

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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OPEN WIRE
DIRECTIONAL FAULT LOCATING
106A TEST SET

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1. GENERAL

1.01 This section provides instructions for using the 106A Test Set for determining the direction of faults in open wire circuits. It is reissued to include instructions on the use of a clip for attaching the switch box of the 106 type set to the case of the 107 type set during fault location operations.

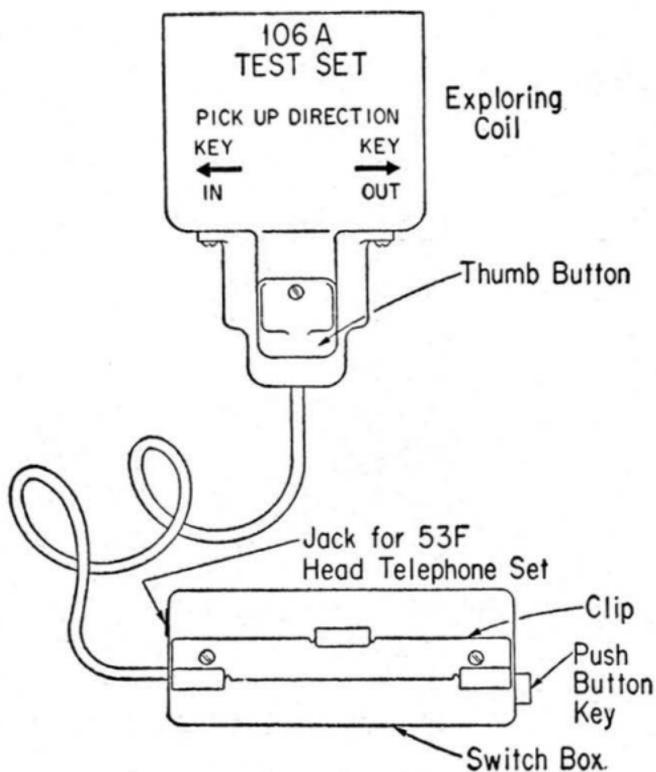
1.02 Use of the 106 type set does not eliminate the necessity for observing all prescribed precautions because of its 10,000-volt dielectric protection. All precautions relating to checking the line for clearance from electric wires must be observed.

1.03 The 106A Test Set consists of an exploring coil and switch box, permanently connected by means of a cord as shown on Page 2. It is used with a 53F Head Telephone Set and either a 107A or 107B Test Set.

1.04 The windings of the exploring coil are encased in a cast resin block which is mounted in a plastic housing with a handle and grip. Depressing a thumb button mounted on the housing raises magnetic shunts in the coil assembly and permits the placement of the exploring coil on the line wire.

1.05 The switch box consists of a plastic housing containing a push-button key, jack and clip.

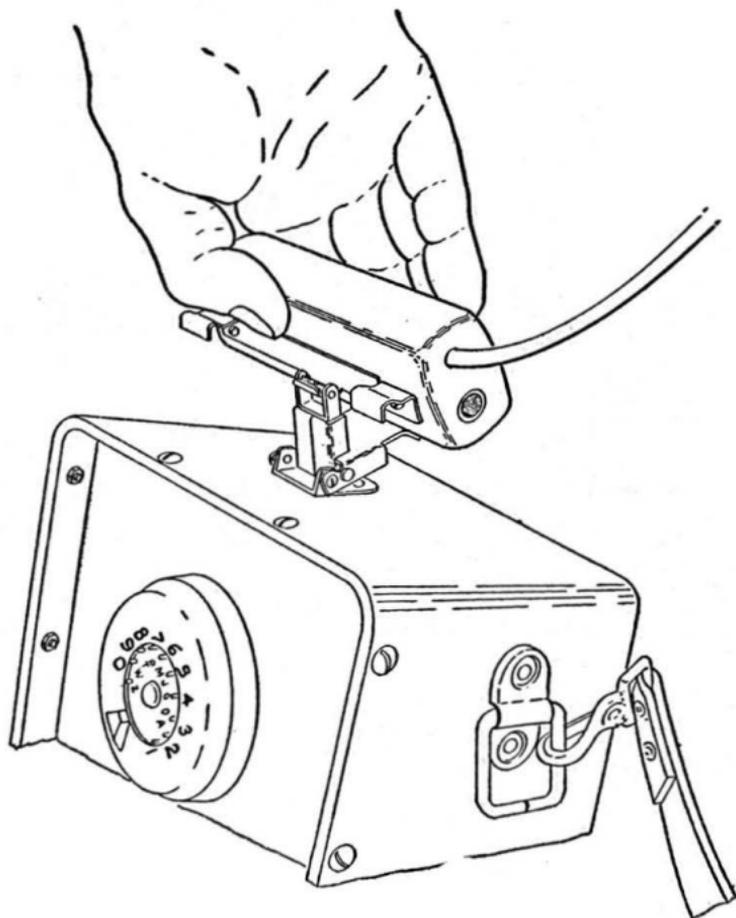
1.06 The advantage of using the 106A Test Set for fault locating is that circuits do not have to be opened for test nor do branch leads have to be disconnected when testing the branch leads.



