

**DIAL PULSE OUTGOING SENDERS SD-25579-01 AND SD-26050-01**  
**TESTS**  
**USING AUTOMATIC MONITOR, REGISTER, AND SENDER TEST CIRCUIT**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**1.01** When dial pulse outgoing senders SD-26050-01 are modified to outpulse multi-frequency signals, the sender will no longer be capable of outpulsing dial pulses. After modification, the sender must be tested in accordance with Section 218-156-501. When these senders are also used for line link pulsing, the line link pulsing features must be tested in accordance with Test A, Section 218-150-502.

**1.02** The reasons for reissuing this section are listed as follows. Revision arrows are used to emphasize the more significant changes. This reissue affects Equipment Test Lists.

- (a) To revise Tests L and P.1 to include information related to the elimination of loud clicks upon completion of battery and ground outpulsing arranged with immediate reorder feature.
- (b) To add Test N.1 to include provisions for testing when both stuck sender trunk identification and alarm surveillance and control features are provided.
- (c) To add Test P.2 to include checks to detect an open loop condition during outpulsing over metallic facilities to a step-by-step office.
- (d) To revise Test Q to include intersender timing for nonwire-spring relay type senders.
- (e) To revise Test S to include optional checks for the elimination of sender plant registration when the sender is made busy on MTF test calls and TUR maintenance busy indication in offices

equipped with alarm surveillance and control feature.

(f) To make minor changes as required.

**1.03** The tests covered are:

**PAGE**

- A. Regular Call:** This test checks that the sender records information from a marker and that it outpulses interoffice calls on an AMA or non-AMA basis. The transmitting of information to the transverter is checked on AMA class calls. . . . . **5**
- B. Trunk Test—Open Trunk:** This test checks that the sender detects an open trunk during trunk test and causes an overflow tone to be sent after definite time-out intervals. . . . . **8**
- C. Abandoned Call—AMA:** This test checks that the sender waits until the initial AMA entry has been made before releasing. . . . . **9**
- D. Abandoned Call—Non-AMA:** This test checks that the sender releases at any stage of a call. . . . . **10**
- E. Transverter Trouble Release:** This test checks that the sender operates its RO relay, sets the trunk to overflow, and releases when the transverter fails on both first and second trial on a detail-billed call. . . . . **11**
- F. Delay Pulsing of Last Digit—AMA:** This test checks

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	PAGE
that the sender delays sending the last digit until AMA functions are completed. .....	11
<b>G. No-Digits Call—AMA:</b> This test checks that the sender releases without pulsing on a no-digits AMA call. It also checks that, when the sender is set to reorder, it does not release on an abandoned intraoffice call until the transverter releases. ....	11
<b>H. Trunk Reversed—Off-Hook to On-Hook:</b> This test checks that the sender recognizes a change in trunk supervision from on-hook to off-hook after the start pulse signal as a reversed trunk; the sender then sets the trunk to overflow. ....	12
<b>I. Trunk Reversed—Initial Off-Hook:</b> This test checks that the sender recognizes an off-hook condition on initial closure of a trunk to a step-by-step office as a reversed trunk, and the sender then sets the trunk to overflow. ....	13
<b>J. Stop Dial Signal:</b> This test checks that the sender recognizes an off-hook condition, after the first digit has been pulsed, as a stop dial signal. ....	14
<b>K. Distant Trunk Reversed or Busy:</b> This test checks that the sender recognizes an off-hook condition after a stop dial signal has been received on a call to a step-by-step office as an all paths busy condition. The sender then sets the trunk to overflow, except for CL2 class calls. ....	14
<b>L. Battery and Ground Pulsing:</b> This test checks that the sender supplies battery and ground pulsing. ....	15
<b>M. Timing Test:</b> This test checks that the sender releases and sets the trunk to overflow in 20 to 32 seconds if it cannot complete its functions. It also checks, when the sender is arranged for reduced timing for transverter	

	PAGE
operations, that the sender sets the trunk to return overflow and the sender releases if the transverter has not completed its functions within 7 to 11 seconds. ....	16
<b>M.1 TM Timer Recycle:</b> This test checks the recycle of the TM timer when a stop-dial signal is received. (Option XS provided.) ....	17
<b>N. Cancel Time Release and Alarm Test:</b> This test checks that with the associated CTR_ key operated, the sender will not release on time out and will operate the stuck sender alarm. It also checks that if the call is abandoned, the sender will not release. When the alarm sending circuit is provided, this test checks that when alarms are transferred the sender cancel timed release feature is disabled. ....	18
<b>N.1 Stuck Sender Trunk Identification:</b> This test verifies that when a stuck sender occurs, outgoing trunk detection can be started manually or automatically causing a trouble record to be taken. A check is also made of alarm surveillance and control feature where the interface and control circuit is arranged to control the sender timed released feature. ....	20
<b>O. Marker Reorder:</b> This test checks that the sender sets the trunk to overflow and the sender releases when the marker calls for reorder. ....	22
<b>P. Antiglare Test:</b> This test checks that when connected to a CX 2-way trunk or a CX intertoll trunk with customer access, the sender will time properly for changes in supervision before pulsing and during interdigital timing. It also checks when supervision changes a second time, the sender will set the trunk to overflow and release. ....	23
<b>P.1 Immediate Reorder on Stop Dial Signal:</b> This test checks that immediate reorder is returned when a stop dial signal is received during the	

