TCAS TOP DIRECTIONAL ANTENNA - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove and install the TCAS Top Directional Antenna.

   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*
34-43-02-000-801-A	TCAS TOP DIRECTIONAL ANTENNA - REMOVAL	ALL
34-43-02-400-801-A	TCAS TOP ANTENNA DIRECTIONAL - INSTALLATION	ALL

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TASK 34-43-02-000-801-A
EFFECTIVITY: ALL

2. TCAS TOP DIRECTIONAL ANTENNA - REMOVAL

A. General

(1) This procedure gives the instructions to remove the TCAS Top Directional Antenna.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-04/100	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
233	233ALC	Passenger cabin ceiling - LH side

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Polyethylene spatula	To remove the sealant	AR
Commercially available	Workstand - Upper Skin Top Fuselage	To get access to the TCAS top antenna	AR

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin ceiling and upper forward fuselage

I. Preparation

SUBTASK 841-002-A

WARNING: MAKE SURE THAT THE AIRCRAFT IS IN A SAFE CONDITION BEFORE YOU DO THE MAINTENANCE PROCEDURES. THIS IS TO PREVENT INJURY TO PERSONS AND/OR DAMAGE TO THE EQUIPMENT.

(1) Make sure that the aircraft is safe for maintenance.

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(2) On the Circuit Breaker Panel, open the TCAS circuit breaker and attach a DO-NOT-CLOSE tag to it.

(3) Remove ceiling panel 233ALC (AMM MPP 06-41-04/100).

J. Removal

SUBTASK 020-002-A

(1) (AIRCRAFT WITH ANTENNAS THAT DO NOT HAVE GEL CONDUCTIVE GASKET). To remove the TCAS top antenna, do as follows: (Figure 401).

CAUTION: IDENTIFY THE COAXIAL CONNECTORS TO PREVENT A POSSIBLE INVERSION DURING THE INSTALLATION. INCORRECT CONNECTIONS CAN CAUSE MALFUNCTION OR DAMAGE TO THE COMPONENT.

(a) Disconnect the coaxial connectors (5) from the TCAS top antenna (1).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(b) Use a spatula to remove the sealant from around the fuselage skin hole and the TCAS top antenna (1), on the inner surface of the fuselage skin hole.

(c) Use a workstand (external top fuselage) to get access to the TCAS top antenna (1).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(d) Use a spatula to remove the sealant from around the TCAS top antenna (1) and from the aircraft skin.

(e) Remove the sealant used as a protection of the screws (2).

(f) Remove the screws (2) and washers (3).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(g) Use a spatula between the baseplate of the TCAS top antenna (1) and the aircraft skin to make the separation.

(h) Carefully pull the TCAS top antenna (1) away from the fuselage.

(i) Remove the TCAS top antenna (1).

(j) Remove the O-ring (6).

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(k) (AIRCRAFT WITH TCAS TOP ANTENNA THAT HAVE ANTENNA ADAPTER PLATE) Remove the antenna adapter plate (4) from the TCAS top antenna (1).

(2) (AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET) To remove the TCAS top antenna, do as follows: (Figure 402).

CAUTION: IDENTIFY THE COAXIAL CONNECTORS TO PREVENT A POSSIBLE INVERSION DURING THE INSTALLATION. INCORRECT CONNECTIONS CAN CAUSE MALFUNCTION OR DAMAGE TO THE COMPONENT.

(a) Disconnect the coaxial connectors (6) from the TCAS top antenna (1).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(b) Use a spatula to remove the sealant from around the fuselage skin hole and the TCAS top antenna (1), on the inner surface of the fuselage skin hole.

(c) Use a workstand (external top fuselage) to get access to the TCAS top antenna (1).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(d) Use a spatula to remove the sealant from around the TCAS top antenna (1) and from the aircraft skin.

(e) Remove the sealant used as a protection of the screws (2).

(f) Remove the screws (2) and washers (3).

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(g) Use a spatula between the baseplate of the TCAS top antenna (1) and the aircraft skin to make the separation.

(h) Carefully pull the TCAS top antenna (1) away from the fuselage.

(i) Remove the TCAS top antenna (1).

(j) Remove the O-ring (7).

(k) (AIRCRAFT WITH TCAS TOP ANTENNA THAT HAVE ANTENNA ADAPTER PLATE) Remove the antenna adapter plate (4) from the TCAS top antenna (1).

(l) Remove and discard the gel conductive gasket (5).

