

**2-WAY OPERATOR OFFICE TRUNKS
AND ASSOCIATED COIN CONTROL TRUNK
COIN, NONCOIN, AND RERING TESTS
USING TRUNK TEST SET SD-90469-01 OR SD-90469-02 (J94710A)
STEP-BY-STEP SYSTEMS**

1. GENERAL

1.01 This section describes a method of testing the operating features of the 2-way operator office trunk SD-32340-01 (and similar circuits), and the associated coin control trunk SD-32298-01, using trunk test set SD-90469-01 or SD-90469-02.

1.02 This section is reissued to update Test B to include method of testing 2-way operator office trunks in offices arranged for "dial tone first" operation. Dial tone first is an improved coin service which eliminates the requirement for a coin deposit at the coin station when making service code operator or free code calls. This reissue does not affect the Equipment Test List.

1.03 The tests covered are:

A. Operation Test of 2-Way Trunks for Noncoin Service: This test checks the overall operation of the trunk, including calls to and from an operator. It also tests the class-of-service tones.

B. Operation Test of 2-Way Trunks for Coin Service: This test checks the overall operation of the trunk including calls to and from an operator, a test of the coin collect, coin return and rering features, and a test of the class-of-service tones.

1.04 Action and verification will be required at the distant office and at the local test position. In performing these tests, office records should be consulted to determine which digits will direct a call to the test line or office telephone.

1.05 Parts of these tests are made with all trunks of a group made busy.

1.06 Local instructions should be followed for recording and reporting any register operations caused by performing these tests.

1.07 Precautions should be taken to perform these tests so as not to affect normal traffic adversely.

1.08 The test equipment specified in this section is designed to apply proper marginal tests (simulated critical circuit conditions) when the circuit under test and the test equipment have an applied voltage of 48.5 to 50. In those offices where power plants are normally operated at more than 50 volts, the battery voltage should be reduced and maintained within the required limits while the tests are being made.

1.09 ♣ When testing 2-way operator office trunks in offices arranged for "dial tone first" operation, a trunk test set SD-90469-02 equipped with ZH and ZK options or SD-90469-01 equipped with ZH option.♣

1.10 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 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 Trunk test set, J94710A (SD-90469-01 or SD-90469-02).

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2.02 Head telephone set (associated with test set).

2.03 Patching cord, P2J cord, 9 feet long, equipped with two 310 plugs (2P9A cord) used to supply battery and ground supply to test set when battery supply jack is provided.

2.04 Testing cord, W2M cord, 9 feet long, equipped with a 310 plug (tip and sleeve connected) and two 59 cord tips (2W12A cord) used when a 35-type fuse (not to exceed 5 amperes) and frame ground, or battery and ground block are used to provide battery and ground to test set.

2.05 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord) (for use in connecting test set to trunk test jack).

2.06 Testing cord, W3M cord, 15 feet long, equipped with a 310 plug, a 360A, 360B, and 360C tool, and two 624B tools, ring and sleeve connected (3W4B cord) (for one and two class-of-service tone tests).

2.07 1011G handset (dial hand test set), connected to a W2CL cord, 4 feet long, equipped with a 471A jack and a 240A plug (2W39A cord) (used to busy connector test line).

2.08 258F (dummy) plugs as required.

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

1 Connect test set BAT-G jack to -48V battery supply.

Note 1: To avoid possible grounding of battery supply lead, connect cord to test set first and, when disconnecting, remove from test set last.

Note 2: When using W2M cord, connect red (sleeve) conductor to frame ground, white (tip) conductor to battery.

2 Connect headset to test set TEL jacks.

3 Operate test set TRS key.

4 Insert 310 plug of P3E cord into test set T jack.

5 Insert 310 plug of W3M cord into test set TL jack.

4. METHOD

A. Operation Test of 2-Way Trunks for Noncoin Service

6 Determine from office records the type of class-of-service tones, or no tone provided.

STEP	ACTION	VERIFICATION
	<i>Note:</i> Where two class-of-service tones are provided, also determine which tone should be heard when direct ground and when resistance ground is connected to the "A" lead.	
7	At test set— Operate LP key.	
8	Insert other 310 plug of P3E cord into test jack TST of coin control trunk associated with trunk under test.	BSY lamp not lighted. <i>Note:</i> If BSY lamp is lighted, remove plug from test jack, proceed to another trunk.
9a	If testing circuits requiring no indication on "A" lead— No key or cord action.	
10b	If testing circuits requiring resistance ground on "A" lead— Connect 624B tool (sleeve) of W3M cord to "A" lead, punching 25, on coin control trunk circuit unit terminal strip B.	
11	Operate test set MI key.	
12c	If testing circuits requiring direct ground on "A" lead— Connect 624B tool (ring) of W3M cord to "A" lead, punching 25, on coin control trunk circuit unit terminal strip B.	
13	Operate test set T key.	
14	At test set— Momentarily operate DL ST key.	SL lamp lighted. Audible ringing heard in receiver.
15	At switchboard— Call answered.	Audible ringing silenced. At switchboard— Proper class-of-service tone heard.
16	At switchboard— Remove, reinsert plug in trunk jack.	Same class-of-service tone again heard.
17	At test set— Operate FL key for at least 1 second.	ST lamp remains lighted. At switchboard— Cord lamp extinguished.
18	At test set— Restore FL key.	At switchboard— Cord lamp relighted.