interdigital interval on calls to a step-by-step office not requiring stop-go dialing operation. . . . .	24
<b>P.2 Open Loop Detection Between Digits:</b> This test checks that the sender detects an open loop condition during outpulsing over metallic facilities to a step-by-step office. . . . .	24
<b>Q. Intersender Timing—Wire-Spring and Nonwire-Spring Relay Type Senders:</b> This test checks that when start pulsing polarity is not returned within 4 to 8 seconds and the marker finds that all senders of the group are busy, the trunk is set to overflow and the sender is released. . . . .	25
<b>R. Pulse Conversion Call:</b> This test checks that the sender functions with pulse conversion trunks. . . . .	26
<b>S. Sender Busy:</b> This test checks that the sender appears busy when it is in service or when it is made busy at the associated MB <sub>1</sub> jack. Optional checks are also made for elimination of sender plant registration when the sender is made busy on MTF test calls and TUR maintenance busy indication in offices equipped with alarm surveillance and control feature. . . . .	26
<b>T. Directory Assistance Charging:</b> This test checks the ability of the sender to record the called number structure and called number class for directory assistance calls. . . . .	28
<b>1.04</b> Tests G and M, using reduced timing, should preferably be made during light traffic because other senders must be made busy.	
<b>1.05</b> For Tests A through R and T, charts are furnished with spaces provided for listing specific keys and key units to be operated for each test, depending on local conditions. These charts should be filled out from local records in accordance with instructions provided in Part 5, Preparation of Test Charts.	

**1.06** Local instructions should be followed for recording and reporting plant register operations for registers associated with sender SS leads.

**1.07 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 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** On Issue 76D of SD-25800-01, a group of 18 “class of test” lamps was replaced by a single “start test” lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.

**2. APPARATUS**

**All Tests Except M.1, S**

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

**All Tests Except B, M.1, S**

**2.02** Automatic monitor, register, and sender test circuit, SD-25680-01.

**Test B**

**2.03** Trunk test circuit, SD-25918-01.

SECTION 218-150-501

Tests B, G, M, M.1, N, P, Q

2.04 KS-3008 stopwatch or equivalent.

Tests B, M.1, Q, S

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

Tests G, M, N, N.1, S

2.06 322A (make-busy) plugs.

Test S

2.07 67C test set or equivalent (for checking the presence or absence of ground), equipped with two 624B tools (to make test connections to terminals arranged for solderless wrapped connections).

*Note:* Refer to paragraphs 1.01, 1.08, 1.09.

3. PREPARATION

All Tests Except Tests M.1, S

STEP	ACTION	VERIFICATION
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select sender to be tested.	
4	Select marker.	
	<i>Note:</i> When a particular line location is to be used, special marker 0 or 1 must be selected.	
5	Select route advance.	
6a	◆If office is equipped with stuck sender trunk identifier circuit— Release SSI, ACTR keys.	

All Tests Except M.1, N, N.1, S

7b If CTR\_ key associated with sender under test is operated (pulled-out)—  
Release (push-in) CTR\_ key.◆

Tests A, C Through R, Except Test M.1

8 Select SDR class of test.

9 Operate MAC key.

*Note:* Allow 1 minute for tubes to heat.

10 Operate STT key.

STEP	ACTION	VERIFICATION
<b>4. METHOD</b>		

STEP	ACTION	VERIFICATION
<b>A. Regular Calls</b>		
<b>AMA Calls and DDD AMA or CAMA Calls</b>		
11	Operate keys and set switches in accordance with Test Chart Test 1.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13d	If check of transverter leads is not required— At MTF— Momentarily operate ST key.	OK lamp lighted.
14	Momentarily operate RL key.	OK lamp extinguished.
15e	If trouble record is required to check transverter leads— At MTF— Operate REC key.	
16e	Momentarily operate ST key.	OK lamp lighted. Two trouble records taken. FR_, CN_, S_, calling line location, OBS or NOB, CP_, MB_, RNT0, 1, or 2, RN_, and LST, L5D, 4DG, or 5DG designations perforated on each record. SRT, MKR, called number, called number class, TP or RP designations perforated on first record. TV, 2L or 4L, TPT or RPT, and called number (when test is an observed 2-line entry, or a 4- or 5-line entry call) designation perforated on second record.
17e	Momentarily operate RL key.	OK lamp extinguished.
18e	Restore REC key.	
19c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
20	Repeat Steps 11 through 19c, as required for Tests 2 through 44.	

**A. Regular Calls**

**AMA Calls and DDD AMA or CAMA Calls**

- | STEP | ACTION  | VERIFICATION  |
|------|---|---|
| 11   | Operate keys and set switches in accordance with Test Chart Test 1.   |   |
| 12c  | If 2-way trunk is used for selected outgoing route—<br>At distant office—<br>Have trunk removed from service. |   |
| 13d  | If check of transverter leads is not required—<br>At MTF—<br>Momentarily operate ST key.                      | OK lamp lighted.  |
| 14   | Momentarily operate RL key.   | OK lamp extinguished.   |
| 15e  | If trouble record is required to check transverter leads—<br>At MTF—<br>Operate REC key.                      |   |
| 16e  | Momentarily operate ST key.   | OK lamp lighted.<br>Two trouble records taken.<br>FR_, CN_, S_, calling line location, OBS or NOB, CP_, MB_, RNT0, 1, or 2, RN_, and LST, L5D, 4DG, or 5DG designations perforated on each record.<br>SRT, MKR, called number, called number class, TP or RP designations perforated on first record.<br>TV, 2L or 4L, TPT or RPT, and called number (when test is an observed 2-line entry, or a 4- or 5-line entry call) designation perforated on second record. |
| 17e  | Momentarily operate RL key.   | OK lamp extinguished.   |
| 18e  | Restore REC key.  |   |
| 19c  | If 2-way trunk is used for selected outgoing route—<br>At distant office—<br>Have trunk restored to service.  |   |
| 20   | Repeat Steps 11 through 19c, as required for Tests 2 through 44.  |   |

