INTRAOFFICE 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 intraoffice trunks SD-25684-01, SD-25684-02, SD-26060-01, SD-26061-01, SD-26062-01, SD-26064-01, SD-27540-01, and SD-27915-01. Phase II centrex is covered in 218-331-501 and Phase III centrex is covered in 218-332-501.

1.02 This section is reissued for the reasons listed below. Revision arrows are used to emphasize the more significant changes.

(a) To add provisions for Call Data Transmitter (CDT) testing.

(b) To add provisions for improved testing of CS relay feature to Test F.

(c) To add Coin Service Improvements (Dial-Tone First) to Tests D, E, F, G, I, J, L.

(d) To make minor changes as required.

This reissue affects Equipment Test Lists.

1.03 The tests covered are:

A. Trunk Seizure and Release: The following features are tested:
(1) Seizure of trunk. (2) Continuity of originating and terminating sleeve leads. (3) Continuity and polarity of originating tip and ring leads.

B. Ringing Features: This test checks the ability of the trunk to apply all ringing codes and to verify that they are applied to the proper side of the line and are of the correct polarity.

C. Pretrip and Trip: This test checks the operation of the trip relay.

D. Supervision—Originating and Terminating Ends Disconnect: This test checks the charge functions and release of the trunk without using a timed release.

E. Supervision—Originating End Disconnect: The following features are tested: (1) Charge functions. (2) Ability to hold if extra digits are dialed into trunk. (3) Timed release of trunk in 13 to 32 seconds, where provided.

F. Supervision—Terminating End Disconnect: This test checks the charge functions and, where provided, the timed release in 13 to 32 seconds of the trunk when only the terminating end disconnects. It also checks the improved testing of CS relay feature if provided.

G. Noncharge Supervision: This test checks that a charge condition is not established when an answered call is held less than 2 seconds if this feature is provided.

H. Timed Release After Coin Collect but Before Overtime Monitoring—Trunks Arranged for Coin Operation With Timing (LAMA-C or CDT Not Provided):

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Printed in U.S.A.
I. Collection of Initial and Overtime Deposits—Trunks Arranged for Coin Operation With Timing (LAMA-C &/or CDT Not Provided): The following features are tested: (1) Charge functions. (2) Selection of coin supervisory circuit. (3) Collection of initial deposit. (4) Test for overtime deposit. (5) Collection of overtime deposit.

J. Return of Overtime Deposit—Disconnect After Coin Collect but Before Overtime Monitoring—Trunks Arranged for Coin Operation With Timing (LAMA-C &/or CDT Not Provided):

K. Supervision—Trunks Arranged for Message Register Operation With or Without Timing (LAMA-C, &/CDT &/or ETS Not Provided): The following features are tested: (1) Test for initial operation of message register at time of answer. (2) Test for operation of message register once at the beginning of each timing interval after time of answer.

L. Call to Free Line—Trunks Arranged for AMA, Coin, Message Register, or Data Message Timing Operation: The following features are tested: (1) No charge made when using message register or data message timing trunks. (2) Return of coin when using coin trunks. (3) No answer or disconnect entries made when using AMA trunks.

M. Cancel Disconnect Entry—AMA Trunks When Disconnect Entry is Provided (ETS, &CDT or LAMA-C &/or Not Provided): This test checks cancellation of disconnect entry and release of trunk if disconnect entry is not made within 2 to 6 seconds after disconnect.

N. Universal Pad Control: This test checks the operation of the PCA and PCB relays in the trunk circuit.

O. Trunk Busy: This test checks that only a test call can complete to an idle made-busy trunk. It also checks that a service call can complete to an idle trunk.

P. Tests P through AS Deleted:

AT. ETS Verification Test: This test verifies the following conditions: (1) Trunk seizure and release. (2) Trunk supervisory scanning (FT, S1, and CS leads). (3) Make-busy override. (4) Correct trunk register assignment.

1.04 Tests H, I, and J should be made during periods of light coin traffic to ensure immediate seizure of a coin supervisory circuit.

1.05 In Tests H, I, and J, the initial and overtime charging intervals used in testing nonwire-spring-relay type trunks are based on a 5-minute timing interval. When testing these trunks in an office that uses a timing interval other than 5 minutes, the timing specified in the office should be used instead of the timing specified in these tests.

1.06 Tests M and N, require action and verification at the relay rack frame.

1.07 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.

1.08 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.

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

1.10 When the office is arranged for LAMA-C or ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in an out-of-service condition—not in an out-of-service condition. To change a scanner or distributor from an out-of-service to a maintenance-busy condition, use the procedure given in the following sections for the office arrangement.


1.11 When the trunk under test is arranged for ETS, the first completed test call from the MTF will cause the TST bit to be set in the trunk register associated with the selected trunk, enabling trunk supervisory scanning to be repeated on the FT, CS, and S1 lamps at the MTF trunk test circuit. As long as the TST bit is set in the trunk register, supervision will continue to be repeated on the lamps, even on service calls. The TST bit will remain set in the trunk register until (1) a test call is made from the MTF to another trunk, or (2) the command STOP:TRK TST is entered at the maintenance TTY.

1.12 ♠When CDT (calling data transmitter) billing system is provided in the office, this trunk may or may not handle billable calls. When it is arranged for billable calls, supervisory scan points will be assigned and supervision will be repeated from the scan points on test calls to the MTF by CS and S1 lamps.

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

2. APPARATUS

All Tests

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

2.02 Trunk test circuit, SD-25918-01.

Tests A, D Through M

2.03 KS-3008 stopwatch or equivalent.

Test M

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

3. PREPARATION

All Tests

STEP ACTION VERIFICATION

Refer to paragraph 1.07 through 1.13

1 At MTF— Restore all keys and switches. All lamps extinguished.

2 Momentarily operate RL key.

3 Select digits required to direct call to type of trunk under test.
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<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a</td>
<td>If trunk under test is arranged for flat rate, message register, AMA, or coin operation— Operate TTL key.</td>
</tr>
<tr>
<td>5b</td>
<td>If KAMA key is provided and AMA features are not being tested— Operate KAMA key.</td>
</tr>
<tr>
<td>6c</td>
<td>If trunk under test is arranged for data service, message timing, or data flat rate operation— Select numerical digits assigned to data terminating test line.</td>
</tr>
<tr>
<td>7d</td>
<td>If coin service improvements (dial-tone-first) are provided— Operate DTNF key for initial charge or OTCN key for overtime charge.</td>
</tr>
<tr>
<td>8e</td>
<td>If trunk under test is coin operation— Operate CN key.</td>
</tr>
<tr>
<td>9f</td>
<td>If ETS provided— Operate PCS and PTS keys.</td>
</tr>
<tr>
<td>10</td>
<td>Select marker.</td>
</tr>
<tr>
<td>11</td>
<td>Select route advance.</td>
</tr>
<tr>
<td>12</td>
<td>Select A appearance of trunk under test.</td>
</tr>
<tr>
<td>13</td>
<td>Operate FS, TS, and KRC keys.</td>
</tr>
<tr>
<td>14</td>
<td>Select a class of service and rate treatment, if required, having access to trunk under test.</td>
</tr>
<tr>
<td>15</td>
<td>Select IAO class of test.</td>
</tr>
<tr>
<td>16</td>
<td>Select ringing combination as required.</td>
</tr>
<tr>
<td>17</td>
<td>Select originating class of call and associated translator indication.</td>
</tr>
<tr>
<td>18</td>
<td>Operate GPA/GPB key when trunk is in an allotted trunk group.</td>
</tr>
</tbody>
</table>

Tests A Through O

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>19g</td>
<td>If tens block screening is provided— Set TERT switch as required.</td>
</tr>
</tbody>
</table>
### STEP ACTION

**All Tests Except H, I, J, M, and AT**

20h  If trunk is to be tested for CDT—
     Operate CDTT key.

