

REPAIRS TO TERMINAL STRIPS AND INSTALLING SPLIT FANNING STRIPS

1. GENERAL

1.01 This section covers the procedures for replacing broken fanning strips of terminal strips by means of a split fanning strip and without disconnecting the wiring. It also covers a procedure for gluing broken wooden fanning strips.

1.02 This section is reissued to:

- Delete the method of replacing damaged plastic fanning strips.

1.03 Fig. 1 and 2 illustrate the method of preparing new wooden fanning strips, which are to replace broken wooden fanning strips. Fig. 3 illustrates a wooden fanning strip that may be made locally for replacement, using a regular wooden fanning strip of the proper type for a pattern.

1.04 The method illustrated in Fig. 1 provides for splitting the fanning strip into five parts by means of four straight cuts. This method might be preferable when a number of fanning strips is to be prepared at one time. Assembling and installing this fanning strip is a little more involved than the arrangement shown in Fig. 2 or 3.

1.05 The method shown in Fig. 2 provides for splitting the fanning strip into three parts by cutting as illustrated from hole to hole. Splitting the strips in this manner is more involved than in Fig. 3, but is somewhat easier to assemble and install and the strip is less liable to break.

1.06 Fig. 3 illustrates a fanning strip that may be made locally and might be more practical where a great number of fanning strips of the same type are required for replacement. This fanning strip is made in four parts and eliminates the individual holes in the cable side. This simplifies the assembling and installation considerably.

1.07 All precautions pertaining to the prevention of interference to working lines must be observed in connection with the removal of the damaged fanning strip and the installation of the split fanning strip.

1.08 Use the distributing frame bag to protect equipment below that is being worked on.

2. TOOLS AND MATERIALS

2.01 *List of Tools and Materials*

CODE NO	DESCRIPTION
TOOLS FOR WOODEN FANNING STRIPS	
—	1-1/4 Inch Wood Chisel
—	6-Inch C Screwdriver
—	Three 5-inch "C" clamps
	<i>Note:</i> Two cabinetmaker clamps may be used where available instead of the "C" clamps.
—	Riveting Hammer, 4 Ounces
—	Three Small Wooden Wedges 1/4 to 1/2 Inch Wide
MATERIALS FOR WOODEN FANNING STRIPS	
—	Distributing Frame Bag
—	Small Vessel in Which to Mix the Glue
—	Small Stick or Brush to Apply Glue
00	Sandpaper

SECTION 069-340-801

MATERIALS FOR WOODEN FANNING STRIPS

- Two Narrow Strips of Fiber or Wood the Length of the Block for Separating the Layers of Wire
- Two Strips of 1- by 1-Inch Hardwood, the Length of the Block
- Two 12-Inch Pieces of 20-Gauge Insulated Wire
- 6-Ply Twine
- Split Fanning Strips as Required
- Cascamite Waterproof Glue (powdered) 3-1/2 Ounce Can, or Casco Water Resistant Casine Glue (powdered) 2-Ounce Can

Note: The Cascamite glue deteriorates in the can sooner than the Casco glue. However, if it is noted that either glue has deteriorated as evidenced by the power becoming caked, it should be discarded.

3. PROCEDURES

REMOVAL OF DAMAGED WOODEN FANNING STRIP

- 3.01** Separate the wires associated with the upper holes of the fanning strip from those in the lower holes by inserting a thin strip of wood or fiber between the rows, lengthwise of the block. Do this for the wiring on both top and bottom of the terminal lug assembly.
- 3.02** Back off the assembly screws (holding the terminal lug assembly) sufficiently to provide clearance for insertion of the two 12-inch pieces of 20-gauge insulated wire between the lug assembly and the fanning strip. Loop one of these wires around the lug assembly near each end and twist the ends firmly. This is for the purpose of holding the lugs and insulating strips intact while the fanning strip is being replaced. This procedure is not necessary if the terminal strip is of the moulded plastic type.
- 3.03** Break out the wood of the broken fanning strip with a chisel or other suitable tool, being careful not to damage any of the wiring or cables.

- 3.04** Remove all of the assembly and mounting screws, the remainder of the old fanning strip and the metal clamping plate or nuts from the rear of the strip. If the terminal strip is of the moulded plastic type, remove the mounting screws and then remove the assembly screws which are at the rear of the fanning strip.

