PERMANENT SIGNAL HOLDING TRUNK, CONCENTRATING, TIMING, AND ASSOCIATED AUXILIARY TRUNK CIRCUITS
TESTS USING TRUNK TEST CIRCUIT SD-25918-01
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of testing nonwire-spring-relay, SD-25761-01, SD-25929-01, and wire-spring-relay, SD-26134-01, type permanent signal holding trunk (PSHT) circuits and nonwire-spring-relay type concentrating SD-25766-01, timing SD-25870-01, and associated auxiliary trunk circuits SD-25574-01, SD-25742-01, SD-25814-01, SD-99329-01 in No. 5 crossbar offices equipped with a master test frame (MTF).

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) Paragraph 1.01 has been modified to add SD- numbers of circuits covered in this section.

(b) Paragraph 1.12 has been added.

(c) Test A Steps 16, 17, 18 are modified to include 600 ms open verification, of permanent signal holding trunk.

(d) Other minor changes as necessary.

1.03 The tests covered are:

A. Seizure: The following features are checked: (1) Automatic application of receiver off-hook announcement and tone. (2) Seizure of PSHT and concentrating circuit. (3) Completion of connection from originating test line through PSHT and concentrating circuit to a dial system "A" switchboard (DSA SWBD) position if provided. (4) Ability of PSHT to return permanent signal tone until operator answers. (5) Feature to prevent permanent signals caused by improperly operated customer key equipment.

B. Line Signal Indication: This test checks the type-of-line signal received at the MTF and the type-of-line signal sent by the concentrating circuit to the DSA SWBD if provided.

C. Ringing and False Ground Check: The following features check the ability of the PSHT and concentrating circuit to: (1) Detect false ground on customer line. (2) Ring back on customer line having receiver off-hook. (3) Apply ungrounded ringing.

D. Coin Control Feature: The following features are checked: (1) Ability of PSHT and concentrating circuit to collect coin under control of DSA SWBD if provided. (2) Ability of PSHT and concentrating circuit to return coin under control of DSA SWBD if provided. (3) Ability of PSHT arranged for coin return after disconnect (or PSHT circuits provided with auxiliary trunks for this purpose) to return coin when permanent signal condition is cleared.

E. Howler or Receiver Off-Hook Tone — Monitoring: The following features are checked: (1) Ability of PSHT and concentrating circuit to connect the howler or receiver off-hook tone circuit
The PSHT circuits are tested in conjunction with the associated concentrating, timing, and auxiliary trunk circuits.

Tests A through G require an assistant at the DSA SWBD if provided.

Test E requires verification at relay rack location of the associated concentrator circuit.

Lettered Steps: A letter a, b, c, etc, added to a step number in Part 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.

The manner of selecting some circuits and test conditions at the master test frame (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.

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

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


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.

1.12 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, DT, ORIG, ITDO, ITNP, OGT, INC, OR, SDR, IR, MISC, IAO, MLV, LT, IMS, PTT, TVT, ATNT, and IMT.

2. APPARATUS

Tests A Through J

2.01 Master test control circuit, SD-25800-01.
2.02 Trunk test circuit, SD-25918-01.
2.03 MTF telephone, key, and lamp circuit, SD-25744-01.

3. PREPARATION

STEP ACTION

Tests A Through G, I, and J

Note: Refer to paragraphs 1.04 through 1.12.

1 At MTF—
   Restore all keys and switches.

2 Momentarily operate RL key.

3 Select MISC class of test.

4 Select originating class of call and LT translator indication.

5 Select marker.

6 Select PSHT under test.

7 Select route advance for access to route of trunk under test.

2.04 MTF voltmeter test circuit, SD-25792-01.
2.05 Miscellaneous MTF circuit, SD-25748-01.
2.06 322A (make-busy) plugs as required.

Tests E and F

2.07 Patching cord, P3F cord, 6 feet long, equipped with one 309 plug and one 310 plug (3P12E cord) (for making test connection of voltmeter circuit and PSHT being tested).

Tests G and J

2.08 KS-3008 stopwatch or equivalent.

Test K

2.09 1A fault locator test set, SD-95616-01.

2.10 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord) and two KS-6278 (connecting clip) tools (for making test connections to terminal strip terminals).
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STEP ACTION

8 Operate APS/NPS key to NPS position.

9a If ETS provided—
Operate PCS, PTS keys.