21h  When trunk is assigned to CDT dual controllers,
     select controller—
     Operate CDC 0/1 key.

22h  When a trouble record is to be taken from
     the CDT translator access (TA) circuit—
     Operate TREC key.

23h  When the CDT controller operates with both
     shared and dedicated translator circuits and a
     particular translator circuit is to be used for
     the test—
     Operate TAD key to select dedicated TA circuit
     or operate TAS key to select shared TA circuit.

**Note:** When a TA circuit is not selected, the controller will select the next available TA circuit.

### 4. METHOD

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Trunk Seizure and Release</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Operate TLK key.</td>
</tr>
<tr>
<td>25</td>
<td>Momentarily operate ST key.</td>
</tr>
</tbody>
</table>

| 26  | Operate ANS key; **start timing.** |

**AS, TS lamps lighted.**

*Ringing tone heard.*

If answer and disconnect supervision is provided—

- **PK lamp lighted.**

If ETS provided—

- **FT, S1 lamps lighted.**

If LAMA-C provided—

- **S1 lamp lighted.**

**If CDTT key is operated—**

- **S1 lamp lighted.**

If ETS or LAMA-C provided—

- **CS lamp lighted.**

**If CDTT key is operated—**

- **CS lamp lighted.**

*High tone heard.*

If answer and disconnect supervision is provided—
STEP | ACTION | VERIFICATION
---|---|---
27 | Restore TLK, ANS keys. | PK lamp extinguished.  
After 38 seconds—  
AS, TS lamps remain lighted.

28 | Momentarily operate RL key. | AS, TS lamps extinguished.  
High tone silenced.  
If answer and disconnect supervision is provided—  
PK lamp lighted.  
If ETS provided—  
FT, CS, S1 lamps extinguished.  
If LAMA-C provided—  
CS, S1 lamps extinguished.  
◆If CDTT key is operated—  
S1, CS lamps extinguished.◆

29 | Restore all keys and switches not required in next test. | All lamps extinguished.

B. Ringing Features

24 | Operate TLK key. | AS, TS lamps lighted.  
Ringing detection lamps function as shown in Table A.  
Ringing tone heard.  
If answer and disconnect supervision is provided—  
PK lamp lighted.  
If ETS provided—  
FT, S1 lamps lighted.  
If LAMA-C provided—  
S1 lamp lighted.  
◆If CDTT key is operated—  
S1 lamp lighted.◆

25 | Select ringing combination to be applied to terminating test line. (Refer to Table A.) |  

26 | Momentarily operate ST key. |  

27 | Momentarily operate RL key. | All lamps extinguished.  
Ringing tone silenced.

28 | Restore TLK key. |  

29 | Repeat Steps 24 through 27 for each type of ringing provided. |  

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

<table>
<thead>
<tr>
<th>RINGING COMB.</th>
<th>RINGING SELECTION SWITCH</th>
<th>RINGING DETECTION LAMP LIGHTED</th>
<th>RINGING TEST LINE NO.</th>
<th>RINGING CODES</th>
<th>RINGING INTERVAL IN SECONDS</th>
<th>REMARKS</th>
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<td>R—</td>
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<td>48 Ring, Grd Tip</td>
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<td>R—</td>
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<td>Code 3 Gen</td>
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<td>1.5</td>
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<td>T—</td>
<td>Code 5 Gen</td>
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<tr>
<td></td>
<td></td>
<td>T—§</td>
<td>—48 Tip, Grd Ring</td>
<td></td>
<td></td>
<td>Silent Level</td>
</tr>
</tbody>
</table>

*These ringing combinations check all equipped crosspoints on the ringing selection switch.
†In offices arranged for marker controlled immediate ring, set RMBR switch to position 1.
‡Ringing combination 10 is listed for information purposes only and should not be used for testing the ringing feature.
§If line link pulsing or direct access to No. 101 ESS is provided, operate RTK key to test silent level.
*No indication.
C. Pretrip and Trip

24 Operate TLK key.
25 Select code 1 ringing.
26 Momentarily operate ST key.

AS, TS lamps lighted.
R- lamp flashes once every 6 seconds.
Ringing tone heard in unison with R- lamp flashes.
If ETS provided—
   FT, S1 lamps lighted.
If LAMA-C provided—
   S1 lamp lighted.
♦If CDTT key is operated—
   S1 lamp lighted.
If answer and disconnect supervision is provided—
   PK lamp lighted.

27 During silent interval of ringing cycle—
   Operate PTP key and hold for approximately 1/2 second.

28 Observe R- lamp.

R- lamp continues to flash.

29 During silent interval of ringing cycle—
   Operate TRP key and hold for approximately 1/2 second if trunk test circuit has 1500-ohm
test resistance, or 1 second if it has a 1622-ohm test resistance.

R- lamp extinguished.
Ringing tone silenced.
If trunk under test is data message timing—
   AS, TS lamps extinguished.
If ETS provided—
   FT, S1 lamps extinguished.
If LAMA-C provided—
   S1 lamp extinguished.
♦If CDTT key is operated—
   S1 lamp extinguished.

30 Momentarily operate RL key.

All lamps extinguished.

31i If office is equipped with range extension for uniguage cabling—
   Select ringing combination 4.

32i Repeat Steps 26 through 30.

33 Restore TLK key.

34 Restore all keys and switches not required in next test.
<table>
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<tr>
<th>STEP</th>
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<th>VERIFICATION</th>
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</thead>
<tbody>
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<td>D. Supervision—Originating and Terminating Ends Disconnect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Rate Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Operate TLK key.</td>
<td>AS, TS lamps lighted. If answer and disconnect supervision is provided— PK lamp lighted. If ETS provided— FT, S1 lamps lighted. If LAMA-C provided— S1 lamp lighted. ♦If CDTT key is operated— S1 lamp lighted.♦</td>
</tr>
<tr>
<td>25</td>
<td>Momentarily operate ST key.</td>
<td>High tone heard. If answer and disconnect supervision is provided— PK lamp extinguished. If ETS or LAMA-C provided— CS lamp lighted. ♦If CDTT key is operated— CS lamp lighted.♦</td>
</tr>
<tr>
<td>26</td>
<td>Operate ANS key; <strong>start timing.</strong></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>In 7 to 9 seconds— Restore ANS, TLK keys.</td>
<td>AS, TS lamps extinguished. High tone silenced. If answer and disconnect supervision is provided— PK lamp lighted. If ETS provided— FT, S1, CS lamps extinguished. If LAMA-C provided— CS, S1 lamps extinguished. ♦If CDTT key is operated— S1, CS lamps extinguished.♦</td>
</tr>
<tr>
<td>AMA Operation (ETS, ♦CDT♦ or LAMA-C Not Provided)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>29</td>
<td>Operate TLK key.</td>
<td>AS, TS lamps lighted. IE, RN-, T2/5, U2/5 lamps lighted. If answer and disconnect supervision is provided— PK lamp lighted.</td>
</tr>
</tbody>
</table>
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STEP | ACTION | VERIFICATION
--- | --- | ---
31 | Operate ANS key; *start timing.* | High tone heard.
    | | If answer and disconnect supervision is provided—
    | | PK lamp extinguished.
    | | In 2 to 6 seconds—
    | | AE lamp lighted.
32 | Restore ANS, TLK keys. | AS, TS lamps extinguished.
    | | High tone silenced.
    | | If disconnect entry is provided—
    | | DE lamp lighted.
    | | If answer and disconnect supervision is provided—
    | | PK lamp lighted.
33 | Momentarily operate RL key. | All lamps extinguished.

