

## CENTRAL OFFICE TRUNKS AND TIE TRUNKS OPERATION TESTS 740A, 740B, AND 740C PBX

### 1. GENERAL

1.01 This section describes methods of testing the operating features of central office trunks and tie trunks. The tests covered are:

Tests for No. 740-A, No. 740-B and No. 740-C P B X 's.

- (A) Operation Test of Central Office Trunks and Tie Trunks from Selector Levels of Selector-Connectors
- (B) Operation Test of Central Office Trunks and Tie Trunks from Attendant's Cabinet
- (C) Test of Night Connections
- (D) Test of Dial Central Office P B X Hunting Feature

Tests for No. 740-C P B X Only

- (E) Secrecy Feature Test
- (F) Switchboard Service

1.02 This section has been revised to combine the central office trunk and tie trunk tests for No. 740-A, No. 740-B and No. 740-C P B X 's into one section and cancels sections B252.141, Issue 1 and B252.241 Issue 2.

1.03 Any central office trunk or tie trunk on which a failure is encountered should be made busy until the trouble has been cleared.

1.04 Test (A) should be started from a different selector-connector each time the test is made, so that all trunks eventually will be tested from all switches.

1.05 Tests (B), (C), (D), (E) and (F) should be made during intervals when no calls are being handled by the attendant. If during the test of central office trunks or tie trunks from the attendant's cabinet a signal for the attendant appears, release the apparatus used for the test until the connection has been completed by the attendant.

1.06 When two attendant's cabinets are provided at No. 740-C P B X 's, all tests should be conducted at Cabinet No. 1 and tests (B), (E) and (F) should be repeated at Cabinet No. 2.

Note: For identification, Cabinet No. 1 is considered to be the cabinet in which the SWITCHBOARD SERVICE key is employed as a transfer key to the second cabinet (Cabinet No. 2).

### 2. APPARATUS

#### Test (A)

2.01 Dial Hand Test Set equipped with a No. 4-CB Dial and a No. 240-A Plug.

#### Tests (A) and (B)

2.02 No. 375-A Make-Busy Tools, as required.

### 3. METHOD

Tests for No. 740-A, No. 740-B and No. 740-C P B X 's

#### (A) Operation Test of Central Office Trunks and Tie Trunks from Selector Levels of Selector-Connectors

3.01 Connect the dial hand test set to the test jack of an idle selector-connector and operate the C button. Dial the correct code to cause the switch to select an idle central office trunk or tie trunk.

3.02 **Trunk to Manual Office or Dial Selected Tie Trunk:** When the operator or attendant answers, check the central office trunk or tie trunk number. Proceed to 3.06, 3.07 and 3.08.

3.03 **Trunk to Dial Office:** Dial tone should be heard. Dial the permanently made busy number in the dial office. Note that the busy signal is heard in the receiver. Proceed to paragraphs 3.06, 3.07 and 3.08.

Note: If a permanently made busy number in a step-by-step office is not available, dial zero and when the operator answers, check the trunk number. Proceed to paragraphs 3.06, 3.07 and 3.08.

3.04 **Dial Repeating Tie Trunks:** Where the dial repeating tie trunks terminate at dial P.B.X.'s having manual positions, proceed as in 3.01 and then dial zero. When the attendant answers at the distant P B X , check the tie trunk number. Proceed to paragraphs 3.06, 3.07 and 3.08.

Note: When these tie trunks terminate at a No. 702-A P B X the operator cannot check the tie trunk number.

3.05 Where dial repeating tie trunks terminate at an unattended P B X , proceed as in 3.01 and then dial the number of a dial station at the distant P B X for which arrangements have been previously made to have someone answer the necessary test calls. Note that an audible ringing signal is heard in the receiver. When an answer is received, check the extension number. Proceed to 3.06, 3.07 and 3.08.

3.06 Short-circuit test jack springs Nos. 1 and 2 of the selector-connector by means of a No. 375-A tool and then disconnect the hand test set from the test jack.

3.07 Connect the hand test set to the test jack of another idle selector-connector, dial the correct code to cause the switch to select the next central office trunk or tie trunk. Proceed as outlined in 3.01 to 3.05. Continue in this manner until all the trunks on the level have been tested.

3.08 After the last trunk has been tested, the No. 375-A tools should be removed immediately from the selector-connectors.

#### (B) Operation Test of Central Office Trunks and Tie Trunks from Attendant's Cabinet

3.09 Make the test line busy by placing a No. 375-A tool between the sleeve and ground springs of the test line jack.

3.10 Operate the trunk key of the central office trunk or tie trunk under test to the TLK or TALK position. The BSY or TRUNK BUSY lamp should light.

3.11 Operate the OUT-CALL key and remove the receiver from the switchhook at the attendant's station.

3.12 **Manual Selected Tie Trunks:** When the distant attendant answers, request her to disconnect momentarily, then to originate a call on the tie trunk and to hold the connection until she receives a disconnect signal. Then proceed to 3.17.

