

FREE TRUNKS AND ASSOCIATED AUXILIARY TRUNKS
TESTS USING TRUNK TEST CIRCUIT SD-25918-01
NO. 5 CROSSBAR OFFICES

1. GENERAL

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1.01 This section describes a method of testing trunk circuits SD-25659-01, SD-25889-01, SD-25928-01, SD-27996-01 used for free call service. Tests of SD-27996-01 as used for 911 emergency reporting service are also provided.

B. Coin Return Feature: This test checks that on a call from a coin line, coin return potential will be applied at completion of call. **5**

1.02 This section is reissued for the reasons listed below. Revision arrows are used to emphasize the more significant changes. This reissue does not affect Equipment Test Lists.

C. Tandem Completion Feature: This test checks that the TM relay in the trunk repeats supervision to the connected trunk for tandem calls. **6**

- (a) Paragraph 1.10 has been added for clarification.
- (b) Test F, Step 23, verification changed to include reduced forced release timing feature.
- (c) Test G, Step 25, verification changed to include reduced forced release timing feature.
- (d) Test J Step 28 key operations changed.
- (e) Test J Step 31 verifications changed.

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D. Trunk Busy Features: The following features are checked: (1) Seizure when the trunk is made busy at the MTF. (2) Busy condition to a service call when the trunk is made busy at the MTF. (3) Seizure of an idle trunk by a service call. **6**

1.03 The tests covered are:

FREE CALL SERVICE SD-25659-01, SD-25889-01, SD-25928-01, SD-27996-01

E. False-Busy and False-Idle Conditions: This test checks for continuity and crosses on the F, BT, and FT leads. **7**

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A. Seizure, Supervision, and Release: This test checks on a local completion basis seizure, completion of the connection to the outgoing end, supervision, and release or timed release. It also checks the originating end of the trunk for nonreversal of tip and ring leads and the ability of the trunk to hold under control of the originating customer or the operator. **5**

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F. Seizure, Ringing, Supervision and Timed Release—SOG and Tandem Operation: This test checks (1) Seizure on a local or tandem basis (2) Ringing features (3) Supervision and holding features of both originating customer and the agent (4) Time release features (5) off-hook indication of local calling customer, when provided. **8**

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| G. Coin Return Feature: This test checks that on a call from a coin line, coin return potential will be applied at completion of call. | 10 | 1.08 When the office is arranged for ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in a <i>maintenance-busy</i> condition—not in an <i>out-of-service</i> condition. To change a scanner or distributor from an <i>out-of-service</i> to a <i>maintenance-busy</i> condition, use the procedure given in the following section for the office arrangement. |
| H. Abandon Call On Answer: This test checks that when the agent answers a call just as the calling customer disconnects, line busy tone is heard. | 12 | 218-799-701—taking ETS
Equipment Out-of-Service. |
| I. Improper Idle Circuit Seizure From Bureau: This test checks that when the trunk is idle and is seized from the bureau (1) Overflow tone will be heard at bureau (2) A minor alarm will be brought in at MTF if not released (3) The trunk link appearance of the trunk is made busy. | 12 | 1.09 When the trunk under test is arranged for ETS, the first completed test call from the MTF will cause the TST bit to be set in the trunk register associated with the selected trunk, enabling trunk scanning to be repeated on the FT lamp at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, supervision will continue to be repeated on the lamps, even on service calls. The TST bit will remain set in the trunk register until (1) a test call is made from the MTF to another trunk, or (2) the command <i>STOP:TRK TST</i> is entered at the maintenance TTY. |
| J. Emergency Ringback to Calling Customer: This test checks that ringback may be sent to the calling customer when on-hook or off-hook. | 13 | 1.10 On Issue 76D of SD-25800-01 a group of 18 “class of test” lamps was replaced by a single “start test” lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, DT, ORIG, ITDO, ITNP, OGT, INC, OR, SDR, IR, MISC, IAO, MLV, LT, IMS, PTT, TVT, ATNT, and IMT.♦ |
| 1.04 Tests A, B, C, and D require action and verification at a PBX or DSA switchboard. | | |
| 1.05 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 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 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 |
| 1.06 The manner of selecting some circuits and test conditions at the master test frame (MTF) and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301. | | Test A, F, I, and J |
| 1.07 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF. | | 2.01 KS-3008 stopwatch or equivalent. |
| | | Tests A Through D, F Through J |
| | | 2.02 Master test control circuit, SD-25800-01. |
| | | 2.03 Trunk test circuit, SD-25918-01. |
| | | Tests D, E, and I |
| | | 2.04 322A (make-busy) plugs as required. |

Test E

2.05 Oscillator J94730B (SD-95616-01), part of 1A fault locator test set J94730A.

2.06 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 419A tool (for

3. PREPARATION

connecting high resistance ground [HRG] to terminal strip terminal).

