

TEST OF B AND DP REGULAR A BOARD

INCOMING TRUNKS

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1. GENERAL INFORMATION

1.1 Description of Tests

1.11 Refer to Section 207, Paragraph 3 for the common tests to be applied to the circuits covered by this section.

1.12 The following circuits are tested by this method:

NOTE: The flashing feature in the supervisory circuit of various incoming trunks is being removed and replaced with tone. Where this change applies, disregard the flashing supervisory lamp referred to in the following paragraphs.

SD No.	Sdr. Class	Supp. Test Para.
25263	B	4
25263	DP	6
25303	B	4 & 5
25303	DP	6 & 7
25322	B	8

1.2 Manload: Two men are recommended to perform these tests.

1.3 TSL Crosspoint Test: The TSL crosspoint test described in Paragraph 3 is made to test the TSL crosspoints referred to in Paragraph 12, Section 212 of this handbook.

2. TEST EQUIPMENT

2.1 Equipment Required for Testing SD-25263, 25303 and when arranged for B service, Paragraphs 4 and 5

2.11 Test Sets and Accessories

Amt	ITE	Description	With ITE
1	4010	Term. Equipment Test Set	
∅1	4011	Miscellaneous Trunk Test Set	
1	4042	Hand Telephone Set	4023
1	4052	Contact Fixture	4010
1	2448	AC Lamp and Power Voltmeter Set	

∅ - Required only for 4 party ringing tests, Paragraphs 5 and 7.

2.12 Cords

Amt	ITE	Lgth	Cdrs	One End	Other End	With ITE
3	9650	6'	4	137 Plug	Tel. Set	4023
1	9598	12'	2	110 Plug	110 Plug	4010
1	9639	12'	3	110 Plug	ITE-2455	4023
2	9601	12'	3	110 Plug	110 Plug	4023
∅1	9637	12'	3	110 Plug	325A Plug	4010
∅2	9547	12'	1	ITE-2455	ITE-2455	4011
∅8	9548	9"	1	ITE-2455	ITE-2455	4011

∅ - Required only for 4 party ringing tests, Paragraph 5.

2.2 Equipment required for Testing SD-25263, 25303 and when arranged for DP service Paragraphs 6 and 7

2.21 Test Sets and Accessories

Amt	ITE	Description	With ITE
1	4042	Hand Telephone Set	4023
1	2448	AC Lamp and Power Set	
∅1	4011	Miscellaneous Trunk Test Set	

∅ - Required only for 4 party ringing tests, Paragraph 7.

2.22 Cords

Amt	ITE	Lgth	Cdrs	One End	Other End	With ITE
∅2	9547	12'	1	ITE-2455	ITE-2455	4011
∅8	9548	9"	1	ITE-2455	ITE-2455	4011
2	9650	6'	4	137 Plug	Tel. Set	4023
∅1	9637	12'	3	110 Plug	325A Plug	4010

∅ - Required only for 4 party ringing tests, Paragraph 7.

2.3 Equipment Required for Testing SD-25322, Paragraph 8

2.31 Test Sets and Accessories

Amt	ITE	Description	With ITE
1	4010	Term. Equipment Test Set	
1	4042	Hand Telephone Set	4023
1	4052	Contact Fixture	4010

2.32 Cords

Amt	ITE	Lgth	Cdrs	One End	Other End	With ITE
1	9598	12'	2	110 Plug	110 Plug	4010
3	9650	6'	4	137 Plug	Tel. Set	4023
1	9639	12'	3	110 Plug	ITE-2455	4023

3. TSL CROSSPOINT TEST (Refer to Handbook 62, Section 212, Paragraph 12)

**NOTE:** See Paragraphs 4.9, 6.9 and 8.8.

Complete three test calls over each trunk by routing one call through each sender subgroup. Busy out the sender subgroups not used. One tester originates the call while the other tester observes that the proper sender is selected. The sender selected is indicated by a momentary flash of the associated S lamp on the TTI frame.

4. B TRUNK FROM A BOARD

1-2 PARTY SD-25263 SD-25303  
4 PARTY SS RING SD-25303  
4 PARTY SEL RING SD-25303

4.1 Setup for Test

- 4.11 Locate the ITE-4010 test set at the incoming trunk frame.
- 4.12 Patch an ITE-9650 cord (Operator's Telephone Set) into the TEL jacks.
- 4.13 Patch an ITE-9598 cord into the test set A jack and the incoming trunk frame A jack.
- 4.14 Patch an ITE-9639 cord into the test set T-1 jack. Equip the other end of the cord with an ITE-4052 fixture. Connect the contact fixture to the tip, ring and sleeve of the trunk to be tested. Connection is made at the vertical unit terminal strip.
- 4.15 Using an ITE-9601 cord, patch the test set E jack to the E jack on the incoming trunk frame.
- 4.16 Set up a talking circuit between the incoming trunk frame and the A switchboard.
- 4.17 Connect a headset ITE-4042 to a cross-connected individual subscriber line.