Tests A Through G and J

10 Operate FS, TS keys.

11 Select PS auxiliary originating translator indication.

Tests A Through G

12 Operate TLK key.

13 Insert make-busy plugs into all PSCMB. jacks except jack associated with concentrating circuit to be tested in conjunction with PSHT.

*Note:* Select a different concentrating circuit for each PSHT under test until all concentrating circuits have been selected and tested. On subsequent cycles of tests, vary the combination of PSHT circuits with concentrating circuits so that eventually all PSHT circuits will have been tested with each concentrating circuit.

14b If switchboard provided—
Insert plug of operator telephone set into TEL jack.

4. METHOD

STEP ACTION VERIFICATION

A. Seizure

15 At MTF—
Select class of service and rate treatment as required for non-PBX, noncoin line.

16c If verification of 600 ms open feature of permanent signal trunk is being tested—
Operate ORV key.

*Note:* Means are provided in the permanent signal holding trunk to prevent improperly operated customer key equipment from causing permanent signals. One method causes a T and R short, preventing line current from flowing (M.D.). The other method causes a

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STEP ACTION VERIFICATION

600 ms, minimum open of the line (standard). In either case above, the hold relay of improperly operated customer key equipment that may have caused a permanent signal, will release.

17 Momentarily operate ST key.

If 600 ms open feature is being tested—
PK lamp flashes once and then remains lighted.

If ETS provided—
FT lamp lighted.
AS, RA, MRL lamps lighted.

If permanent signal expanded routing feature is provided—
ROH lamp lighted.
Permanent signal high tone heard.
If 1 minute interrupter provided—
Within 1 minute—
Permanent signal high tone momentarily interrupted.
NC lamp lighted.
If DSA switchboard is provided—
At switchboard—
NC lamp lighted.

If receiver off-hook announcement and tone feature is provided—
At MTF—
Receiver off-hook announcement heard followed by receiver off-hook tone for approximately 50 seconds.
Permanent signal high tone heard.
If 1 minute interrupter provided—
Within 1 minute—
Permanent signal high tone momentarily interrupted.
NC lamp lighted.
If DSA switchboard is provided—
At switchboard—
NC lamp lighted.

PK lamp extinguished.

18c If verification of 600 ms open feature of permanent signal trunk is being tested—
Restore CRV key.

All lamps extinguished except PSC lamps lighted in Step 13.

19d If receiver off-hook announcement without receiver off-hook tone to PBX attendant feature is provided—
At MTF—
Momentarily operate RL key.

20d Select class of service and rate treatment as required for PBX line.
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STEP ACTION

21d Momentarily operate ST key.

22 Insert front cord plug into jack associated with permanent signal.

23b If DSA switchboard is provided—
At switchboard—
Operate Talk key.

24 At MTF—
Remove plugs from PSCMB_ jacks.

25 At MTF—
Dial digit 0.

26 Momentarily operate RL key.

27 Restore all keys and switches.

28 Operate APS/NPS key to normal operating position.

29b If DSA switchboard is provided—
Disconnect cord circuit and operator telephone set.

30b Restore Talk key.

VERIFICATION

If ETS provided—
FT lamp lighted.
AS, RA_, MRL lamps lighted.
If permanent signal expanded routing feature is provided—
ROH lamp lighted.
Receiver off-hook announcement heard not
followed by receiver off-hook tone.
Permanent signal high tone heard.
If 1 minute interrupter provided—
Within 1 minute—
Permanent signal high tone momentarily interrupted.
Pb lamp lighted.
If DSA switchboard is provided—
At switchboard—
Pb lamp lighted.

At MTF—
Permanent signal high tone not heard.

Talking circuit established.

All PSC_ lamps extinguished except PSC_ lamp associated with concentrating circuit being tested.

AS lamp remains lighted.

All lamps extinguished.

