

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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AT&TCo Standard

AT-7888 LIST 1A TEST SET

SPEAKER SET

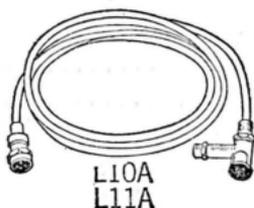
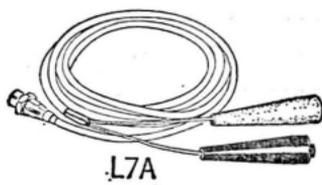
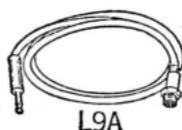
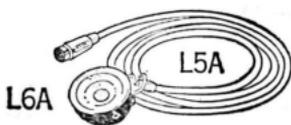
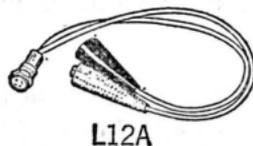
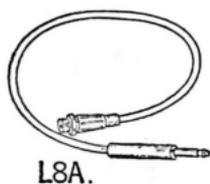
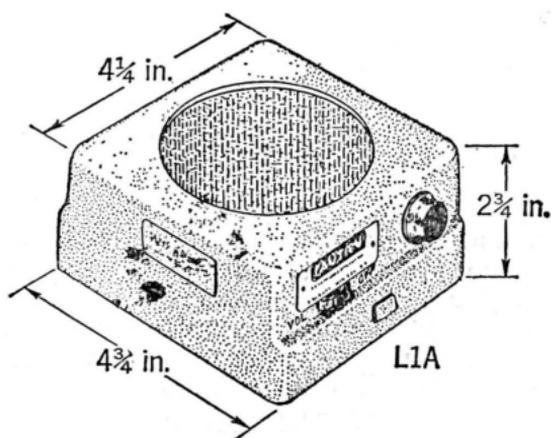
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1. GENERAL

1.01 This section describes the AT-7888 List 1A Test Set (Speaker Set) intended as a substitute for a head telephone set or receiver in outside plant work. Illustrations are included covering methods for using the speaker set.

2. DESCRIPTION

2.01 The AT-7888 List 1A Test Set is illustrated in Fig. 1. The set consists of a two-piece plastic case housing a speaker and a transistorized amplifier. Three low impedance jacks are provided labeled PROBE, MIKE and LINE. The PROBE jack is a high level input intended specifically for connection to a 147-type amplifier, the MIKE jack is for connecting to a magnetic-type microphone and the LINE jack is a capacitor input for connecting to a talking line and for the majority of remaining applications described later. Two 6.5-volt Mallory TR-135R batteries are required; these must be ordered separately.



AT-7888, LIST 1A TEST SET

Fig. 1

2.02 **Cords:** The cords required to make connection to the speaker set are listed below and illustrated in Fig. 1.

Cord, AT-7888 L5A — 44 inches long for connecting microphone to set.

Cord, AT-7888 L6A — similar to the L5A cord except that it is equipped with a microphone (723A Receiver).

- Cord, AT-7888 L7A — 90 inches long equipped with needle point test clips.
- Cord, AT-7888 L8A — 22 inches long equipped with a No. 310 Plug.
- Cord, AT-7888 L9A — 48 inches long equipped with a No. 310 Plug.
- Cord, AT-7888 L10A — 116 inches long, for use with Motorola hand-carried transceiver.
- Cord, AT-7888 L11A — 116 inches long, for use with Bendix hand-carried transceiver.
- Cord, AT-7888 L12A — 20 inches long, an adapter equipped with needle point test clips for use with L5A or L6A Cord.

3. CAUTION

3.01 **Always turn the volume control to the OFF position when the set is not in use.** Failure to do so will cause the batteries to run down. When the switch is in the ON position, the red portion of the control knob is exposed.

4. USES

4.01 **71-Type Test Set:** The method of using and the cord required for connecting the speaker set to a 71-type test set are shown in Fig. 2. In this application the speaker set is used independently of the talking circuit. The volume control should be adjusted to less than one-quarter turn from the OFF position. The desired signal strength should then be adjusted by the gain control in the 71-type set from the maximum counterclockwise position.

