VOLTMETER TEST CIRCUIT PER SD-15118-01

NO. 12 SWITCHBOARD

1. GENERAL

1.01 This section describes the principal functions of the voltmeter test circuit per SD-15118-01 for making voltmeter tests on lines and trunks, ringing and talking tests, ringing on lines with the receiver off the hook and other miscellaneous tests.

1.02 The equipment consists of a panel arranged to mount in the face of the switchboard. On the front of this panel are located the voltmeter, keys and jacks used for making the various tests.

2. EQUIPMENT FEATURES

2.01 The test panel is a small compact unit arranged for location in one panel of the jack field. It is equipped with a voltmeter, two keys designated RG-G and REV and two jacks designated TST and TLK which are arranged as shown in Fig. 1.

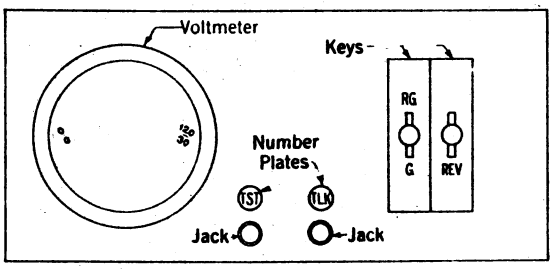

Fig. 1 - Front of Voltmeter Test Panel.

2.02 The voltmeter is a small flush-type instrument with a 60 line scale with two ranges - one of 0 to 120 volts having a resistance of 100,000 ohms and the other of 0 to 30 volts having a resistance of 25000 ohms. The 0 to 120 volt scale only is used.

2.03 The positive side of a 45-volt dry battery is normally connected to the voltmeter of the test circuit as shown in Fig. 2. If the switchboard is equipped with the emergency battery feature, the 45-volt dry battery associated with the emergency feature is also used for the test battery. When used as both test and emergency battery, the connections from the battery to the test circuit, telephone circuit and emergency cord circuit are made through the emergency battery key which is located in the face of the switchboard, otherwise these connections are made directly from the battery to the test circuit and ground.

2.04 A subscriber set may be connected to the test circuit, as indicated in Fig. 2, so that talking tests can be made without requiring a switchboard position to be vacated for test purposes.

3. OPERATING FEATURES

3.01 The voltmeter test circuit provides a means of testing lines and trunks for grounds, opens, crosses, shorts, line insulation resistance and capacity. This circuit can also be used in conjunction with a

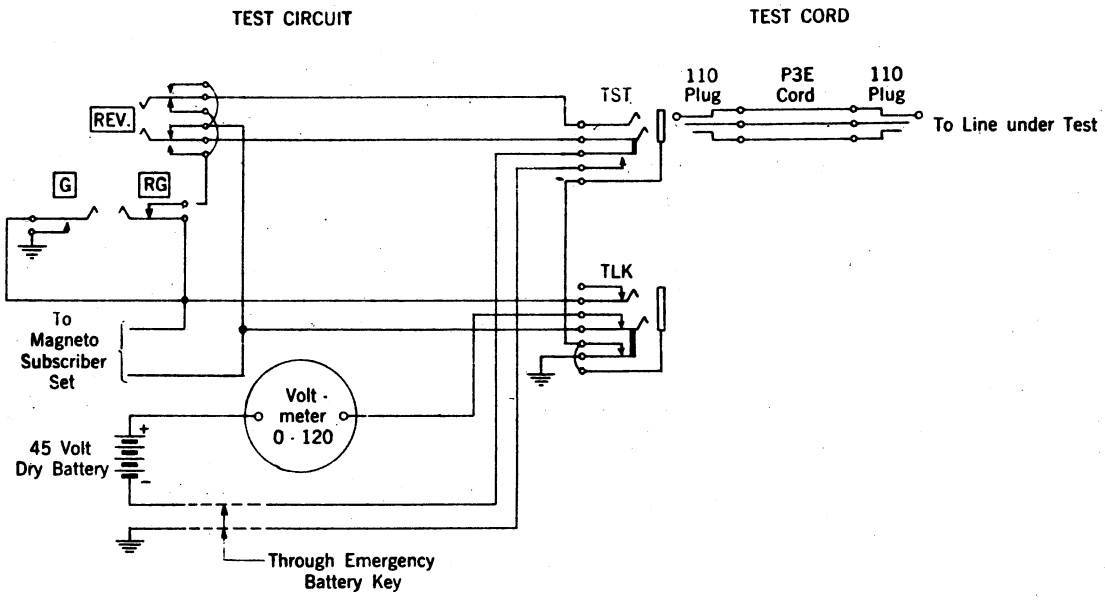

Fig. 2 - Test Circuit.

switchboard cord circuit for ringing on common battery lines with receiver off the hook and for making talking and ringing tests.

3.02 A patching cord, consisting of a No. P3E cord equipped with a No. 110 plug at each end, is used for connecting the test circuit to the line or trunk to be tested. A regular cord circuit is also used on talking connections.

3.03 The TST jack is used for patching the test circuit to the line or trunk to be tested and, when in use, places ground on the negative side of the test battery if the circuit is connected through the emergency battery key.

3.04 The TLK jack provides a means of making a talking connection through the test circuit to a line or trunk under test either from a switchboard position or from a subscriber set associated with the test circuit. When a plug is inserted in this jack the voltmeter is cut off from the circuit.

3.05 The REV key is of the one-way locking type which when operated, reverses the tip and ring leads of the test circuit with respect to a line or trunk patched to the TST jack.

3.06 The RG - G key is a two-way locking type key. When operated to the position designated G, it connects ground to the tip side of the test circuit when the REV key is normal, and to the ring side when the REV key is operated. When operated to the position designated RG, it removes generator ground from the line so that if a receiver is left off the switchhook on a two-party selective or four-party semi-selective common battery line, the ringers on the line can be rung directly to ground by the operation of the ringing key of a cord circuit connected to the TLK jack.

3.07 Further details regarding the circuit will be found in CD-15118-01.