1. GENERAL

1.01 This section describes methods for testing trunk links using regular size crossbar switches (SD-26032-01) and small size crossbar switches (SD-27879-01) using the office test frame SD-27633-01 (J23260) in small No. 5 crossbar offices.

1.02 This section is reissued for the following reasons. Revisions arrows have been used to emphasize the most significant changes. This reissue does not affect Equipment Test Lists.

(a) To revise Tests A, B, and D to delete the use of the 329A make-busy plug.

(b) To revise Test A to include methods for testing small crossbar switches and to provide checks of trunk links to all trunk switches.

(c) To revise Test D to amend make-busy procedures of individual junctor switches.

(d) To add paragraph 1.10 to include application of the lamp display control feature (option YR).

(e) To make minor changes as required.

1.03 The tests covered are:

A. Trunk Link Availability and Verification of Trouble Indicator Function (LC_ Leads): This test checks that all trunk links are available and that the LC_ leads are extended to the trouble indicator.

B. Verification of Trouble Indicator Functions (LV- Leads) Using Outgoing or Intraoffice Trunks: This test checks that the LV_ leads are extended to the trouble indicator.

C. Verification of Trouble Indicator Functions (LV_ Leads) Using Originating Registers: This test checks that the LV_ leads are extended to the trouble indicator.

D. Junctor Switch Make-Busy Features: This test checks that the individual junctor switches are made busy when a make-busy plug is inserted into the associated JS_jack.

E. Frame Make-Busy Feature: This test checks that a trunk link frame is made busy to dial tone and originating traffic when a make-busy plug is inserted into the associated TMB_jack.

1.04 Test A requires action at the line link frame.

1.05 Tests A, B, and C require actions at the trunk link frame and verifications at the TIC.

1.06 Test E is made with a trunk link frame made busy.

1.07 Tests for junctor availability and for crosses on junctor sleeves are covered in the section for testing the line link circuits. The line link circuit tests check the operation of the relays and
the junctor select magnets associated with the
junctors in the trunk link circuit. Also, the functions
of the trunk connector and the trunk switch level
connector relays in the trunk link circuit are tested
in the individual sections for testing trunks or
originating registers.

1.08 Local instructions should be followed for
recording and reporting any register operations
caused by performing these tests.

1.09 All tests in this section should be made
during periods of light traffic.

1.10 When lamp display control feature (option
YR) is provided at the trouble indicator and
connector circuit (TIC), a stored trouble condition
is indicated by a lighted red DR lamp. Momentary
operation of the LD key will cause the trouble
indicating lamps to light. These lamps will be
extinguished with the momentary operation of the
RLS key. Application of this feature will prevent
trouble lamp displays from occurring in unattended
offices.

2. APPARATUS

All Tests

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

2.02 Trouble indicator and connector circuit (TIC),
SD-27634-01.

2.03 322A (make-busy) plugs as required.

Test A

2.04 Patching cord, P3U cord, 7 feet long,
equipped with one 310 plug and one 351A
plug (3P27B) for regular size crossbar switches or
patching cord, P3BE cord, 7 feet long, equipped
with one 310 plug and one 459A plug for small
size crossbar switches.

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

2.06 351C plug for regular size crossbar switches
or 459E plug for small size crossbar switches.

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

Test D, E

2.08 349A make-busy plugs as required.

2.09 32A test set.

3. PREPARATION

Tests A, D, E

3.01 Determine from office records the following
information:

(a) An outgoing trunk or intraoffice trunk
associated with each trunk switch on the
trunk link frame to be tested.

(b) The office code assigned to the trunk selected.

Test B

3.02 Determine from office records the following
information:

(a) An outgoing trunk or intraoffice trunk on
each level (0 through 9) assigned to levels
of the trunk switches to be tested

(b) The office code assigned to the trunk selected

(c) Omit levels assigned to originating registers.

Test C

3.03 Determine from office records the following
information:

(a) An originating register on each level assigned
to originating registers associated with each
trunk switch to be tested.

