

**INCOMING TRUNK CIRCUIT SD-97577-01
FOR DIRECTORY ASSISTANCE TRAFFIC
TESTS USING PORTABLE TEST SET SD-97576-01 (J94747A)
NO. 1 TRUNK CONCENTRATOR**

1. GENERAL

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1.01 This section describes a method of testing incoming trunk circuit SD-97577-01 using portable test set SD-97576-01 (J94747A). This circuit interfaces the outgoing trunks from the remote central office to the vertical selection controls of the No. 1 trunk concentrator (TC). The incoming trunk circuit is arranged to handle directory assistance calls, which are for either nonbilling or automatic message accounting (AMA) billing.

No. 5 crossbar automatic call distributor (ACD) or No. 23 desk, and an answer supervision signal is returned from the No. 5 ACD or No. 23 desk, also, that a talking path is established and release of the trunk is normal.

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1.02 This section is reissued for the following reasons:

- (a) Insert new Step Action Verification format to agree with standards
- (b) Change Test A.1 to B and reletter Tests B through F to C through G, respectively
- (c) Revise Test B to eliminate unnecessary steps
- (d) Add information on option ZA in Test G
- (d) Add **Warning** in each test regarding connection and disconnection of cords to battery and ground.

◆B.◆ Operational Test—Trunks With DAC: This test checks the operation of the incoming trunk circuit for directory assistance calls, which are routed to a Traffic Service Position System (TSPS) office or a 1ESS* switch equipped for centralized automatic message accounting (CAMA) for DAC. When this circuit is arranged for DAC, it requires that the calling number be either automatic number identified or operator number identified. Also, this test establishes a talking path to one or two operators, depending on the number identification arrangement at the central office. The trunk is released to normal, after completion.

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Revisions arrows are used to emphasize the more significant changes. This reissue affects the Equipment Test List.

1.03 The tests covered are:

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A. Operational Test —Trunks Without Directory Assistance Charging (DAC): This test checks that the trunk can be seized forward to the

◆C.◆ Trunk Time-Out After Seizure: This test checks that when the 10-second timer in the trunk functions before an outgoing trunk has been connected, the incoming trunk will go off-hook to the remote central office and reorder tone will be returned to the customer.

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◆D.◆ Concentrator Time-Out After Seizure: This test checks that

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when the concentrator fails to switch a call within the preset time period, the incoming trunk will go off-hook to the central office and reorder tone will be returned to the customer.

◆E.◆ *Outgoing Trunk Time-Out:*

This test checks that when the outgoing trunk has timed out waiting for an integrity wink signal from either the ACD, No. 1 ESS switch, or TSPS, the outgoing trunk will return a signal to the incoming trunk causing the incoming trunk to release the connection through the concentrator and return reorder tone to the customer. This test can only be performed when the ACD is arranged to return the integrity wink.

◆F.◆ *Outgoing Trunk Time-Out After Wink—ACD, 1 ESS Switch, and TSPS On-Hook:*

This test checks that when the outgoing trunk times out following a valid integrity wink signal from either the ACD, 1 ESS switch, or TSPS, the outgoing trunk will send a signal to the incoming trunk causing it to release the connection through the concentrator, and a permanent signal (PS) lamp will light. This test can only be performed when the ACD is arranged to return the integrity wink.

◆G.◆ *False Ground on ST Lead While Trunk is Idle:*

This test checks that when a false ground is detected on the ST lead, a trouble lamp will light and the trunk will be locked out of service.

1.04 Tests ◆E and F◆ *cannot* be performed on trunks that terminate at a No. 23 desk.

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1.05 Before performing each test, position the TTS switch on the TC test set as follows unless otherwise indicated.

SWITCH POSITION	TYPE OF SIGNALING
AOIL	2-Wire reverse battery
OFF	2-Wire E&M
4WT	4-Wire E&M
HLT	2-Wire high-low

1.06 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 3 and 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 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

11 2.01 Trunk concentrator portable trunk test set, J94747A (SD-97576-01).

2.02 Head telephone set, 52M or equivalent.

13 2.03 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord) in the following quantities. All 2-wire trunk tests require four cords except Tests A and ◆B◆, which require three cords. All 4-wire trunk tests require five cords except Tests A and ◆B◆, which require four cords.