**Coin Operation**

34 | Operate TLK key. | If ETS provided—
    | | FT, S1 lamps lighted.
    | | AS, TS lamps lighted.
    | | PK lamp *not* lighted.
35 | Momentarily operate ST key. | High tone heard.
    | | If ETS provided—
    | | CS lamp lighted.
36 | Operate ANS key; *start timing.* | If ETS provided—
    | | FT, S1, CS lamps extinguished.
    | | CC lamp momentarily lighted.
    | | CND lamp lighted.
    | | *If trunk is arranged for coin service improvements (dial-tone-first)—*
    | | OLF lamp *does not* light.*
    | | AS, TS lamps extinguished.
    | | High tone silenced.
37 | In 7 to 9 seconds—
    | | Restore ANS, TLK keys. | CND lamp extinguished.
38 | Restore CN key. | All lamps extinguished.
39 | Momentarily operate RL key. | 

**Message Register Operation (LAMA-C or ETS Not Provided)**

40 | Operate TLK key. | AS, TS lamps lighted.
    | | PK lamp *not* lighted.
41 | Momentarily operate ST key. |
STEP 42 Operate ANS key; \textit{start timing}.

STEP 43 Restore ANS, TLK keys.

STEP 44 Momentarily operate RL key.

STEP 45i If circuit is arranged for 2-party operation—
Operate TP, TLK keys.

STEP 46i Momentarily operate ST key.

STEP 47i Operate ANS key; \textit{start timing}.

STEP 48i Restore ANS, TLK keys.

STEP 49i Restore TP key.

STEP 50i Momentarily operate RL key.

**Data Message Timing and Data Flat Rate Operation**

STEP 51 Operate TLK key.

STEP 52 Momentarily operate ST key.

**Verification**

- If CDTT key is operated—
  - S1 lamp lighted.
- High tone heard.
- In 2 to 6 seconds—
  - RP lamp lighted.
- DR lamp \textbf{not} lighted.
- If CDTT key is operated—
  - CS lamp lighted.
- AS, TS lamps extinguished.
- High tone silenced.
- If CDTT key is operated—
  - S1, CS lamps extinguished.
- All lamps extinguished.

- AD, TS lamps lighted.
- If CDTT key is operated—
  - S1 lamp lighted.
- High tone heard.
- In 2 to 6 seconds—
  - TP lamp lighted.
- DR lamp \textbf{not} lighted.
- If CDTT key is operated—
  - CS lamp lighted.
- If CDTT key is operated—
  - S1, CS lamps extinguished.
- AS, TS lamps extinguished.
- High tone silenced.
- All lamps extinguished.

- If CDTT key is operated—
  - S1 lamp lighted.
- If LAMA-C provided—
  - S1 lamp lighted.
- If ETS provided—
  - FT, S1 lamps lighted.
- AS, TS lamps lighted.
- RP, PK lamps \textbf{not} lighted.
SECTION 218-247-501

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 53   | Operate ANS key. | High tone heard.  
PK lamp lighted.  
If trunk under test is data message timing—  
RP lamp lighted.  
DR lamp not lighted.  
If ETS or LAMA-C provided—  
CS lamp lighted.  
◆If CDTT key is operated—  
CS lamp lighted.◆ |
| 54   | Restore ANS, TLK keys. | AS, TS lamps extinguished.  
High tone silenced.  
If ETS provided—  
FT, S1, CS lamps extinguished.  
If LAMA-C provided—  
CS, S1 lamps extinguished.  
◆If CDTT key is operated—  
S1, CS lamps extinguished.◆ |
| 55   | Momentarily operate RL key | All lamps extinguished. |

All Trunks

56 Restore all keys and switches not required in next test.

E. Supervision—Originating End Disconnect

All Trunks

Note: Do not proceed with this test until assured that the trunk has been idle for 2 minutes where tube-type RL relay is used and for 4 minutes where 235-type RL relay is used.

Flat Rate Operation

24 Operate TLK key.

25 Momentarily operate ST key.  
◆If CDTT key is operated—  
S1 lamp lighted.◆  
If LAMA-C provided—  
S1 lamp lighted.  
If ETS provided—  
FT, S1 lamps lighted.  
AS, TS lamps lighted.  
If answer and disconnect supervision is provided—  
PK lamp lighted.
STEP | ACTION | VERIFICATION
---|---|---
27 | Operate ANS key; start timing. | High tone heard.
| | | If answer and disconnect supervision is provided—
| | | PK lamp extinguished.
| | | If ETS or LAMA-C provided—
| | | CS lamp lighted.
| | | ◆If CDTT key is operated—
| | | CS lamp lighted.◆
| | | ◆If LAMA-C provided—
| | | S1 lamp extinguished.
| | | If ETS provided—
| | | PT, S1 lamps extinguished.
| | | ◆If CDTT key is operated—
| | | S1, CS lamps extinguished.◆
| | | AS lamp extinguished.
| | | In 13 to 32 seconds—
| | | TS lamp extinguished.
| | | High tone silenced.
| | | If answer and disconnect supervision is provided—
| | | PK lamp lighted.
| | | If ETS or LAMA-C provided—
| | | CS lamp extinguished.
28 | In 7 to 9 seconds—
| | | All lamps extinguished.
| | Restore TLK key; start timing. | Restore ANS key.
29 | | Momentarily operate RL key.
30 | | AMA Operation (ETS, ◆CDT◆ or LAMA-C Not Provided)
31 | Operate TLK key. | AS, TS lamps lighted.
32 | Momentarily operate ST key. | IE, RN-, T2/5, U2/5 lamps lighted.
| | | If answer and disconnect supervision is provided—
| | | PK lamp lighted.
34 | Operate ANS key; start timing. | High tone heard.
| | | In 2 to 6 seconds—
| | | AE lamp lighted.
| | | If answer and disconnect supervision is provided—
| | | PK lamp extinguished.
SECTION 218-247-501

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Restore TLK key; <em>start timing.</em></td>
<td>AS lamp extinguished. High tone silenced. S1 lamp extinguished. In 13 to 32 seconds— TS lamp extinguished. If disconnect entry is provided— DE lamp lighted. If answer and disconnect supervision is provided— PK lamp lighted.</td>
</tr>
<tr>
<td>36</td>
<td>Restore ANS key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>37</td>
<td>Momentarily operate RL key.</td>
<td></td>
</tr>
</tbody>
</table>

**Coin Operation**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Operate TLK key.</td>
<td>If ETS provided— FT, S1 lamps lighted. AS, TS lamps lighted. PK lamp <em>not</em> lighted.</td>
</tr>
<tr>
<td>39</td>
<td>Momentarily operate ST key.</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Operate ANS key; <em>start timing.</em></td>
<td>High tone heard. If ETS heard— CS lamp lighted.</td>
</tr>
<tr>
<td>42</td>
<td>In 7 to 9 seconds— Restore TLK key; <em>start timing.</em></td>
<td>CC lamp momentarily lighted. CND lamp lighted. If trunk is arranged for coin service improvements (dial-tone-first)— OLF lamp <em>does not</em> light.4 If ETS provided— FT, S1 lamps extinguished. AS lamp extinguished. In 13 to 32 seconds— TS lamp extinguished. High tone silenced. If ETS provided— CS lamp extinguished.</td>
</tr>
</tbody>
</table>

*Note:* PK lamp may be momentarily lighted during the interval that coin collect potential is applied.