B. Line Signal Indication

15 At MTF—
Select class of service as required for coin line.
STEP | ACTION | VERIFICATION
---|---|---
16c | If PSHT being tested is not arranged for coin return after disconnect— Operate CNR key. | If ETS provided— FT lamp lighted. AS, RA, MRL lamps lighted. If permanent signal expanded routing feature is provided— ROH lamp lighted. C, NC, or PBX lamp lighted, depending on class of service. If DSA switchboard is provided— At switchboard— C, NC, or PBX lamp lighted, depending on class of service. If receiver off-hook announcement and tone is provided— At MTF— Receiver off-hook announcement heard followed by receiver off-hook tone for approximately 50 seconds. If receiver off-hook announcement without receiver off-hook tone to PBX attendant feature is provided— Receiver off-hook announcement heard not followed by receiver off-hook tone. Permanent signal high tone heard. If 1 minute interrupter provided— Within 1 minute— Permanent signal high tone momentarily interrupted. C, NC, or PBX lamp lighted. If DSA switchboard is provided— At switchboard— C, NC, or PBX lamp lighted.
17 | Momentarily operate ST key. | At MTF— Permanent signal high tone not heard. Talking circuit established.
18 | Insert front cord plug into jack associated with permanent signal. | At MTF— Permanent signal high tone not heard.
19b | If DSA switchboard is provided— At switchboard— Operate Talk key. | C, NC, or PBX lamp extinguished. At MTF— AS lamp remains lighted.
20b | Disconnect cord circuit. | C, NC, or PBX lamp extinguished. At MTF— AS lamp remains lighted.
21 | Momentarily operate RL key. | All lamps extinguished.
22 | Restore all keys and switches. |
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STEP ACTION

23 Repeat Step 12 through 22 using a different class of service until each type-of-line indication has been checked.

24 Operate APS/NPS key to normal operating position.

25 Remove plug from PSCMB_ jacks.

26b If DSA switchboard is provided—
   At switchboard—
   Disconnect cord circuit and operator telephone set.

27b Restore Talk Key.

C. Ringing and False Ground Check

15 At MTF—
   Select class of service and rate treatment as required for non-PBX, noncoin line.

16 Momentarily operate ST key.

   If ETS provided—
      FT lamp lighted.
      AS, RA_, MRL lamps lighted.
   If permanent signal expanded routing feature is provided—
      ROH lamp lighted.
      Permanent signal high tone heard.
      If 1 minute interrupter provided—
      Within 1 minute—
      Permanent signal high tone momentarily interrupted.
      NC lamp lighted.
   If DSA switchboard is provided—
      At switchboard—
      NC lamp lighted.
   If receiver off-hook announcement and tone feature is provided—
      At MTF—
      Receiver off-hook announcement heard followed by receiver off-hook tone for approximately 50 seconds.
      Permanent signal high tone heard.
      If 1 minute interrupter provided—
      Within 1 minute—
      Permanent signal high tone momentarily interrupted.
      NC lamp lighted.
   If DSA switchboard is provided—

VERIFICATION

All PSC_ lamps extinguished except PSC_ lamp associated with concentrating circuit being tested.
STEP | ACTION | VERIFICATION
--- | --- | ---
17 | Insert cord into jack associated with permanent signal. | At switchboard—
NC lamp lighted.
18b | If DSA switchboard is provided—
At switchboard—
Operate Talk key. | At MTF—
Permanent signal high tone not heard.
19 | At MTF—
Remove plugs from PSCMB_ jacks. | Talking circuit established.
20b | If DSA switchboard is provided—
At switchboard—
Restore Talk key. | All PSC_ lamps extinguished except PSC_ lamp associated with concentrating circuit being tested.
21 | Momentarily operate RING key. | NC lamp momentarily extinguished.
At MTF—
R- lamp momentarily lighted while ringing current applied.
Ringing tone momentarily heard while ringing current applied.
22b | If DSA switchboard is provided—
At switchboard—
Operate RG key. | NC lamp extinguished.
23b | Momentarily operate RING key. | NC lamp extinguished.
At MTF—
R- lamp extinguished.
24b | If DSA switchboard is provided—
At switchboard—
Restore RG key. | NC lamp lighted.
25 | At MTF—
Momentarily operate RL key. | All lamps extinguished.
26 | Restore all keys and switches. | 
27 | Operate APS/NPS key to normal operating position. | 
28b | If DSA switchboard is provided—
At switchboard—
Disconnect cord circuit and operator telephone set. | 

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VERIFICATION
At switchboard—
NC lamp lighted.
At MTF—
Permanent signal high tone not heard.
Talking circuit established.
All PSC_ lamps extinguished except PSC_ lamp associated with concentrating circuit being tested.
NC lamp momentarily extinguished.
At MTF—
R- lamp momentarily lighted while ringing current applied.
Ringing tone momentarily heard while ringing current applied.
NC lamp extinguished.
NC lamp extinguished.
At MTF—
R- lamp extinguished.
NC lamp lighted.
All lamps extinguished.

