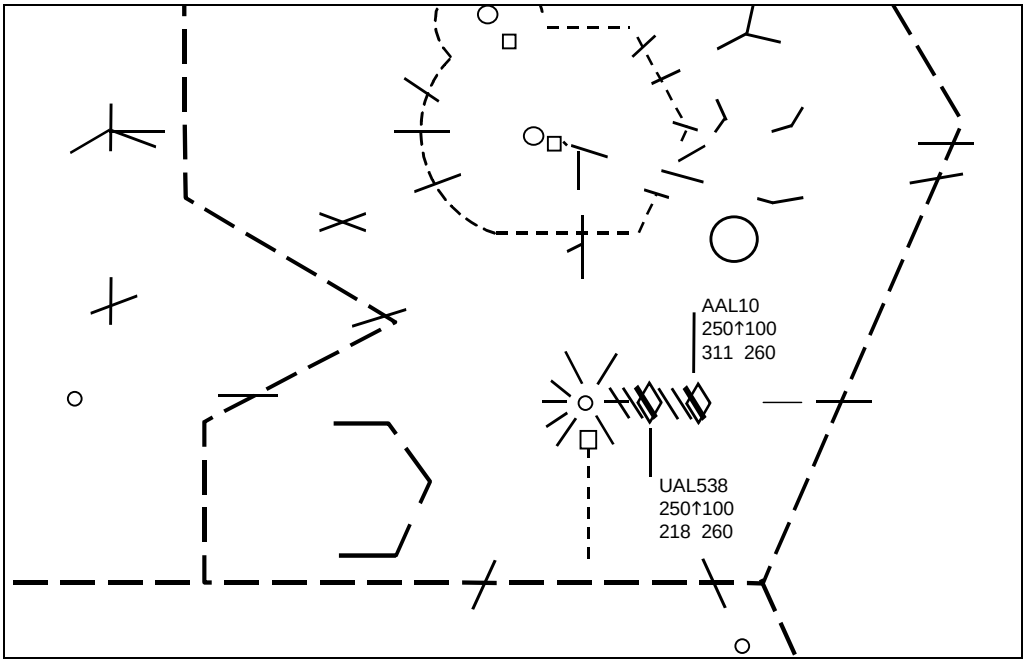
4. Sector A is a radar sector. As the Sector B controller, how close to the Sector A boundary are you authorized to vector an aircraft at FL290 without coordination?

5. Radar separation is measured between what points of the target symbology on a Stage A display?

RDP SEPARATION
Question Section *(Continued)*



6. Sector C is a **nonradar** sector. As the Sector D controller, how close to the Sector C boundary are you authorized to vector an aircraft at 10,000 feet without coordination?



7. What is the minimum approved radar separation between AAL10, a DC10, and UAL538, a B727? Both aircraft are within 40 miles of the antenna, and the system is single-site adapted.

RDP SEPARATION
Answer and Discussion Section

1. AAL54 and AAL36 are both eastbound, and altitude readouts have been verified. There is less than standard radar separation between the two aircraft. When may AAL54 be issued a single descent clearance to 13,000 feet?

   ANSWER: Immediately

   REFERENCE: JO 7110.65, par. 5-5-5

   DISCUSSION: A descent clearance to 13,000 feet may be issued at any time as long as both valid Mode C readouts are monitored during the descent to ensure that applicable vertical separation minima is maintained at all times. ***However, if workload is such that it is not feasible to continuously monitor the Mode C readouts,*** *do* ***NOT*** *assign 13,000 to AAL54 until after AAL36 has reported vacating that altitude, or you observe that AAL36 (valid Mode C) has vacated 13,000. AAL54 may also be issued interim altitudes as they are vacated by AAL36. Of course, once standard lateral radar separation exists, there is no further requirement to provide vertical separation.*

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

2. Radar separation may be applied between an unidentified IFR aircraft and an identified IFR aircraft that is climbing or descending through the former's altitude, provided such separation takes place **NOT** less than _____ mile(s) from the edge of the radar display.

   ANSWER: 10

   REFERENCE: JO 7110.65, par. 5-5-1

   DISCUSSION: When the provisions of this rule are applied, the controller must ensure that the performance of the primary radar is adequate and primary targets are being displayed. The controller must also ensure that radar separation is maintained between the radar-identified aircraft and all observed targets, and that the aircraft not radar identified is of a type and in a position where an adequate primary return could be expected.

RDP SEPARATION

Answer and Discussion Section *(Continued)*

3. Both aircraft are C411 type and westbound. What is the minimum approved separation between aircraft if the separation takes place within 40 miles of the antenna and is single-site adapted?

   ANSWER: Without a facility directive to specify otherwise, 5 miles separation must be applied. A facility directive may specify a minimum of 3 miles.

   REFERENCE: JO 7110.65, par. 5-5-4; 7210.3, par. 8-2-1

   DISCUSSION: Aircraft below FL180 and within 40 miles of the radar antenna may be provided 3 miles minimum radar separation if single-site adapted. Where a significant operational advantage is obtained by modifying a radar site adaptation to single-site coverage, facility directives are required to define the areas where 3-mile separation applies.

4. Sector A is a radar sector. As the Sector B controller, how close to the Sector A boundary are you authorized to vector an aircraft at FL290 without coordination?

   ANSWER: 2½ miles

   REFERENCE: JO 7110.65, par. 5-5-10

   DISCUSSION: Separation is predicated, in this instance, on the controller in Sector A conforming to the same minimum. This would afford a total of 5 miles separation between aircraft, which is the approved minimum below FL600 in a Stage A environment.

5. Radar separation is measured between what points of the target symbology on a Stage A display?

   ANSWER: Between the centers of the target symbols as long as you do not allow the targets to touch

   REFERENCE: JO 7110.65, par. 5-5-2

   DISCUSSION: Since Stage A target symbols are of varying sizes and shapes, the actual aircraft is represented by the center point of the symbols. Due to data input from several sources, radar separation targets must not be allowed to touch or overlap.

RDP SEPARATION
Answer and Discussion Section *(Continued)*

6. Sector C is a **nonradar** sector. As the Sector D controller, how close to the Sector C boundary are you authorized to vector an aircraft at 10,000 feet without coordination?

   ANSWER: 5 miles

   REFERENCE: JO 7110.65, par. 5-5-10

   DISCUSSION: Separation is predicated on the type of control being exercised in the adjacent sector. Sector C must only ensure that aircraft are within its sector. Therefore, Sector D must keep aircraft under its jurisdiction at least 5 miles from the sector boundary. Aircraft at FL600 and above must be provided a minimum of 10 miles from the sector boundary. These separation criteria are applicable for all IFR aircraft regardless of whether they are climbing, descending, or in level flight.

7. What is the minimum approved radar separation between AAL10, a DC10, and UAL538, a B727? Both aircraft are within 40 miles of the antenna, and the system is single-site adapted.

   ANSWER: 5 miles

   REFERENCE: JO 7110.65, par. 5-5-4

   DISCUSSION: A minimum of 5 miles separation must be provided when an aircraft in the "large" weight class (B727) is following an aircraft in the "heavy" weight class (DC10), even though both aircraft are within 40 miles of the radar antenna and below FL180 and the radar site is adapted to single-site coverage. This is true even if a facility directive allows 3 miles separation in this area.

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