



**OUTGOING DIAL PULSE SENDERS**  
**TESTS USING OFFICE TEST FRAME SD-27633-01 (H-595-950)**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**1.001** This addendum supplements Section 218-450-501, Issue 2. The attached pages must be inserted in the section in accordance with filing instructions above.

**1.002** This addendum is reissued to add Test R to provide testing procedures to charge for directory assistance calls and to make minor changes as required.  
This addendum affects Equipment Test Lists.

The following change applies to Part 1 of this section:

Test R—added.

**4. METHOD**

The following change applies to Part 4 of this section:

Test R—added.

**Attached:**

**Page 1 dated September 1974, reissued**  
**Page 2 dated September 1974, revised**  
**Page 2.1 dated September 1974, revised**  
**Page 9 dated April 1973, revised**  
**Page 10 dated April 1973, revised**  
**Page 10.1 dated April 1973, added**  
**Page 10.2 dated April 1973, added**  
**Page 13 dated September 1974, revised**  
**Page 14 dated September 1974, added.**  
**Page 15 dated September 1974, added**

**OUTGOING DIAL PULSE SENDERS**  
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**NO. 5 CROSSBAR OFFICES**

<b>1. GENERAL</b>		<b>PAGE</b>
<b>1.01</b>	This section describes a method of testing dial pulse outgoing senders using the office test frame in No. 5 crossbar offices.	delays sending the last digit until AMA functions are completed. . . . . <b>7</b>
<b>1.02</b>	This section is reissued to add the 2TR key for second trial displays when making AMA tests and to add the TV_ key for transverter selection.	<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. . . . . <b>7</b>
<b>1.03</b>	The tests covered are:	<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. . . . . <b>8</b>
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<b>A. Regular Call:</b>	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. . . . . <b>3</b>	<b>I. Trunk Reversed—Initial Off Hook:</b> This tests 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; the sender then sets the trunk to overflow. . . . . <b>8</b>
<b>B. Trunk Test—Open Trunk:</b>	This test checks that the sender detects an open trunk during trunk test and causes a trouble indication during light traffic. . . . . <b>5</b>	<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. . . . . <b>8</b>
<b>C. Abandoned Call—AMA:</b>	This test checks that the sender waits until the initial AMA entry has been made before releasing. . . . . <b>5</b>	<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 will then set the trunk to overflow, except for CL2 class calls. . . . . <b>9</b>
<b>D. Abandoned Call—Non-AMA:</b>	This test checks that the sender releases at any stage of a call. . . . . <b>6</b>	<b>L. Battery and Ground Pulsing:</b> This test checks that the sender supplies battery and ground pulsing. . . . . <b>9</b>
<b>E. Transverter Trouble Release:</b>	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. . . . . <b>6</b>	
<b>F. Delay Pulsing of Last Digit—AMA:</b>	This test checks that the sender	

**M. Timing Test:** 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 operations, that the sender sets the trunk to return overflow and that the sender releases if the transverter has not completed its functions within 7 to 11 seconds. . . . . 10

**M.1 TM Timer Recycle:** This test checks that the TM timer will recycle on a stop dial signal when option ZS is provided. . . . . 10.1

**N. Cancel Time Release and Alarm Test:** This test checks that, with the associated CTR key operated, the sender will not release when it times out and that it will operate the stuck sender alarm. It also checks that if the call is abandoned at this time, the sender will not release. When the alarm sending circuit is provided, this test checks that when the alarms are transferred the sender cancel timed release feature is disabled. . . . . 10.2

**O. Antiglare Test:** This test checks that, when connected to a CX 2-way trunk or to a CX intertoll trunk (CL2 and CL6 relays operated in sender) with customer access, the sender will time properly for changes in supervision before pulsing and during interdigital timing. It also checks that when supervision changes a second time, the sender will set the trunk to overflow and release. . . . . 11

**P. Intersender Timing:** This test checks that, when start pulsing polarity is not returned within 4 to 8 seconds and the marker finds that all the senders of the group are busy, the trunk is set to overflow and the sender is released. . . . . 12

**Q. Sender Busy:** This test checks that the sender appears busy when it is

in service or when it is made busy at the associated MB jack. . . . . 12

**R. Directory Assistance Charging:** This test checks the ability of the sender to record the called number structure and called number class for directory assistance calls. . . . . 13

**1.04** Test Q requires making all senders within a subgroup busy.

**1.05 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.

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

**2. APPARATUS**

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

**2.01** Office test frame (OTF).

**2.02** Patching cords, as required, P3D cord, 6 feet long, equipped with two 309 plugs (3P3A cord) (for use in selecting sender under test).

