

**LINE CIRCUIT SD-28040-01**  
**TESTS USING MASTER TEST FRAME**  
**NO. 5 CROSSBAR OFFICES ARRANGED**  
**FOR AUTOMATIC CALL DISTRIBUTION**

**1. GENERAL**

**PAGE**

**1.01** ♦ This section describes a method of testing line circuit SD-28040-01 using the master test frame (MTF) in No. 5 crossbar offices arranged for automatic call distribution (ACD).♦

**1.02** The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. The Equipment Test Lists are affected.

- (a) To revise title to conform with standards
- (b) To add scope of document in paragraph 1.01
- (c) To add Tests J and K for testing the auxiliary line circuits provided for use with the No. 2A Directory Assistance System/Computer (2ADAS/C)
- (d) To add Test L for testing the emergency announcement features
- (e) To identify TOUCH-TONE® calling as a service mark per standards
- (f) To revise steps at the end of tests to conditionally restore switches operated during test, if no other tests are to be performed
- (g) To remove the operation of ACDL key in Test H which is no longer required.
- (h) To make miscellaneous minor changes as required.

**1.03** The tests covered are:

- A. Line Circuit Seizure With Customer and Operator Disconnect Supervision Features:** This test checks for seizure for the line circuit and subsequent release under operator or customer control. . . . . **4**
- B. Permanent Signal Alarm and Line Lockout Features:** This test checks for the release and lockout of a line circuit held under customer control following operator release. This test also checks for visual and audible alarm indications initiated after a specific period of time has elapsed. . . . . **6**
- C. Line Circuit Reseizure Test:**  
This test checks that a new call may not be attempted until the sleeve lead is cleared from a previous call. . . . . **7**
- D. Single Frequency Timer Feature:** This test checks the single frequency timer (SFT) operation and length of operating time. . . . . **8**
- E. Ringing Tone Feature (Option R):** This test checks that ringing tone is heard when completion of a service call is delayed and is silenced when call linkage is set up. . . . . **10**
- F. Voice Announcement Feature:**  
This test checks that the "origin of call" announcement is heard at the called end but is not heard at the calling end of the line circuit. . . . . **11**
- G. Call Transfer:** This test checks that the operator may transfer a call

**PAGE**

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	<b>PAGE</b>
to another operator, the calling customer may be excluded from and connected into the conversation under control of the first operator, and the second operator may retransfer the call. . . . .	12
<b>H. Wink Timer Test:</b> This test checks the wink timer (WKR) operation. . . . .	13
<b>I. M Lead Diode Test:</b> This test checks the M lead diode for opens and shorts when the M diode is provided. . . . .	14
<b>J. Auxiliary Line Circuit Test:</b> This test checks that a test call can be transferred to an announcement facility provided with the 2ADAS/C feature. . . . .	16
<b>K. Reconnection to Attendant After Announcement Test:</b> This test checks that a service call can be transferred to the announcement facility provided by the 2ADAS/C feature, and then be reconnected to an attendant. . . . .	17
<b>L. Emergency Announcement Control Circuit Test:</b> This test checks that an emergency announcement may be transmitted to a customer appearance under key control of the traffic coordinator. It also checks that an announcement system failure, during application of the emergency announcement, will cause a major alarm and audible ringing will be transmitted to the customer appearance. . . . .	17
<b>1.04</b> Tests A through L require outgoing information trunks from distant offices be removed from service.	
<b>1.05</b> Before performing Tests D and H, the timing test set SD-25707-01 (J24753A) should be calibrated according to instructions in Section 100-130-101.	
<b>1.06</b> Tests A, B, C, E, F, and G require actions at the MTF and line circuit and verifications at the MTF.	
<b>1.07</b> Test D requires actions at the MTF, line circuit, and test set for timing tests and verifications at the MTF and test set for timing tests.	

<b>1.08</b> Test K requires a call to an ACD operator. To prevent interference with service calls, this test should be performed during light traffic.
<b>1.09</b> Test L may interfere with the application of audible ringing for customers connected to line circuits mounted on the same relay rack frame as the line circuit under test. To reduce the possible interference with service, this test should be performed during light traffic.
<b>1.07 Lettered Steps:</b> 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.