Note: It will be necessary, in some cases, for the attendant at the distant end to connect the tie trunk to an extension line circuit in order that she can hold the tie trunk connection and at the same time operate her board. In this case, the attendant should be advised to disconnect at the end of a time interval sufficient to permit the test to be completed.

3.13 **Dial Repeating Tie Trunks:** Where dial repeating tie trunks terminate at dial P B X 's having manual positions, proceed as in 3.09, 3.10 and 3.11, and dial zero. When the distant attendant answers, request her to disconnect momentarily, then originate a call on the tie trunk and to hold the connection until she receives a disconnect signal. Then proceed to 3.17.

3.14 Where dial repeating tie trunks terminate at an unattended P B X, proceed as in 3.09, 3.10 and 3.11 and then dial the number of a dial station at the distant P B X for which arrangements have been previously made to have someone answer the necessary test calls. When an answer is received, request the subscriber to disconnect momentarily, then originate a call on the tie trunk and leave the receiver off the switchhook for a time interval sufficient to permit the test to be completed. Then proceed to 3.17.

3.15 **Trunk to Manual Office:** When the operator answers request her to disconnect momentarily and then to ring back and to leave the cord in the jack until she receives a disconnect signal. Then proceed to 3.17.

3.16 **Trunk to Dial Office:** When dial tone is heard in the receiver of the attendant's station, dial zero. When the operator answers, request her to wait a moment, then to ring back and to leave the cord in the jack until she receives a disconnect signal. Proceed to 3.17.

3.17 Immediately restore the OUT-CALL key and the trunk key of the central office trunk or tie trunk under test to normal. Observe that the TRK or INCOMING TRUNK CALL and BSY or TRUNK BUSY lamps are lighted on the incoming call.

3.18 With the AUX key operated to the ON position or the CALL BUZZER key in the NORMAL position, note that the buzzer sounds. Then operate the trunk key to the TLK or TALK position. Note that the TRK or INCOMING TRUNK CALL lamp is extinguished and that the buzzer is silenced if the attendant's extension lamp and other trunk lamps are extinguished. The AUX or CALL BUZZER key may then be operated to the OFF position.

3.19 When testing central office trunks momentarily operate the trunk key to the HLD or HOLD position and note that the BSY or TRUNK BUSY lamp remains lighted.

3.20 Operate the EXT-DIAL or TRUNK-EXTENSION key and note that the GD or AWAITING EXTENSION ANSWER lamp lights. When dial tone is heard, dial the test line number and note that busy tone is heard in the receiver.

3.21 Restore the EXT-DIAL or TRUNK-EXTENSION key and operate the RLS or RELEASE key. When the GD or AWAITING EXTENSION ANSWER lamp is extinguished, release the RLS or RELEASE key. The busy tone should no longer be heard.

3.22 Reoperate the EXT-DIAL or TRUNK-EXTENSION key and note that the GD or AWAITING EXTENSION ANSWER lamp lights. When dial tone is heard, dial the number of the attendant's extension. Ringing induction should be heard and the attendant's extension lamp should light.

3.23 Momentarily restore the EXT-DIAL or TRUNK-EXTENSION key and when the key is reoperated, note that ringing induction is still heard and that the attendant's extension lamp and GD or AWAITING EXTENSION ANSWER lamp are still lighted.

3.24 Restore the trunk key and note that ringing induction is no longer heard.

3.25 Restore the EXT-DIAL or TRUNK-EXTENSION key.

3.26 Operate the ATT-EXT or EXTENSION-SWITCHBOARD key and note that the attendant's extension lamp and GD or AWAITING EXTENSION ANSWER lamps are extinguished.

3.27 Work the switchhook slowly at the attendants' extension. Note that the flash of the TRK or INCOMING TRUNK CALL lamp follows the operation of the switchhook and then lights steadily when the switchhook is not depressed.

3.28 Operate the trunk key to the TLK or TALK position and note that the TRK or INCOMING TRUNK CALL lamp is extinguished.

Note: If it is desired to conduct Test (E) Secrecy Feature Test, proceed as outlined in 3.42 to 3.49. Otherwise replace the receiver on the switchhook at the attendant's station, restore all keys to normal and observe that when the connection at the central office has been released, the BSY or TRUNK BUSY lamp is extinguished. Remove the busy condition from the test line.

### (C) Test of Night Connections

3.29 Operate the trunk key of the trunk under test to the TLK or TALK position. The BSY or TRUNK BUSY lamp should light. Then operate the NS or NIGHT CONNECTION key. Note that the BSY or TRUNK BUSY lamp is extinguished.

3.30 Operate the EXT-DIAL or TRUNK-EXTENSION key and remove the receiver from the switchhook at the attendant's extension. Dial the number of the attendant's extension. Note that no ringing induction is heard and that the attendant's extension lamp does not light. Restore the EXT-DIAL or TRUNK-EXTENSION key and the trunk key to normal.