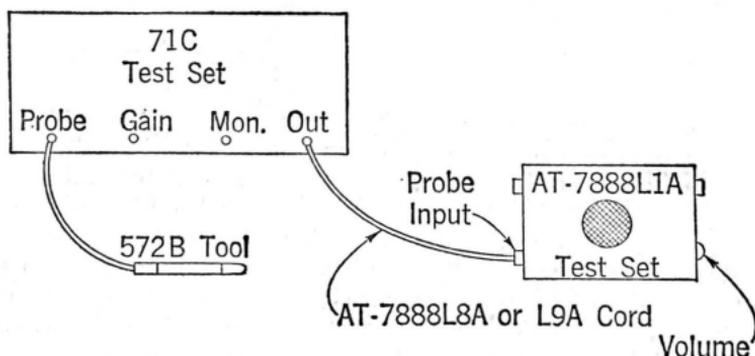


Fig. 2

4.02 **99-Type Test Set:** The method of using and the cord required for connecting the speaker set to a 99-type set in locating grounds or crosses in long or loaded cables are as shown in Fig. 3. The volume control should be adjusted to provide the desired signal strength.

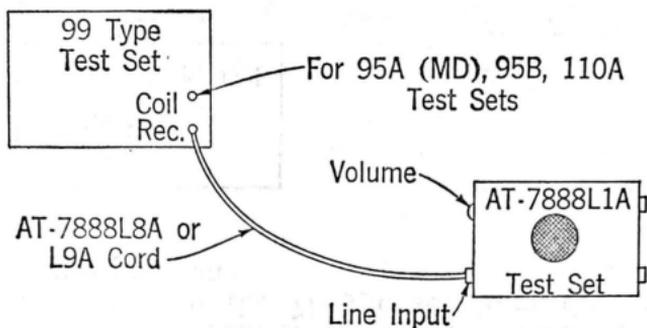


Fig. 3

4.03 **104A Test Set:** In this application the speaker set is used as a substitute for a receiver. The set should be connected to the 104A Set using the cord shown in Fig. 4. The volume of the speaker set should be adjusted to maximum clockwise position. The volume of the 104A Set should then be adjusted for the desired signal volume.

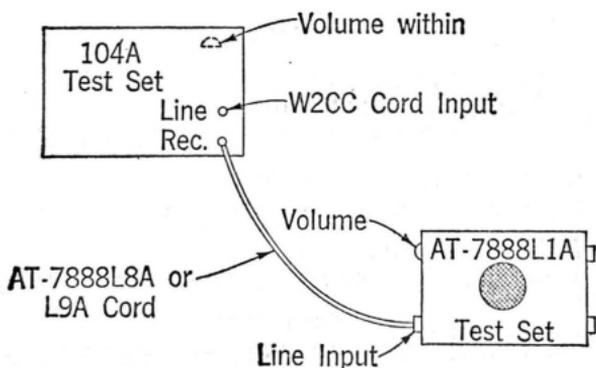


Fig. 4

4.04 **147-Type Amplifier:** The method of using and the cord required for connecting the speaker set to a 147-type amplifier are shown in Fig. 5. In this application the speaker set is used as a substitute for a receiver. The volume control of the speaker set should be adjusted to the maximum volume position. The volume control of the amplifier should be adjusted to the position which provides the desired signal volume.

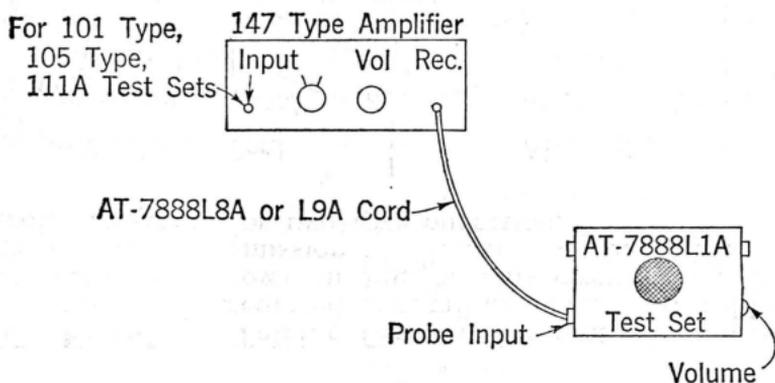


Fig. 5

4.05 **Portable Radio Receiver:** The method of using and the cord required for connecting the speaker set to a Motorola or Bendix radio set are shown in Fig. 6. Use the L10A cord with Motorola set and the L11A cord with a Bendix set. The speaker set volume replaces the receiver of the handset. Adjust the speaker set volume to the desired level.