4.2 Idle Line4.21 Delayed Ringing

4.211 Operate keys BG and LRS. Lamp SL lights. When order tone is heard pass the individual line number to the operator.

4.212 Momentarily operate key ± to start ringing. Ringing is heard in the handset. Operate the handset key to answer the call. Lamps T and R light. Check talking between the test set and the handset.

4.213 Release keys BG, LRS and the handset key. Lamps T, R and SL are extinguished. The equipment restores to normal.

4.22 Early Ringing - Repeat Paragraph 4.21 except that the ringing start key should be operated before the subscriber line number is passed to the operator.

4.23 Answer Before Ringing

4.231 Operate keys BG and LRS. Lamp SL lights. Make another call to the handset line. Do not operate the ± ringing key. When the subscribers line hold magnet operates, operate the handset key. Lamps T and R light. Check talking between the test set and the handset.

4.232 Release keys BG, LRS and the handset key. The equipment restores to normal.

4.3 Tip Party

4.31 Connect the handset to a cross-connected tip party subscribers line.

4.32 Operate keys BG and LRS. Lamp SL lights. Pass the tip party line number to the operator and then momentarily operate key ±. When ringing is heard in the handset operate the handset key. Lamps T and R light. Check talking between the test set and the handset. Note that the trunk RV relay is operated.

4.33 Release keys BG, LRS and the handset key. The equipment restores to normal. Remove the handset.

4.4 Busy Line

4.41 Operate keys BG and LRS and make a call to the permanently busy line.

4.42 Lamp R flashes at 60 I.P.M. and busy tone is heard in the telephone set.

4.43 Release keys BG and LRS. The equipment restores to normal.

4.5 Overflow

4.51 Operate keys BG and LRS and pass the operator the number of the line assigned for overflow test.

4.52 Lamp R flashes at 120 I.P.M. Check that tone is not heard in the telephone set.

4.53 Release keys BG and LRS. The equipment restores to normal.

4.6 Permature Disconnect

4.61 Momentarily operate keys BG and LRS. Lamp SL lights momentarily. Observe that the equipment restores to normal.

4.62 Operate keys BG and LRS. Lamp SL lights. When order tone is heard, release keys BG and LRS. Lamp SL is extinguished. Observe that the sender disconnects from the trunk and that all equipment restores to normal.

4.7 Register Tests

NOTE: Perform 4.71 or 4.72 depending upon which arrangement is used.

4.71 Paths Busy Register: Block operated the D relay in each trunk circuit. Release and reoperate each relay in turn. Observe that the associated PB register scores each time. Release all relays.

4.72 Peg Count Register: Operate the BAT key (Traffic Register Rack) associated with the peg count registers. Operate and release the F1 or F relay as equipped, of each trunk in turn. Observe that the PC register scores each time.

4.73 Trunk Busy Awaiting Sender Release: Manually operate LC relay in the trunk circuit. Check for the busy condition at the sleeve of the trunk jack with a special service cord.

4.8 Idle Trunk Indicating Lamp and Power Supply Check

4.81 Check that the ac power supply is connected to the idle trunk indicating relay circuit. Check that the lamp associated with the first trunk is lighted.

4.82 Partially insert a cord into the first trunk jack at the A board. The second trunk lamp lights. Continue the test by partially inserting cords into the succeeding trunk jacks and note that as each cord is inserted the associated lamp is extinguished and the succeeding lamp lights. Remove all cords at the completion of the test.

4.83 Make a continuity test of the S1 lead between the SL and LC relays. Check for ground on 7B of LC relay.

4.84 Verify that all lamps in the line burn with uniform brightness when the trunk is the next assigned idle trunk and are extinguished when the trunk is made busy.

4.85 Check that the voltage at the middle lamp of a group of AC lamps is not less than 4.0 volts and the voltage at this midpoint shall be adjusted at the transformer to be as near 4.0 volts as possible. The voltage shall be adjusted to meet these limits under the conditions given in (1), (2) and (3) below. This test should be performed on at least ten circuits in each lineup.

NOTE: When testing extensions to existing multiple a new check of the "midpoint" voltage should be made since the middle lamp has been shifted by the addition of the lamps in the extension.

(1) When the normal line voltage is applied to the primary of the transformer.

(2) When the maximum load is applied to the secondaries of both transformers of the unit.

(3) When the load is balanced; that is, when no current is flowing in ground return lead.

4.86 The voltage on the AC lamp leads is regulated by changing the connections to the taps on the transformer. The adjustment should be made so as to have the voltage at the middle point of the multiple not less than 4.0 volts but as near to 4.0 volts as possible. The voltage limits on the line current supplied to the primaries of the transformers can be obtained by consulting the Telephone Company power representative. The AC lamp voltage and AC power voltage should be measured using the Telephone Company's AC meter or if this is not available, the AC lamp and Power Voltmeter, ITE-2448.

