

**2-WAY TRUNK CIRCUIT SD-27836-01**  
**FOR OFF-NET ACCESS SERVICE**  
**TESTS USING TRUNK TEST CIRCUIT SD-25918-01**  
**NO. 5 CROSSBAR OFFICES**

**1.01** This section describes a method of testing 2-way trunk circuit SD-27836-01 (ONAL) for off-net access service in common control switching arrangement (CCSA) networks.

**1.02** This section is reissued for the reasons listed below. Arrows are used to emphasize the most significant changes. Equipment Test Lists are affected.

(a) To revise Tests A, B, F through H, M through S, and U through Y for calling data transmitter (CDT) features.

(b) To revise Tests C and D to eliminate AMA single time entries with option H.

**1.03** The tests covered are:

**SUBSCRIBER OUTGOING TESTS (SOG)**

**A. ONAL Seizure and Release:**

This test checks seizure of the circuit, continuity, and polarity on tip and ring leads, and ONAL release.

**B. Supervision:** This test checks that the circuit will release immediately when the originating end disconnects first, but will time for 13 to 32 seconds when the terminating end disconnects first.

**C. AMA Features (ETS, CDT, or LAMA-C not Provided):**

This test checks that an AMA record is taken when a request is made for traffic sampling.

**D. Cancel Disconnect Entry (ETS, CDT, or LAMA-C not Provided):**

This test checks cancellation of a disconnect entry and release of the ONAL if a disconnect entry is not made within 2 to 5 seconds after disconnect.

**E. Noncharge Supervision: (ETS, CDT, or LAMA-C not Provided):**

This test checks that a charge condition is not established when an answered call is held less than 2 seconds.

**F. Reorder:** This test checks that an overflow tone is returned to the originating end when a sender is unable to complete a call.

**G. Call to Distant Office (Auxiliary Line Circuit SD-99484-01 in Distant Office):**

This test checks the ability of the ONAL to complete to a permanent busy number in a distant office.

**H. Call to Simulated 2-Wire Trunk Circuit (Auxiliary Line Circuit SD-99484-01) Directly Wired in Same Office:**

This test checks the ability of the ONAL to complete through the switches to a simulated 2-wire trunk circuit.

**THROUGH-SWITCHED TESTS (TOG)**

**I. ONAL Seizure and Release:**

This test checks seizure of the circuit,

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continuity, and polarity on tip and ring leads, and checks ONAL release. . . . . 12

**J. Supervision:** This test checks that the ONAL releases immediately when either originating or terminating end disconnects first. . . . . 13

**K. Cross-Office Lockout (17E Testboard Provided):** This test checks that the ONAL may be locked out from the 17E testboard. . . . . 14

**L. Reorder:** This test checks that an overflow tone is returned to the originating end when a sender is unable to complete a call. . . . . 14

**INCOMING TESTS (INC)**

**M. Extension of Call On-Net:** This test checks the following features: (1) Seizure from DDD network. (2) Continuity and polarity on tip and ring leads. (3) Completion to on-net (CCSA) attendant via attendant trunk circuit. (4) Extension of call by attendant through ONAL to CCSA trunk circuit. (5) Called station answer. (6) Attendant trunk release. (7) Originating and terminating ends disconnect. . . . . 15

**N. Supervision-Calling End Disconnect:** This test checks that on an extended, answered call, the ONAL will release immediately when the calling end disconnects first. . . . . 17

**O. Supervision-Called End Disconnect:** This test checks that on an extended, answered call the ONAL will release immediately when the called end disconnects first. The test also checks that when permanent signal timing is provided a minor alarm will sound in either 6 or 12 minutes and a permanent signal lamp will light. . . . . 19

**P. Attendant Release After Startout:** This test checks that the ONAL functions properly when the attendant attempts to extend a call on-net but due to the following conditions must release and initiate a second extension

attempt: (1) All originating registers busy. (2) Partial dial. (3) Called party does not answer or number busy (release destination). . . . . 22

**Q. Abandoned Call Before Attendant Answer:** This test checks that the ONAL will release linkage when the call is abandoned prior to attendant answer. . . . . 25

**R. Abandoned Call Before Called Station Answer:** This test checks that all linkages will be released when the call is abandoned after being extended on-net and prior to called station answer. . . . . 26

**S. Call to Distant Attendant Facilities (Auxiliary Line Circuit SD-99484-01 in Distant Office):** This test checks that a test call may be completed to an assistant at the distant attendant facilities. . . . . 28

**T. Call to Distant Attendant Facilities (Auxiliary Line Circuit SD-99484-01 Directly Wired in Same Office):** This test checks that a test call may be completed to an assistant at the distant attendant facilities. . . . . 29

**U. Cross-Office Lockout (17E Testboard Provided):** This test checks that a cross-office lockout applied to the ONAL will pass the signal to lock out the outgoing trunk through the switches. . . . . 30

**MISCELLANEOUS TESTS**

**V. Remote Make-Busy From Auxiliary Line Circuit:** This test checks that a steady seizure on the E lead from the auxiliary line circuit will hold a make-busy condition on the ONAL until the steady seizure is released. . . . . 31

**W. ONAL Busy (17E Testboard Not Provided):** This test checks that the ONAL may be made busy to service at the MTF, but may be seized for testing. . . . . 32

- X. ONAL Busy (17E Testboard Provided):** This test checks that the ONAL may be made busy to service at the 17E testboard, but may be seized for testing. . . . . **33**
- Y. Universal Pad Control:** This test checks the operation of the PC relay. . . . . **34**
- Z. False-Busy and False-Idle Conditions (ETS not Provided):** This test checks for continuity and crosses on F, BT, and FT leads. . . . . **34**
- 1.04** This circuit cannot be seized for testing when remotely made busy from the auxiliary line circuit.
- 1.05** Tests D, O, and Y require actions and verifications at the MTF and relay rack frame.
- 1.06** Tests K, U, V, and X require actions and verifications at the MTF and 17E testboard.
- 1.07** Tests S and T require action and verification at the MTF and an assistant at the distant attendant facilities.
- 1.08** Test Z requires actions and verifications at the MTF or 17E testboard (when provided) and the relay rack frame.
- 1.09** Test Z requires that all trunks of the same route as trunk under test be made busy.
- 1.10 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.
- 1.11** The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.
- 1.12** The manner of selecting some circuits and test conditions at the MTF and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.
- 1.13** A statement between the asterisks (\* \_\_\*) after action or verification statements is added to clarify the function being simulated in the test procedures of Part 4.
- 1.14** When the office is arranged for either LAMA-C or ETS, the distributor and scanner associated with the marker and trunk used in the test call must be *in service*, or in a *maintenance-busy* condition—not in an *out-of-service* condition. To change a scanner or distributor from an *out-of-service* to a *maintenance-busy* condition, use the procedure given in the following sections for the office arrangement.
- 218-798-308—Taking LAMA-C Equipment Out of Service.
- 218-799-701—Taking ETS Equipment Out of Service.
- 1.15** When the trunk under test is arranged for ETS, the first completed test call from the MTF will cause the TST bit to be set in the trunk register associated with the selected trunk, enabling trunk supervisory scanning to be repeated on the FT, CS, and S1 lamps at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, supervision will continue to be repeated on the lamps, even on service calls. The TST bit will remain set in the trunk register until (1) a test call is made from the MTF to another trunk, or (2) the command **STOP:TRK TST** is entered at the maintenance TTY.
- 1.16** On Issue 76D of SD-25800-01, a group of 18 “class of test” lamps was replaced by a single “start test” lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.
- 1.17** ♦When CDT (calling data transmitter) billing system is provided in the office, this trunk

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may or may not handle billable calls. When it is arranged for billable calls, supervisory scan points will be assigned and supervision will be repeated from the scan points on test calls to the MTF by CS and S1 lamps.