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(m) Use a spatula to remove the sealant from around the connector of the TCAS top antenna (1) from the TCAS top antenna (1).

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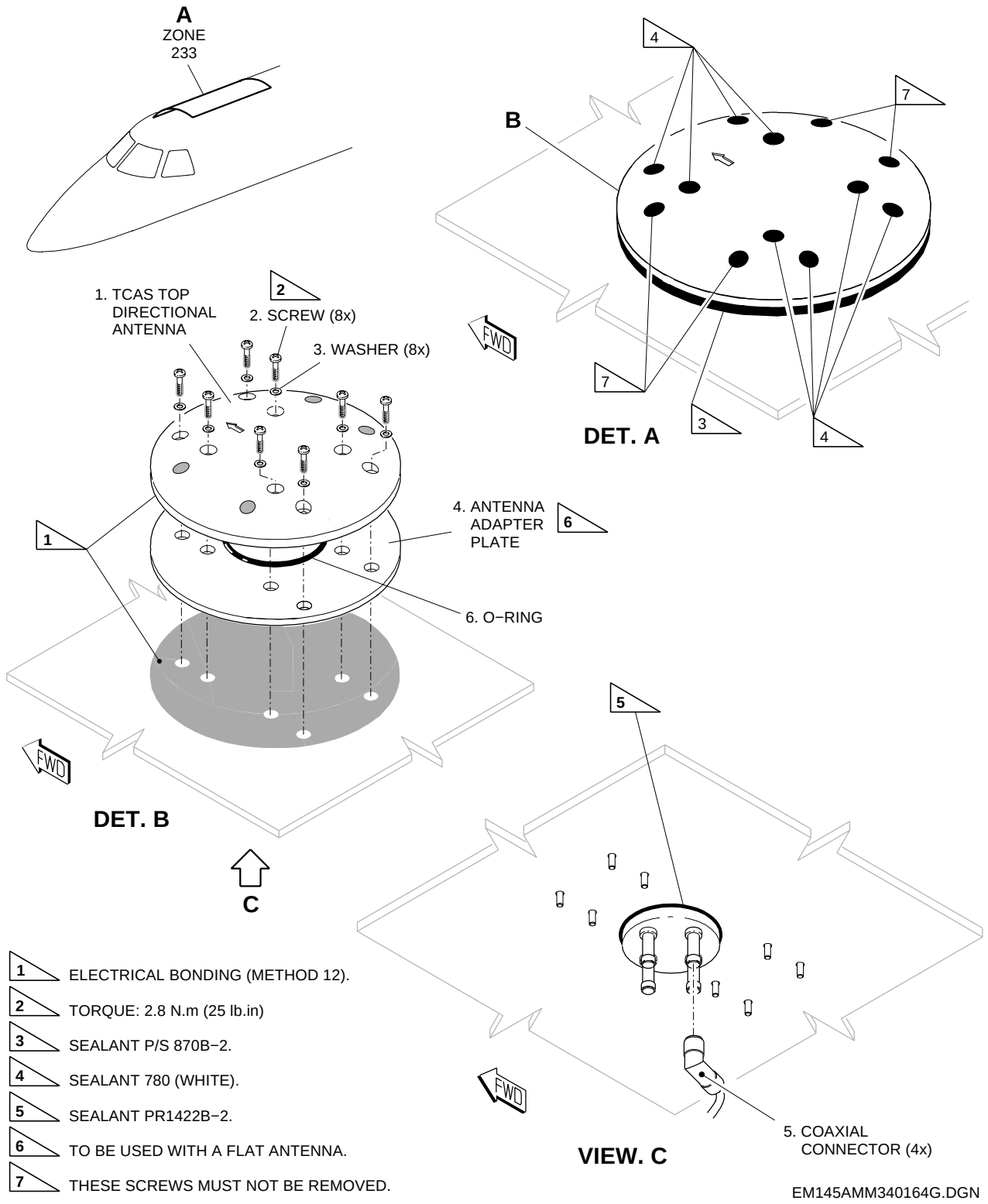
EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT DO NOT HAVE GEL CONDUCTIVE GASKET

