

AUTOMATIC INTERCEPT SERVICE
 LINE CIRCUITS WITHOUT LLP

Replaces: Section 254
 Dated 7-23-71

CONTENTS

- | | |
|---|---------------------------|
| 1. GENERAL INFORMATION | 6. VOLTMETER TESTING |
| 2. RECORDS AND REQUIREMENTS | 7. E & M LINE ACCESS |
| 3. TEST EQUIPMENT | 8. MARGINAL RELAY TESTS |
| 4. PREPARATION | 9. OVERFLOW (SD-25062-01) |
| 5. LINE SEIZURE, RING TRIPPING, ANSWER AND DISCONNECT | 10. CALL THROUGH TEST |

1. GENERAL INFORMATION

1.1 Description of Tests: This method describes tests of the line circuits:

SD-27963-01 (Loop Supv.)
 SD-27964-01 (E & M Supv.)

Calls are routed via these line circuits to the Automatic Intercept Center when directory numbers have been marked for intercept. The tests are made using the Outgoing Trunk Test Frame (OGTTF). Also tested are the Interrupter Circuit (SD-25062-01) connections to the line circuits.

- 1.2 This test should be applied at least once to each AIS line circuit.
- 1.3 Tests of Handbook 62, Section 252 and applicable tests of Section 225.4 should be performed before the following tests.
- 1.4 *The OGTT can be arranged to test AIS without LLP in a maximum of 4 Terminating Marker Groups. The Sender Select and Trunk Select switches are designated 0 and 1 (2 MKR GRPS) or 0/2 and 1/3 (4 MKR GRPS). To test in the third marker group (MG2), operate switches 0/2 and key MG2. To test in the fourth marker group (MG3), operate switches 1/3 and key MG3. With key MG2/MG3 normal, the switches will access marker groups 0 or 1.*

2. RECORDS AND REQUIREMENTS

2.1 Records: Forms SD-4-1313 and SD-4-1315 are required for recording the results of these tests.

2.2 Requirements: The tests of this section must be applied to meet the equipment performance requirements per BSP 816-007-181.

3. TEST EQUIPMENT

3.1 Test Set

<u>Amt</u>	<u>Code</u>	<u>Description</u>
1	ITE-4287	Crossbar Terminating Test Set

3.2 Cords Required with Test Set

<u>Amt</u>	<u>ITE</u>	<u>Lgth</u>	<u>Cdrs</u>	<u>One End</u>	<u>Other End</u>	<u>With ITE</u>
2	9604	6'	3	309 Plug	310 Plug	
1	9598	12'	2	310 Plug	310 Plug	4023
1	9354	12'	2	Hubbell Polarized Plug	Hubbell 7464 Connector Body	
2	9314	12'	3	310 Plug	3-ITE-4085 Push on Clips	

4. PREPARATION

4.1 Set up ITE-4287 (Crossbar Terminating Set) near the AIS Frame. Using cord ITE-9354 or equivalent, connect 110V receptacle to 110 volt A.C. supply. Using cord ITE-9598 connect jack A of test set to Misc. Circuit jack A on AIS Frame. Lamp PWR lights.

NOTE: Timing tests of ITE-4287 are located in Paragraph 5.2 and Handbook 100, TMO-4287, Paragraph 6.4.

4.2 Loop Supervision Line Circuits

4.21 Using a ITE-9314 cord, connect tip and ring of jack T to T1 and R1 terminals of line circuit under test, Terminal Strip (L).

4.22 Operate test set keys MG, LP, MFP and REV.

4.3 E & M Line Circuits

4.31 Using ITE-9314 cords, connect tip and ring of jack S to line circuits E & M terminals respectively, Terminal Strip (L). Connect tip and ring of jack T to line circuits T1 and R1 terminals, Terminal Strip (L).

4.32 Operate test set keys CX, MG, MFP and REV.

5. LINE SEIZURE, RING TRIPPING, ANSWER AND DISCONNECT

NOTE: If office has both physical & theoretical numbers, use both for intercept numbers.

5.01 Select line circuit 0 for test with the trunk select switch. (See Para. 1.4) If the line circuit is busy, its RMB-lamp will light. Select a sender with the sender select switch.

5.02 Place a class 0 or 3 intercept number on the numerical recording keys. Operate keys MV, DM, TAC, VM-TLK, BATT and RI.

5.03 Momentarily operate key LT-ST. Verify the line circuit RMB-lamp lights. Lamp ON and BY at test set ITE-4287 lights. Sender outpulses before test set times out and lamp OFHK lights.

5.04 Release key RI. Momentarily operate key LT-DIS. Verify all lamps extinguished.

5.05 Repeat Paragraphs 5.01 to 5.04 for all senders.

5.06 Repeat Paragraphs 5.01 to 5.05 for line circuits 1 to 9.

5.07 Repeat Paragraph 5.01. Place a class 1 intercept number on the numerical recording keys. Operate keys MV, DM, TAC, PUI, VM-TLK, and BATT.

5.08 Momentarily operate key LT-ST. After number outpulsed from OGTTF, manually operate key SUP until lamp RT lights.

Verify the line circuit RMB-lamp lights. Lamp ON and BY at test set ITE-4287 lights. Sender outpulses before test set times out and lamp OFHK lights.