**1.18** When CDT is provided, there may be several configurations in the office - single controller, dual controller with the trunk assigned to one controller, or dual controller and the trunk is assigned to both controllers. When assigned to both controllers in a dual controller configuration, one test must be made to each controller to verify scan points for each controller.♦

### 2. APPARATUS

#### All Tests Except Z

**2.01** Master test control circuit, SD-25800-01.

**2.02** Trunk test circuit, SD-25918-01.

Tests A, B, C, D, P

**2.03** KS-3008 stopwatch or equivalent.

Tests D, P, Z

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

Tests K, U, V, X, Z

**2.05** 17E testboard (when provided).

Tests M, N, O, P, R, U

**2.06** MTF telephone, key, and lamp circuit SD-25762-01.

Tests M, N, O, S, U, V

**2.07** 1014A dial hand test set (handset), equipped with a 2W38A cord assembly consisting of a W2CK cord, 310 plug, and 471A jack.

Tests W, Z

**2.08** 322A (make-busy) plugs as required.

Test Y

**2.09** 67C test set or equivalent, equipped with a KS-6278 tool (for connection to battery or ground test points).

Test Z

**2.10** Oscillator J94730B (SD-95616-01), part of 1A fault locator test set J94730A.

**2.11** Testing cord, W1AK cord, 6 feet long, equipped with one 296 (banana-type) plug, one 360B tool, and one 624B (terminal connector) tool.

**2.12** Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip and one 624B (terminal connector) tool as required (for connecting high resistance ground [HRG] to terminal strip terminals).

### 3. PREPARATION

*Refer to Paragraphs 1.04 through 1.18*

3. PREPARATION (Contd)

Refer to paragraph 1.04 through 1.18

| STEP | ACTION  | TESTS |   |   |   |   |   |   |   |   |   |   |   |   |
|------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|
|      |   | N     | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 1    | At MTF—<br>Restore all keys and switches.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 2    | Momentarily operate RL key.   | X     | X | X | X | X | X | X | X | X | X | X | X |   |
| 3    | Select completing marker.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 4    | Select route advance.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 5    | Operate FS, TS, TLK, EM, KY keys.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 6    | Select ONAL to be tested.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 7    | Operate GPA/GPB key when ONAL under test is in an allotted trunk group.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 8a   | If ETS provided—<br>Operate PCS, PTS keys.  | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 9    | Select A_ through K_ digits as required to select route served by ONAL under test.  | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 10   | Select OGT class of test.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 11   | Select originating class of call and translator indication.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 12   | Select class of service and rate treatment having access to ONAL under test.  | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 13   | Select TAN subclass of test.  | —     | — | — | — | — | — |   | — | — | — | — | — |   |
| 14b  | ◆If trunk is to be tested for CDT—<br>Operate CDTT key.   | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 15b  | When trunk is assigned to CDT dual controllers, select controller—<br>Operate CDC 0/1 key.  | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 16b  | When a trouble record is to be taken from the CDT translator access (TA) circuit—<br>Operate TREC key.  | X     | X | X | X | X | X |   | X | X | X | X | X |   |
| 17b  | When the CDT controller operates with both shared and dedicated translator circuits and a particular translator circuit is to be used for the test—<br>Operate TAD key to select dedicated TA circuit or operate TAS key to select shared TA circuit.<br><br><b>Note:</b> When a TA circuit is not selected, the controller will select the next available TA circuit.◆ | X     | X | X | X | X | X |   | X | X | X | X | X |   |

▣ PROCEED TO METHOD — OMIT STEP

## 3. PREPARATION

Refer to paragraph 1.04 through 1.18

| STEP | ACTION  | TESTS |   |   |   |   |   |   |   |   |   |   |   |   |
|------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|
|      |   | A     | B | C | D | E | F | G | H | I | J | K | L | M |
| 1    | At MTF—<br>Restore all keys and switches.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 2    | Momentarily operate RL key.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 3    | Select completing marker.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 4    | Select route advance.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 5    | Operate FS,TS, TLK, EM, KY keys.  | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 6    | Select ONAL to be tested.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 7    | Operate GPA/GPB key when ONAL under test is in an allotted trunk group.   | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 8a   | If ETS provided—<br>Operate PCS, PTS keys.  | X     | X | X | X | X | X | X | X | X | X | X | X | X |
| 9    | Select A_ through K_ digits as required to select route served by ONAL under test.  | X     | X | X | X | X | X | — | — | X | X | X | X | X |
| 10   | Select OGT class of test.   | X     | X | X | X | X | X | — | — | X | X | X | X | X |
| 11   | Select originating class of call and translator indication.   | X     | X | X | X | X | X | X | X | — | — | — | — | X |
| 12   | Select class of service and rate treatment having access to ONAL under test.  | X     | X | X | X | X | X | X | X | — | — | — | — | X |
| 13   | Select TAN subclass of test.  | —     | — |   |   |   |   | — | — | — | X | X | X | — |
| 14b  | ◆If trunk is to be tested for CDT—<br>Operate CDTT key.   | X     | X |   |   |   |   | X | X | X | X | X |   | X |
| 15b  | When trunk is assigned to CDT dual controllers, select controller—<br>Operate CDC 0/1 key.  | X     | X |   |   |   |   | X | X | X | X | X |   | X |
| 16b  | When a trouble record is to be taken from the CDT translator access (TA) circuit—<br>Operate TREC key.  | X     | X |   |   |   |   | X | X | X | X | X |   | X |
| 17b  | When the CDT controller operates with both shared and dedicated translator circuits and a particular translator circuit is to be used for the test—<br>Operate TAD key to select dedicated TA circuit or operate TAS key to select shared TA circuit.<br><br><i>Note:</i> When a TA circuit is not selected, the controller will select the next available TA circuit.◆ | X     | X |   |   |   |   | X | X | X | X | X |   | X |

☐ PROCEED TO METHOD      — OMIT STEP

## 4. METHOD

| STEP                                   | ACTION   | VERIFICATION  |
|--|--|---|
| <b>SUBSCRIBER OUTGOING TESTS (SOG)</b> |  |   |
| <b>A. ONAL Seizure and Release</b>     |  |   |
| 18                                     | Momentarily operate ST key.                              | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted.                                  |
| 19                                     | Operate ANS key.   | ♦If CDTT key is operated—<br>CS lamp lighted.♦<br>If ETS or LAMA-C provided—<br>CS lamp lighted.<br>High tone heard.  |
| 20                                     | Restore TLK, ANS keys.                                   | ♦If CDTT key is operated—<br>S1, CS lamps extinguished.♦<br>If ETS provided—<br>FT, CS, S1 lamps extinguished.<br>If LAMA-C provided—<br>CS, S1 lamps extinguished.<br>High tone silenced.<br>AS, E lamps extinguished. |
| 21                                     | Momentarily operate RL key.                              | All lamps extinguished.   |
| 22                                     | Restore all keys and switches not required in next test. |   |

**B. Supervision****Originating End Disconnect First**

|    |                             |  |
|----|-----------------------------|--|
| 18 | Momentarily operate ST key. | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted. |
| 19 | Operate ANS key.            | ♦If CDTT key is operated—<br>CS lamp lighted.♦<br>If ETS or LAMA-C provided—   |