Test I

2.07 Testing cord, P3F cord, 4 feet long, equipped with one 309 plug and one 310 plug (3P12A cord).

2.08 MTF voltmeter test circuit, SD-25792-01.

3. PREPARATION

STEP	ACTION	TEST									
		A	B	C	D	E	F	G	H	I	J
1	At MTF-- Restore all keys, set all switches to OFF.	X	X	X	X		X	X	X	X	X
2	Momentarily operate RL key.	X	X	X	X		X	X	X	X	X
3	Select A-through G-digits as required to direct call to route of trunk under test.	X	X	X	X		X	X	X	X	X
4	Operate FS, TS, KY keys.	X	X	X	X		X	X	X	X	X
5	Select trunk under test.	X	X	X	X		X	X	X	X	X
6	Select marker.	X	X	X	X		X	X	X	X	X
7	Select route advance as required for access to trunk under test.	X	X	X	X		X	X	X	X	X
8	Select class of service and rate treatment as required for access to trunk under test.	X	-	X	X		X	-	X	X	X
9	Select OR class of call with translator indication as required for selected route.	X	X	X	X		X	X	X	X	X
10a	If ETS provided -- operate PCS, PTS keys.	X	X	X	X		X	X	X	X	X
11	Operate TLK key.	X	X	X	X		X	X	-	X	X
12	Operate 911 key.	-	-	-	-		X	X	X	X	X
13	Select MISC class of test.	X	X	X	X		-	-	-	-	-
14	Select OGT class of test.						X	X	X	X	X

- OMIT STEP

Proceed to Method

4. METHOD

STEP	ACTION	VERIFICATION
FREE CALL SERVICE SD-25659-01, SD-25889-01, SD-25928-01		
A. Seizure, Supervision, and Release		
14	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. Ringing tone heard in MTF telephone set.
15	At switchboard or PBX— Call answered.	At MTF— AS lamp remains lighted. Ringing tone not heard. PK lamp not lighted.
16	Dial digit 0.	AS lamp remains lighted.
17	At switchboard or PBX— Momentarily disconnect cord circuit.	Trunk lamp not lighted. At MTF— AS lamp remains lighted.
18b	If testing trunk SD-25659-01 equipped for timed disconnect— At switchboard or PBX— Disconnect cord circuit.	At MTF— After 13 to 32 seconds— AS lamp extinguished. If ETS provided— FT lamp extinguished.
19b	Restore TLK key.	
20c	If trunk is not equipped for timed disconnect— At switchboard or PBX— Disconnect cord circuit.	At MTF— AS lamp remains lighted. No ringing tone heard.
21c	Restore TLK key.	AS lamp extinguished. If ETS provided— FT lamp extinguished.
22	Momentarily operate RL key.	All lamps extinguished.
23d	If no further tests are to be made— Restore all keys, set all switches to OFF.	
B. Coin Return Feature		
14	Select class of service and rate treatment for coin operation.	
15	Operate CN key.	

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STEP	ACTION	VERIFICATION
16	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. Ringing tone heard in MTF telephone set.
17	At switchboard or PBX— Call answered and disconnected.	At MTF— Ringing tone not heard. PK lamp <i>not</i> lighted.
18	Restore TLK key.	If ETS provided— FT lamp extinguished. AS lamp extinguished. CR lamp lighted momentarily. CND lamp lighted.
19	Restore CN key.	CND lamp extinguished.
20	Momentarily operate RL key.	All lamps extinguished.
21b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

