TRANSVERTERS SD-25591-01 AND SD-26161-01

TESTS USING OFFICE TEST FRAME TEST CIRCUIT SD-27633-01 (J23260)

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing transverters SD-25591-01 and SD-26161-01, using office test frame test circuit (OTF) SD-27633-01 (J23260) and the trouble indicator and connector circuit (TIC) SD-27634-01 in No. 5 crossbar offices. When translator access circuits are provided in offices arranged with the call data transmitter (CDT), refer to Section 218-779-513.

1.02 This section is reissued for the reasons listed below. Revision arrows are used to emphasize the more significant changes. This reissue does not affect Equipment Test Lists.

(a) To revise Test B to include a test for all message billing calls on first trial transfer start.

(b) To revise Test L to include a test for a regular release on second trial directory assistance calls.

1.03 The tests covered are:

A. Continuity, False Ground, and False Battery Tests of TIC and ICK Leads (LAMA Transverters): These tests check that the transverter causes a trouble display if a trouble battery or ground occurs on the TIC or ICK leads when trunk identification is being made.

B. Transfer of Start Lead From Transverter Connector: This test checks that the transverter causes a trouble display when the transverter connector fails to connect to the first idle transverter in the chain.

C. Observing Feature: This test checks the observing functions of the transverter.

D. Second Trial Feature: This test checks the second trial functions of the transverter.

E. Recorder Make-Busy and Recorder Trouble Features: This test checks transverter functions when a recorder is made busy. It also checks that the transverter causes a trouble display if it seizes a recorder that is in trouble.

F. Translator Make-Busy Feature: This test checks that when an associated translator is made busy, the transverter will send an overflow indication for detail billed calls and will give a regular release for bulk billed call.

G. Translator Double-Connection Feature: This test checks that the transverter will block and cause a trouble display if two translator start relays operate.

H. AMA Translator Selection and Directory Number Register Relays: This test checks that the transverter makes proper translator group selection and checks for transpositions in the directory number relay wiring in the translator and transverter.

I. ANI Translator Selection and Directory Number Register

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Printed in U.S.A.
Relays: This test provides for checking calling number identification.  

J. Information Code—Home Area (411) and Foreign Area (NPA 411): This test checks the transverter functions on home area 411 and foreign area NPA 411 information calls.

K. Forced Four-Line Entry: This test checks the ability of the transverter to be forced by the operation of the MDLC key at the jack, lamp, and key circuit, to make four-line entries on the AMA call.

L. Directory Assistance Charging: This test checks that billing of 411 and 555-1212 directory assistance calls are recorded on AMA records using 2-line tape entries.

1.04 Test E requires making a recorder busy and Test F requires making a translator busy.

1.05 Tests of trouble detecting features, as well as miscellaneous tests, are covered in Section 218-472-503 for transverter SD-25591-01 and Section 218-737-501 for transverter SD-26216-01.

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 Local instructions should be followed for recording and reporting any register operations caused by performing these tests. The register operations are as follows:

<table>
<thead>
<tr>
<th>TEST</th>
<th>REGISTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PC, TTR</td>
</tr>
</tbody>
</table>

*When ANI Transverter is used.
†When a condition arises that allows a bulk billed call to be completed free of charge.
‡If recorder is in trouble at time of test seizure.

2. APPARATUS

All Tests

2.01 Office test frame test circuit, SD-27633-01 (J23260).

2.02 Office test frame trouble indicator and connector circuit, SD-27634-01.

Test A

2.03 Two testing cords, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, and one 624B (terminal connector) tool.

2.04 19JH resistor.

2.05 18CR resistor.

Tests A, E

2.06 Two testing cords, W2W cords 10 feet long, equipped with a 310 plug, 360B tool, 360C
tool (2W17C cord), and 607A (relay winding connector) tool or 624B (terminal connector) tool.

**Tests B, C, D, J L**

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

**Test C**

2.08 Patching cord, P3BF cord, 7 feet long, equipped with a 351A plug and 464B plug (3P34A cord).

**Tests C Through G, J, K, L**

2.09 322A (make-busy) plugs as required.

**Tests C, H, I**

2.10 Patching cord, P3BE cord, 7 feet long, equipped with a 310 plug and a 459A plug.

**Tests E, G**

2.11 Two testing cords, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 624B (terminal connector) tools.

3. Preparation (Cont)

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTE: Refer to paragraphs 1.06 and 1.07.</td>
<td></td>
</tr>
</tbody>
</table>

**All Tests**

1  At OTF- 
   Restore all keys and switches.

2  At TIC- 
   Momentarily operate RLS key.

3  At OTF- 
   Operate MCB key.

4  Operate TV_ key to select transverter to be tested.

5  Operate MKR_ key to select completing marker.

6  Set L-L switch to 0.

**Tests H, I**

2.12 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord).

