MICROWAVE ANTENNAS

KS-15676 HORN REFLECTOR AND WAVEGUIDE SYSTEM

MAINTENANCE

REFLECTOR SURFACE

This section contains procedures for Class I Repairs (replacement of 1 or more rivets) and for Class II Repairs (removal of intermediate rib) which apply to the KS-15676 Horn Reflector and Waveguide System.

This issue affects the Equipment Test List.

Caution: Before performing these procedures, all safety precautions and warnings in Section 402-421-500 should be followed.

CHART **PAGE**

CHART 1

CLASS I REPAIRS (REPLACEMENT OF RIVETS ONLY)

APPARATUS:

1—5/32-inch Drift Pin

1—No. 10 Drill

1—No. 5 Drill

1—No. H Drill

1—Hammer

1—1/2-inch Cold Chisel

1—Cherry Hand Gun No. G-36 (Note 1)

1—Cherry Rivet 3/16-inch Diameter Pulling Head No. H615-64 (Note 1)

APPARATUS (Cont):

Standard Cherrylock Rivet No. CR2263-6-5 (3/16-inch Diameter—5/16-inch Grip) (Note 1)

Cherry Rivet Oversize Repair Sleeve No. JK5511A06C5 (Note 1)

1—Cherry Rivet 1/4-inch Diameter Pulling Head No. H615-8U (Note 1)

Standard Cherrylock Rivet No. CR2263-8-5 (1/4-inch Diameter—5/16-inch Grip) (Note 1)

1—Sealant—PR1422, Class B-2 Sealant (Note 2) or ProSeal 890 Elevated Temperature Injection and Filleting Sealant, Class B-2 (Note 3)

Note 1: Order from Townsend Company, Cherry Rivet Division, 1224 East Warner Avenue, Santa Anna, California.

Note 2: Order from Products Research and Chemical Corporation, 2915 Empire Ave., Burbank, California.

Note 3: Order from Coast ProSeal, 19451 Susanna Road, Compton, California.

STEP	PROCEDURE
	Note: Prevent rivets from falling into waveguide by inserting an air blocking tool. Refer to Section 402-421-506.
1	Chisel off the corroded rivet heads.
2	Use a 5/32-inch drift pin to punch out the rivet shank. If the rivet shank is corroded and is holding fast to the adjacent aluminum skin, drill out the shank with a No. 10 drill.
3	Clean out all rivet holes with a No. 10 drill.
4	Insert a 3/16-inch Standard Cherrylock rivet (No. CR2263-6-5) through the hole. ***Requirement:*** The rivet should not tilt more than 20 degrees from the vertical. See Fig. 1. If the requirement is met, proceed to Step 9. If the requirement is not met, proceed to Step 5.
5	If the rivet tilts more than 20 degrees from the vertical, clean out the rivet hole with a No. 5 drill.
6	Insert the No. JK5511A06C5 sleeve into the rivet hole and insert a 3/16-inch Standard Cherrylock rivet into the sleeve. ***Requirement:*** The rivet and shank should not tilt more than 20 degrees from the vertical.

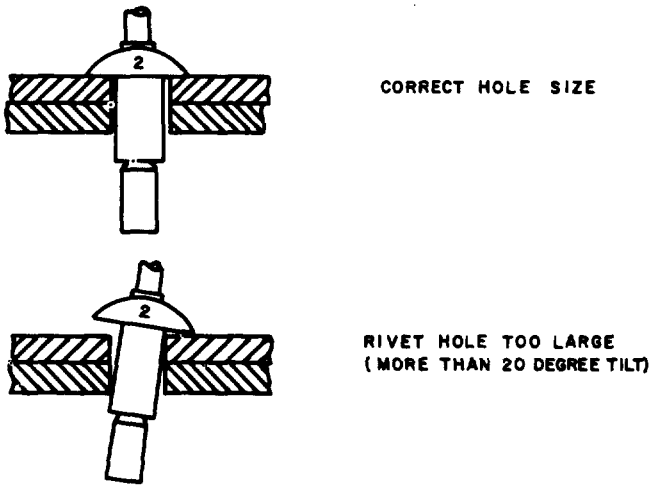

Fig. 1—Rivet Placement

CHART 1 (Cont)

