LINE SWITCHES AND MASTER SWITCHES OPERATION TESTS 700C AND 710C PBX (DIAL EQUIPMENT)

1. GENERAL:

1.1 This section describes a method of testing the operating features of line switches, master switches, the associated trunk and alarm circuits. The tests covered are:

(a) Master Switch Operation and Alarm Test.
(b) Trunk Hunting and Chain Circuit Test.
(c) Peg Count and all Trunk Busy Register Test.
(d) Line Switch and Trunk Test.
(e) Line Switch B.C.O. Relay Test.
(f) Restricted Service Trunk Test.

This section has been reissued to include the 710C PBX in the title and convert it to letter size.

1.2 This routine should be made during a period of light traffic and care should be taken to avoid interference with calls which may originate during the tests.

2. APPARATUS:

2.1 Ten No. 136-B Tools (used to short circuit relay springs).

2.2 One No. 369 Tool (test pencil).

2.3 One Dial Hand Test Set equipped with No. 2-CB Dial and No. 240-A Plug.

2.4 Special Patching Cord per Figure 1, for testing restricted service trunks.

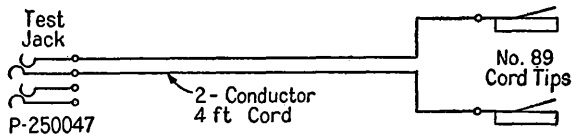

Figure 1.

3. PREPARATION:

3.1 If the alarm signals are extended to the central office, notify the central office forces that a test is to be made and request them to disregard the associated alarm signals until the test is completed.

4. METHOD:

(a) **Master Switch Operation and Alarm Test:**

4.1 Operate and hold the test key and observe that the master switch oscillates smoothly and at approximately the same speed in traveling from trunk No. 10 to No. 1 as it does in traveling from trunk No. 1 to No. 10. Observe that the speed is not noticeably slower or faster than the test requirements shown in Specification X-70031. Observe that all idle plungers are engaged with the guide shaft.

4.2 Manually operate and release the A relay armature of any idle line switch in the group and observe that the line switch does not plunge.

4.3 **Call Blocked Alarm:** Observe that the blue lamp lights and the bell rings after the master switch has been oscillating for a period of 15 to 30 seconds.

4.4 Release the test key and observe that the master switch stops on an idle trunk and the blue lamp is immediately extinguished and the bell stops ringing.

4.5 **Fuse Alarm:** Momentarily cross the equipment end of a fuse in service with the alarm bus-bar, located at the top of the line switch frame. Observe that the red lamp lights and the bell rings. Note that the lamp is extinguished when the cross is removed.

(b) **Trunk Hunting and Chain Circuit Test:**

4.6 Insert No. 136-B tools between springs No. 2 and No. 5 of the B.C.O. relays of idle line switches until a line switch has plunged on each equipped trunk. Observe that the line switches plunge and hold properly. Also observe that the master switch does not advance when the last trunk is made busy.

4.7 Manually operate and release the A relay armature of any idle line switch in the group and observe that the line switch does not plunge.

4.8 Set the master switch on trunk No. 10. Release the line switch on trunk No. 1 and observe that the master switch rotates to trunk No. 1 and stops. Plunge a line switch on trunk No. 1 and observe that the master switch does not advance.

4.9 Release the line switch on trunk No. 2 and observe that the master switch rotates to trunk No. 2 and stops. Plunge a line switch on trunk No. 2 and observe that the master switch does not advance.

4.10 Repeat the above operations (paragraph 4.9) on the remaining trunks and then release all line switches.

4.11 **Permanent Signal:** Where the trunks terminate on selector-connectors, observe that the clear lamp lights during the progress of test (b) and is extinguished when the last line switch is released.

(c) **Peg Count and All-Trunks-Busy Register Test:**

4.12 When this test is scheduled, it should be made in connection with test (b). Read the peg count (if provided) and all-trunks-busy registers before and after test (b) is made.

Note that the peg count register has operated once for each line switch plunged during the test. Note that the all-trunks-busy register has operated once for each equipped trunk, plus one.

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(d) Line Switch and Trunk Test:

4.13 Apply the low (operate) resistance of the No. 369 tool between jack springs No. 5 and No. 6 of an idle line switch. Observe that the line switch plunges and holds properly and that the A relay releases immediately after the line switch plunges. Remove the No. 369 tool and observe that the line switch releases properly.

4.14 Repeat this test on all trunks, using a different line switch on each trunk. Use a different set of line switches each time this routine is performed, so that all line switches will eventually be tested.

(e) Line Switch B.C.O. Relay Test:

4.15 Test the operation of the B.C.O. armature of each line switch by applying the No. 369 tool between jack springs No. 3 and No. 4. Observe that the B.C.O. armature operates when the low (operate) resistance is used and that it does not operate when the high (non-operate) resistance is used.

(f) Restricted Service Trunk Test:

4.16 Select an idle line switch on which service is restricted Connect the No. 89 cord tips of the special patching cord to the tip and ring conductors at the terminal assembly. Connect the dial hand set to the test jack of this cord.

4.17 Operate the C button and observe that the line switch plunges on an idle trunk. Dial a restricted level and note that the paths-busy tone is heard in the receiver.

4.18 Release the C button and observe that the line switch releases.

4.19 Repeat this test on each restricted level and note that the paths-busy tone is heard.

4.20 Dial the level above and the level below the restricted level and note that the paths-busy tone is not heard.

4.21 Repeat the tests (paragraphs 4.16 to 4.20) on each trunk. Use a different line switch each time, so that all line switches on which service is restricted will eventually be tested on all trunks.

5. REPORTS:

5.1 The required record of this routine should be entered on the proper form.