2.13 Patching cord, P3U cord, 7 feet long, equipped with 310 plug and 351A plug (3P27B cord).

**Test K**

2.14 KS-14343 tape reader.

2.15 Red china marking pencil.

3. PREPARATION

**Tests H, I**

3.01 Determine from office records line location and corresponding directory number for a line in each vertical group associated with each translator. Select these lines, and additional lines if necessary, so that the line directory numbers include each of the numerals 0 through 9 in each office, thousands, hundreds, tens, and units digit for which each translator is wired.

**VERIFICATION**

All lamps extinguished.

All lamps extinguished.
### STEP 218-473-501

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Set PS switch to 44-11.</td>
<td></td>
</tr>
</tbody>
</table>

**Tests A Through G, J Through L**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Operate OTL key.</td>
<td></td>
</tr>
</tbody>
</table>

**Tests A, B, D, F, Through I**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Operate FS_ key to select trunk link frame.</td>
<td></td>
</tr>
</tbody>
</table>

**Tests A, C Through E, H, J Through L**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Operate AMA key, if provided.</td>
<td></td>
</tr>
</tbody>
</table>

**Tests C Through H, J, L**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>11a</td>
<td>If OTF is arranged for positive test call control and selection of a particular sender is required—Select from office records an outgoing sender of type required by trunk to be used in test.</td>
<td></td>
</tr>
<tr>
<td>12a</td>
<td>Set RSG switch to OSB_ to select sender group.</td>
<td></td>
</tr>
<tr>
<td>13a</td>
<td>Set RSS switch to select particular sender.</td>
<td></td>
</tr>
</tbody>
</table>

### 4. METHOD

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Select from office records an outgoing sender arranged for LAMA service.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>At OTF—Set RSG switch to OSB_ to select sender group.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Set RSS switch to select particular sender.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Set A through N DIAL switches, as required to select LAMA detailed billed route served by sender used in test and any test line number.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Operate _D key for number of digits to be dialed.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** When a 13-digit call is required, do not operate any _D key.
STEP | ACTION | VERIFICATION
--- | --- | ---
16 | Set CST, CSU switches, as required to select class of service. |  
17 | At sender used in test—  
Using 893 testing cords and 19 JH resistor,  
connect 850-ohm resistance ground in series with terminal 28 on terminal strip B. | At TIC—  
TV, DR, DNK, IC, RD, XX, MB, RN_ lamps lighted.  
CN, S lamps lighted identifying transverter connector and sender.  
FU, VG, HG, VF lamps lighted identifying location of originating test line.  
OFF, TH, HN, T, U lamps lighted identifying directory number received from translator.  
All lamps extinguished.  

18 | At OTF—  
Operate ST key. |  

19 | At OTF—  
Restore ST key. |  

20 | At TIC—  
Momentarily operate RLS key. |  

21 | At sender used in test—  
Remove test connector from terminal 28 terminal strip B. |  

22 | Using 893 testing cords and 18CR resistor,  
connect 2000-ohm resistance battery in series with terminal 28 on terminal strip B. |  

23 | Repeat Steps 18 through 21. |  

24 | At OTF—  
Restore all keys and switches not required in next test. |  

B. Transfer of Start Lead From Transverter Connector

10 | Select from office records an outgoing sender arranged for LAMA or ANI service as required. |  

11 | At OTF—  
Set RSG switch to OSB_ to select sender group. |  

12 | Set RSS switch to select particular sender. |  

13a | If transverter is arranged for LAMA—  
Set A through N DIAL switches, as required |  

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<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to select •the first bulk billed• route served by sender used in test and any test line number.</td>
<td></td>
</tr>
<tr>
<td>14a</td>
<td>Operate AMA key, if provided.</td>
<td></td>
</tr>
<tr>
<td>15b</td>
<td>If transverter is arranged for ANI—Select A through N DIAL switches, as required to select ANI route served by sender used in test and any test line number.</td>
<td></td>
</tr>
<tr>
<td>16b</td>
<td>Operate ANI key.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Operate D key for number of digits to be dialed.</td>
<td>Note: When a 13-digit call is required, do not operate any D key.</td>
</tr>
<tr>
<td>18</td>
<td>Set CST, CSU switches, as required to select class of service.</td>
<td></td>
</tr>
<tr>
<td>19c</td>
<td>If associated transverter connector is SD-26021-01—At transverter connector—Insulate contact 13 of SD_ relay associated with sender used in test.</td>
<td></td>
</tr>
<tr>
<td>20d</td>
<td>If associated transverter connector is SD-26162-01—At transverter connector—Insulate contact 01 of SC_ relay associated with sender used in test.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>At OTF—Operate ST key.</td>
<td>Call completed to test line. At TIC—TV, DR_, TRS, DNK, RLR, RN_ lamps lighted. Note: It may be necessary to repeat test to obtain verification, depending on whether or not the Z relay in the transverter connector is operated at the time of the test.</td>
</tr>
<tr>
<td>22</td>
<td>At OTF—Restore ST key.</td>
<td>Call disconnected.</td>
</tr>
<tr>
<td>23</td>
<td>At TIC—Momentarily operate RLS key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>24a</td>
<td>•Repeat Steps 13a, 14a, and 17 through 23 for each remaining bulk billed and detailed</td>
<td></td>
</tr>
</tbody>
</table>
STEP ACTION

billed route served by sender used in test and any test line number.