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| STEP                                    | ACTION   | VERIFICATION   |
|---|--|--|
|   |  | CS lamp lighted.<br>High tone heard.   |
| 20                                      | Restore TLK key.   | ♦If CDTT key is operated—<br>S1, CS lamps extinguished.♦<br>If ETS provided—<br>FT, CS, S1 lamps extinguished.<br>If LAMA-C provided—<br>CS, S1 lamps extinguished.<br>High tone silenced.<br>AS, E lamps extinguished.                  |
| 21                                      | Momentarily operate RL key.  | All lamps extinguished.  |
| 22                                      | Restore ANS key.   |  |
| 23                                      | Operate TLK key.   |  |
| <b>Terminating End Disconnect First</b> |  |  |
| 24                                      | Momentarily operate ST key.  | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted.   |
| 25c                                     | If improved testing of CS relay is provided—<br>Momentarily operate SK key.  |  |
| 26                                      | Operate ANS key.   | ♦If CDTT key is operated—<br>CS lamp lighted.♦<br>If ETS or LAMA-C provided—<br>CS lamp lighted.<br>High tone heard.   |
| 27c                                     | If improved testing of CS relay is provided—<br>Momentarily operate CSR key. | OGT-CS lamp momentarily extinguished.<br>If ETS or LAMA-C provided ♦or CDTT key<br>is operated—♦<br>CS lamp momentarily extinguished.  |
| 28                                      | Restore ANS key; <i>start timing.</i>  | ♦If CDTT key is operated—<br>CS lamp extinguished.♦<br>If ETS or LAMA-C provided—<br>CS lamp extinguished.<br>High tone silenced.<br>In 13 to 32 seconds—<br>AS, E lamps extinguished.<br>If ETS provided—<br>FT, S1 lamps extinguished. |

| STEP  | ACTION   | VERIFICATION  |
|---|--|---|
|   |  | If LAMA-C provided—<br>S1 lamp extinguished.<br>♦If CDTT key is operated—<br>S1 lamp extinguished.♦   |
| 29  | Momentarily operate RL key.                              | All lamps extinguished.   |
| <b>All Tests</b>  |  |   |
| 30  | Restore all keys and switches not required in next test. |   |
| <b>C. AMA Features (ETS, ♦CDT,♦ or LAMA-C not Provided)</b>                   |  |   |
| 13  | Operate SA or SMPL key.                                  |   |
| 14  | Momentarily operate ST key.                              | AS, E lamps lighted.<br>RN-, T2/5, U2/5, IE lamps lighted.  |
| 15  | Operate ANS key; <i>start timing.</i>                    | High tone heard.<br>If option H provided—<br>(to minimize single time entries)<br>AE lamp lighted.<br>If option J provided—<br>In 2 to 2-4 seconds—<br>AE lamp lighted. |
| 16  | Restore TLK, ANS keys.                                   | High tone silenced.<br>AS, E lamps extinguished.<br>DE lamp lighted.  |
| 17  | Momentarily operate RL key.                              | All lamps extinguished.   |
| 18  | Restore all keys and switches not required in next test. |   |
| <b>D. Cancel Disconnect Entry (ETS or LAMA-C Not Provided)</b>                |  |   |
| <i>Note:</i> Do not proceed with test until ONAL has been idle for 4 minutes. |  |   |
| 13  | Operate SA or SMPL key.                                  |   |
| 14  | Momentarily operate ST key.                              | AS, E lamps lighted.<br>PK lamp not lighted.<br>RN-, T2/5, U2/5, IE lamps lighted.  |
| 15  | Operate ANS key; <i>start timing.</i>                    | High tone heard.<br>If option H provided—<br>(to minimize single time entries)  |

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| STEP   | ACTION  | VERIFICATION   |
|--|---|--|
|  |   | AE lamp lighted.<br>If option J provided—<br>In 2 to 2.4 seconds—<br>AE lamp lighted.<br>At relay rack frame—<br>MA relay on ONAL under test operated. |
| 16   | Insulate 10B of S2 relay on ONAL under test.                    |  |
| 17   | At MTF—<br>Restore TLK, ANS keys simultaneously.                | High tone silenced.<br>AS, E lamps extinguished.<br>DE lamp not lighted.<br>At relay rack frame—<br>S2 relay released.                                 |
| 18   | After S2 relay releases, <i>start timing</i> .                  | In 2 to 5 seconds—<br>MA relay released.<br>*Verifies TR relay operation.*   |
| 19   | Remove insulator from S2 relay.                                 |  |
| 20   | At MTF—<br>Momentarily operate RL key.                          | All lamps extinguished.  |
| 21   | Restore all keys and switches not required in next test.        |  |
| <b>E. Noncharge Supervision (ETS, CDT, or LAMA-C not Provided)</b> |   |  |
| 13   | Operate ANS key.  |  |
| 14   | Operate SA or SMPL key.   |  |
| 15   | Momentarily operate ST key.                                     | AS, E lamps lighted.<br>PK lamp not lighted.<br>High tone heard.<br>RN-, T2/5, U2/5, IE lamps lighted.   |
| 16   | In 1-1/2 to 2 seconds—<br>Restore TLK, ANS keys simultaneously. | High tone silenced.<br>AS, E lamps extinguished.<br>AE, DE lamps <b>do not</b> light.  |
| 17   | Momentarily operate RL key.                                     | All lamps extinguished.  |
| 18   | Restore all keys and switches not required in next test.        |  |
| <b>F. Reorder</b>  |   |  |
| 18   | Operate ROT key.  |  |

| STEP  | ACTION  | VERIFICATION  |
|---|---|---|
| 19  | Momentarily operate ST key.   | <p>◆If CDTT key is operated—<br/>S1 lamp lighted.◆<br/>If ETS provided—<br/>FT, S1 lamps lighted.<br/>If LAMA-C provided—<br/>S1 lamp lighted.<br/>E, AS lamps lighted.<br/>Overflow tone heard.</p>  |
| 20  | Restore TLK key.  | <p>E, AS lamps extinguished.<br/>Overflow tone silenced.<br/>If ETS provided—<br/>FT, S1 lamps extinguished.<br/>If LAMA-C provided—<br/>S1 lamp extinguished.<br/>◆If CDTT key is operated—<br/>S1 lamp extinguished.◆</p>   |
| 21  | Momentarily operate RL key.   | All lamps extinguished.   |
| 22  | Restore all keys and switches not required in next test.  |   |
| <b>G. Call to Distant Office (Auxiliary Line Circuit SD-99484-01 in Distant Office)</b> |   |   |
| 18  | Select MISC class of test.  |   |
| 19  | Select A_ through K_ digits as required to reach permanent busy number in distant office via ONAL under test. |   |
| 20  | Momentarily operate ST key.   | <p>◆If CDTT key is operated—<br/>S1 lamp lighted.◆<br/>If ETS provided—<br/>FT, S1 lamps lighted.<br/>If LAMA-C provided—<br/>S1 lamp lighted.<br/>AS lamp lighted.<br/>PK lamp not lighted.<br/>Busy tone heard.</p> <p><b>Note:</b> If circuit under test uses inband-single frequency signaling, care should be exercised to ensure that the sound heard is <i>true busy tone</i>.</p> |
| 21  | Momentarily operate RL key.   | All lamps extinguished.<br>Busy tone silenced.  |
| 22  | Restore all keys and switches not required in next test.  |   |

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| STEP  | ACTION  | VERIFICATION  |
|---|---|---|
| <b>H. Call to Simulated 2-Wire Trunk Circuit (Auxiliary Line Circuit SD-99484-01 Directly Wired in Same Office)</b> |   |   |
| 18  | Select MISC class of test.  |   |
| 19  | Select A_ through K_ digits as required to direct call to simulated 2-wire trunk circuit. |   |
| 20  | Momentarily operate ST key.   | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted.<br>TS lamp lighted.                  |
| 21  | Operate ANS key.  | ◆ If CDTT key is operated—<br>CS lamp lighted.◆<br>If ETS or LAMA-C provided—<br>CS lamp lighted.<br>High tone heard.   |
| 22  | Restore TLK, ANS key.   | AS, TS, E lamps extinguished.<br>High tone silenced.<br>If ETS provided—<br>FT, CS, S1 lamps extinguished.<br>If LAMA-C provided—<br>CS, S1 lamps extinguished.<br>◆If CDTT key is operated—<br>S1, CS lamps extinguished.◆ |
| 23  | Momentarily operate RL key.   | All lamps extinguished.   |
| 24  | Restore all keys and switches not required in next test.                                  |   |

**THROUGH-SWITCHED TESTS (TOG)**

**I. ONAL Seizure and Release**

|    |                             |  |
|----|-----------------------------|--|
| 14 | Momentarily operate ST key. | If ETS provided—<br>FT lamp lighted.<br>AS, E lamps lighted. |
| 15 | Operate ANS key.            | OGT-CS lamp lighted.<br>High tone heard.                     |
| 16 | Restore, TLK, ANS keys.     | If ETS provided—<br>FT lamp extinguished.                    |