**Tests B, C, F, G, M, M.1, N, P, Q, and R**

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

**Tests C, D, F, G, M, and P**

**2.04** 32A test set.

**Tests C, K, M, M.1, and N**

**2.05** KS-3008 stopwatch, or equivalent.

**Tests A, B, P, M.1, and Q**

**2.06** 322A make-busy plugs, as required.

**Test A**

**2.07** 329A make-busy plug.

**2.08** Patching cord, P3E cord, 8 feet long, equipped with two 310 plugs (3P6E cord).

**2.09** Testing cord, W2W cord, 10 feet long, equipped with one 310 plug (2W17C cord), one 360B tool, one 360C tool, one 624A (terminal connector) tool, and one 624B (terminal connector) tool.

**3. PREPARATION**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
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**All Tests Except M.1, Q**

- |   |                                                                                                           |  |
|---|-----------------------------------------------------------------------------------------------------------|--|
| 1 | At OTF—<br>Restore all keys.                                                                              |  |
| 2 | At jack, lamp, and key circuit—<br>Patch SDR jack in MB2 jack field to SMB_ jack for sender to be tested. |  |

STEP	ACTION	VERIFICATION
14	Before EP lamp lights and between digits— Operate RVT key momentarily.	Sender stops outputting while RVT key is operated. CS lamp lighted.
15	Restore ST key.	All lamps extinguished.
16	Restore all keys not required for next test.	
17	At jack, lamp, and key circuit— Remove patching cords not required for next test.	

**K. Distant Trunk Reversed or Busy**

12	At OTF— Operate OGT and DPS keys.	
13	Operate ST key.	TGT lamp lighted momentarily.
14	Before EP lamp lights, operate RVT key and <i>start timing</i> .	◆If sender classes CL2 and CL6 (ZN option) are used— Sender stopped outputting. In 20 to 32 seconds— Overflow tone heard. If sender class CL2 (ZO option) is used or if sender is arranged for immediate reorder on stop dial— Sender released. Overflow tone heard.◆
15	Restore ST key.	Tone removed.
16	Restore all keys not required for next test.	
17	At jack, lamp, and key circuit— Remove patching cords not required for next test.	

**L. Battery and Ground Pulsing**

12	At OTF— Operate OGT, NCH, and DPS keys.	
13d	If 4, 5, or 7 digits are to be outputted by sender— Operate one of the following keys: 4SD, 5SD, or 7SD, depending on number of digits outputted.	

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
14	Operate A_ through K_ SDR switches, as required, corresponding to digits outpulsed by sender.	
15	Operate ST key.	OS lamp lighted. At completion of pulsing— EP and CS lamps lighted. High tone heard. TOK lamp lighted.
16	Restore ST key.	All lamps extinguished.
17	Restore all keys not required for next test.	
18	At jack, lamp, and key circuit— Remove patching cords not required for next test.	
<b>M. Timing Test</b>		
12	At jack, lamp, and key circuit— Operate (pull-out) CTR key associated with sender under test.	
13	At sender under test— Insert plug of 32A test set into RC jack.	
14	Block nonoperated ES relay.	
15	Operate white key on 32A test set.	At sender under test— ON1 relay operated.
16	Immediately after ON1 relay operates, <i>start timing.</i>	In 20 to 32 seconds— TM relay operated. At jack, lamp, and key circuit— TO lamp associated with sender lighted.
17	At jack, lamp, and key circuit— Release (push-in) CTR key.	TO lamp extinguished.
18	Operate red key on 32A test set.	
19d	If AMA is provided— Insulate contacts 1M and 10M of STT relay.	
20d	Operate white key on 32A test set.	At sender under test— ON1 relay operated.
21d	Immediately after ON1 relay operates, <i>start timing.</i>	In 7 to 11 seconds—  TM relay operated momentarily. ON1 relay released.

