

CABLE TESTING—GENERAL

DETECTING TONE WITH AN AMPLIFIER

1. GENERAL

1.01 The presence of audible identification tone on a conductor can be detected by means of a 91A Test Set (147-type Amplifier). While these test sets are generally used at splices and sheath openings, they can also be used at cross-connecting and terminal points. For the purpose of this section, it is assumed that conductors are being identified at a splice.

1.02 This section is reissued to delete reference to the 107A Amplifier.

2. CONNECTIONS

2.01 The 147-type Amplifier is connected in the following way:

- (a) Insert the 347B Plug of the probe cord in the IN jack and connect the insulated test clip to the cable sheath.
- (b) Insert the receiver plug in the REC jack. This will turn on the amplifier.

2.02 Jarring or vibration of the amplifier may cause objectionable tube noise. Such trouble can be avoided by suspending the amplifier by its carrying strap and keeping it clear from contact with adjacent objects.

3. ADJUSTMENT

3.01 *147-Type Amplifier:* The volume of tone in the receiver is controlled by operating the control labeled VOL.

3.02 In a working cable the proper adjustment can be determined by holding the probe

(513A tool) at right angles to a pair on which conversation is heard and turning the rheostat or VOL control to give satisfactory volume in the receiver. In a nonworking cable it is advisable to set the rheostat or VOL control at about the midpoint and to make the final adjustment after detecting the first conductor on which tone is sent.

3.03 Noise from working telephone circuits or from adjacent electrical circuits or radio transmitters may be heard in the receiver, particularly when the amplifier is being operated at maximum amplification. This condition can usually be corrected by reducing the amount of amplification.

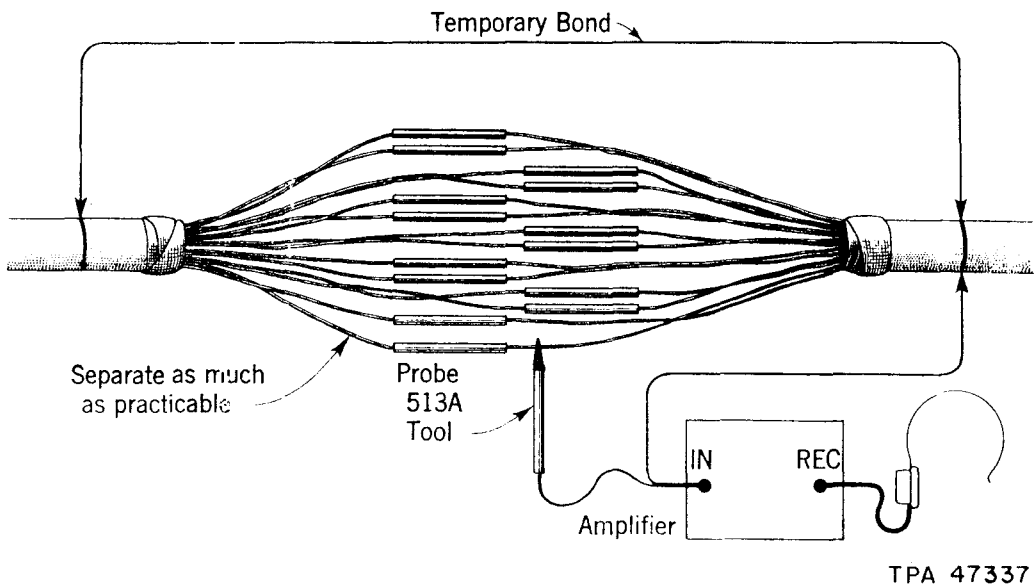
4. DETECTING TONE

4.01 Hold the probe by the fiber handle, taking care not to touch the brass tip with the fingers. Move the probe slowly around the splice, with the tip resting against the insulation of the conductors while listening carefully for tone. This will determine whether the conductor with tone is located in the outer part of the splice. If tone is heard, push the probe through the splice at several points. When the tip of the probe is near the conductor on which tone is being sent, tone will be heard in the receiver. Careful probing among the conductors should indicate the correct pair or quad, which should be checked by separating it as far as practicable from the adjacent pairs or quads.

4.02 If tone is being sent on only one wire, separate the individual conductors of the pair or quad. The loudest tone is heard when the tip of the probe is pressed against the insulation of the wire on which the tone is being sent.

4.03 A typical arrangement at a splice is shown in Fig. 1.

**Reprinted to comply with modified final judgment.



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Fig. 1—Testing For Tone