

RECORDING-COMPLETING TRUNKS
OPERATION TEST
USING TEST SET SD-31858-01 (J34701A)
STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes methods of testing subscriber recording-completing trunks (including AEC0 CLR trunks) in 355A and 35-E-97 community dial offices.

1.02 This section is reissued to update Test C to include a method of testing coin recording completing trunks in offices arranged for "dial tone first" prepay coin lines. This reissue does not affect the Equipment Test List.

1.03 The tests covered are:

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

3

B. Operation Test of Recording—Completing Trunk for Noncoin Service: This test checks the over-all operation of the trunk including signaling to and from an operator.

7

C. Operation Tests of Recording—Completing Trunks for Coin Service: This test checks the over-all operation of the trunk, including signaling to and from the operator and provides a test of the rering features and coin collector and coin return features.

8

D. Make-Busy Feature Test—Coin and Noncoin Trunks: This test checks that a trunk is made busy when its associated fuse operates.

11

1.04 Coin recording-completing trunks equipped for inband method of coin control may, in some cases, also complete noncoin traffic over the same trunk group using a class-of-service tone to distinguish the two types of service.

1.05 Action and verification will be required at the distant switchboard and at the test position.

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

1.07 Test B or C may be made at the same time as Test A.

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 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 3 or 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.

SECTION 226-524-503

2. APPARATUS

Test A, B, or C

- 2.01 Test set J34701A (SD-31858-01).
- 2.02 Head telephone set (associated with test set).
- 2.03 Patching cord, P3H cord, 10 feet long, equipped with a 310 plug and a 240A plug (3P2A cord) (for use when trunks are provided with AECO type test jack or where test jacks are not provided on trunks).
- 2.04 Patching cords, two P3E cords, 6 feet long, each equipped with two 310 plugs (3P7A cord) (one for use where battery jack is used to supply battery and ground to test set).
- 2.05 Testing cord, W2M cord, 9 feet long, equipped with a 310 plug and two 59 cord tips (tip and sleeve connected) (2W12A cord) (for use when spare 35-type fuse, not to exceed 5 amperes, or

battery and ground block is used to supply battery and ground to test set).

Test A

- 2.06 Testing cord, W2W cord, 6 feet long, equipped with a 310 plug, a 360B and a 360C tool, and a 624B tool (ring connected) (2W17A cord) (for one and two classes-of-service tone tests).
- 2.07 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 tests).

Test D

- 2.08 Test receiver, 716C receiver attached to a W2AB cord equipped with two 360A tools (2W21A cord), one KS-6278 connecting clip, and one 411A tool.
- 2.09 258D (make-busy) plug, or 477A (make busy) tool, as required.

3. PREPARATION

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

Tests A, B, and C

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

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

Note 2: When using W2W cord, connect red (sleeve) conductor of cord to frame ground, white (tip) conductor to battery.
- 2 At test set—
Connect head telephone set to TEL jacks, operate TRS key.
- 3a If testing trunks arranged for inband method of signaling—
Insert 310 plug of P3E cord into test set T jack.
- 4b If testing trunks *not* arranged for inband method of signaling—

STEP	ACTION	VERIFICATION
	Insert 310 plug of P3E, or P3H (AEC Co trunks) cord into test set T jack.	
5c	If testing trunks not equipped with test jacks— Insert 310 plug of P3H cord into test set T jack.	
Test A		
6	Determine from office records type of class-of-service tone, tones, or no 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.	
7d	If testing class-of-service tones on trunks arranged for inband method of signaling— Insert 310 plug of W3W cord into test set CL jack.	
8e	If testing class-of-service tones on trunks <i>not</i> arranged for inband method of signaling— Insert 310 plug of W1B cord into test set CL jack.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Class-of-Service Tone Test—Coin and Noncoin		
Trunks Using Inband Method of Signaling		
9	Connect 624B tool of W3W cord to A lead, punching 15 on coin control trunk circuit unit terminal strip A.	
10	At test set— For noncoin trunks, operate LP, 600 keys.	
11	For coin trunks, operate CBT LP, 300 keys.	
12f	If testing 2-tone class-of-service tone— Operate BY key.	
13g	If testing single class-of-service tone— Operate BY, PTR, (or NTR) keys.	