25c If associated transverter connector is SD-26021-01—
   At transverter connector—
   Remove insulation from contact 13 of SD relay.

26d If associated transverter connector is SD-26162-01—
   At transverter connector—
   Remove insulator from contact 01 of SC relay.

27 At OTF—
   Restore all keys and switches not required in next test.

C. Observing Feature

14 Select from office records a trunk and route used for detailed billed calls.

15 At jack, lamp, and key circuit—
   Insert make-busy plug into TVMB_ jack associated with transverter under test.

16 At OTF—
   Operate ODD or EVEN, FS_ keys and set TS switch as required to select particular detailed billed trunk.

17 Set A through N DIAL switches, as required to select LAMA detailed billed route and any test line number.

18 Operate _D key for number of digits to be dialed.

   Note: When a 13-digit call is required, do not operate any _D key.

19 At line link frame—
   **For regular crossbar switches**—
   Using P3BF patching cord, insert 351A plug into jack of line link vertical associated with originating test line and insert 464B plug into SO jack associated with service observing circuit.

   **For small crossbar switches**—
   Using P3BE patching cord, insert 459A plug into jack of line link vertical associated with

Verification

All lamps extinguished.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 20   | At transverter under test—  
Block nonoperaed P1A relay. | Overflow tone heard.  
At TIC—  
TV, DR, OBS, DNK, CI1, RN lamps lighted.  
A'2, B'0, 4 lamps lighted identifying last line of an observed initial entry of four lines.  
C', D' lamps lighted identifying message billing index units and tens digits.  
E', F' lamps lighted identifying call identity index trunk number. |
| 21   | At OTF—  
Operate ST key. | Overflow tone silenced.  
At TIC—  
All lamps extinguished. |
| 22   | At OTF—  
Restore ST key. | All lamps extinguished. |
| 23   | At TIC—  
Momentarily operate RLS key. | All lamps extinguished. |
| 24   | At transverter under test—  
Remove blocking tool from P1A relay. | All lamps extinguished. |
| 25   | At line link frame—  
Remove patching cord from jack of line link vertical and SO jack. | All lamps extinguished. |
| 26   | At OTF—  
Restore all keys and switches not required in next test. | All lamps extinguished. |
| 27   | Remove make-busy plug from TVMB_ jack of transverter under test. | All lamps extinguished. |

**D. Second Trial Feature**

14   | At jack, lamp, and key circuit—  
Insert make-busy plug into TVMB_ jack associated with transverter under test. |

15b  | If transverter is arranged for LAMA—  
AT OTF—  
Set A through N DIAL switches, as required to select LAMA detailed billed route and any test line number. |

16b  | Operate AMA key, if provided. |
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 17c  | If transverter is arranged for ANI—  
      At OTF—  
      Select A through N DIAL switches, as required to select ANI route and any test line number. |  
      Call completed to test line.  
      At TIC—  
      TV, DR_ lamps lighted.  
      CK1 lamp remains extinguished. |
| 18c  | Operate ANI key. |  
      Call disconnected. |
| 19   | Operate _D key for number of digits to be dialed. |  
      All lamps extinguished. |
| 20   | Set CST, CSU switches, as required to select class of service. |  
      Call completed to test line.  
      At TIC—  
      TV, DR_, 2TR, DNK, RN_, TLR_ lamps lighted.  
      FU_, VG_, HG_, VF_ lamps lighted identifying line location of originating test line.  
      OFF_, TH_, HN_, T_, U_ lamps lighted identifying directory number received from translator.  
      Call disconnected. |
| 21   | At transverter under test—  
      Block nonoperated 1TR relay. |  
      All lamps extinguished. |
| 22   | At OTF—  
      Operate ST key. |  
      All lamps extinguished. |
| 23   | At OTF—  
      Restore ST key. |  
      Call completed to test line.  
      At TIC—  
      TV, DR_ lamps lighted.  
      CK1 lamp remains extinguished. |
| 24   | At TIC—  
      Momentarily operate RLS key. |  
      Call disconnected. |
| 25   | At transverter under test—  
      Block operated 2TR relay. |  
      All lamps extinguished. |
| 26   | At TIC—  
      Operate 2TR key. |  
      Call completed to test line.  
      At TIC—  
      TV, DR_, 2TR, DNK, RN_, TLR_ lamps lighted.  
      FU_, VG_, HG_, VF_ lamps lighted identifying line location of originating test line.  
      OFF_, TH_, HN_, T_, U_ lamps lighted identifying directory number received from translator.  
      Call disconnected. |
| 27   | At OTF—  
      Operate TVR key. |  
      All lamps extinguished. |
| 28   | Operate ST key. |  
      All lamps extinguished. |
| 29   | At OTF—  
      Restore ST key. |  
      All lamps extinguished. |
| 30   | At TIC—  
      Momentarily operate RLS key. |  
      All lamps extinguished. |
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<tr>
<td>31</td>
<td>Restore 2TR key.</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>At transverter under test— Remove blocking tools from 1TR, 2TR relays.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>At OTF— Restore all keys and switches not required in next test.</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>At jack, lamp, and key circuit— Remove make-busy plug from TVMB_jack of transverter under test.</td>
<td></td>
</tr>
</tbody>
</table>

