

RADIO ALTIMETER - MAINTENANCE PRACTICES

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to simulate the radio altitude on radio altimeters 1 and/or 2.
- B. The procedures in this section are given in the sequence below. The tasks identified with (◆) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
34-31-00-800-801-A	RADIO ALTIMETER - RIGGING	ALL

TASK 34-31-00-800-801-A

EFFECTIVITY: ALL

2. RADIO ALTIMETER - RIGGING

A. General

- (1) This task gives the procedures to simulate the radio altitude on radio altimeters 1 and/or 2.
- (2) It is possible to simulate the radio altitude with GSE 361 (recommended) or with a precision DC power supply.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM SDS 31-42-00/1	
AMM SDS 34-22-00/1	
AMM SDS 34-23-00/1	
AMM SDS 34-31-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
S.B.145-34-0024	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
193	193LL	Wing Stub (PRE-MOD. S.B. 145-34-0024)
191	191EL	Wing-to-fuselage attachment fairing for RA 1 (POST-MOD. S.B.145-34-0024)
272	272DR	Rear electronic compartment for RA 2 (POST-MOD. S.B.145-34-0024)

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 361	Radio Altimeter Test Harness	To simulate radio altitude.	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit or outside the aircraft
1	Helps the other technician	Cockpit or outside the aircraft

I. Preparation

SUBTASK 841-002-A

- (1) Energize the aircraft with the external DC power supply ([AMM TASK 20-40-01-860-801-A/200](#)).
- (2) Make sure that these systems are serviceable and on:
 - Integrated Computer System ([AMM SDS 31-42-00/1](#)).
 - EFIS ([AMM SDS 34-22-00/1](#)).
 - Radio Altimeter System ([AMM SDS 34-31-00/1](#)).
 - (Aircraft equipped with HGS) Head-Up Guidance System ([AMM SDS 34-23-00/1](#)).
- (3) On the circuit breaker panel, open and attach a DO-NOT-CLOSE tags to these circuit breakers:
 - (To simulate radio altitude on radio altimeter 1) RA1.
 - (To simulate radio altitude on radio altimeter 2) RA2.
- (4) (PRE-MOD [S.B.145-34-0024](#)) Open access door 193LL (AMM MPP 06-41-01/100).
- (5) (POST-MOD [S.B.145-34-0024](#)).

(To simulate radio altitude on radio altimeter 1) Open access door 191EL (AMM MPP 06-41-01/100).

(To simulate radio altitude on radio altimeter 2) Open access door 272DR (AMM MPP 06-41-01/100).
- (6) If the aircraft is equipped with HGS, proceed as follows:
 - (a) On the Head-up Control Panel (HCP), push the TEST key.

Result:

 - 1 The Combiner display will be blanked and the fault annunciator on the HCP will illuminate until all tests are completed (approximately 2 seconds if no fault is detected).
 - 2 The TEST information is shown on the HCP display.
 - 3 The HGS Test Menu is shown on the Combiner display.
 - (b) On the HGS Test Menu, select SENSOR DATA option. To do this, use the BRT+ or DIM- keys, on the Head-up Control Panel, to put the cursor in the associated line and then push the ENTER key.

NOTE: The BRT+ key is used to scroll up the cursor on the HGS Test Menu and the DIM- key is used to scroll down the cursor on the HGS Test Menu.

- (c) On the Sensor Menu, choose the RA option.

NOTE: Compare the RA values shown on the Combiner with the ones shown on the PFD and verify the tolerance of ± 3 ft.

J. Radio Altimeter - Rigging [\(Figure 201\)](#) [\(Figure 202\)](#) [\(Figure 203\)](#)

SUBTASK 820-002-A

NOTE: It is recommended that you simulate radio altitude with GSE 361 as an alternative to a precision DC power supply. The installation of GSE 361 is easier and faster.