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>Restore CN, ANS keys.</td>
<td>CND lamp extinguished.</td>
</tr>
<tr>
<td>44</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
</tbody>
</table>
**Message Register Operation (LAMA-C or ETS Not Provided)**

- **Step 45**: Operate TLK key.
- **Step 46**: Momentarily operate ST key.  
  - If CDTT key is operated—  
    - S1 lamp lighted.  
    - AS, TS lamps lighted.  
    - PK lamp **not** lighted.
  - AS, TS lamps remain lighted.

- **Step 47**: Using dial of MTF telephone circuit—Dial digit 7.
  - If CDTT key is operated—  
    - CS lamp lighted.  
    - High tone heard.  
    - In 2 to 6 seconds—  
      - RP lamp lighted.  
      - DR lamp **not** lighted.

- **Step 48**: Operate ANS key; **start timing**.
  - If CDTT key is operated—  
    - S1, CS lamps extinguished.  
    - AS lamp extinguished.  
    - In 13 to 32 seconds—  
      - TS lamp extinguished.  
      - High tone silenced.
  - All lamps extinguished.

- **Step 49**: Restore TLK key; **start timing**.

- **Restoring Keys**

- **Step 50**: Restore ANS key.

- **Step 51**: Momentarily operate RL key.

**Data Message Timing and Data Flat Rate Operation**

- **Step 52**: Operate TLK key.

- **Step 53**: Momentarily operate ST key.
  - If CDTT key is operated—  
    - S1 lamp lighted.  
    - If LAMA-C provided—  
      - S1 lamp lighted.  
    - If ETS provided—  
      - FT, S1 lamps lighted.  
    - AS, TS lamps lighted.  
    - PK lamp lighted.

- **Step 54**: Operate ANS key.
  - If CDTT key is operated—  
    - CS lamp lighted.  
  - If ETS or LAMA-C provided—  
    - CS lamp lighted.  
    - High tone heard.  
    - PK lamp extinguished.  
  - If trunk under test is data message timing—
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STEP | ACTION | VERIFICATION
--- | --- | ---
55  | Restore TLK key. | RP lamp lighted.
 |  | DR lamp not lighted.
 |  | ◆If CDTT key is operated—
 |  | S1, CS lamps extinguished.
 |  | ◆If LAMA-C provided—
 |  | CS, S1 lamps extinguished.
 |  | ◆If ETS provided—
 |  | FT, S1, CS lamps extinguished.
 |  | AS, TS lamps extinguished.
 |  | High tone heard.

56  | Momentarily operate RL key. | All lamps extinguished.

57  | Restore ANS key. |  |

All Trunks

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

F. Supervision—Terminating End Disconnect

All Trunks

*Note:* For trunks except data message timing and data flat rate, do not proceed with these tests until assured that the trunk has been idle for 2 minutes where tube-type RL relay is used and for 4 minutes where 235-type RL relay is used.

Flat Rate Operation

24  | Operate TLK key. | ◆If CDTT key is operated—
 |  | S1 lamp lighted.
 |  | ◆If LAMA-C provided—
 |  | S1 lamp lighted.
 |  | ◆If ETS provided—
 |  | FT, S1 lamps lighted.
 |  | AS, TS lamps lighted.
 |  | If answer and disconnect supervision is provided—
 |  | PK lamp lighted.

25  | Momentarily operate ST key. | ◆If CDTT key is operated—
 |  | S1 lamp lighted.
 |  | ◆If LAMA-C provided—
 |  | S1 lamp lighted.
 |  | ◆If ETS provided—
 |  | FT, S1 lamps lighted.
 |  | AS, TS lamps lighted.
 |  | If answer and disconnect supervision is provided—
 |  | PK lamp lighted.

26i | ◆If improved testing of CS relay is provided—
 |  | Momentarily operate SK key. |  |

27  | Operate ANS key; *start timing.* | ◆If CDTT key is operated—
 |  | CS lamp lighted. |  |
28i \*If improved testing of CS relay is provided—
Momentarily operate CSR key.

29 In 7 to 9 seconds—
Restore ANS key; start timing.

30 Restore TLK key.

31 Momentarily operate RL key.

AMA Operation (ETS, CDT, or LAMA-C Not Provided)

32 Operate TLK key.

33 Momentarily operate ST key.

34 Operate ANS key; start timing.

35 Restore ANS key; start timing.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Restore TLK key.</td>
<td>AS, TS lamps extinguished. If answer and disconnect supervision is provided— PK lamp lighted. If disconnect entry is provided— DE lamp lighted.</td>
</tr>
<tr>
<td>37</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td><strong>Coin Operation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Operate TLK key.</td>
<td>If ETS provided— FT, S1 lamps lighted. AS, TS lamps lighted. PK lamp <em>not</em> lighted.</td>
</tr>
<tr>
<td>39</td>
<td>Momentarily operate ST key.</td>
<td></td>
</tr>
<tr>
<td>40i</td>
<td><em>If improved testing of CS relay is provided— Momentarily operate SK key.</em></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Operate ANS key; <em>start timing.</em></td>
<td>If ETS provided— CS lamp lighted. High tone heard.</td>
</tr>
<tr>
<td>42i</td>
<td><em>If improved testing of CS relay is provided— Momentarily operate CSR key.</em></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>In 7 to 9 seconds— Restore ANS key; <em>start timing.</em></td>
<td>If ETS provided— CS lamp extinguished. High tone silenced. In 13 to 32 seconds— AS, TS lamps extinguished. CC lamp momentarily lighted. CND lamp lighted. <em>If trunk is arranged for coin service improvements (dial-tone-first)— OLF lamp <em>does not</em> light.</em> If ETS provided— FT, S1 lamps extinguished. <strong>Note:</strong> PK lamp may be momentarily lighted during the interval that coin collect potential is applied.</td>
</tr>
<tr>
<td>44</td>
<td>Restore CN key.</td>
<td>CND lamp extinguished.</td>
</tr>
<tr>
<td>45</td>
<td>Restore TLK key.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
</tbody>
</table>
STEP | ACTION | VERIFICATION
---|---|---
Message Register Operation (LAMA-C or ETS Not Provided)
47 | Operate TLK key. | • If CDTT key is operated—
 | | S1 lamp lighted.
48 | Momentarily operate ST key. | • If CDTT key is operated—
 | | AS, TS lamps lighted.
49i | • If improved testing of CS relay is provided—
 | | Momentarily operate SK key. | PK lamp not lighted.
50 | Operate ANS key; *start timing.* | • If CDTT key is operated—
 | | CS lamp lighted.
51i | • If improved testing of CS relay is provided—
 | | Momentarily operate CSR key. | High tone heard.
 | | In 2 to 6 seconds—
 | | RP lamp lighted.
 | | DR lamp not lighted.
52 | Restore ANS key; *start timing.* | If CDTT key operated—
 | | CS lamp momentarily extinguished.
53 | Restore TLK key. | • If CDTT key is operated—
 | | CS lamp lighted.
 | | In 13 to 32 seconds—
 | | AS, TS lamps extinguished.
 | | High tone silenced.
 | | • If CDTT key is operated—
 | | S1 lamp extinguished.
54 | Momentarily operate RL key. | All lamps extinguished.