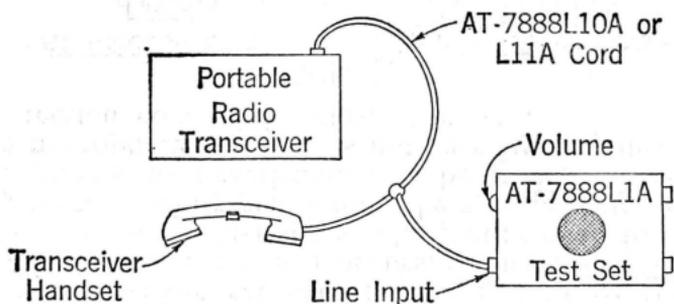


Fig. 6

4.06 **Two-Wire Talking Circuit:** The sketch, Fig. 7, shows the method of using the speaker set for talking over one cable pair for distances up to about 1000 feet. The volume control on each speaker set should be adjusted to the desired volume. If feedback (howling) occurs, reduce the volume to the point where the noise just stops. The tendency to feedback can generally be reduced by positioning the speaker sets as far from the microphones as practicable and by facing the sets away from the microphones. If this is not satisfactory, use the four-wire connection covered in Paragraph 4.07.

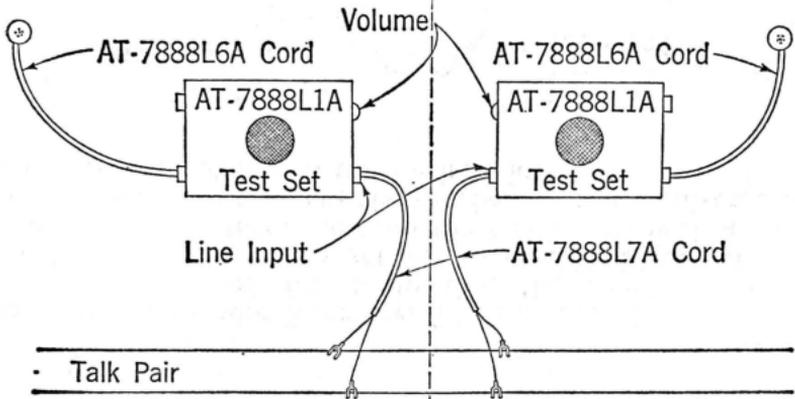


Fig. 7

4.07 **Four-Wire Talking Circuit:** The method of using and the cords required for talking over two cable pairs (four wires) are shown in Fig. 8. This circuitry extends the range of voice transmission by reducing feedback. The volume controls are set as for two-wire operation.

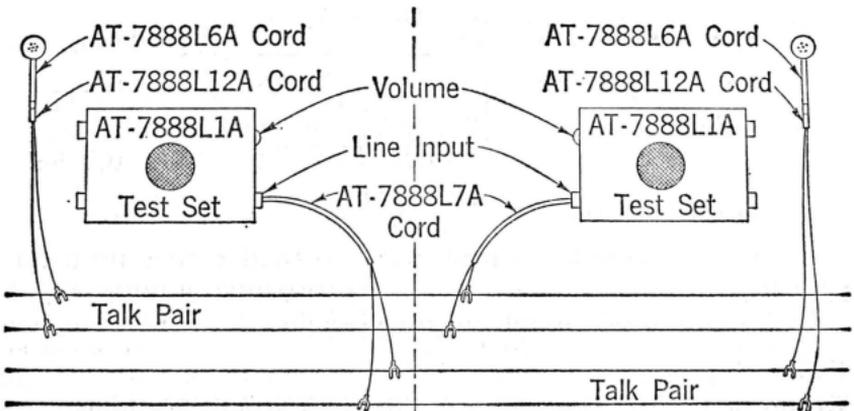


Fig. 8

4.08 **Monitoring on a Talking Circuit:** A battery talking circuit using speaker sets is shown in Fig. 9. Used in this manner the speaker sets provide a means for constant monitoring. Adjust the volume control of each set to the desired level.