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
|      |  | AS, E, OGT-CS lamps extinguished.<br>High tone silenced. |
| 17   | Momentarily operate RL key.                              | All lamps extinguished.                                  |
| 18   | Restore all keys and switches not required in next test. |  |

#### J. Supervision

##### Originating End Disconnect First

|    |                             |   |
|----|-----------------------------|---|
| 14 | Momentarily operate ST key. | If ETS provided—<br>FT lamp lighted.<br>AS, E lamps lighted.  |
| 15 | Operate ANS key.            | OGT-CS lamp lighted.<br>High tone heard.  |
| 16 | Restore TLK key.            | If ETS provided—<br>FT lamp extinguished.<br>AS, E, OGT-CS lamps extinguished.<br>High tone silenced. |
| 17 | Momentarily operate RL key. | All lamps extinguished.   |
| 18 | Restore ANS key.            |   |
| 19 | Operate TLK key.            |   |

##### Terminating End Disconnect First

|    |                             |   |
|----|-----------------------------|---|
| 20 | Momentarily operate ST key. | If ETS provided—<br>FT lamp lighted.<br>AS, E lamps lighted.  |
| 21 | Operate ANS key.            | OGT-CS lamp lighted.<br>High tone heard.  |
| 22 | Restore ANS key.            | If ETS provided—<br>FT lamp extinguished.<br>AS, E, OGT-CS lamps extinguished.<br>High tone silenced. |
| 23 | Momentarily operate RL key. | All lamps extinguished.   |

##### All Tests

|    |  |  |
|----|--|--|
| 24 | Restore all keys and switches not required in next test. |  |
|----|--|--|

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| STEP  | ACTION  | VERIFICATION  |
|---|---|---|
| <b>K. Cross-Office Lockout (17E Testboard Provided)</b> |   |   |
| 14  | Momentarily operate ST key.   | If ETS provided—<br>FT lamp lighted.<br>AS, E lamps lighted.                                  |
| 15  | At 17E testboard—<br>Apply lockout condition to ONAL under test.    | LO lamp associated with ONAL under test lighted.  |
| 16  | At MTF—<br>Momentarily operate RL key.                              | All lamps extinguished except LO lamp.<br>If ETS provided—<br>FT lamp remains lighted.        |
| 17  | Momentarily operate ST key.   | TB lamp lighted.  |
| 18  | Momentarily operate RL key.   | All lamps extinguished except LO lamp.<br>If ETS provided—<br>FT lamp remains lighted.        |
| 19  | Restore FS, TS keys.  |   |
| 20  | Operate NTFS, NTTS keys.  |   |
| 21  | Momentarily operate ST key.   | TB lamp lighted.  |
| 22  | Momentarily operate RL key.   | All lamps extinguished except LO.<br>If ETS provided—<br>FT lamp remains lighted.             |
| 23  | At 17E testboard—<br>Remove lockout condition from ONAL under test. | If ETS provided—<br>FT lamp extinguished.   |
| 24  | At MTF—<br>Restore all keys and switches not required in next test. |   |
| <b>L. Reorder</b>                                       |   |   |
| 14  | Operate ROT key.  |   |
| 15  | Momentarily operate ST key.   | If ETS provided—<br>FT lamp lighted.<br>AS lamp lighted.<br>Overflow tone heard.              |
| 16  | Restore TLK key.  | If ETS provided—<br>FT lamp extinguished.<br>AS lamp extinguished.<br>Overflow tone silenced. |
| 17  | Momentarily operate RL key.   | All lamps extinguished.   |

| STEP                               | ACTION   | VERIFICATION  |
|------------------------------------|--|---|
| 18                                 | Restore all keys and switches not required in next test.                               |   |
| <b>INCOMING TESTS (INC)</b>        |  |   |
| <b>M. Extension of Call On-Net</b> |  |   |
| 18                                 | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19                                 | Operate MTTA key.  |   |
| 20                                 | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21                                 | Restore all keys and switches except MTTA key.   |   |
| 22                                 | Select dial tone marker.   |   |
| 23                                 | Select originating register group.   |   |
| 24                                 | Select MISC class of test.   |   |
| 25                                 | Select class of service and rate treatment having access to CCSA test attendant trunk. |   |
| 26                                 | Select line location for appearance 1 of ONAL under test.                              |   |
| 27                                 | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.  |   |
| 28                                 | Insert plug on headset into TM2 jack.  |   |
| 29                                 | Momentarily operate ST key.  | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*  |
| 30                                 | Operate CANS key.<br>*Attendant answer.*   | E lamp lighted.<br>CTX lamp extinguished.   |
| 31                                 | Operate STI key.<br>*Attendant startout.*  | Dial tone heard.<br>High tone silenced.<br>RDY lamp lighted.<br>*Originating register attached.*  |

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| STEP | ACTION   | VERIFICATION  |
|------|--|---|
| 32   | Restore ANS key.   |   |
| 33   | Select A_ through G_ digits as required to route call to simulated 2-wire trunk circuit.                     | Dial tone silenced.<br>RDY lamp extinguished.<br>TS lamp lighted.<br>*Linkage established between appearance 2 of ONAL and simulated 2-way trunk circuit.*  |
| 34   | Restore STI key.   | CTX lamp flashes at 30 ipm.<br>*Awaiting station answer.*   |
| 35   | Operate TM2 key.   |   |
| 36c  | If attendant verification of on-net station is <i>not</i> provided—<br>Operate ANS key.<br>*Station answer.* | CTX lamp extinguished.<br>High tone not heard at test receiver.<br>High tone heard in handset at TM2 jack.<br>*Linkage released between appearance 1 of ONAL and CCSA test attendant trunk.*                                |
| 37d  | If attendant verification of on-net station is provided—<br>Operate ANS key.<br>*Station answer.*            | CTX lamp lighted steadily.<br>High tone not heard in handset at TM2 jack or in test receiver.<br>*Verifies calling station on hold.*  |
| 38d  | Operate TN key.  | High tone heard in handset at TM2 jack but not heard in test receiver.<br>*Verifies connection between attendant and called station (ONAL appearances 1 and 2).*  |
| 39d  | Restore TN key.  | High tone not heard in handset at TM2 jack or in test receiver.<br>*Tone manipulation.*   |
| 40d  | Restore CANS key.  | CTX lamp extinguished.<br>High tone heard in handset at TM2 jack but not in test receiver.<br>*Connection established between incoming call and ONAL appearance 2.<br>Linkage released between attendant and appearance 1.* |
| 41   | Restore SEZ, ANS keys.<br>*Calling and called ends disconnect.*  | E lamp extinguished.<br>High tone silenced in handset at TM2 jack.<br>TS lamp extinguished.<br>*Linkage released between appearance 2 of ONAL and simulated 2-wire trunk circuit.*  |
| 42   | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 43   | Operate SEZ, ANS keys.   |   |
| 44   | Restore TM2, CANS keys.  |   |

| STEP   | ACTION  | VERIFICATION  |
|--|---|---|
|  | <b>Note:</b> The following steps need not be performed when either Test N through S, U, or V is to be performed next. |   |
| 45   | Restore MTTA key.   |   |
| 46   | Momentarily operate RL key.   | MTT lamp extinguished.  |
| 47   | Restore all keys and switches not required in next test.  |   |
| 48   | Remove plug of handset from TM2 jack.   |   |
| <b>N. Supervision—Calling End Disconnect</b> |   |   |
| 18   | Momentarily operate ST key.   | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19   | Operate MTTA key.   |   |
| 20   | Momentarily operate RL key.   | All lamps extinguished except MTT.  |
| 21   | Restore all keys and switches except MTTA key.  |   |
| 22   | Select dial tone marker.  |   |
| 23   | Select originating register group.  |   |
| 24   | Select MISC class of test.  |   |
| 25   | Select class of service and rate treatment having access to CCSA test attendant trunk.                                |   |
| 26   | Select line location for appearance 1 of ONAL under test.   |   |
| 27   | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.   |   |
| 28   | Insert plug of handset into TM2 jack.   |   |
| 29   | Momentarily operate ST key.   | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*  |

