BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G50.244.7
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CABLE GENERAL—TESTING
OPERATION OF 94A TEST SET

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1. GENERAL

1.01 This section outlines the use of the 94A Test Set or the superseded D-175572 Test Set (Sliver Burner) for burning out slivers in coaxial cable conductors.

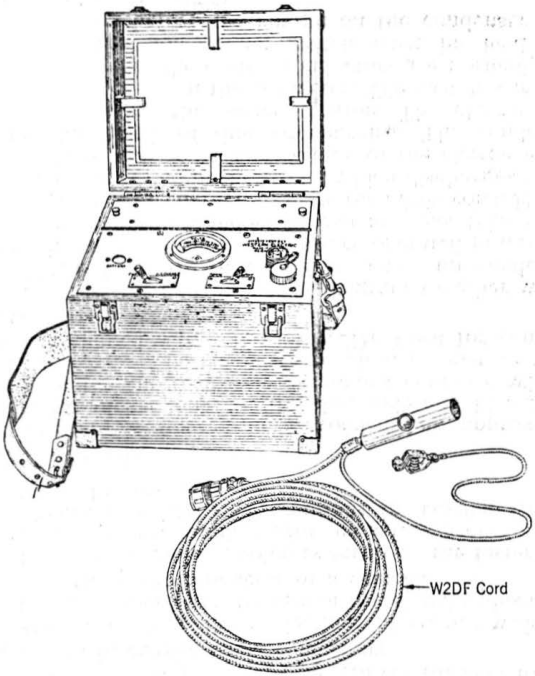
1.02 Slivers are hair-like projections of copper which may lower the dielectric strength or occasionally short-circuit the inner to the outer conductor of a coaxial.

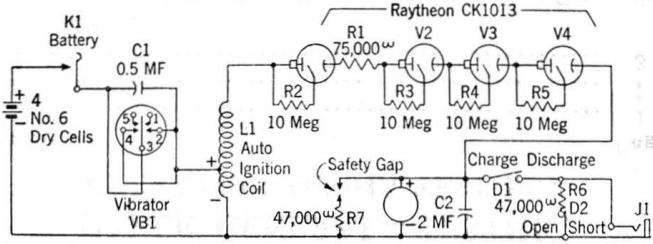
1.03 Because of the high voltages involved, the tester should be thoroughly familiar with the safety procedures outlined in Section G50.244.3 (Precautions in Testing Coaxials) before using this test set.

2. DESCRIPTION

2.01 The set is housed in a wooden box approximately 11-5/8 inches long, 9-5/8 inches wide and 12-1/2 inches high and weighs approximately 30 pounds equipped with batteries. Four KS-6542 batteries are required to operate the set. The set is equipped with a 15-foot W2DF Cord for connecting it to a coaxial.

2.02 The test set and its circuit diagram together with the W2DF Cord are shown below. The 2 mf condenser in the set is charged by means of a battery operated power supply consisting of a vibrator, induction coil and gas tube rectifier. The set should not be charged to more than 3000 volts. However, a safety gap is provided in the circuit which discharges the condenser at about 3500 volts. The voltage of the charge is determined by the length of time of charging. The condenser is charged by pressing the battery button. The charge on the condenser is indicated on the voltmeter. The switches in the set are so arranged that the output conductors are normally short-circuited and the non-locking switch must be held in the operated position before the charge on the condenser can be discharged into the coaxial.





2.03 The W2DF Cord is of the shielded type and is 15 feet long. One end is equipped with a coaxial connector for making connections to a prepared .270-inch or .375-inch coaxial or to a coaxial terminal; the other end is equipped with a plug

for connecting to the jack in the set. This cord can be stored in the cover of the set.

3. USE

3.01 The set should be connected to the cable end nearest the suspected location of the fault. For best results, the fault should be within a few thousand feet of the set. The coaxial should be cleared at both ends of the cable before testing.

3.02 The set is operated as follows:

(1) First check its operation. To do this leave the switches CHG-DIS and OPEN-SHT in their normal positions of "charge" and "short" and press the battery switch to charge the condenser to a predetermined value as indicated by the voltmeter. About 30 seconds are required for the condenser voltage to build up to its full value. After the voltage has been built up to the desired value, discharge the condenser by moving CHG-DIS switch D1 to the discharge position. If the set is working properly, the voltmeter reading should return to zero immediately.

(2) To test the coaxial, connect the cord to the jack on the panel of the test set. Then make the connection to the prepared end of the coaxial or to the coaxial terminal with the 206A Connector. Clip the flexible lead to the outer conductor of the coaxial. Examine the clip occasionally to ensure that it has not become disengaged.

(3) With the CHG-DIS switch in the "charge" position and the OPEN-SHT switch in "short" position, hold down the battery switch until the voltmeter reads 2500-3000 volts in the case of .375-inch coaxials and 1500 to 2000 volts in the case of .270-inch coaxials.

(4) Release the battery switch. Hold switch OPEN-SHT in the "open" position and quickly move switch CHG-DIS to "discharge," thereby discharging the condenser into the cable. Then release the switches. The test should be repeated several times, if necessary.

(5) If on throwing the switches to "open" and "discharge," the voltmeter does not go to zero immediately, it indicates that the trouble has been cleared. To remove the charge on the condenser and coaxial, restore the OPEN-SHT switch to "short" position and hold the CHG-DIS switch in "discharge" position until the voltmeter returns to zero.

3.03 The leads should be tested for continuity frequently as an open in them will indicate that the sliver or fault has been cleared.