SECTION 218-150-501

STEP	ACTION	VERIFICATION
<b>Non-AMA Calls and 2-Way or Intertoll Trunk Calls</b>		
21	Operate keys and set switches in accordance with Test Chart Test 45.	
22c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
23	At MTF— Momentarily operate ST key.	OK lamp lighted.
24	Momentarily operate RL key.	OK lamp extinguished.
25c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
26	Repeat Steps 21 through 25c, as required for Tests 46 through 66.	
<b>Coin Zone Trunk Calls</b>		
27	Operate keys and set switches in accordance with Test Chart Test 67.	
28d	If check of transverter leads is not required— At MTF— Momentarily operate ST key.	OK lamp lighted.
29d	Momentarily operate RL key.	OK lamp extinguished.
30e	If trouble record is required to check transverter leads— At MTF— Operate REC key.	
31e	Momentarily operate ST key.	OK lamp lighted. Two trouble records taken. FR_, CN_, S_, calling line location, OBS or NOB, CP_, MB_, RNT0, 1, or 2, RN_, and LST, L5D, 4DG, or 5DG designations perforated on each record. SRT, MKR, called number, called number class, TP or RP designations perforated on first record. TV, 2L or 4L, TPT or RPT, and called number (when test is an observed 2-line entry, or a 4- or 5-line entry call) designations perforated on second record.

STEP	ACTION	VERIFICATION
32e	Momentarily operate RL key.	OK lamp extinguished.
33e	Restore REC key.	
34	Repeat Steps 27 through 33e, as required for Tests 68 and 69.	

#### Tandem Trunk Calls—Non AMA

35	Operate keys and set switches in accordance with Test Chart Test 70.	
36c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
37	At MTF— Momentarily operate ST key.	OK lamp lighted.
38	Momentarily operate RL key.	OK lamp extinguished.
39c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
40	Repeat Steps 35 through 39c, as required for Test 71.	

#### Tandem Trunk Calls—AMA

41	Operate keys and set switches in accordance with Test Chart Test 72.	
42c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
43d	If check of transverter leads is not required— At MTF— Momentarily operate ST key.	OK lamp lighted.
44	Momentarily operate RL key.	OK lamp extinguished.
45e	If trouble record is required to check transverter leads— At MTF— Operate REC key.	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
46e	Momentarily operate ST key.	OK lamp lighted. Two trouble records taken. FR_, CN_, S_, calling line location, OBS or NOB, CP_, MB_, RNT0, 1, or 2, RN_, and LST, L5D, 4DG, or 5DG designations perforated on each record. SRT, MKR, called number, called number class, TP or RP designations perforated on first record. TV, 2L or 4L, TPT or RPT, and called number (when test is an observed 2-line entry, or a 4- or 5-line entry call) designations perforated on second record.
47e	Momentarily operate RL key.	OK lamp extinguished.
48e	Restore REC key.	
49c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
50	Repeat Steps 41 through 49c, as required for test 73.	
<b>All Calls</b>		
51	At MTF— Restore all keys and switches not required in next test.	
52a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
53	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>B. Trunk Test—Open Trunk</b>		
8	Operate keys and set switches in accordance with Test Chart Test 74.	
9	Select ITDO class of test.	
10	Operate TTL, TLK keys.	
11	Insert make-busy plug into MB_jack associated with sender under test.	

STEP	ACTION	VERIFICATION
12	At trunk test circuit— Block nonoperated ITDO relay.	
13	At MTF— Momentarily operate ST key; <i>start timing</i> .	<b><i>With marker on light traffic</i></b> In 2.5 to 4.5 seconds— Overflow tone heard. Trouble record taken. TGT, sender, trunk number designations perforated.
		<b><i>Note:</i></b> If trouble record is not taken within 4.5 seconds, ensure that marker is in light traffic by making it busy. Repeat test.
14	Momentarily operate RL key.	Overflow tone silenced.
15	Operate HTR key.	
16	Momentarily operate ST key; <i>start timing</i> .	<b><i>With marker in heavy traffic</i></b> In 20 to 32 seconds— TO_ lamp momentarily lighted. Overflow tone heard.
17	Momentarily operate RL key.	Overflow tone silenced.
18	Restore HTR key.	
19	Repeat Steps 8 through 18, as required for Test 75.	
20	Remove blocking tool from ITDO relay.	
21	Remove make-busy plug from MB_ jack associated with sender under test.	
22	Restore all keys and switches not required in next test.	
23a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
24	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>C. Abandoned Call—AMA</b>		
11	Operate keys and set switches in accordance with Test Chart Test 76.	
12c	If 2-way trunk is used for selected outgoing route—	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
	At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted.
14	Momentarily operate RL key.	OK lamp extinguished.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	At MTF— Restore all keys and switches not required in next test.	
17a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
18	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

**D. Abandoned Call—Non-AMA**

11	Operate keys and set switches in accordance with Test Chart Test 77.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted.
14	Momentarily operate RL key.	OK lamp extinguished.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	At MTF— Restore all keys and switches not required in next test.	
17a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	