3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
1	At distant office associated with trunk selected to be tested— Arrange to have trunk made busy.	
2	At TC test set— Restore all keys to normal.	
3	Operate TTS switch according to paragraph 1.05.	
4	<p>◆Warning: <i>To avoid possible grounding of battery supply lead that could cause equipment damage, connect cord to test set first.</i>◆</p> <p>At incoming trunk frame— Using 3P7A cord, connect the -48V jack on TC test set to the -48V jack on the incoming trunk frame.</p>	
5a	If testing 2-wire trunks— At the trunk selected in Step 1— Using 3P7A cord, connect TST line jack to 2W TST jack on TC test set.	
6a	Using 3P7A cord, connect TRK jack to TRK jack on TC test set.	
7b	If testing 4-wire trunks— At the trunk selected in Step 1— Using 3P7A cord, connect TST-R jack to the RCV1 jack on TC test set.	
8b	Using 3P7A cord, connect TST-T jack to TRT2 jack on TC test set.	
9b	Using 3P7A cord, connect TRK jack to TRK jack on TC test set.	
10	At TC test set— Operate -48V key.	-48V lamp lighted.
11	At incoming trunk frame— Operate BCO key.	BCO lamp lighted.

STEP	ACTION	VERIFICATION
Tests A Through E		
12	At TC test set— Plug head telephone set into A-B jacks.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Operational Test—Trunks Without DAC		
13c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate FT key.	FT lamp lighted.
14c	Momentarily operate TSZ key.	At incoming trunk frame— ON_, CT_ lamps lighted. At TC test set— TSZ lamp lighted. If integrity wink is provided by ACD line circuit— WNK/ANS lamp flashed then lighted after operator answers. If integrity wink is not provided by ACD line circuit— WNK/ANS lamp lighted after operator answers.
15d	If testing 2-wire or 4-wire trunk with E&M signaling— Momentarily operate TSZ key.	TSZ lamp lighted.
16d	Operate FT key.	At incoming trunk frame— ON_, CT_ lamps lighted. At TC test set— FT lamp lighted. If integrity wink is provided— WNK/ANS lamp flashed then lighted after operator answers. If integrity wink is not provided by ACD line circuit— WNK/ANS lamp lighted after operator answers.
17	Operate TALK key to talk to operator.	TALK lamp lighted. Operator answers.

STEP	ACTION	VERIFICATION
18c	If testing 2-wire trunk with high-low or reverse battery signaling— Momentarily operate RL key.	TSZ, WNK/ANS lamps extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
19d	If testing 2-wire or 4-wire trunk with E&M signaling— Restore FT key.	
20	Restore all keys to normal.	All lamps extinguished.
21e	If no other tests are to be performed on this trunk— ◆Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.◆ Remove all patching cords between test set and incoming trunk frame.	
22e	At distant office— Arrange to have trunk restored to service.	
◆B.◆ Operational Test—Trunks With DAC		
13	At TC test set— Operate TONE key.	MFT lamp lighted.
14	Operate 10 DB and DN keys.	10 DB and DN lamps lighted.
15c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate FT key.	FT lamp lighted.
16c	Momentarily operate TSZ key.	At incoming trunk frame— ON_, CT_ lamps lighted. At TC test set— TSZ lamp lighted. WNK/ANS lamp momentarily flashes.
17d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate TSZ key.	TSZ lamp lighted.
18d	Operate FT key.	At incoming trunk frame— ON_, CT_ lamps lighted.

STEP	ACTION	VERIFICATION
		At TC test set— FT lamp lighted. WNK/ANS lamp momentarily flashes.
19e	◆If testing automatic number identification (ANI)-DAC— Using multifrequency (MF) keyset on test set— Key in KP plus seven digits associated with a local test number, plus ST.	MF tones heard in head telephone set as each digit is keyed in. Audible ringing heard. Directory assistance (DA) operator answers call.
20f	If testing operator number identification (ONI)-DAC— Using MF keyset on test set— Key in KP-1-ST.	◆MF tones heard in head telephone set as each digit is keyed in.
21	At TC test set— Operate TALK key.	TALK lamp lighted. Talking path established with operator.◆
22	Inform operator that a test is being made.	
23g	If volume is too low— Restore DN and/or 10DB key to normal.◆	
24f	If testing ONI-DAC— Request CAMA or TSPS operator to key in test number. <i>Example:</i> KP-555-4596-ST, where KP-555-4596-ST is a test number.	
25f	Restore TALK key.	TALK lamp extinguished.
26f	Request CAMA or TSPS operator to key KP plus 7 digits associated with a local test number plus ST into AMA.	Audible ringing heard. DA operator answers.
27f	At TC test set— Operate TALK key.	TALK lamp lighted. Talking path established with the DA operator.
28f	Inform DA operator that a test is being made.	
29g	If the volume is too low— Restore DN and/or 10 DB key to normal if still operated.	

