

**PLANT REGISTERS—PART 8**  
**TESTS USING MASTER TEST FRAME**  
**NO. 5 CROSSBAR OFFICES**

**1. GENERAL**

**1.01** This section is Part 8 in a series of sections that describe methods for testing plant registers.

**1.02** This issue affects Equipment Test Lists.

**1.03** The tests in this section were formerly covered in Section 218-233-501.

**1.04** The tests covered are:

**AD. ANI Transverter First and Second Trial Trouble Registers (ATTR, ATST Registers):** This test checks that a plant register operates on first trial service call failures and on second trial service call failures when a trouble record is requested before disconnect. . . . **4**

**AE. AMA 2-Line Entry Peg Count Registers (2LCPC, 2LLPC Registers):** This test checks that a plant register operates on all AMA calls, other than message billing index 9 calls, resulting in a 2-line AMA recorder entry. . . . **5**

**AF. AMA Bulk Billing Trouble Registers (LBBF, CBBF Registers):** This test checks that a plant register operates on all AMA calls, other than message billing index 9 calls, encountering second trial trouble release conditions. . . . **7**

**1.05** Plant registers are located either in a self-contained register cabinet and referred to as the plant register circuit or just above the trouble recorder perforator on the master test frame (MTF) trouble recorder bay.

**1.06** Table A indicates the tests requiring action and verification at more than one location.

**TABLE A**

ACTION AND/OR VERIFICATION REQUIRED AT:	TESTS		
	AD	AE	AF
Master Test Frame	✓	✓	✓
Transverter Frame	✓	✓	✓
Plant Register Circuit	✓	✓	✓

✓As required.

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

**1.09** The manner of selecting some circuits and test conditions at the 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.

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

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**2. APPARATUS**

**2.01** The apparatus required for each test is listed in Table B. The details of each item are covered in the paragraph indicated by the number in parentheses. In addition, the following apparatus may also be required.

- (a) Apparatus covered in 2.07 and 2.08 is required when a portable lamp is used to determine register operation.
- (b) Two head telephone sets are required when a portable lamp is not used.
- (c) A 32A test set is required when the MTF is controlled from a remote point.

**TABLE B**

APPARATUS	TESTS		
	AD	AE	AF
Test Circuit (2.02)	1	1	1
Cord (2.03)	1	1	1
Cord (2.04)		1	
Tools (2.05)			1
Cord (2.06)		1	2
322A (make-busy) Plug	✓	✓	✓

✓As required.

**2.02** Master test control circuit SD-25800-01.

**2.03** Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), two 639A (contact connector) tools, and two 651-type (contact connector holder) tools (for making connections to contacts of wire-spring-type relays).

**2.04** Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 419A (test connector) tools (for use in strapping contact springs).

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

**2.06** Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, one 419A (test connector) tool (for use in connecting battery or ground to springs of nonwire-spring-type relays).

**2.07** Two W2W cords, 10 feet long, each equipped with a 310 plug, two 360-type tools (2W17C cords), two KS-6278 connecting clips, and two 108 cord tips (required when a portable test lamp is used).

**2.08** 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

**2.09** When making connections to relays using testing cords listed in this section, use as covered in Section 069-131-811.

**3. PREPARATION**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
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**All Tests**

*Note:* Refer to 1.09 and 1.10.

- 1a If tests are to be performed without portable test lamp—  
Establish talking circuit between frames where test is to be performed and where observations are to be made.