STEP	PROCEDURE
	If the requirement is met, proceed to Step 9. If the requirement is not met, proceed to Step 7.
7	Remove the JK5511A06C5 sleeve and insert a 1/4-inch Standard Cherrylock rivet (No. CR2263-8-5) into the rivet hole. ***Requirement:*** The rivet should not tilt more than 20 degrees from the vertical. If the requirement is met, proceed to Step 9. If the requirement is not met, proceed to Step 8.
8	Clean out the rivet hole with a No. H drill and insert a No. JK5511A08C5 sleeve in the hole with a 1/4-inch Standard Cherrylock rivet (No. CR2263-8-5).
9	Wipe the underside of the rivet head with sealant. ***Note:*** Do not use an excessive amount of sealant on the shank area of the rivet as the clamping action will force sealant into the inner chamber of the antenna.
10	Hold the riveter and pulling head in line with the axis of the rivet as shown in Fig. 2. ***Note:*** When using a No. CR2263-6-5 Cherrylock rivet, as in Steps 4 and 6, use a Cherry hand gun No. G-36 with a No. H615-6U pulling head. When using a No. CR2263-8-5 Standard Cherrylock rivet, as in Steps 7 and 8, use a Cherry hand gun No. G-36 with a No. H615-8U pulling head.

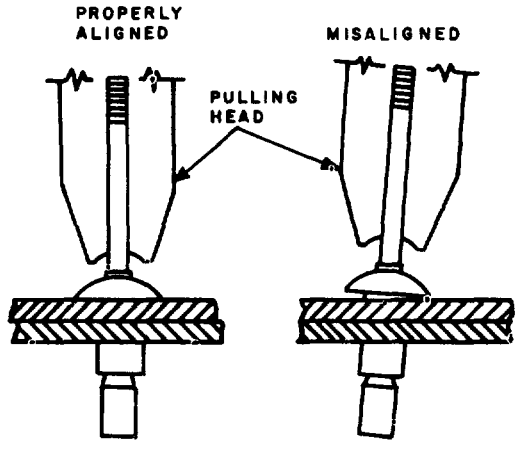

Fig. 2—Pulling Head Placement

CHART 1 (Cont)

STEP	PROCEDURE
11	Repeatedly squeeze the gun handle until the stem breaks from the rivet head and seats the collar. Press the trigger on the hand gun to eject the broken stem. The stem must be ejected before another rivet can be installed. ***Caution: Pressing down with force will hamper the rivet from seating itself properly. Allow the rivet to upset and fracture with a minimum amount of operator force.***

CHART 2

CLASS II REPAIRS (REMOVAL OF INTERMEDIATE RIB)

Criteria for CLASS II Repairs—Flange of the intermediate rib has separated from the reflector skin due to excessive corrosion buildup and rivet failure.

APPARATUS:

Hammer

Wire Brush (Stainless Steel)

Chisel, 1 inch

Chisel, 1/2 inch

APPARATUS (Cont):

Methy Ethyl Ketone or Toluene

Wedgelock Wing Nut Fasteners (No. WNXL-3/16)

Stainless Steel Hex Head Cap Screws (No. 1032) × 1-1/4 inches long

Boots Nut Corporation Self-Locking Nuts (No. JL-1C1032)

Rivets and Hand Gun (as required in Chart 1)

Sealant (Refer to Apparatus List in Chart 1)

STEP	PROCEDURE
1	Remove rivets as in Chart 1, Class I Repairs. Refer to Fig. 3.
2	Using a 1/2-inch chisel, shear off rivet heads on vertical spars and drive rivets back and forth until shank diameter reduces from wear for easier removal.
3	When the flange is held to the reflector surface by old sealant, place a 1-inch chisel (flat side against reflector surface) and break sealant approximately every 2 inches. Tap chisel from back side of flange or from top of antenna down.
4	Remove rib and scrape off as much of the old sealant as possible from the reflector surface and rib flange. Use the wire brush (stainless steel only) on all corroded aluminum surfaces. Refer to Fig. 4.
5	Clean areas where sealant is to be applied with Methy Ethyl Ketone (MEK) or Toluene.
6	Apply sealant around the periphery of the rivet hole area with a bead approximately 1/4 inch thick. Refer to Fig. 5.
7	Replace intermediate rib and insert Wedgelock Wing Nut Fasteners (No. WNXL-3/16) at every other hole. In the remaining holes, insert the rivets. Refer to Fig. 6.
8	Draw up the Wedgelock fasteners to mate the reflector surface and flange of the intermediate ribs.
9	Seat and install rivets according to the procedure given in Chart 1. Remove the Wedgelock fasteners and replace rivets. Seat and install as above.
10	Smooth (tool) sealant squeeze-out to approximately 1/4-inch radius.
11	Secure the vertical flanges of the intermediate ribs to the vertical spare with 1-1/4 inch stainless steel hex head cap screws No. 1032 and Boots Nut Corporation self-locking nuts No. JL-1C032.