SECTION 226-524-503

STEP	ACTION	VERIFICATION
14	Connect free end of P3E cord to TS jack of coin control trunk associated with trunk under test.	At test set— BSY lamp not lighted.
		<i>Note:</i> If BSY lamp lights, remove cord and proceed to another trunk.
15	At test set— Operate, restore DL ST key.	SL lamp lighted— Audible ringing heard in receiver. At switchboard— Trunk lamp lighted.
16f	If testing 2-tone class-of-service tone— At switchboard— Call answered.	Tone heard, corresponding to resistance ground condition. Trunk lamp extinguished. At test set— Audible ringing silenced.
17f	At test set— Operate TR key.	
18f	At switchboard— Remove, slowly reinsert plug into jack.	Same class-of-service tone again heard.
19f	At test set— Restore TR key, operate PTR (or NTR) key.	
20f	At switchboard— Remove, reinsert plug into jack.	Class-of-service tone heard, corresponding to direct ground condition.
21f	At test set— Restore BY key.	
22f	At switchboard— Remove, reinsert plug into jack.	No class-of-service tone heard.
23g	If testing single class-of-service tone— At switchboard— Call answered.	Trunk lamp extinguished. Tone heard corresponding to direct ground. At test set— Audible ringing silenced.
24g	At switchboard— Remove, slowly reinsert cord plug into trunk jack.	Same class-of-service tone again heard.
25g	At test set— Restore BY, PTR (or NTR) keys.	
26g	At switchboard— Remove, reinsert cord plug into trunk jack.	No class-of-service tone heard.

STEP	ACTION	VERIFICATION
27h	If noncoin trunk operation tests are to be made— Proceed to Test B, Step 14.	
28i	If coin trunk operation tests are to be made— Proceed to Test C, Step 8.	
29	Unless further tests are to be made— Remove all test cords, restore all keys.	
Trunk Using Other Than Inband Method of Signaling		
30	Connect KS-6780 clip of W1B cord to A lead punching on terminal strip of trunk under test.	
31	At test set— For noncoin trunks— Operate LP, 600 keys.	
32	For coin trunks, operate CBT LP, 300 keys.	
33f	If testing 2-tone class-of-service tone— Operate BY key.	
34g	If testing single class-of-service tone— Operate BY, PTR (or NTR key).	
35	Connect free end of P3E or P3H cord to test jack of trunk under test.	At test set— BSY lamp not lighted.
		Note: If BSY lamp lights, remove cord and proceed to another trunk.
36	At test set— Operate, restore DL ST key.	SL lamp lighted. Audible ringing heard in receiver. At switchboard— Trunk lamp lighted.
37c	If testing trunks not equipped with test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunks under test.	BSY lamp does not light.
		Note: If BSY lamp lights, remove plug and proceed to another selector.
38c	At test set— Operate, restore DL ST key, remove cover from switch.	SL lamp lighted.
39c	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.

SECTION 226-524-503

STEP	ACTION	VERIFICATION
40f	If testing 2-tone class-of-service tone— At switchboard— Call answered.	Tone heard, corresponding to resistance ground condition. Trunk lamp extinguished. At test set— Audible ringing silenced.
41f	At test set— Operate TP key.	
42f	At switchboard— Remove, slowly reinsert plug into jack.	Same class-of-service tone again heard.
43f	At test set— Restore TR key, operate NTR (or PTR) key.	
44f	At switchboard— Remove, reinsert plug into jack.	Class-of-service tone heard, corresponding to direct ground condition.
45f	At test set— Restore BY key.	
46f	At switchboard— Remove, reinsert plug into jack.	No class-of-service tone heard.
47g	If testing class-of-service-tone— At switchboard— Call answered.	Trunk lamp extinguished. Tone heard corresponding to direct ground. At test set— Audible ringing silenced.
48g	At switchboard— Remove, slowly reinsert cord plug into trunk jack.	Same class-of-service tone again heard.
49g	At test set— Restore BY, NTR (or PTR) keys.	
50g	At switchboard— Remove, reinsert cord plug into trunk jack.	No class-of-service tone heard.
51h	If noncoin trunk operation tests are to be made— Proceed to Test B, Step 14.	
52i	If coin trunk operation trunks are to be made— Proceed to Test C, Step 8.	
53	Unless further tests are to be made— Remove all test cords, restore all keys.	

