

PERMANENT SIGNAL HOLDING TRUNKS SD-25126-01 AND SD-25425-01  
TESTS USING OUTGOING TRUNK TEST FRAME

SD-25177-01

NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing permanent signal holding trunks SD-25126-01 and SD-25425-01 by means of the outgoing trunk test frame (OGTT) SD-25177-01 in No. 1 crossbar offices.

1.02 This section is reissued for the following reasons:

- (1) In paragraph 1.03:
  - (a) Under Test B, delete "release hold relays—etc."
  - (b) Under Test C, add last sentence "This test can...etc."
  - (c) Under Test H, change reference to key equipment in title of test from "1A" to "telephone", and delete reference to "Test for Interrupter Ground...etc." Add information to description of test for trunks SD-25126-01 equipped with ZB option.
- (2) In paragraph 1.04, add information for testing trunks SD-25126-01 equipped with ZB option.
- (3) Add paragraph 2.07.
- (4) Under Section 4, METHOD, add information to Tests B, D, E, H, and I for testing trunks SD-25126-01 equipped with ZB option.

The Equipment Test List is affected.

1.03 The tests covered are:

- A. False Ground on S Lead:** This test checks the sleeve of the trunk for false ground. . . . .
- B. Trunk L Relay Operate Test—S Lead Continuity Test:** This test checks:

- (1) The ability of the L relay to operate on a line loop of approximately 6500 ohms
- (2) The continuity of the S lead
- (3) The ability of the trunk to connect steady permanent signal tone or, announcement and receiver off-hook tone (ROH tone is not connected to trunks serving PBX and carrier class subscribers) prior to steady permanent signal tone. . . . .

- C. Trunk L Relay Release Test—Operator Hold Test:** This test checks the ability of the trunk L relay to release on a 15,000-ohm line loop. This test also checks the ability of the trunk DS key to hold the established connection with the proper supervision. ♦This test can only be performed using SD-25425-01 or SD-25126-01 (option ZA) trunks.♦ . . . . .

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<b>D. S1 Lead Continuity Test:</b> This test checks the continuity of the S1 lead . . . . .	5
<b>E. Sleeve Tone:</b> This test checks for the presence of permanent signal tone on the sleeve of the trunk within 90 seconds after the PST key is operated at the LDF or MDF. . . . .	6
<b>F. Automatic Return of Coin on Disconnection (SD-25425-01 Trunks Only):</b> This test checks the ability of the trunk to return the coin automatically when the operator disconnects. . . . .	7
<b>G. Stuck Coin Test—Coin Time Alarm (SD-25425-01 Trunks Only):</b> This test checks the ability of the trunk coin supervisory circuit to detect a stuck coin and to signal the sender monitor operator. This test also checks the ability of the trunk coin supervisory circuit to sound an alarm in the equipment room if the signal is not answered within 30 to 60 seconds. . . . .	7
<b>H. Permanent Signal Holding Trunks Arranged to Release Hold Relays in Telephone Key Equipment:</b> This test checks that an intermittent shunting ground is applied to the ring side of the trunk at a 60-ipm rate ♦or, if testing SD-25126-01 trunks equipped with ZB option, the T and R leads are opened for a minimum of 600 ms.♦ . . . . .	9
<b>I. Return of Coin by Operator (SD-25126-01 Trunks Arranged for Coin Service Improvement Features):</b> This test checks the ability of the trunk to apply coin potential to the tip lead only toward the coin station when the coin control key has been operated at the switchboard. . . . .	9

trunks equipped with ZB option, the sender make-busy frame or local test desk.♦

**1.05** Test G requires verification at the equipment frame.

**1.06** Only those OGTT lamps which verify a circuit function that is being tested are listed in the VERIFICATION column.

**1.07 Lettered Steps:** A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

**2. APPARATUS**

**All Tests**

**2.01** Outgoing trunk test frame SD-25177-01.

**2.02** P3F cord (slate), 4 feet long, equipped with 309 plug and 310 plug (3P12A cord).

**All Tests Except H**

**2.03** P3F cord (red), 4 feet long, equipped with 309 plug and 310 plug (3P12B cord).

**Tests B Through I**

**2.04** Head telephone set.

**Test E**

**2.05** 716C receiver attached to W2AB cord equipped with two 360A tools (2W21A cord), a KS-6278 connecting clip, and a 411 tool.