STEP	ACTION	VERIFICATION
30c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Momentarily operate RL key.	TSZ, WNK/ANS lamps extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
31d	If testing 2-wire or 4-wire trunks with E&M signaling— At TC test set— Restore FT key.	FT lamp extinguished.
32	Restore all keys to normal.	All lamps extinguished.
33h	If no other tests are to be performed on this trunk— ◆Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.◆ Remove all patching cords between test set and incoming trunk frame.	
34h	At distant office— Arrange to have trunk restored to service.	
◆C.◆ Trunk Time-Out After Seizure		
13	At incoming trunk frame— Using 3P7A cord, connect TT jack to TT jack on TC test set.	
14c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate TT key.	TT lamp lighted.
15c	Momentarily operate TSZ key.	TSZ lamp lighted. At incoming trunk frame— ON_ lamp lighted. Within approximately 10 seconds— TBL lamp lighted. If incoming trunk requires off-hook signal (option Z)— At TC test set— OHI/OP lamp lighted.

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STEP	ACTION	VERIFICATION
16d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate TSZ key.	TSZ lamp lighted.
17d	Operate TT key.	TT lamp lighted. At incoming trunk frame— ON_ lamp lighted. Within approximately 10 seconds— TBL lamp lighted. If incoming trunk requires off-hook signal (option Z)— At TC test set— OHI/OP lamp lighted.
18	Operate TALK key.	TALK lamp lighted. 120 interruptions per minute (IPM) tone heard in receiver.
19	Momentarily operate SIG-B key (to disconnect).	SIG lamp momentarily lighted. At incoming trunk frame— CT_ lamp lighted. TBL lamp extinguished.
20c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Momentarily operate RL key.	At TC test set— TSZ lamp extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
21d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate SIG-B key.	SIG lamp momentarily lighted.
22	Restore TT key to normal.	At TC test set— TT lamp extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
23	At TC test set— Restore all keys to normal.	All lamps extinguished.
24e	If no other tests are to be performed on this trunk—	
	⚠ Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.⚠	

STEP	ACTION	VERIFICATION
	Remove all patching cords between test set and incoming trunk frame.	
25e	At distant office— Arrange to have trunk restored to normal.	
D. Concentrator Time-Out After Seizure		
13	At incoming trunk frame— Using 3P7A cord, connect TT jack to TT jack on TC test set.	
14c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate TT key.	TT lamp lighted.
15c	Momentarily operate TSZ key.	TSZ lamp lighted. At incoming trunk frame— ON_ lamp lighted.
16d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate TSZ key.	TSZ lamp lighted.
17d	Operate TT key.	TT lamp lighted. At incoming trunk frame— ON_ lamp lighted.
18	At TC test set— Within 10 seconds after performing previous step— Operate TO key.	TO lamp lighted. If incoming trunk requires off-hook signal (option Z)— OHI/OP lamp lighted.
19	Operate TALK key.	TALK lamp lighted. 120 IPM tone heard in receiver.
20c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Momentarily operate RL key (to disconnect).	TSZ lamp extinguished. At incoming trunk frame— ON_ lamp extinguished.
21d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate SIG-B key twice.	SIG lamp momentarily lighted twice.

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STEP	ACTION	VERIFICATION
22	Restore TT key to normal.	At incoming trunk frame— ON_, CT_ lamps extinguished.
23	At TC test set— Restore all keys to normal.	All lamps extinguished.
24e	If no other tests are to be performed on this trunk— ⚠Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.⚠ Remove all patching cords between test set and incoming trunk frame.	
25e	At distant office— Arrange to have trunk restored to service.	
⚠E.⚠ Outgoing Trunk Time-Out		
13	At incoming trunk frame— Using 3P7A cord, connect TT jack to TT jack on TC test set.	
14c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate TT key.	TT lamp lighted.
15c	Momentarily operate TSZ key.	TSZ lamp lighted. At incoming trunk frame— ON_ lamp lighted.
16d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate TSZ key.	TSZ lamp lighted.
17d	Operate TT key.	TT lamp lighted. At incoming trunk frame— ON_ lamp lighted.
18	At TC test set— Within 10 seconds after performing previous step— Momentarily operate SIG-B key.	SIG lamp momentarily lighted. At incoming trunk frame— CT_ lamp lighted.