STEP	ACTION	VERIFICATION
B. Operation Test of Recording—Completing Trunks for Noncoin Service		
6	At test set— Operate LP key.	
7a	If testing trunks arranged for inband method of signaling— Connect free end of P3E cord into TS jack of coin control trunk associated with trunk under test.	At test set— BSY lamp not lighted. Note: If BSY lamp lights, remove cord and proceed to another trunk.
8b	If testing trunks <i>not</i> arranged for inband method of signaling— Connect free end of P3E or P3H cord into test jack of trunk to be tested.	At test set— BSY lamp not lighted. Note: If BSY lamp lights, remove cord and proceed to another trunk.
9	At test set— Operate, restore DL ST key.	SL lamp lighted. Audible ringing heard in receiver. At switchboard— Trunk lamp lighted.
10c	If testing trunks not equipped with test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunks under test.	Note: If BSY lamp is lighted, remove plug and proceed to another selector.
11c	At test set— Operate, restore DL ST key.	SL lamp lighted.
12c	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.
13	At switchboard— Call answered.	At test set— Audible ringing silenced. REV lamp lighted. Note: For certain AECo trunks, the REV lamp will not light.
14f	If testing trunks in offices having subscriber loops of 1200 ohms or more— Operate test set 600 key.	
15	At test set— Operate FL key for at least 1 second, restore.	ST lamp remains lighted. At switchboard— Cord lamp lighted, extinguished.

SECTION 226-524-503

STEP	ACTION	VERIFICATION
16	Operate. release FL key several times.	At switchboard— Cord lamp flashes. SL lamp remains lighted.
17	At switchboard— Ring back on trunk under test.	
18	At test set— Operate RR key.	RR lamp lighted while ringing current is applied. Note: If REV lamp flickers, disregard.
19	Restore RR key.	
20	At switchboard— Disconnect when disconnect signal is received.	
21	At test set— Operate, hold operated FL key.	At switchboard— Disconnect made when signal is received. At test set— SL lamp extinguished.
22	Release FL key.	
23	Remove cord from trunk test jack or selector test jack. Note: To test succeeding trunks from selector, remove switch cover, restore LP key, 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 the off-normal springs the required number of times. SL lamp may extinguish, but will relight.	
24	Unless other tests are to be made— Remove remaining cords, restore test set keys to normal.	

C. Operation Test of Recording—Completing Trunks for Coin Service

1	At test set— Operate CBT LP key.	
2a	If testing trunks arranged for inband method of signaling— Connect free end of P3E cord into TS jack of coin control trunk associated with trunk under test.	At test set— BSY lamp not lighted. Note: If BSY lamp lights, remove cord and proceed to another trunk.

STEP	ACTION	VERIFICATION
3b	If testing trunks <i>not</i> arranged for inband method of signaling— Connect free end of P3E or P3H cord into test jack of trunk to be tested.	At test set— BSY lamp not lighted. <i>Note:</i> If BSY lamp lights, remove cord and proceed to another trunk.
4	Operate, restore DL ST key.	SL lamp lighted. Audible ringing heard in receiver. At switchboard— Trunk lamp lighted.
5c	If testing trunks not equipped with test jacks— Insert 240A plug of P3H cord into test jack of selector having access to trunks under test.	BSY lamp does not light. <i>Note:</i> If BSY lamp lights, remove plug and proceed to another selector.
6c	At test set— Operate, restore DL ST key.	SL lamp lighted.
7c	Dial level on which trunks to be tested appear.	Selector steps to level dialed, rotates to first idle trunk. Audible ringing heard in receiver.
8	At switchboard— Call answered.	At test set— Audible ringing silenced. REV lamp lighted. CR lamp lighted momentarily where initial coin return feature is provided. ▶REV lamp may be momentarily extinguished.◀ <i>Note:</i> For certain AECO trunks, the REV lamp will not light.
9d	If testing trunks in offices having coin subscriber loops of 1200 ohms or more— Operate test set key 300.	
10	At test set— Operate FL key for at least 1 second; restore.	SL lamp remains lighted. At switchboard— Cord lamp lighted, extinguished.
11	At test set— Operate, release FL key several times.	Cord lamp flashes. At test set— SL lamp remains lighted.
12	Operate ON key.	
13	Operate RR, ID keys.	
14	At switchboard— Ring back on line momentarily.	At test set— RR lamp lighted while ringing current is