5.09 Release key PUI. Momentarily operate key LT-DIS. Verify all lamps extinguished.

5.10 Repeat Paragraphs 5.07 to 5.09 for all senders.

5.11 Repeat Paragraphs 5.07 to 5.11 for line circuits 1 to 9.

5.12 If OGTT Frame is equipped with key LT-MF repeat tests of paragraph 5 substituting keys LT-MF and MF1 for DM in paragraphs 5.02 and 5.07.

5.2 Timing Test of ITE-4287 Test Set

NOTE: The test per this paragraph need be applied only if the tests of this section fail and test set timing is suspected of being at fault. This test does not verify the sequential operation of the test set. It does verify the timing circuit used and as outlined in Fig. 1 of TMO-4287.

5.201 Connect a VTVM (Vacuum Tube Volt Meter) between terminal 5 (count the pins clockwise starting with the guide pin on the wiring side) of the 50L6 tube and ground. Connect so that negative voltage can be measured. (With test set power on, voltmeter should give 48 volt reading.)

5.202 Connect Timing Test Set, ITE-4325 or J24753A, to 48 volts.

5.203 Operate key BAT to position ON and allow test set to stabilize (15 seconds). Lamp BAT lights.

5.204 Adjust the meter (ITE-4325) to read zero by rotating control ADJ-0.

5.205 Operate key TST to position CAL and maintain in this position. Rotate potentiometer CAL so that meter indicates full scale (100). Release key TST.

5.206 Rotate switch MIL SEC to position 0-5000.

5.207 Connect one end of cord ITE-9303 to jack TST1 of the timing test set. Connect the other end of cord as follows: red lead to 8T of relay ON, blue lead to ground, white lead to 3T of relay TM.

5.208 Operate key DP on the ITE-4287.

- 5.209 In the ITE-4287, block relays TM1 and TM5 nonoperate.
- 5.210 Rotate switch REC to position START (GRD) STOP (OC).
- 5.211 Key SEND is to be set in position MK.
- 5.212 The following is the operation which should occur. Key TST on the timing set is operated to position OPR and held while observing the VTVM. The meter reading decreases and at about 36 volts relay TM operates (use the hand which is not holding key TST operated to detect the operation of relay TM). Observe that the time on the timing set is about 2 seconds (multiply the scale reading on the meter by 50 and obtain the time in milliseconds). Release timing test set key TST when completed. This verifies the timing circuit involving resistor TM2.

NOTE: Should the meter read as low as -34 volts before relay TM operates, this may indicate either a weak 50L6 tube or relay TM in need of adjustment. Check the relay per ITD-4287-012 first and then, if necessary, replace 50L6 tube.

6. VOLTMETER TESTS

- 6.1 Select line circuit by means of the *Trunk Select Switch*. (See Para. 1.4) Insert a 322A make busy plug into the line circuit jack MB. Patch an ITE-9604 test cord from jack ITC to jack T1 and from jack TT to jack T2.
- 6.2 Operate keys VM1 and FEMF. Verify 48 volt indication.
- 6.3 Operate key REV. Verify ground indication on voltmeter.
- 6.4 Release keys VM1, REV and FEMF. Momentarily operate key DISC1. Verify all lamps extinguished.

7. E & M LINE ACCESS - E & M LEAD SUPERVISION ONLY

- 7.1 Insert a 322A make busy plug into line circuit jack MB. Patch an ITE-9604 test cord from jack ITC to jack T1. Operate key MF1. Verify access to E & M signaling leads provided through jack E & M LINE towards the intercept center and jack E & M jack into the line circuit.

Lines presented in Script indicate new or changed information.

Reason for Reissue:

To add Para. 1.4 and reference in Paragraphs 5.01, 6.1 and 9.1.

- 7.2 Remove 322A make busy plug and the test cord from jack ITC. Release key MF1. Momentarily operate key DISC1. Verify all lamps extinguished.
8. MARGINAL RELAY TESTS - LOOP SUPERVISION ONLY
- 8.1 Repeat Paragraph 6.1.
- 8.2 Operate keys MF1 and MBT. Verify line circuit RMB lamp lights.
- 8.3 Release key MBT. Repeat Paragraph 7.2.
9. OVERFLOW
- 9.1 Block operated relay OF in line circuit under test. Select the line circuit *with the trunk select switch*. (See Para. 1.4)
- 9.2 Place a class 0 intercept number on the numerical recording keys. Operate keys MV, DM, TAC, VM-TLK, BATT and RI.
- 9.3 Momentarily operate key LT-ST. Verify line circuit lamp RMB- lights. Monitor call via the telephone circuit and verify overflow tone is heard.
- 9.4 Restore all keys and switch to normal. Momentarily operate key LT-DIS. Verify all lamps extinguished. Release relay OF.
- 9.5 If OGTT Frame is equipped with key LT-MF repeat test of Paragraph 9 substituting keys LT-MF and MF1 for DM in Paragraph 9.2.
10. CALL THROUGH TEST
- 10.1 Repeat Paragraphs 5.01 and 5.02.
- 10.2 Momentarily operate key LT-ST. Verify the line circuit RMB- lamp lights. Monitor the call via the telephone circuit and verify ringing and completion of the call to a recorded message at the intercept center.
- 10.3 Repeat Paragraphs 5.04, 5.06 and 5.07.
- 10.4 Momentarily operate key LT-ST. After number outpulsed from OGTT, manually operate key SUP until lamp RT lights. Verify line circuit RMB- lamp lights. Monitor the call via the telephone circuit and verify ringing and completion of the call to a recorded message at the intercept center.

Manager, Product Engineering
Control Center