INSTALLATION OF SPLIT WOODEN FANNING STRIP

- 3.05** Some of the more recent fanning strips are provided with nuts instead of a metal clamping strip. The nuts are recessed in counterborings in the rear face of the fanning strip. In replacing this type of fanning strip, it will be necessary to counterbore the rear face of the new strip in a similar manner. To make these counterborings, a 1/4-inch drill should be used, boring to a depth of approximately 3/16 inch. The nuts are then forced into the counterborings and should fit tightly.
 - 3.06** Inspect the surfaces of the split fanning strips which are to be glued and if necessary clean lightly with 00 sandpaper. Care should be taken not to change the contour of the surfaces, which would prevent a perfect joint.
 - 3.07** Mount the terminal lug assembly on the main section of the split fanning strip by means of the terminal lug assembly screws and clamping plate or nuts. Turn the screws just enough to hold the assembly in place. If the terminal strip is of the moulded plastic type, tighten the assembly screws securely.
- Fanning Strips per Fig. 1**
- 3.08** Where split fanning strips which are split in five sections as in Fig. 1 are used, and the terminal lug assembly has been mounted on the new center section as outlined in 3.07, cut and remove the 20-gauge tie wires when used, and draw down the terminal lug assembly screws securely.
 - 3.09** Place the remaining sections in their respective positions ready for gluing, being careful to fan out the wires with respect to their associated holes in the fanning strip.
 - 3.10** Mix the glue in a small vessel following the directions on the container.

3.11 Check the alignment of pins and holes of the sections. Apply the glue with a suitable brush or small stick. Place the sections together and check that the wires are in their respective holes. Place the two mounting screws, one at each end of the first associated section assembled, and fasten securely to the frame.

3.12 Glue and assemble the other sections in a like manner with the exception that the last two mounting screws be placed and secured just enough to hold the assembly in place. The pins should hold them in alignment.

Fanning Strips per Fig. 2 and 3

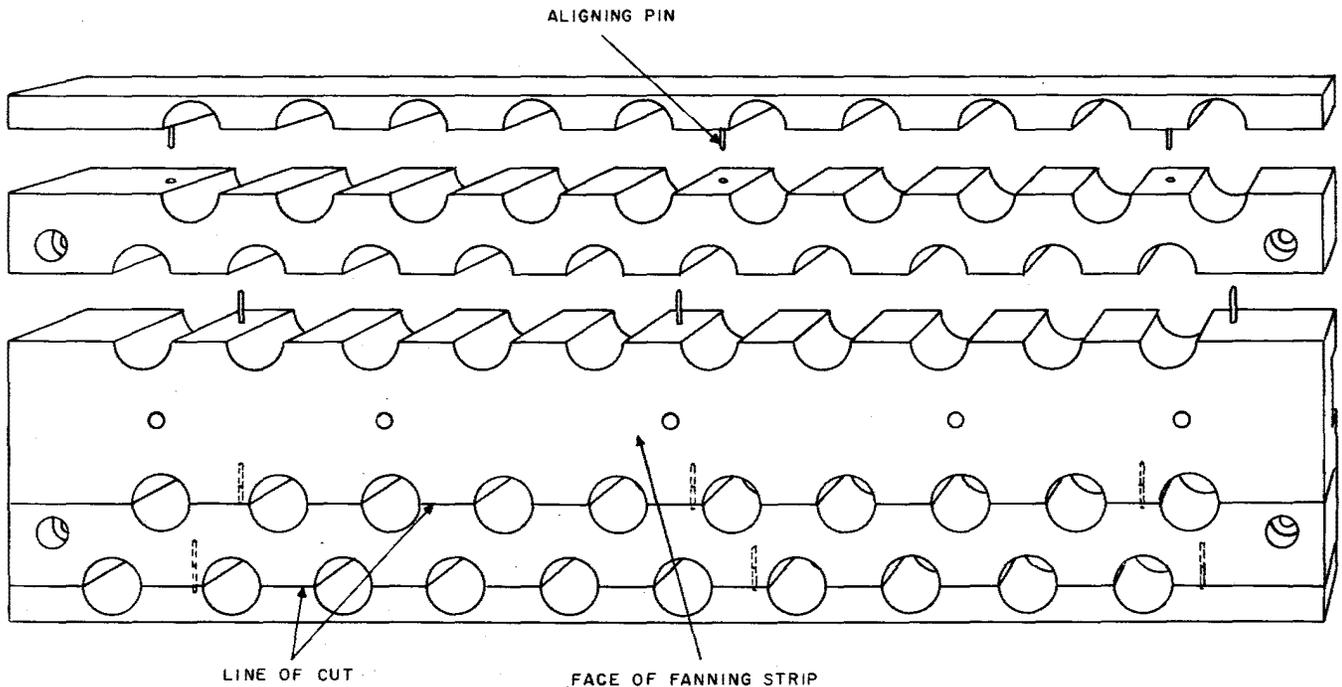
3.13 Where split fanning strips per Fig. 2 and 3 are used, mount the assembly (see 3.07) on the frame using the four mounting screws for