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STEP	ACTION	VERIFICATION
19	At test set— Momentarily operate FL key several times.	At switchboard— Cord lamp flashes. At test set— SL lamp remains lighted.
20	Operate RR key.	
21	At switchboard— Ring back on trunk under test.	At test set— RR lamp lighted while ringing current is applied.
22	Restore RR key.	
23d	If office telephone is available in local office— At switchboard— Connect calling cord to next idle trunk jack.	At switchboard— Cord lamp lighted.
24d	Dial digits to call office phone.	At test set— Dial pulses not heard in test receiver. Audible ringing induction heard in receiver. At switchboard— When call is answered— Audible ringing ceases. Transmission satisfactory. Calling cord lamp extinguished.
25d	At test set— Momentarily operate FL key several times.	REV lamp flashes. SL lamp remains lighted. At switchboard— Cord lamp flashes.
26d	At called telephone— Operate switchhook several times.	At switchboard— Cord lamp flashes in unison with switchhook.
27d	At switchboard— Disconnect from called telephone jack momentarily.	
28d	Redial number.	Busy indication received at cord lamp or operator headset.
29d	At switchboard— Operate key to disconnect from line for a few seconds.	At test set— Busy signal heard while switchboard key is closed.
30d	At test set— Hang up office phone.	
31d	At switchboard— Remove cord from called telephone jack.	

STEP	ACTION	VERIFICATION
32d	At test set— Proceed to Step 42.	
33e	If office telephone is not available in local office— At switchboard— Connect calling cord to next idle trunk jack.	
34e	Dial digits to call test line.	At test set— Dial pulses not heard in test receiver. Audible ringing induction heard in receiver. At switchboard— When test number is seized— Cord lamp lighted. Audible ringing silenced. Tone heard. Cord lamp flashes intermittently.
35e	At switchboard— Disconnect cord used to dial test line.	Cord lamp extinguished.
36e	At local connector frame— Connect handset to idle connector.	
37e	Dial test line terminal.	
38e	At switchboard— Reconnect cord to idle trunk jack.	
39e	Dial test line.	Busy indication received at cord lamp or operator handset.
40e	At test set— Operate, release FL key several times.	At switchboard— Cord lamp flashes. Call answered.
41e	At switchboard— Cord used to call test line disconnected.	At test set— SL lamp remains lighted.
42	At test set— Make busy all trunks in group being tested.	
43	At switchboard— Reconnect cord to trunk jack.	
44	Dial office phone or test line.	At switchboard— All-trunks-busy indication received. At test set— All-trunks-busy signal heard.
45	At test set— Remove busy condition from all trunks.	

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STEP	ACTION	VERIFICATION
46	At switchboard— Disconnect both cords when disconnect signal is received.	
47	At test set— Operate, hold operated FL key.	At switchboard— Disconnect is made. At test set— SL lamp extinguished.
48	Release FL key.	
49	Remove cords from trunk circuit TS jack, "A" lead terminal.	
50	Disconnect handset from connector.	
51	Unless further tests are to be made— Remove all cords, restore all keys when tests are completed.	

B. Operation Test of 2-Way Trunks for Coin Service

- 6 Determine from office records the type of class-of-service tones, or no tone provided.

Note: Where two class-of-service tones are provided, also determine which tone should be heard when direct ground and when resistance ground is connected to the "A" lead.

- 7 At test set—
Operate CBT LP key.

- 8 Insert 310 plug of P3E cord into test jack TST of coin control trunk associated with trunk under test.

BSY lamp not lighted.

Note: If BSY lamp is lighted, remove plug from test jack and proceed to another trunk.

- 9 Operate test set CN key.

- 10a If testing circuits requiring resistance ground on "A" lead—
Connect 624B (sleeve) tool of W3M cord to "A" lead, punching 25, on coin control trunk circuit unit terminal strip B.

- 11 Operate test set MI key.