STEP	ACTION	VERIFICATION
2b	<p>If tests are to be performed with portable test lamp—            At frame where action is to be taken—            Insert plug of 2W17C cord, equipped with two KS-6278 connecting clips, into SP jack of miscellaneous circuit.</p>	
3b	<p>Determine from circuit drawing of circuit associated with register to be tested, location of terminal on terminal strip at which plant register circuit is connected.</p>	
4b	<p>Connect one lead of 2W17C cord to terminal on terminal strip associated with plant register being tested.</p>	
5b	<p>Connect other lead of 2W17C cord to battery.</p>	
6b	<p>Connect leads of 38B lamp socket to leads of another 2W17C cord, equipped with two KS-6278 connecting clips.</p>	
7b	<p>Insert plug of this 2W17C cord into any appearance of selected SP jack of miscellaneous circuit close to position where test is to be performed.</p>	
8b	<p>Place portable test lamp so that it can be easily observed.</p>	
9b	<p>If tests are to be performed with portable test lamp—            To observe scoring of register when using portable test lamp, proceed as follows: (a) For first observation of scoring of register, observe that portable test lamp indicates proper condition on lead and that register scores as required.            (b) For subsequent observations of scoring of same register, observe portable test lamp indications only.</p> <p><i>Note:</i> When the register to be tested scores at timed intervals, the portable test lamp will flash with the scoring of the register.</p>	
10	<p>At MTF—            Restore all keys and switches.</p>	
11	<p>Momentarily operate RL key.</p>	<p>All lamps extinguished.</p>

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
12c	If testing 4-wire switching systems— Operate 4W key.	
13c	Select control digits.	

**4. METHOD**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
<b>AD. ANI Transverter First and Second Trial Trouble Registers (ATTR, ATST Registers)</b>		
14	Insert make-busy plug into TVMB- jack associated with ANI transverter under test.	
15	At transverter frame— Interconnect 1F of SC relay, 1F of 1TR relay.	
16	At MTF— Select transverter made busy.	
17	Select originating line.	
18	Select TVT (ANI) class of test.	
19	Operate REC key.	
20	Momentarily operate ST key.	At plant register circuit— ATTR plant register associated with transverter under test scored once.
21	At MTF— Momentarily operate RL key.	All lamps extinguished.
22	Operate TR2 key to simulate a second trial call.	
23	Momentarily operate ST key.	At plant register circuit— ATST plant register scored once.
24	At MTF— Momentarily operate RL key.	All lamps extinguished.
25	At transverter frame— Remove test connection from SC, 1TR relays.	
26	At MTF— Restore TR2, REC keys.	
27	Remove make-busy plug from TVMB jack.	

STEP	ACTION	VERIFICATION
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| 28 | Repeat Steps 14 through 27 for each transverter trouble register to be tested.         |  |
| 29 | Restore all keys and switches and remove all patching cords not required in next test. |  |

**AE. AMA 2-Line Entry Peg Count Registers (2LCPC, 2LLPC Registers)**

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| 14 | Insert make-busy plug into TVMB- jack associated with transverter under test. |  |
| 15 | Insert make-busy plug into TRMB-TV jack associated with transverter selected. |  |

**CAMA Transverter SD-26010-01**

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| 16 | At transverter frame—<br>Interconnect 12 on SC relay, 8 on P2L relay.   |  |
| 17 | At MTF—<br>Set CNA- through CNG- switches as required to record a working originating office index.   |  |
| 18 | Select A- through K- digits to record a working area code, office code, and directory number for a nonobserved bulk-billed call, resulting in a 2-line entry. |  |
| 19 | Operate ORC- key as required to record an originating rate class for originating office index selected.   |  |
| 20 | Select recorder.  |  |
| 21 | Operate AD/OD key as required for automatic or operator identified call.  |  |
| 22 | Operate LCD1, LCD2, or ACD key, or none, as required for terminating office code selected.  |  |

**LAMA Transverter SD-25591-01**

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| 23 | At transverter frame—<br>Strap 3, 4B of TK relay.          |  |
| 24 | Connect ground to 7B of SC relay.                          |  |
| 25 | At MTF—<br>Select A- through K- digits to record a working |  |