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| STEP | ACTION  | VERIFICATION  |
|------|---|---|
| 30   | Operate CANS key.<br>*Attendant answer.*  | E lamp lighted.<br>CTX lamp extinguished.   |
| 31   | Operate STI key.<br>*Attendant startout.*   | Dial tone heard.<br>High tone silenced.<br>RDY lamp lighted.<br>*Originating register attached.*  |
| 32   | Restore ANS key.  |   |
| 33   | Select A_ through G_ digits as required to route call to simulated 2-wire trunk circuit.              | Dial tone silenced.<br>RDY lamp extinguished.<br>TS lamp lighted.<br>*Linkage established between appearance 2 of ONAL and simulated 2-way trunk circuit.*  |
| 34   | Restore STI key.  | CTX lamp flashes at 30 ipm.<br>*Awaiting station answer.*   |
| 35   | Operate TM2 key.  |   |
| 36c  | If attendant verification of on-net station is not provided—<br>Operate ANS key.<br>*Station answer.* | CTX lamp extinguished.<br>High tone not heard at test receiver.<br>High tone heard in handset at TM2 jack.<br>*Linkage released between appearance 1 of ONAL and CCSA test attendant trunk.*                                |
| 37d  | If attendant verification of on-net station is provided—<br>Operate ANS key.<br>*Station answer.*     | CTX lamp lighted steadily.<br>High tone not heard in handset at TM2 jack or in test receiver.<br>*Verifies calling station on hold.*  |
| 38d  | Operate TN key.   | High tone heard in handset at TM2 jack but not heard in test receiver.<br>*Verifies connection between attendant and called station (ONAL appearances 1 and 2).*  |
| 39d  | Restore TN key.   | High tone not heard in handset at TM2 jack or in test receiver.<br>*Tone manipulation.*   |
| 40d  | Restore CANS key.   | CTX lamp extinguished.<br>High tone heard in handset at TM2 jack but not in test receiver.<br>*Connection established between incoming call and ONAL appearance 2.<br>Linkage released between attendant and appearance 1.* |
| 41   | Restore SEZ key.<br>*Calling end disconnect.*   | E lamp extinguished.<br>High tone silenced in handset at TM2 jack.<br>TS lamp extinguished.   |

| STEP | ACTION   | VERIFICATION  |
|------|--|---|
|      |  | *Linkage released between appearance 2 of ONAL and simulated 2-wire trunk circuit.* |
| 42   | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 43   | Operate SEZ key.   |   |
| 44   | Restore TM2, CANS keys.  |   |
|      | <b>Note:</b> The following steps need not be performed when either Test M, O through S, U, or V is to be performed next. |   |
| 45   | Restore MTTA key.  |   |
| 46   | Momentarily operate RL key.  | MTT lamp extinguished.  |
| 47   | Restore all keys and switches not required in next test.   |   |
| 48   | Remove plug of handset from TM2 jack.  |   |

#### O. Supervision—Called End Disconnect

|    |  |   |
|----|--|---|
| 18 | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19 | Operate MTTA key.  |   |
| 20 | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21 | Restore all keys and switches except MTTA key.   |   |
| 22 | Select dial tone marker.   |   |
| 23 | Select originating register group.   |   |
| 24 | Select MISC class of test.   |   |
| 25 | Select class of service and rate treatment having access to CCSA test attendant trunk. |   |
| 26 | Select line location for appearance 1 of ONAL under test.                              |   |

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| STEP | ACTION  | VERIFICATION   |
|------|---|--|
| 27   | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.   |  |
| 28   | Insert plug of handset into TM2 jack.   |  |
| 29   | Momentarily operate ST key.   | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*   |
| 30   | Operate CANS key.<br>*Attendant answer.*  | E lamp lighted.<br>CTX lamp extinguished.  |
| 31   | Operate STI key.<br>*Attendant startout.*   | Dial tone heard.<br>High tone silenced.<br>RDY lamp lighted.<br>*Originating register attached.*   |
| 32   | Restore ANS key.  |  |
| 33   | Select A_ through G_ digits as required to route call to simulated 2-wire trunk circuit.                  | Dial tone silenced.<br>RDY lamp extinguished.<br>TS lamp lighted.<br>*Linkage established between appearance 2 of ONAL and simulated 2-way trunk circuit.*                                   |
| 34   | Restore STI key.  | CTX lamp flashes at 30 ipm.<br>*Awaiting station answer.*  |
| 35   | Operate TM2 key.  |  |
| 36c  | If attendant operation of on-net station is <i>not</i> provided—<br>Operate ANS key.<br>*Station answer.* | CTX lamp extinguished.<br>High tone not heard at test receiver.<br>High tone heard in handset at TM2 jack.<br>*Linkage released between appearance 1 of ONAL and CCSA test attendant trunk.* |
| 37d  | If attendant verification of on-net station is provided—<br>Operate ANS key.<br>*Station answer.*         | CTX lamp lighted steadily.<br>High tone not heard in handset at TM2 jack or in test receiver.<br>*Verifies calling station on hold.*   |
| 38d  | Operate TN key.   | High tone heard in handset at TM2 jack but not heard in test receiver.<br>*Verifies connection between attendant and called station (ONAL appearances 1 and 2).*                             |
| 39d  | Restore TN key.   | High tone not heard in handset at TM2 jack or in test receiver.<br>*Tone manipulation.*  |

| STEP | ACTION  | VERIFICATION  |
|------|---|---|
| 40d  | Restore CANS key.   | CTX lamp extinguished.<br>High tone heard in handset at TM2 jack but not in test receiver.<br>*Connection established between incoming call and ONAL appearance 2.<br>Linkage released between attendant and appearance 1.*   |
| 41   | Restore ANS key.<br>*Called end disconnect.*  |   |
| 42   | Operate 2 DISC key.   | E lamp extinguished.<br>High tone silenced in handset at TM2 jack.<br>TS lamp extinguished.<br>*Linkage released between appearance 2 of ONAL and simulated 2-wire trunk circuit.*<br>If permanent signal timing is provided—<br>In 6 or 12 minutes (depending upon option furnished in interrupter circuit)—<br>Minor alarm sounds.<br>Permanent signal lamp (ONPS) associated with ONAL under test lighted.<br>At relay rack miscellaneous circuit—<br>Permanent signal lamp lighted. |
| 43   | At MTF—<br>Restore SEZ key.<br>*Calling end disconnect.*  | E lamp extinguished.<br>ONPS lamp extinguished.<br>Minor alarm silenced.<br>At relay rack miscellaneous circuit—<br>Permanent signal lamp extinguished.   |
| 44   | At MTF—<br>Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 45   | Operate SEZ, ANS keys.  |   |
| 46   | Restore TM2 key.  |   |
|      | <b>Note:</b> The following steps need not be performed when either Test M, N, P through S, U, or V is to be performed next. |   |
| 47   | Restore MTTA key.   | MTT lamp extinguished.  |
| 48   | Momentarily operate RL key.   |   |
| 49   | Restore all keys and switches not required in next test.  |   |
| 50   | Remove plug of handset from TM2 jack.   |   |