STEP	ACTION	VERIFICATION
18	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	
<b>E. AMA Transverter Trouble Release</b>		
11	Operate keys and set switches in accordance with Test Chart Test 78.	
12	At MTF— Momentarily operate ST key.	Overflow tone heard.
13	Momentarily operate RL key.	OK lamp extinguished. Overflow tone silenced.
14	Restore TOF key, if operated.	
15	Restore all keys and switches not required in next test.	
16a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
17	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	
<b>F. Delay Pulsing of Last Digit—AMA Call</b>		
11	Operate keys and set switches in accordance with Test Chart Test 79.	
12	At MTF— Momentarily operate ST key.	OK lamp lighted.
13	Momentarily operate RL key.	OK lamp extinguished.
14	Restore all keys and switches not required in next test.	
15a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
16	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	
<b>G. No-Digits Call—AMA</b>		
11c	If sender is not arranged for reduced timing interval and is not arranged to indicate when connected to transverter—	

STEP	ACTION	VERIFICATION
	Operate keys and set switches in accordance with Test Chart Test 80.	
12c	At MTF— Momentarily operate ST key.	OK lamp lighted. Overflow tone not heard.
13c	Momentarily operate RL key.	All lamps extinguished.
14d	If sender is arranged to reduce timing interval and is arranged to release if timing circuit functions before connection is made to transverter— Operate keys and set switches in accordance with Test Chart Test 81.	
15d	At MTF— Insert make-busy plugs into MB_ jacks of all senders that use same transverter-connector as sender under test (refer to paragraph 1.06).	
16d	Momentarily operate ST key; <i>start timing</i> .	In 7 to 11 seconds— TO_ lamp lighted. Overflow tone not heard.  <b>Note:</b> Immediately after verification of this step, proceed to next step to prevent transverter timeout.
17d	Momentarily operate RL key.	All lamps extinguished.
18d	Remove make-busy plugs from MB_ jacks of all senders made busy in Step 15d.	
19	Restore all keys and switches not required in next test.	
20a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
21	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>H. Trunk Reversed—Off-Hook to On-Hook</b>		
11	Operate keys and set switches in accordance with Test Chart Test 82.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	

STEP	ACTION	VERIFICATION
13	At MTF— Momentarily operate ST key.	If non-wire-spring relay type senders using Fig. A— OK lamp lighted. Overflow tone heard. If non-wire-spring-relay type senders using Fig. B or wire-spring-relay type senders— In 20 to 32 seconds— OK lamp lighted. Overflow tone heard.
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 83.	
17	Restore all keys and switches not required in next test.	
18a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

#### I. Trunk Reversed—Initial Off-Hook

11	Operate keys and set switches in accordance with Test Chart Test 84.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted. Overflow tone heard.
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	

**SECTION 218-150-501**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
16	Repeat Steps 11 through 15c, as required for Test 85.	
17	At MTF— Restore all keys and switches not required in next test.	
18a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>J. Stop Dial Signal</b>		
11	Operate keys and set switches in accordance with Test Chart Test 86.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted.
14	Momentarily operate RL key.	All lamps extinguished.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 87.	
17	At MTF— Restore all keys and switches not required in next test.	
18a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

**K. Distant Trunk Reversed or Busy**

- 11 Operate keys and set switches in accordance with Test Chart Test 88.

STEP	ACTION	VERIFICATION
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	If nonwire-spring-relay type senders with options XC and XE— OK lamp lighted. Overflow tone heard. If nonwire-spring-relay type senders with options XD and XE, or wire-spring-relay type senders— OK lamp lighted. If sender class relays CL2 and CL6 operated, or if CL2, CL3, and CL6 relays non-operated— Overflow tone heard. If sender class relay CL2 operated— Overflow tone not heard.
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced, if heard.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 89.	
17	At MTF— Restore all keys and switches not required in next test.	
18a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	

#### L. Battery and Ground Pulsing

- |     |   |
|-----|---|
| 11  | Operate keys and set switches in accordance with Test Chart Test 90.  |
| 12c | If 2-way trunk is used for selected outgoing route—<br>At distant office—<br>Have trunk removed from service. |

SECTION 218-150-501

STEP	ACTION	VERIFICATION
13	At MTF— Momentarily operate ST key.	OK lamp lighted.  ♦ <b>Note:</b> Ensure that battery clicks are not heard at end of outpulsing.♦
14	Momentarily operate RL key.	All lamps extinguished.
15	Restore BGO key.	
16	Momentarily operate ST key.	OK lamp lighted.
17	Momentarily operate RL key.	All lamps extinguished.
18c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
19	Repeat Steps 11 through 18c, as required for Test 91.	
20	At MTF— Restore all keys and switches not required in next test.	
21a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
22	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	

**M. Timing Test**

11	Operate keys and set switches in accordance with Test Chart Test 92.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key; <i>start timing.</i>	TMT lamp lighted. In 20 to 32 seconds— OK lamp lighted. Overflow tone heard.
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
15	Restore TMT, SDT1 keys.	

