BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G50.211.3
Issue 1, May, 1948
AT&T Co Standard

CABLE TESTING—GENERAL
TALKING CIRCUIT WITH 76-TYPE TEST SET

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1. GENERAL

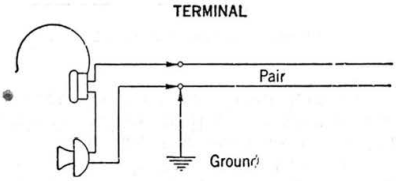
1.01 This section describes the method of establishing a talking circuit with the 76-type test set.

2. DEAD CABLES

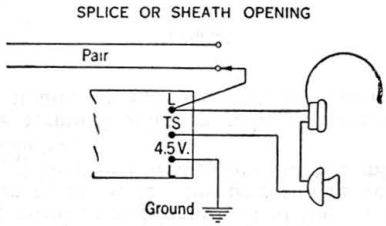
2.01 In dead cables, a talking circuit can be established by one of the following methods.

2.02 **Selecting Pair from Terminal by Grounding:** If a talking circuit is required from a distribution terminal to a splice or sheath opening nearby, it may be desirable to select the pair at the terminal and identify it at the splice. If the test set is to remain at the splice, the pair should be grounded at the terminal and identified as a ground at the splice. The procedure is as follows:

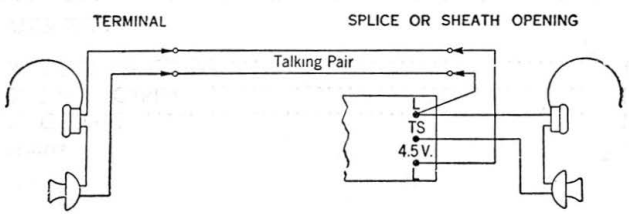
(1) At the terminal select a pair, connect a talking set across it and ground one side, as shown below.



(2) At the splice or sheath opening, connect the talking set as shown below. Set the keys at LIS and WS-WAIT; then use the scissors or test pick to make contact with the wires until the buzzer in the set operates, indicating that the pair has been located.

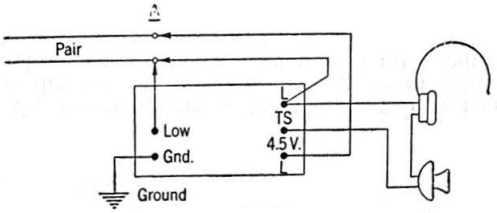


(3) After the pair has been located at the splice or sheath opening, clear the ground and connect the lower L post to the talking pair. This will again operate the buzzer in the set. Shift the key from WS-WAIT to TLK, which will stop the buzzer. Clear the ground at the terminal. The final connections should be as follows:

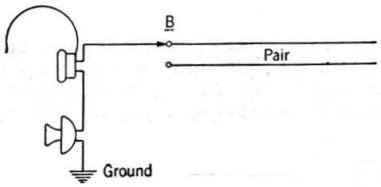


2.03 **Selecting Pair by Tone:** If the talking pair is to be selected from a splice or a large terminal, it is generally desirable to use tone to identify it at the other end. Designating the two places as A and B, each of which may be a splice, sheath opening or termination, the general procedure is:

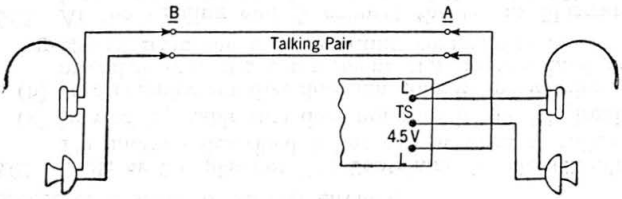
(1) At the sending end A, make the connections as illustrated below and send tone on the talking pair with the keys in the SND and WS-WAIT positions.



(2) At the identifying end B, ground one side of the talking set and run over the wires or binding posts until the pair with tone is located.



(3) At B, after the pair with tone is located, connect the talking set across the pair. This will operate the buzzer of the set at A and signal that the pair has been located. At A, shift the keys to the LIS and TLK positions, and remove the connection to the LOW post. The talking circuit should be as shown below:



3. WORKING CABLES

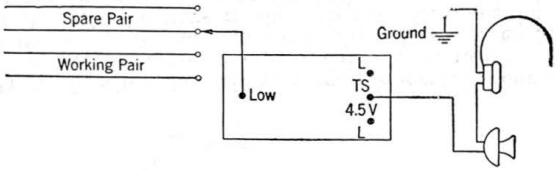
3.01 In working cables a talking circuit may be established by one of the following methods, depending on the presence or absence of special circuits.

3.02 **Cable or Complement Not Containing Special Circuits:** The method described below can be used as follows:

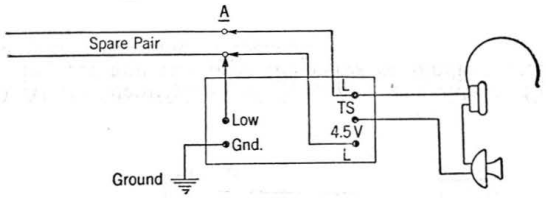
(a) In working cable that does not contain special circuits.