C. Tandem Completion Feature

14	Select TAN subclass of test.	TAN lamp lighted.
15	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. Ringing tone heard in MTF telephone set.
16	At switchboard or PBX— Call answered and disconnected.	At MTF— Ringing tone not heard.
17	Restore TLK key.	AS lamp extinguished. If ETS provided— FT lamp extinguished.
18	Momentarily operate RL key.	All lamps extinguished.
19b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

**FREE CALL SERVICE and 911 EMERGENCY REPORTING
SERVICE SD-25659-01, SD-25889-01, SD-25928-01,
SD-27996-01**

D. Trunk Busy Features

14	Momentarily operate ST key.	If ETS provided— FT lamp lighted.
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STEP	ACTION	VERIFICATION
		AS lamp lighted. Ringing tone heard in MTF telephone set.
15	At switchboard or PBX— Call answered and disconnected.	At MTF— Ringing tone not heard.
16	Momentarily operate RL key.	All lamps extinguished.
17	Insert 322A plug into MB jack of trunk under test.	If ETS provided— FT lamp lighted.
18	Momentarily operate ST key.	TB lamp lighted. AS lamp <i>not</i> lighted.
19	Momentarily operate RL key.	All lamps extinguished. If ETS provided— FT lamp remains lighted.
20	Operate NTTS, NTFS keys.	
21	Momentarily operate ST key.	AS lamp lighted.
22	At switchboard or PBX— Call answered and disconnected.	
23	At MTF— Restore TLK key.	AS lamp extinguished.
24	Momentarily operate RL key.	All lamps extinguished. If ETS provided— FT lamp remains lighted.
25	Remove 322A plug from MB jack of trunk under test.	If ETS provided— FT lamp extinguished.
26b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

E. False-Busy and False-Idle Conditions

1	At relay rack frame— Connect 110-volt ac supply to 1A fault locator.	
2	Set W-T switch to W, HR-LRT switch to HR.	
3	Insert make-busy plugs into MB jacks of all trunks using same route on same trunk link frame except trunk being tested.	
4	Connect WT jack of 1A fault locator to FT terminal of terminal strip on trunk being	When trunk being tested is idle— Whistle not heard.

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STEP ACTION VERIFICATION

tested as follows:

(1) Trunks not equipped with D-type terminal strips—

Terminal 10 or A10 as provided.

(2) Trunks equipped with D-type terminal strips—

Terminal 45.

(3) SD-27996-01 terminal A24.

5 Block operated BY relay. Whistle heard.

6 Restore service trunks made busy for test.

7 Disconnect WT jack of 1A fault locator from FT terminal and connect to BT terminal of trunk being tested as follows:

(1) Trunks not equipped with D-type terminal strips—

Terminal 11 or A11 as provided.

(2) Trunks equipped with D-type terminal strips—

Terminal 15.

(3) SD-27996-01 terminal A44.

8 Connect HRG terminal to F terminal of terminal strip on trunk being tested as follows:

(1) Trunks not equipped with D-type terminal strips—

Terminal 9 or A9 as provided.

(2) Trunks equipped with D-type terminal strips—

Terminal 55.

(3) SD-27996-01 terminal A34.

9 Remove blocking tool from BY relay. Whistle not heard.

10 Remove power connected to 1A fault locator.

11 Remove test connections from terminal strips.

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F. Seizure, Ringing, Supervision and Timed Release—SOG and Tandem Operation

SOG

15 Momentarily operate ST key. If ETS provided—
FT lamp lighted.
AS lamp lighted.
Ringing tone heard in unison with R- lamp flashes.

STEP	ACTION	VERIFICATION
16	Hold PTP key operated for 1/2 second during silent interval of ringing cycle.	R- lamp continues to flash.
17	Hold TRP key operated for 1 second during silent interval of ringing cycle.	Ring tone not heard. R- lamp extinguished.
18	Operate ANS key.	OGT-CS lamp lighted. High tone heard. PK lamp <i>not</i> lighted.
19	Restore TLK key.	High tone not heard. AS lamp remains lighted. If off-hook indications of local calling customer is provided— PK2 lamp extinguished.
20	Operate TSW key.	If machine detection of calling party on-hook is <i>not</i> provided at emergency 911 bureau— Line busy tone heard. If machine detection of calling party on-hook is provided at emergency 911 bureau— Steady (precise) low tone heard.
21	Restore TSW key.	Line busy tone or low tone not heard.
22	Operate TLK key.	Line busy tone or low-tone not heard. If off-hook indication of local calling customer is provided— PK2 lamp lighted.
23	Restore ANS key; <i>start timing</i> .	PK2, OGT-CS lamps extinguished. ◆In 1 to 2◆ seconds— AS lamp extinguished. ◆If reduced forced release timing is not provided— In 13 to 32 seconds— AS lamp extinguished.◆ If ETS provided— FT lamp extinguished.
24	Momentarily operate RL key.	All lamps extinguished.
25	Operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted.
26	Operate ANS key.	PK2, OGT-CS lamps lighted. High tone heard.
27	Restore ANS key.	PK2, OGT-CS lamps extinguished. High tone silenced.