STEP	ACTION	VERIFICATION
16d	If sender is arranged for AMA— Insert make-busy plugs into MB_ jacks of all senders that use same transverter-connector as sender being tested (refer to paragraph 1.06).	
17d	Operate SDT3, STVT keys.	
18d	Momentarily operate ST key; <i>start timing</i> .	TK1 lamp momentarily lighted. In 7 to 11 seconds— OK lamp lighted.
19d	Momentarily operate RL key.	OK lamp extinguished.
20d	Restore SDT3, STVT keys.	
21d	Remove make-busy plugs from MB_ jacks of all senders made busy in Step 16d.	
22c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
23	Restore all keys and switches not required in next test.	
24a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
25	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

#### M.1 TM Timer Recycle

1	At MTF— Insert make-busy plug into MB_ jack associated with sender under test.	
2	At sender frame— At sender under test— Block nonoperated TRL relay.	
3	Block operated ON relay, <i>start timing</i> .	In 20 to 32 seconds— TM relay operated.
4	Record length of TM timing.	
5	Remove blocking tool from ON relay.	TM relay released.
6	Block operated TT1 relay.	

STEP	ACTION	VERIFICATION
7	Block operated ON relay; <i>start timing</i> .	
8	Within 3 seconds prior to the end of TM timing— Manually operate ATC1 relay for 1 second.	In 20 to 32 seconds— TM relay not operated. In 38 to 74 seconds after operation of ON relay— TM relay operated.
9	Remove blocking tool from ON relay.	TM relay released.
10	Block operated SG, SG1 relays.	
11	Repeat Steps 7, 8, and 9, as required.	
12	Remove blocking tools from TT1, SG, SG1, TRL relays.	
13	At MTF— Remove make-busy plug from MB_ jack associated with sender under test.	

#### N. Cancel Time Release and Alarm Test

11	Operate keys and set switches in accordance with Test Chart Test 94.	
12b	◆If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Advise remote alarm center by telephone to release stuck sender holding feature, if activated.◆	
13c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
14d	◆At MTF— If CTR_ key associated with sender under test is released (pushed-in)— Operate (pull-out) CTR_ key.◆	
15	Momentarily operate ST key; <i>start timing</i> .	In 20 to 32 seconds— TO_ lamp lighted. Overflow tone not heard. In 10 to 15 seconds after TO_ lamp lighted— R-S-TOA lamp lighted. Major alarm sounds.

STEP	ACTION	VERIFICATION
		<b>Note:</b> If R-S-TOA lamp lights in less than 10 seconds, it may be necessary to repeat test because another circuit may have seized common alarm circuit.
16	Insert make-busy plug into MB_jack associated with sender under test.	R-S-TOA lamp extinguished. Major alarm silenced.
17	Restore (push-in) CTR_ key associated with sender under test.	OK lamp lighted.
18	Momentarily operate RL key.	All lamps extinguished.
19	Remove make-busy plug from MB_ jack associated with sender under test.	
20	Restore DISC key.	
21e	If alarm sending circuit is provided— Operate (pull-out) CTR_ key associated with sender under test.	
22	Operate transfer key to DB position (if provided) or to TR position.	
	<b>Note:</b> All alarms will be transferred while key is operated.	
23	Momentarily operate ST key; <i>start timing.</i>	TMT lamp lighted. In 20 to 32 seconds— Overflow tone heard. OK lamp lighted.
24	Operate DISC key.	Overflow tone silenced.
25	Momentarily operate RL key.	All lamps extinguished.
26	Operate transfer key to NTR position.	
27	Momentarily operate RL key.	
28	Restore DISC key.	
29c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
30	Repeat Steps 11 through 29c, as required for Test 95.	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
31	At MTF— Restore all keys and switches not required in next test.	
32a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
33b	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Advise remote alarm center by telephone to reactivate stuck sender holding feature, if required.	
34f	If CTR_ key associated with sender under test is released (pushed-in)— Operate (pull-out) CTR_ key, if required.♦	
<b>N.1 ♦Stuck Sender Trunk Identification</b>		
11b	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to release stuck sender holding feature, if activated.  <i>Note:</i> The stuck sender trunk identifier circuit is disabled when the stuck sender holding feature is activated at the remote alarm center.	REM lamp extinguished.
12	Operate keys and set switches in accordance with Test Chart Test 96.	
13c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
14d	At MTF— If CTR_ key associated with sender under test is released (pushed-in)— Operate (pull-out) CTR_ key.	
15	Momentarily operate ST key; <i>start timing.</i>	TMT lamp lighted. In 20 to 32 seconds— TO_ lamp lighted. In 10 to 15 seconds— R-S-TOA lamp lighted.

STEP	ACTION	VERIFICATION
		Major alarm sounds. R-S-TOA lamp extinguished. Major alarm silenced.
16	Insert make-busy plug into MB_jack associated with sender under test.	
17	Operate SSI key.	SSTI lamp lighted. In 20 to 25 seconds— UH/RH, FT_, FU_, SWT_, SW_, VU_ lamps lighted indicating OSL switch and vertical associated with stuck sender.
		<b>Note:</b> If no sender is stuck, the END lamp will light at the end of the scan cycle and remain lighted until the SSI key is restored.
18	Restore SSI key.	SSTI, LH/RH, FT_, FU_, SWT_, SW_, VU_ lamps extinguished.
19	Restore (push-in) CTR_ key associated with sender under test.	OK lamp lighted.
20	Momentarily operate RL key.	All lamps extinguished.
21	Remove make-busy plug from MB_ jack associated with sender under test.	
22e	If automatic tracing feature is provided— Operate ACTR key.	
23e	Momentarily operate ST key; <i>start timing.</i>	TMT lamp lighted. In 20 to 25 seconds— MN-SSTI lamp lighted. Minor alarm sounded. Trouble record taken. SSTI, OSG_, SSA/SSB, OS_ designations perforated indicating sender group assignment. LH/RH, FT_, FU_, SWT_, SW_, VU_ designations perforated indicating OSL switch and vertical associated with stuck sender.
24e	Restore ACTR key.	
25e	Momentarily operate TRR-AR key.	MN-SSTI lamp extinguished. Minor alarm silenced.
26e	Momentarily operate RL key.	All lamps extinguished.
27c	If 2-way trunk is used for selected outgoing route—	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
	At distant office— Have trunk restored to service.	
28	Repeat Steps 12 through 27c, as required for Test 97.	
29	At MTF— Restore all keys and switches not required in next test.	
30	Operate SSI or ACTR key, as required for manual or automatic stuck sender trunk identification.	
31	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to reactivate stuck sender holding feature, if required.	REM lamp lighted.
32	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	
<b>O. Marker Reorder</b>		
11	Operate keys and set switches in accordance with Test Chart Test 98.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted. Overflow tone heard.
14	Momentarily operate RL key.	OK lamp extinguished. Overflow tone silenced.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 99.	
17	At MTF— Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
18a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