Data Message Timing and Data Flat Rate Operation
55 | Operate TLK key. | • If CDTT key is operated—
 | | S1 lamp lighted.
56 | Momentarily operate ST key. | If LAMA-C provided—
 | | S1 lamp lighted.
 | | If ETS provided—
 | | PT, S1 lamps lighted.
 | | AS, TS lamps lighted.
 | | RP, PK lamps not lighted.
57i | • If improved testing of CS relay is provided—
 | | Momentarily operate SK key. |
STEP ACTION VERIFICATION

58 Operate ANS key.
- If CDTT key is operated—
  CS lamp lighted.
- If ETS or LAMA-C provided—
  CS lamp lighted.
  High tone heard.
  PK lamp lighted.
  If trunk under test is data message timing—
  RP lamp lighted.
  DR lamp not lighted.

59i If improved testing of CS relay is provided—
Momentarily operate CSR key.
- If ETS or LAMA-C provided—
  CS lamp momentarily extinguished.
- If CDTT key operated—
  CS lamp momentarily extinguished.

60 Restore ANS key.
- If CDTT key is operated—
  CS lamp extinguished.
- If LAMA-C provided—
  CS, S1 lamps extinguished.
  If ETS provided—
  FT, S1, CS lamps lighted.
  AS, TS lamps extinguished.
  High tone silenced.

61 Restore TLK key.
- If CDTT key is operated—
  S1 lamp extinguished.

62 Momentarily operate RL key.
- All lamps extinguished.

All Trunks

63 Restore all keys and switches not required in next test.

G. Noncharge Supervision

Flat Rate Operation

24 Operate TLK key.
- If CDTT key is operated—
  S1 lamp lighted.
- If LAMA-C provided—
  S1 lamp lighted.
  If ETS provided—
  FT, S1 lamps lighted.
  AS, TS lamps lighted.
  If answer and disconnect supervision is provided—
  PK lamp lighted.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 26   | Operate ANS key for 1 to 1-1/2 seconds. | If CDTT key is operated—
CS lamp lighted while ANS key is operated.
If ETS or LAMA-C provided—
CS lamp lighted while ANS key is operated.
High tone heard while ANS key is operated.
If answer and disconnect supervision is provided—
PK lamp extinguished. |
| 27   | Operate ANS key and restore TLK key simultaneously. | If CDTT key is operated—
S1 lamp extinguished.
If LAMA-C provided—
S1 lamp extinguished.
If ETS provided—
FT, S1 lamps extinguished.
PK lamp remains extinguished.
AS, TS lamps extinguished. |
| 28   | Restore ANS key. | All lamps extinguished. |
| 29   | Momentarily operate RL key. | |

**AMA Operation (ETS, CDTT, or LAMA-C Not Provided)**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 30   | Operate TLK key. | AS, TS lamps lighted.
If answer and disconnect supervision is provided—
PK lamp lighted.
IE, RN, T2/5, U2/5 lamps lighted. |
| 31   | Momentarily operate ST key. | High tone heard while ANS key is operated.
If answer and disconnect supervision is provided—
PK lamp extinguished.
AE lamp not lighted. |
| 32   | Operate ANS key for 1 to 1-1/2 seconds; *start timing.* | AS, TS lamps extinguished. |
| 33   | In 7 to 9 seconds—
Restore TLK key. | All lamps extinguished. |
| 34   | Momentarily operate RL key. | |

**Coin Operation**

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 35   | Operate TLK key. | If ETS provided—
FT, S1 lamps lighted.
AS, TS lamps lighted.
PK lamp not lighted. |
| 36   | Momentarily operate ST key. | |
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<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Verification</th>
</tr>
</thead>
</table>
| 37   | Operate ANS key for 1 to 1-1/2 seconds. | High tone heard while ANS key is operated.  
If ETS provided—  
CS lamp lighted while ANS key is operated. |
| 38   | Restore TLK key. | TS lamp extinguished.  
CR lamp momentarily lighted.  
CND lamp lighted.  
If trunk is arranged for coin service improvements (dial-tone-first)—  
OLF lamp does not light.  
AS lamp extinguished.  
If ETS provided—  
FT, S1 lamps extinguished. |
| 39   | Restore CN key. | CND lamp extinguished. |
| 40   | Momentarily operate RL key. | All lamps extinguished. |

**Message Register Operation (LAMA-C or ETS Not Provided)**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Verification</th>
</tr>
</thead>
</table>
| 41   | Operate TLK key. | If CDTT key is operated—  
S1 lamp lighted.  
AS, TS lamps lighted.  
PK lamp not lighted. |
| 42   | Momentarily operate ST key. | If CDTT key is operated—  
CS lamp lighted while ANS key operated.  
High tone heard while ANS key is operated.  
RP lamp not lighted. |
| 43   | Operate ANS key for 1 to 1-1/2 seconds. | All lamps extinguished. |
| 44   | Momentarily operate RL key. | All lamps extinguished. |
| 45   | Restore TLK key. | |

**All Trunks**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Restore all keys and switches not required in next test.</td>
<td></td>
</tr>
</tbody>
</table>
H. Timed Release After Coin Collect but Before Overtime Monitoring—Trunks Arranged for Coin Operation With Timing (LAMA-C or CDT Not Provided)

**Nonwire-Spring-Relay Type Trunks**

20 Operate TLK key.

21 Momentarily operate ST key.

22 Operate ANS key; **start timing**.

23 In 4 minutes 33 seconds—
   Restore ANS key.

24 Restore TLK key.

25 Momentarily operate RL key.

**Wire-Spring-Relay Type Trunks**

26 Determine from office records the initial timing interval of trunk being tested.

27 Operate TLK key.

28 Momentarily operate ST key.

29 Operate ANS key; **start timing**.

30 Restore TLK key; **start timing**.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Restore CN key.</td>
<td>In 13 to 32 seconds— TS lamp extinguished. High tone silenced. If ETS provided— CS lamp extinguished.</td>
</tr>
<tr>
<td>32</td>
<td>Momentarily operate RL key.</td>
<td>All lamps extinguished.</td>
</tr>
<tr>
<td>33</td>
<td>Operate TLK, CN keys.</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Restore ANS key.</td>
<td>If ETS provided— FT, S1 lamps lighted. AS, TS lamps lighted.</td>
</tr>
<tr>
<td>35</td>
<td>Momentarily operate ST key.</td>
<td>If ETS provided— CS lamp lighted.</td>
</tr>
<tr>
<td>36</td>
<td>Operate ANS key; <em>start timing.</em></td>
<td>If ETS provided— CS lamp extinguished. TS lamp extinguished in time indicated in Table B in TS LAMP TIME LIMITS column. If ETS provided— FT, S1 lamps extinguished.</td>
</tr>
<tr>
<td>37</td>
<td>Depending upon the initial timing interval and the timed release interval, restore ANS key as indicated in Table B.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE B

<table>
<thead>
<tr>
<th>Initial Timing Interval in Minutes</th>
<th>Timed Release Interval in Seconds</th>
<th>Restore Ans Key In</th>
<th>TS Lamp Time Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13-19</td>
<td>0 min 40 sec</td>
<td>0 min 53 sec to 0 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>19-25</td>
<td>0 min 34 sec</td>
<td>0 min 53 sec to 0 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>25-32</td>
<td>0 min 28 sec</td>
<td>0 min 53 sec to 1 min 0 sec</td>
</tr>
<tr>
<td>2</td>
<td>13-19</td>
<td>1 min 40 sec</td>
<td>1 min 53 sec to 1 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>19-25</td>
<td>1 min 34 sec</td>
<td>1 min 53 sec to 1 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>25-32</td>
<td>1 min 28 sec</td>
<td>1 min 53 sec to 2 min 0 sec</td>
</tr>
<tr>
<td>3</td>
<td>13-19</td>
<td>2 min 40 sec</td>
<td>2 min 53 sec to 2 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>19-25</td>
<td>2 min 34 sec</td>
<td>2 min 53 sec to 2 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>25-32</td>
<td>2 min 28 sec</td>
<td>2 min 53 sec to 3 min 0 sec</td>
</tr>
<tr>
<td>4</td>
<td>13-19</td>
<td>3 min 40 sec</td>
<td>3 min 53 sec to 3 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>19-25</td>
<td>3 min 34 sec</td>
<td>3 min 53 sec to 3 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>25-32</td>
<td>3 min 28 sec</td>
<td>3 min 53 sec to 4 min 0 sec</td>
</tr>
<tr>
<td>5</td>
<td>13-19</td>
<td>4 min 40 sec</td>
<td>4 min 53 sec to 4 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>19-25</td>
<td>4 min 34 sec</td>
<td>4 min 53 sec to 4 min 59 sec</td>
</tr>
<tr>
<td></td>
<td>25-32</td>
<td>4 min 28 sec</td>
<td>4 min 53 sec to 5 min 0 sec</td>
</tr>
</tbody>
</table>

