VHF ANTENNA - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove and install the VHF Antennas.

   B. These procedures are applicable to VHF antennas I, II, and lll (optional).

   C. 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*
23-12-04-000-801-A	VHF ANTENNAS - REMOVAL	ALL
23-12-04-400-801-A	VHF ANTENNAS - INSTALLATION	ALL

TASK 23-12-04-000-801-A
EFFECTIVITY: ALL

2. VHF ANTENNAS - REMOVAL

A. General

(1) This procedure gives the instructions to remove VHF antennas I, II, and lll.

B. References

REFERENCE	*DESIGNATION*
IPC 23-12-04	VHF ANTENNA

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
132		Fuselage bottom - RH
243		Fuselage top - LH
253		Fuselage top - LH

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 VHF top antenna	AR

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	At fuselage center sections I, ll, and lll

I. Preparation

SUBTASK 841-002-A

(1) On the circuit breaker panel, open the circuit breakers listed below and attach a DO-NOT-CLOSE tag to them:

- VHF 1 (Location Tip: ESSENTIAL DC BUS 1/COMM/VHF 1).
- VHF 2 (Location Tip: DC BUS 2/COMM/VHF 2).

- (Aircraft with VHF 3 system) VHF 3 (Location Tip: DC BUS 1/COMM/VHF 3).

J. Removal (Figure 401) (Figure 402)

SUBTASK 020-002-A

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

(1) From the inside of the aircraft, disconnect the electrical connector (1) from the VHF antenna (2).

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.

(2) Use a spatula to remove the sealant from around the electrical connector (1).

(3) Use a workstand (external top fuselage) to get access to the VHF antenna (1).

(4) On the fuselage outside, remove the aerodynamic sealant from the contour of the VHF antenna (2) and from each screw (3).

(5) Remove the six screws (3) and, if applicable, remove the washers (4) (IPC 23-12-04) that attach the VHF antenna (2) to the fuselage.

(6) Remove the antenna (2).

K. Removal (Figure 403) (Figure 404)

SUBTASK 020-003-A

EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET

(1) From the inside of the aircraft, disconnect the electrical connector (3) from the VHF 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.

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

(3) Use a workstand (external top fuselage) to get access to the VHF antenna (1).

(4) On the fuselage outside, use a spatula to remove the aerodynamic sealant from the contour of the VHF antenna (1) and from aircraft skin.

(5) Remove the sealant use as protection of the screws (5).

(6) Remove the six screws (5) and, if applicable, remove the washers (4) (IPC 23-12-04) that attach the VHF antenna (1) to the fuselage.

CAUTION: BE CAREFUL WHEN 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.

(7) Use a spatula between the baseplate of the VHF antenna (1) and the aircraft skin to make the separation.

(8) Carefully pull the VHF antenna (1) away from the fuselage.

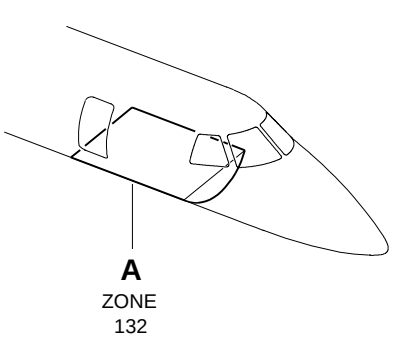
(9) Remove the antenna (1).

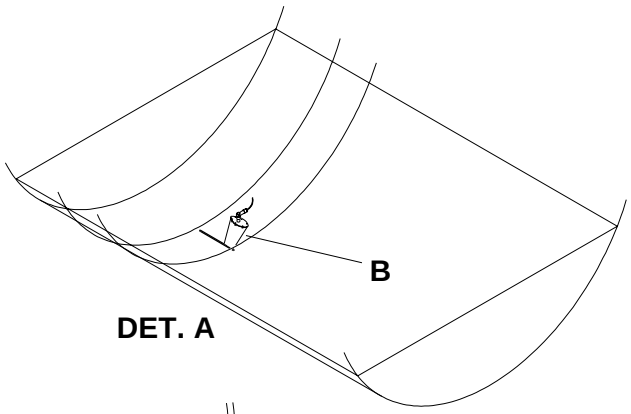
(10) Remove and discard the gel conductive gasket (2).

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.