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| STEP                                       | ACTION   | VERIFICATION  |
|--|--|---|
| <b>P. Attendant Release After Startout</b> |  |   |
| <b>No Originating Register Available</b>   |  |   |
| 18   | Momentarily operate ST key.  | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19   | Operate MTTA key.  |   |
| 20   | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21   | Restore all keys and switches except MTTA key.   |   |
| 22   | Select dial tone marker.   |   |
| 23   | Select originating register group.   |   |
| 24   | Select MISC class of test.   |   |
| 25   | Select class of service and rate treatment having access to CCSA test attendant trunk.   |   |
| 26   | Select line location for appearance 1 of ONAL under test.  |   |
| 27   | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.  |   |
| 28   | Momentarily operate ST key.  | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*  |
| 29   | Operate CANS key.<br>*Attendant answer.*   | E lamp lighted.<br>CTX lamp extinguished.   |
| 30   | At relay rack frame—<br>Insulate 2B of RV relay on ONAL under test.<br>*Open ring lead of ONAL to prevent ground start from appearance 2.* |   |
| 31   | At MTF—<br>Operate STI key; <b>start timing</b> .<br>*Attendant startout.*   | High tone silenced for 3 to 4 seconds.<br>RDY lamp not lighted.   |

| STEP                | ACTION  | VERIFICATION   |
|---------------------|---|--|
| 32                  | Restore ONT key.<br>*Disconnection of test receiver.*                                       | High tone silenced.  |
| 33                  | Operate RB key for 1 second.<br>*20-Hz ringing applied.*                                    |  |
| 34                  | Operate ONT key.<br>*Connection of test receiver.*  | High tone heard.   |
| 35                  | Restore STI key.  | CTX lamp lighted.  |
| 36                  | At relay rack frame—<br>Remove insulator from 2B of RV relay.                               |  |
| 37                  | At MTF—<br>Operate STI key.<br>*Attendant startout.*  | CTX lamp extinguished.<br>Dial tone heard.<br>High tone silenced.<br>RDY lamp lighted.<br>*Originating register attached.* |
| 38                  | Select A_ through K_ digits as required for permanent busy number.                          | Overflow or busy tone heard.<br>Dial tone silenced.<br>RDY lamp extinguished.<br>*Verifies second startout.*               |
| 39                  | Restore SEZ key.<br>*Calling end disconnect.*   | Overflow or busy tone silenced.<br>E lamp extinguished.<br>High tone not heard.  |
| 40                  | Momentarily operate RL key.   | All lamps extinguished except MTT.   |
| 41                  | Operate SEZ key.  |  |
| 42                  | Restore STI, CANS keys.   |  |
| <b>Partial Dial</b> |   |  |
| 43                  | Momentarily operate ST key.   | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.* |
| 44                  | Operate CANS key.<br>*Attendant answer.*  | E lamp lighted.<br>CTX lamp extinguished.  |
| 45                  | Operate STI key.<br>*Attendant startout.*   | High tone silenced.<br>RDY lamp lighted.<br>Dial tone heard.<br>*Originating register attached.*                           |
| 46                  | Select any A_, B_, and C_ digits that will not be recognized as a code or treated as unused | RDY lamp extinguished.<br>Dial tone silenced.  |

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| STEP                       | ACTION   | VERIFICATION   |
|----------------------------|--|--|
|                            | digit.<br>*Partial dial.*  |  |
| 47                         | Restore STI key.   |  |
| 48                         | Momentarily operate RD key.<br>*Attendant release of originating register.*    | High tone heard.<br>CTX lamp lighted.  |
| 49                         | Operate STI key.<br>*Attendant startout.*                                      | CTX lamp extinguished.<br>High tone silenced.<br>Dial tone heard.<br>RDY lamp lighted.<br>*Originating register attached.*                                 |
| 50                         | Select A_ through K_ digits as required for permanent busy number.             | Busy tone heard.<br>RDY lamp extinguished.<br>Dial tone silenced.<br>*Verifies second startout.*   |
| 51                         | Restore SEZ key.<br>*Calling end disconnect.*                                  | Busy tone silenced.<br>E lamp extinguished.<br>High tone not heard.  |
| 52                         | Momentarily operate RL key.  | All lamps extinguished except MTT lamp.  |
| 53                         | Operate SEZ key.   |  |
| 54                         | Restore STI, CANS key.   |  |
| <b>Release Destination</b> |  |  |
| 55                         | Momentarily operate ST key.  | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*                                 |
| 56                         | Operate CANS key.<br>*Attendant answer.*                                       | E lamp lighted.<br>CTX lamp extinguished.  |
| 57                         | Operate STI key.<br>*Attendant startout.*                                      | High tone silenced.<br>Dial tone heard.<br>RDY lamp lighted.<br>*Originating register attached.*   |
| 58                         | Select A_ through G_ digits as required for MTF simulated 2-way trunk circuit. | Dial tone silenced.<br>RDY lamp extinguished.<br>TS lamp lighted.<br>*Linkage established between appearance 2 of ONAL and simulated 2-way trunk circuit.* |

| STEP  | ACTION   | VERIFICATION  |
|---|--|---|
| 59  | Restore STI key.   | CTX lamp flashes at 30 ipm.<br>*Awaiting called station answer.*  |
| 60  | Momentarily operate RD key.<br>*Attendant release of destination.* | TS lamp extinguished.<br>CTX lamp lighted.<br>High tone heard.  |
| 61  | Operate STI key.<br>*Attendant startout.*                          | CTX lamp extinguished.<br>High tone silenced.<br>Dial tone heard.<br>RDY lamp lighted.<br>*Originating register attached.*  |
| 62  | Select A_ through K_ digits as required for permanent busy number. | Busy tone heard.<br>Dial tone silenced.<br>RDY lamp extinguished.<br>*Verifies second startout.*  |
| 63  | Restore SEZ key.<br>*Calling end disconnect.*                      | Busy tone silenced.<br>High tone not heard.   |
| 64  | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| <b>All Tests</b>  |  |   |
| <i>Note:</i> The following steps need not be performed when either Test M, N, O, Q through U, or V is to be performed next. |  |   |
| 65  | Restore MTTA key.  | MTT lamp extinguished.  |
| 66  | Momentarily operate RL key.  |   |
| 67  | Restore all keys and switches not required in next test.           |   |
| <b>Q. Abandoned Call Before Attendant Answer</b>  |  |   |
| 18  | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19  | Operate MTTA key.  |   |
| 20  | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21  | Restore all keys and switches except MTTA key.                     |   |

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| STEP | ACTION  | VERIFICATION  |
|------|---|---|
| 22   | Select dial tone marker.  |   |
| 23   | Select originating register group.  |   |
| 24   | Select MISC class of test.  |   |
| 25   | Select class of service and rate treatment having access to CCSA test attendant trunk.  |   |
| 26   | Select line location for appearance 1 of ONAL under test.   |   |
| 27   | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.   |   |
| 28   | Momentarily operate ST key.   | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*      |
| 29   | Restore SEZ key.<br>Calling end disconnect.*  | CTX lamp extinguished.<br>High tone silenced.<br>*Linkage released between appearance 1 of ONAL and CCSA test attendant trunk.* |
| 30   | Momentarily operate RL key.<br><br><i>Note:</i> The following steps need not be performed when either Test M through O, R, S, U, or V is to be performed. | All lamps extinguished except MTT.  |
| 31   | Restore MTTA key.   | MTT lamp extinguished.  |
| 32   | Momentarily operate RL key.   |   |
| 33   | Restore all keys and switches not required in next test.  |   |

**R. Abandoned Call Before Called Station Answer**

|    |                             |   |
|----|-----------------------------|---|
| 18 | Momentarily operate ST key. | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19 | Operate MTTA key.           |   |
| 20 | Momentarily operate RL key. | All lamps extinguished except MTT.  |

| STEP | ACTION   | VERIFICATION   |
|------|--|--|
| 21   | Restore all keys and switches except MTTA key.   |  |
| 22   | Select dial tone marker.   |  |
| 23   | Select originating register group.   |  |
| 24   | Select MISC class of test.   |  |
| 25   | Select class of service and rate treatment having access to CCSA test attendant trunk.                                   |  |
| 26   | Select line location for appearance 1 of ONAL under test.  |  |
| 27   | Operate ANS, SEZ, EM, LLS, KCS, ONT key.   |  |
| 28   | Momentarily operate ST key.  | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*                                 |
| 29   | Operate CANS key.<br>*Attendant answer.*   | E lamp lighted.<br>CTX lamp extinguished.  |
| 30   | Operate STI key.<br>*Attendant startout.*  | Dial tone heard.<br>High tone silenced.<br>RDY lamp lighted.<br>*Originating register attached.*   |
| 31   | Restore ANS key.   |  |
| 32   | Select A_ through G_ digits as required to route call to simulated 2-wire trunk circuit.                                 | Dial tone silenced.<br>RDY lamp extinguished.<br>TS lamp lighted.<br>*Linkage established between appearance 2 of ONAL and simulated 2-way trunk circuit.* |
| 33   | Restore STI key.   | CTX lamp flashes at 30 ipm.<br>*Awaiting station answer.*  |
| 34   | Restore SEZ key.<br>*Calling end disconnect.*  | TS, CTX lamps extinguished.<br>*Linkage released.*   |
| 35   | Momentarily operate RL key.  | All lamps extinguished except MTT.   |
| 36   | Operate SEZ, ANS keys.   |  |
|      | <b>Note:</b> The following steps need not be performed when either Test M through Q, S, U, or V is to be performed next. |  |