### 38
Restore CN, TLK keys.

### 39
Momentarily operate RL key. All lamps extinguished.

### All Trunks

### 40
Restore all keys and switches not required in next test.

### 1. Collection of Initial and Overtime Deposits—Trunks Arranged for Coin Operation With Timing (LAMA-C or CDT# Not Provided)

#### Nonwire-Spring-Relay Type Trunks

### 20
Operate TLK key.

### 21
Momentarily operate ST key.

If ETS provided—
FT, S1 lamps lighted.
AS, TS lamps lighted.
PK lamp *not* lighted.
22 Operate ANS key; start timing.

If ETS provided—
CS lamp lighted.
High tone heard.
In 4 minutes 26 seconds to 4 minutes 44 seconds—
CC lamp momentarily lighted.
Low tone heard while CC lamp is lighted.
CND lamp lighted.
†If trunk is arranged for coin service improvements (dial-tone-first)—
OLF lamp does not light.

23 Momentarily restore CN key immediately after CND lamp lights.

CND lamp extinguished.
In 5 minutes 5 seconds to 5 minutes 15 seconds—
Momentary break in high tone.

24 In 5 minutes 25 seconds to 5 minutes 35 seconds—
Restore TLK key.

If ETS provided—
FT, S1 lamps extinguished.
CC lamp momentarily lighted.
CND lamp lighted.
†If trunk is arranged for coin service improvements (dial-tone-first)—
OLF lamp does not light.

25 Restore ANS key.

If ETS provided—
CS lamp extinguished.
TS, CND lamps extinguished.
High tone silenced.

26 Momentarily operate RL key.

All lamps extinguished.

Wire-Spring-Relay Type Trunks

27 Determine from office records the initial and overtime timing intervals of trunk being tested.

28 Operate TLK key.

If ETS provided—
FT, S1 lamps lighted.
AS, TS lamps lighted.
PK lamp not lighted.

29 Momentarily operate ST key.

If ETS provided—
CS lamp lighted.
High tone heard.
Depending upon the duration of the initial timing interval, CC lamp momentarily lighted in:

30 Operate ANS key; start timing.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>INITIAL TIMING INTERVAL</strong></td>
<td><strong>CC LAMP TIME LIMITS</strong></td>
</tr>
<tr>
<td></td>
<td>1 min</td>
<td>0 min 32 sec to 0 min 50 sec</td>
</tr>
<tr>
<td></td>
<td>2 min</td>
<td>1 min 32 sec to 1 min 50 sec</td>
</tr>
<tr>
<td></td>
<td>3 min</td>
<td>2 min 32 sec to 2 min 50 sec</td>
</tr>
<tr>
<td></td>
<td>4 min</td>
<td>3 min 32 sec to 3 min 50 sec</td>
</tr>
<tr>
<td></td>
<td>5 min</td>
<td>4 min 32 sec to 4 min 50 sec</td>
</tr>
<tr>
<td>31</td>
<td>Momentarily restore CN key immediately after CND lamp lights.</td>
<td>Low tone heard while CC lamp lighted. CND lamp lighted. If trunk is arranged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for coin service improvements (dia-tone-first)— OLF lamp does not light.</td>
</tr>
<tr>
<td>32</td>
<td>Immediately after momentary break in high tone, <em>stop and restart timing.</em></td>
<td>CND lamp extinguished. In 30 seconds after CC lamp lighted in Step 30— Momentary break in high tone. Depending upon the duration of the overtime timing interval, CC lamp lighted in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>OVERTIME TIMING INTERVAL</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>CC LAMP TIME LIMITS</strong></td>
</tr>
<tr>
<td></td>
<td>1 min</td>
<td>0 min 30 sec to 0 min 45 sec</td>
</tr>
<tr>
<td></td>
<td>1-1/2 min</td>
<td>1 min 0 sec to 1 min 15 sec</td>
</tr>
<tr>
<td></td>
<td>2 min</td>
<td>1 min 30 sec to 1 min 45 sec</td>
</tr>
<tr>
<td></td>
<td>2-1/2 min</td>
<td>2 min 0 sec to 2 min 15 sec</td>
</tr>
<tr>
<td></td>
<td>3 min</td>
<td>2 min 30 sec to 2 min 45 sec</td>
</tr>
<tr>
<td></td>
<td>3-1/2 min</td>
<td>3 min 0 sec to 3 min 15 sec</td>
</tr>
<tr>
<td></td>
<td>4 min</td>
<td>3 min 30 sec to 3 min 45 sec</td>
</tr>
<tr>
<td></td>
<td>4-1/2 min</td>
<td>4 min 0 sec to 4 min 15 sec</td>
</tr>
<tr>
<td></td>
<td>5 min</td>
<td>4 min 30 sec to 4 min 45 sec</td>
</tr>
<tr>
<td>33</td>
<td>Momentarily restore CN key immediately after CND lamp lights.</td>
<td>CND lamp extinguished. In 30 seconds after CC lamp lighted in Step 30— Momentary break in high tone. Depending upon the duration of the overtime timing interval, CC lamp lighted in:</td>
</tr>
</tbody>
</table>

*Note:* The OLF lamp *does not* light during the initial and overtime timing intervals.
### SECTION 218-247-501

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>In 50 seconds after CC lamp lighted in Step 32— Restore TLK key.</td>
<td>32— Momentary break in high tone. If ETS provided— FT, S1 lamps extinguished. CC lamp momentarily lighted. CND lamp lighted. If trunk is arranged for coin service improvements (dial-tone-first)— OLF lamp does not light. If trunk is arranged for coin service improvements (dial-tone-first)— AS lamp extinguished. If ETS provided— CS lamp extinguished. TS, CND lamps extinguished. High tone silenced. All lamps extinguished.</td>
</tr>
<tr>
<td>35</td>
<td>Restore CN, ANS keys.</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Momentarily operate RL key.</td>
<td></td>
</tr>
</tbody>
</table>

**All Trunks**

37 Restore all keys and switches not required in next test.

**J. Return of Overtime Deposit—Disconnect After Coin Collect but Before Overtime Monitoring—Trunks Arranged for Coin Operation With Timing (LAMA-C $\text{or CDT}\$ Not Provided)**