4.9 TSL Crosspoint Test

(See Paragraph 3)

5. 4 PARTY B TRUNK RINGING TESTS SD-25303

5.1 Setup for Test

5.11 Use the setup for test described in 4.11 to 4.16.

5.12 Use a cross-connected for-party line as a test line. If such a line is not available, select four lines which will meet the following conditions or provide temporary cross-connections for a four-party line.

Pty.	Incls.	Trk.	Ringing	
			Full Sel.	Semi. Sel.
1st	RC		MR SUP.-ON RING	MR1 on RING
2nd	RC,RV		" " -ON TIP	" " TIP
3rd	RC,RP		" " +ON RING	MR2 " RING
4th	RC,RV,RP		" " +ON TIP	" " TIP

5.13 Using an ITE-4011 test set for terminating the test calls patch the jacks as follows:

- (MTB) T to (RES) 1
- (MTB) R " (OR) R
- (RES) 2 " (OR) T
- (CW) T and R " (OR) T2 and R2
- (TD) R " (REV) 2
- (REV) T1 and R1 " (OR) T1 and R1

Set the RES switch on terminal #1. Operate RES 1 key to 500. Operate keys DD-CW and STO.

5.14 Using an ITE-9637 cord patch the O jack of ITE-4011 to the vertical of the line to be used for test. Connect 48 volt battery and ground to the test set. Plug a telephone set into the TEL jacks.

## 5.2 Test Operations

### 5.21 Full Selective Ringing Tests (SD-25303)

5.211 Originate a call to the first party of the line used for test. (See chart in Paragraph 5.12)

5.212 Operate and release the ITE-4010 ± key to start ringing.

5.213 Observe that the needle of the B meters vibrates with the greatest swing to the left while machine ringing is applied.

5.214 Operate key DG on ITE-4011 and verify that ringing is tripped. Release the call and restore key DG.

5.215 Originate a call to the second party line and operate and release key ± to start ringing. The B meter needle vibrates to the right.

5.216 Operate key DG. Ringing is not tripped. Operate ITE-4011 key REV. Ringing is tripped. Release keys DG and REV and release the call.

5.217 Originate a test call to the third party and check that the B meter needle swings to the right. DG key operation trips the ringing. Restore the equipment to normal.

5.218 Originate a test call to the fourth party and check that the B meter needle swings to the left. Operate key DG. Ringing is not tripped. Operate key REV. Ringing is tripped; restore the equipment to normal.

### 5.22 Semi-Selective Ringing Tests (SD-25303)

5.221 Originate a call to the first party of the line used for test. (See chart in Paragraph 5.12.)

5.222 Operate and release the ITE-4010 ± key to start ringing.

5.223 Observe that the needle of the B meter vibrates while ringing current is applied. Note that only one ring is received using each ringing interval.

5.224 Operate ITE-4011 key DG and note that ringing is tripped. Release the test call and restore key DG.

5.225 Originate a call to the second party of the line used for test and operate key ± to start ringing. Observe that the meter needle vibrates as on the first call. Operate key DG. Ringing is not tripped. Operate key REV on the ITE-4011 set. Ringing is tripped. Restore the equipment to normal.

5.226 Originate a test call to the third party and check that two rings are received during each ringing interval. The operation of key DG trips ringing. Restore the equipment to normal.

5.227 Originate a test call to the fourth party and check that two rings are received during each ringing interval. It is necessary to operate key DG and REV to trip ringing. Restore the equipment to normal.

5.228 At each trunk unit arranged for 4 party semiselective ringing perform the following PU-MRR2 lead check: Connect an R-1824 pencil lamp to 48 volt battery and to miscellaneous punching 58 (PU lead) of trunk unit vertical terminal strip. The lamp lights periodically; approximately 3 seconds lighted and 3 seconds extinguished. With a grounded test receiver HELD WELL AWAY FROM THE EAR, check that 2 one second intervals of ringing separated by a silent interval of one second, are received at punching 56 (MRR2 lead) of vertical terminal strip during the interval in which the pencil lamp is extinguished. Any reception of ringing during the interval in which the lamp is lighted indicates that either the incorrect PU or MRR2 lead from the ringing machine has been used.

## 6. DP TRUNK FROM A BOARD 1-2 PARTY SD-25263, SD-25303 4 PARTY SS RING SD-25303 4 PARTY FS RING SD-25303

### 6.1 Setup for Test

6.11 Calls over the trunks to be tested are originated at the A board by inserting the plug of the calling cord into the trunk OGT jack. With a telephone set plugged into the position telephone jacks and the talking key operated, dial tone is heard in the telephone set. Dial the number of the line used for test and then operate the dial disconnect key.