#### E. Recorder Make-Busy and Recorder Trouble Features

14 Select from office records a trunk and route used for bulk billed calls.

15 Operate ODD or EVEN, FS_ keys and set TS switch, as required to select particular bulk billed trunk.

16 Set A through N DIAL switches, as required to select LAMA bulk billed route and any test line number.

17 Operate _D key for number of digits to be dialed.

18 Set CST, CSU switches, as required to select class of service.

19 Operate TVR key.

20 At jack, lamp, and key circuit— Insert make-busy plug into MB_ jack of recorder associated with selected trunk.

**Caution:** While the recorder is made busy, all bulk billed calls will be completed free and detailed billed calls will be routed to overflow.

21 At OTF— Operate ST key.

Call completed to test line.

At TIC—

TV, DR, DNK, RD, RN_ lamps lighted.

CN_, S_ lamps lighted identifying transverter connector and sender.

FU, VG, HG, VF_ lamps lighted identifying location of originating test line.

OFF_, TH, HN, T_, U_ lamps lighted
22 At OTF—
   Restore ST key.

23 At TIC—
   Momentarily operate RLS key.

24 At OTF—
   Restore _D key.

25 At jack, lamp, and key circuit—
   Remove make-busy plug from MB_ jack of
   recorder associated with selected trunk.

26 Select from office records a trunk and route
   used for detailed billed calls.

27 Operate ODD and EVEN, FS_ keys and set
   TS switch, as required to select particular
   detailed billed trunk.

28 Set A through N DIAL switches, as required
   to select LAMA detailed billed route and any
   test line number.

29 Operate _D key for number of digits to be
   dialed.

   **Note:** When a 13-digit call is required, do
   not operate any _D key.

30 Set CST, CSU, switches, as required to select
   class of service.

31 At jack, lamp, and key circuit—
   Insert make-busy plug into MB_ jack of
   recorder associated with selected trunk.

   **Caution:** While the recorder is made
   busy, and bulk billed calls will be
   completed free and detailed billed
   calls will be routed to overflow.

32 At OTF—
   Operate ST key.

   **Verification**

   identifying directory number received from
   translator.

   Call disconnected.

   All lamps extinguished.

   EMR lamp lighted while make-busy pattern
   is being placed on AMA tape.

   Overflow tone heard.

   At TIC—
   TV, DR_, DNK, RD, RN_ lamps lighted.
   CN_, S_ lamps lighted identifying transverter
   connector and sender.
   FU_, VG_, HG_, VF_ lamps lighted identifying
   location of originating test line.
<table>
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<tr>
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<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>At OTF— Restore ST key.</td>
<td>OFFₐ THₐ HNₐ Tₐ Uₐ lamps lighted identifying directory number received from translator. Overflow tone silenced. All lamps extinguished. EMR lamp lighted while make-busy pattern is being placed on AMA tape.</td>
</tr>
<tr>
<td>34</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>At jack, lamp, and key circuit— Remove make-busy plug from MBₜ jack of recorder associated with selected trunk.</td>
<td></td>
</tr>
<tr>
<td>36b</td>
<td>If office is not equipped for AMA translator line verification (ATLV) test circuit— At transverter under test— Using 893 testing cords, connect directory number of originating test line to trap circuit, omitting connection from OFFₑ to TR terminals.</td>
<td></td>
</tr>
<tr>
<td>37b</td>
<td>Using W2W testing cord, connect 607A or 624B tool attached to ring conductor to OFFₑ terminal of trap circuit and insert 310 plug into SP jack of miscellaneous circuit.</td>
<td></td>
</tr>
<tr>
<td>38b</td>
<td>At recorder associated with trunk selected— Using W2W testing cord, connect 607A or 624B tool attached to ring conductor to winding terminal 12T of TBL relay and insert 310 plug into SP jack of miscellaneous circuit.</td>
<td></td>
</tr>
<tr>
<td>39b</td>
<td>At OTF— Momentarily operate ST key.</td>
<td>Overflow tone heard. At TIC— TV, DRₐ, DNK, RD, RNₐ lamps lighted. CNₐ Sₐ lamps lighted identifying transverter connector and sender. FUₐ VGₐ HGₐ VFₐ lamps lighted identifying location of originating test line. OFFₐ THₐ HNₐ Tₐ Uₐ lamps lighted identifying directory number received from translator. Overflow tone silenced. All lamp extinguished.</td>
</tr>
<tr>
<td>40b</td>
<td>At OTF— Restore ST key.</td>
<td></td>
</tr>
<tr>
<td>41b</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>42b</td>
<td>At recorder associated with trunk selected— Remove testing cord from TBL relay and jack.</td>
<td></td>
</tr>
</tbody>
</table>
43b At transverter under test—
Remove testing cord from OFF terminal and SP jack.