**Nonwire-Spring-Relay Type Trunks**

20 Operate TLK key. If ETS provided— FT, S1 lamps lighted. AS, TS lamps lighted. PK lamp not lighted. If ETS provided— CS lamp lighted. High tone heard. In 4 minutes 26 seconds to 4 minutes 44 seconds— CC lamp momentarily lighted. Low tone heard while CC lamp lighted. CND lamp lighted. If trunk is arranged for coin service improvements (dial-tone-first)— OLF lamp does not light. If trunk is arranged for coin service improvements (dial-tone-first)— AS lamp extinguished. TS, CND lamps extinguished. High tone silenced. All lamps extinguished. |
| 21   | Momentarily operate ST key. |  |
| 22   | Operate ANS key; start timing. |  |
| 23   | Momentarily restore CN key immediately after CND lamp lights. |  |

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STEP  

24  In 5 minutes—
    Restore ANS, TLK keys.

25  Restore CN key.

26  Momentarily operate RL key.

27  Determine from office records the initial timing interval of trunk being tested.

28  Operate CN, TLK keys.

29  Momentarily operate ST key.

30  Operate ANS key; \textit{start timing}.

Wire-Spring-Relay Type Trunks

31  Momentarily restore CN key immediately after CND lamp lights.

VERIFICATION

If ETS provided—
   FT, S1, CS lamps extinguished.
   CR lamp momentarily lighted.
   CND lamp lighted.
   If trunk is arranged for coin service improvements (dial-tone-first)—
     OLF lamp \textit{does not} light.\# 
   AS, TS lamps extinguished.
   High tone silenced.
   CND lamp extinguished.

All lamps extinguished.

If ETS provided—
   FT, S1 lamps lighted.
   AS, TS lamps lighted.
   PK lamp \textit{not} lighted.

If ETS provided—
   CS lamp lighted.
   High tone heard.
   Depending upon the duration of the initial timing interval, CC lamp momentarily lighted in:

\begin{center}
\begin{tabular}{|c|c|}
\hline
\textbf{INITIAL TIMING INTERVAL} & \textbf{CC LAMP TIME LIMITS} \\
\hline
1 min & 0 min 32 sec to 0 min 50 sec  \\
2 min & 1 min 32 sec to 1 min 50 sec  \\
3 min & 2 min 32 sec to 2 min 50 sec  \\
4 min & 3 min 32 sec to 3 min 50 sec  \\
5 min & 4 min 32 sec to 4 min 50 sec  \\
\hline
\end{tabular}
\end{center}

Low tone heard while CC lamp lighted.
   CND lamp lighted.
   If trunk is arranged for coin service improvements (dial-tone-first)—
     OLF lamp \textit{does not} light.\#
SECTION 218-247-501

32 Depending upon the duration of the initial timing interval, restore ANS, TLK keys in:

<table>
<thead>
<tr>
<th>INITIAL TIMING INTERVAL</th>
<th>RESTORE ANS, TLK KEYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 min</td>
<td>1 min 0 sec</td>
</tr>
<tr>
<td>2 min</td>
<td>2 min 0 sec</td>
</tr>
<tr>
<td>3 min</td>
<td>3 min 0 sec</td>
</tr>
<tr>
<td>4 min</td>
<td>4 min 0 sec</td>
</tr>
<tr>
<td>5 min</td>
<td>5 min 0 sec</td>
</tr>
</tbody>
</table>

If ETS provided—
FT, S1, CS lamps extinguished.

CR lamp momentarily lighted.
CND lamp lighted.

If trunk is arranged for coin service improvements ( dial-tone-first)—
OLF lamp does not light.

AS, TS lamps extinguished.
High tone silenced.

33 Restore CN key.

34 Momentarily operate RL key.

35 Restore TLK key.

All Trunks

36 Restore all keys and switches not required in next test.

K. Supervision—Trunks Arranged for Message Rate Operation With or Without Timing (LAMA-C, & CDT† or ETS Not Provided)

24 Operate TLK key.

25 Momentarily operate ST key.

26 Operate ANS key; start timing.

If CDTT key is operated—
S1 lamp lighted.
AS, TS lamps lighted.
PK lamp not lighted.

If CDTT key is operated—
CS lamp lighted.

Trunks Not Arranged for Timing
High tone heard.
In 2 to 5 seconds—
RP lamp lighted.
Nonwire-Spring-Relay Type Trunks Arranged for Timing
High tone heard.
In 2 to 6 seconds—
RP lamp lighted.
In 5 minutes 5 seconds to 5 minutes 20 seconds—
DR lamp lighted.

Wire-Spring-Relay Type Trunks Arranged for Timing
High tone heard.
In 2 to 6 seconds—
RP lamp lighted.
Depending upon the duration of the timing interval, DR lamp lighted in:

<table>
<thead>
<tr>
<th>TIMING INTERVAL</th>
<th>DR LAMP TIME LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 min</td>
<td>1 min 2 sec to 1 min 20 sec</td>
</tr>
<tr>
<td>2 min</td>
<td>2 min 2 sec to 2 min 20 sec</td>
</tr>
<tr>
<td>3 min</td>
<td>3 min 2 sec to 3 min 20 sec</td>
</tr>
<tr>
<td>4 min</td>
<td>4 min 2 sec to 4 min 20 sec</td>
</tr>
<tr>
<td>5 min</td>
<td>5 min 2 sec to 5 min 20 sec</td>
</tr>
</tbody>
</table>

*If CDTT key is operated—
S1, CS lamps extinguished.*
High tone silenced.

All lamps extinguished.

27. Restore ANS, TLK keys.

28. Momentarily operate RL key.

29. Restore all keys and switches not required in next test.

L. Call to Free Line—Trunks Arranged for AMA, Coin, Message Register, or Data Message Timing Operation

24. Select D through G digits for number of a regular or data free test line.

25i. If trunk under test is not data message timing—
Restore TTL key and operate KRC key.

26. Operate TLK key.

27. Momentarily operate ST key.

*If CDTT key is operated—
S1 lamp lighted.*
If ETS provided—
STEP \hspace{1cm} ACTION \hspace{1cm} VERIFICATION

28 \hspace{1cm} Operate ANS key; \textit{start timing.} \hspace{1cm} \bullet

- FT, S1 lamps lighted.
- AS, TS lamps lighted.
- If LAMA-C provided—
  - S1 lamp lighted.
  - IE, RP lamps \textbf{not} lighted.
- If answer and disconnect supervision is provided—
  - PK lamp lighted.

- If CDTT key is operated—
  - CS lamp lighted.\bullet
- If ETS or LAMA-C provided—
  - CS lamp lighted.
- High tone heard.
- AE, DE, RP lamps \textbf{not} lighted.
- If answer and disconnect supervision is provided—
  - PK lamp extinguished.
- If trunk under test is data message timing—
  - PK lamp lighted.

29 \hspace{1cm} In 7 to 9 seconds—

- Restore ANS, TLK keys.

- If CDTT key is operated—
  - S1, CS lamps extinguished.\bullet
- If ETS provided—
  - FT, S1, CS lamps extinguished.
- AS, TS lamps extinguished.
- High tone silenced.
- If answer and disconnect supervision is provided—
  - PK lamp lighted.
- If trunk under test is coin operation—
  - CR lamp momentarily lighted.
  - CND lamp lighted.
- If trunk is arranged for coin service improvements (dial-tone-first)—
  - OLF lamp \textbf{does not} light.\bullet
- If LAMA-C provided—
  - S1, CS lamps extinguished.

- CND lamp extinguished.

30 \hspace{1cm} If trunk under test is coin operation—

- Restore CN key.

- All lamps extinguished.

31 \hspace{1cm} Momentarily operate RL key.

32 \hspace{1cm} Restore all keys and switches not required in next test.

\textbf{M. Cancel Disconnect Entry—AMA Trunks When Disconnect Entry is Provided (ETS, \$CDT,\$ or LAMA-C Not Provided)}

\textbf{Note:} Do not proceed with this test until assured that the trunk has been idle for 3
minutes where tube-type TR relay is used and for 2 minutes where 235-type TR relay is used.