- (1) To simulate radio altitude with GSE 361 (recommended), do these steps:
 - (a) Disconnect the electrical connector (2) from the radio altimeter (1).
 - (b) Connect GSE 361 between the electrical connector (2) and the radio altimeter (1).
 - (c) (If the radio altitude simulation is on radio altimeter 1) On the circuit breaker panel, close the RA1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
 - (d) (If the radio altitude simulation is on radio altimeter 2) On the circuit breaker panel, close the RA2 circuit breaker and remove the DO-NOT-CLOSE tag from it.
 - (e) (Aircraft not equipped with HGS) Turn the knob of GSE 361 to adjust the radio altitude (Refer to Table 201) and make sure the desired value is shown on the PFD.
 - (f) (Aircraft equipped with HGS) Turn the knob of GSE 361 to adjust the radio altitude (Refer to Table 201) and make sure that the correspondent RA value on the Combiner shows the correct value, within the following tolerances:
 - 1 ± 3 ft, for 0 RA value 100 ft
 - 2 $\pm 3\%$, for 100 ft RA value 500 ft
 - 3 $\pm 4\%$, for 500 ft < RA value 2500 ft

CAUTION: TO SIMULATE RADIO ALTITUDE WITH A PRECISION DC POWER SUPPLY, OBEY THESE LIMITS OF TENSION VARIATION APPLICABLE TO THE RADIO ALTIMETER: -0.10 VDC TO +13.92 VDC (REFER TO TABLE 201).

- (2) To simulate radio altitude with a precision DC power supply, do these steps:

NOTE: The values of Table 201 can change as a function of a higher or lower degree of precision of the power supply use.

Table 201 - RADIO ALTITUDE X POWER SUPPLY VOLTAGE

Power Supply (VOLTS DC)	Indication (ft)	Power Supply (VOLTS DC)	Indication (ft)
-0.10	-20	+4.92	900
0	0	+5.20	950

Table 201 - RADIO ALTITUDE X POWER SUPPLY VOLTAGE (Continued)

Power Supply (VOLTS DC)	Indication (ft)	Power Supply (VOLTS DC)	Indication (ft)
+0.28	50	+5.44	1000
+0.55	100	+6.00	1100
+0.82	150	+6.55	1200
+1.10	200	+7.10	1300
+1.35	250	+7.66	1400
+1.62	300	+8.20	1500
+1.89	350	+8.75	1600
+2.20	400	+9.30	1700
+2.44	450	+9.81	1800
+2.74	500	+10.36	1900
+3.00	550	+10.91	2000
+3.30	600	+11.45	2100
+3.54	650	+11.99	2200
+3.84	700	+12.56	2300
+4.10	750	+13.10	2400
+4.36	800	+13.65	2500
+4.65	850	+13.92	2550

- (a) Disconnect the electrical connector (2) from the radio altimeter (1).
- (b) Remove the wire connected to position E of the electrical connector (2), and electrically insulate it.
- (c) Use other wire and pin to connect the positive pole of a precision DC power supply to position E of the electrical connector (2), and the power supply negative pole to the ground of this connector.
- (d) Connect the electrical connector (2) to the radio altimeter (1).
- (e) (If the radio altitude simulation is on radio altimeter 1) On the circuit breaker panel, close the RA1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (f) (If the radio altitude simulation is on radio altimeter 2) On the circuit breaker panel, close the RA2 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (g) (Aircraft not equipped with HGS) Set the power supply to the desired value (Refer to Table 201) and make sure that the PFD shows the desired altitude.
- (h) (Aircraft equipped with HGS) Set the Power Supply to the desired value (Refer to Table 201) and make sure that the correspondent RA value on the Combiner shows the correct value, within the following tolerances:
 - 1 ± 3 ft, for 0 RA value 100 ft
 - 2 $\pm 3\%$, for 100 ft RA value 500 ft

