

CABLE TESTING — GENERAL
PAIR IDENTIFICATION
USING 108A AND 109A TEST SETS

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1. GENERAL

1.01 This section outlines methods of using the 108A and 109A Test Sets for identifying working or nonworking cable pairs terminated on C50, C52 or 1177 Protector Mountings, 121 Protectors or 300 Connectors. The 108A and 109A Test Sets as well as the cords used with these sets are described in Section 106-310-120.

1.02 The section has been revised to cover identifying pairs terminated on 121 Protectors or 300 Connectors.

1.03 To ensure satisfactory contact when the plugs of P40A, P40C and P20F Cords are placed over protector springs, the springs must be in a straight line and equally spaced with respect to adjacent springs and the tip and ring springs must be in the same horizontal plane. The latter requirement also applies to the plugs of a P20G Cord.

2. ARRANGEMENT OF TEST SETS

Protector Mountings

2.01 The general arrangement of the 108A Test Set in the central office for pairs terminating on protector mountings and the 109A Test Set at the splice is illustrated in Fig. 1.

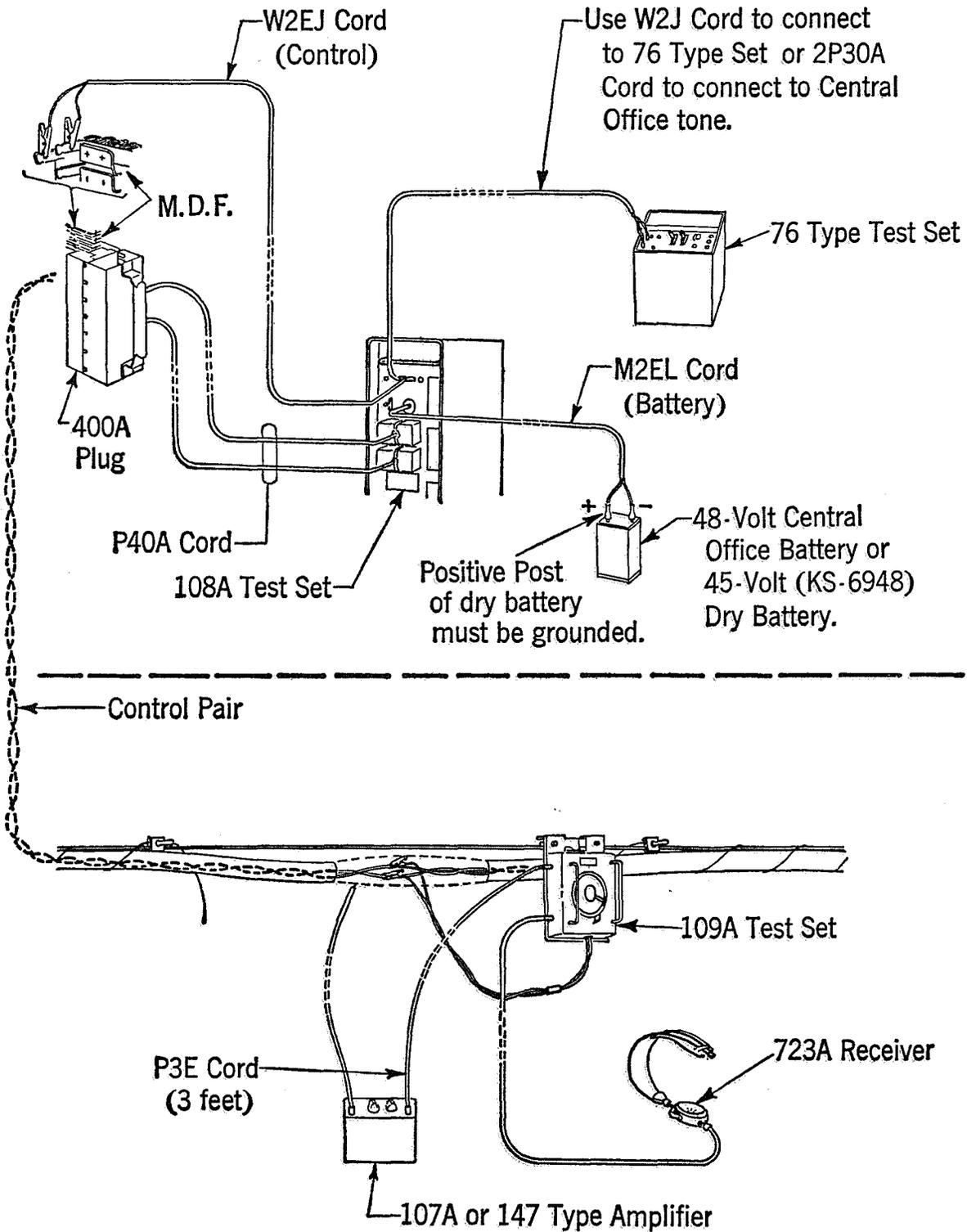


Fig. 1

300 Connectors

2.02 The general arrangement of the 108A Test Set in the central office for pairs terminat-

ing on 300 Connectors or 121 Protectors and the 109A Test Set at the splice is illustrated in Fig. 2. A 2P34A Cord may be used in place of a W2EW Cord.