**Test G**

**2.06** KS-3008 stopwatch.

♦Tests B, D, E, H I

**2.07** Miscellaneous circuit sender make-busy frame SD-25076-01. (For testing SD-25126-01 ZB option trunks.)♦

**1.04** Tests B through I require actions and verifications at the sender monitor position of the switchboard ♦or, when testing SD-25126-01

**3. PREPARATION**

STEP	ACTION	VERIFICATION
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**All Tests Except H**

1	At OGTT— Restore all keys to normal and operate DISC1 key.	At OGTT— ON1 lamp extinguished.
2	Insert plug of head telephone set into A, B jacks.	
3a	If test frame telephone circuit is equipped with 102A, 178A, or 181B induction coil— Operate A, OPR, COM keys to equal 5500 ohms in non-AMA offices or 4500 ohms in AMA offices.	
4b	If test frame telephone circuit is equipped with 102C, 178C, or 178E induction coil— Operate A, OPR, COM keys to equal 5000 ohms in non-AMA offices or 4000 ohms in AMA offices.	
5	Patch T1 jack to T jack of trunk to be tested.	BY1 lamp extinguished.  <i>Note:</i> BY1 lamp lighted indicates busy trunk.
6	Patch MB jack to T&MB jack of trunk to be tested.	

**4. METHOD**

STEP	ACTION	VERIFICATION
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**A. False Ground on S Lead**

7	At OGTT— Operate TST1, SUB REC, NO SDR1, RSG keys.	At OGTT— SUP1 lamp lighted.
8	Restore RSG, NO SDR1, SUB REC, TST1 keys.	SUP1 lamp extinguished.
9	Momentarily operate DISC1 key.	
10c	If no further tests are to be performed— Remove patching cords from T, T&MB jacks.	

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STEP	ACTION	VERIFICATION
<b>B. Trunk L Relay Operate Test—S Lead Continuity Test</b>		
7	At OGTT— Operate TST1, MISC TRK, NO SDR1 keys.	At OGTT— SUP1 lamp lighted. If auxiliary permanent signal holding trunk SD-99329-01 is provided— Announcement (approximately 10-second duration) heard. Receiver off-hook tone heard for 30 to 60 seconds, except on trunks serving PBX and carrier class subscribers. Permanent signal tone heard. If auxiliary permanent signal holding trunk SD-99329-01 is not provided— Permanent signal tone heard. At switchboard, sender make-busy frame, or test position— Trunk PS lamp flashes (60 ipm). At switchboard— Auxiliary lamp lighted. Auxiliary alarm sounded.
8	At switchboard, sender make-busy frame, or test position— Call answered.	At OGTT— Permanent signal tone removed from trunk. At switchboard, sender make-busy frame, or test position— Trunk PS lamp lighted steadily. At switchboard— Auxiliary lamp extinguished. Auxiliary alarm silent.
9	At OGTT— Restore NO SDR1, MISC TRK, TST1 keys.	SUP1 lamp extinguished.
10	Momentarily operate DISC1 key.	At switchboard, sender make-busy frame, or test position— Trunk PS lamp extinguished.
11c	If no further tests are to be performed— Remove patching cords from T, T&MB jacks.	
<b>C. Trunk L Relay Release Test—Operator Hold Test</b>		
7	At OGTT— Operate TST1, PERM SIG, NO SDR1 keys.	At switchboard — Trunk PS lamp flashes (60 ipm). Auxiliary lamp lighted. Auxiliary alarm sounded.
8	At switchboard— Call answered.	At switchboard— Trunk PS lamp lighted steadily.