#### P. Antiglare Test

11	Operate keys and set switches in accordance with Test Chart Test 100.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	In 5 to 11 seconds— OK lamp lighted.
14	Momentarily operate RL key.	All lamps extinguished.
15	Restore SPD key.	
16	Operate AGR, MOTL keys.	
17	Momentarily operate ST key.	In 2 to 5 seconds— OK lamp lighted. Overflow tone heard.
18	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
19c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
20	Repeat Steps 11 through 19c, as required for Test 101.	
21	At MTF— Restore all keys and switches not required in next test.	
22a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
23	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
<b>P.1 Immediate Reorder on Stop Dial Signal</b>		
11	Operate keys and set switches in accordance with Test Chart Test 102.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted. Overflow tone heard.  ♦ <b>Note:</b> Ensure that battery clicks are not heard at end of outpulsing.♦
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 103.	
17	At MTF— Restore all keys and switches not required in next test.	
18a	♦If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.♦	
<b>P.2 Open Loop Detection Between Digits</b>		
11	Operate keys and set switches in accordance with Test Chart Test 104.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At MTF— Momentarily operate ST key.	OK lamp lighted. Overflow tone heard.

STEP	ACTION	VERIFICATION
14	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
15c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
16	Repeat Steps 11 through 15c, as required for Test 105.	
17	At MTF— Restore all keys and switches not required in next test.	
18a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	

**Q. Intersender Timing—◆Wire-Spring and Nonwire-Spring Relay Type Senders◆**

11	Operate keys and set switches in accordance with Test Chart Test 106.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	At relay rack frame— At outgoing sender group release circuit— Block operated R_ relay of sender group associated with sender under test.	
14	At MTF— Momentarily operate ST key.	In 4 to 8 seconds— Overflow tone heard.
15	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
16c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
17	Repeat Steps 11 through 16c, as required for Test 107.	

SECTION 218-150-501

STEP	ACTION	VERIFICATION
18	At relay rack frame— At outgoing sender group release circuit— Remove blocking tool from R_ relay of sender group associated with sender under test.	
19	At MTF— Restore all keys and switches not required in next test.	
20a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
21	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>R. Pulse Conversion Call</b>		
11	Operate keys and set switches in accordance with Test Chart 108.	
12	At MTF— Select PCR incoming class of call.	
13	Momentarily operate ST key.	OK lamp lighted.
14	Momentarily operate RL key.	All lamps extinguished.
15	Repeat Steps 11 through 14, as required for Tests 109 through 113.	
16	Restore all keys and switches not required in next test.	
17a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key as required.	
18	Operate (pull-out) CTR_ key associated with sender under test, if required.◆	
<b>S. Sender Busy</b>		
1	At sender frame— When sender to be tested is idle— Block operated SB relay.	
2	At MTF— Insert make-busy plugs into MB_ jacks of all other senders in subgroup associated with sender under test (refer to paragraph 1.06).	At sender frame— <b>Nonwire-spring-relay type senders</b> ◆Check for absence of ground on terminal 19 of terminal strip C and terminals 29 and 30 of terminal strip D on sender control unit.◆

STEP	ACTION	VERIFICATION
		<p><b>Wire-spring-relay type senders</b> Check for absence of ground on terminals 16, 26 of terminal strip A and terminal 17 of terminal strip B on sender control unit.</p>
3	<p>At MTF— Insert make-busy plug into MB_ jack associated with sender under test.</p>	
4	<p>At sender under test— Remove blocking tool from SB relay.</p>	<p>At sender frame— <b>Nonwire-spring-relay type senders</b> ◆Check for absence of ground on terminal 19 of terminal strip C and terminals 29 and 30 of terminal strip D on sender control unit.◆ <b>Wire-spring-relay type senders</b> Check for absence of ground on terminals 16, 26 of terminal strip A and terminal 17 of terminal strip B on sender control unit.</p>
5	<p>At MTF— Remove make-busy plug from MB_ jack associated with sender under test.</p>	<p>At sender frame— <b>Nonwire-spring-relay type senders</b> ◆Check for presence of ground on terminal 19 of terminal strip C and terminals 29 and 30 of terminal strip D on sender control unit.◆ <b>Wire-spring-relay type senders</b> Check for presence of ground on terminals 16, 26 of terminal strip A and terminal 17 of terminal strip B on sender control unit.</p>
6a	<p>◆If option is provided for elimination of stuck sender plant registration on test calls when sender is made busy at MTF— At MTF— Insert make-busy plug into MB_ jack of sender under test.</p>	
7a	<p>At sender under test— Block operated CT, TRL relays.</p>	<p><b>Nonwire-spring-relay type senders</b> Check for absence of ground on terminal 32 of terminal strip D on sender control unit. <b>Wire-spring-relay type senders.</b> Check for absence of ground on terminal 36 of terminal strip A on sender control unit.</p>
8a	<p>At MTF— Remove make-busy plug from MB_ jack of sender under test.</p>	<p>At sender frame— <b>Nonwire-spring-relay type senders</b> Check for presence of ground on terminal 32 of terminal strip D on sender control unit. <b>Wire-spring-relay type senders</b> Check for presence of ground on terminal 36 of terminal strip A on sender control unit.</p>