TCAS Top Antenna Directional - Removal/Installation

Figure 401



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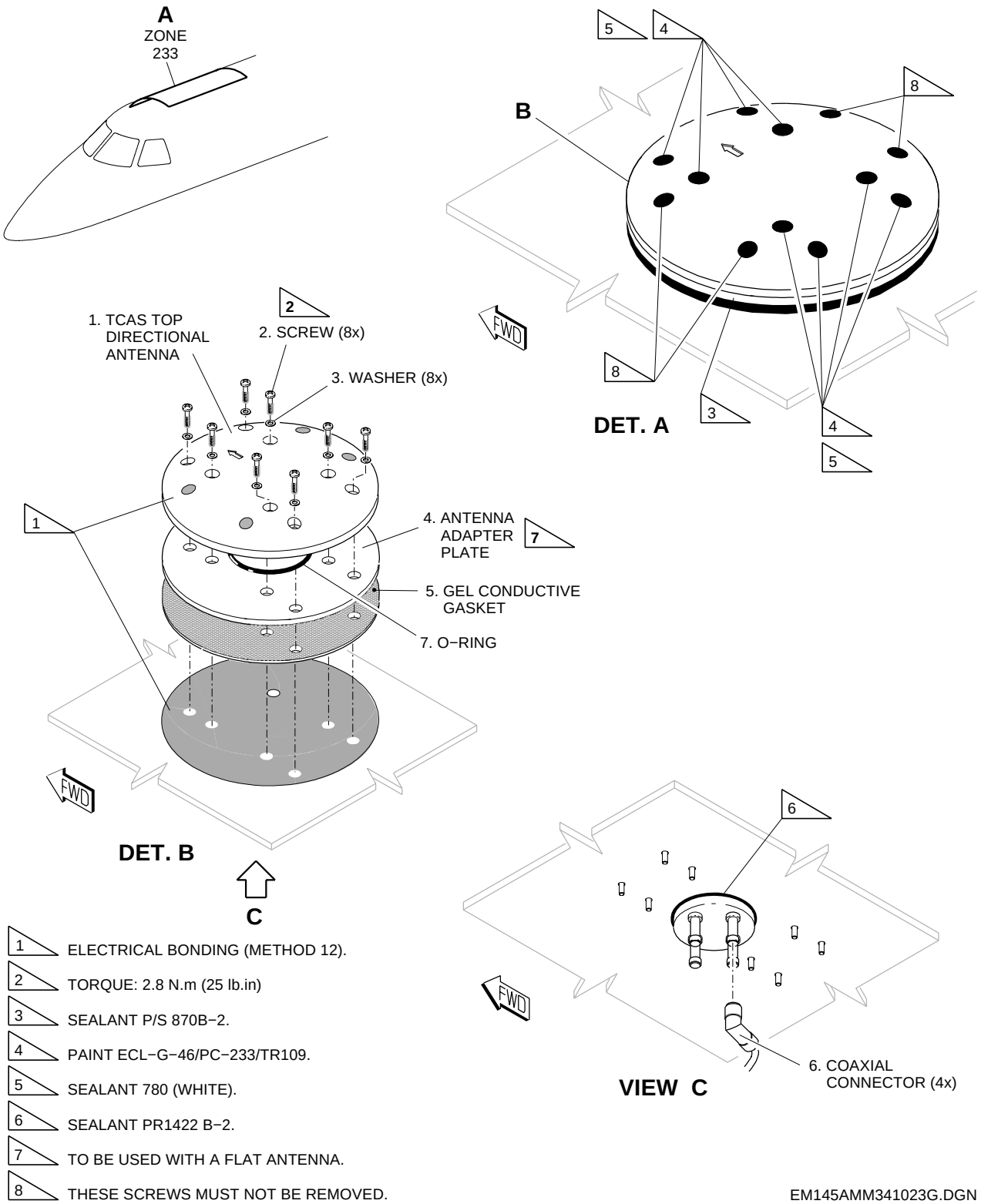
EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET
TCAS Top Antenna Directional - Removal/Installation
Figure 402



1. ELECTRICAL BONDING (METHOD 12).
2. TORQUE: 2.8 N.m (25 lb.in)
3. SEALANT P/S 870B−2.
4. PAINT ECL−G−46/PC−233/TR109.
5. SEALANT 780 (WHITE).
6. SEALANT PR1422 B−2.
7. TO BE USED WITH A FLAT ANTENNA.
8. THESE SCREWS MUST NOT BE REMOVED.

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TASK 34-43-02-400-801-A
EFFECTIVITY: ALL

3. TCAS TOP ANTENNA DIRECTIONAL - INSTALLATION

A. General

(1) This procedure gives the instructions to install the TCAS Top Directional Antenna.