STEP	ACTION	VERIFICATION
22d	Operate red key on 32A test set.	
23	Remove blocking tool from ES relay.	
24	Remove plug of 32A test set from RC jack.	
25	At OTF— Restore all keys not required for next test.	
26	At jack, lamp, and key circuit— Remove patching cords not required for next test.	

**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 non-operated TRL relay.	
3	Block operated ON relay; <i>start timing</i> .	In 19 to 37 seconds— TM relay operated.♦
4	Record length of TM timing — seconds.	
5	Remove blocking tool from ON relay.	TM relay released.
6	Block operated TT1 relay.	
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 19 to 37 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.	
12	Remove blocking tools from TT1, SG, SG1, TRL relays.	

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
13	At MTF— Remove make-busy plug placed in Step 1.	
<b>N. Cancel Time Release and Alarm Test</b>		
12	At jack, lamp, and key circuit— Operate (pull-out) CTR key of sender under test.	
13	At sender under test— Block nonoperated ES relay.	
14	At OTF— Operate ST key.	TGT lamp lighted.

STEP	ACTION	VERIFICATION
2	At jack, lamp and key circuit— Insert make-busy plugs into SMB_ jacks of all other senders in same subgroup as sender under test.	
3	At sender under test— Test for presence of ground on terminals A16, A26, and B17 on sender control unit terminal strip.	At sender under test— Ground not present.
4	At jack, lamp, and key circuit— Insert make-busy plug into SMB_ jack of sender under test.	
5	At sender under test— Remove blocking tool from SB relay.	
6	Repeat Step 3.	
7	At jack, lamp and key circuit— Remove make-busy plug from SMB_ jack of sender under test.	
8	At sender under test— Repeat Step 3.	Ground present.
9	At jack, lamp and key circuit— Remove make-busy plugs from all SMB_ jacks of senders made busy in Step 2.	

#### R. ♦Directory Assistance Charging

12	At OTF— Operate OST, DPS keys.	
13	Operate TV_, TR keys.	
14d	If test is for 411 2-line entry— Operate A_, B_, C_ DIAL switches, to select AMA route served by sender under test.	
15d	Operate A_, B_, C_ SDR switches, corresponding to digits outpulsed by sender.	
16d	Operate 3SD key.	
17e	If test is for 555-1212 2- or 4- line entry— Operate A_ through G_ DIAL switches, to select AMA route served by sender under test.	

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STEP	ACTION	VERIFICATION
18e	Operate A_ through G_ switches, corresponding to digits outpulsed by sender.	
19e	Operate 7SD key.	
20f	If a particular trunk is required— Operate FS_, NT keys.	
21f	Insert 329A plug into TS_ jack associated with selected trunk.	
22f	Insert make-busy plug into OGT-MB jack associated with selected trunk.	
23	Operate ST key.	<p>OS, ED lamps lighted            At completion of sender outpulsing—            EP, CS lamps lighted.            High tone heard.            TOK lamp lighted.            At TIC—            DR_, CN_, S_, FU_, VG_, HG_, VF_ lamps lighted identifying transverter, transverter connector, sender, and originating test line.            OFF_, RN_, CIIT_, CIIU_ lamps lighted identifying originating office group, recorder number, and call identity index trunk number.            If test is for 411 or 555-1212 2- line entry—            A_, B_, C_, or A_ through G_, MB6, CI1, CI2 lamps lighted identifying called number, message billing index, and cut-in perforator leads.            If test is for 555-1212 4-line entry—            A_ through G_, MB9, CI1, CI2, CI3, CI4 lamps lighted identifying called number, message billing index and cut-in perforator leads.</p>
24	At OTF— Restore ST key.	<p>All lamps extinguished.            High tone silenced.</p>
25	At TIC— Momentarily operate RLS key.	All lamps extinguished.

*Note:* Disregard XP1 lamp if lighted.

STEP	ACTION	VERIFICATION
26	At OTF— Restore all keys and switches not required in next test.	
27	Remove patching cords from SDR jacks in MB1 and MB2 jack fields and SMB- jacks of all senders made busy in Steps 2 and 3.	
28f	If a particular trunk is required— Remove make-busy plugs from MB_ and TS_ jacks associated with selected trunk.◀	