SUPPLEMENT
TECHNICAL MANUAL

ORGANIZATIONAL / UNIT AND INTERMEDIATE MAINTENANCE

AVIONIC CLEANING AND CORROSION PREVENTION / CONTROL

(ATOS)

THIS PUBLICATION SUPPLEMENTS TO 1-1-689 (NAVAIR 16-1-540 AND ARMY TM 1-1500-343-23) DATED 1 SEPTEMBER 2000. Reference to this supplement will be made on the title page of the basic manual by personnel responsible for maintaining the publication in current status.

COMMANDERS ARE RESPONSIBLE FOR BRINGING THIS SUPPLEMENT TO THE ATTENTION OF ALL AFFECTED AF PERSONNEL

Published under authority of the Secretary of the Air Force

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1. PURPOSE.

a. The Air Force has determined that MIL-L-87177 is an acceptable alternate for MIL-C-81309 as a corrosion preventive compound in electronic applications. The Air Force has also identified an electrically conductive, corrosion inhibiting sealant for EMI suppression applications. To authorize usage of MIL-L-87177 and the conductive sealant by Air Force organizations, the following changes shall be incorporated in TO 1-1-689.

b. In all cases where MIL-C-83109, Type II and III, Classes 1 and 2 (Corrosion Preventive Compound, Water Displacing, Ultra-thin) is specified for use in this Technical Order; MIL-L-87177, Types I and II, Grade B (Lubricants, Corrosion Preventive Compound, Water Displacing, Synthetic) may be used as a direct substitute or an alternate material.

2. INSTRUCTIONS.

a. Page 6-5, the WARNING prior to sub-paragraph 6-2.7.f is changed to read as indicated below:

WARNING

Do not use Corrosion Preventive Compound MIL-C-81309 or MIL-PRF-16173, or MIL-C-85054 or Lubricating Oil, General Purpose Preservative, VV-L-800 (Appendix A, Table A-1, Item 18) around oxygen or oxygen fitting since
fire/explosion may result. Corrosion Preventive Compounds, MIL-C-81309 and MIL-L-87177 are flammable and toxic.

b. Page 6-26, the NOTE prior to sub-paragraph 6-3.5.g is changed to read as indicated below:

NOTE

The following procedures are applicable only to bulbs that are installed into their socket with a turning, twisting, or scraping motion (e.g. screw base, bayonet base, or fuse-type clip). This scraping metal-to-metal contact is needed to ensure local displacement of the thin, soft-film formed by the Water-Displacing Corrosion Preventive Compound, MIL-C-81309, (Appendix A, Table A-1, Item 16). Corrosion Preventive Compounds, MIL-C-81309 and MIL-L-87177 (Appendix A, Table A-1, Item 16B) are flammable and toxic.

c. Page 7-12, sub-paragraph 7-2.3.d. is changed to read as indicated below:

d. Apply Water-Displacing, Corrosion Preventive Compound, MIL-C-81309, (Appendix A, Table A-1, Item 16), over jumper assembly. Make sure the entire connection is completely covered.

d. Page 7-12, a new sub-paragraph 7-2.3.e is added to read as indicated below:

e. For connections seldom requiring disassembly, coat the entire connection with Corrosion Inhibiting Sealant, MIL-S-81733, Type II-1/2 (MIL-PRF-81733, Class 1, Grade A, Type II-1/2) (Appendix A, Table A-1, Item 29) using a sealant gun; and smooth out with a spatula, ZZ-S-70 (A-A-227) (Appendix B, Table B-1, Item 18) to ensure complete coverage. This sealant will cure to a tack-free state in 10 hours.

e. Page 8-8, a new paragraph is added to read as indicated below:

8-6.3.1. (Air Force Only) Electronically Conductive, Corrosive Inhibiting Sealant for EMI Suppression Applications. Many electrically conductive sealants are available, but most are not corrosion inhibiting and generate galvanic corrosion at bond lines when contacting aluminum and/or steel alloys in the presence of moisture. SAE Specification AMS 3262 covers an electrically conductive, corrosion inhibiting sealant that can be used in EMI suppression applications without causing a galvanic corrosion problem. This material can be used to bond EMI gaskets to one of two mating surfaces, to bond and seal two mating metal surfaces fastened in a permanent joint, or to fillet seal the edges of a metal-to-metal lap or butt type joint while in each case providing electrical conductivity between all components. See Appendix A, Table A-1, Item 29A for sealant and primer ordering information. Application procedures are as follows:

a. If present, remove all paint and primer from all metal surfaces that will contact the sealant per TO 1-1-8 procedures, and lightly abrade these surfaces with A-A-58054, Type I, Grade B, abrasive mat (Appendix A, Table A-1, Item 1).

WARNING

TT-I-735 Isopropyl Alcohol is flammable and toxic. Skin and eye protection is required. Avoid all sources of ignition. Good general ventilation is adequate.

b. Clean all surfaces that will contact the sealant with a lint free cloth (Appendix A, Table A-1, Item 24) wet with TT-I-735 Isopropyl Alcohol (Appendix A, Table A-1, Item 15), and then wipe the areas dry with a clean cloth of the same type. Do not allow drying by evaporation or touch thecleaned areas with bare hands as this will re-contaminate the surfacesand prevent adhesion of the sealant.