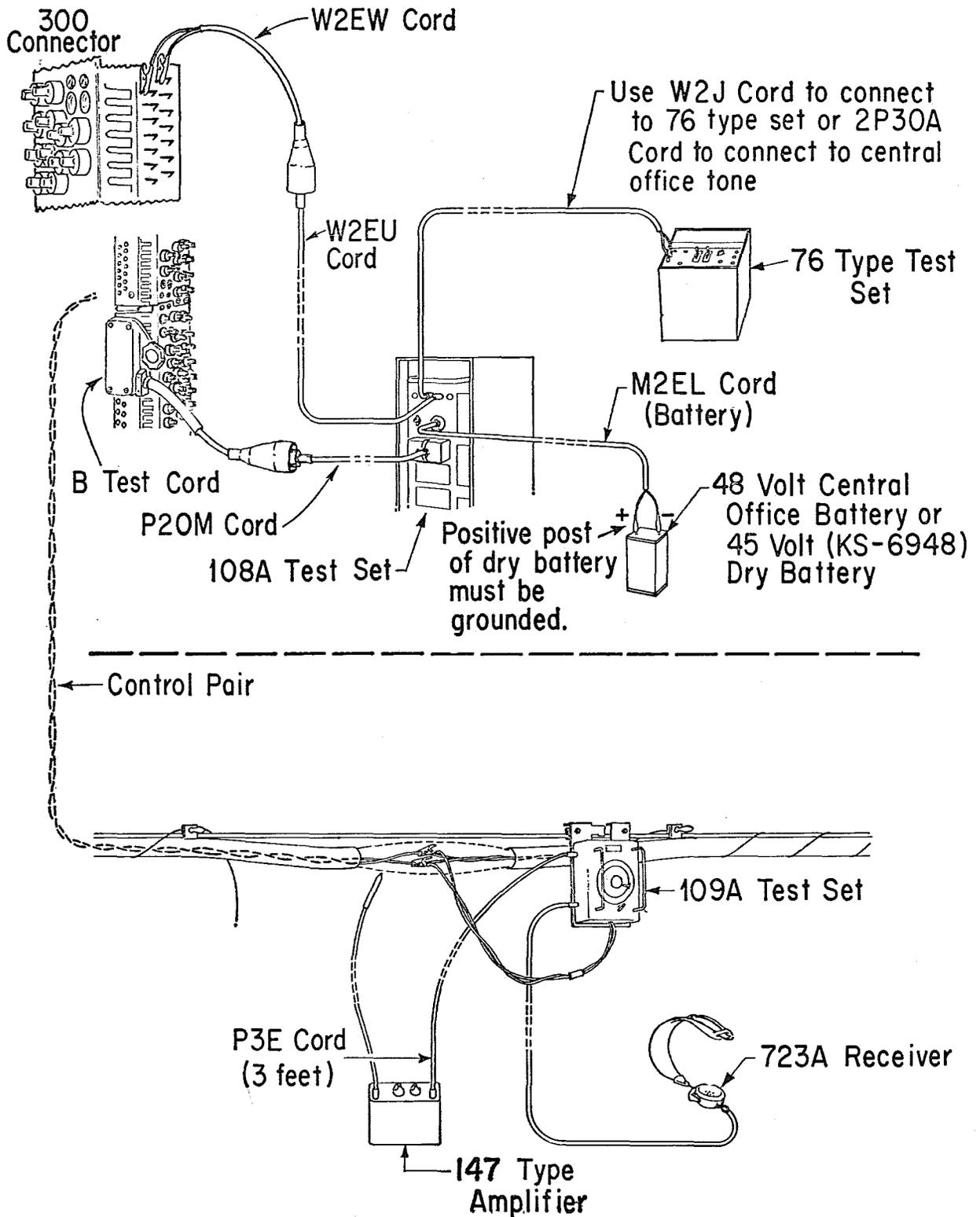


Fig. 2

2.03 The method of attaching a B Test Cord to a 300 Connector (or 121 Protector) is shown in Fig. 3. As the plungers at either end of a B Test Cord are small and displaced with

respect to their associated test points on a 300 Connector, the B Cord should be aligned by sighting on a large plunger.