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STEP	ACTION	VERIFICATION
28	Restore TLK key.	AS lamp extinguished. If ETS provided— FT lamp extinguished.
29	Momentarily operate RL key.	All lamps extinguished.
30b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

TANDEM OPERATION

31	Select TAN subclass of test.	TAN lamp lighted.
32	Repeat Steps 15 through 17.	
33	Operate ANS key.	PK2 lamp lighted. High tone heard.
34	Restore ANS key; <i>start timing</i> .	PK2 lamp extinguished. In 6 seconds— OGT-CS lamp lighted. After 6 additional seconds— OGT-CS lamp extinguished. AS lamp remains lighted.
35	Momentarily operate RL key.	All lamps extinguished.
36b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

G. Coin Return Feature

15	Select class of service and rate treatment for coin operation.	
16	Operate CN key.	
17	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. Ringing tone heard in MTF telephone set.
18	Operate ANS key.	PK2, OGT-CS lamps lighted. Ringing tone <i>not</i> heard. PK lamp <i>not</i> lighted. High tone heard.
19	Restore TLK, ANS keys.	PK2, OGT-CS, AS lamps extinguished. CR lamp momentarily lighted. CND lamp lighted. If ETS provided— FT lamp extinguished.

STEP	ACTION	VERIFICATION
20	Restore CN key.	CND lamp extinguished.
21	Momentarily operate RL key.	All lamps extinguished.
22	Operate CN, TLK keys.	
23	Operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted.
24	Operate ANS key.	PK2, OGT-CS lamps lighted.
25	Restore ANS key; <i>start timing</i> .	PK2, OGT-CS lamps extinguished. ◆In 1 to 2◆ seconds— AS lamp extinguished. CR lamp momentarily lighted. CND lamp lighted. ◆If reduced forced release timing is not provided— After 13 to 32 seconds— AS lamp extinguished. CR lamp momentarily lighted. CND lamp lighted.◆ If ETS provided— FT lamp extinguished.
26	Momentarily operate RL key.	All lamps extinguished.
27	Momentarily restore CN key.	CND lamp extinguished.
28	Operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted.
29	Operate ANS key.	PK2, OGT-CS lamps lighted.
30	Restore ANS key.	PK2, OGT-CS, lamps extinguished.
31	Restore TLK key.	AS lamp extinguished. CR lamp momentarily lighted. CND lamp lighted. If ETS provided— FT lamp extinguished.
32	Restore CN key.	CND lamp extinguished.
33	Momentarily operate RL key.	All lamps extinguished.
34b	If no further tests are to be made— Restore all keys, set all switches to OFF.	

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STEP	ACTION	VERIFICATION
H. Abandon Call On Answer		
SOG		
15	Operate TSW key.	
	<i>Note:</i> The <i>non</i> operation of the TLK key simulates the calling customer hanging up on answer.	
16	Operate MTTA key.	
17	Momentarily operate ST key.	If ETS provided— FT lamp momentarily lighted. MTT lamp lighted. OGT-CS lamp lighted. AS lamp momentarily lighted. Overflow tone heard.
18	Restore TSW key.	OGT-CS lamp extinguished. Overflow tone not heard.
19	Restore MTTA key.	MTT lamp extinguished.
20	Momentarily operate RL key.	All lamps extinguished.
21	Select TAN subclass of test.	
22	Repeat Steps 15 through 20.	
23b	If no further tests are to be made— Restore all keys, set all switches to OFF.	
I. Improper Idle Circuit Seizure From Bureau		
15	Patch T1 jack of voltmeter test circuit to test jack of trunk under test.	BY1 lamp not lighted.
16	If off-hook indication of local calling customer not provided— Operate T1 REV key.	
17	Operate T key; <i>start timing</i> .	Overflow tone heard in hand telephone set. In 6 minutes— Minor alarm sounds. At jack, lamp, and key circuit— 911 PS lamp flashes at 120 ipm.
18	Insert 322A plug into MB jack of trunk under test.	Minor alarm silenced. 911 PS lamp lighted steady.

