

**CAMA JUNCTOR CIRCUIT SD-26102-01**  
**TESTS USING TRUNK TEST CIRCUIT SD-25918-01**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**PAGE**

**1.01** This section describes a method of testing CAMA junctor circuit SD-26102-01 in No. 5 crossbar offices by using the master test frame (MTF) and the trunk test circuit. Included in this section is a miscellaneous test which is made without the use of the MTF.

**C. Supervision—Terminating End Disconnect:** The following features are checked. (1) Charge functions. (2) Timed release of circuit within 13 to 32 seconds. . . . .

**5**

**1.02** This section is reissued for the reasons listed below. Revision arrows are used to emphasize the more significant changes. This reissue affects Equipment Tests Lists.

**D. Noncharge Supervision:** This test checks that an answer entry is not made when an answered call is held less than 2 seconds. . . . .

**6**

(a) To include test procedures required when the No. 5 crossbar office is arranged with the Electronic Translation System (ETS) and the CAMA feature is provided.

**E. Cancel Disconnect Entry:** This test checks the canceling of request for disconnect entry if disconnect entry is not made within 2 to 5 seconds after disconnect. . . . .

**6**

(b) To make minor changes as required.

**F. Overflow:** This test checks that overflow tone is returned to the calling customer when the second usage marker is unable to establish the terminating connection. . . . .

**7**

**1.03** The tests covered are:

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**A. Junctor Seizure:** The following features are checked. (1) Seizure of junctor, (2) Continuity and polarity of tip and ring leads of the originating end of the junctor, (3) Ability to terminate at a CAMA operator position through a CAMA sender. . . . .

**4**

**G. Call to Busy Line:** The following features are checked. (1) Noncharge functions on call to busy line, (2) Transmission of busy tone. . . . .

**8**

**B. Supervision—Originating and Terminating Ends Disconnect:** The following features are checked. (1) Charge functions, (2) Release of circuit without using timed release, (3) Trunk number assignment in call identity indexer and recorder number, (4) Ability of circuit to hold if extra digits are dialed. . . . .

**4**

**H. Circuit Busy:** The following features are checked. (1) Seizure for the test call by master test frame when circuit is made busy, (2) Busy condition to service call when circuit is made busy. . . . .

**8**

**I. False-Busy and False-Idle Conditions:** ♦No. 5 ETS CAMA not provided)♦ This test checks for continuity and crosses on F, BT, and FT leads. . . . .

**9**

**NOTICE**

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1.04 Test E requires action and verification at the MTF and relay rack frame.

1.05 If the circuit being tested is arranged for intertoll completion, the route selected by the operated A\_ through K\_ keys or switches should provide access to outgoing (not 2-way) intertoll trunk circuits.

1.06 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section indicates an action which may or may not be required, depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.07 While performing Tests A through H, local instructions should be followed for recording and reporting register operations associated with the PC lead of the CAMA position link circuit.

1.08 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.

1.09 ♦The statement between the asterisks (\* \*) after ACTION and VERIFICATION statements is added to clarify the function being simulated or the action being taken in the test procedures.

1.10 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.

1.11 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

1.12 When the office is arranged for ETS, the distributors and scanners 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 section for the office arrangement.

218-799-701—Taking ETS Equipment Out-of-Service.

1.13 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 scanning to be repeated on the FT lamp at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, scanning will continue to be repeated on the lamp, 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.♦

## 2. APPARATUS

### Tests A Through H

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

2.02 Trunk test circuit, SD-25918-01.

2.03 Test circuit for register and CAMA sender circuits, SD-25988-01.

2.04 Test set circuit for register and CAMA sender circuits (test set), SD-25676-01.

2.05 Patching cord, 20-conductor, 6 feet long, equipped with one KS-13875 plug and one KS-13895 plug (W20C cord) (for connecting test set circuit for register and CAMA sender circuits to test circuit for register and CAMA sender circuits).