STEP	ACTION	VERIFICATION
		Auxiliary lamp extinguished. Auxiliary alarm silent.
9	Remove cord from trunk jack.	Trunk PS lamp remained lighted.
10	Reconnect cord to trunk jack.	Trunk PS lamp remained lighted.
11	Operate trunk DS key and remove cord from trunk jack.	At OGTT— Permanent signal tone heard on trunk.
12	At OGTT— Operate and hold RFL key for 3 seconds.	At switchboard — Trunk PS lamp flashes (120 ipm). Auxiliary lamp lighted. Auxiliary alarm sounded.
13	At switchboard— Reconnect cord to trunk jack.	At switchboard— Trunk PS lamp lighted steadily. Auxiliary lamp extinguished. Auxiliary alarm silent.
14	Restore DS key.	
15	At OGTT— Restore NO SDR1, PERM SIG, TST1 keys.	
16	Momentarily operate DISC1 key.	At switchboard— Trunk PS lamp extinguished.
17c	If no further tests are to be performed— Remove patching cords from T, T&MB jacks.	
<b>D. S1 Lead Continuity Test</b>		
7	At OGTT— Operate TST1, PERM SIG, NO SDR1 keys.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp flashes (60 ipm). ♦At switchboard—♦ Auxiliary lamp lighted. Auxiliary alarm sounded.
8	At switchboard, ♦sender make-busy frame, or test position—♦ Call answered.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp lighted steadily. ♦At switchboard—♦ Auxiliary lamp extinguished. Auxiliary alarm silent.
9	Delay removal of cord from trunk jack for several seconds after disconnect signal is received.	

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STEP	ACTION	VERIFICATION
10	At OGTT— Operate NO SDR1 key to DISC1 position without hesitating in normal position.	At OGTT— BY1 lamp lighted.
11	At switchboard, ♦sender make-busy frame, or test position—♦ Remove cord from trunk jack.	At OGTT— BY1 lamp extinguished.
12	At OGTT— Restore PERM SIG, TST1, NO SDR1 keys.	
13	Momentarily operate DISC1 key.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp extinguished.
14c	If no further tests are to be performed— Remove patching cords from T, T&MB jacks.	
<b>E. Sleeve Tone</b>		
7	At LDF or MDF— Operate PST key.	
8	At OGTT— Operate TST1, PERM SIG, NO SDR1 keys.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp flashes (60 ipm). ♦At switchboard—♦ Auxiliary lamp lighted. Auxiliary alarm sounded.
9	At switchboard, ♦sender make-busy frame, or test position—♦ Call answered.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp lighted steadily. ♦At switchboard—♦ Auxiliary lamp extinguished. Auxiliary alarm silent.
10	Remove cord from trunk jack and disregard trunk signal.	
11	At OGTT— Remove patching cord from MB jack and test tip of plug with test receiver connected to ground.	At OGTT— Within 90 seconds— Permanent signal tone is heard on tip of plug.
12	Reconnect patching cord to MB jack.	
13	Restore NO SDR1, PERM SIG, TST1 keys.	
14	Momentarily operate DISC1 key.	At switchboard, ♦sender make-busy frame, or test position—♦ Trunk PS lamp extinguished.

STEP	ACTION	VERIFICATION
15c	If no further tests are to be performed— Remove patching cords from T, T&MB jacks.	
16	At LDF or MDF— Restore PST key.	
<b>F. Automatic Return of Coin on Disconnection (SD-25425-01 Trunks Only)</b>		
7c	If trunks are not arranged for coin service improvement features— At OGTT— Operate TST1, PERM SIG, NO SDR1, RCT keys.	At switchboard— Trunk PS lamp flashes (60 ipm). Auxiliary lamp lighted. Auxiliary alarm sounded.
8d	If trunks are arranged for coin service improvement features— At OGTT— Operate TST1, PERM SIG, NO SDR1, RCT, CSI keys.	At switchboard— Trunk PS lamp flashes (60 ipm). Auxiliary lamp lighted. Auxiliary alarm sounded.
9	At switchboard— Call answered.	At switchboard — Trunk PS lamp lighted steadily. Auxiliary lamp extinguished. Auxiliary alarm silent.
10	At OGTT— Operate and hold RFL key.	
11	At switchboard— Remove cord from trunk jack.	CR lamp momentarily lighted.
12	At OGTT— Restore RCT, RFL keys.	
	<b>Caution: Restore RCT key as soon as CR lamp is extinguished, otherwise trunk coin control circuit will stick.</b>	
13	Restore all operated keys.	
14	Momentarily operate DISC1 key.	At switchboard— Trunk PS lamp extinguished.
15	Remove patching cords from T, T&MB jacks.	
<b>G. Stuck Coin Test—Coin Time Alarm (SD-25425-01 Trunks Only)</b>		
7c	If trunks are not arranged for coin service improvement features— At OGTT—	At switchboard— Trunk PS lamp flashes (60 ipm). Auxiliary lamp lighted.