3 ± 4%, for 500 ft < RA value 2500 ft

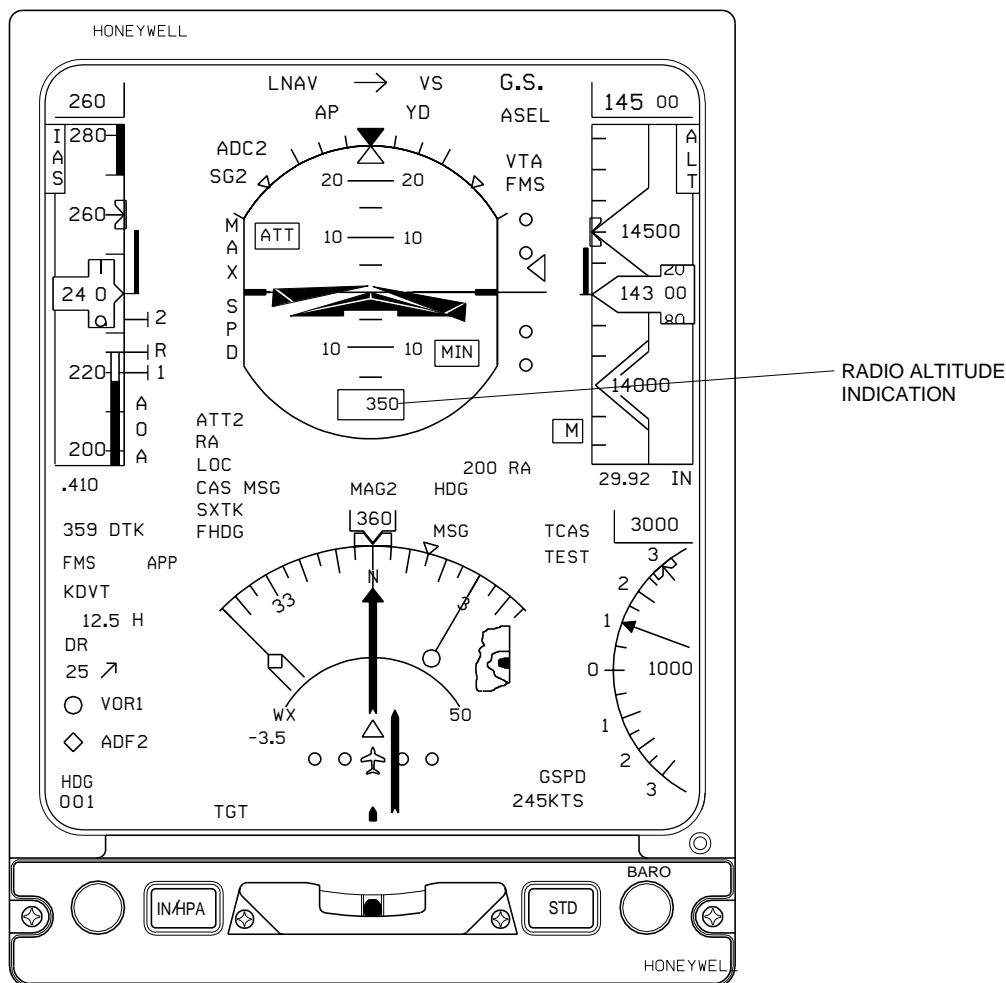
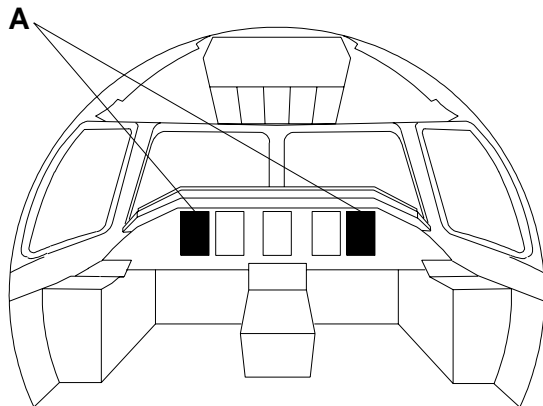
K. Follow-on (Figure 202) (Figure 203)

SUBTASK 842-002-A

- (1) If the radio altitude was simulated with GSE 361, do these steps:
 - (a) (If the radio altitude was simulated on radio altimeter 1) On the circuit breaker panel, open the RA1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
 - (b) (If the radio altitude was simulated on radio altimeter 2) On the circuit breaker panel, open the RA2 circuit breaker and attach a DO-NOT-CLOSE tag to it.
 - (c) Remove the GSE 361.
 - (d) Connect the electrical connector (2) to the radio altimeter (1).
- (2) If the radio altitude was simulated with a precision DC power supply, do these steps:
 - (a) (If the radio altitude was simulated on radio altimeter 1) On the circuit breaker panel, open the RA1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
 - (b) (If the radio altitude was simulated on radio altimeter 2) On the circuit breaker panel, open the RA2 circuit breaker and attach a DO-NOT-CLOSE tag to it.
 - (c) Turn off the precision DC power supply.
 - (d) Disconnect the electrical connector (2) from the radio altimeter (1).
 - (e) Disconnect the power supply negative pole from the ground of the electrical connector (2).
 - (f) Remove the wire of the power supply positive pole connected to position E of the electrical connector (2).
 - (g) Remove the electrical insulation of the aircraft wire removed from position E of the electrical connector (2).
 - (h) Reconnect the aircraft wire removed from position E of the electrical connector to its original position.
 - (i) Connect the electrical connector (2) to the radio altimeter (1).
- (3) (PRE-MOD [S.B.145-34-0024](#)) Close access door 193LL (AMM MPP 06-41-01/100).
- (4) (POST-MOD [S.B.145-34-0024](#)).
 - (If the radio altitude was simulated on radio altimeter 1) Close access door 191EL (AMM MPP 06-41-01/100).
 - (If the radio altitude was simulated on radio altimeter 2) Close access door 272DR (AMM MPP 06-41-01/100).
- (5) On the circuit breaker panel, close and remove the DO-NOT-CLOSE tags from these circuit breakers:
 - (If the radio altitude was simulated on radio altimeter 1) RA1.