(2) After the installation of the TCAS Top Directional Antenna, it is necessary to energize the aircraft to make sure that the antenna is serviceable.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-04/100	-
AMM SDS 34-43-00/1	
AMM TASK 20-13-21-700-801-A/200	ELECTRICAL BONDING TEST - STANDARD PROCEDURES
AMM TASK 20-13-21-910-801-A/200	TYPES OF ELECTRICAL BONDING AND SURFACE PREPARATION - STANDARD PROCEDURES
AMM TASK 34-43-02-000-801-A/400	TCAS TOP DIRECTIONAL ANTENNA - REMOVAL
CPM 51-21-06	-
IPC 34-43-02	TCAS TOP DIRECTIONAL ANTENNA
SRM 51-20-01	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
232		Passenger cabin - RH side
233	233ALC	Passenger cabin ceiling - LH side

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque wrench	To torque	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Polyethylene spatula	To remove the sealant	AR
Commercially available	Workstand - Upper Skin Top Fuselage	To get access to the TCAS top antenna	AR
Commercially available	Clean dry cloth	To clean the antenna base	AR

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F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
ASTM-D-740	Methyl Ethyl Ketone (MEK)	AR
780 (WHITE) (ASTM-C-920)	Type II Class A White Silicone Sealant	AR
P/S870 B-2 (MIL-PRF-81733)	Type II CL B-2 Polysulfide Aerodynamic Sealant	AR
PR1422 B-2 (AMS-S-8802)	Type I, CL B-2 Polysulfide Sealant	AR
ECL-G-46/PC-233/TR109 (MEP 10-069)	High Polyurethane White Paint	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
Gel Conductive Gasket	IPC 34-43-02	1

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin and upper forward fuselage
1	Does the task	In the cockpit

I. Installation

SUBTASK 420-002-A

(1) Make sure that the aircraft is in the same configuration as it was at the end of the removal task (AMM TASK 34-43-02-000-801-A/400).

(2) Use a workstand (external top fuselage) to get access to the installation position of the TCAS top antenna (1).

(3) (AIRCRAFT WITH ANTENNAS THAT DO NOT HAVE GEL CONDUCTIVE GASKET). To install the TCAS top antenna, do as follows: (Figure 401)

WARNING: BE CAREFUL WHEN YOU USE THE METHYL ETHYL KETONE (MEK). PUT ON SAFETY GOGGLES, PROTECTIVE GLOVES AND CLOTHING. DO NOT BREATHE THE GAS. DO THE WORK IN AN AREA WHICH HAS A GOOD FLOW OF AIR. THE METHYL ETHYL KETONE (MEK) IS POISONOUS AND HIGHLY FLAMMABLE.

(a) With a clean cloth soaked in Methyl Ethyl Ketone (MEK), clean the antenna base surface.

CAUTION: MAKE SURE THAT THE ELECTRICAL BONDING GIVES A GOOD ELECTRIC CONDUCTIVE PATH. IF NOT, DAMAGE TO THE AIRCRAFT AND TO THE EQUIPMENT CAN OCCUR.

(b) Do the bonding procedure, method 12, on the antenna installation surface on the aircraft skin (AMM TASK 20-13-21-910-801-A/200)

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(c) Install the O-ring (6) to the base of the TCAS top directional antenna (1).

(d) (AIRCRAFT WITH TCAS TOP ANTENNA THAT HAVE ANTENNA ADAPTER PLATE) Install the antenna adapter plate (4) to TCAS top antenna (1).

(e) Put the TCAS top antenna (1) in installation position.

(f) Install the screws (2) and washers (3).

(g) Use a torque wrench to torque the screws (2) to 2.8 N.m. (25 lb.in) in a crisscross pattern.

(h) Do the bonding test between the connector of the TCAS top antenna (1) and aircraft ground (AMM TASK 20-13-21-700-801-A/200).

(i) Apply aerodynamic sealant P/S870 B-2 around the contour of the TCAS top antenna (1), on the skin (SRM 51-20-01).

(j) Apply sealant 780 (WHITE) on the screw heads until you fully fill the recesses in the antenna body (SRM 51-20-01).

(k) Apply sealant PR1422 B-2 around the fuselage skin hole and the TCAS antenna base, on the inner surface of the fuselage skin (SRM 51-20-01).

CAUTION: LOOK AT THE IDENTIFICATION OF THE COAXIAL CONNECTORS TO MAKE SURE THAT YOU MAKE THE CORRECT CONNECTIONS. INCORRECT CONNECTIONS CAN CAUSE MALFUNCTION OF THE SYSTEM OR DAMAGE TO THE COMPONENT.

