

**RECORDING-COMPLETING TRUNKS**  
**COIN AND NONCOIN**  
**OPERATION 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 2-wire subscriber recording-completing trunks and subscriber recording-completing trunks arranged for inband method of signaling in step-by-step offices and 3-wire recording-completing trunks in toll offices incoming from step-by-step offices, using trunk test set SD-90469-01 or SD-90469-02.

**1.02** This section is reissued to delete using the RCK key in Test C. Other minor corrections are made in the text. This reissue does not affect the Equipment Test List.

**1.03** The test covered are:

**A. Class-of-Service Tone Test—Coin and Noncoin Service:** This test checks that the operator receives a class-of-service tone indicating either coin or noncoin service. . . . . **3**

**B. Operation Test of Subscriber Recording-Completing Trunks—Noncoin Service:** This test checks the overall operation and 2-way signaling of operator trunks using either inband or other than inband method of signaling. . . . . **6**

**C. Operating Test of Subscriber Recording-Completing Trunks—Coin Service:** This test checks the overall operation and 2-way signaling of operator trunks using either inband or other than inband method of signaling. Coin collect, coin return, and rering features are also tested. . . . . **7**

**1.04** Actions and verifications will be required at the distant switchboard and at the test position.

**1.05** When testing coin recording completing 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 is used.

**1.06** Where last trunk-busy registers are used in connection with recording-completing trunks, registrations caused by these tests should be reported to the traffic department.

**1.07** 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.

**1.08 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.

**PAGE**

**SECTION 226-524-502**

**2. APPARATUS**

**All Tests**

- 2.01** Trunk test set J94710A (SD-90469-01 or SD-90469-02).
- 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 in connecting battery and ground to test set when battery and ground jack is available).
- 2.04** Testing cord, W2M cord, 9 feet long, equipped with a 310 plug (tip and sleeve connected), two 59 and two 90 cord tips (2W12A cord) [for use in connecting battery and ground to test set when a 35-type fuse (not to exceed 5 amperes) and frame ground, or battery and ground block is used].

- 2.05** Patching cord, P3E cord, 10 feet long, equipped with two 310 plugs (3P6F cord) (used when trunk test jacks are provided).
- 2.06** Patching cord, P3H cord, 10 feet long, equipped with a 310 plug and a 240A plug (3P2A cord) (used when trunk test jacks are not provided).
- 2.07** Testing cord, W3M cord, 15 feet long, equipped with a 310 plug and 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).
- 2.08** Testing cord, W1B cord, 10 feet long, equipped with a 310 plug and one KS-6780 connecting clip with one 108 cord tip (1W5A cord) (for class-of-service tone test).

**3. PREPARATION**

STEP	ACTION	VERIFICATION
------	--------	--------------

**All Tests**

- 1 Connect test set BAT-G jack to 48V battery supply.  
  
*Note 1:* If using W2M cord, connect white (tip) conductor to battery, red (sleeve) conductor to ground.  
  
*Note 2:* To avoid possible grounding of battery supply lead, connect cord to test set first and, when disconnecting, remove from test set last.
- 2 Connect headset to test set TEL jacks.
- 3 Operate test set TRS key.
- 4a If testing trunks arranged for inband signaling method—  
Insert plug of P3E cord into test set T jack.
- 5b If testing trunk *not* arranged for inband signaling method and equipped with trunk test jacks—  
Insert plug of P3E cord into test set T jack.

STEP	ACTION	VERIFICATION
6c	If testing trunks <i>not</i> arranged for inband signaling method and <i>not</i> equipped with trunk test jacks— Insert 310 plug of P3H cord into test set T jack.	
<b>Test A</b>		
7	Determine from office records type of class-of-service tone or tones required.  <i>Note:</i> Where two class-of-service tones are provided, also determine which tone should be heard when direct ground or when resistance ground is connected to the A lead.	
8d	If testing class-of-service tones on trunks arranged for inband signaling method— Insert plug of W3M cord into test set TL jack.	
9e	If testing class-of-service tones on trunks <i>not</i> arranged for inband signaling method— Insert plug of W1B cord into test set TL jack.	

#### 4. METHOD

##### A. Class-of-Service Tone Test—Coin and Noncoin Service

###### Inband Method of Signaling

10	Connect 624B (sleeve) tool of W3M cord to lead A, punching 15 on coin control trunk circuit unit terminal strip A.	
11	At test set— Operate MI key.	
12	Operate LP key, or CBT LP, CN keys where required.	
13	Insert other plug of P3E cord into TS jack of coin control jack associated with trunk under test.	At test set— BSY lamp not lighted.  <i>Note:</i> If BSY lamp is lighted, remove plug from test jack and proceed to another trunk.
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—