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#### STEP ACTION

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<td>D. Coin Control Feature</td>
<td><strong>VERIFICATION</strong></td>
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<tr>
<td>15</td>
<td>At MTF—&lt;br&gt;Select class of service as required for coin line.</td>
</tr>
<tr>
<td>16c</td>
<td>If PSHT being tested is not arranged for coin return after disconnect—&lt;br&gt;Operate CNR key.</td>
</tr>
<tr>
<td>17</td>
<td>Momentarily operate ST key.</td>
</tr>
<tr>
<td>18</td>
<td>Insert front cord into jack associated with permanent signal.</td>
</tr>
<tr>
<td>19b</td>
<td>If DSA switchboard is provided—&lt;br&gt;At switchboard—&lt;br&gt;Operate Talk key.</td>
</tr>
<tr>
<td>20</td>
<td>Remove plugs from PSCMB_ jacks.</td>
</tr>
<tr>
<td>STEP</td>
<td>ACTION</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>21</td>
<td>At MTF—&lt;br&gt;Operate CN key.</td>
</tr>
<tr>
<td></td>
<td>If office is arranged for coin service improvements (dial-tone-first)—&lt;br&gt;Operate DTNF key.</td>
</tr>
<tr>
<td></td>
<td>Collect coin.</td>
</tr>
<tr>
<td>23</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>24b</td>
<td>If DSA switchboard is provided—&lt;br&gt;At switchboard—&lt;br&gt;Collect coin.</td>
</tr>
<tr>
<td>25</td>
<td>At MTF—&lt;br&gt;Restore CN key.</td>
</tr>
<tr>
<td>26</td>
<td>Operate CN key.</td>
</tr>
<tr>
<td>27</td>
<td>Return coin.</td>
</tr>
<tr>
<td>28b</td>
<td>If DSA switchboard is provided—&lt;br&gt;At switchboard—&lt;br&gt;Return coin.</td>
</tr>
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<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>At MTF— Restore CN key.</td>
<td>CND lamp extinguished.</td>
</tr>
<tr>
<td>30</td>
<td>Operate CN key.</td>
<td>CR lamp momentarily lighted.</td>
</tr>
<tr>
<td>31</td>
<td>At MTF— Restore TLK key.</td>
<td>If DSA switchboard provided— At switchboard— Coin present lamp lighted.</td>
</tr>
<tr>
<td>32b</td>
<td>If DSA switchboard provided— At switchboard— Disconnect cord circuit and operator telephone set.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Restore Talk key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>34</td>
<td>At MTF— Momentarily operate RL key.</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Restore all keys and switches.</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Operate APS/NPS key to normal operating position.</td>
<td></td>
</tr>
</tbody>
</table>

### E. Howler or Receiver Off-Hook Tone — Monitoring

<table>
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<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
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</thead>
<tbody>
<tr>
<td>15</td>
<td>At MTF— Select class of service and rate treatment as required for non-PBX, noncoin line.</td>
<td>If ETS provided— FT lamp provided.</td>
</tr>
<tr>
<td>16c</td>
<td>If range extension for unigauge cabling feature is under test— Operate LOLL key.</td>
<td>If permanent signal expanded routing feature is provided— ROH lamp lighted.</td>
</tr>
<tr>
<td>17</td>
<td>Momentarily operate ST key.</td>
<td>If DSA switchboard is provided— At switchboard— NC lamp remains lighted.</td>
</tr>
</tbody>
</table>

If receiver off-hook announcement and tone feature is provided— At MTF— Receiver off-hook announcement heard followed by receiver off-hook tone for...
18  Insert front cord into jack associated with permanent signal.
    If DSA switchboard is provided—
    At switchboard—
    Operate Talk key.

19b  If DSA switchboard is provided—
     At switchboard—
     Operate Talk key.

20  At MTF—
    Remove plugs from PSCMB_ jacks.

21b  If DSA switchboard is provided—
     At switchboard—
     Restore Talk key.

22c  If office is not arranged for receiver off-hook announcement and tone feature—
     At switchboard if provided—
     Operate HLR key.

23d  If office is arranged for receiver off-hook announcement and tone feature—
     At switchboard if provided—
     Operate ROHT key.