**2. APPARATUS**

**Tests A Through H, J, K, and L**

- 2.01** Master test control circuit, SD-25800-01.
- 2.02** Trunk test circuit, SD-25918-01.
- 2.03** Patching cord, P3E cord, 8 feet long, equipped with two 310 plugs [(3P6E cord or equivalent) for patching between line circuits and trunk test circuit jacks].

**Test A**

- 2.04** 67C test set or equivalent.

**Test B**

- 2.05** KS-3008 stopwatch or equivalent.

**Test D, H**

- 2.06** Timing test set, J24753A (SD-25707-01).

**Tests E and L**

- 2.07** Blocking and insulating tools. Use tools and apply as covered in Section 069-020-801.

**Test E**

- 2.08** 1020A headset or equivalent.

**Test G**

**2.09** One 1014A dial hand test set (handset) or equivalent equipped with a 2W38A cord assembly consisting of one 471A jack and one 310 plug.

**Test I**

**2.10** KS-14510 L1 volt-ohm-milliammeter (VOM) or equivalent.

**3. PREPARATION**

STEP	ACTION	VERIFICATION
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**All Tests**

- |   |   |                         |
|---|---|-------------------------|
| 1 | At MTF—<br>Restore all keys and switches.   |                         |
| 2 | Momentarily operate RL key.   | All lamps extinguished. |
| 3 | Request that associated outgoing information trunk circuit be removed from service at distant office. |                         |

**All Tests Except Test I**

- |    |  |  |
|----|--|--|
| 4a | If reverse battery or high-low supervision is provided—<br>At line circuit—<br>Patch T1 jack of line circuit to the ITT jack of the incoming trunk test (ITT) multiple at the miscellaneous circuit for relay racks.   |  |
| 5b | If E and M supervision is provided—<br>At line circuit—<br>Patch T1, T2 jacks of line circuit to T1, T2 jacks of toll trunk test multiple at miscellaneous circuit for relay racks.                                    |  |
| 6b | At MTF—<br>Operate OEM, ACDL keys.   |  |
| 7c | If line circuit under test is arranged for reverse battery supervision and arranged for short-loop compensating resistance (1000-ohm resistors in tip and ring conductors)—<br>At MTF—<br>Operate COMP, BLA, SLP keys. |  |

STEP	ACTION	VERIFICATION
8d	If line circuit under test is arranged for reverse battery supervision but <b>not</b> arranged for short-loop compensating resistance (1000-ohm resistors <b>not</b> in tip and ring conductors)— At MTF— Operate LLP key to simulate maximum loop conditions.	
9e	If reverse battery supervision is provided— At MTF— Operate RBS, TLK keys.	
10f	If high-low supervision is provided— At MTF— Operate HLS, TLK, LLR keys.	
11	At MTF— Operate ANS key.	
<b>◆All Tests Except Tests I and L◆</b>		
12	Operate TTC16 key to ON.	

#### 4. METHOD

STEP	ACTION	VERIFICATION
<b>A. Line Circuit Seizure With Customer and Operator Disconnect Supervision Features</b>		
<b>Seizure</b>		
13a	If reverse battery or high-low supervision is provided— ◆At MTF—◆ Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard. If line circuit is arranged for combined intercept and verification service from a step-by-step office— At line circuit— Ground present on terminal 17 of terminal strip A.

STEP	ACTION	VERIFICATION
14b	If E and M supervision is provided— ◆At MTF—◆ Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard. If line circuit is arranged for combined intercept and verification service from a step-by-step office— At line circuit— Ground present on terminal 17 of terminal strip A.
15	At MTF— Restore TTC16 key to OFF.	
16	At TOUCH-TONE ◆calling◆ dial— Key digit 3.	Interrupted dial tone silenced. High tone heard. AA lamp lighted.
<b>Customer Disconnect Feature</b>		
17e	If reverse battery supervision is provided— Restore SLP or LLP key.	High tone silenced. AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished. If line circuit is arranged for combined intercept and verification service from a step-by-step office— At line circuit— Ground <b>not</b> present on terminal 17 of terminal strip A.
18f	If high-low supervision is provided— Restore HLS keys.	High tone silenced. AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished. If line circuit is arranged for combined intercept and verification service from a step-by-step office— At line circuit— Ground <b>not</b> present on terminal 17 of terminal strip A.
19b	If E and M supervision is provided— Restore TLK key.	High tone silenced. AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished. If line circuit is arranged for combined intercept and verification service from a step-by-