STEP	ACTION	VERIFICATION
19	At TC test set— Momentarily operate SIG-B key again.	SIG lamp momentarily lighted. If incoming trunk requires integrity check failure with off-hook signal (option V)— OHI/OP lamp momentarily lighted. Within approximately 10 seconds— TBL lamp lighted.
20	Operate TALK key.	TALK lamp lighted. 120 IPM tone heard in receiver.
21c	If testing 2-wire trunk with high-low or reverse battery signaling— Operate RL key.	TSZ lamp extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
22d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Restore TT key.	TSZ lamp extinguished. At incoming trunk frame— ON_, CT_ lamps extinguished.
23	At TC test set— Restore all keys to normal.	All lamps extinguished.
24e	If no other tests are to be performed on this trunk— ◆Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.◆ Remove all patching cords between test set and incoming trunk frame.	
25e	At distant office— Arrange to have trunk restored to service.	
◆F.◆ Outgoing Trunk Time-Out After Wink—ACD, 1ESS Switch, and TSPS On-Hook		
12	At incoming trunk frame— Using 3P7A cord, connect TT jack to TT jack on the TC test set.	
13c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate TT key.	TT lamp lighted.
14c	Momentarily operate TSZ key.	TSZ lamp lighted.

STEP	ACTION	VERIFICATION
		At incoming trunk frame— ON_ lamp lighted.
15d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Momentarily operate TSZ key.	TSZ lamp lighted.
16d	Operate TT key.	TT lamp lighted. At incoming trunk frame— ON_ lamp lighted.
17	At TC test set— Within 10 seconds after performing previous step— Momentarily operate SIG-B key.	SIG lamp momentarily lighted. At incoming trunk frame— CT_ lamp lighted.
18	At TC test set— Momentarily operate SIG-B key.	SIG, WNK/ANS, and OHI/OP lamps momentarily lighted.
19	Momentarily operate SIG-B key again.	SIG, OHI/OP lamps momentarily lighted. At incoming trunk frame— PS_ lamp lighted.
20c	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Momentarily operate RL key (to disconnect).	TSZ lamp extinguished. At incoming trunk frame— ON_, CT_, PS_ lamps extinguished.
21d	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Restore TT key.	TT lamp extinguished. At incoming trunk frame— ON_, CT_, PS_ lamps extinguished.
22	Restore all keys to normal.	All lamps extinguished.
23e	If no other tests are to be performed on this trunk— Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.	
	Remove all patching cords between test set and incoming trunk frame.	
24e	At distant office— Arrange to have trunk restored to service.	

STEP	ACTION	VERIFICATION
◆G.◆ False Ground on ST Lead While Trunk is Idle		
12	<i>Note:</i> When performing this test, operate the TTS switch to the OFF position for E&M trunks and to other position according to trunk type for all other trunks.	
13	At incoming trunk frame— Using 3P7A cord, connect TT jack to TT jack on TC test set.	
14c	◆If incoming trunk is equipped with option ZA— At incoming trunk frame— Operate TT key.◆	◆Yellow TT lamp lighted.◆
15d	If testing 2-wire trunk with high-low or reverse battery signaling— At TC test set— Operate TT key.	TT lamp lighted.
16d	At TC test set— Operate XST key.	At incoming trunk frame— TBL lamp lighted. At TC test set— XST lamp lighted. If incoming trunk requires off-hook signal before cut through (option Z)— OHI/OP lamp lighted.
17d	At TC test set— Restore XST key.	XST lamp extinguished.
18d	At incoming trunk frame— Manually release XST relay in trunk.	If incoming trunk requires off-hook signal before cut through (option Z)— At TC test set— OHI/OP lamp extinguished. At incoming trunk frame— TBL lamp extinguished.
19e	If testing 2-wire or 4-wire trunk with E&M signaling— At TC test set— Operate XST key.	XST lamp lighted.
20e	Operate TT key.	At incoming trunk frame— TBL lamp lighted. At TC test set— TT lamp lighted. If incoming trunk requires off-hook signal be-

STEP	ACTION	VERIFICATION
		fore cut through (option Z)— OHI/OP lamp lighted.
21e	At incoming trunk frame— Manually release XST relay in trunk.	At incoming trunk frame— TBL lamp extinguished. At TC test set— XST lamp extinguished.
22e	At TC test set— Momentarily operate SIG-B key twice.	SIG lamp momentarily lighted twice. At incoming trunk frame— CT_ lamp lighted.
23	Restore TT key to normal.	TT, OHI/OP lamps extinguished.
24e	◆If incoming trunk is equipped with option ZA— At incoming trunk frame— Restore TT key.◆	◆Yellow TT lamp extinguished.◆
25	Restore all keys to normal.	All lamps extinguished.
26f	If no other tests are to be performed on this trunk— ◆Warning: To avoid possible grounding of battery supply lead that could cause equipment damage, remove connections to battery and ground first.◆ Remove all patching cords between test set and incoming trunk frame.	
27f	At distant office— Arrange to have trunk restored to service.	