24  Patch T1 jack of voltmeter test panel to T jack of PSHT being tested.

25  Operate T key.

26  When tone cycle is completed (H lamp extinguished)—
    Remove patching cord.

27  Restore T key.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 28c  | If office is not arranged for receiver off-hook announcement and tone feature—  
At switchboard if provided—  
Momentarily restore HLR key. | SUPV lamp flashes at 120 ipm. |
| 29d  | If office is arranged for receiver off-hook announcement and tone feature—  
At switchboard if provided—  
Momentarily restore ROHT key. | SUPV lamp flashes again at 120 ipm. |
| 30   | When flashing SUPV lamp changes to a steadily lighted condition—  
Disconnect cord circuit. | At MTF—  
Howler or receiver off-hook tone heard. |
| 31c  | If range extension for unigauge cabling feature is under test—  
Patch T1 jack of voltmeter test panel to T jack of PSHT being tested. | BY1 lamp lighted. |
| 32c  | Operate PSM key. | Receiver off-hook tone heard at 60 ipm. |
| 33c  | Operate T key. | Receiver off-hook tone silenced. |
| 34c  | Restore PSM key. |  |
| 35c  | Restore T key. | BY1 lamp extinguished. |
| 36c  | Remove patching cord. |  |
| 37c  | At MTF—  
Restore LOLL key. |  |
| 38c  | Operate NOLL key. |  |
| 39c  | Repeat Steps 17, 18. |  |
| 40b  | If DSA switchboard provided—  
Operate Talk key. | Talking circuit established.  
At PSHT under test—  
LOLP relay not operated.  
At concentrator circuit associated with PSHT under test—  
LOLP, LOLPA relays not operated. |
| 41b  | Repeat Steps 20 through 24. |  |
| 42b  | Operate T key. | Receiver off-hook tone heard. |
| 43   | Repeat Steps 26 through 29. |  |
| 44   | Before H lamp is extinguished—  
Restore TLK key. | If ETS provided—  
FT lamp extinguished.  
AS lamp extinguished. |
<table>
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<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>46</td>
<td>Repeat Steps 11 through 20 using a PBX class of service.</td>
<td></td>
</tr>
<tr>
<td>47b</td>
<td>If DSA switchboard provided— Restore Talk key.</td>
<td></td>
</tr>
<tr>
<td>48c</td>
<td>If office is not arranged for receiver off-hook announcement and tone feature— At switchboard if provided— Momentarily restore HLR key.</td>
<td>SUPV lamp not lighted.</td>
</tr>
<tr>
<td>49d</td>
<td>If office is arranged for receiver off-hook announcement and tone feature— At switchboard if provided— Momentarily restore ROHT key.</td>
<td>SUPV lamp not lighted.</td>
</tr>
<tr>
<td>50</td>
<td>Restore howler or ROHT key.</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>At MTF— Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>52</td>
<td>Restore all keys and switches.</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Operate APS/NPS key to normal operating position.</td>
<td></td>
</tr>
</tbody>
</table>