Test E

3.04 Determine from office records the following
information:

(a) An outgoing or intraoffice trunk associated
with the trunk link frame selected for test.
### 3. PREPARATION (Cont)

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At OTF— Restore all keys and switches.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>2</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>3</td>
<td>Operate MKR_key to select completing marker.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Operate NT, MCB keys.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Set PS switch for required pulsing speed.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Set L-L switch to 0.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Operate REC key.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>At jack, lamp, and key circuit or relay rack frame— Insert 322A make-busy plug into OGT-MB jack or set MB switch to MB for trunk to be used in test.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>At OTF— Operate PS_key for trunk link frame associated with trunk selected.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Set TS switch to select trunk on trunk switch to be used in test.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Operate EVEN or ODD key as required for selected trunk.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Operate GPA or GPB key as required when selected trunk is in an allotted group.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Set A through N DIAL switches as required to select trunk made busy in Step 8 and any test line number.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Set CST, CSU switches to select class of service having access to trunk selected.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Operate _D key as required.</td>
<td></td>
</tr>
</tbody>
</table>

### Tests B, D

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Operate OTL key.</td>
</tr>
</tbody>
</table>
SECTION 218-415-502

4. METHOD

STEP ACTION VERIFICATION

A. Trunk Link Availability—Verification of Trouble Indicator Functions (LC_ Leads)

16a If office is equipped with regular size crossbar switches—
At line link frame—
Patch P3U cord from SP jack to any spare line link appearance (even numbered frame).

17b If office is equipped with small size crossbar switches—
At line link frame—
Patch P3BE cord from SP jack to any spare line link appearance (even numbered frame).

18 At jack, lamp, and key circuit—
Patch P3K cord from SP jack to OTL jack.

19 At OTF—
Operate OTLP, CH keys.

20 Set CH switch to select first channel to be tested.

21 Operate ST key.

22 Momentarily operate RLS key.

23 At OTF—
Restore ST key.

24 At trunk link frame—
Insert 349A make-busy plug into JS_ jack corresponding to channel selected in Step 20.

25a If office is equipped with regular size crossbar switches—
After verifying that T_ hold magnet corresponding to trunk switch of selected trunk is not

At TIC—
LC_ lamp corresponding to trunk switch of selected trunk lighted.
CH_ lamp corresponding to channel selected lighted (refer to paragraph 1.10).

All lamps extinguished.

T_ hold magnet operated.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>26b</td>
<td>If office is equipped with small size crossbar switches— After verifying that ( T _ ) hold magnet corresponding to trunk switch of selected trunk is not operated, insert 459E plug into vertical of trunk switch.</td>
<td>( T _ ) hold magnet operated.</td>
</tr>
<tr>
<td></td>
<td>Note: The vertical of the trunk switch and the junctor switch at the trunk link frame are always numbered the same as the channel with respect to the left or right-half of the trunk and junctor switches.</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Remove 349A make-busy plug from JS_ jack placed in Step 24.</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>At OTF— Operate ST key.</td>
<td>Overflow tone heard.</td>
</tr>
<tr>
<td>29</td>
<td>At TIC— Momentarily operate RLS key.</td>
<td>All lamps extinguished. At OTF— Overflow tone silenced.</td>
</tr>
<tr>
<td>30</td>
<td>Restore ST key.</td>
<td>( T _ ) hold magnet released.</td>
</tr>
<tr>
<td>31</td>
<td>At trunk link frame— Remove 351C plug or 459E plug from vertical of trunk switch placed in Step 25a or 26b.</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Repeat Steps 20 through 31 until all remaining channels associated with even numbered line link frames have been tested.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Repeat Steps 16a or 17b and 20 through 31 using odd numbered line link frames until all channels have been tested.</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>At jack, lamp, and key circuit or relay rack frame— Remove 322A make-busy plug from OGT-MB jack or restore MB switch to N.</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Repeat Steps 8 through 34 for remaining trunk switches as required.</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>At line link frame— Remove P3U or P3BE cord from SP jack and line link appearance.</td>
<td></td>
</tr>
</tbody>
</table>
### B. Verification of Trouble Indicator Functions (LV\_ Leads) Using Outgoing or Intraoffice Trunks