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STEP	ACTION	VERIFICATION
	Operate TST1, PERM SIG, NO SDR1, RCT keys.	Auxiliary alarm sounded.
8d	If trunks are arranged for coin service improvement features— Operate TST1, PERM SIG, NO SDR1, RCT, CSI keys.	At switchboard— Trunk PS lamp flashes (60 ipm). Auxiliary lamp lighted. Auxiliary alarm sounded.
9	At switchboard— Call answered.	At switchboard— Trunk PS lamp lighted steadily. Auxiliary lamp extinguished. Auxiliary alarm silent.
10	At OGTT— Operate and hold RFL key.	
11	At switchboard— Remove cord from trunk jack.	At OGTT— CR lamp momentarily lighted.
12	At OGTT— Restore RFL key.	At switchboard— Trunk C lamp lighted.
13	At switchboard— Connect cord to coin supervisory jack.	At switchboard— Trunk C lamp extinguished.
14	Remove cord from coin supervisory jack.	Trunk C lamp lighted.
15	Reconnect cord to coin supervisory jack.	Trunk C lamp extinguished.
16	Remove cord and disregard lighted C lamp.	At trunk equipment frame— Within 30 to 60 seconds— Trunk CT lamp lighted. Green aisle pilot lamp lighted. Minor alarm sounded.
17	Momentarily insert a cord into trunk release jack.	Trunk C lamp extinguished. At trunk equipment frame— Trunk CT lamp extinguished. Green aisle pilot lamp extinguished. Minor alarm silent.
18	Restore all operated keys.	
19	Momentarily operate DISC1 key.	
20	Remove patching cords from T, T&MB jacks.	

STEP	ACTION	VERIFICATION
<b>H. Permanent Signal Holding Trunks Arranged to Release Hold Relays in Telephone Key Equipment</b>		
1	At OGTT— Restore all keys to normal and operate DISC1 key.	At OGTT— ON1 lamp extinguished.
2	Patch T1 jack to T jack of trunk to be tested.	BY1 lamp extinguished.
3	Operate VM TLK, REV, VM1 keys.	SV lamp flashes (60 ipm). Permanent signal tone heard on trunk.
4	At switchboard, sender make-busy frame, or test position— Call answered.	At OGTT— SV lamp lighted steadily. Permanent signal tone removed from trunk.
5	At switchboard, sender make-busy frame or test position— Disconnect cord from trunk jack.	At OGTT— SV lamp flashes (60 ipm). Permanent signal tone heard on trunk.
6	At OGTT— Operate FEMF, G, 1000 $\Omega$ keys.	
7	Restore REV, VM TLK keys.	SV lamp extinguished. Permanent signal tone no longer heard. If testing SD-25425-01 or SD-25076-01 (ZA option) trunk— Voltmeter needle swings between an upscale reading and zero at a 60-ipm rate. If testing SD-25076-01 (ZB option)— Voltmeter needle does not move.
8	Restore VM1, FEMF, G, 1000 $\Omega$ keys.	
9	Momentarily operate DISC1 key.	
10	Remove patching cord from T jack of trunk tested.	
<b>I. Return of Coin by Operator (SD-25126-01 Trunks Arranged for Coin Service Improvement Features)</b>		
7	At OGTT— Operate TST1, PERM SIG, NO SDR1, RCT, CSI keys.	At switchboard, sender make-busy frame, or test position— Trunk PS lamp flashes (60 ipm). At switchboard— Auxiliary lamp lighted. Auxiliary alarm sounded.
8	At switchboard, sender make-busy frame, or test position—	Trunk PS lamp lighted steadily. At switchboard—

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STEP	ACTION	VERIFICATION
	Call answered.	Auxiliary lamp extinguished. Auxiliary alarm silent.
9	Momentarily operate coin control key.	At OGTT— CR lamp momentarily lighted.
10	At OGTT— Restore TST1, PERM SIG, NO SDR1, RCT, CSI keys.	
11	Momentarily operate DISC1 key.	At switchboard, sender make-busy frame, or test position— Trunk PS lamp extinguished.
12	At OGTT— Remove patching cords from T, T&MB jacks.	