**F. Time-Out — Monitor and Alarm Indication — Coin Class**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
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</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>At MTF— Select class of service as required for coin line.</td>
<td></td>
</tr>
<tr>
<td>16c</td>
<td>If PSHT being tested is not arranged for coin return after disconnect— Operate CNR key.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Momentarily operate ST key.</td>
<td>If ETS provided— FT lamp lighted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS, RA, MRL lamps lighted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If permanent signal expanded routing feature is provided— ROH lamp lighted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C lamp lighted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If DSA switchboard is provided— At switchboard— C lamp lighted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If receiver off-hook announcement and tone feature is provided— At MTF—</td>
</tr>
<tr>
<td>STEP</td>
<td>ACTION</td>
<td>VERIFICATION</td>
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</tr>
<tr>
<td>18</td>
<td>Insert front cord into jack associated with permanent signal.</td>
<td>Receiver off-hook announcement heard, followed by receiver off-hook tone for approximately 50 seconds. Permanent signal high tone heard. If 1 minute interrupter provided— Within 1 minute— Permanent signal high tone momentarily interrupted. C lamp lighted. If DSA switchboard is provided— At switchboard— C lamp lighted.</td>
</tr>
<tr>
<td>19b</td>
<td>If DSA switchboard is provided— At switchboard— Operate Talk key.</td>
<td>At MTF— Permanent signal high tone not heard.</td>
</tr>
<tr>
<td>20</td>
<td>Remove plugs from PSCMB_ jacks.</td>
<td>Talking circuit established.</td>
</tr>
<tr>
<td>21d</td>
<td>If PSHT is arranged for immediate alarm after operator disconnect— At switchboard if provided— Disconnect cord circuit.</td>
<td>All PSC_ lamps extinguished except PSC_ lamp associated with concentrating circuit being tested. C lamp flashes at 120 ipm. Minor alarm sounds.</td>
</tr>
<tr>
<td>22d</td>
<td>Restore Talk key.</td>
<td></td>
</tr>
<tr>
<td>23e</td>
<td>If PSHT is not arranged for immediate alarm after operator disconnect— At switchboard if provided— Disconnect cord circuit.</td>
<td></td>
</tr>
<tr>
<td>24e</td>
<td>Restore Talk key.</td>
<td></td>
</tr>
<tr>
<td>25e</td>
<td>At MTF— Momentarily operate PS1, PS2 keys.</td>
<td>C lamp flashes at 120 ipm. Minor alarm sounds.</td>
</tr>
<tr>
<td>26</td>
<td>Patch T1 jack of voltmeter test panel to T_ jack of PSHT being tested.</td>
<td>C lamp flashes changed from 120 ipm to 60 ipm. Minor alarm silenced.</td>
</tr>
<tr>
<td>27</td>
<td>Remove patching cord.</td>
<td>C lamp continues to flash at 60 ipm. Minor alarm does not sound.</td>
</tr>
<tr>
<td>28</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>29</td>
<td>Restore all keys and switches.</td>
<td></td>
</tr>
<tr>
<td>STEP</td>
<td>ACTION</td>
<td>VERIFICATION</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>30</td>
<td>Operate APS/NPS key to normal operating position.</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td><strong>Concentrating Circuit — Timed Release</strong></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>At MTF— Select class of service and rate treatment as required for non-PBX, noncoin line.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>At relay rack frame— Block nonoperated CO relay of concentrating circuit to be tested.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>At MTF— Momentarily operate ST key. When AS lamp lights, <em>start timing</em>.</td>
<td>If ETS provided— FT lamp lighted. AS, RA, MRL lamps lighted. In approximately 13 to 32 seconds— Minor alarm sounds. At relay rack frame— AL lamp lighted.</td>
</tr>
<tr>
<td>18</td>
<td>At MTF— Remove plugs from PSCMB jacks.</td>
<td>If receiver off-hook announcement and tone is provided— Receiver off-hook announcement and tone heard. Permanent signal high tone heard. If 1 minute interrupter provided— Within 1 minute— Permanent signal high tone momentarily interrupted. If DSA switchboard is provided— At switchboard— NC lamp lighted.</td>
</tr>
<tr>
<td>19</td>
<td>Insert front cord into jack associated with permanent signal.</td>
<td>At MTF— Permanent signal high tone not heard. Talking circuit established.</td>
</tr>
<tr>
<td>20b</td>
<td>If DSA switchboard is provided— At switchboard— Operate Talk key.</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>At MTF— Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>22</td>
<td>Restore all keys and switches.</td>
<td></td>
</tr>
<tr>
<td>23b</td>
<td>If DSA switchboard is provided— At switchboard— Disconnect cord circuit.</td>
<td></td>
</tr>
<tr>
<td>24b</td>
<td>Restore Talk key.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 218-286-501

STEP ACTION VERIFICATION

25 At relay rack frame— Remove blocking tool from CO relay. AL lamp extinguished. Minor alarm silenced.

26 Momentarily operate AR key.

H. Timing — Noncoin

1 At relay rack frame— Operate MB switch to MB position on PSHT associated with timing circuit being tested. MB lamp lighted.

2 When ST relay of timing circuit being tested is normal— Block operated S2 relay, start timing. At MTF— Depending upon timing interval provided for trunk— NC lamp flashes at 120 ipm in:

<table>
<thead>
<tr>
<th>NOMINAL TIMING INTERVAL</th>
<th>MIN TO MAX TIMING INTERVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 minutes</td>
<td>12 to 38 minutes</td>
</tr>
<tr>
<td>22 minutes</td>
<td>18 to 49 minutes</td>
</tr>
<tr>
<td>33 minutes</td>
<td>27 to 73 minutes</td>
</tr>
<tr>
<td>46 minutes</td>
<td>38 to 103 minutes</td>
</tr>
</tbody>
</table>