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| STEP  | ACTION   | VERIFICATION  |
|---|--|---|
| 37  | Restore MTTA key.  | MTT lamp extinguished.  |
| 38  | Momentarily operate RL key.  |   |
| 39  | Restore all keys and switches not required in next test.                               |   |
| <b>S. Call to Distant Attendant Facilities (Auxiliary Line Circuit SD-99484-01 in Distant Office)</b> |  |   |
| 18  | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19  | Operate MTTA key.  |   |
| 20  | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21  | Restore all keys and switches except MTTA key.   |   |
| 22  | Select dial tone marker.   |   |
| 23  | Select originating register group.   |   |
| 24  | Select MISC class of test.   |   |
| 25  | Select class of service and rate treatment having access to CCSA test attendant trunk. |   |
| 26  | Select line location for appearance 1 of ONAL under test.                              |   |
| 27  | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.  |   |
| 28  | Restore ONT key.   |   |
| 29  | Operate LS key.  |   |
| 30  | Insert plug of handset into TNK jack.  |   |
| 31  | Momentarily operate ST key.<br>*Wink seizure of ONAL.*                                 | Ringling tone heard.<br>*Ground start function.*<br><br>At distant attendant facilities—<br>Attendant answers call.<br>At MTF—                                      |

| STEP  | ACTION   | VERIFICATION   |
|---|--|--|
|   |  | Ringing tone silenced.<br>E lamp lighted.<br>Talking path established between handset at TNK jack and distant attendant facilities.  |
| 32  | Request attendant to release call.   | Talking path removed between handset and distant attendant facilities.<br>At MTF—<br>E lamp extinguished.  |
| 33  | Momentarily operate RL key.<br><br><i>Note:</i> The following steps need not be performed when either Test M through R, T, U, or V is to be performed next.    | All lamps extinguished except MTT.   |
| 34  | Restore MTTA key.  | MTT lamp extinguished.   |
| 35  | Momentarily operate RL key.  |  |
| 36  | Restore all keys and switches not required in next test.   |  |
| 37  | Remove plug of handset from TNK jack.  |  |
| <b>T. Call to Distant Attendant Facilities (Auxiliary Line Circuit SD-99484-01 Directly Wired in Same Office)</b> |  |  |
| 3   | Select LT class of test.   |  |
| 4   | Select completing marker 0 or 1.   |  |
| 5   | Select office designation.   |  |
| 6   | Select incoming class of call.   |  |
| 7   | Select A_ through D_ (or E_) digits as required for directory numbers (and directory code) assigned to auxiliary line circuit associated with ONAL under test. |  |
| 8   | Operate T key.   |  |
| 9   | Momentarily operate ST key.  | LT, S lamps lighted.<br>Ringing tone heard.<br>At distant attendant facilities—<br>Attendant answers call.<br>Ringing tone silenced.<br>S lamp extinguished.<br>Talking path established between test receiver and distant attendant facilities. |

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| <b>STEP</b> | <b>ACTION</b>  | <b>VERIFICATION</b>   |
|-------------|--|---|
| 10          | Request attendant to release call.                       | Talking path removed between test receiver and distant attendant facilities.<br>S lamp lighted. |
| 11          | Momentarily operate RL key.                              | All lamps extinguished.   |
| 12          | Restore all keys and switches not required in next test. |   |

**U. Cross-Office Lockout (17E Testboard Provided)**

|    |  |   |
|----|--|---|
| 18 | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19 | Operate MTTA key.  |   |
| 20 | Momentarily operate RL key.  | All lamps extinguished except MTT.  |
| 21 | Restore all keys and switches except MTTA key.   |   |
| 22 | Select dial tone marker.   |   |
| 23 | Select originating register group.   |   |
| 24 | Select MISC class of test.   |   |
| 25 | Select class of service and rate treatment having access to CCSA test attendant trunk. |   |
| 26 | Select line location for appearance 1 of ONAL under test.                              |   |
| 27 | Operate ANS, SEZ, EM, LLS, KCS, ONT keys.  |   |
| 28 | Momentarily operate ST key.  | CTX lamp lighted.<br>High tone heard.<br>*Linkage established between appearance 1 of ONAL and CCSA test attendant trunk.*  |
| 29 | Operate CANS key.<br>*Attendant answer.*   | E lamp lighted.<br>CTX lamp extinguished.   |
| 30 | Operate STI key.<br>*Attendant startout.*  | Dial tone heard.<br>High tone silenced.   |

| STEP | ACTION  | VERIFICATION   |
|------|---|--|
|      |   | RDY lamp lighted.<br>*Originating register attached.*  |
| 31   | Restore ANS key.  |  |
| 32   | Insert plug of handset into TNK jack.<br>At MTF telephone, key, and lamp circuit—<br>Select A_ through K_ digits as required to route call to a permanent busy number in distant office. (Outgoing trunk selected must be equipped with LO relay. Typical trunk is SD-27655-01 for CCSA.) | At MTF—<br>Dial tone silenced.<br>RDY lamp extinguished.<br>Busy tone heard in handset.                    |
| 33   | At 17E testboard—<br>Apply cross-office lockout condition to ONAL under test.   | LO lamp associated with outgoing trunk in selected route lighted.  |
| 34   | At MTF—<br>Momentarily operate RL key.  | All lamps extinguished except MTTA<br>Busy tone silenced.<br>At 17E testboard—<br>LO lamp remains lighted. |
| 35   | Remove lockout condition from outgoing trunk.   | LO lamp extinguished.  |
|      | <b>Note:</b> The following steps need not be performed when either Test M through S, or V is to be performed next.  |  |
| 36   | At MTF—<br>Restore MTTA key.  | MTT lamp extinguished.   |
| 37   | Momentarily operate RL key.   |  |
| 38   | Restore all keys and switches not required in next test.  |  |
| 39   | Remove plug of handset from TNK jack.   |  |

#### MISCELLANEOUS TESTS

##### V. Remote Make-Busy From Auxiliary Line Circuit

|    |                             |   |
|----|-----------------------------|---|
| 18 | Momentarily operate ST key. | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, MTT lamps lighted. |
| 19 | Operate MTTA key.           |   |

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| <b>STEP</b> | <b>ACTION</b>  | <b>VERIFICATION</b>   |
|-------------|--|---|
| 20          | Momentarily operate RL key.                              | All lamps extinguished except MTT.  |
| 21          | Restore all keys and switches except MTTA key.           |   |
| 22          | Select dial tone marker.                                 |   |
| 23          | Select originating register group.                       |   |
| 24          | Insert plug of handset into TNK jack.                    |   |
| 25          | Operate LLS, ONT, EM, ANS keys.                          |   |
| 26          | Momentarily operate ST key.                              | Overflow tone heard at TNK jack.<br>RMB lamp lighted.<br>If 17E testboard is provided—<br>At 17E testboard—<br>LO lamp associated with ONAL under test lighted. |
| 27          | At MTF—<br>Restore ANS key.                              | Overflow tone silenced at TNK jack.<br>RMB lamp extinguished.<br>If 17E testboard provided—<br>At 17E testboard—<br>LO lamp extinguished.                       |
| 28          | At MTF—<br>Momentarily operate RL key.                   | All lamps extinguished except MTT.  |
| 29          | Restore MTTA key.  | MTT lamp extinguished.  |
| 30          | Momentarily operate RL key.                              |   |
| 31          | Restore all keys and switches not required in next test. |   |
| 32          | Remove plug of handset from TNK jack.                    |   |