### Tests B, C, and E

2.06 KS-3008 stopwatch or equivalent.

**Tests E and I**

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

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

**Test I**

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

**3. PREPARATION****STEP****ACTION****VERIFICATION****Tests A Through H**

- |     |   |                         |
|-----|---|-------------------------|
| 1   | At MTF—<br>Restore all keys and switches.                               |                         |
| 2   | Momentarily operate RL key.   | All lamps extinguished. |
| 3   | ◆Patch IRT jack to IRT connector of register and CAMA sender test set.◆ |                         |
| 4   | At test set—<br>Set L switch to OFF.                                    |                         |
| 5   | At MTF—<br>Set POS switch to 0.   |                         |
| 6   | ◆Set MF switch to MPT.  |                         |
| 7   | Select completing marker.   |                         |
| 8   | Select class of service and/or rate treatment as required.              |                         |
| 9a  | If No. 5 ETS-CAMA is provided—<br>Operate PCS, PTS keys.                |                         |
| 10  | Operate TLK, KY, FS, TS, CAM0/1, GPA/B, OGT, OD keys.                   |                         |
| 11  | Select route advance.   |                         |
| 12a | If No. 5 ETS-CAMA is provided—<br>Operate TB-RA switch.◆                |                         |

**Tests A Through F and H**

- 13 Operate A\_ through K\_ as required to select circuit being tested. (Refer to paragraph 1.05.)

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

Tests B Through E

|     |  |  |
|-----|--|--|
| 14b | If associated outgoing trunk circuit is arranged for E and M lead supervision—<br>Operate E-M key. |  |
|-----|--|--|

4. METHOD

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

A. Junctor Seizure

|    |  |  |
|----|--|--|
| 14 | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender. Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>PK lamp not lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
|----|--|--|

|    |  |                         |
|----|--|-------------------------|
| 15 | At MTF—<br>Momentarily operate RL key. | All lamps extinguished. |
|----|--|-------------------------|

|    |  |  |
|----|--|--|
| 16 | If no other tests are to be made—<br>Restore all keys, set all switches to OFF;<br>remove patching cord. |  |
|----|--|--|

B. Supervision—Originating and Terminating Ends Disconnect

|    |  |  |
|----|--|--|
| 15 | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender. Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
|----|--|--|

|    |                     |  |
|----|---------------------|--|
| 16 | Key calling number. | At MTF—<br>High tone silenced.<br>MRL, IE, T_, U_, RN_ lamps lighted.<br>◆If No. 5 ETS CAMA is provided—<br>IE, T_, U_, RN_ lamps <i>not</i> lighted.◆<br>If E-M key is operated—<br>E lamp lighted. |
|----|---------------------|--|

|    |  |  |
|----|--|--|
| 17 | Operate ANS key; <i>start timing</i> .<br>◆*Supervision of terminating and answered call and timed AMA answer entry.*◆ | High tone heard.<br>In 2 to 5 seconds—<br>AE lamp lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>CS lamp lighted.◆ |
|----|--|--|

| STEP | ACTION   | VERIFICATION  |
|------|--|---|
| 18   | Dial digit 7.<br>◆*Checks slow release of S1 relay in trunk under test.*◆  | High tone still heard.  |
| 19   | Restore ANS, TLK keys.<br>◆*Release of circuit without timed release, trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone silenced.<br>DE lamp lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1, CS lamps extinguished.◆ |
| 20   | Momentarily operate RL key.  |   |
| 21e  | If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.                                       | All lamps extinguished.   |

### C. Supervision—Terminating End Disconnect

**Note:** Do not proceed with this test until 2 minutes have elapsed since the thermal time-delay relay (RL) in the circuit was last energized.

|    |  |  |
|----|--|--|
| 15 | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender. Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
| 16 | Key calling number.  | At MTF—<br>High tone silenced.<br>MRL, IE, T, U, RN lamps lighted.<br>◆If No. 5 ETS CAMA is provided—<br>IE, T, U, RN lamps <b>not</b> lighted.◆                       |
| 17 | Operate ANS key; <b>start timing</b> .<br>◆*Supervision of terminating end, answered call and trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆                                   | High tone heard.<br>In 2 to 5 seconds—<br>AE lamp lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>CS lamp lighted.◆   |
| 18 | Restore ANS key; <b>start timing</b> .<br>◆*Supervision of terminating end disconnect with timed release, trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆                       | High tone silenced.<br>In 13 to 32 seconds—<br>DE lamp lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>S1, CS, FT lamps extinguished.◆                                  |
| 19 | Momentarily operate RL key.  | All lamps extinguished.  |