3 At relay rack frame— Remove blocking tool from S2 relay. MB lamp extinguished.

4 Restore MB switch.

I. Trunk Busy

10 At relay rack frame— Operate MB switch of PSHT being tested to MB position. MB lamp lighted.

11 At MTF— Insert make-busy plugs into all PSCMB_jacks. All PSC_ lamps lighted.

12 Operate NTFS, NTTS, PS keys.

13 Select class of service and rate treatment as required for non-PBX, noncoin line.

14 Operate TLK key.

15 Momentarily operate ST key. If ETS provided— FT lamp lighted. AS, RA_, MRL lamps lighted.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 16   | Momentarily operate RL key. | All lamps extinguished.  
If ETS provided—  
FT lamp remains lighted. |
| 17   | Operate TS key. | TB lamp lighted.  
AS lamp not lighted. |
| 18   | Momentarily operate ST key. | All lamps extinguished.  
If ETS provided—  
FT lamp remains lighted. |
| 19   | Momentarily operate RL key. | PSC_ lamps extinguished. |
| 20   | Restore all keys and switches. | MB lamp extinguished.  
If ETS provided—  
At MTF—  
FT lamp extinguished. |
| 21   | Remove plug from PSCMB_ jacks. | All PSC_ lamps lighted. |
| 22   | Operate APS/NPS key to normal operating position. | J. Manual Release Feature — PST Key |
| 23   | At relay rack frame—  
Operate MB switch of PSHT being tested to N position. | All PSC_ lamps lighted.  
If ETS provided—  
FT lamp lighted.  
AS lamp lighted. |

**J. Manual Release Feature — PST Key**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 12   | At MTF—  
Insert make-busy plugs into all PSCMB_ jacks. | All PSC_ lamps lighted. |
| 13   | Select class of service and rate treatment as required for non-PBX, noncoin line. | |
| 14   | Operate TLK key. | If ETS provided—  
FT lamp lighted.  
AS lamp lighted. |
| 15   | Momentarily operate ST key. | If ETS provided—  
FT lamp extinguished.  
AS lamp extinguished. |
| 16   | Momentarily operate PST key. | All lamps extinguished. |
| 17   | Momentarily operate RL key. | |
| 18   | Restore all keys and switches. | |
| 19   | Operate APS/NPS key to normal operating position. | |
| 20   | Remove plug from PSCMB_ jacks. | PSC_ lamps extinguished. |
### K. False-Busy and False-Idle Conditions

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At relay rack frame—Connect 110-volt ac supply to IA fault locator.</td>
<td>Whistle heard.</td>
</tr>
<tr>
<td>2</td>
<td>Operate W-T switch to W position, HR-LRT switch to HR position.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Connect WT jack of fault locator to terminal of terminal strip on unit as follows:</td>
<td>Whistle not heard.</td>
</tr>
<tr>
<td></td>
<td>Nonwire-spring-relay type PSHT—Terminal A10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wire-spring-relay type PSHT—Terminal A45.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Operate MB switch of PSHT being tested and then MB switches of all other trunks using the same route on same trunk link frame.</td>
<td>Whistle heard.</td>
</tr>
<tr>
<td></td>
<td>MB lamp lighted.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>When PSHT being tested is idle—Momentarily restore MB switch.</td>
<td>Whistle not heard while MB switch restored.</td>
</tr>
<tr>
<td>6</td>
<td>Block operated S2 relay.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Restore MB switch of PSHT being tested.</td>
<td>Whistle heard.</td>
</tr>
<tr>
<td>8</td>
<td>Restore other MB switches operated in Step 4.</td>
<td>Whistle not heard.</td>
</tr>
<tr>
<td>9</td>
<td>Connect HRG (high resistance ground) terminal to terminal of terminal strip on unit as follows:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nonwire-spring-relay type PSHT—Terminal A9.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wire-spring-relay type PSHT—Terminal A55.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Disconnect WT jack of fault locator from terminal A45 or 110, and connect to terminal as follows:</td>
<td>Whistle heard.</td>
</tr>
<tr>
<td></td>
<td>Nonwire-spring-relay type PSHT—Terminal A11.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wire-spring-relay type PSHT—Terminal A15.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Remove blocking tool from S2 relay.</td>
<td>Whistle not heard.</td>
</tr>
<tr>
<td>12</td>
<td>Remove test connections from terminal strip.</td>
<td></td>
</tr>
</tbody>
</table>