NOTE

All sealant and primer application operations and component assembly operations after the sealant application shall be performed within the temperature range of 60°F to 95°F so that the sealant will adhere properly.

WARNING

Sealants and primers are flammable and toxic. Skin and eye protection are required. Avoid all sources of ignition. Good general ventilation is normally adequate.

c. If required by the sealant manufacturer, obtain the appropriate adhesive primer (See Appendix A, Table A-1, Item 29A) apply it to the surfaces that will contact the sealant per the manufacturer's instructions; allow it to cure for at least 1/2 but not more than 4 hours before applying the sealant. If more than 4 hours elapse after the primer application, reaccomplish steps a., b., and c. before applying the sealant.

d. Choose a sealant (See Appendix A, Table A-1, Item 29A); if it is a multi-component sealant, mix the components together per the manufacturer's instructions.

e. Apply a bead of sealant to the surface to which the EMI gasket will be bonded; one of the two mating metal surfaces that will be permanently assembled to the edge of a lap joint; or the gap of a butt joint; whatever situation applies, using a sealant gun or a squeezable sealant tube. Using a straight edged wood or plastic tool, smooth the sealant bead to form a continuous film over the entire contact surface for the EMI gasket or the mating metal surface of a permanent assembly as applicable; or smooth the bead at the lap joint edge to an even, continuous fillet or the bead in the butt joint gap to fill the gap entirely and be flush with the surface as applicable.

f. Press the EMI gasket into the sealant or assemble the sealant coated surface to the sealant free mating surface of a permanent assemble, as applicable, while the sealant is wet or within the manufacturer's specified application life.

g. Clean up any excess sealant with a lint free cloth (Appendix A, Table A-1, Item 24) wet with Isopropyl Alcohol (Appendix A, Table A-1, Item 15) while the sealant is still wet.

NOTE

To ease clean up of excess sealant, MIL-T-21595, Type I masking tape (Appendix A, Table A-1, Item 32) can be applied to the surface on each side of the area to which sealant will be applied. Install the tape before the sealant is applied, and remove it as soon as possible after the sealant is smoothed out.

h. Allow the sealant to cure for the time recommended by the manufacturer, but not less than 24 hours, before placing the equipment in service.

f. Page 10-3, sub-paragraph 10-4.3.3.b. is changed to read as indicated below:

b. Totally immerse equipment is a 55-gallon drum of Water-Displacing Corrosion Preventive Compound, (Appendix A, Table A-1, Item 16). If equipment cannot be immersed, either spray, wipe, or brush all exterior and interior surfaces with Water Displacing Corrosion Preventive Compound, Ultra-Thin Film MIL-C-81309, Type II (Appendix A, Table A-1, Item 16) or Water Displacing Lubricant and Corrosion Preventive Compound, MIL-L-87177, Type I or II, Grade B (Appendix A, Table A-1, Item 16B).

g. Page A-4, Table A-1., new Item Nos. are added as indicated below:

Table A-1. Avionic Cleaning/Corrosion Removal Materials.

ITEM NO.	NOMENCLATURE	SPECIFICATION	NATIONAL STOCK NO.	UNIT ISSUE	INTENDED USE
16B	Lubricants, Corrosion Preventive Compound, Water Displacing, Synthetic	MIL-L-87177, Type I, Grade B	6850-01-328-3617	Aerosol Can, 16 oz	Water displacing lubricant and corrosion preventive compound for lubrication, corrosion prevention, and water displacement on in-service equipment and parts at temperatures from -65°F type +400°F. Suitable for use on electrical and electronic equipment and components without effecting electrical conductivity.
		Type II, Grade B	6850-01-326-7294	Can, 5 gal	

Table A-1. Avionic Cleaning/Corrosion Removal Materials.

ITEM NO.	NOMENCLATURE	SPECIFICATION	NATIONAL STOCK NO.	UNIT ISSUE	INTENDED USE
29A	Sealing Compound, Silicone Rubber, Electrically Conductive and Corrosion Inhibiting For Use From -67 To +500°F (-55 to +260°C).	AMS 3262 Cho-Bond 1075 Sealant Cho-Bond 1086 Primer PR-2225, B-1 Sealant	8040-01-342-1510 8040-01-188-5038 None	Tube, 2.5 oz Cart, 10 oz Semkit® Cart, 10 oz	To bond EMI gaskets to a metal surface, to bond and seal metal mating surfaces, and to fillet seal metal lap and butt joints while providing electrical conductivity and preventing galvanic corrosion in each case for EMI suppression applications.

NOTE

Cho-Bond 1075 and 1086 are available from Chomerics Division of Parker Hannifin Coroporation; 77 Dragon Ct; Woburn, MA 01888. PR-2225 is available from PRC-DeSoto Int. Inc., 5454 San Fernando Rd., Glendale, CA 91203.

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