STEP	ACTION	VERIFICATION
		step office— At line circuit— Ground <i>not</i> present on terminal 17 of terminal strip A.
20	◆At MTF—◆ Restore all keys.	
21g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
22g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	
<b>Operator Disconnect Feature</b>		
23	Repeat Steps 1 through 16.	
24	Restore ANS key.	AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished. If line circuit is arranged for combined intercept and verification service from a step-by-step office— At line circuit— Ground <i>not</i> present on terminal 17 of terminal strip A.
25	◆At MTF—◆ Restore all keys.	All lamps extinguished.
26g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
27g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	
<b>B. Permanent Signal Alarm and Line Lockout Features</b>		
13a	If reverse battery or high-low supervision is provided— At MTF— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing tone may be heard. If answer supervision is provided— OGT-CS lamp lighted.

STEP	ACTION	VERIFICATION
		Interrupted dial tone heard.
14b	If E and M supervision is provided— At MTF— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing tone may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
15	Restore TTC16 key to OFF.	
16	At TOUCH-TONE <b>calling</b> dial— Key digit 3.	Interrupted dial tone silenced. High tone heard. AA lamp lighted.
17	Restore ANS key; <b>start timing</b> .	High tone silenced. AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished. In approximately 6 to 12 or 12 to 24 minutes (de- pending on optional timing interval period used)— Minor alarm sounds. ACDP lamp lighted.
18a	If reverse battery or high-low supervision is provided— Restore ACDL key.	Minor alarm silenced. ACDP lamp extinguished.
19b	If E and M supervision is provided— Restore TLK key.	Minor alarm silenced. ACDP lamp extinguished.
20	Restore all keys.	All lamps extinguished.
21g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
22g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	

### C. Line Circuit Reseizure Test

13a	If reverse battery or high-low supervision is provided— At MTF— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing tone may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
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STEP	ACTION	VERIFICATION
14b	If E and M supervision is provided— At MTF— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
15	At telephone, key, and lamp circuit— Restore TTC16 key to OFF.	
16	At TOUCH-TONE ♦calling♦ dial— Key digit 3.	Interrupted dial tone silenced. High tone heard. AA lamp lighted.
17	Operate ACDD key.	High tone silenced. AA lamp extinguished.
18a	If reverse battery or high-low supervision is provided— Momentarily restore LLP, SLP, HLS keys as required.	If audible ringing tone feature is provided— Audible ringing <i>not</i> heard. If answer supervision is provided— OGT-CS lamp extinguished while LLP, SLP, HLS keys restored. Interrupted dial tone <i>not</i> heard.
19b	If E and M supervision is provided— Momentarily restore TLK key.	If audible ringing tone feature is provided— Audible ringing <i>not</i> heard. If answer supervision is provided— OGT-CS lamp extinguished while TLK key restored. Interrupted dial tone <i>not</i> heard.
20	Restore all keys.	
21g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
22g	♦At MTF—♦ Request that outgoing information trunk circuit be restored to service at distant office.	

#### D. Single Frequency Timer Feature

- 13 **Note:** Refer to paragraph 1.05.  
♦Calibrate timing test set.♦
- 14 Patch SFT jack to TST1 jack of timing test set.

STEP	ACTION	VERIFICATION
15	Patch 48V jack of timing test set to 48V jack on frame.	
16	At timing test set— Set REC switch to GRD (start), 48V OR OC (stop).	
17	Operate SEND key to MK.	
18	Set MCF switch to NORM.	
19	Set MIL SEC switch to 0-500 to select range scale for test.	
20b	If E and M supervision is provided— At MTF— Restore OEM key.	
21b	Operate TLK key.	
22a	If reverse battery or high-low supervision is provided— Restore ACDL key.	
23	At timing test set— Operate TST key to OPR and hold key until microammeter pointer stops.	At MTF— SLV lamp lighted. If E and M supervision is provided— Interrupted dial tone heard after pointer stops.
24	At timing test set— Observe microammeter reading and, using Table A, convert meter indication into milliseconds.	Time indicated is between 500 and 700 milliseconds.