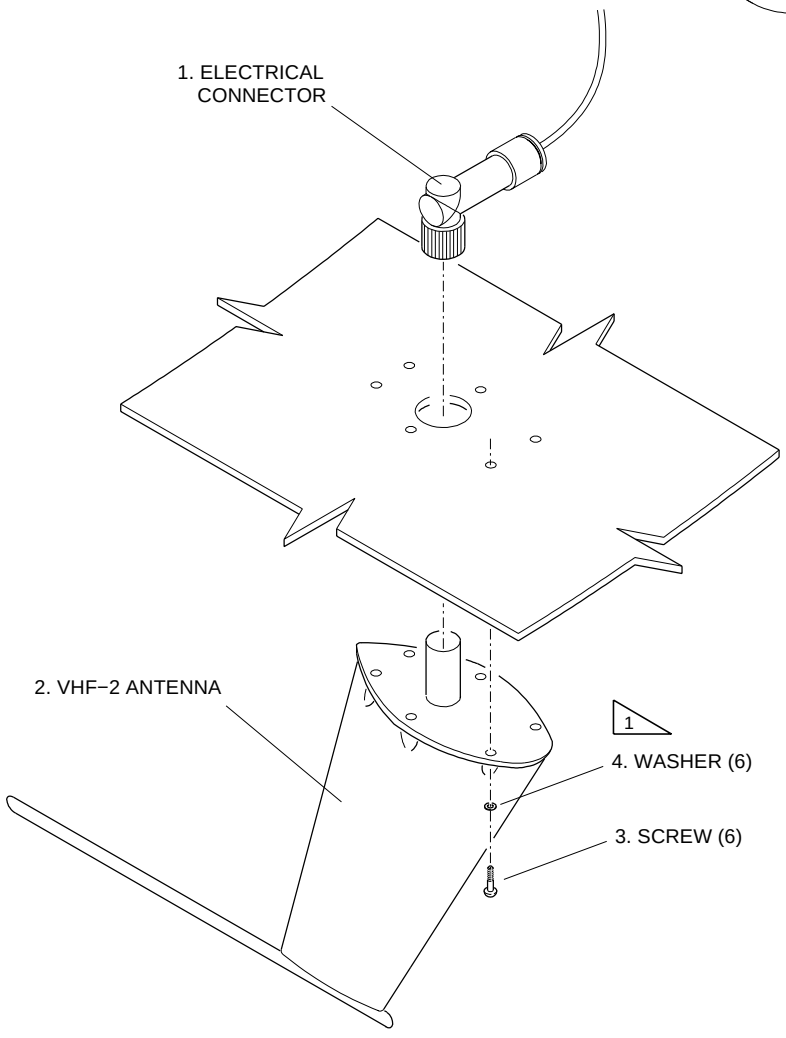
(11) Use a spatula to remove the sealant from around the connector of the VHF antenna (1).

EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT DO NOT HAVE GEL CONDUCTIVE GASKET
VHF Antennas - Removal/Installation
Figure 401