SECTION 226-524-503

STEP	ACTION	VERIFICATION
		applied. REV lamp may flash, but disregard.
15	Restore RR, ID keys.	
16	At switchboard— When disconnect signal is received, ring back on line.	
17	At test set— Operate, hold FL key; then operate RR key.	RR lamp lighted while ringing current is applied. <i>Note:</i> REV lamp may flash, but disregard.
18	Restore FL, RR keys.	
19g	◆If testing trunks arranged to apply coin potential on the tip with the ring side open— Operate the RCK key. <i>Note:</i> If ring side of line is closed through in the trunk during application of coin potential in Steps 22, 25, 28, or 29, the CC and CR lamps will flash alternately.◆	
20	At switchboard— When disconnect signal is received, collect coin.	
21	At test set— Operate ID key.	
22	Operate, hold operated FL key; restore, reoperate CN key while holding FL key operated.	CC lamp lighted while coin collect current is applied. REV lamp may flash, but disregard. At switchboard— Connect collect (low) tone heard, if provided.
23	Restore FL key.	
24	At switchboard— When disconnect signal is received, return coin.	
25	At test set— Operate, hold operated FL key; restore, reoperate CN key while holding FL key operated.	CR lamp lighted while coin return current is applied. REV lamp may flash, but disregard. At switchboard— Coin return (high) tone heard if provided.
26	Restore FL key.	

STEP	ACTION	VERIFICATION
27	Restore, reoperate CN key.	
28	At switchboard— Return coin.	At test set— CR lamp lighted while coin current is applied. REV lamp may flash, but disregard.
29	At switchboard— Collect coin.	At test set— CC lamp lighted while coin current is applied. REV lamp may flash, but disregard.
30	At switchboard— Disconnect when disconnect signal is received.	
32	Operate, hold FL key.	At switchboard— Disconnect made when signal is received. At test set— SL lamp extinguished.
33	Release FL key.	
34	Remove cord from trunk test jack or selector test jack. <i>Note:</i> To test succeeding trunks from selector, remove switch cover; restore CBT LP key; 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 the off-normal springs the required number of times. SL lamp may extinguish but will relight.	
35	Unless other tests are to be made— Remove remaining cords, restore test set key to normal.	

D. Make-Busy Feature Test—Coin and Noncoin Trunks

- | | | |
|---|--|----------------------------------|
| 1 | Connect KS-6278 connecting clip associated with test receiver to equipment side of spare battery fuse (not to exceed 5 amperes in any case). | |
| 2 | Connect test pick momentarily to sleeve of trunk to be tested. | No click heard in test receiver. |

Caution: To avoid the effects of resultant clicks when using a test receiver, the receiver should not be placed directly over the ear.

SECTION 226-524-503

STEP	ACTION	VERIFICATION
	<i>Note:</i> If click is heard, delay test until trunk is idle.	
3f	If no click was heard in Step 2— Insert make-busy plug, or tool into test jack immediately.	
4	Remove -48V battery fuse of trunk under test, then remove make-busy plug or tool from test jack.	
5	Connect test pick to sleeve of trunk momentarily.	Click heard in test receiver. <i>Caution: If no click is heard, immediately replace make-busy plug or tool in trunk jack.</i>
6g	If trunk is arranged to work with dial-tone-first prepay coin service— Remove +48V battery fuse.	
7	Replace -48V battery fuse.	
8g	Momentarily touch test pick to sleeve of trunk.	Click heard in test receiver. <i>Caution: If no click is heard, immediately replace make-busy plug or tool in trunk jack.</i>
9g	Replace +48V battery fuse.	
10	Repeat Steps 2 through 9g for other trunks to be tested.	
11h	If no further tests are to be performed— Disconnect test receiver.	