20 Operate TLK key.

21 Momentarily operate ST key.

AS, TS lamps lighted.
If answer and disconnect supervision is provided—
PK lamp lighted.
IE, RN, T2/5, U2/5 lamps lighted.

22 Operate ANS key; start timing.

High tone heard.
If answer and disconnect supervision is provided—
In 2 to 6 seconds—
PK lamp extinguished.
AE lamp lighted.

23 At relay rack frame—
Insulate contact of S2 relay as follows:
Nonwire-spring-relay type trunk—1T
Wire-spring-relay type trunk—7.

24 At MTF—
Restore TLK, ANS keys simultaneously; start timing.

AS, TS lamps extinguished.
High tone silenced.
DE lamp not lighted.
At relay rack frame—
In 2 to 6 seconds—
MA relay released.

25 At relay rack frame—
Remove insulator from S2 relay.

26 At MTF—
Momentarily operate RL key.

All lamps extinguished.

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

N. Universal Pad Control

24 Operate 2WD, 2WCB keys.

*If CDTT key is operated—
S1 lamp lighted.*
If LAMA-C provided—
S1 lamp lighted.
If ETS provided—
FT, S1 lamps lighted.
TS, AS, ES lamps lighted.
R- lamp flashes.
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<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
</tr>
</thead>
</table>
| 26   | At MTF—
      | Momentarily operate RL key. |
| 27   | Restore 2WD, 2WCB keys. |
| 28   | Momentarily operate ST key. |

**VERIFICATION**

- Ringing tone heard in unison with R- lamp flashes.
- At relay rack frame—PCA, PCB relays operated.
- All lamps extinguished.
- Ringing tone silenced.

- If CDTT key is operated—
  - S1 lamp lighted.
  - If LAMA-C provided—
    - S1 lamp lighted.
  - If ETS provided—
    - FT, S1 lamps lighted.
  - TS, AS, ES lamps lighted.
  - R- lamp flashes.
- Ringing tone heard in unison with R- lamp flashes.
- At relay rack frame—PCA, PCB relays not operated.

- At MTF—
- Momentarily operate RL key.
- Operate 2WD key.
- Momentarily operate ST key.

- If CDTT key is operated—
  - S1 lamp lighted.
  - If LAMA-C provided—
    - S1 lamp lighted.
  - If ETS provided—
    - FT, S1 lamps lighted.
  - TS, AS, ES lamps lighted.
  - R- lamp flashes.
- Ringing tone heard in unison with R- lamp flashes.
- At relay rack frame—PCB relay operated.
- PCA relay not operated.

- At MTF—
- Momentarily operate RL key.
- Restore 2WD key.
- Operate 2WCB key.
- Momentarily operate ST key.

- If CDTT key is operated—
  - S1 lamp lighted.
  - If LAMA-C provided—
### O. Trunk Busy

24. At relay rack frame—
Set MB switch to MB on all intraoffice trunks of same route on same trunk link frame as trunk under test.

25. At MTF—
Operate TLK key.

26. Momentarily operate ST key.

27. Restore TLK key.

28. Momentarily operate RL key.

29. At relay rack frame—
Set MB switch associated with trunk under test to MB.

### Verification

- S1 lamp lighted.
- If ETS provided—
  - FT, S1 lamps lighted.
  - TS, AS, ES lamps lighted.
  - R- lamp flashes.
  - Ringing tone heard in unison with R- lamp flashes.
- At relay rack frame—
  - PCB relay operated.
  - PCA relay not operated.

- All lamps extinguished.
- Ringing tone silenced.

- If CDTT key is operated—
  - S1 lamp lighted.
- If LAMA-C provided—
  - S1 lamp lighted.
  - If ETS provided—
    - FT, S1 lamps lighted.
  - AS, TS lamps lighted.

- If CDTT key is operated—
  - S1 lamp extinguished.
- If ETS provided—
  - FT, S1 lamps extinguished.
  - AS, TS lamps extinguished.
  - If LAMA-C provided—
    - S1 lamp extinguished.

- All lamps extinguished.
- If ETS provided—
  - FT lamp lighted.
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 30   | At MTF—  
     | Operate TLK key. | TB lamp lighted. |
| 31   | Momentarily operate ST key. | TB lamp extinguished. |
| 32   | Momentarily operate RL key. | |
| 33   | Restore FS, TS keys. | |
| 34   | Operate NTFS, NTTS keys. | |
| 35   | Momentarily operate ST key. | If CDTT key is operated—  
     |                               | S1 lamp lighted.
     |                               | If ETS provided—  
     |                               | S1 lamp lighted.
     |                               | AS, TS lamps lighted.
     |                               | If LAMA-C provided—  
     |                               | S1 lamp lighted. |
| 36   | Restore TLK key. | If CDTT key is operated—  
     |                               | S1 lamp extinguished.
     |                               | If ETS or LAMA-C provided—  
     |                               | S1 lamp extinguished.
     |                               | AS, TS lamps extinguished. |
| 37   | Momentarily operate RL key. | All lamps extinguished.  
     |                               | If ETS provided—  
     |                               | FT lamp remains lighted. |
| 38   | At relay rack frame—  
     | Restore MB switches associated with trunks made busy. | If ETS provided—  
     |                               | FT lamp extinguished. |
| 39   | At MTF—  
     | Restore all keys and switches not required in next test. | |

Tests P Through AS Deleted

AT. ETS Verification Test

<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 20   | Operate TLK key. | AS, FT, S1, TS lamps lighted.  
     |                               | If answer and disconnect supervision is provided—  
     |                               | PK lamp lighted. |
| 21   | Momentarily operate ST key. | CS lamp lighted.  
     |                               | High tone heard.  
<pre><code> |                               | If answer and disconnect supervision is |
</code></pre>
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
</table>
| 23   | Restore TLK key after ANS key has been operated for 8 seconds. | provided—
PK lamp extinguished. AS, CS, FT, S1, TS lamps extinguished. High tone silenced. If coin class of service—CC lamp momentarily lighted. CND lamp lighted. If trunk is arranged for coin service improvements (dial-tone-first)—OLF lamp *does not* light.
<p>| 24   | Momentarily operate RL key. | All lamps extinguished. |
| 25   | Release ANS key. | |
| 26   | Operate TLK key. | |
| 27   | At relay rack location of trunk under test—Operate make-busy switch of trunk under test to MB. | TB lamp lighted. All lamps extinguished. |
| 28   | At MTF—Momentarily operate ST key. | |
| 29   | Momentarily operate RL key. | |
| 30   | Operate NTFS, NTTS keys. | CS lamp extinguished. High tone silenced. In 13 to 32 seconds—AS, S1, TS lamps extinguished. If answer and disconnect supervision is provided—PK lamp lighted. If coin class of service—CC lamp momentarily lighted. CND lamp lighted. If trunk is arranged for coin service improvements (dial-tone-first)—OLF lamp <em>does not</em> light. |
| 31   | Repeat Steps 21, 22. | |
| 32   | Restore ANS key after 8 seconds. | |
| 33   | Momentarily operate RL key. | All lamps extinguished. FT lamp remains lighted. |
| 34   | Restore all keys and switches not required in next test. | |</p>
<table>
<thead>
<tr>
<th>STEP</th>
<th>ACTION</th>
<th>VERIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>At relay rack location of trunk under test— Restore make-busy switch to normal.</td>
<td>FT lamp extinguished.</td>
</tr>
</tbody>
</table>