**SECTION 226-524-502**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
		Class-of-service tone corresponding to resistance ground heard.
16	Remove, reinsert plug into jack.	Class-of-service tone again heard.
17	At test set— Restore MI key.	
18	Remove 624B tool from lead A terminal.	
19	Connect 624B tool (ring) to lead A terminal.	
20	Operate T key.	
21	At switchboard— Remove, reinsert plug into jack.	Class-of-service tone corresponding to direct ground heard.
22	At test set— Restore T key.	
23	At switchboard— Remove, reinsert plug into test jack.	No class-of-service tone heard.
24f	If noncoin trunk operation tests are to be made— Proceed to Test B, Step 15d.	
25g	If coin trunk operation tests are to be made— Proceed to Test C, Step 18.	
26	At test set— Remove all cords and restore all keys unless other tests are to be made.	At test set— All lamps extinguished.

**Other Than Inband Method of Signaling**

27h	If trunk under test is equipped with test jack— Connect KS-6780 connecting clip of W1B cord to lead A punching on terminal strip of unit under test.	
28h	At test set— Operate T key.	
29h	Operate LP key.	
30h	Insert plug of P3E cord into test jack of trunk under test.	BSY lamp not lighted.  <b>Note:</b> If BSY lamp is lighted, remove plug from test jack and proceed to another trunk.

STEP	ACTION	VERIFICATION
31h	At test set— Momentarily operate DL ST key.	SL lamp lighted. Audible ringing heard in receiver.
32i	If trunk under test is not equipped with test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunk under test.	
33i	At test set— Momentarily operate DL ST key.	SL lamp lighted.
34i	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.
35	At switchboard— Call answered.	Audible ringing silenced. At switchboard— Class-of-service tone corresponding to direct ground heard.
36	Remove, reinsert plug into jack.	Class-of-service tone again heard.
37	At test set— Restore T key.	
38	At switchboard— Remove, reinsert plug into jack.	No class-of-service tone heard.
39f	If noncoin trunk operation tests are to be made— Proceed to Test B, Step 15d.	
40g	If coin trunk operation tests are to be made— Proceed to Test C, Step 18.	
41	At test set— Remove cord from trunk or selector jack unless other tests are to be made.	
	<b>Note:</b> To test succeeding trunks from selector, remove switch cover, restore LP key, and operated DL ST key. When SL lamp lights, dial selector level again. When selector stops, immediately step switch to trunk to be tested by opening and closing off-normal springs the required number of times. SL lamp may extinguish but will relight.	
42	At test set— Remove all cords, restore all keys, and replace switch cover unless other tests are to be made.	At test set— All lamps extinguished.

SECTION 226-524-502

STEP	ACTION	VERIFICATION
<b>B. Operation Test of Subscriber Recording-Completing Trunks—Noncoin Service</b>		
7	At test set— Operate LP key.	
8a	If testing trunks arranged for in-band signaling method— Insert other plug of P3E cord into TS test jack of coin control trunk associated with trunk under test.	At test set— BSY lamp not lighted.  <b>Note:</b> If BSY lamp is lighted, remove plug from test jack and proceed to another trunk.
9b	If testing trunks <i>not</i> arranged for inband signaling method and equipped with trunk test jacks— Insert other plug of P3E cord into test jack of trunk under test.	BSY lamp not lighted. (See note, Step 8a.)
10	At test set— Momentarily operate DL ST key.	SL lamp lighted. Audible ringing heard in receiver.
11c	If testing trunk <i>not</i> arranged for inband signaling method and <i>not</i> equipped with trunk test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunk under test.	
12c	At test set— Momentarily operate DL ST key.	SL lamp lighted.
13c	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.
14	At switchboard— Call answered.	Audible ringing silenced.
15d	If testing trunks in offices having subscriber loops of 1200 ohms or more— Operate 600 key.	
16	At test set— Operate FL key for at least 1 second.	SL lamp remains lighted. At switchboard— Cord lamp lighted.
17	Restore FL key.	Cord lamp extinguished.
18	Momentarily operate FL key several times.	Cord lamp flashes. At test set— SL lamp remains lighted.

STEP	ACTION	VERIFICATION
19d	If testing trunks in offices having subscriber loops of 1200 ohms or more— Restore 600 key.	
20	At switchboard— Momentarily ring back on trunk under test.	
21	At test set— Operate RR key while ringing is applied.	RR lamp lighted while ringing current applied. Disregard flickering of REV lamp if lighted.
22	Restore RR key.	
23	At switchboard— Disconnect when disconnect signal received.	
24	At test set— Operate, hold operated FL key.	At switchboard— Disconnect signal received. At test set— SL lamp extinguished when switchboard disconnects.
25	Remove cord from trunk or selector jack unless other tests are to be made.  <i>Note:</i> To test succeeding trunks from selector, remove switch cover, restore LP key, and operate DL ST key. When SL lamp lights, dial selector level again. When selector stops, immediately step switch to trunk to be tested by opening and closing off-normal springs the required number of times. SL lamp may extinguish but will relight.	
26	Remove all cords, restore all keys, and replace switch cover unless other tests are to be made.	