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Operate ST key.</td>
</tr>
<tr>
<td>18</td>
<td>Momentarily operate RLS key.</td>
</tr>
<tr>
<td>19</td>
<td>At OTF— Restore ST key.</td>
</tr>
<tr>
<td>20</td>
<td>Repeat Steps 17 through 19 using selected trunks until all levels of switch have been tested.</td>
</tr>
<tr>
<td>21</td>
<td>At jack, lamp, and key circuit or relay rack frame— Remove 322A make-busy plug from OGT-MB jack or restore MB switch to N.</td>
</tr>
<tr>
<td>22</td>
<td>Restore all keys and switches not required in next test.</td>
</tr>
</tbody>
</table>

### C. Verification of Trouble Indicator Functions (LV\_ Leads) Using Originating Registers

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At TIC— Momentarily operate RLS key.</td>
</tr>
<tr>
<td>2</td>
<td>At OTF— Operate MKR2 key to select dial tone marker.</td>
</tr>
<tr>
<td>3</td>
<td>Operate REC, OTL keys.</td>
</tr>
<tr>
<td>4</td>
<td>Operate FS_ key to select trunk link frame of register being used in test.</td>
</tr>
<tr>
<td>5</td>
<td>Set RSG switch to ORG.</td>
</tr>
<tr>
<td>6</td>
<td>Set RSS switch to select particular register.</td>
</tr>
<tr>
<td>7</td>
<td>Operate ST key.</td>
</tr>
<tr>
<td>8</td>
<td>Momentarily operate RLS key.</td>
</tr>
</tbody>
</table>

### Verification

- **At TIC—**
  - LV\_ lamp corresponding to level of selected trunk lighted (refer to paragraph 1.10).
  - All lamps extinguished.

- **At TIC—**
  - LV\_ lamp corresponding to level on which selected originating register appears lighted (refer to paragraph 1.10).
  - All lamps extinguished.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 9    | At OTF—
|      | Restore ST key. |              |
| 10   | Repeat Steps 4 through 9 for all levels that have originating registers assigned. |              |
| 11   | Restore all keys and switches not required in next test. |              |

D. Junctor Switch Make-Busy Features

17  Operate CH key.

18  Select Ch switch to select first channel to be tested.

19  Operate ST key.

20  Momentarily operate RLS key.

21  At OTF—
|      | restore ST key. | At TIC—
|      |                 | LC_ lamp corresponding to trunk switch of selected trunk lighted.
|      |                 | CH_ lamp corresponding to channel selected lighted (refer to paragraph 1.10).

22  At trunk link frame—
|      | Insert 349A make-busy plug into JS_ jack corresponding to channel selected in Step 18. | Overflow tone heard.
|      | At OTF—
|      | Momentarily operate ST key. | At TIC—
|      |                              | LC_ lamp corresponding to trunk switch of selected trunk lighted.
|      |                              | CH_ lamp corresponding to channel selected not lighted (refer to paragraph 1.10).

23  At OTF—
|      | Momentarily operate RLS key. | All lamps extinguished.

24  At trunk link frame—
|      | Remove 349A make-busy plug from JS_ jack placed in Step 22. |              |

27  Repeat Steps 18 through 26 until all remaining channels have been tested.

28  At jack, lamp, and key circuit or relay rack frame—
SECTION 218-415-502

STEP ACTION VERIFICATION

29 Remove 322A make-busy plug from OGT-MB jack or restore MB switch to N.

STEP ACTION VERIFICATION

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

E. Frame Make-Busy Feature

Caution: Make this test as quickly as possible since the trunk link frame is excluded from all dial tone and originating traffic while the frame is made busy.

18 Insert 349A make-busy plug into TMB jack.

TMB lamp lighted.
At jack, lamp, and key circuit—TLMB lamp lighted.

19 Momentarily operate white (ST) button on 32A test set.

At TIC—
FTCK, JCK, TCHK lamps lighted.
FS_ lamp not lighted (refer to paragraph 1.10).

20 At trunk link frame—
Remove make-busy plug from TMB jack.

TMB lamp extinguished.
At jack, lamp, and key circuit—TLMB lamp extinguished.

21 Momentarily operate red (RL) button on 32A test set.

22 At TIC—
Momentarily operate RLS key.

All lamps extinguished.

23 At jack, lamp, and key circuit or relay rack frame—
Remove make-busy plug or restore MB switch to N.

24 At trunk link frame—
Remove 32A test set.

25 At OTF—
Restore all keys and switches.