- (If the radio altitude was simulated on radio altimeter 2) RA2.
- (6) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY: ALL
Radio Altitude - Indication
Figure 201



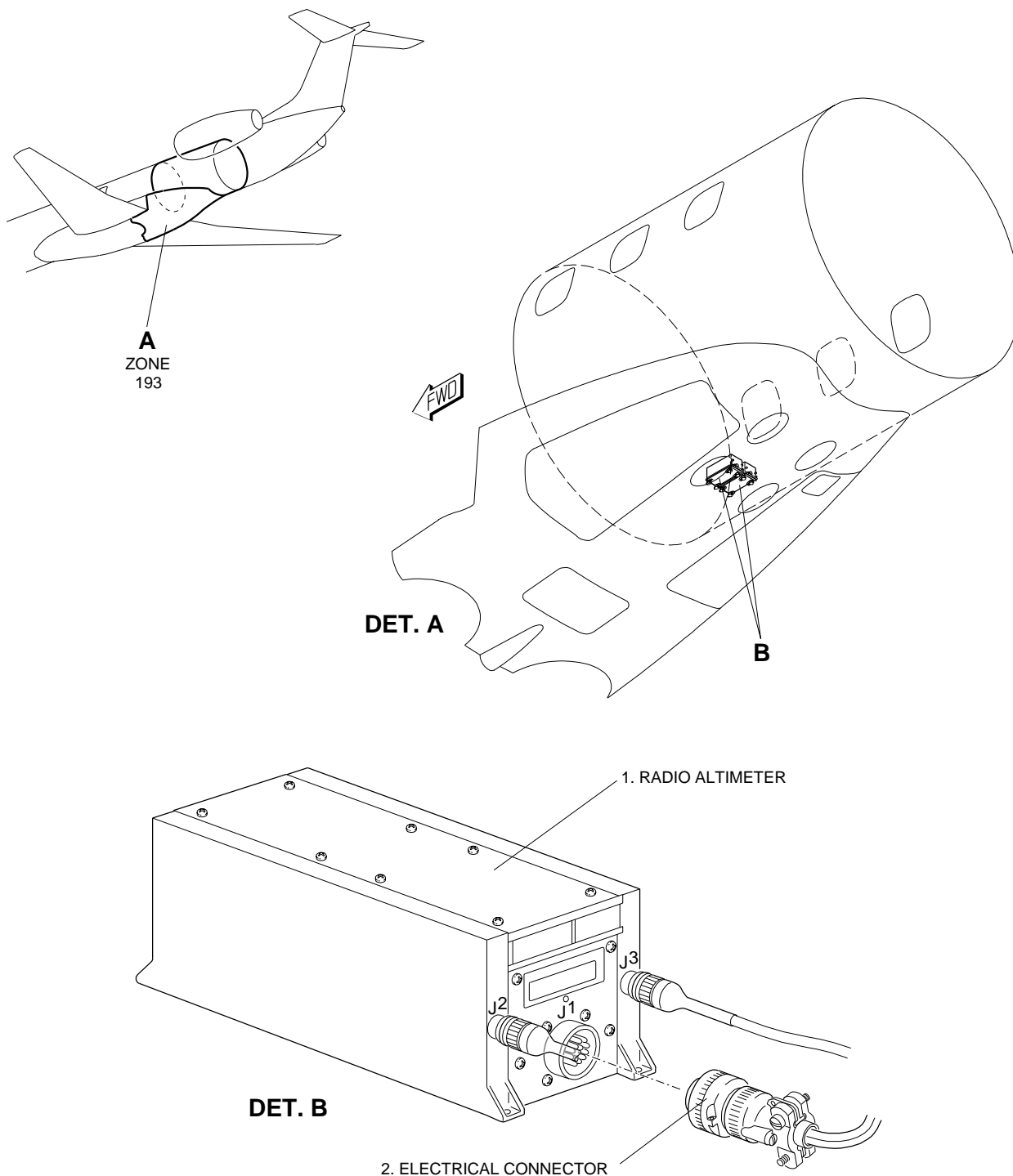
DET. A

145AMM340773.MCE