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| STEP                            | ACTION  | VERIFICATION   |
|---------------------------------|---|--|
| 20c                             | If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.  |  |
| <b>D. Noncharge Supervision</b> |   |  |
| 15                              | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender.<br>Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
| 16                              | Key calling number.   | At MTF—<br>High tone silenced.<br>MRL, IE, T_, U_, RN_ lamps lighted.<br>◆If No. 5 ETS CAMA is provided—<br>IE, T_, U_, RN_ lamps <i>not</i> lighted.◆                 |
| 17                              | Operate ANS key for 1-1/2 seconds.<br>◆*Answer entry not made when an answered call is held less than 2 seconds.*◆  | AE lamp not lighted.<br>While ANS key was operated—<br>High tone heard.<br>◆If No. 5 ETS-CAMA is provided—<br>CS lamp not lighted.◆                                    |
| 18                              | Momentarily operate RL key.   | All lamps extinguished.  |
| 19c                             | If other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.   |  |

**E. Cancel Disconnect Entry**

**Note:** Do not proceed with this test until 2 minutes have elapsed since the thermal time-delay relay (TR) in the circuit was last energized.

|    |   |  |
|----|---|--|
| 15 | At relay rack frame—<br>Operate MB switch of circuit being tested.  | MB lamp lighted.   |
| 16 | At MTF—<br>Operate NTTS, NTFS keys.   |  |
| 17 | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender.<br>Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.◆<br>At test set—<br>P lamp lighted. |

| STEP | ACTION   | VERIFICATION  |
|------|--|---|
| 18   | Key calling number.  | At MTF—<br>High tone silenced.<br>MRL, IE, T, U, RN lamps lighted.<br>♦If No. 5 ETS CAMA is provided—<br>IE, T, U, RN lamps <i>not</i> lighted.♦                          |
| 19   | Operate ANS key.   | High tone heard.<br>AE lamp lighted.<br>♦If No. 5 ETS-CAMA is provided—<br>CS lamp lighted.♦  |
| 20   | At relay rack frame—<br>Insulate 7B of S2 relay.   |   |
| 21   | At MTF—<br>Restore TLK, ANS keys; <i>start timing</i> .<br>♦*Canceling of a request for disconnect entry if disconnect entry is not made within 2 to 5 seconds after disconnect.*♦ | At relay rack frame—<br>In 2 to 5 seconds,<br>MA relay released.<br>At MTF—<br>DE lamp not lighted.<br>♦If No. 5 ETS-CAMA is provided—<br>S1, CS, FT lamps extinguished.♦ |
| 22   | At relay rack frame—<br>Remove insulator from S2 relay.  |   |
| 23   | Restore MB switch.   | MB lamp extinguished.   |
| 24   | At MTF—<br>Restore NTTS, NTFS keys.  |   |
| 25   | Momentarily operate RL key.  | All lamps extinguished.   |
| 26c  | If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.   |   |

#### F. Overflow

|    |  |  |
|----|--|--|
| 14 | Momentarily operate ST key.<br>♦*Trunk seizure and supervision and termination to CAMA operator position through a CAMA sender.<br>Trunk busy scanning and trunk supervisory scanning for No. 5 ETS-CAMA.♦ | High tone heard.<br>OGT, AS lamps lighted.<br>♦If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.♦<br>At test set—<br>P lamp lighted. |
| 15 | Momentarily operate STT key.<br>♦*Simulates a position disconnect key operation by a CAMA operator*♦   | At MTF—<br>High tone silenced.<br>Overflow tone heard.   |
| 16 | Momentarily operate RL key.  | All lamps extinguished.  |