(b) In a complement that does not contain special circuits, provided that the complement can be identified and segregated from the other working complements.

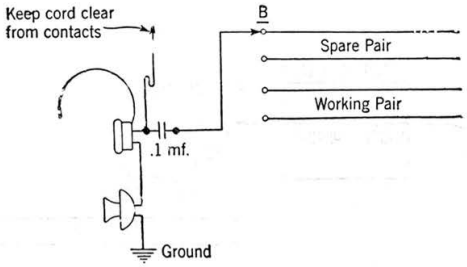
3.03 At the sending end A connect the set as illustrated below and with the keys in the LIS and TLK positions select a spare pair.



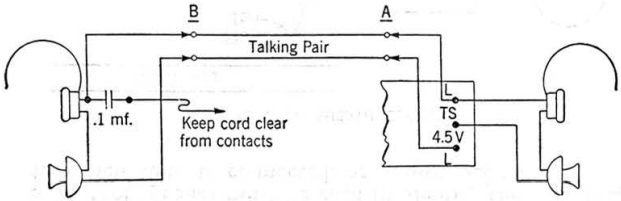
3.04 Test the spare pair for defects by means of the battery and receiver tests. Set up the talking circuit at the sending end as shown below and send tone on the talking pair with the keys in the SND and WS-WAIT positions.



3.05 At the receiving end B the talking pair is identified with the talking set connected as shown below. The talking set should be equipped with a 1/10 mf condenser to avoid interference on working lines.

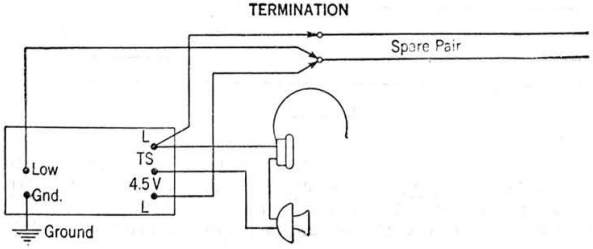


3.06 After the talking pair has been identified the connections to the talking set at the identifying end B should be rearranged as indicated in the following sketch.

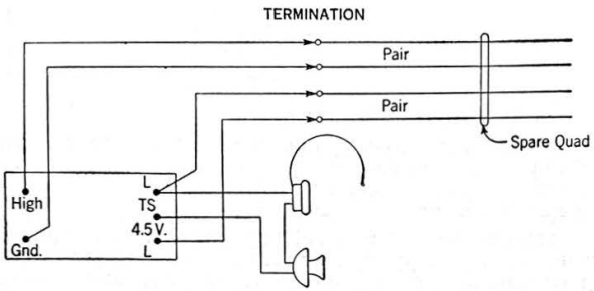


3.07 **Cable or Complement Containing Special Circuits:** In a cable or complement containing special circuits the talking circuit must be established by sending tone from a termination where the identity of the circuits is known. At the identifying end the conductors must be identified by means of an amplifier and probe. The procedure is as follows:

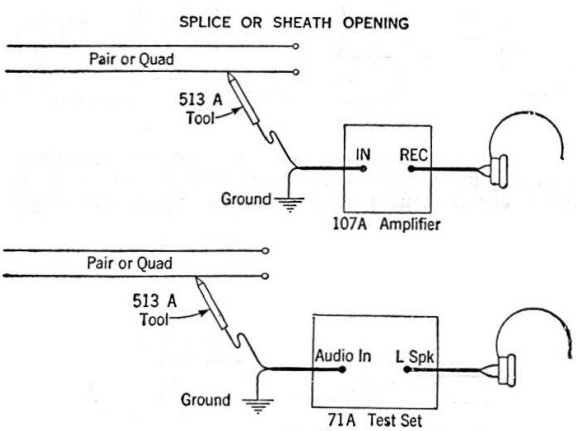
(1) **In paired cable or in short quadded cable,** select a good spare pair at the termination and connect the talking set as shown below. Send tone on the talking pair with the keys in the SND and WS-WAIT positions.



(2) **In a long quadded cable,** select a good spare quad at the termination and connect the talking set as shown below. With the keys at SND and WS-WAIT, send non-grounded tone on the pair.



(3) At the splice or sheath opening, a 107A amplifier, or the audio-frequency circuit of the 71A test set, and a 513A tool (probe) must be used to identify the pair or quad to which tone is connected, as shown below.



(4) After the pair with tone has been identified at the splice or sheath opening, connect a talking set across the pair. In the case of a quad, connect the talking set across the pair that has the weaker tone. This will operate the buzzer of the test set at the termination and signal that the pair has been located. At the termination, shift the keys to the LIS and TLK positions and remove the tone sending connections. The talking pair should be as shown below.