

PLANT REGISTERS—PART 9
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 9 in a series of sections that describe methods for testing plant registers.

1.02 This section is reissued to provide for the addition of 20 recorders or more and to add that if Electronic Translation System (ETS) is installed in an office this section *does not apply*. This issue does not affect Equipment Test Lists.

1.03 The tests covered are:

AG. AMA Recorder Usage Register (REC PC Register): This test checks that a plant register operates to record the number of AMA recorder usages. ♦for any number of recorders up to and including 20 or more. This section does not apply in ETS offices.♦

AH. AMA Recorder Trouble Entry Register (RTR Register): This test checks that a plant register operates when the AMA recorder is unable to complete its functions within an allotted time interval following a request for a trouble record card ♦for any number of recorders up to and including 20 or more. This section does not apply in ETS offices.♦

1.04 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.

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

TABLE A

ACTION AND/OR VERIFICATION REQUIRED AT:	TESTS	
	AG	AH
Master Test Frame	✓	✓
Recorder Frame		✓
Plant Register Circuit	✓	✓

✓As required.

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1.06 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.

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

1.08 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.

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

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

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1.10 On Issue 76D of SD-25800-01, a group of 20 "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 20 discontinued lamps, such as ATNT, DT, IAO, IMS, INC, IR, IT, ITDO, ITNP, ITP, IT1, LT, MISC, MLV, OGT, OR, ORIG, PTT, SDR, TVT.¶

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 2.10 and 2.11 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	
	AG	AH
Test Circuit (2.02)	1	
Test Circuit (2.03)	1	
Test Set (2.04)	1	
Cord (2.05)	1	
Cord (2.06)	1	
Cord (2.07)		1
Cord (2.08)		1
Tools (2.09)		✓
322A (make-busy) Plug	✓	✓

✓As required.

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

2.03 Test circuit for register and CAMA sender circuits, SD-25988-01.

2.04 Test set circuit for register and CAMA sender circuits (test set), SD-25676-01 (for use with test circuit for register and CAMA sender circuits).

2.05 Patching cord, 20-conductor, 6 feet long, equipped with one KS-13875 plug and one KS-13895 plug (W20C cord) for patching test circuit for register and CAMA sender circuits to test set.

2.06 Patching cord, P3F cord, 6 feet long, equipped with one 309 plug and one 310 plug (3P12E cord).

2.07 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 ground to springs of nonwire-spring-type relays).

2.08 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).

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

2.10 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).

2.11 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

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

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

Note: Refer to 1.07 through 1.09.

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| 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. | |
| 2b | 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. | |
| 3b | 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. | |
| 4b | Connect one lead of 2W17C cord to terminal on terminal strip associated with plant register being tested. | |
| 5b | Connect other lead of 2W17C cord to battery. | |
| 6b | Connect leads of 38B lamp socket to leads of another 2W17C cord, equipped with two KS-6278 connecting clips. | |
| 7b | 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. | |
| 8b | Place portable test lamp so that it can be easily observed. | |
| 9b | 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 | |

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STEP	ACTION	VERIFICATION
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same register, observe portable test lamp indications only.

Note: When the register to be tested scores at timed intervals, the portable test lamp will flash with the scoring of the register.

10	At MTF— Restore all keys and switches.	
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11	Momentarily operate RL key.	All lamps extinguished.
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Test AG

12c	If testing 4-wire switching systems— Operate 4W key.	
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13c	Select control digits.	
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4. METHOD

STEP	ACTION	VERIFICATION
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AG. AMA Recorder Usage Register (REC PC Register)

Common to LAMA and CAMA Offices

14	Select for test purpose trunk assigned to recorder and recorder usage register under test.	
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Note: The following test procedure covers a sampling of trunk types assigned to AMA recorders in LAMA or CAMA offices. When this test procedure fails to cover a trunk type assigned to a particular recorder and recorder usage register, further investigation is required to select trunk and test procedures necessary to place test condition on recorder usage register.

