LINE CIRCUIT, LLP

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1. GENERAL INFORMATION

1.1 This section describes a method of testing the Line Circuit, SD-27752-01, using the DID Test Circuit, SD-27762-01.

1.2 Cross-connections should be installed prior to application of this section. Refer to office records and cross-connecting information, SD-27752-01, Sheet 1.

1.3 When testing unassigned line circuits (T1, R1 X-Conn at HMDF not installed) make busy a working circuit and temporarily cross-connect T1 and R1 to the circuit to be tested. If the Service Observing Jack Bay is more readily accessible than the MDF it may be more convenient to patch the TRK A jack of the made busy circuit to the TRK A jack of the circuit to be tested using a two conductor (T-R) cord. (TELCO 2P23A or equivalent)

1.4 Lamp FGMC is provided on the DID Test Circuit to detect false grounds on the MCF lead to the terminating marker applique circuit and the TST lead to the terminating marker connector. Test calls should not be initiated if this lamp is lighted.

1.5 Failures encountered by the marker in establishing the connection to the line circuit under test will be displayed at the terminating trouble indicator (TTI).

1.6 The test of the line circuits and the outgoing senders will verify the Outgoing Sender Link Circuit, SD-27757-01.

2. RECORDS AND REQUIREMENTS

2.1 Forms SD-4-1313 and SD-4-1315 are required for recording the results of these tests. For further information on records, see Section 3, Handbook 50.

2.2 Test calls should be performed at least twice on each circuit.

3. TEST EQUIPMENT

3.1 Accessories

Amt	Code	Description
1	ITE-9604 or Equivalent	Cord, 3 Cdr., 310 Plug One End, 309 Plug One End
1	ITE-9650	Operators Telephone Set
As Req.	322A	Make Busy Plug
1	R-9572 or ITE-4442	Test Receiver Volt-Ohmmeter

4. FUSING

4.1 At the Fuse Bay, using a test receiver or volt-ohmmeter, verify the absence of low resistance ground on the fuse posts associated with the circuits to be fused.

4.2 Using fuses of the correct type as indicated by circuit drawings and fuse panel designations, install the following fuse. Verify that the fuse is associated with its proper equipment and is free from crosses with other unfused posts on the fuse panel.

FUSE	EQUIPMENT
-48V (SIG)	Term. Strip B Pch. 11

5. MAKE BUSY

5.1 Insert a 322A make busy plug into the MB jack associated with the line circuit under test.

5.2 Verify that relay D of the line circuit is operated and ground is present on T.S. B Punchings 15 and 25.

5.3 Remove make busy plug. Relay D releases, ground absent on T.S. B Punchings 15 and 25.

6. TEST SETUP

6.1 Test calls will be directed to a test termination at the PBX, i.e., Station number arranged for test, Subscriber Loop Test, Balanced Test Termination, Transmission Test Termination, etc. Refer to office records and telephone company information.

6.2 At the DID Test Frame insert the plug of the operators telephone sets into jacks T and R.

6.3 Operate key MBR.

6.4 Using an ITE-9604 cord or equivalent, patch jack MBR to the MB jack of the line circuit under test.

6.5 Operate keys and/or switches as follows:

TRTH- TRH- TRT- TRU- CR- DL- OA/OB	Number Group address of the Line Circuit under test.
TH- H- T- U-	DID Station number or number required to reach the test termination at the PBX.
F-	Incoming frame indication.
F10	When Incoming frame number is over 10.
NS-	Number series (when required).
OB	Office B indication (when required).
TRT	Translator test indication.
S1	Closes path for supervisory relay.
NH1	Cancel terminal hunting.
TLK1	Connection to telephone circuit.

7. OPERATIONAL TEST

7.1 Termination to PBX Extension

7.11 Set up test per Paragraph 6. Set switches TH-, H-, T-, U-, F-, NS-, etc. to direct call to PBX extension.

7.12 Operate key ST1. Audible ringing is heard in telephone headset.

7.13 Called station answers. Lamp CS1 lights.

7.14 Operate key TLK. Transmission is established between called station and Test Frame.

7.15 Called station hangs up. Lamp CS1 is extinguished.

7.16 Restore keys TLK and ST1.

7.17 Repeat test for all Line Circuits.

7.2 Voltmeter Tests

7.21 Restore key TLK1.

7.22 Set up test per Paragraph 6.

7.23 Operate keys ND, OST and SH. (If a particular test termination is desired, i.e., Balanced Test Termination, key ND is not operated.)

7.24 Operate key ST1.

7.25 When the test is required from the office side of the line circuit operation of key VM1 connects the voltmeter to the transmission facilities.

7.26 When the test is required from the line side of the line circuit operation of key VM3 connects the voltmeter to the transmission facilities.

7.27 Refer to CD-27766-01, Paragraph 1.5, for a detailed description of the Voltmeter Test Circuit operation.

7.28 At completion of voltmeter tests, restore keys ND, OST, SH and ST1.

7.3 Circuit Seizure for Transmission Tests

7.31 Set up test per Paragraph 6. Set switches TH-, H-, T-, U-, etc., to direct the call to the Transmission Test termination at the PBX.

7.32 If the test is required from the office side of the line circuit, operate key ST1.

7.33 (a) Operation of key MON connects the transmission facilities to the monitor jack M.

(b) Operation of key TRM connects the transmission facilities to the transmission measuring set in parallel with the monitor jack.

NOTE: If the 23C transmission measuring set is not furnished with the test frame, jack TRM is furnished for connection to a portable set.

7.34 At completion of tests restore keys ST1, MON and TRM.

7.35 If the test is required from the line side of the line circuit, keys OST, SH, TRM, TRM1 and TTS are operated prior to start of test.

7.36 Operate key ST1. Lamp TTS lights. The monitor jack and transmission measuring set are connected in parallel to the transmission facilities.

7.37 At completion of test restore all keys to normal. All lamps are extinguished.

8. LINE CIRCUIT IDENTIFICATION

8.1 Set up test per Paragraph 6.

8.2 Operate keys OSG-, SGA/B and OS- to select a sender associated with the line circuit under test.

8.3 Operate (pull out) key CTR- for the sender selected.

8.4 Operate keys OS, OST, MST and PC.

8.5 Operate key ST1. In 8.5 to 11.5 seconds the sender times out. Lamp SS- flashes at 60 IPM. Overflow tone is heard in telephone set.

8.6 Restore key ST1.

8.7 Operate key IDR.

8.8 Operate key SS- associated with flashing SS- lamp. The line circuit number is registered on lamps TH-, H-, T- and U-. (T and MB jack number)

8.9 Restore all operated keys to normal. All lamps are extinguished.

9. MISCELLANEOUS LEAD TEST

9.1 Traffic Usage Recorder

9.11 Apply ground through a test receiver to the TUR switch contact associated with the line circuit under test.

9.12 Verify that relay SL of the line circuit operates.

9.2 Service Observing Jack Bay

9.21 Apply ground through a test receiver to the sleeve of the "A" jack associated with the line circuit under test. Verify that relay SL of the line circuit operates.

9.22 Block operated relay D in line circuit. Verify ground is present on the ring of the associated jack "B".

9.23 Using an ITE-4137 AC Continuity Test Set or equivalent, verify continuity from line circuit terminal strip B Punchings 57 and 47 to the SOJ Bay, jack A, T and R respectively.

9.24 Remove blocking tool from relay D.

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