DET. A



DET. B

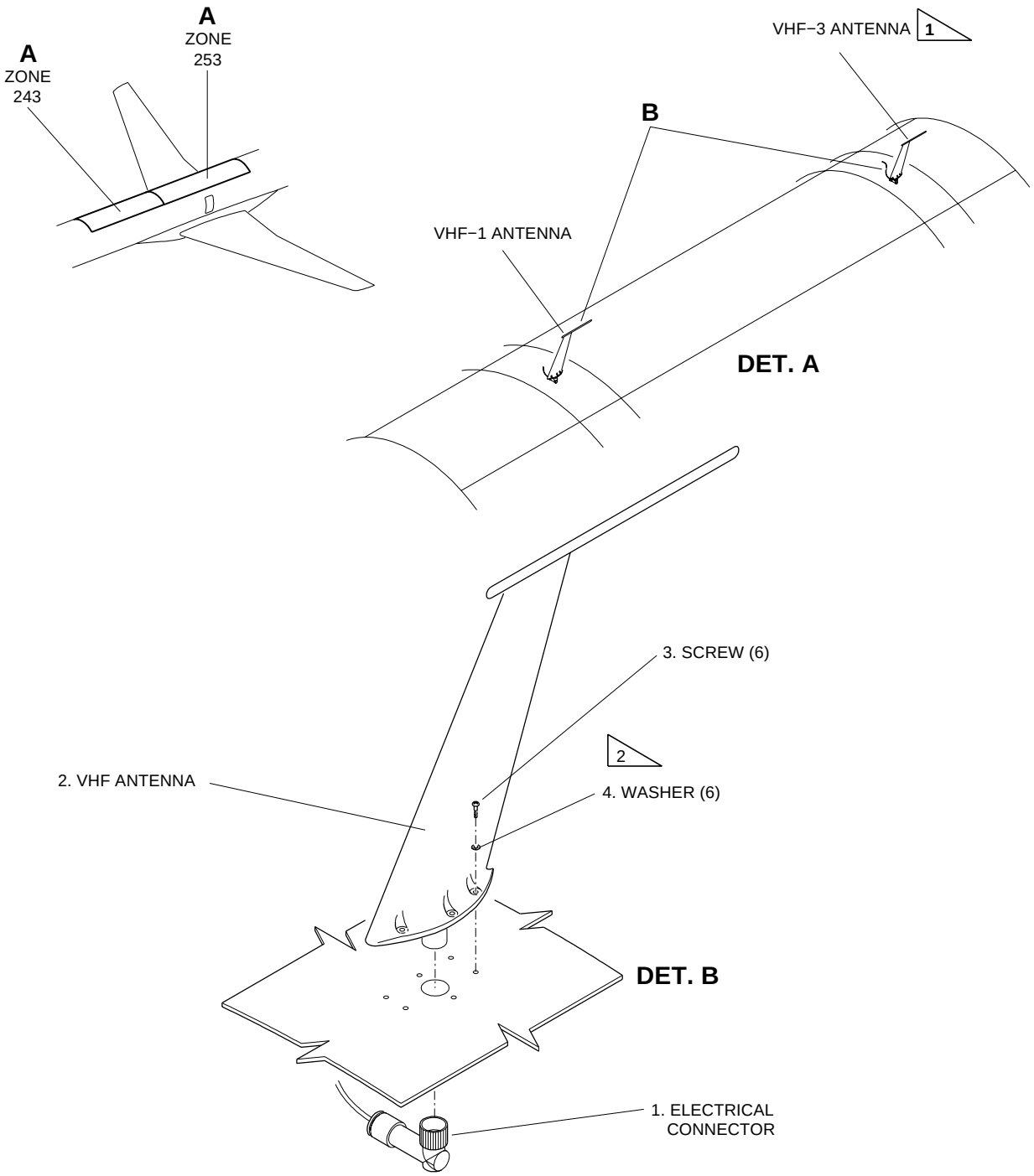
1 AS APPLICABLE TO THE AIRCRAFT CONFIGURATION

EM145AMM230132E.DGN

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

VHF Antennas - Removal/Installation

Figure 402