3.31 **Trunk to Manual Office:** Operate the ATT-EXT or EXTENSION-SWITCHBOARD key. When the operator answers, request her to ring upon disconnection at the attendants' station.

3.32 Leaving the ATT-EXT or EXTENSION-SWITCHBOARD key operated, replace the receiver on the switchhook. Note that the attendant's extension bell rings and that the attendant's extension lamp does not light on the incoming call.

3.33 Restore the ATT-EXT or EXTENSION-SWITCHBOARD key and the NS or NIGHT CONNECTION key of the trunk under test.

3.34 **Trunk to Dial Office:** Operate the ATT-EXT or EXTENSION-SWITCHBOARD key. When dial tone is heard in the receiver of the attendant's station, dial zero. When the operator answers, request her to ring upon disconnection at the attendant's extension. Then proceed as in 3.32 and 3.33.

### (D) Test of Dial Central Office P B X Hunting Feature

3.35 Operate the trunk key of the lowest numbered idle central office trunk to the TLK or TALK position. Then operate the OUT-CALL key and remove the receiver from the switchhook at the attendant's extension.

3.36 When central office dial tone is heard in the receiver, dial the number of the first trunk in the P B X group. Ringing induction should be heard in the receiver and the TRK or INCOMING TRUNK CALL lamp of the next higher numbered idle trunk should light.

3.37 Restore the trunk key operated for the test and after several seconds operate and release the trunk key of the trunk on which the call has appeared, to extinguish the TRK or INCOMING TRUNK CALL lamp.

Note: The short delay is necessary to permit the central office equipment to restore to normal and thus prevent charging the subscriber with a call.

3.38 When the TRK or INCOMING TRUNK CALL lamp is extinguished, reoperate the trunk key to the TLK or TALK position.

3.39 When central office dial tone is heard in the receiver, dial the number of the trunk on which the call is being made. Ringing induction should be heard in the receiver and the TRK or INCOMING TRUNK CALL lamp of the next higher numbered idle trunk should light.

3.40 Proceed as in 3.37, 3.38 and 3.39. After the number of the highest numbered idle trunk in the P B X group is dialed on that trunk, note that the busy signal is heard in the receiver.

Note: On P B X trunks to a step-by-step office the arrangement of the trunks on the connector multiple may be such that the next higher terminal will not always be selected when calling as outlined above. In this case the test should be omitted.

### Tests for No. 740-C P B X Only

#### (E) Secrecy Feature Test

3.41 After performing the test outlined in 3.09 to 3.28 proceed as follows:

3.42 Restore the EXTENSION-SWITCHBOARD key and operate the RELEASE key. Operate the TRUNK-EXTENSION key and when dial tone is heard, dial the number of a nearby extension.

3.43 When the extension is rung, request the attendant to answer and note that a conversation can be held with the extension. Restore the TRUNK and TRUNK-EXTENSION keys to normal.

3.44 Reoperate the TRUNK key to the TALK position. Note that there is no transmitter battery on the attendant's set. Restore the TRUNK key to normal.

3.45 Operate the TRUNK-EXTENSION key. Note that a conversation cannot be held with the extension. Restore the TRUNK-EXTENSION key to normal.

3.46 Request the attendant at the nearby extension to work the switchhook slowly. Note that the flash of the INCOMING TRUNK CALL lamp follows the operation of the switchhook and lights steadily when the switchhook is not depressed.

3.47 Operate the TRUNK key to the TALK position. Note that transmitter battery is received at the attendant's set.

3.48 Operate the TRUNK-EXTENSION key and note that a conversation can be held with the extension. Restore the TRUNK or TRUNK-EXTENSION key to normal and disconnect at the extension and attendant's set. When the connection at the central office has been released, the TRUNK BUSY lamp should be extinguished. Operate the CALL BUZZER key to its normal position.

3.49 Remove the busy condition from the test line.

#### (F) Switchboard Service

3.50 When one attendant's cabinet is provided, dial the number of the attendant's extension from a nearby extension. Note that the EXTENSION CALL lamp lights. Operate the SWITCHBOARD SERVICE key to the OFF position and note that the EXTENSION CALL lamp is extinguished. Restore the SWITCHBOARD SERVICE key to normal and disconnect at the extension station.

3.51 When two attendant's cabinets are provided, dial the number of the attendant's extension from a nearby extension. Note that the EXTENSION CALL lamp lights. Operate the SWITCHBOARD SERVICE key at Cabinet No. 1 and note that the EXTENSION CALL lamp is extinguished at Cabinet No. 1 but appears at Cabinet No. 2.

3.52 Operate the SWITCHBOARD SERVICE key at Cabinet No. 2 and observe that the EXTENSION CALL lamp is extinguished. Restore the SWITCHBOARD SERVICE key at Cabinet No. 2 to normal and disconnect at the extension station.

#### 4. REPORTS

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