**TABLE A**  
**TIMING TEST SET CALIBRATION AND CONVERSION FACTORS**

SETTING OF MIL SEC SWITCH	USED FOR MEASUREMENTS BETWEEN	CONVERSION FACTOR TO CHANGE METER READINGS TO MILLISECONDS	CALIBRATION AT HALF SCALE OR FULL SCALE
0-500	100-500 Milliseconds	Reading x 5	Full Scale
0-5000	500-5000 Milliseconds	Reading x 50	Half Scale
0-5000	500-5000 Milliseconds	Reading x 50	Full Scale

STEP	ACTION	VERIFICATION
25	Restore TST key.	◆At MTF— Interrupted dial tone <i>not</i> heard.◆ SLV lamp extinguished.
26	Restore all keys.	
27g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
28g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	

#### E. Ringing Tone Feature (Option R)

- 13     **Caution:**     *When insulating movable springs of wire-spring-type relays, service can be affected if the movable spring is dislodged from the groove of the comb.*
- At line circuit—  
Insulate 11M of A1 relay.
- 14     At local frame line circuit—  
Patch headset to TEL jack.
- 15     At MTF—  
Operate LOC FR L key.
- 16a    If reverse battery or high-low supervision is provided—  
Operate ACDL key.     Audible ringing tone heard.

STEP	ACTION	VERIFICATION
17b	If E and M supervision is provided— Operate TLK key.	Audible ringing tone heard.
18	At line circuit— Momentarily operate S1 relay.	Audible ringing tone silenced while S1 relay operated.
19	Momentarily operate SL1 relay.	Audible ringing tone silenced while SL1 relay operated.
20	Remove insulator from A1 relay.	
21	At MTF— Restore all keys.	All lamps extinguished.
22g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
23g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	

#### F. Voice Announcement Feature

13a	If reverse battery or high-low supervision is provided— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
14b	If E and M supervision is provided— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
15	Restore TTC16 key to OFF.	
16	At TOUCH-TONE ◆calling◆ dial— Key digit 3.	Interrupted dial tone silenced. High tone heard. AA lamp lighted.
17	Operate TEL key.	High tone silenced.
18	Momentarily operate ACDD key.	Voice announcement heard identifying origin of call.
19	Restore TEL key.	High tone heard.

STEP	ACTION	VERIFICATION
20	Operate ACDD key.	High tone silenced.
21	Restore ACDD key.	Voice announcement identifying origin of call <b>not</b> heard. High tone heard.
22	Restore all keys.	All lamps extinguished.
23g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
24g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	
<b>G. Call Transfer</b>		
13a	If reverse battery or high-low supervision is provided— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
14b	If E and M supervision is provided— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
15	Restore TTC16 key to OFF.	
16	At TOUCH-TONE ◆calling◆ dial— Key digit 3.	Interrupted dial tone silenced. High tone heard. AA lamp lighted.
17	Operate TEL key.	High tone silenced.
18	Operate TFR1 key.	Dial tone heard.
19	Momentarily restore TEL key.	Dial tone not heard while TEL key restored.
20	Using TOUCH-TONE ◆calling◆ dial— Key digit(s) required to reach 2-wire simulated trunk.	Dial tone silenced. High tone heard. TS lamp lighted.
21	Restore TEL key.	High tone still heard.

STEP	ACTION	VERIFICATION
22	Operate HOLD key (at trunk test circuit).	High tone silenced.
23	Restore HOLD key.	High tone heard.
24	Operate TM2 key.	
25	Patch 1014A handset to TM2 jack.	High tone heard (at handset).
26	Operate TFR2 key.	AA lamp extinguished.
27	Momentarily restore ANS key.	High tone silenced.
28	Remove 1014A handset from TM2 jack.	
29	Restore TM2 key.	High tone heard.
30	◆Operate◆ 2DISC key.	High tone silenced. TS lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished.
31	Restore all keys.	All lamps extinguished.
32g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
33g	◆At MTF—◆ Have associated outgoing intercept trunk re- store to service at distant office.	

#### H. Wink Timer Test

- 13 Operate WKTT key.
- 14 **Note:** Refer to paragraph 1.05.  
◆Calibrate timing test set.◆
- 15 Patch SFT jack to TST1 jack of timing test set.
- 16 Patch 48V jack of frame to 48V jack of timing test set.
- 17 At timing test set—  
Set REC switch to GRD (start), 48V or OC (stop).
- 18 Operate SEND key to MK.