**C. Operation Test of Subscriber Recording-Completing Trunks—Coin Service**

7a	If testing trunks arranged for inband signaling method— Insert other plug of P3E cord into TS test jack of coin control trunk associated with trunk under test.	At test set— BSY lamp not lighted.  <i>Note:</i> If BSY lamp is lighted, remove plug from test jack and proceeded to another trunk.
8b	If testing trunks <i>not</i> arranged for inband signaling method and equipped with trunk test jacks—	BSY lamp not lighted. (See note, Step 7a.)

SECTION 226-524-502

STEP	ACTION	VERIFICATION
	Insert other plug of P3E cord into test jack of trunk under test.	
9	◆ At test set— Operate CN, CBT LP keys.◆	
10d	If testing trunks in offices having subscriber loops of 1200 ohms or more— Operate 300 key.	
11	Momentarily operate DL ST key.	SL lamp lighted. Audible ringing heard in receiver.
12c	If testing trunks <i>not</i> arranged for inband signaling method and <i>not</i> equipped with trunk test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunk under test.	BSY lamp not lighted.  <i>Note:</i> If BSY lamp is lighted, remove plug from test jack and proceed to another trunk.
13c	◆ At test set— Operate CN, CBT LP keys.◆	
14d	If testing trunks in offices having subscriber loops of 1200 ohms or more— Operate 300 key.	
15c	If testing trunks <i>not</i> arranged for inband signaling method and <i>not</i> equipped with trunk test jacks— Momentarily operate DL ST key and remove cover from switch.	SL lamp lighted.
16c	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.
17	At switchboard— Call answered.	Audible ringing silenced. REV lamp lighted. Where initial coin-return provided— CR lamp lighted momentarily. If office is arranged for "dial tone first"— CTCK lamp also momentarily lighted. REV lamp flashes once.
18	At test set— Restore CN key, operate FL key for at least 1 second.	At switchboard— REV lamp extinguished while key is operated. Cord lamp lighted while key is operated. At test set— SL lamp remains lighted.
19	Momentarily operate FL key several times.	At switchboard— Cord lamp flashes.

STEP	ACTION	VERIFICATION
		At test set— SL lamp remains lighted. REV lamp flashes.
20e	If coin control is through coin-control selector— Operate ID key.	
21	Operate RR key.	
22	At switchboard— Momentarily ring back on line.	RR lamp lighted while ringing current applied. REV lamp may flash intermittently but disregard.
23	At test set— Restore RR key, ID key if used.	
24	At switchboard— Ring back on line when disconnect signal received.	
25	At test set— While holding FL key operated, operate RR key.	RR lamp lighted while ringing current applied. REV lamp may flash but disregard.
26	Restore FL, RR keys.	
27	Operate CN key.	
28	At switchboard— Collect coin when disconnect signal received.	If office is arranged for "dial tone first"— CC lamp momentarily lighted.  <i>Note:</i> REV lamp may flash.
29e	If coin control is through coin-control selector— At test set— Operate ID key.	
30	While holding FL key operated, momentarily restore CN key.	CC lamp lighted when coin-collect current applied. REV lamp may flash but disregard.
31	Restore FL key.	
32	At switchboard— Return coin when disconnect signal received.	If office is arranged for "dial tone first"— CR and CTCK lamps momentarily lighted. REV lamp flashes once.
33	At test set— While holding FL key operated, momentarily restore CN key.	CR lamp lighted while coin-return current applied. REV lamp may flash but disregard.
34	Restore FL key.	

SECTION 226-524-502

STEP	ACTION	VERIFICATION
35	Momentarily restore CN key.	
36	At switchboard— Return coin.	CR lamp lighted while coin-return current applied. REV lamp may flicker but disregard. If office is arranged for dial tone first— CR and CTCK lamps momentarily lighted. REV lamp flashes once.
37	Collect coin.	CC lamp lighted while coin-collect current applied. If office is arranged for "dial tone first"— CC lamp momentarily lighted.  <i>Note:</i> REV lamp may flash.
38	Disconnect when disconnect signal received.	
39	At test set— Restore CN key, 300 key if operated.	
40	Operate, hold operated FL key.	At switchboard— Operator disconnects. At test set— SL, REV lamps extinguished.
41	Remove cord from trunk or selector jack unless other tests <i>are</i> to be made.  <i>Note:</i> To test succeeding trunks from selector, remove switch cover, restore LP key, and operate DL ST key. When SL lamp lights, dial selector level again. When selector stops, immediately step switch to trunk to be tested by opening and closing off-normal springs the required number of times. SL lamp may extinguish but will relight.	
42	Remove all cords, restore all keys, and replace switch cover when tests are completed.	