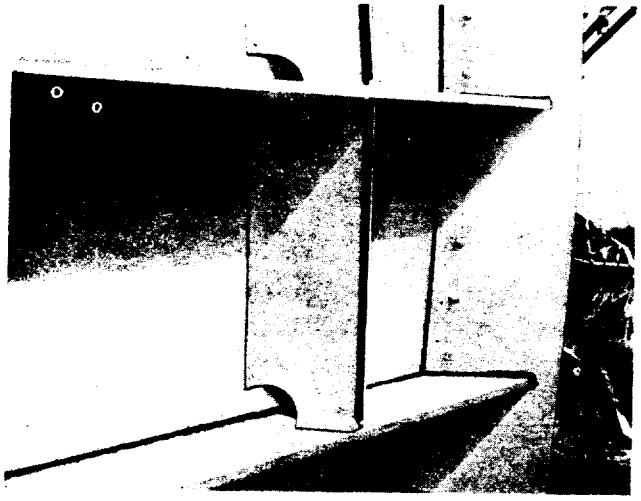

Fig. 3—Intermediate Rib With Rivets Removed

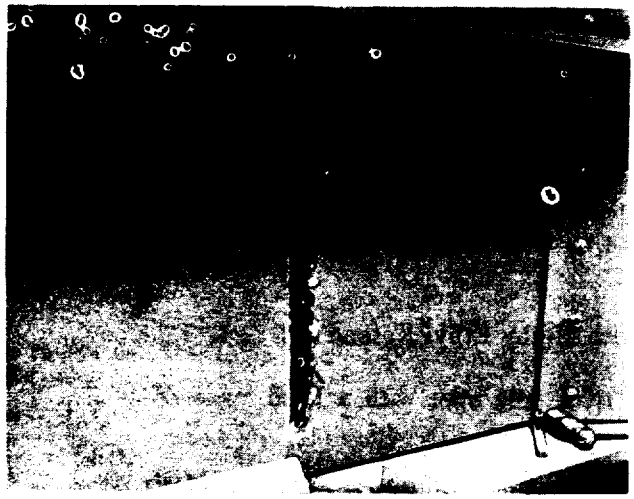

Fig. 4—Intermediate Rib Removed and Sealant Scraped Off

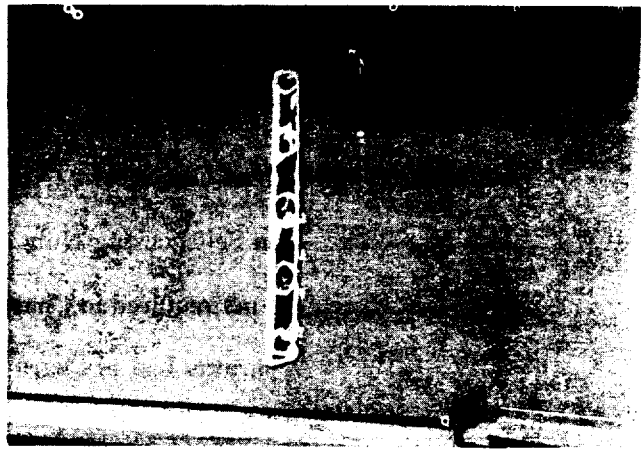

Fig. 5—New Sealant Applied

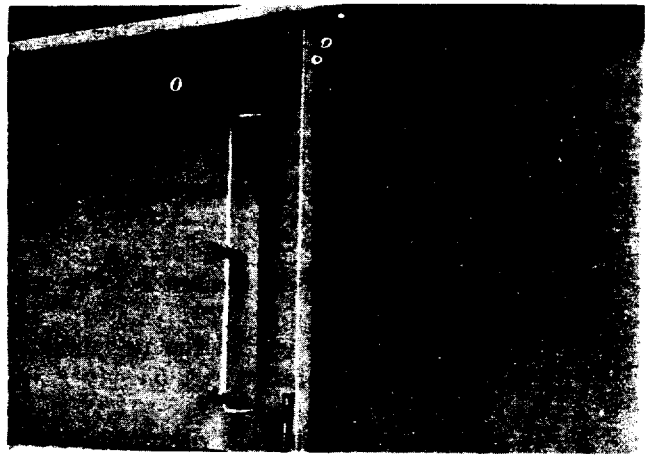

Fig. 6—Intermediate Rib Replaced and Wedgelock Fasteners and Rivets Installed