STEP	ACTION	VERIFICATION
19	Momentarily operate ST key.	TB lamp lighted. AS lamp not lighted.
20	Restore T key.	911 PS lamp extinguished. Overflow tone not heard.
21	Remove patch cord from test jack of trunk under test.	
22	Remove 322A plug from MB jack of trunk under test.	
23	Momentarily operate RL key.	All lamps extinguished.
24b	If no further tests are to be made— Restore all keys, set all switches to OFF.	
J. Emergency Ringback to Calling Customer		
15	Momentarily operate ST key.	If ETS provided— FT lamp lighted. AS lamp lighted. R- lamp flashes. Ringing tone heard in unison with R- lamp flashes.
16	Operate ANS key.	PK2, OGT-CS lamps lighted. High tone heard. R- lamp extinguished. Ringing tone silenced.
17	Operate TR key.	
18	Restore TLK key. *Calling customer on-hook.*	High tone silenced. Ringing detection lamps do not flash. If off-hook indication of local calling customer is provided— PK2 lamp extinguished.
19	Operate TSW key.	If machine detection of calling party on-hook provided at emergency 911 bureau— Steady (precise) low tone heard. If machine detection of calling party on-hook not provided at emergency 911 bureau— Line busy tone heard. If off-hook indication of local calling customer is not provided— PK2 lamp extinguished.
20	Restore TSW key.	Line busy tone or low tone silenced. If off-hook indication of local calling customer

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STEP	ACTION	VERIFICATION
		is not provided— PK2 lamp lighted.
21	Momentarily operate CDL key. *Checks TM (WT) timer.*	OGT-CS lamp momentarily extinguished. R-, R+, T-, T+ ringing detection lamps do not flash.
22	Momentarily operate CDL key. *Checks TM1 (RT) timer.*	OGT-CS lamp momentarily extinguished. R-, R+, T-, T+ ringing detection lamps flash in accordance with ringback arrangement provided for approximately 3 1/2 seconds.
23	Restore ANS key for approximately 2 seconds. *Checks TM2(WT1) timer.*	AS, OGT-CS lamps extinguished. If off-hook indication of local calling customer is provided— PK2 lamp extinguished. If ETS provided— FT lamp extinguished.
24	Momentarily operate RL key.	All lamps extinguished.
25	Restore TR, ANS keys.	
26	Operate TLK key.	
27	Momentarily operate ST key. *Calling customer off-hook.*	If ETS provided— FT lamp lighted. AS lamp lighted. R- lamp lighted. Ringing tone heard in unison with R- lamp flashes.
28	Operate TR, ANS keys.	PK2, OGT-CS lamps lighted. High tone heard. R- lamp extinguished. Ringing tone silenced.
29	Momentarily operate CDL key. *Checks TM(WT) timer.*	OGT-CS lamp momentarily extinguished. R-, R+, T-, T+ ringing detection lamps do not flash. High tone still heard.
30	Momentarily operate CDL key. *Checks TM1(RT) timer.*	OGT-CS lamp momentarily extinguished. R-, R+, T-, T+ ringing detection lamps flash in accordance with ringback arrangement provided for approximately 3 1/2 seconds. Ringing tone heard for approximately 3 1/2 seconds. High tone heard after ringing tone is silenced.
31	Restore ANS key for approximately 2 seconds. *Checks TM2(WT1) timer.*	AS lamp remains lighted. PK2 OGT-CS lamps extinguished.

STEP	ACTION	VERIFICATION
32	Momentarily operate RL key.	High tone silenced. If ETS provided— FT lamp extinguished.
33b	If no further tests are to be made— Restore all keys, set all switches to OFF.	All lamps extinguished.