(l) Connect the coaxial connectors (5) to the TCAS top antenna (1).

(4) (AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET). To install the TCAS top antenna, do as follows: (Figure 402)

WARNING: BE CAREFUL WHEN YOU USE THE METHYL ETHYL KETONE (MEK). PUT ON SAFETY GOGGLES, PROTECTIVE GLOVES AND CLOTHING. DO NOT BREATHE THE GAS. DO THE WORK IN AN AREA WHICH HAS A GOOD FLOW OF AIR. THE METHYL ETHYL KETONE (MEK) IS POISONOUS AND HIGHLY FLAMMABLE.

(a) With a clean cloth soaked in Methyl Ethyl Ketone (MEK), clean the antenna base surface.

(b) Install the O-ring (7) to the base of the TCAS top directional antenna (1).

(c) (AIRCRAFT WITH TCAS TOP ANTENNA THAT HAVE ANTENNA ADAPTER PLATE) Install the antenna adapter plate (4) to the TCAS top antenna (1).

(d) Carefully remove the protective release film identified with "ANTENNA SIDE" from the gel conductive gasket (5).

(e) Carefully align the gel conductive gasket (5) with the screw holes and connector, and install it to the base of the TCAS top antenna (1).

(f) Carefully remove the protective release film identified with "AIRCRAFT SIDE" from the gel conductive gasket (5).

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CAUTION: MAKE SURE THAT THE ELECTRICAL BONDING GIVES A GOOD ELECTRIC CONDUCTIVE PATH. IF NOT, DAMAGE TO THE AIRCRAFT AND TO THE EQUIPMENT CAN OCCUR.

(g) Do the bonding procedure, method 12, on the antenna installation surface on the aircraft skin (AMM TASK 20-13-21-910-801-A/200).

(h) Put the TCAS top antenna (1) in installation position.

(i) Install the screws (2) and washers (3).

(j) Use a torque wrench to torque the screws (2) to 2.8 N.m. (25 lb.in) in a crisscross pattern.

CAUTION: BE CAREFUL WHEN YOU USE THE POLYETHYLENE SPATULA TO BREAK THE ANTENNA SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRCRAFT SKIN, THE COAXIAL CABLE, OR THE ANTENNA.

(k) If necessary, with a spatula, remove the excess gel of the conductive gel gasket (5) from around the TCAS top antenna (1) and from the aircraft skin.

(l) Do the bonding test between the connector of the TCAS top antenna (1) and aircraft ground (AMM TASK 20-13-21-700-801-A/200).

(m) Apply aerodynamic sealant P/S870 B-2 around the contour of the TCAS top antenna (1), on the skin (SRM 51-20-01).

(n) Apply paint ECL-G-46/PC-233/TR109 on the screw (2) heads (CPM 51-21-06).

(o) Apply sealant 780 (WHITE) on the screw heads until you fully fill the recesses in the antenna body (SRM 51-20-01).

(p) Apply sealant PR1422 B-2 around the fuselage skin hole and the TCAS top antenna base, on the inner surface of the fuselage skin (SRM 51-20-01).

CAUTION: LOOK AT THE IDENTIFICATION OF THE COAXIAL CONNECTORS TO MAKE SURE THAT YOU MAKE THE CORRECT CONNECTIONS. INCORRECT CONNECTIONS CAN CAUSE MALFUNCTION OF THE SYSTEM OR DAMAGE TO THE COMPONENT.

(q) Connect the coaxial connectors (6) to the TCAS top antenna (1).

J. Follow-on

SUBTASK 842-002-A

(1) On the Circuit Breaker Panel, close the TCAS circuit breaker and remove the DO-NOT-CLOSE tag from it.

(2) Make sure that the TCAS top directional antenna is serviceable as follows:

(a) Get access to the RH wardrobe.

(b) Remove the access panel on the wardrobe end wall to get access to the TCAS processor.

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(c) Energize the aircraft and make sure that the TCAS (AMM SDS 34-43-00/1) is serviceable and on.

(d) After the aircraft energization, stop for approximately 11 seconds and make sure that, on the TCAS processor, all led's are off.

(e) Deenergize the aircraft.

(f) Install the access panel of the RH wardrobe end wall.

(3) Install ceiling panel 233ALC (AMM MPP 06-41-04/100).

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