- 12b If testing circuits requiring direct ground on "A" lead—
Connect 624B (ring) tool to "A" lead, punching

STEP	ACTION	VERIFICATION
	25, on coin control trunk circuit unit terminal strip B.	
13	Operate test set T key.	
14	Operate, restore DL ST key.	SL lamp lighted. Audible ringing heard in receiver.
15	At switchboard— Call answered.	At test set— Audible ringing silenced. Where initial coin-return feature is provided— CR lamp momentarily lighted. If office is arranged for "dial tone first"— CTCK lamp also momentarily lighted. At switchboard— Proper class-of-service tone heard.♦
16	At switchboard— Remove, reinsert plug in trunk jack.	Class-of-service tone again heard.
17	At test set— Operate test set FL key for at least 1 second.	SL lamp remains lighted. At switchboard— Cord lamp extinguished.
18	At test set— Restore FL key.	At switchboard— Cord lamp relighted.
19	At test set— Momentarily operate test set FL key several times.	SL lamp remains lighted. At switchboard— Cord lamp flashes.
20	At test set— Operate RR key.	
21	At switchboard— Momentarily ring back on line.	At test set— RR lamp lighted while ringing current is applied.
22	Restore RR key.	
23	At switchboard— Ring back on line when disconnect signal is received.	
24	At test set— Operate RR key.	
25	Operate, hold operated FL key.	RR lamp lighted while ringing current is applied.
26	Restore FL, RR keys.	

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STEP	ACTION	VERIFICATION
27	At switchboard— Momentarily operate CC (coin collect) key when disconnect signal is received.	
28	At test set— Operate ID key.	
29	Operate, hold operated FL key.	
30	Restore, reoperate CN key while holding FL key operated.	◆At test set— CC lamp lighted when coin-collect current is applied. <i>Note:</i> REV lamp may flash.◆
31	Restore FL key.	
32	At switchboard— Momentarily operate CR (coin return) key when disconnect signal is received.	
33	Operate, hold operated FL key.	
34	Restore, reoperate CN key while holding FL key operated.	◆At test set— CR lamp lighted while coin-return current is applied. If office is arranged for "dial tone first"— CTCK lamp also momentarily lighted. REV lamp flashes once.◆
35	Restore FL key.	
36	Restore, reoperate CN key.	
37	At switchboard— Momentarily operate CR (coin return) key.	◆At test set— CR lamp lighted while coin-return current is applied. If office is arranged for "dial tone first"— CTCK lamp also momentarily lighted. REV flashes once.◆
38	At switchboard— Momentarily operate CC (coin collect) key.	At test set— CC lamp lighted while coin-collect current is applied.
39d	If office telephone is available in local office— At switchboard— Connect calling cord to next idle trunk jack.	◆ <i>Note:</i> REV lamp may flash.◆
40d	Dial digits to call office phone.	At test set— Dial pulses not heard in test receiver. Audible ringing induction heard in receiver.

STEP	ACTION	VERIFICATION
		At switchboard— When call is answered— Audible ringing ceases. Transmission satisfactory. Calling cord lamp extinguished.
41d	At test set— Operate, restore FL key several times.	REV lamp flashes. SL lamp remains lighted. At switchboard— Cord lamp flashes.
42d	At called telephone— Operate switchhook several times.	At switchboard— Cord lamp flashes in unison with switchhook.
43d	At switchboard— Momentarily disconnect from called telephone jack.	
44d	Redial number.	Busy indication received at cord lamp or operator headset.
45d	At switchboard— Operate key to disconnect from line for a few seconds.	At test set— Busy tone heard while switchboard key is closed.
46d	At test set— Hang up office phone.	
47d	At switchboard— Remove cord from called telephone jack.	
48d	At test set— Proceed to Step 58.	
49e	If office telephone is not available in local office— At switchboard— Connect calling cord to next idle trunk jack.	
50e	Dial digits to call test line.	At test set— Dial pulses not heard in test receiver. Audible ringing induction heard in receiver. At switchboard— When test line is seized— Cord lamp lighted. Audible ringing silenced. Tone heard. Cord lamp flashes intermittently.
51e	At switchboard— Disconnect cord used to dial test line.	Cord lamp extinguished.

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STEP	ACTION	VERIFICATION
52e	At local connector frame— Connect handset to idle connector.	
53e	Dial test line terminal.	
54e	At switchboard— Reconnect cord to idle trunk jack.	
55e	Dial test line.	Busy indication received at cord lamp or operator headset.
56e	At test set— Momentarily operate FL key several times.	At switchboard— Cord lamp flashes. Call answered.
57e	At switchboard— Cord used to call test line disconnected.	At test set— SL lamp remains lighted.
58	At test set— Make busy all trunks in group being tested.	
59	At switchboard— Reconnect cord to trunk jack.	
60	Dial test line.	All-trunks-busy indication received by switchboard.
61	At test set— Remove busy condition from all trunks.	
62	At switchboard— Disconnect when disconnect signal is received.	
63	At test set— Operate, hold operated FL key.	At switchboard— Disconnect is made. At test set— SL lamp extinguished.
64	Release FL key.	
65	Remove cords from trunk circuit TS jack, "A" lead terminal.	
66	Disconnect handset from connector.	Connector releases.
67	Unless further tests are to be made— Remove all cords, restore all keys.	