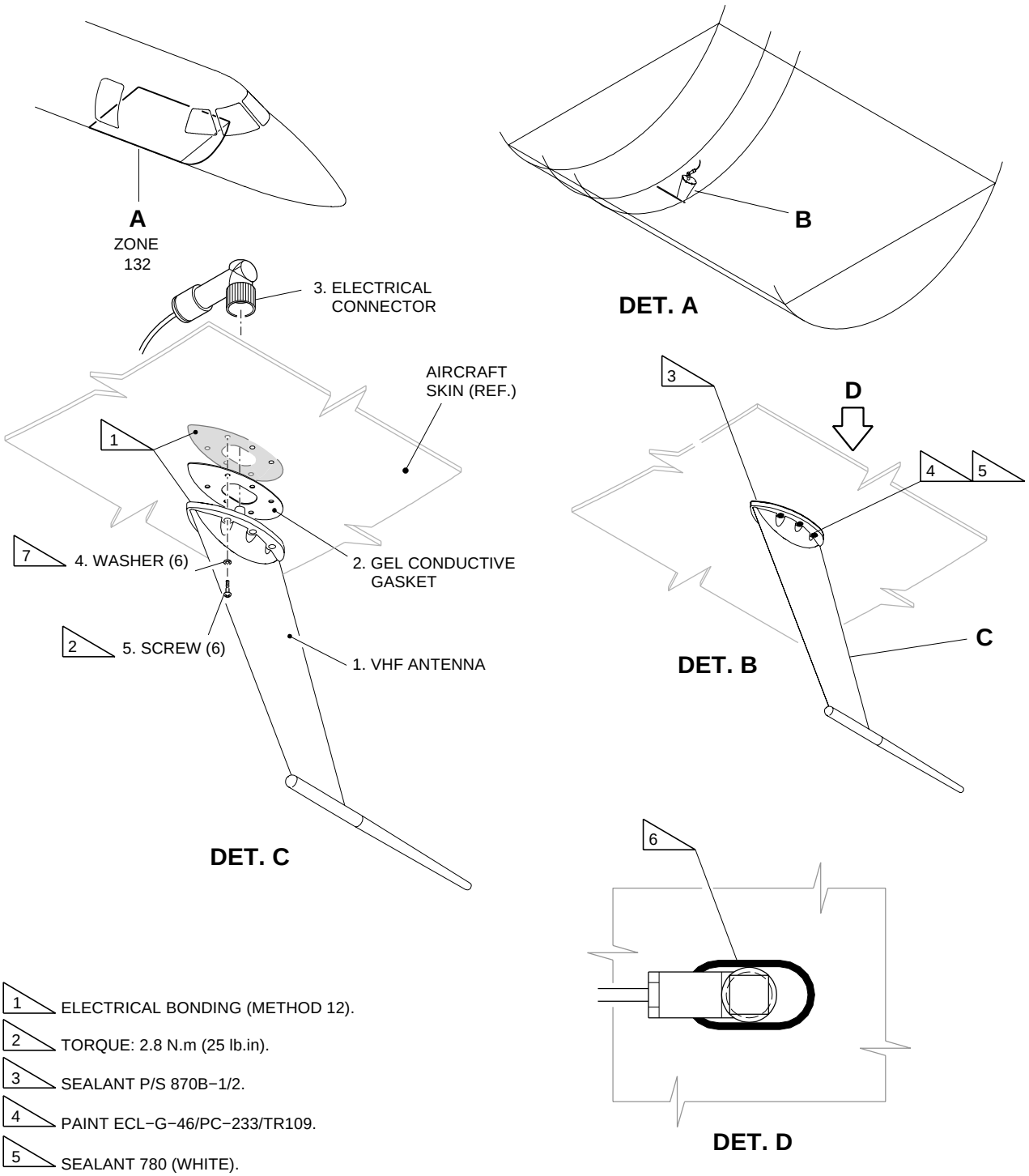


1 AIRCRAFT WITH VHF−3 SYSTEM OR ACARS INSTALLED

2 AS APPLICABLE TO THE AIRCRAFT CONFIGURATION

EM145AMM230133C.DGN

EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET
VHF Antennas - Removal/Installation
Figure 403