STEP	ACTION	VERIFICATION
19	Set MCF switch to NORM.	
20	Set MIL SEC switch to 0-500 position.	
21f	If reverse battery is provided— ◆Hold TST key of timing test set in OPR position.◆	Interrupted dial tone heard after pointer stops.
22f	Observe microammeter indication and, using Table A ◆of Test D, Step 24,◆ convert meter indication into milliseconds.	Time indicated is between 300 and 500 milliseconds.
23f	Release TST key of timing test set.	◆At MTF— Interrupted dial tone <i>not</i> heard.◆
24b	If E and M supervision is provided— Hold TST key of timing test set in OPR position and operate TLK key.	Interrupted dial tone heard after pointer stops.
25b	Observe microammeter indication and, using Table A ◆of Test D, Step 24,◆ convert meter indication into milliseconds.	Time indicated is between 300 and 500 milliseconds.
26b	Release TST key of timing test set.	◆At MTF— Interrupted dial tone <i>not</i> heard.◆
27	Remove patch cords between frame and timing test set.	
28g	If no other tests are to be made— At MTF— Restore all keys.	
29g	At line circuit— Remove patching cord(s).	
30g	◆At MTF—◆ Request that associated outgoing information trunk circuit be restored to service at distant office.	
<b>I. M Lead Diode test</b>		
4a	If answer supervision is required (option S provided)— At line circuit— Insulate contact 9B of S1 relay.	

STEP	ACTION	VERIFICATION
5b	If answer supervision is not required (option T provided) and toll connecting office requires integrity check (App. Fig. 9 provided)— At line circuit— Insulate contact 7B of WK relay.	
6c	If answer supervision is not required (option T provided) and connecting office does not require integrity check (option B provided)— At line circuit— Remove strap wire from terminal 34 of terminal strip B.	
7	At line circuit under test— Set meter to RX1000 range.	
8	Connect “+” lead of meter to ground.	
9	Connect “-” lead of meter to terminal 44 of terminal strip B.	Meter indicates in high portion of scale.
10	Remove meter connections.	
11	Connect “-” lead of meter to ground.	
12	Connect “+” lead of meter to terminal 44 of terminal strip B.	Meter indicates in low portion of scale.
13	Remove meter connections.	
14a	If answer supervision is required (option S provided)— At line circuit— Remove insulator from contact 9B of S1 relay.	
15b	If answer supervision is not required (option T provided) and toll connecting office requires integrity check (App. Fig. 9 provided)— At line circuit— Remove insulator from 7B of WK relay.	
16c	If answer supervision is not required (option T provided) and connecting office does not require integrity check (option B provided)— At line circuit— Replace strap wire on terminal 34 of terminal strip B.	

STEP	ACTION	VERIFICATION
17d	If no other tests are to be made— ◆At MTF—◆ Have associated outgoing information trunk restored to service at distant office.	
<b>◆J. Auxiliary Line Circuit Test</b>		
13a	If reverse battery or high-low supervision is provided— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
14b	If E and M supervision is provided— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. If answer supervision is provided— OGT-CS lamp lighted. Interrupted dial tone heard.
15	At MTF— Restore TTC16 key to OFF.	
16	At TOUCH-TONE calling dial— Key digit 9.	Interrupted dial tone silenced. AA lamp lighted. One burst of high tone heard, followed by test tone or test announcement heard.
17e	If reverse battery supervision is provided— Restore SLP or LLP key.	AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished.
18f	If high-low supervision is provided— Restore HLS key.	AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished.
19b	If E and M supervision is provided— Restore TLK key.	AA lamp extinguished. If answer supervision is provided— OGT-CS lamp extinguished.
20	Restore all keys.	
21g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
22g	At MTF— Request that associated outgoing information trunk circuit be restored to service at distant office.◆	

STEP	ACTION	VERIFICATION
<b>K. Reconnection to Operator After Announcement Test</b>		
13a	If reverse battery or high-low supervision is provided— Operate ACDL key.	If audible ringing tone feature is provided— Audible ringing may be heard. Operator answers.
14b	If E and M supervision is provided— Operate TLK key.	If audible ringing tone feature is provided— Audible ringing may be heard. Operator answers.
15	Inform operator this is a test call and ask operator to transfer call to announcement facility.	Announcement heard.
16	Hold connection until call is reconnected to operator.	Operator answers.
17	Inform operator that this a test call and that you are disconnecting.	
18e	If reverse battery supervision is provided— Restore SLP or LLP key.	Operator disconnected.
19f	If high-low supervision is provided— Restore HLS key.	Operator disconnected
20b	If E and M supervision is provided— Restore TLK key.	Operator disconnected.
21	Restore all keys.	
22g	If no other tests are to be made— At line circuit— Remove patching cord(s).	
23g	At MTF— Have associated outgoing information trunk restored to service at distant office.	