EFFECTIVITY: PRE-MOD S.B. 145-34-0024

Radio Altimeter - Rigging

Figure 202

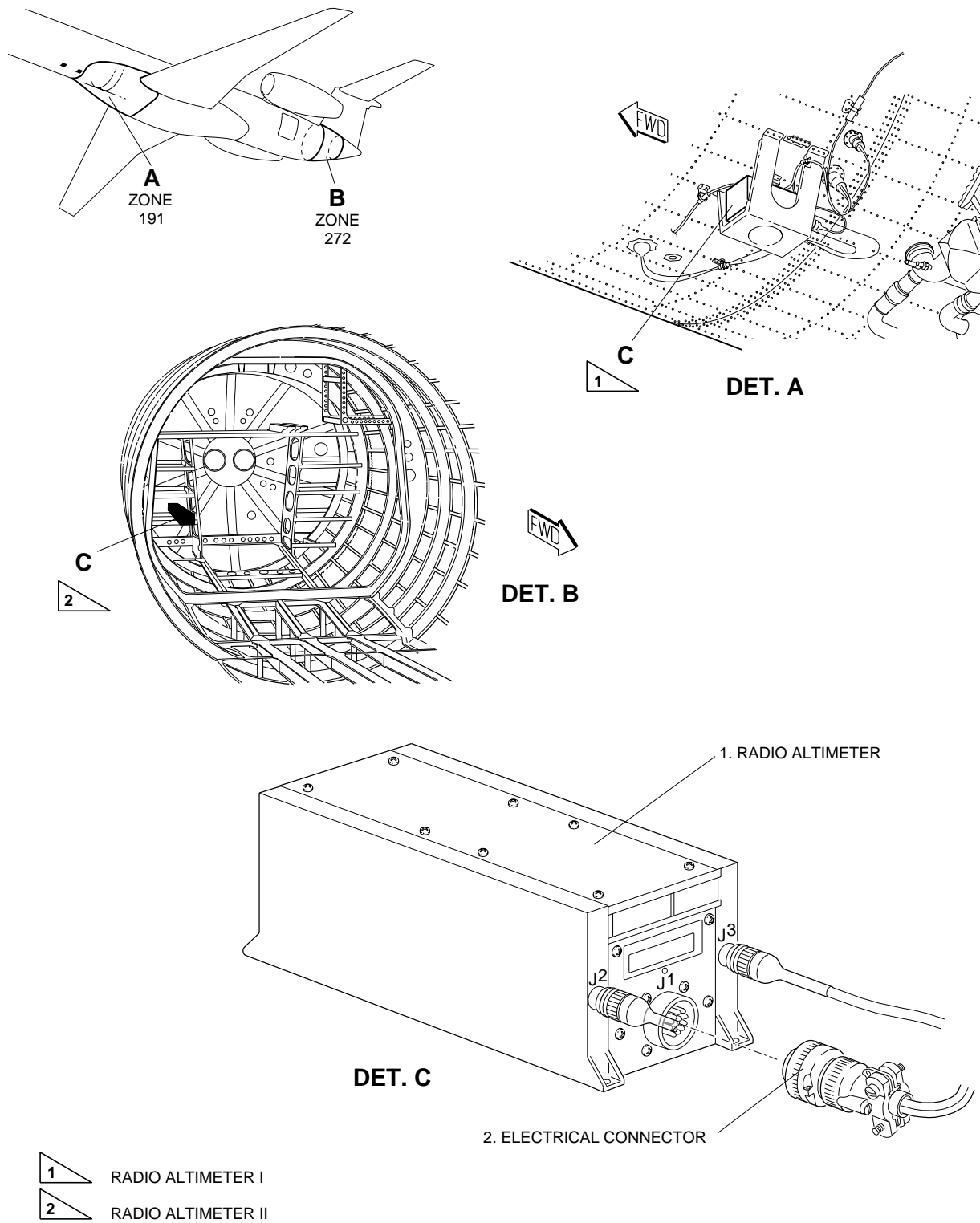


145AMM340776.MCE

EFFECTIVITY: POST-MOD S.B. 145-34-0024

Radio Altimeter - Rigging

Figure 203



145AMM340774.MCE