1 ELECTRICAL BONDING (METHOD 12).

2 TORQUE: 2.8 N.m (25 lb.in).

3 SEALANT P/S 870B−1/2.

4 PAINT ECL−G−46/PC−233/TR109.

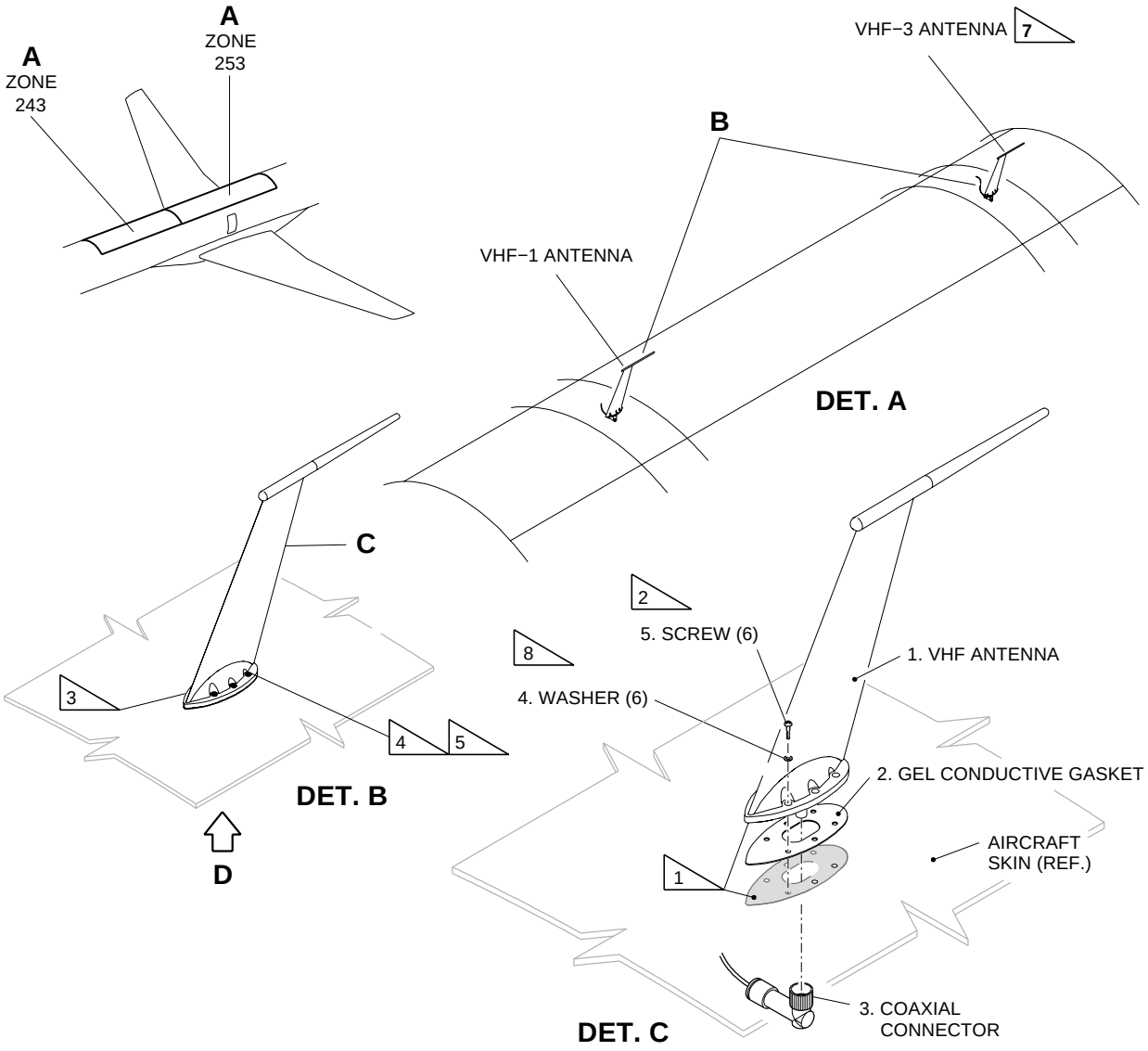
5 SEALANT 780 (WHITE).

6 SEALANT PR1422 B−2.

7 AS APPLICABLE TO THE AIRCRAFT CONFIGURATION

EM145AMM230972D.DGN

EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET
VHF Antennas - Removal/Installation
Figure 404



1 ELECTRICAL BONDING (METHOD 12).

2 TORQUE: 2.8 N.m (25 lb.in).

3 SEALANT P/S 870B−1/2.

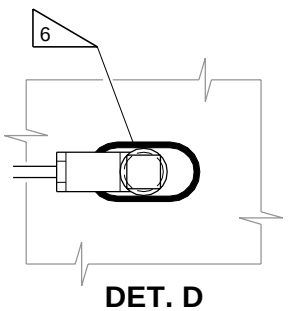
4 PAINT ECL−G−46/PC−233/TR109.

5 SEALANT 780 (WHITE).

6 SEALANT PR1422 B−2.

7 AIRCRAFT WITH VHF−3 SYSTEM OR ACARS INSTALLED.

8 AS APPLICABLE TO THE AIRCRAFT CONFIGURATION



DET. D

EM145AMM230971D.DGN

TASK 23-12-04-400-801-A
EFFECTIVITY: ALL

3. VHF ANTENNAS - INSTALLATION

A. General

(1) This procedure gives the instructions to install VHF antennas I, II, and lll.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 20-11-01-910-801-A/200	ANTENNA SEALING
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 23-12-00-700-802-A/500	VHF-3 FUNCTIONAL TEST
AMM TASK 23-12-00-700-805-A/500	VHF - FUNCTIONAL TEST
AMM TASK 23-12-04-000-801-A/400	VHF ANTENNAS - REMOVAL
AMM TASK 23-22-00-700-801-A/500	ACARS - FUNCTIONAL TEST WITH A PORTABLE ACARS TEST STATION(PATS)
CPM 51-21-06	-
IPC 23-12-04	VHF ANTENNA
SRM 51-20-01	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
132		Fuselage bottom - RH
243		Fuselage top - LH
253		Fuselage top - LH