Fig. 2 and two mounting screws for Fig. 3. Cut and remove the 20-gauge tie wires when used, and draw down the terminal lug assembly screws securely.

3.14 Fan out the wiring so that it is associated with the correct holes in the fanning strip.

3.15 Mix the glue in a small vessel, following the directions on the container.

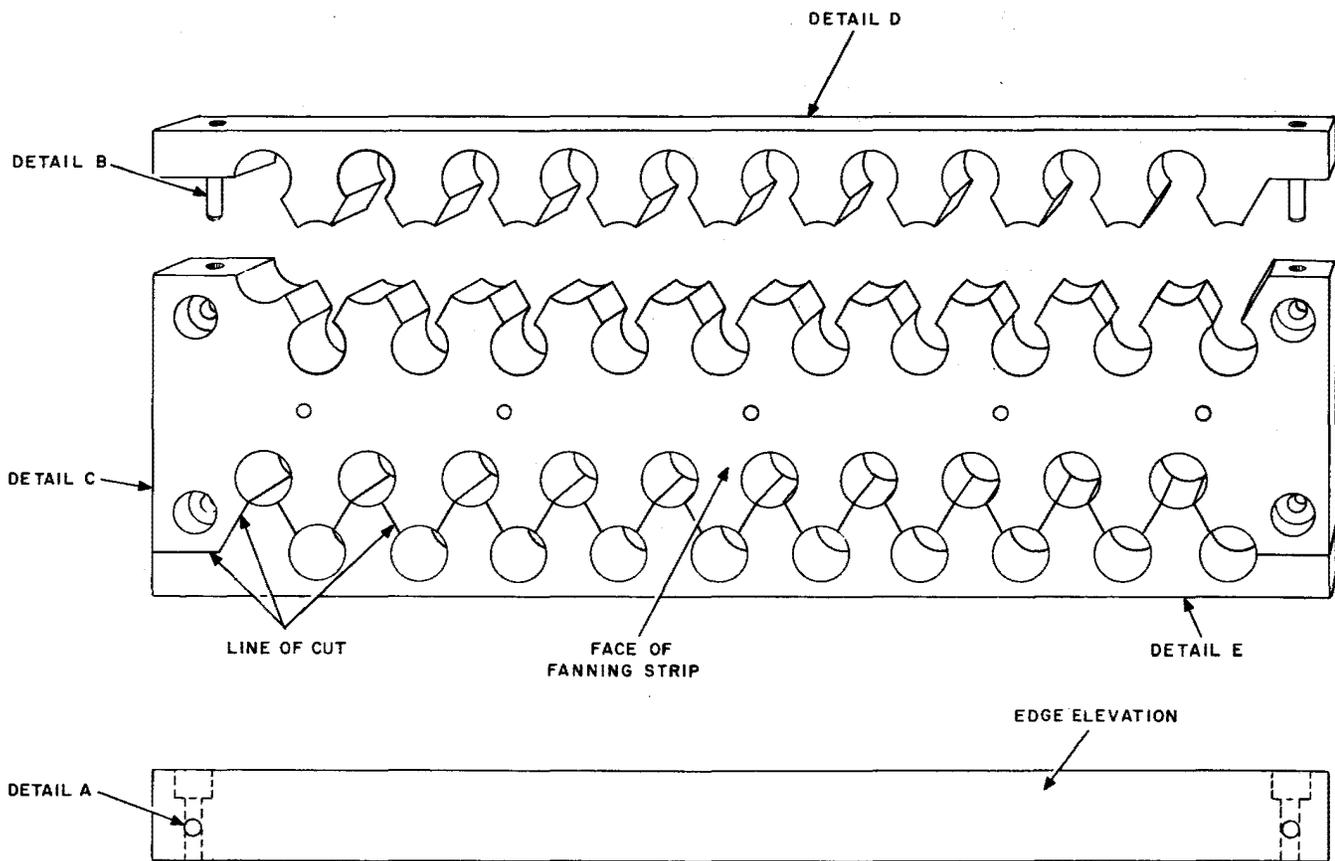
3.16 Check the alignment of pins and holes of the sections. Apply the glue with a suitable brush or small stick. Place the sections together and check that the wires are in their respective holes. The pins should hold them in alignment.