SECTION 218-150-501

STEP	ACTION	VERIFICATION
9a	At sender under test— Remove blocking tool(s) placed in Step 7a.	
10b	If option is provided for TUR maintenance busy indication in offices equipped with alarm surveillance and control feature— At MTF— Insert make-busy plug into MB_ jack of sender under test.	At sender frame— <b>Nonwire-spring-relay type senders</b> Check for presence of ground on terminal 5 of terminal strip D on sender control unit. <b>Wire-spring-relay type senders</b> Check for presence of ground on terminal 32 of terminal strip A of sender control unit.
11b	At MTF— Remove make-busy plug from MB_ jack of sender under test.	At sender frame— <b>Nonwire-spring-relay type senders</b> Check for absence of ground on terminal 5 of terminal strip D on sender control unit. <b>Wire-spring-relay type senders</b> Check for absence of ground on terminal 32 of terminal strip A of sender control unit.
12b	At sender under test— Block operated TRL relay.	At MTF— TO_ lamp lighted. Major alarm sounded. At sender frame— <b>Nonwire-spring-relay type senders</b> Check for presence of ground on terminal 5 of terminal strip D on sender control unit. <b>Wire-spring-relay type senders</b> Check for presence of ground on terminal 32 of terminal strip A of sender control unit.
13b	Remove blocking tool placed in Step 12b.	At MTF— TO_ lamp extinguished. Major alarm silenced.
14	Remove all make-busy plug placed in Step 2.♦	
<b>T. Directory Assistance Charging</b>		
11	Operate keys and set switches in accordance with Test Chart Test 114.	
12c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk removed from service.	
13	Operate REC key.	
14	Momentarily operate ST key.	OK lamp lighted. Two trouble records taken. <b>Both trouble records</b> FR_ CN_ S_ calling line location, OBS or

STEP	ACTION	VERIFICATION
		NOB, RNT0, 1, or 2, RN_ designations perforated. If test is for 411 or 555-1212 <b>observed</b> or <b>nonobserved</b> 2-line entry— CP3, MB6, LST designations perforated. If test is for 555-1212 <b>observed</b> or <b>nonobserved</b> 4-line entry— CP3, MB9, 4DG designations perforated. <b>First trouble record</b> SRT, MKR, called number, called number class, TP or RP designations perforated. <b>Second trouble record</b> TV, 2L or 4L, TPT or RPT designations perforated. If test is for 411 or 555-1212 <b>observed</b> or <b>nonobserved</b> 2-line entry— Called number designations <b>not</b> perforated. If test is for 555-1212 <b>observed</b> or <b>nonobserved</b> 4-line entry— Called number designations perforated.
15	Momentarily operate RL key.	OK lamp extinguished.
16c	If 2-way trunk is used for selected outgoing route— At distant office— Have trunk restored to service.	
17	Repeat Steps 11 through 16c, as required for Tests 115 through 117.	
18	Restore all keys and switches not required in next test.	
19a	◆If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key as required.	
20	Operate (pull-out) CTR_ key associated with sender under test if required.◆	

## 5. PREPARATION OF TEST CHART

5.01 The Test Chart is used as a particular number chart and provides the priming information required for each test. Information obtained from local office records should be used to fill in the Test Chart in the following manner:

(a) **Selection of a Particular Trunk:**

When it is desired to use a particular trunk for test, select the trunk as follows:

**Note:** When 2-way trunks are required to be used for the selected outgoing route, a particular trunk must always be selected.

- (1) Consult local office records for location of desired trunk. Whenever possible, avoid the use of 2-way and intertoll trunks.
  - (2) In the TRUNK SELECTION column, record trunk location.
  - (3) In the MISCELLANEOUS KEYS AND/OR SWITCHES column, record FS, TS keys.
  - (4) Record CX key when trunk selected requires CX supervision.
  - (5) Record C20H key when 2-way or intertoll trunk is selected.
  - (6) Record GPA or GPB key when the trunks served by the sender are in allotted groups.
  - (7) Record CC4 when coin zone trunk or junctor arranged for local zone calls are selected.
  - (8) Record TOL-RB key when trunk is arranged for E-M signaling and reverse battery supervision through the switches.
- (b) When it is necessary to simulate a test call from an incoming trunk to reach a desired outgoing tandem or intertoll trunk, select an incoming subclass of test required for the selected route.
- (c) For non-DDD calls, record the called A\_, B\_, and C\_ digits for an office code that can be reached by the sender.

(d) For DDD calls, record the called A\_, B\_, and C\_ digits for the area code sent by the sender and the office code D\_, E\_, and F\_ digits.