6.12 Connect a handset ITE-4042 to a cross-connected individual subscriber line.

### 6.2 Idle Line Test

#### 6.21 Delayed Ringing

6.211 Originate a call to the line used for test and momentarily operate the ringing key associated with the calling cord.

6.212 Ringing is heard in the handset. Operate the handset key to trip ringing and answer the call. Check talking between the A board and handset.

6.213 Release the call at both ends.

6.22 Early Ringing - Repeat 6.2 except that the A board ringing start key should be operated before dialing the subscriber line number.

#### 6.23 Answer before Ringing

6.231 Originate a call to the line used for test. Do not start ringing.

6.232 When the subscriber line hold magnet operates, operate the handset key and check talking between the A board and handset.

6.233 Release the call at both ends.

### 6.3 Idle Line Tip Party

6.31 Connect the handset to a cross-connected tip party subscriber line.

6.32 Originate a call from the A board to this line and start ringing.

6.33 When ringing is heard in the handset, operate the handset key to trip ringing and answer the call. Check talking between the A board and the handset.

6.34 Check that the trunk RV relay is operated.

6.35 Release the call at both ends.

### 6.4 Busy Line

6.41 Originate a call from the A board to the permanently busy line.

6.42 The cord supervisory lamp flashes at 60 I.P.M. and interrupter tone will be heard in the A board telephone set.

6.43 Release the call.

### 6.5 Overflow

6.51 Originate a call from the A board to the line assigned for overflow test.

6.52 The cord supervisory lamp flashes at 120 I.P.M. No tone is heard.

6.53 Release the call.

6.6 Premature Disconnect - At the A board plug a calling cord into the trunk OGT jack and await dial tone. Remove the cord from the jack. Allow sufficient time for the equipment to restore to normal. Make a test to check that the trunk is idle.

6.7 Register Tests - Make tests as outlined in Paragraph 4.7.

6.8 Idle Trunk Indicating Lamp and Power Supply Check - Make tests as outlined in Paragraph 4.8.

### 6.9 TSL Crosspoint Test

(See Paragraph 3)

## 7. 4 PARTY DP TRUNK RINGING TESTS

7.1 Setup for Test: Use the setup for test described in Paragraphs 5.12 to 5.14.

7.2 Test Operations: The test operations are the same as described in Paragraph 5.2 except that test calls are originated from the A board and the ringing keys on the A board are used.

## 8. B TRUNK FROM A BOARD - SD-25322

8.1 Setup for Test - Use the setup for test described in Paragraph 4.1. Connect the contact fixture of cord ITE-9639 to the tip, ring and sleeve of the trunk to be tested. Connection is made at the vertical unit terminal strip.

### 8.2 Idle Line (Individual)

8.21 Operate keys BG and LRS. Lamp SL lights. When order tone is heard, pass the line number to the operator.

8.22 Connection to the call line may be noted by the operation of the hold magnet.

8.23 Operate handset key C. Test set T and R lamps light. Check talking between the test set and handset.

8.24 Release key C. Lamps T and R are extinguished. Release keys BG and LRS. Lamp SL is extinguished and the equipment restores to normal.

8.3 Idle Line (Party) - When 4 party service is provided connect the handset to a cross-connected 4 party line and repeat the test outlined in Paragraph 8.2. Make a call to each party and observe that when calls are made to the following parties the trunk RP relay is operated. Full selective with positive superimposed ringing or semi-selective two ring code. Observe that on the tip party test the trunk RV relay is operated.

### 8.4 Busy Line

8.41 Operate keys BG and LRS and make a call to the permanently busy line.

8.42 Lamp R flashes at 60 I.P.M. and busy tone is heard in the telephone set.

8.43 Release keys BG and LRS. The equipment restores to normal.

### 8.5 Overflow

8.51 Operate keys BG and LRS and make a call to the overflow line.

8.52 Lamp R flashes at 120 I.P.M. and observe that tone is not heard in the telephone set.

8.53 Release keys BG and LRS. The equipment restores to normal.

### 8.6 Premature Disconnect

8.61 Momentarily operate key LRS. Lamp SL lights while the key is operated. Observe that the trunk restores to normal.

8.62 Operate keys BG and LRS. Lamp SL lights. When order tone is heard release keys LRS and BG. Lamp SL is extinguished. Observe that the sender disconnects and all equipment restores to normal.

8.7 Register (Paths Busy) - Block operated the D relay in each trunk circuit. Release and reoperate each relay in turn and observe that the associated register scores each time. Release all relays.

8.8 TSL Crosspoint Test

(See Paragraph 3)

→ Arrowed lines indicate new or changed information.

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Reason for Reissue:  
To add note listed under General Information.

Replaces Section 207.3 dated 1-19-50.