

LINE FINDERS OPERATION TESTS 740A, 740B, 740C AND 740AX PBX

1. GENERAL

1.01 This section describes methods of testing the operating features of line finders in No. 740-A, No. 740-B, No. 740-C and No. 740-AX PBX's.

1.02 This section is reissued to convert it to letter size and to incorporate material from the addendum in its proper location. In the process of this conversion, marginal arrows have been omitted.

1.03 The features covered are as follows:

- (A) Operation Test
- (B) Restricted Service Test
- (C) Group and Chain Circuit Test
- (D) Particular Extension Test
- (E) Make Busy From Circuit Beyond

1.04 Test (D) is made only when it is necessary to check a complaint.

1.05 Test (E) is made from the monitor jack of the line finder.

1.06 When a trouble is encountered on a line finder, it should be made busy until the trouble has been cleared.

2. APPARATUS

Tests (A), (B) and (D)

2.01 Test Set per SD-66073-01 (J54701A) or SD-90416-01 (J94704A).

2.02 Attendant's Telephone Set or Dial Hand Test Set equipped with a No. 4-CB Dial and a No. 240-A Plug.

Tests (A) and (B)

2.03 One W2M Cord equipped at one end with a No. 110 Plug and at the other end with two No. 59 Cord Tips.

2.04 Three P3E Cords equipped with No. 110 Plugs.

Test (D)

2.05 One W2C Cord equipped at one end with a No. 110 Plug and at the other end with two No. 59 Cord Tips.

Test (E)

2.06 One No. 375-A Make-Busy Tool.

3. PREPARATION

Tests (A), (B) and (D)

3.01 Locate the test set at the line finder side of the switch frame. Connect the W2M cord to the BAT-G (or BAT) jack of the test set. Connect the No. 59 cord tip on the (red) sleeve conductor to ground and the other No. 59 cord tip on the (white) tip conductor to the equipment end of a fuse on the fuse panel.

3.02 Connect an attendant's telephone set to the TEL jacks of the test set or a dial hand test set to the HS jack of the test set.

Note 1: When using a dial hand test set with test set SD-66073-01 operate the TRS key, or if using it with test set SD-90416-01 operate the HS key. Also operate the C button of the dial hand test set and use the hand set dial instead of the test set dial in making tests.

Note 2: When using an attendant's telephone set with either test set SD-66073-01 or SD-90416-01 the TRS key should be left in the normal position except when it may be found necessary to talk over the test line.

Tests (A) and (B)

3.03 Make the following connections using P3E cords:

(a) For test (A) using either test set SD-66073-01 or SD-90416-01 connect jacks A and C of the test set to test line jacks A and C respectively in the jack panel at the switch frame.

(b) For test (B) using test set SD-66073-01 connect jacks A and C of the test set to test line jacks A and C respectively in the jack panel at the switch frame. For test (B) using test set SD-90416-01 connect jacks A and TL of the test set to test line jacks A and C respectively in the jack panel at the switch frame.

3.04 Connect the LF jack of either test set to the test jack of the line finder under test, using a P3E cord.

4. METHOD

(A) Operation Test

4.01 Operate the PBX key (if provided) and the LP key and note that the line finder hunts and finds the test line terminals. Note that dial tone is heard in the receiver when the line finder cuts through. If a failure is encountered, note whether any alarm lamps are lighted and if so proceed as described in Section 546-400-310.

Note: If the REV lamp lights when using test set SD-90416-01 this indicates a reversal of the tip and ring.

4.02 Dial a digit of a connector level and note that dial tone is removed:

4.03 Restore the LP key (and PBX key) and note that the line finder restores to normal.

4.04 Remove the test cord from the test jack of the line finder unless other tests are to be conducted on this switch.

(B) Restricted Service Test

Using Test Set SD-66073-01

4.05 Operate the RS and LK keys. When the line finder has selected the test line, note that dial tone is heard in the receiver and that the RS lamp is lighted.

4.06 Dial a restricted level and after the selection has been made, note that busy tone is heard in the receiver.

Note 1: On No. 740-A PBX's, dial the zero level and on No. 740-B and No. 740-C PBX's, dial the fifth level.

Note 2: It should be recognized that if all trunks are busy when the test is made, a check is not made of the restricted service feature.

4.07 Restore the LK key and note that the line finder restores to normal.

4.08 Operate the LK key and dial the level below the restricted level and after the selection has been made note that the busy tone is not heard.