NOTES :

1. THE CUTS SHOULD BE MADE WITH A THIN SAW BLADE SO THAT A MINIMUM AMOUNT OF WOOD IS REMOVED
2. THE ALIGNING PINS MAY BE MADE OF NO 16 WIRE OR EQUIVALENT.

Fig. 1—Fanning Strip Split into Five Parts



NOTES:

1. DETAIL "A" IS 5/32 IN. WOOD DOWEL GLUED INTO DETAIL "C" WITH SNUG FIT INTO DETAIL "E".
2. DETAIL "B" IS 5/32 IN. WOOD DOWEL GLUED INTO DETAIL "D" WITH SNUG FIT INTO DETAIL "C".
3. END OF ALL DOWELS SHALL BE FLUSH WITH EDGE SURFACE OF FANNING STRIP AND THE INSIDE OF THE MOUNTING SCREW HOLES.
4. THE LINE OF CUT SHOULD BE MADE WITH A THIN SAW BLADE SO THAT A MINIMUM AMOUNT OF WOOD IS REMOVED.
5. ALL ANGLE CUTS SHALL BE MADE AS SHOWN.

Fig. 2—Fanning Strip Split into Three Parts

Clamping or Binding Split Fanning Strips

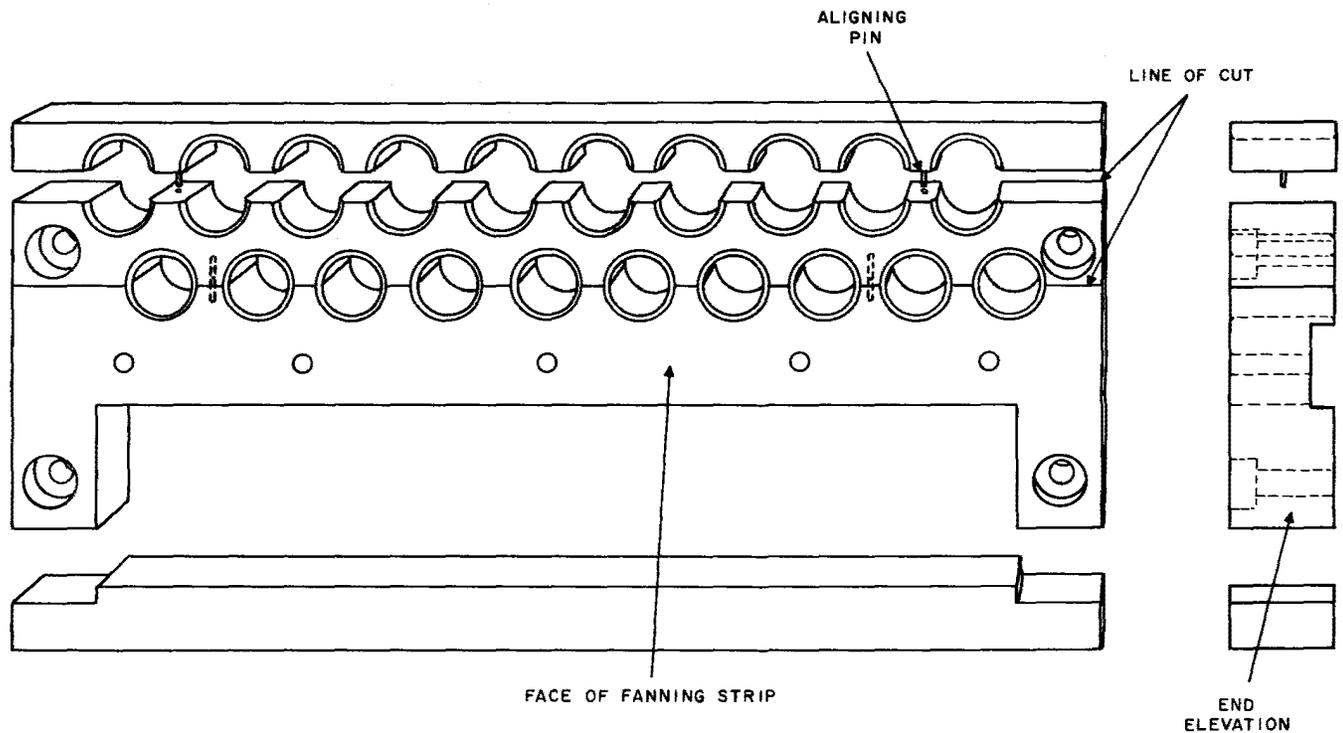
3.17 In clamping or binding the split fanning strips after they have been joined together, any one of the following methods may be used:

Three "C" clamps and two pieces of 1- by 1-inch hardwood strips

Two cabinetmaker clamps

6-ply twine and three small wooden wedges, 1/4 to 1/2 inch wide.

3.18 "C" Clamps: Place one of the 1- by 1-inch pieces of hardwood on the top edge of the fanning strip and the other on the bottom edge. Secure them in place with one of the "C" clamps placed near the middle of the block. Align both of the hardwood strips and apply the two other "C" clamps, one at each end of the block and draw down all three to a very firm and reasonably



NOTES:

1. TO BE MADE OF STRAIGHT-GRAIN MAPLE OR EQUIVALENT.
2. COUNTERSINK HOLES JUST SUFFICIENTLY TO REMOVE ROUGH EDGES
3. THE ALIGNING PINS MAY BE MADE OF NO. 16 WIRE OR EQUIVALENT.

Fig. 3—Fanning Strip Split into Four Parts

uniform pressure. All the glued surfaces must be in firm contact to secure a permanent joint.

3.19 Cabinetmaker Clamps: Place a clamp at each end of the fanning strip and draw down to a very firm and reasonably uniform pressure. It is not necessary to use the 1- by 1-inch hardwood pieces with these clamps.

3.20 6-Ply Twine and Three Wedges: Bind each end and the center of the fanning strip with several turns of the 6-ply twine. If the bindings appear to be too loose to hold the sections of the fanning strip firmly together, tighten them by inserting the small wooden wedges between the twine and the top of the fanning strip.

3.21 Precautions should be taken to prevent accidental disturbance of the strip while the glue is setting. When practicable, rolling ladders may be blocked to prevent contact with the strip or clamps.

3.22 The circuits appearing on the repaired block should be inspected and tested immediately after the fanning strips have been clamped or bound.

3.23 About 1 or 2 hours after the fanning strips have been clamped or bound, inspect the glued joints for glue which may have been forced out by pressure, and remove the surplus.

SECTION 069-340-801

3.24 Leave the clamps or binding in place about 24 hours to permit the glue to set properly and then remove the clamps or binding, install the two remaining mounting screws for fanning strips per Fig. 3 (see 3.13), and check tightness of all mounting and terminal lug assembly screws.

REPAIRING BROKEN WOODEN FANNING STRIPS

3.25 In some cases, broken wooden fanning strips may be repaired rather than replaced. Glue is used as outlined in 3.26 through 3.29 to repair these types of breaks.

3.26 Position the wiring so it is associated with the correct holes in the fanning strip.

3.27 Mix the powdered glue in a small vessel, following the directions on the container.

3.28 Apply the glue to both edges at the break using a suitable brush or small stick.

3.29 Clamp or bind the broken fanning strip similar to the method in 3.17 through 3.24 for the split fanning strips.