TERMINALS
REPAIRING BROKEN BINDING POSTS IN NO. 14 TYPE CABLE TERMINALS

Contents **Page**

1. GENERAL

1.01 This section replaces Section G64.408, Issue 1. It outlines the mercury method of reestablishing the continuity of binding posts which are broken at the rear of face plates in No. 14 Type Cable Terminals.

2. MATERIALS

2.01 The following materials are required for making the binding post repair covered herein.

Binding Post Kit—Consists of the following items:

(a) Binding Post Cutter
(b) Mercury Injector
(c) 1/2 oz. glass bottle containing mercury and equipped with dropper cap
(d) 1-1/2 in. diameter x 4 in. Mailing Case

3. DETECTING BROKEN BINDING POST

3.01 A binding post which is broken at the rear of the face plate can usually be detected by the following procedure:

(1) With the condenser in the circuit, connect one lead of the test set to the post in question and the other lead to ground. A ground can be obtained on the casting of the terminal if the stub cable enters through a soldered connection.

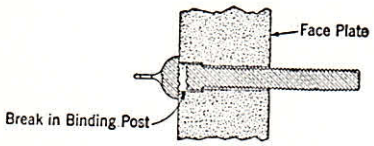
(2) Loosen the binding post nuts, if necessary, and move the post in and out. An intermittent noise in the receiver indicates that contact is being made and broken between the parts of a defective post.

4. METHOD OF REPAIR

4.01 Where the binding post is broken at the rear of the face plate and the post remains seated in the face plate, reestablish continuity by injecting mercury through the opening around the post and into the void between the broken parts as follows:

(1) Remove the upset threads at the end of the broken post by means of the Binding Post Cutter.

(2) Remove all of the nuts and washers and move the post in and out to make sure that it is loose in the face plate.



(3) Place a P207213 Fibre Washer on the post.

(4) Place a nut on the post and tighten it securely by means of the No. 216B Tool. This nut should be free from rough spots on the front and back which might cause leakage of the mercury as described in (11). If the nuts which were removed from the post are corroded or are of the split type, the post should be equipped with solid nuts (P139469).

(5) Place a P207213 Fibre Washer on the post. This is a temporary washer which serves as the bearing surface for the Mercury Injector.

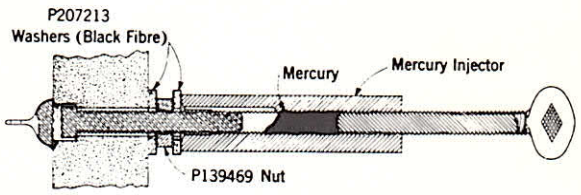
(6) Inspect the slot of the Mercury Injector to ensure that there is no obstruction which will retard the passage of the mercury. If necessary, clean the slot with a piece of wire. The screw should enter the injector from the end opposite the slot.

(7) Turn the screw of the injector until approximately 1/4 inch of its threaded length adjacent to the head is exposed.

(8) Fill the open end of the injector with mercury by means of the dropper. If difficutly is experienced in retaining the mercury in the dropper, clean the glass tube with a pipe cleaner. It is recommended that the workmen do not wear rings when making repairs inasmuch as they may be damaged if mercury comes in contact with them.

(9) Back out the screw of the injector until approximately 1 inch of its threaded length adjacent to the head is exposed.

(10) Place the injector on the binding post, exercising care not to spill the mercury, and tighten it securely by means of the No. 63 Tool.

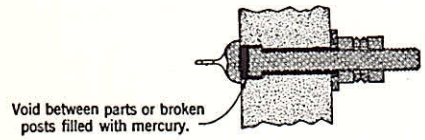


(11) With the condenser in the circuit, connect one lead of the test set to the injector and the other lead to ground. Turn the screw of the injector slowly until tone (induced noise of low volume) is heard in the receiver and then give the screw several additional turns to ensure that the void between the broken parts of the post has been filled with mercury. If the mercury leaks out around the nut, even when the injector is securely tightened, it may be caused by a high spot on the nut. In such cases the nut should be replaced with one known to have smooth bearing surfaces. If the screw of the injector can be turned in as far

as possible without tone being heard, additional mercury should be injected. In general, it should be possible to repair a post with one filling of the injector but occasionally it will be necessary to inject additional mercury.

(12) Remove the injector and the front fibre washer.

(13) Place two metal washers and a second nut on the post. If the washers which were removed from the post are corroded or are of the square edge type, equip the post with beveled washers (P-234967).



5. TESTING FOR GROUNDS, SHORT CIRCUITS AND CROSSES

5.01 The repaired binding post should be tested as outlined below to determine if the mercury has spread through the sealing compound and caused this post to be grounded on the casting or crossed with any post in the immediate vicinity.

Grounds

(a) With the condenser in the circuit, connect one lead of the test set to the repaired post and the other lead to ground. A tone (induced noise of low volume) in the receiver indicates that the post is not grounded and the absence of tone indicates that the post is either grounded through the mercury which has run to the casting or is still open at the rear of the face plate.

Short Circuits and Crosses

(b) With the condenser in the circuit, connect one lead of the test set to the repaired post and, with the other lead, touch the other post of the repaired pair and then each of the other posts in the immediate vicinity, listening at each contact to determine if tone (induced noise of low volume) can be heard. Tone indicates that the posts under test have not been crossed by the mercury and the absence of tone indicates that the mercury has spread between the posts under test or that one side of the circuit is open. The absence of tone when the test set is connected to the two binding posts of a spare pair may also be due to a well-balanced condition of the pair. In such cases, connect the test set to the two posts of the pair and then strap any other good post to either post of the pair in question in order to create an unbalanced condition. If tone is heard, the pair may be considered as good and if no tone is heard the pair is short circuited or open.

5.02 If the mercury has spread at the rear of the face plate causing a short circuit or cross, this trouble can usually be cleared by loosening the nuts of the lowest post affected and allowing the mercury to run out. These nuts should then be retightened. When it is found that mercury has run to another post, no further attempt should be made to repair the broken post.

5.03 Binding posts which cannot be repaired with mercury should be reported in order that the assignment records may be marked accordingly.