Local AMA (LAMA) Offices

15d	If trunk selected is outgoing intertoll or tandem type trunk— Select OGT class of test.	
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16d	Select TOL or TAN class of call with translator indication as required.	
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17d	Select A_ through L_ digits as required to select area code, office code, and directory	
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STEP	ACTION	VERIFICATION
	number for intertoll or tandem route requiring AMA treatment.	
18e	If trunk selected is provided with CX supervision features— Operate E-M key.	
19f	If trunk selected is intraoffice-type trunk requiring AMA treatment— Select IAO class of test.	
20f	Operate A_ through C_ or X11 or A_ FVD0 keys as required to select intraoffice AMA-type trunk route.	
21f	Select ringing combination.	
22f	Operate TTL key to set up connection to terminating test line.	
23	Select trunk appearance of selected trunk.	
24	Operate KRC or KY key.	
25	Select route advance as required.	
26	Select class of service and rate treatment as required.	
27g	If trunk group associated with selected office code is provided with allotted trunks— Operate GPA/GPB key as required to select trunk group having access to sender group associated with trunk being tested.	
28	Select marker.	
29	Momentarily operate ST key.	At plant register circuit— REC PC plant register associated with recorder under test scored once.
30	At MTF— Momentarily operate RL key.	All lamps extinguished.
31	Repeat Steps 14 through 30 to select a trunk associated with each recorder usage register to be tested.	
32h	If emergency recorder equipment is provided— Select regular recorder to be transferred to emergency recorder.	

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STEP	ACTION	VERIFICATION
33h	Insert make-busy plug into TN_ jack associated with regular recorder selected.	EW lamp lighted.
34h	Repeat Steps 14 through 30.	
35	Restore all keys and switches and remove all patching cords not required in next test.	
Centralized AMA (CAMA) Office—Test Set Provided		
36	At test set— Patch IRT jack of test set to IRT jack of test circuit for register and CAMA sender circuits.	
37	Operate L switch to OFF.	
38	At MTF— Set POS switch to 0, MF switch to MIN L.	
39i	If trunk selected for test is arranged for ANI— Operate AI, AD keys.	
40	Insert make-busy plug into MB jack of trunk selected for test.	
41	Patch T jack to CAMA or CAMA/CNTX jack as required.	
42	Select A_ through L_ digits as required to select tandem or intertoll terminating route. Note: If trunk selected for test is arranged for intertoll completion, the route selected by the operated A_ through L_ keys should provide access to one-way circuits when available.	
43	Operate keys in accordance with Table C for route selected.	
44	Momentarily operate ST key.	MRL, CK2, OGT-CS lamps lighted. At test set— P lamp lighted.
45j	If trunk selected is arranged for automatic identification of calling customer— At test set— Momentarily operate following keys, in turn: KP, numeral 0 for X digit, calling number, ST.	At plant register circuit— REC PC plant register associated with recorder under test scored once.

STEP

ACTION

VERIFICATION

TABLE C

CAMA INCOMING TRUNK		TYPE OF COMPLETION	OUTGOING TRUNK OUT SUPERVISION	OPERATE KEYS
TYPE	INC SUPV			
Non-BL	Rev Bat.	Tandem	—	ITNP, KY, TLK, CAM0, COGT, SLP
Non-BL	Rev Bat.	Intertoll	Rev Bat.	ITNP, KY, TLK, CAM1, COGT, SLP
Non-BL	Rev Bat.	Intertoll	E&M Leads	ITNP, KY, TLK, CAM1, SLP, E-M
Non-BL	Rev Bat.	Local	—	ITNP, TLK, CAM0, SLP
BL	E&M Leads	Tandem	—	ITNP, KY, TLK, CAM0, COGT, CEMI
BL	E&M Leads	Intertoll	Rev Bat.	ITNP, KY, TLK, CAM1, COGT, CEMI
BL	E&M Leads	Intertoll	E&M Leads	ITNP, KY, TLK, CAM1, E-M, CEMI
BL	E&M Leads	Local	—	ITNP, TLK, CAM0, CEMI
BL	Rev Bat.	Tandem	—	ITNP, KY, TLK, CAM0, COGT, SXS
BL	Rev Bat.	Intertoll	Rev Bat.	ITNP, KY, TLK, CAM1, COGT, SXS
BL	Rev Bat.	Intertoll	E&M Leads	ITNP, KY, TLK, CAM1, E-M, SXS
BL	Rev Bat.	Local	—	ITNP, TLK, CAM0, SXS
BL	Loop*	Tandem	—	ITNP, KY, TLK, CAM0, COGT, SXS, IRV
BL	Loop*	Intertoll	Rev Bat.	ITNP, KY, TLK, CAM1, COGT, SXS, IRV
BL	Loop*	Intertoll	E&M Leads	ITNP, KY, TLK, CAM1, E-M, SXS, IRV
BL	Loop*	Local	—	ITNP, TLK, CAM0, SXS IRV