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
	area code, office code, and directory number resulting in a 2-line entry.	
26	Select recorder units digit.	
27	Operate AD/OD (0/1) key to select recorder tens digit.	
28	Select an originating line location.	
29d	If transverter under test is arranged for interchangeable area and office codes— Operate 4DG key on 7- or 10-digit calls, LST key on information calls.	
30e	If transverter under test is not arranged for interchangeable area and office codes— Operate 4DG, LST, 5DG, or L5D key as required to record number structure of code.	
31	Select message billing index.	
32	Select code pattern required for called number.	
<b>All Transverters Under Test</b>		
33	At MTF— Select TVT (CAMA) or TVT (AMA) class of test.	
34	Select transverter made busy.	
35	Momentarily operate ST key.	At plant register circuit— 2LCPC or 2LLPC plant register associated with transverter under test scored once.
36	At MTF— Momentarily operate RL key.	All lamps extinguished.
37	At transverter frame— Remove all testing cords.	
38	At MTF— Remove make-busy plug from TRMB-TV jack.	
39	Remove make-busy plug from TVMB- jack.	
40	Repeat Steps 14 through 39 for all transverter registers to be tested.	
41	Restore all keys and switches and remove all patching cords not required in next test.	

STEP	ACTION	VERIFICATION
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**AF. AMA Bulk Billing Trouble Registers (LBBF, CBBF Registers)**

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|----|---|--|
| 14 | Insert make-busy plug into TVMB- jack associated with transverter under test. |  |
| 15 | Insert make-busy plug into TRMB-TV jack associated with transverter selected. |  |

**LAMA Transverter SD-25591-01**

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| 16  | At transverter frame—<br>Connect ground to 7B, 10B of SC relay.  |  |
| 17d | If transverter is arranged to score a single plant register on first and second trial failures—<br>Insulate 2B of 1TR relay to prevent scoring of transverter trouble register.    |  |
| 18e | If transverter is arranged to score separate plant registers on first and second trial failures—<br>Insulate 11B of 2TR relay to prevent scoring of second trial failure register. |  |
| 19  | At MTF—<br>Select A- through K- digits to record working area code, office code, and directory number, resulting in bulk-billed AMA-type call.                                     |  |
| 20  | Select an originating line location.   |  |
| 21  | Select recorder units digit.   |  |
| 22  | Operate AD/OD (0/1) key to select recorder tens digit.   |  |
| 23  | Select code pattern required for called number.  |  |
| 24f | If transverter selected for test is arranged for interchangeable area and office codes—<br>Operate 4DG key on 7- or 10-digit codes, LST key on information codes.                  |  |
| 25g | If transverter selected for test is not arranged for interchangeable area and office codes—<br>Operate 4DG, 5DG, LST, or L5D key as required to record number structure of code.   |  |
| 26  | Operate REC key.   |  |
| 27  | Select message billing index.  |  |

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<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
<b>CAMA Transverter SD-26010-01</b>		
28	At MTF— Set CNA- through CNG- switches as required to record a working originating office index.	
29	Select recorder units digit.	
30	Operate AD/OD key as required for automatic or operator identified call.	
31	Operate ORC- key as required to record an originating rate class for the originating office code.	
32f	If transverter selected for test is arranged for interchangeable area and office codes— Operate 4DG key on 7- or 10-digit calls, LST key on information calls.	
33	Select A- through K- digits to record working area code, office code, and directory number, resulting in bulk-billed AMA-type call.	
34	Operate LCD1, LCD2, or ACD key, or none, as required for terminating office code.	
35	At transverter frame— Interconnect 5F, 5M of SC relay.	
36	Insulate 6M of TVTA relay.	
<b>All Transverters Under Test</b>		
37	At MTF— Operate TR2 key to initiate a second trial call condition.	
38	Select TVT (AMA) or TVT (CAMA) class of test.	
39	Select transverter made busy.	
40	Momentarily operate ST key.	At plant register circuit— LBBF or CBBF plant register scored once
41	At MTF— Momentarily operate RL key.	All lamps extinguished.
42	At transverter frame— Remove insulator from TVTA, 1TR, or 2TR relays and testing cords from SC relay.	

STEP	ACTION	VERIFICATION
43	At MTF— Remove make-busy plug from TRMB-TV jack.	
44	Remove make-busy plug from TVMB- jack.	
45	Repeat Steps 14 through 44 as required for all transverter bulk-billing trouble registers to be tested.	
46	Restore all keys and switches and remove all patching cords not required in next test.	