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

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

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Commercially available	Isopropyl Alcohol	AR
Sealant P/S870B-1/2 (MIL-PRF-81733)	Type II CL B-1/2 Polysulfide Aerodynamic Sealant	AR
ECL-G-46/PC-233/TR109 (MEP 10-069)	High Solids Polyurethane White Paint	AR
780 (WHITE) (ASTM C920)	Type II Class A-White Silicone Sealant	AR
PR1422 B-2 (DMS 2082 C)	Type I CL B-2 Polysulfide Sealant	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	At fuselage center sections I, II, and III

I. Installation (Figure 401) (Figure 402)

SUBTASK 420-002-A

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

(1) Make sure that the aircraft is in the same configuration as it was at the end of the removal task (AMM TASK 23-12-04-000-801-A/400)

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

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.

(3) 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.

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

(5) Put the antenna (2) in its installation position.

(6) Wet the screws (3) and, if applicable, the washers (4) (IPC 23-12-04), in 780 (WHITE) and attach the VHF antenna (2) with them. Tighten manually.

(7) From the inside the aircraft, connect the electrical connector (1) to the VHF antenna (2).

(8) Do the electrical bonding test between the coaxial connector of the VHF antenna (2) and the aircraft ground (AMM TASK 20-13-21-700-801-A/200)

(9) Apply sealant PR1422B-2 on the contour of the electrical connector (1).

(10) Apply aerodynamic sealant P/S870B-1/2 along the contour of the antenna base (AMM TASK 20-11-01-910-801-A/200).

J. Installation (Figure 403) (Figure 404)

SUBTASK 420-003-A

EFFECTIVITY: AIRCRAFT WITH ANTENNAS THAT HAVE GEL CONDUCTIVE GASKET

(1) Make sure that the aircraft is in the same configuration as it was at the end of the removal task (AMM TASK 23-12-04-000-801-A/400).

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

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.

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

(4) Carefully remove the protective release film identified with "ANTENNA SIDE" from the gel conductive gasket (2).

(5) Carefully align the gel conductive gasket (2) with the screw holes and connector, and install it to the base of the VHF antenna (1).

(6) Carefully remove the protective release film identified with "AIRCRAFT SIDE" from the gel conductive gasket (2).

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.

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

(8) Put the VHF antenna (1) in its installation position.

(9) With the screws (5) and, if applicable, the washers (4) (IPC 23-12-04), attach the VHF antenna (1). Tighten manually.

(10) Use a torque wrench to torque the screws (5) to 2.8 N.m (25 lb.in).

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.

(11) If necessary, with a spatula, remove the excess gel of the conductive gel gasket (2) from around the VHF antenna (1) and from the aircraft skin.

(12) Do the the electrical bonding test between the coaxial connector on the antenna (1) and the aircraft ground (AMM TASK 20-13-21-700-801-A/200)

(13) Apply aerodynamic sealant P/S870B-1/2 along the contour of the antenna base (AMM TASK 20-11-01-910-801-A/200).

(14) Apply sealant PR1422B-2 around the fuselage skin hole and the VHF antenna (1) base, on the inner surface of the fuselage skin (SRM 51-20-01).

(15) Apply paint ECL-G-46/PC-233/TR109 on the screw (5) heads (CPM 51-21-06).

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

(17) From the inside the aircraft, connect the electrical connector (3) to the VHF antenna (1).

K. Follow-on

SUBTASK 842-002-A

(1) On the circuit breaker panel, close the circuit breakers listed below and remove the DO-NOT-CLOSE tag from them:

- VHF 1 (Location Tip: ESSENTIAL DC BUS 1/COMM/VHF 1).
- VHF 2 (Location Tip: DC BUS 2/COMM/VHF 2).
- (Aircraft with VHF 3 system) VHF 3 (Location Tip: DC BUS 1/COMM/VHF 3).

(2) Do the VHF Functional Test:

(a) For aircraft with VHF Honeywell, refer to AMM TASK 23-12-00-700-805-A/500.

(b) For aircraft with VHF 3 Collins and equipped with VHF 3 control panel only, refer to AMM TASK 23-12-00-700-802-A/500.

(c) For aircraft with VHF 3 Collins and equipped with ACARS only, refer to AMM TASK 23-22-00-700-801-A/500.