(e) Record originating class of call and translator indication required by the marker to select a route and sender group.

(f) Record the various classes of service for line locations and routes selected. When office is provided with rate treatment, record various rate treatments.

(g) Record any arbitrary digits, sender class marks, and delete digit marks in appropriate columns of MISCELLANEOUS INFORMATION.

(h) Record the line location if a particular calling line location is required.

(i) Record NTC key in MISCELLANEOUS KEYS AND/OR SWITCHES column when a particular line location (h) is required.

(j) Record the called customer directory number in DIGITS—CODE AND NUMBER (CALLED NUMBER) column.

5.02 **Test A:**

(1) Determine from local office records the following:

(a) The office code for each office that can be reached by the sender being tested on an AMA or non-AMA basis.

(b) The DDD codes being sent by the sender.

(2) For Tests 1 through 34, apply (a), (c), and (e) through (i) of paragraph 5.01, selecting AMA office codes and classes of services that will check all office code (A\_, B\_, and C\_), class (CL\_), and deletion (DL\_) leads used for this type of call.

(3) For Tests 35 through 44, apply (a), (d), and (e) through (i) of paragraph 5.01, selecting DDD codes used with AMA or CAMA and classes of service. When call is AMA, record SDT1, REC keys in MISCELLANEOUS KEYS AND/OR SWITCHES column.

(4) For Tests 45 through 62, apply (a) through (i) of paragraph 5.01, selecting office codes and classes of service that do not require AMA.

(5) For Tests 63 through 66, apply (a) through (i) of paragraph 5.01, selecting office codes and classes of service that require 2-way or intertoll routing.

(6) For Tests 67 and 68, apply (a) through (i) of paragraph 5.01, selecting office codes and classes of service that require coin zone trunk or junctor routing.

(7) For Test 69, apply (a) through (i) of paragraph 5.01, selecting office code and class of service that requires local coin zone trunk or junctor routing.

(8) For Tests 70 and 71, apply (a) through (i) of paragraph 5.01, selecting office code and class of service that require tandem trunk routing (non-AMA).

(9) For Tests 72 and 73, apply (a) through (i) of paragraph 5.01, selecting office code and class of service for CCSA AMA tandem trunk routing.

**5.03 Test B:**

(1) Do not use 2-way, intertoll, or coin zone trunks.

(2) Apply (a) through (i) of paragraph 5.01.

**5.04 Test C:**

(1) Apply (a) through (i) of paragraph 5.01, selecting an AMA office code, class of service, and a particular trunk.

**5.05 Test D:**

(1) This test cannot be made on ANI calls.

(2) Apply (a) through (i) of paragraph 5.01, selecting a non-AMA office code, class of service, and a particular trunk.

**5.06 Test E:**

(1) Do not use 2-way or intertoll trunks.

(2) Apply (a) through (i) of paragraphs 5.01, selecting an office code and class of service for a detail-billed AMA call. When a bulk-billed AMA call must be used, record TOF key in MISCELLANEOUS KEYS AND/OR SWITCHES column.

**5.07 Test F:**

(1) Do not use 2-way or intertoll trunk.

(2) Apply (a) through (i) of paragraph 5.01, selecting an AMA office code and class of service.

**5.08 Test G:**

(1) Do not use 2-way or intertoll trunk.

(2) Apply (a) through (i) of paragraph 5.01, selecting an office code using AMA and interoffice trunk requiring AMA routing.

(3) When senders are not arranged for reduced timing interval, perform Test 80.

(4) When senders are arranged for reduced timing interval, perform Test 81.

**5.09 Test H:**

(1) Select an office code that will operate sender class relay CL3.

(2) Apply (a) through (j) of paragraph 5.01.

**5.10 Test I:**

(1) Select an office code that will not operate sender class relays CL2, CL3, or CL6.

(2) Apply (a) through (j) of paragraph 5.01.

**5.11 Test J:**

(1) Select an office code that will operate sender class relay CL2, CL2 and CL6, or a code that will not operate sender class relays CL2, CL3, or CL6.

(2) Apply (a) through (j) of paragraph 5.01.

**5.12 Test K:**

**SECTION 218-150-501**

(1) Select an office code that will operate sender class relay CL2, CL2 and CL6, or a code that will not operate sender class relays CL2, CL3, or CL6.

(2) Apply (a) through (j) of paragraph 5.01.

**5.13 Test L:**

(1) Select an office code that will operate class relay CL5 of the sender.

(2) Apply (a) through (j) of paragraph 5.01.

**5.14 Tests M, N, ♦N.1,♦ O, P, P.1, ♦P.2,♦ and Q:**

(1) For AMA offices, select an AMA office code and class-of-service.

(2) For non-AMA offices, select a non-AMA office code and class-of-service.

(3) Tests M, N, and O require interoffice codes.

(4) Test P requires an office code that will operate sender class relays CL2 and CL6. Nonwire-spring-relay type senders must be equipped with Fig. 13.

(5) Test P.1 requires an office code that will not operate sender class relays CL2, CL3, or CL6.

(6) Tests M, N, and Q cannot be made on trunks with CX supervision.

(7) Apply (a) through (j) of paragraph 5.01.

**5.15 Test R:**

(1) For pulse conversion calls, record the PCD or PCD1 key as required under the miscellaneous MASTER TEST CONTROL column.

**5.16 Test T:**

(1) Apply (a), (e), (f), (h), and (i) of paragraph 5.01, selecting a class of service requiring AMA routing.