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| STEP                        | ACTION   | VERIFICATION   |
|-----------------------------|--|--|
| 17b                         | If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.   |  |
| <b>G. Call to Busy Line</b> |  |  |
| 14                          | Operate A_ through K_ as required to select<br>route to distant busy line for circuit being<br>tested. (Refer to paragraph 1.05.)  |  |
| 15                          | Operate OP key.  |  |
| 16                          | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination<br>to CAMA operator position through a CAMA<br>sender.<br>Trunk busy scanning and trunk supervisory<br>scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
| 17                          | Key calling number.  | At MTF—<br>High tone silenced.<br>IE lamp lighted.<br>Busy tone heard.<br>AE lamp not lighted.<br>◆If No. 5 ETS CAMA is provided—<br>IE, AE lamps <i>not</i> lighted.  |
| 18                          | Momentarily operate RL key.  | All lamps extinguished.  |
| 19b                         | If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord.   |  |
| <b>H. Circuit Busy</b>      |  |  |
| 14                          | At relay rack frame—<br>Operate MB switch of circuit under test.   | MB lamp lighted.   |
| 15                          | At MTF—<br>Operate NTTS, NTFS keys.  |  |
| 16                          | Momentarily operate ST key.<br>◆*Trunk seizure and supervision and termination<br>to CAMA operator position through a CAMA<br>sender.<br>Trunk busy scanning and trunk supervisory<br>scanning for No. 5 ETS-CAMA.*◆ | High tone heard.<br>OGT, AS lamps lighted.<br>◆If No. 5 ETS-CAMA is provided—<br>FT, S1 lamps lighted.<br>Refer to paragraph 1.13.◆<br>At test set—<br>P lamp lighted. |
| 17                          | At MTF—<br>Momentarily operate RL key.   | All lamps extinguished.<br>High tone silenced.   |

| STEP   | ACTION  | VERIFICATION   |
|--|---|--|
| 18   | Operate TS key.   |  |
| 19   | Momentarily operate ST key.   | OGT, TB lamps lighted.                               |
| 20   | Momentarily operate RL key.   | All lamps extinguished.                              |
| 21   | At relay rack frame—<br>Restore MB switch.  | MB lamp extinguished.                                |
| 22b  | At MTF—<br>If no other tests are to be made—<br>Restore all keys; set all switches to OFF;<br>remove patching cord. |  |
| <b>I. False Busy and False Idle Conditions (No. 5<br/>ETS-CAMA Not Provided)</b> |   |  |
| 1  | At relay rack frame—<br>Connect power to 1A fault locator and operate<br>W-T switch to W, HR-LRT switch to HR.      |  |
| 2  | Connect WT jack of 1A fault locator to<br>terminal 45 of terminal strip on unit.                                    | Whistle silenced.                                    |
| 3  | When circuit being tested is idle—<br>Block operated S2 relay.  |  |
| 4  | Operate MB switches of all other circuits using<br>same route on same trunk link frame.                             | Whistle heard.<br>MB lamps lighted.                  |
| 5  | Momentarily remove blocking tool from S2<br>relay.  | Whistle silenced while blocking tool was<br>removed. |
| 6  | Insulate relay springs as follows:<br>Relay S2—7B<br>Relay S1—11M<br>Relay MA—10M                                   |  |
| 7  | Operate MB switch of circuit under test.  |  |
| 8  | Remove blocking tool from S2 relay.   | S2 relay released.<br>Whistle still heard.           |
| 9  | Block operated MA relay.  |  |
| 10   | Restore MB switch of circuit under test.  | Whistle still heard.                                 |
| 11   | Block operated S1 relay.  |  |
| 12   | Remove blocking tool from MA relay.   | MA relay released.<br>Whistle still heard.           |

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| <b>STEP</b> | <b>ACTION</b>   | <b>VERIFICATION</b>                        |
|-------------|---|--|
| 13          | Block operated OF relay.  |  |
| 14          | Remove blocking tool from S1 relay.   | S1 relay released.<br>Whistle still heard. |
| 15          | Connect HRG (high-resistance ground) terminal to terminal 55 of terminal strip on unit.                         |  |
| 16          | Disconnect WT jack of 1A fault locator from terminal 45 and connect it to terminal 5 of terminal strip on unit. | Whistle still heard.                       |
| 17          | Block operated S1 relay.  |  |
| 18          | Remove blocking tool from OF relay and manually release relay.  | OF relay released.<br>Whistle still heard. |
| 19          | Block operated MA relay.  |  |
| 20          | Remove blocking tool from S1 relay.   | S1 relay released.<br>Whistle still heard. |
| 21          | Block operated S2 relay.  |  |
| 22          | Remove blocking tool from MA relay.   | MA relay released.<br>Whistle still heard. |
| 23          | Remove insulators from S1, S2, MA relays.   |  |
| 24          | Remove blocking tool from S2 relay.   | S2 relay released.<br>Whistle silenced.    |
| 25          | Remove test connection from terminals 15 and 55 of terminal strip on unit.                                      |  |
| 26          | Remove power connected to 1A fault locator.   |  |
| 27          | Restore MB switches operated in Step 4.   | MB lamps extinguished.                     |