44b Remove test connections from directory number of originating test line and trap circuit.

45 Repeat Steps 14 through 44, as required for each regular and emergency AMA recorder provided.

*Note:* Follow standard procedures when transferring to the emergency recorder and notify the accounting department of all transfer and make-busy entries.

46 At OTF—
Restore all keys and switches not required in next test.

**F. Translator Make-Busy Feature**

14b If transverter is arranged for LAMA—
At OTF—
Set A through N DIAL switches, as required to select LAMA bulk billed route and any test line number.

15b Operate AMA key, if provided.

16c If transverter is arranged for ANI—
Set A through N DIAL switches, as required to select ANI route and any test line number.

17 Operate ANI key.

18 Operate _D key for number of digits to be dialed.

*Note:* When a 13-digit call is required, do not operate any _D key.

19 Set CST, CSU switches, as required to select class of services.

*Caution:* While the translator is made busy, all bulk billed calls will be completed free and detailed billed calls will be routed to overflow. All ANI calls will require operator identification.
## SECTION 218-473-501

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</thead>
<tbody>
<tr>
<td>20</td>
<td>At jack, lamp, and key circuit— Insert make-busy plug into translator AMAT-MB_ or TRNSL-MB_jack associated with originating test line.</td>
<td>If LAMA transverter is under test— Call completed to test line. If ANI transverter is under test— Call completed to operator for calling line number identification.</td>
</tr>
<tr>
<td>21</td>
<td>At OTF— Operate ST key. <strong>Note:</strong> If test call is completed to an operator, inform operator that this is a test call and proceed to next step.</td>
<td>Call disconnected.</td>
</tr>
<tr>
<td>22</td>
<td>Restore ST key.</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>At jack, lamp, and key circuit— Remove make-busy plug from AMAT-MB_ or TRNSL-MB_ jack.</td>
<td></td>
</tr>
<tr>
<td>24b</td>
<td>If transverter is arranged for LAMA— At OTF— Set A through N DIAL switches, as required to select LAMA detailed billed route and any test line number.</td>
<td></td>
</tr>
<tr>
<td>25b</td>
<td>Operate _D key for number of digits to be dialed. <strong>Note:</strong> When 13-digit call is required, do not operate and _D key.</td>
<td></td>
</tr>
<tr>
<td>26b</td>
<td>Set CST, CSU switches, as required to select class of service. <strong>Caution:</strong> While the translator is made busy, all bulk billed calls will be completed free and detailed billed calls will be routed to overflow. All ANI calls will require operator identification.</td>
<td></td>
</tr>
<tr>
<td>27b</td>
<td>At jack, lamp, and key circuit— Insert make-busy into translator AMAT-MB_ or TRNSL-MB_jack associated with originating test line.</td>
<td></td>
</tr>
<tr>
<td>28b</td>
<td>At OTF— Operate ST key.</td>
<td>Overflow tone heard.</td>
</tr>
<tr>
<td>29b</td>
<td>Restore ST key.</td>
<td>Overflow tone silenced.</td>
</tr>
</tbody>
</table>
STEP ACTION

30b At jack, lamp, and key circuit—
Remove make-busy plug from AMAT-MB_ or
TRNSL-MB_ jack.

31 At OTF—
Restore all keys and switches not required in
next test.

G. Translator Double-Connection Feature

14b If transverter is arranged for LAMA—
At OTF—
Set A through N DIAL switches as required
to select LAMA detailed billed route and any
test line number.

15b Operate AMA key, if provided.

16c If transverter is arranged for ANI—
At OTF—
Set A through N DIAL switches as required
to select ANI route and any test line number.

17c Operate ANI key.

18 Operate _D key for number of digits to be
dialed.

Note: When a 13-digit call is required, do
not operate any _D key.

19 Set CST, CSU switches, as required to select
class of service.

20 At jack, lamp, and key circuit—
Insert make-busy plug into TVMB_ jack
associated with transverter under test.

21 At transverter under test—
Determine which TS_ relay will operate for
originating test line.

Caution: If transverter is not made
busy while the connection is placed
in Step 22 all AMA calls associated
with TS_ relays crossed will be
completed free or routed to overflow.
All ANI customers will need the
assistance of an operator.

