

CORD CIRCUITS WITH LAMP RINGDOWN SUPERVISORY SIGNALS

NO. 12 SWITCHBOARD

1. GENERAL

1.01 This section describes methods of testing switchboard cord circuits which are equipped with lamp ringdown supervisory signals, using test circuit per SD-15174-01. The tests are as follows:

- (A) Continuity Test
- (B) Operate and Release Test of Supervisory Relay
- (C) Check of Supervisory Relay Windings and Non-Operate Test of Sleeve Relay
- (D) Operate Test of Sleeve Relay
- (E) Ringing Test
- (F) Emergency Battery Test

1.02 Schematic circuit sketches and the descriptions of the tests in this section are included in a section in the A700 Division.

2. APPARATUS

Test (A)

2.01 Operator's Telephone Set.

Test (B)

2.02 W2AS Cord equipped with a No. 110 Plug and a No. 522A Key.

2.03 No. 110 Plug with tip and ring short-circuited.

Test (F)

2.04 No. 109 Plug with tip and ring short-circuited. (For No. 2 Local Test Cabinet.)

2.05 No. 110 Plug with tip and ring short-circuited. (Where the voltmeter is not provided.)

3. METHOD

(A) Continuity Test

3.01 With an operator's telephone set connected to the position in which the cords under test are located, and the grouping key normal, operate the talking key of an idle cord circuit and insert the plug of the calling (front) cord into jack F.

3.02 Insert the plug of the cord to be tested into jack C.

3.03 Listen in the receiver during the following operations for any clicks which will indicate a cutout or other trouble condition.

3.04 Hold the plug in jack C with one hand and shake the cord with the other hand.

3.05 Turn the plug around in the jack so as to cause the jack springs to make contact at all possible points of the tip and ring of the plug.

Note: Scratchy noises heard while the plug is being rotated should be disregarded.

3.06 Tap lightly on the key top to detect loose connections or defective contacts.

3.07 Move the key levers slightly forward and backward while exerting a reasonable pressure to the left and to the right to take up any play or side lash, in order to detect faulty key adjustments that might cause clicks.

3.08 Make a non-click test of the ringing keys by operating the lever and allowing it to restore unrestrained. Any clicks in the receiver indicate excessive overthrow of the lever. Operate the talking key to the talking position and restore it. On cord circuits with a second key lever, operate the back lever to each position and allow it to restore.

3.09 Any cord circuit on which clicks are heard in response to the movement of the cord, plug or key levers should be considered defective.

(B) Operate and Release Test of Supervisory Relay

3.10 Insert the plug of the W2AS cord into jack A.

3.11 Insert the plug of the cord under test into jack C.

3.12 Insert a No. 110 plug with tip and ring short-circuited into jack F for a moment in order to give the supervisory relay a "soak." When the plug is removed, the cord supervisory lamp should light.

3.13 Operate the No. 522A key to apply the "operate" current. The lamp should be extinguished to indicate that the relay has operated.

3.14 Release the No. 522A key. This changes the current to the "release" value. The lamp should light to indicate the release of the relay.

(C) Check of Supervisory Relay Windings and Non-Operate Test of Sleeve Relay

3.15 Insert the plug of an idle cord into jack C.

3.16 Insert the plug of the cord to be tested into jack B. The ringdown supervisory lamp of the cord circuit should light to indicate that the sleeve relay is not operated and that the supervisory relay is operated through its three windings.

(D) Operate Test of Sleeve Relay

3.17 Insert the plug of an idle cord into jack B.

3.18 Insert the plug of the cord to be tested into jack A. The ringdown supervisory lamp of the cord in jack B should light to indicate that the sleeve relay of the cord being tested is operated.

(E) Ringing Test

3.19 Insert the plug of an idle cord into jack F.

3.20 Insert the plug of the cord to be tested into jack G.

3.21 Operate the ringing key for a short time. The ringdown supervisory lamp of the cord connected to jack F should light while the key is operated indicating that ringing current is properly sent out.

3.22 If the cord has more than one ringing key, repeat 3.21 for the other ringing conditions.

3.23 If the position has a master ringing key, repeat 3.21 for each position of the master key using any one of the cord ringing keys.

Note: This test need be made but once per position as it tests only the continuity of the ringing current through the master ringing key.

3.24 Operate the emergency ringing key to the HAND position, hold the cord circuit ringing key operated and operate the hand generator. The ringdown supervisory lamp of the cord connected to jack F should light while the generator is operated. Then release the key and restore the ringing key to the KEY position.

Note: This test need be made but once per position.

(F) Emergency Battery Test

With Voltmeter Test Circuit or With No. 2 Local Test Cabinet

3.25 Insert either front or rear cord plug of the cord circuit to which the emergency battery is connected into jack D. The cord supervisory lamp should not light. Disconnect the operator's telephone set if it is connected to the position.

3.26 If the No. 2 local test cabinet is being used, operate the G key (the other keys should be normal) and insert a No. 109 plug with tip and ring short-circuited into the TST jack of the test cabinet.

3.27 Operate the EMB (emergency battery) key for a period of approximately 5 seconds and note the reading of the voltmeter. The guard lamp associated with the EMB key should light while the key is operated.

Caution: The emergency battery key should not be operated longer than necessary to make the test in order to prevent excessive drain on the battery.

3.28 If the voltage reading obtained is less than 42 volts, the emergency battery should be replaced.

Without a Voltmeter

3.29 Insert either front or rear cord plug of the cord circuit to which the emergency battery is connected into jack C. The cord supervisory lamp should light. Disconnect the operator's telephone set if it is connected to the position.

3.30 Operate the EMB (emergency battery) key. Note that the guard lamp associated with the EMB key lights and that the cord lamp remains lighted. Insert a No. 110 plug with tip and ring short-circuited into jack F. Note that the cord lamp is extinguished. Then restore the EMB key.

Caution: The emergency battery key should not be operated longer than necessary to make the test in order to prevent excessive drain on the battery.

3.31 Failure of the cord supervisory lamp to function as outlined in 3.30 is an indication that the emergency battery voltage has dropped to a point where the battery should be replaced.

4. REPORTS

4.01 The required record of these tests should be entered on the proper form.