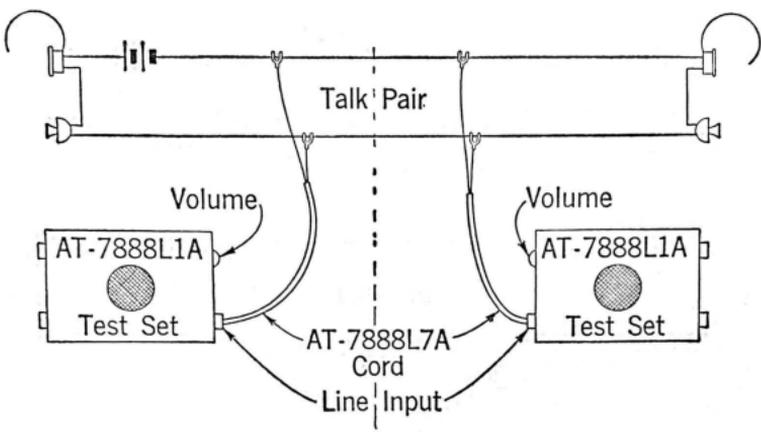


Fig. 9

4.09 **Identifying Cable Pairs:**

(a) **Two-Wire Connection:** The method of connecting the 76-type set, speaker sets and amplifier when one cable pair is employed for talking is shown in Fig. 10.

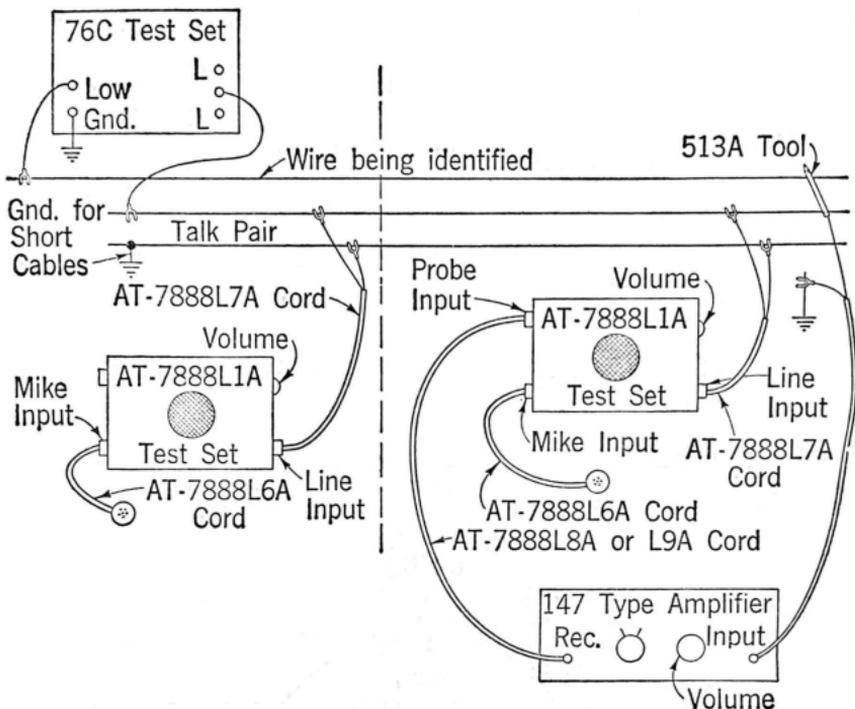


Fig. 10

(b) **Four-Wire Connection:** When two cable pairs are employed for talking, the manner in which the various test sets should be connected is shown in Fig. 11.