22 Using 893 testing cord, connect SC_ terminal
associated with selected TS_ relay to SC_
### SECTION 218-473-501

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>At OTF— Operate ST key.</td>
<td>If LAMA transverter is under test— Overflow tone heard. If ANI transverter is under test— Call completed to operator for calling line number identification. At TIC— TV, DR_ lamps lighted. DNK lamp remains extinguished. Overflow tone silenced or operator disconnected. All lamps extinguished.</td>
</tr>
<tr>
<td>24</td>
<td>At OTF— Restore ST key.</td>
<td>Note: If test call is completed to an operator, inform the operator that this is a test call and proceed to next step.</td>
</tr>
<tr>
<td>25</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>At transverter under test— Remove test connection from SC_ terminals on terminal strip of auxiliary transverter unit.</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>At jack, lamp, and key circuit— Remove make-busy plug from TVMB_ jack of transverter under test.</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>At OTF— Restore all keys and switches not required in next test.</td>
<td></td>
</tr>
</tbody>
</table>

### H. AMA Translator Selection and Directory Number Register Relays

**Note:** Refer to paragraph 3.01.

14 Set A through N DIAL switches, as required to select LAMA route and any test line number.

15 Operate _D key for number of digits to be dialed.

**Note:** When a 13-digit call is required, do not operate any _D key.

16 Operate OTLP, TVR keys.

17 At line link frame— *For regular crossbar switches*— Using P3U patching cord, insert 351A plug into jack of line link vertical of line location associated with translator to be selected, and insert 310 plug into SP jack of miscellaneous
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>circuit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>For small crossbar switches</em>—</td>
<td></td>
</tr>
<tr>
<td>18b</td>
<td>Using P3BE patching cord, insert 459A plug into jack of line link vertical of line location associated with translation to be selected, and insert 310 plug into SP jack of miscellaneous circuit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At OTF— If tip translator is selected— Operate TP key.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At jack, lamp, and key circuit— Using P3E patching cord, insert 310 plugs into SP and OTL jacks.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>At OTF— Operate ST key.</td>
<td>Call completed to test line. At TIC— TV, DR_, DNK, TLR_ lamps lighted. FU_, VG_, HG_, VF_ lamps lighted identifying selected line location associated with particular translator. OFF_, TH_, HN_, T_, U_ lamps lighted identifying directory number received from translator.</td>
</tr>
<tr>
<td>21</td>
<td>At OTF— Restore ST key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>22</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>At line link frame— Remove patching cord from SP jack and line link vertical.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Repeat Steps 17 through 23 for each vertical group for each translator.</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>At jack, lamp, and key circuit— Remove patching cord from SP and OTL jacks.</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>At OTF— Restore all keys and switches not required in next test.</td>
<td></td>
</tr>
</tbody>
</table>
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STEP ACTION VERIFICATION

I. ANI Translator Selection and Directory Number Register Relays

   Note: Refer to paragraph 3.01.

10 Set A through N DIAL switches, as required to select ANI route and any test line number.

11 Operate ANI key.

12 Operate _D key for number of digits to be dialed.

   Note: When a 13-digit call is required, do not operate any _D key.

13 Operate _SD key for number of digits to be outpulsed by sender.

14 Set A through K SDR switches, as required corresponding to digits to be outpulsed by sender.

15 Operate OTLP, OGT, NCH, MFS keys.

16a If wink start signal to sender is required—Operate WK key.

17b If immediate closure of pulsing loop is required—Operate CL2S key.

18c If variable frequency combination are used to TSPS offices—Set STP switch as required.

19 At line link frame—
   For regular crossbar switches—Using P3U patching cord, insert 351A plug into jack of line link vertical of line location associated with translator to be selected, and insert 310 plug into SP jack of miscellaneous circuit.
   For small crossbar switches—Using P3BE patching cord, insert 459A plug into jack of line link vertical of line location associated with translator to be selected, and insert 310 plug into SP jack of miscellaneous circuit.

20 At jack, lamp, and key circuit—Using P3E patching cord, insert 310 plugs into SP and OTL jacks.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Operate ST key.</td>
</tr>
<tr>
<td>22</td>
<td>Restore ST key.</td>
</tr>
<tr>
<td>23</td>
<td>At line link frame— Remove patching cord from SP jack and line link vertical.</td>
</tr>
<tr>
<td>24</td>
<td>Repeat Steps 19 through 23 for each vertical group for each translator.</td>
</tr>
<tr>
<td>25</td>
<td>At jack, lamp, and key circuit— Remove patching cord from SP and OTL jacks.</td>
</tr>
<tr>
<td>26</td>
<td>At OTF— Restore all keys and switches not required in next test.</td>
</tr>
</tbody>
</table>

**VERIFICATION**

- OS, EP lamps lighted.
- CS lamp lighted indicating that number outpulsed by sender matched number set up or SDR switches.