Note: When the level below the restricted level to which the selector-connector was directed is also restricted, as may be with No. 740-A PBX's, this test should not be made to the other restricted level but to the first level below that is not restricted.

4.09 Restore the LK and RS keys and disconnect the test cord from the test jack of the line finder unless other tests are to be conducted on the switch.

SECTION 546-400-590

Using Test Set SD-90418-01

4.10 Operate the PBX, ID and LK keys. When the line finder has selected the test line, note that dial tone is heard in the receiver. Restore the ID key and operate the TP key.

4.11 Dial a restricted level and after the selection has been made, note that busy tone is heard in the receiver.

Note 1: On No. 740-A PBX's, dial the zero level and on No. 740-B and No. 740-C PBX's, dial the fifth level.

Note 2: It should be recognized that if all trunks are busy when the test is made, a check is not made of the restricted service feature.

4.12 Restore the LK key and note that the line finder restores to normal.

4.13 Restore the TP key and then operate the ID and LK keys. When the line finder has selected the test line, restore the ID key and operate the TP key. Dial the level below the restricted level and after selection has been made note that the busy tone is not heard.

Note: When the level below the restricted level to which the selector-connector was directed is also restricted, as may be with No. 740-A PBX's, this test should not be made to the other restricted level but to the first level below that is not restricted.

4.14 Restore the LK, TP and PBX keys and disconnect the test cord from the test jack of the line finder unless other tests are to be conducted on the switch.

(C) Group and Chain Circuit Test

4.15 Operate the group test (TST) key located on the line finder frame. Note that each idle line finder, in turn, beginning with No. 1, steps to the proper level as indicated by the following table, then rotates to the tenth step and is released.

SEQUENCE OF OPERATION

740-A PBX Switch No.	740-B PBX Switch No.	740-C PBX Switch No.	Level Cut In
1, 11	1, 6, 11	1, 6	1
10, 20	5, 10	5	2
9, 19	4, 9	4	3
8, 18	3, 8	3	4
7, 17	2, 7, 12	2, 7	5
6, 16			6
5, 15			7
4, 14			8
3, 13			9
2, 12			10

4.16 Should a subscriber originate a call while the TST key is operated, the test may be momentarily interrupted while a line finder seizes the calling line, after which the operation of the line finders will continue. The operation of a line finder due to a calling subscriber will usually be indicated by

the line finder operating and not releasing and the other idle line finders continuing to operate and release in the proper order.

4.17 The failure of any line finder to respond usually indicates that the start lead is open through the last switch seized. The trouble should be cleared at this time. If no failure is encountered, the last switch in the group should open the multiple chain circuit. This is indicated by the first line finder again operating. When this occurs, restore the TST key.

(D) Particular Extension Test

4.18 Using the W1B cord insert the No. 110 plug into the C jack of the test set and connect the No. 59 cord tip to the sleeve terminal of the extension line under test.

4.19 If the BSY lamp lights, the test should be deferred until the extension line is idle. If the BSY lamp does not light or when it is extinguished, insert the No. 110 plug of the W2C cord into the T jack of the test set. Connect the No. 59 cord tips of the W2C cord to the tip and ring terminals of the extension line under test at the frame terminal block.

4.20 Operate the LP key and note that dial tone is heard in the receiver.

4.21 Dial a central office trunk level and check that central office dial tone or an operator's answer is received, depending on whether the central office trunks terminate in a dial or manual central office. (If the line is wired for restricted service on the central office trunk level, busy tone should be heard in the receiver.)

Note: On No. 740-B PBX's, when central office trunks and tie lines terminate on the 5th level, it will be necessary to dial 5 and then the second digit of the trunk code.

4.22 Restore the LP key. When the line finder returns to its normal position, operate the LK key. Note that dial tone is heard in the receiver.

4.23 Dial the number of the line under test and after the selection has been made note that busy tone is received. Restore the LK key.

4.24 Disconnect the test apparatus.

(E) Make Busy From Circuit Beyond

4.25 Insert the No. 375-A tool into the monitor jack of the line finder two or three times in slow succession and note by sound that the E relay operates and releases with each insertion and removal.

Caution: Do not short circuit the monitor jack of any line finder that is off normal. If the line finder starts to operate at the instant the No. 375-A tool is inserted, immediately remove the tool.

5. REPORTS

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