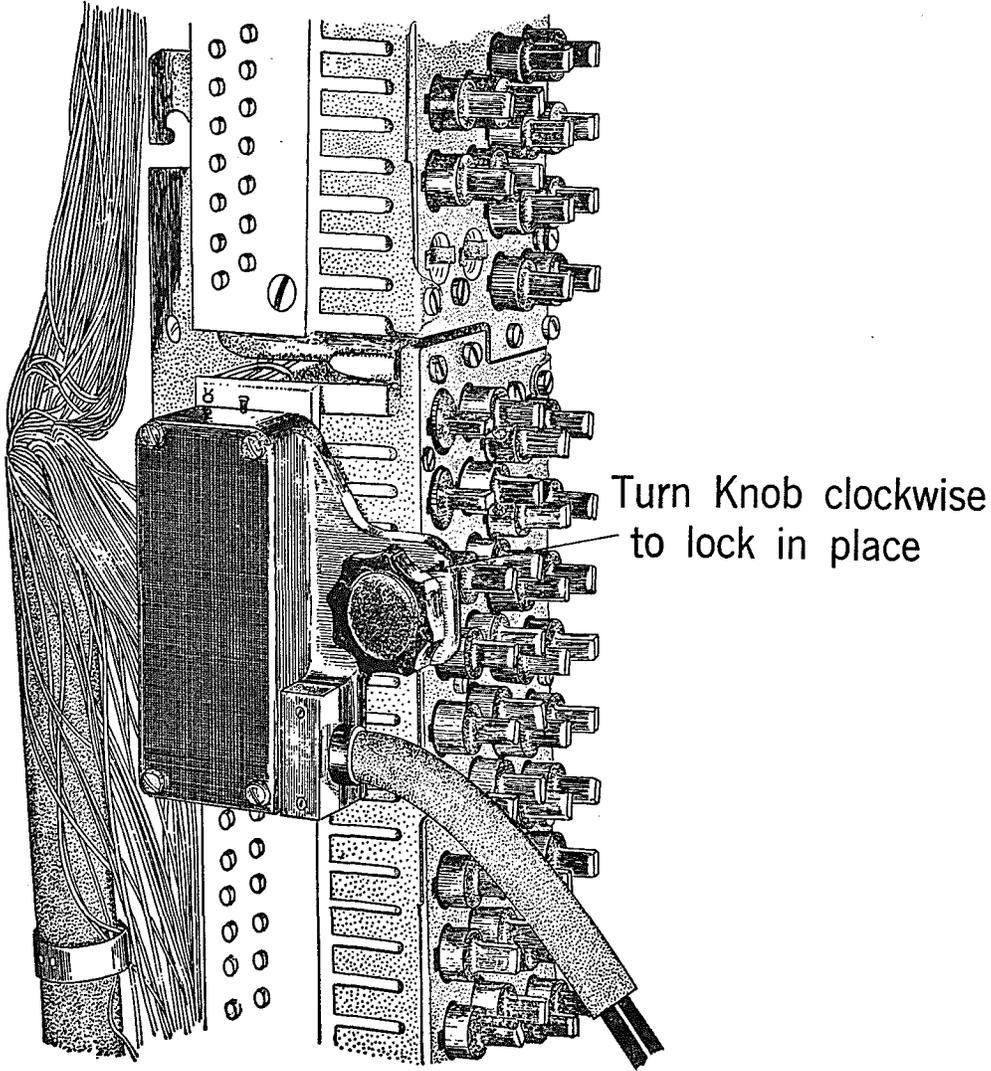


Fig. 3

3. CONNECTING 108A TEST SET

3.01 The 108A Test Set should be placed at the main or combined distributing frame near the vertical or verticals on which the pairs to be identified are terminated. Attach the guard supplied with the set to the frame to minimize accidental moving of the 108A set. Then proceed as follows:

- (1) Unlock the switch shaft.
- (2) Connect the TONE jack either to a 76-Type Test Set using the W2J Cord or to the central office tone using the 2P30A Cord.
- (3) Connect the control (CONT) jack to the control pair using a W2EJ Cord or 2P34A and W2EW Cords, depending on the type of protector. The control pair must be a spare pair

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that appears in the cable at the splice, but not necessarily one of the pairs to be identified.

(4) Connect the battery (BAT) jack to 48-volt central office battery on the horizontal side of the distributing frame or to a KS-6948 Dry Battery (45 volts) using the M2EL Cord. When a dry battery is used, the positive terminal must be grounded. (The 108A set may not respond to the battery available on the vertical side of the frame.)

(5) The pairs to be identified are connected to a 108A set using P40A, P40C, P20F and P20G Cords or B Test Cords. Also, P20M (extension) Cords are required with P40C and B Test Cords. The pairs may be in one or two verticals. By means of the P20G Cord, pairs terminated on protector mountings can be conveniently omitted from connection to the 108A set where interference with special circuits must be avoided. At 300 Connectors, the markers for special circuits will prevent contact with plungers on the B Test Cord.