**Note:** If the line number set up on the SDR switch does not match the translation of the translator, the call will block. The failure may be identified by checking the A/1 through K/0 lamps.

All lamp extinguished.

---

**J. Information Code—Home Area (411) and Foreign Area (NPA 411)**

14   | Select from office records a trunk and route used for home area (411) and a trunk and route used for foreign area (NPA 411) information code. |
15   | At jack, lamp, and key circuit— Insert make-busy plug into TVMB_ jack associated with transverter under test. |
16b  | If home area information code 411 is selected— At OTF— Set A through C DIAL switches to select code 411. |
17b  | Operate 3D key. |
18c  | If foreign area information code NPA 411 is selected— At OTF— Set A through F DIAL switches to select foreign area code and information code 411. |
19c  | Operate 6D key. |
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Operate ODD or EVEN, FS_ keys and set TS switch to select particular trunk used in test.</td>
<td>Overflow tone heard. At TIC— TV, DR_, DNK, CI3, RN_ lamps lighted. A'0 lamp lighted identifying supplementary line. B'_4, C'_4, lamps lighted identifying local area index and category of class of call index. D'0,4; E'0,1; F'0,1 lamps lighted identifying called office code.</td>
</tr>
<tr>
<td>21</td>
<td>Set CST CSU switches, as required to select class of service.</td>
<td>Overflow tone silenced.</td>
</tr>
<tr>
<td>22</td>
<td>At transverter under test— Block nonoperated P3A relay.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>23</td>
<td>At OTF— Operate ST key.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>At OTF— Restore ST key.</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>At transverter under test— Remove blocking tool from P3A relay.</td>
<td></td>
</tr>
<tr>
<td>27c</td>
<td>If foreign area information code NPA 411 is selected— At transverter under test— Block nonoperated PFAA relay.</td>
<td>Overflow tone heard. At TIC— TV, DR_, DNK, CIFA, RN_ lamps lighted. A'0 lamp lighted identifying supplementary line. B'4, 7; C'4, 7 lamps lighted identifying filler digits. D' through F' lamps lighted identifying selected foreign area code.</td>
</tr>
<tr>
<td>28c</td>
<td>At OTF— Operate ST key.</td>
<td>Overflow tone silenced.</td>
</tr>
<tr>
<td>29c</td>
<td>At OTF— Restore ST key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>30c</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td></td>
</tr>
<tr>
<td>31c</td>
<td>At transverter under test— Remove blocking tool from PFAA relay.</td>
<td></td>
</tr>
<tr>
<td>STEP</td>
<td>ACTION</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td></td>
</tr>
</tbody>
</table>
| 32   | At jack, lamp, and key circuit—  
|      | Remove make-busy plug from TVMB_ jack. |
| 33   | At OTF—  
|      | Restore all keys and switches. |

**K. Forced Four-Line Entry**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Select from office records a trunk and route used for bulk billed calls.</td>
</tr>
</tbody>
</table>
| 12   | At jack, lamp, and key circuit—  
|      | Insert make-busy plug into TVMB— jack associated with transverter under test. |
| 13   | Operate ODD or EVEN, FS_ keys and set TS switch, as required to select particular bulk billed trunk. |
| 14   | Set A through N DIAL switches, as required to select LAMA bulk billed route and any test line number. |
| 15   | Operate _D key for number of digits to be dialed. |
| 16   | Operate _SD key for number of digits to be outpulsed by sender. |
| 17   | Set CST, CSU switches, as required to select class of service. |
| 18   | Set A_ through K_ SDR switches, as required corresponding to digits to be outpulsed by sender. |
| 19   | Operate OGT, NCH keys. |
| 20a  | If associated sender is arranged for dial pulsing—  
|      | Operate DPS key. |
| 21b  | If associated sender is arranged for multifrequency pulsing—  
|      | Operate MFS key. |
| 22c  | If wink start signal to sender is required—  
|      | Operate WK key. |
| 23d  | If immediate closure of pulsing loop is required—  
<p>|      | Operate CL2S key. |</p>
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>At jack, lamp, and key circuit— Operate MDLC key.</td>
<td>When all transverters serving calls at time MDLC key is operated have released— MUD lamp lighted.</td>
</tr>
<tr>
<td>25</td>
<td>At transverter under test— Block nonoperated TVT, TVTA relays.</td>
<td>Call completed to test line.</td>
</tr>
<tr>
<td>26</td>
<td>At AMA perforator— Using red china marking pencil, mark AMA tape at input chute of perforator associated with trunk selected.</td>
<td>Call disconnected.</td>
</tr>
<tr>
<td>27</td>
<td>Operate ST key.</td>
<td>4-line initial entry perforated.</td>
</tr>
</tbody>
</table>
| 28   | Restore ST key. | First line  
|      | | A0 digit indicates supplementary line.  
|      | | B_, C_, D_, E_ digits indicate numericals of called number.  
|      | | F_ digits indicates class of call index.  
| 29   | At AMA perforator— Using tape reader, observe test call entry by locating call identity index number of trunk used on test. | Second line  
|      | | A0 digit indicates supplementary line.  
|      | | B_ digit indicates home area index or compressed code, representing a foreign area code.  
|      | | C_ digit indicates category of class of call index.  
|      | | D_, E_, F_ digits indicate called office code.  
|      | | Third line  
|      | | A0 digit indicates supplementary line.  
|      | | B_ digit indicates calling office index.  
|      | | C_ through F_ digits indicate numericals of calling number.  
|      | | Fourth line  
|      | | A2, B_ digits indicate last line of observed or nonobserved 4-line initial entry.  
|      | | C_, D_ digits indicate message billing index units and tens digits.  
|      | | E_, F_ digits indicate call identity index trunk number.  
| 30   | At jack, lamp, and key circuit— Remove make-busy plug from TVMB— jack of transverter under test. |  
| 31   | Restore MDLC key, if not operated before start of test. |  
| 32   | At transverter under test— Remove blocking tools from TVT, TVTA relays. |  