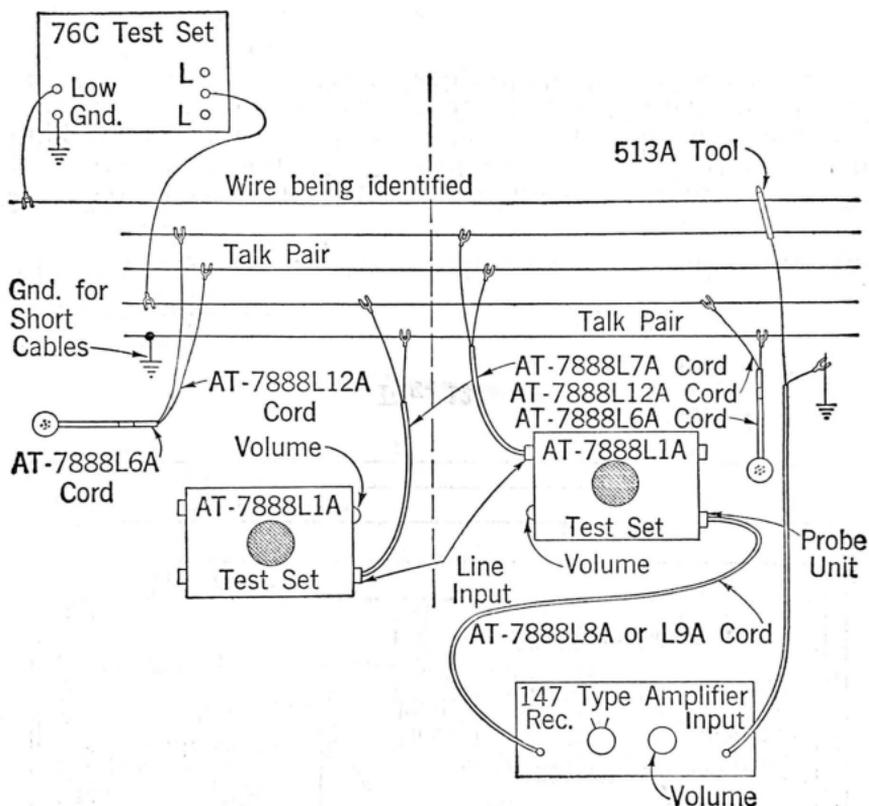


Fig. 11

In both connections the volume of each speaker set should be adjusted to obtain the desired signal strength. If feedback (howling) noise occurs, adjust the volume to the point where the noise just stops. The volume of the 147-type amplifier should then be adjusted to obtain the signal strength required.

4.10 Cable Section Transfer: The method of using the speaker sets in making a cable section transfer is shown in Fig. 12. The speaker sets replace battery talking sets and are used for monitoring the test signals. The volume controls should

be adjusted to maximum volume position or just short of the position where feedback occurs. The gain control of the 71-type set should be adjusted to obtain the desired volume. The volume control of the 104A Test Set should be adjusted so its tone can be conveniently heard.

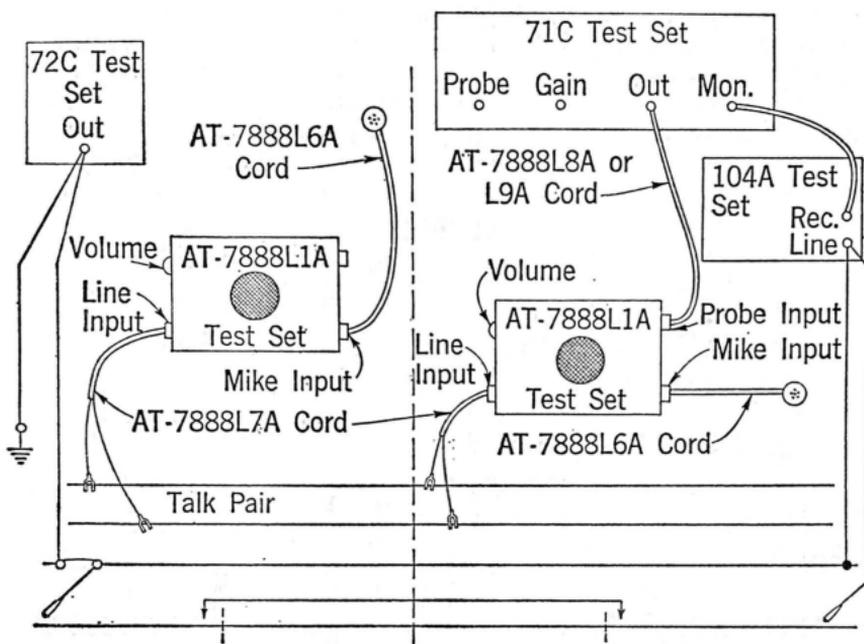


Fig. 12

5. MAINTENANCE

- 5.01 Replace the batteries when the combined voltage is equal to or less than 10.0 volts.
- 5.02 To replace the batteries, remove the cover of the set and then take off the metal end of the battery clip by pushing it toward the end of the battery and lifting it upwards. Remove the battery. Care should be exercised in placing the new batteries to ensure that the polarity of the batteries agrees with the stampings on the clips.

6. PARTS

6.01 Replacement Parts:

Battery, Dry, Mallory TR-135R

Case, AT-7888 L2A

Cover, AT-7888 L3A

Board, Wiring, Printed AT-7888 L4A

6.02 Optional Parts:

Cord, AT-7888 L5A

Cord, AT-7888 L6A

Cord, AT-7888 L7A

Cord, AT-7888 L8A

Cord, AT-7888 L9A

Cord, AT-7888 L10A

Cord, AT-7888 L11A

Cord, AT-7888 L12A