*Incoming from intramural (local) step-by-step office

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STEP	ACTION	VERIFICATION
	Note: Keying must be completed in 4.8 seconds to avoid sender time-out.	
46k	If trunk selected is not arranged for automatic identification of calling customer— At test set— Key calling number identification.	At plant register circuit— REC PC plant register associated with recorder under test scored once.
47	At MTF— Momentarily operate RL key.	All lamps extinguished.
48	Repeat Steps 36 through 47 to select a trunk associated with each recorder usage register to be tested.	
49h	If emergency recorder equipment is provided— Select regular recorder to be transferred to emergency recorder.	
50h	Insert make-busy plug into TN_jack associated with regular recorder selected.	EW lamp lighted.
51h	Repeat Steps 36 through 47 for emergency recorder.	

Restoral of Equipment Common to LAMA or CAMA Recorders

52h	If emergency recorder equipment is provided— Remove make-busy plug from TN_jack.	
53	At test set— Remove patching cord from IRT jacks.	
54	At MTF— Remove patching cord from T and CAMA or CAMA/CNTX jacks.	
55	Restore to service trunk selected for test.	
56	Restore all keys and switches and remove all patching cords not required in next test.	

AH. AMA Recorder Trouble Entry Register (RTR Register)

Caution: No test should be made on recorder equipment during the period ~~5~~ minutes before and ~~5~~ minutes after every hour ~~for 6 second timing~~ or during the interval of 1 minute

STEP	ACTION	VERIFICATION
	<i>before or after any 10 minute period for one second timing.</i>	
Regular Recorder		
12	Observe that no make-busy plug is inserted in TN_ jacks for regular recorders.	
13c	If emergency recorder is provided— Observe that no make-busy plug is inserted in MB_ jack for emergency recorder.	
14	Insert make-busy plug into TN_ jack for recorder to be tested.	
15	At regular recorder frame— Insulate 3T of TTIB relay, 12B of TB relay.	
16d	If recorder selected is provided with wiring on 4T of HR3 relay— Observe that HR3, NS relays operated.	
17e	If recorder selected is not provided with wiring on 4T of HR3 relay— Connect ground to 9T of NS relay.	
18	Block nonoperated TC relay.	
19	Block operated TTIB relay.	
20	Block operated ON relay.	TE relay operated.
21	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test scored once.
22f	If AMA trunk transfer with partial charge guard entries for transfer is provided— At recorder frame— Connect ground to terminal 115 of unit terminal strip MA.	
23f	Block operated ON relay.	TE relay operated.
24f	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test did not score.
25f	At recorder frame— Remove test connection from terminal 115 and connect to terminal 116 of unit terminal strip MA.	

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STEP	ACTION	VERIFICATION
26f	Block operated ON relay.	TE relay operated.
27f	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test did not score.
28f	Remove test connection from unit terminal strip MA.	
29	At regular recorder frame— Remove blocking tools from TC, TTIB relays.	
30	Block nonoperated TTIB relay.	
31	Block operated ON relay.	TE relay operated.
32	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test scored once.
33	At regular recorder frame— Remove blocking tool from TTIB relay.	
34g	If ground is connected to 9T of NS relay— Remove test connection.	
35	Remove insulating tools from 3T of TTIB relay, 12B of TB relay.	
36	At MTF— Remove make-busy plug from TN_ jack.	

Emergency Recorder

37	At emergency recorder frame— Insulate 3T of TTIB relay, 12B of TB relay.	
38	Connect 1T to 2T of RNT relay.	
39	Block operated ON relay.	TE relay operated.
40	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test scored once.
41	At emergency recorder frame— Remove test connection from RNT relay.	
42	Block operated ON relay.	TE relay operated.

STEP	ACTION	VERIFICATION
43	Remove blocking tool from ON relay.	At plant register circuit— RTR plant register associated with recorder under test did not score.
44	At emergency recorder frame— Remove insulator from TTIB, TB relays.	
45	Repeat Steps 12 through 36 for each regular AMA recorder to be tested for plant register operation.	