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### Step 33
At OTF—
Restore all keys and switches not required in next test.

### Directory Assistance Charging

#### Step 14
At jack, lamp, and key circuit—
Insert make-busy plug into TVMB_ jack associated with transverter under test.

#### Step 15
Select from office records a trunk and route used for local information (411).

#### Step 16
At OTF—
Operate ODD or EVEN, FS_ keys and set TS switch to select particular trunk used in test.

#### Step 17
Set A through C DIAL switches to select local information code 411.

#### Step 18
Operate 3D key.

#### Step 19
Set CST, CSU switches, as required to select class of service.

#### Step 20
At transverter under test—
Block nonoperated P2A relay.

### Step 21
At OTF—
Operate ST key.

- Overflow tone heard.
- At TIC—
  TV, DR_, DNK, CI2, MB2, 4; RN_ lamps lighted.
  A'0 lamp lighted identifying supplementary line.
  B'_ lamp lighted identifying calling office index.
  C' through F' _ lamps lighted identifying callings number.

### Step 22
At OTF—
Restore ST key.

### Step 23
At TIC—
Momentarily operate RLS key.

### Step 24
At transverter under test—
Remove blocking tool from P2A relay.

### Step 25
Block nonoperated P1A relay.

- Overflow tone silenced.
- All lamps extinguished.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 26   | At OTF—  
      Operate ST key. | Overflow tone heard.  
At TIC—  
TV, DR_, DNK, CI2, CI1, MB2, 4; RN_ lamps lighted.  
A'0, B'0, 1 lamp lighted identifying last line of nonobserved 2-line initial entry.  
C'2, 4; D'0, 1 lamp lighted identifying message billing index units and tens digits.  
E'_, F' lamps lighted identifying call identity index trunk number.  
| | Overflow tone silenced. |
| 27   | At OTF—  
      Restore ST key. | |
| 28   | At TIC—  
      Momentarily operate RLS key. | |
| 29   | At transverter under test—  
      Remove blocking tool from P1A relay. | |
| 30   | At OTF—  
      Restore 3D key. | |
| 31   | Select from office records a trunk and route used for home NPA information (555-1212). | |
| 32   | Operate ODD or EVEN, FS_ keys and set TS switch to select particular trunk used in test. | |
| 33   | Set A through G DIAL switches as required, to select home NPA information code 555-1212. | |
| 34   | Operate 7D key. | |
| 35   | Set CST, CSU, switches, as required to select class of service. | |
| 36   | Repeat Steps 20 through 30. | |
| 37   | At transverter under test—  
      Block nonoperated 1TR relay. | |
| 38   | Block operated 2TR relay. | |
| 39   | At TIC—  
      Operate 2TR key. | |
| 40   | At OTF—  
      Operate TVR key. | |
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Operate ST key.</td>
<td>Call completed to test line. If transverter is arranged to provide a trouble release on a second trial call (RS option)—Overflow tone heard. If transverter is arranged to provide a regular release on a second trial call (RT option)—Overflow tone <strong>not</strong> heard.</td>
</tr>
<tr>
<td>42</td>
<td>At OTF—Restore ST key.</td>
<td>Call disconnected.</td>
</tr>
<tr>
<td>43</td>
<td>At TIC—Momentarily operate RLS key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>44</td>
<td>Restore 2TR key.</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>At transverter under test—Remove blocking tools from 1TR, 2TR relays.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>At OTF—Restore all keys and switches not required in next test.</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>At jack, lamp, and key circuit—Remove make-busy plug from TVMB_ jack of transverter under test.</td>
<td></td>
</tr>
</tbody>
</table>