(6) Place the plugs of P-type cords over the protector springs of the pairs to be identified with the cords at the right-hand side. Make sure that protector blocks and springs are in alignment. Press the plugs gently forward and at the same time work the plug up and down to facilitate engagement. Care should be exercised to ensure that the cords are properly connected. The last two digits of the pair numbers stamped on the frame must be connected to the correspondingly numbered terminations on the 108A set. Connect the other end of the cord to the KS-8585 List 47 Plug in the 108A set whose number corresponds to the pair contacted by the plug. The P20F Cord is used to avoid connection to special service pairs. Make sure that the terminations of the cords are connected to the 108A set in the proper manner.

(7) Turn the power switch to the ON position and observe whether the stand-by lamp (STAN BY) is burning.

(8) If 76-Type Test Set is used, turn on tone by operating the SIG-LIS-SND key to the SND position.

(9) Check to determine whether tone is present on the control pair by temporarily connecting a handset or a receiver across the control pair.

(10) Connect a 1011B Test Set to the TALK jack or across the control pair. The cord of the handset to be connected to the TALK jack must be equipped with a 310 Plug. Place the talk-mon switch of the 1011B Test Set in the TALK position. The operate (OPR) lamp should light. Choose any nonworking pair in the cable count to be identified and dial its number. Place tone between the wires of this pair by dialing one (1). Connect another 1011B Test Set across this pair at the terminal or connector to determine whether tone is present. If a second 1011B Test Set is not available, a 147-Type Amplifier, a 723A Receiver and a 513A Tool (capacitance probe) may be used to make the test. *At the conclusion of this test, return the handset switch to the MON position and remove the 1011B Test Set.*

(11) The 108A set contains an alarm that is under the control of the workman. Sounding of the alarm indicates that the workman wishes to talk to the central office attendant. To talk to the workman, connect a 1011B Test Set to the TALK jack or across the control pair. Place the talk-mon switch in the TALK position and answer the workman. *At the conclusion of the conversation, return the handset switch to the MON position and remove the handset.*

(12) To contact the workman, wait until the operate (OPR) lamp is burning, indicating that the workman is using the equipment. Connect a 1011B Test Set to the TALK jack or across the control pair. Place the talk-mon switch in the TALK position and talk to the workman. Allow a few minutes for the workman to answer, for, in order to talk, it may be necessary for the workman to connect a talking set to the 109A set. *At the conclusion of the conversation, return the handset switch to the MON position and remove the set.* At the conclusion of the test, disconnect the tone set, turn the power switch of the 108A set to OFF, disconnect all patch and test cords, remove guard, lock the shaft of the selector switch and replace the cover on the 108A set.

4. CONNECTING 109A TEST SET

4.01 At the splice attach the 109A set to the strand or cable where it will be convenient

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to operate the dial and switch. Connect the ground terminal to the cable (metal) sheath.

4.02 Using an amplifier and probe, identify the control pair in the cable. After it has been located, connect the pair to the 109A set using the cords of the set.

4.03 Connect a receiver to the jack in the 109A set designated REC. Connect the output jack of the amplifier to the AMPL jack of 109A set, using the P3E Cord. Turn the switch of the 109A set to the DIAL position and apparatus is ready for dialing the number of the first pair to be identified.

5. IDENTIFYING CABLE PAIRS

5.01 After the 108A and 109A sets have been set up proceed as follows:

- (1) Dial the last two digits of the first pair to be identified. (The last two digits of this pair should correspond to the pair numbers on the faceplate of the 108A set.)
- (2) Listen to determine whether the pair is in use. If busy, release this pair and select another.
- (3) If the pair is not in use, dial one (1). This will place tone across the pair.
- (4) Probe for the pair in the splice, using the 513A Tool.
- (5) After the pair has been identified, the tip side is determined by dialing one. This will

place tone between the tip side and ground. The ring side can next be identified by dialing one again. This will place tone between ring side and ground. Generally the tone heard on the ring side will be considerably louder than that heard on the tip side.

- (6) If there is any question as to the identity of the sides, a check should be made. Dial one to remove tone from the pair. Then dial one again. This will place tone on the tip side. Dialing one again will place tone on the ring side.
- (7) After the sides are identified, turn the switch to the RELEASE position. This will place the 108A set in position for dialing the next pair to be identified.
- (8) Splice the identified pair to the stub in the terminal or place it in a testboard as required.
- (9) Identify the remaining pairs by following the above procedure.

6. SIGNALING

6.01 The splicer can signal the central office attendant by depressing the SIG key on the right-hand side of the 109A set. This will sound the alarm in the 108A set.

6.02 The central office attendant can talk to the workman, as described in (11) and (12) of Paragraph 3.01. The workman's talking set must be connected to the terminals on the 109A set designated TALK SET.