**W. ONAL Busy (17E Testboard Not Provided)**

|    |  |                         |
|----|--|-------------------------|
| 18 | Insert make-busy plug into MB- jack associated with ONAL under test. |                         |
| 19 | Momentarily operate ST key.  | TB lamp lighted.        |
| 20 | Momentarily operate RL key.  | All lamps extinguished. |
| 21 | Restore FS, TS keys.   |                         |
| 22 | Operate NTFS, NTTS keys.   |                         |

| STEP   | ACTION  | VERIFICATION   |
|--|---|--|
| 23   | Momentarily operate RL key.   | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted. |
| 24   | Momentarily operate RL key.   | All lamps extinguished.<br>If ETS provided—<br>FT lamp remains lighted.  |
| 25   | Remove make-busy plug from MB-jack associated with ONAL under test. | If ETS provided—<br>FT lamp extinguished.  |
| 26   | Restore all keys and switches not required in next test.            |  |
| <b>X. ONAL Busy (17E Testboard Provided)</b> |   |  |
| 18   | At 17E testboard—<br>Apply make-busy condition to ONAL under test.  | LO lamp associated with ONAL under test lighted.   |
| 19   | At MTF—<br>Momentarily operate ST key.                              | TB lamp lighted.   |
| 20   | Momentarily operate RL key.   | All lamps extinguished.  |
| 21   | Restore FS, TS keys.  |  |
| 22   | Operate NTFS, NTTS keys.  |  |
| 23   | Momentarily operate ST key.   | ♦If CDTT key is operated—<br>S1 lamp lighted.♦<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E lamps lighted.<br>PK lamp not lighted. |
| 24   | Momentarily operate RL key.   | All lamps extinguished.<br>If ETS provided—<br>FT lamp remains lighted.  |
| 25   | Restore all keys and switches not required in next test.            |  |
| 26   | At 17E testboard—<br>Remove make-busy condition applied to ONAL     | LO lamp extinguished.<br>If ETS provided—  |

| STEP   | ACTION   | VERIFICATION  |
|--|--|---|
|  | under test.  | At MTF—<br>FT lamp extinguished.  |
| <b>Y. Universal Pad Control</b>                                    |  |   |
| 18   | Operate 2WD key.   |   |
| 19   | Momentarily operate ST key.  | ◆If CDTT key is operated—<br>S1 lamp lighted.◆<br>If ETS provided—<br>FT, S1 lamps lighted.<br>If LAMA-C provided—<br>S1 lamp lighted.<br>AS, E, lamps lighted.<br>PK lamp not lighted.<br>At relay rack frame—<br>PC relay associated with ONAL under test operated.<br>At main distribution frame—<br>Ground present at ESC terminal associated with ONAL under test. |
| 20   | At MTF—<br>Momentarily operate RL key.   | All lamps extinguished.<br>PC relay released.<br>At main distributing frame—<br>Ground removed from ESC terminal.   |
| 21   | At MTF—<br>Restore all keys and switches not required in next test.  |   |
| <b>Z. False-Buy and False-Idle Conditions ◆(ETS not Provided)◆</b> |  |   |
| 1a   | If 17E testboard is provided—<br>At 17E testboard—<br>Apply make-busy condition to ONAL under test.                  | LO lamp associated with ONAL under test lighted.  |
| 2b   | If 17E testboard is not provided—<br>At MTF—<br>Insert make-busy plug into MB- jack associated with ONAL under test. |   |
| 3  | At relay rack frame—<br>Connect power to 1A fault locator.   |   |
| 4  | At 1A fault locator—<br>Set W-T switch to W.   |   |
| 5  | Set HR-LRT switch to LRT.  | Whistle heard.  |

| STEP | ACTION  | VERIFICATION   |
|------|---|--|
| 6    | Connect testing cord from WT jack of 1A fault locator to terminal 45 of terminal strip A associated with trunk under test.  | Whistle not heard.   |
| 7    | While circuit being tested is idle—<br>Block nonoperated MA, E relays.  |  |
| 8a   | If 17E testboard is provided—<br>At 17E testboard—<br>Apply make-busy condition to all ONALs using same route on same trunk link as ONAL under test.                    | At relay rack frame—<br>Whistle heard when last ONAL is made busy. |
| 9b   | If 17E testboard is not provided—<br>At MTF—<br>Insert make-busy plugs into MB- jacks associated with all ONALs using same route on same trunk link as ONAL under test. | At relay rack frame—<br>Whistle heard when last ONAL is made busy. |
| 10   | Momentarily restore B relay.  | Whistle silenced while B relay is restored.                        |
| 11   | Connect ground to U_ winding of E1 relay.   |  |
| 12   | Momentarily restore B relay.  | Whistle still heard while B relay is restored.                     |
| 13   | Remove ground from E1 relay.  |  |
| 14   | Connect ground to U_ winding of MB1 relay.  |  |
| 15   | Momentarily restore B relay.  | Whistle still heard while B relay is restored.                     |
| 16   | Remove ground from MB1 relay.   |  |
| 17   | Block nonoperated Z relay.  |  |
| 18   | Connect ground to U_ winding of W relay.  |  |
| 19   | Momentarily restore B relay.  | Whistle still heard while B relay is restored.                     |
| 20   | Remove ground from W relay.   |  |
| 21   | Remove blocking tool from Z relay.  |  |
| 22   | Block nonoperated W relay.  |  |
| 23   | Connect ground to U_ winding of Z relay.  |  |
| 24   | Momentarily restore B relay.  | Whistle still heard while B relay is restored.                     |
| 25   | Remove ground from Z relay.   |  |
| 26   | Remove blocking tool from W relay.  |  |

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| <b>STEP</b> | <b>ACTION</b>  | <b>VERIFICATION</b>                            |
|-------------|--|--|
| 27          | Connect ground to U_ winding of SP relay.  |  |
| 28          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 29          | Remove ground from SP relay.   |  |
| 30          | Remove make-busy condition applied in Step 8a or 9b.   |  |
| 31          | Connect HRG terminal to terminal 55 of terminal strip A associated with trunk under test.                    |  |
| 32          | Disconnect testing cord from terminal 45 of terminal strip A and connect to terminal 15 of terminal strip A. |  |
| 33          | Momentarily restore B relay.   | Whistle not heard while B relay is restored.   |
| 34          | Connect to U_ winding of E2 relay.   |  |
| 35          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 36          | Remove ground from E2 relay.   |  |
| 37          | Block nonoperated E1, E2, MB relays.   |  |
| 38          | Remove blocking tool from E, MA relays.  |  |
| 39          | Connect ground to U_ winding of E relay.   |  |
| 40          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 41          | Remove ground from E relay.  |  |
| 42          | Connect ground to U_ winding of MB1 relay.   |  |
| 43          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 44          | Remove ground from MB1 relay.  |  |
| 45          | Connect ground to U_ winding of SP relay.  |  |
| 46          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 47          | Remove ground from SP relay.   |  |
| 48          | Connect -48 volts to L winding of G relay.   |  |
| 49          | Momentarily restore B relay.   | Whistle still heard while B relay is restored. |
| 50          | Remove battery from G relay.   |  |

| STEP | ACTION  | VERIFICATION |
|------|---|--------------|
| 51   | Remove blocking tools from E1, E2, MB relays.                         |              |
| 52   | Remove test connections from terminals 15 and 55 of terminal strip A. |              |
| 53   | Remove power from 1A fault locator.                                   |              |
| 54   | Remove make-busy condition applied in Step 1a or 2b.                  |              |