**L. Emergency Announcement Control Circuit Test**

- 12 From office records determine the emergency announcement control circuit and the transfer relay (TR00 through TR23) associated with line circuit used in test.♦

STEP	ACTION	VERIFICATION
◆13g	If more than one emergency announcement control circuit is provided— At emergency control circuits not under test— Block nonoperated EM relay for each emergency announcement control circuit not under test.	
14	At emergency announcement control circuit under test— Block nonoperated all active transfer relays (TR00 through TR23) except the one to be tested.	
15	At relay rack frame containing line circuit used in test— Insulate contact 6M of A1 relay for each line circuit, whose associated outgoing information trunk is not made busy and equipped for emergency announcement.	
16	At line circuit used in test— Block nonoperated S1 and SL relays.	
17	At MTF— Request traffic coordinator to operate emergency announcement key.	
18a	If reverse battery or high-low supervision is provided— Operate ACDL key.	Emergency announcement heard.
19b	If E and M supervision is provided— Operate TLK key.	Emergency announcement heard.
20	At emergency announcement control circuit under test— Block operated VFA relay.	
21a	If reverse battery or high-low supervision is provided— At MTF— Restore ACDL key.	Major alarm silenced.
22b	If E and M supervision is provided— At MTF — Operate TLK key.◆	Major alarm silenced.

STEP	ACTION	VERIFICATION
◆23	At emergency announcement control circuit under test— Remove blocking tool from VFA relay.	
24h	If other TR_ relays are to be tested for same emergency announcement control circuit— At emergency announcement control circuit under test— Block nonoperated active TR_ relay not blocked nonoperated.	
25	At relay rack frame containing line circuit used in test— Remove blocking tools from S1 and SL relays of line circuit used in test.	
26	Request distant office to return to service outgoing information trunk made busy for test.	
27	At relay rack frame of line circuit used in test— Remove insulators from contact 6M of the A1 relay inserted in Step 15.	
28h	If other TR_ relays are to be tested for same emergency announcement control circuit— At TC— Restore all switches.	
29h	From offices records select a line circuit associated with TR_ relay to be tested.	
30h	At MTF— Have outgoing information trunk associated with selected line circuit made busy.	
31h	At relay rack frame of line circuit used in test— Insulate contact 6M of A1 relay for each line circuit whose outgoing information trunk is not made busy and equipped for emergency announcement.	
32h	At line circuit used in test— Block nonoperated S1 and SL relays.	
33h	At emergency announcement control circuit— Remove blocking tool from TR_ relay associated with line circuit to be used in test.◆	

STEP	ACTION	VERIFICATION
34h	Repeat steps 4a through 11 to prepare for test using line circuit selected.	
35h	Repeat Steps 18a through 33h to test the emergency announcement circuit using the selected TR_ relay.	
36i	If other emergency announcement circuits are to be tested— At emergency announcement circuit under test— Block nonoperated EM relay.	
37	At emergency announcement circuit under test— Remove blocking tools from TR_ relays inserted for test.	
38	At MTF— Restore all switches.	
39i	If other emergency announcement circuits are to be tested— From office records select line circuit associated with emergency announcement circuit to be tested.	
40i	At MTF— Request distant office to make busy the outgoing information trunk associated with line circuit.	
41i	At emergency announcement control circuit under test— Block nonoperated all active TR—relays except the one to be tested.	
42i	At relay rack frame containing line circuit used in test— Insulate contact 6M of A1 relay for each line circuit, whose associated outgoing information trunk is not made busy, and equipped for emergency announcement.	
43i	Block nonoperated S1 and SL relays of line circuit used in test.♦	

STEP	ACTION	VERIFICATION
◆44i	Repeat Steps 18a through 43i for each emergency announcement control circuit to be tested.	
45j	If no other tests are to be performed— At MTF— Request traffic coordinator to restore EM key.	
46j	Restore all switches.	
47j	At emergency announcement control circuits— Remove blocking tools from EM relay of each circuit, inserted for this test.◆	