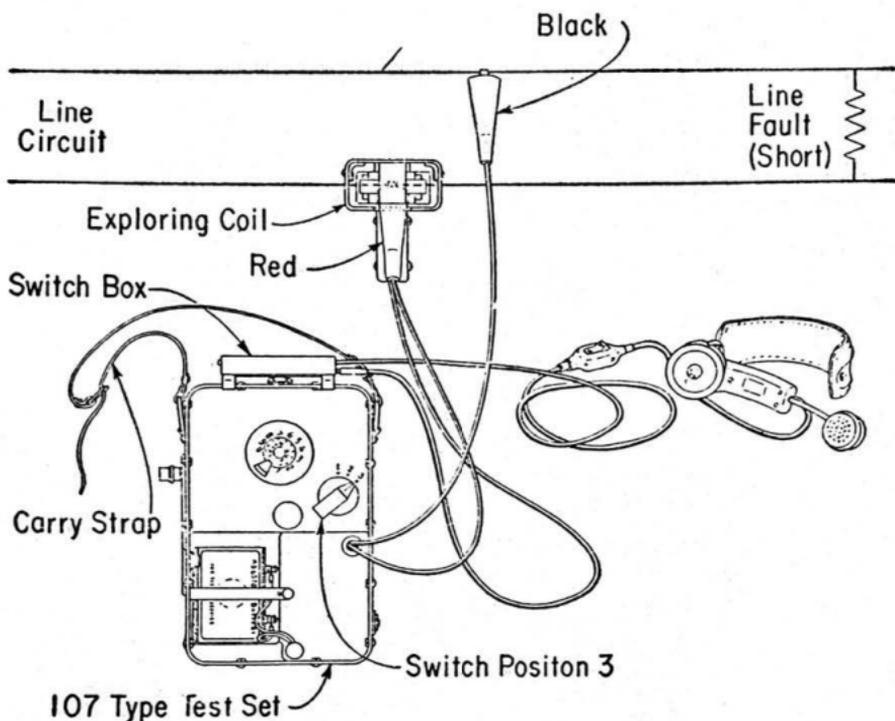
2. TESTING FOR THE DIRECTION OF A SHORT

2.01 To test for the direction of a short proceed as follows: ↴

- (1) Connect the Red insulated clip of the 107 type set to one of the line wires under test.
- (2) Connect the Black insulated clip of the 107 type set to the other wire of the pair under test.
- (3) Place the exploring coil of the 106 type set over the Red insulated clip and upon the line wire by depressing the thumb button on the coil housing.
- (4) By means of the clip, attach the switch box of the 106 type set to the case of the 107 type set.



- (5) Insert the plug of the 53F Head Telephone Set into the jack of the switch box.
- (6) Turn the switch of the 107 type set to position 3.



2.02 Turn the hand generator and at the same time alternately operate and release the push button on the switch box.

2.03 The position of the push button in which the LOUDER tone is obtained denotes the direction of the fault, as indicated by the marking on the 106A Test Set.

3. TESTING FOR THE DIRECTION OF A CROSS

3.01 To determine the direction of a cross between two wires not of the same pair, place the Red insulated clip and the exploring coil on one of the two line wires in trouble as described in Paragraph 2.01 and connect the Black insulated clip to the other line wire. The direction of the cross is determined by testing for the louder tone as described in Paragraphs 2.02 and 2.03.

4. TESTING FOR THE DIRECTION OF A GROUND

4.01 To determine the direction of a ground, place the Red insulated clip and the exploring coil on the grounded line wire as described in Paragraph 2.01 and connect the Black insulated clip to ground. The direction of the ground is determined by testing for the louder tone as described in Paragraphs 2.02 and 2.03.

5. TESTING FOR THE DIRECTION OF AN OPEN

5.01 To determine the direction of an open, place the Red insulated clip and the exploring coil on the faulty line wire as described in Paragraph 2.01 and connect the Black insulated clip to the other line wire of the pair.

5.02 Turn the hand generator and at the same time alternately operate and release the push button on the switch box.

5.03 The position of the push button in which the LOWER tone is obtained denotes the direction of the fault, as indicated by the marking on the 106A Test Set.

5.04 If the tones are of approximately equal intensity, and it is difficult to differentiate between the two tones, the pair should be shorted at the central office or at the cable open wire junction and the procedure described in Paragraphs 5.02 and 5.03 repeated.

6. ANNUAL ELECTRICAL RETEST

6.01 Each 106A Test Set shall be returned annually for an electrical retest. The date (month and year) for retest shall be stamped on a marking plate at time of manufacture and at each subsequent retest.

6.02 The marking plate is fastened to the handle of the 106A Test Set.

