PLANT REGISTERS—PART 15

TESTS USING MASTER TEST FRAME

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 15 in a series of sections that describe methods for testing plant registers.

1.02 This section is reissued to provide for testing registers associated with 20 or more recorders or trunk control circuits. When Electronic Translation System (ETS) is installed in an office, the following tests do not apply, BI, BJ, BK, BL, BM, BN and BO.

This issue does not affect Equipment Test Lists.

1.03 The tests covered are:

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BH. Incoming Register Pretranslator-First and Second Trial Register (IRPTR- and IRPST 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

BI. LAMA, ANI Transverter Usage Register-Magnetic Tape (TVPC LAMA-, TVPC ANI-Registers): This test checks that these plant registers operate on a LAMA service call and on an ANI service call. 5

BJ. LAMA Transverter-First and Second Trial Failure Register-Magnetic Tape (TTR-, TST Registers): This test checks that a plant register operates on first trial service call failures and second trial service call failures when a trouble record is requested before disconnect. 7

BK. LAMA Transverter-Message Unit Entry Register-Magnetic Tape (2LLPC-Register): This test checks that this plant register operates when the transverter completes a call requiring a message unit entry. . 8

BL. LAMA Transverter-Bulk Billing Failure Register-Magnetic Tape (LBBF-Register): This test checks that this plant register operates when the transverter in a second trial condition fails on a service call requiring a message unit entry. 9

BM. LAMA Transverter-Toll Statement Register-Magnetic Tape (LTC- Register): This test checks that this plant register operates on a toll statement service call. . 10

BN. LAMA Transverter-Toll Statement Call Free Register Magnetic Tape- (LFTC-Register): This test checks that this plant register operates when the transfer and make-busy circuit determines on a second trial call that the on-line recorder is in trouble. 11

BO. Trunk Control Usage-Magnetic Tape (REC PC-Register): This test checks that this plant register operates when the associated trunk control puts an entry on the magnetic tape for 20 or more recorders or trunk control circuits. 12

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 ***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 During Tests BI through BN, plant register REC PC- will operate. The reporting of this register operation should be in accordance with local instructions.

1.07 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.

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

1.09 ▶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, and TVT.◀

2. APPARATUS

2.01 The apparatus required for each test is listed in Table A. 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 2.06 and 2.07 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 A

APPARATUS	TESTS							
	BH	BI	BJ	BK	BL	BM	BN	BO
Test Circuit (2.02)	1	1	1	1	1	1	1	1
Cord (2.03)	1	1	1	1	1	1	1	
Plug (2.04	✓	✓	✓	✓	✓	✓	✓	
Tools (2.05)							✓	

✓ 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 322A (make-busy) plug (used to make outgoing trunks busy and busying out the trouble recorder).

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

2.06 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).

2.07 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
	Note: Refer to ▮1.06 through 1.08.◀	
1a	If tests are to be performed without portable test lamps— 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.	

STEP	ACTION	VERIFICATION
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 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.	
11	Momentarily operate RL key.	All lamps extinguished.
12c	If testing 4-wire switching systems— Operate 4W key.	
13c	Select control digits.	

STEP	ACTION	VERIFICATION
4. METHOD		
BH.	**Incoming Register Pretranslator-First and Second Trial Register (IRPTR-and IRPST Register)**	
14	At MTFC— Interconnect 8 and 9T of PTT relay.	
15	At MTF— Select PTT class of test.	
16	Operate IRPT key.	
17	Select pretranslator under test.	
18	Insert make-busy plug into TRMB-PRT- jack associated with pretranslator under test.	
19	Momentarily operate ST key.	At plant register circuit— IRPTR- register operated.

STEP	ACTION	VERIFICATION
20	At MTF— Momentarily operate RL key.	All lamps extinguished.
21	Operate TR2 key.	
22	Momentarily operate ST key.	At plant register circuit— IRPST register operated.
23	At MTF— Momentarily operate RL key.	All lamps extinguished.
24	Remove make-busy plug from TVMB-PRT-jack.	
25	Restore TR2 key.	
26	Repeat Steps 17 through 25 for remaining incoming register pretranslator.	
27	Remove interconnection from SC relay.	
28	Restore all keys and switches not required for next test.	

BI. LAMA Transverter Usage Register-Magnetic Tape (TVPC LAMA, TVPC ANI Register)

AMA Operation

14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG keys.	
16	Select code pattern 3.	
17	Select message billing index 9.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	

STEP	ACTION	VERIFICATION
23	At transverter circuit under test— Interconnect 4F and 4M of SC relay.	
24	At MTF— Select transverter under test.	
25	Momentarily operate ST key.	At plant register circuit— TVPC LAMA register operated.
26	At MTF— Momentarily operate RL key.	All lamps extinguished.
27	Operate OBS key.	
28	Momentarily operate ST key.	At plant register circuit— TVPC LAMA register operated.
29	At MTF— Momentarily operate RL key.	All lamp extinguished.
30	Remove make busy plug from TVMB- jack associated with transverter under test.	
31	Restore all keys and switches not required for next test.	
ANI Operation		
32	At MTF— Insert make-busy plug into TRMB-TV jack associated with transverter under test.	
33	Select TVT (ANI) class of test.	
34	Select originating test line.	
35	Momentarily operate ST key.	At plant register circuit— TVPC ANI register operated.
36	At MTF— Momentarily operate RL key.	
37	At transverter under test— Remove interconnection from SC relay.	
38	At MTF— Remove make-busy plug from TVMB- jack associated with transverter under test.	
39	Restore all keys and switches not required for next test.	

STEP	ACTION	VERIFICATION
40	Repeat Steps 14 through 39 for remaining transverter(s) to be tested.	

BJ. LAMA Transverter-First and Second Trial Failure Register-Magnetic Tape (TTR, TST Registers)

14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG, ▶TKK◀ keys.	
16	Select code pattern 3.	
17	Select message billing index 9.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	
23	Insert make-busy plug into TRMB-TV jack associated with transverter under test.	
24	At transverter circuit under test— Interconnect 7F to 7M of SC relay.	
25	At MTF— Select transverter under test.	
26	Momentarily operate ST key.	At plant register circuit— TTR- register operated.
27	At MTF— Momentarily operate RL key.	All lamps extinguished.
28	Operate TR2 key.	
29	Momentarily operate ST key.	At plant register circuit— TST register operated.
30	At MTF— Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
31	At transverter under test— Remove interconnection from SC relay.	
32	At MTF— Remove make-busy plug from TVMB- and TRMB-TV jacks.	
33	Restore TR2 key.	
34	Repeat Steps 22 through 33 for remaining transverter(s) to be tested.	
35	Restore all keys and switches not required for next test.	
BK. LAMA Transverter-Message Unit Entry Register-Magnetic Tape (2LLPC Register)		
14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG keys.	
16	Select code pattern 3.	
17	Select message billing index for message unit entry.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	
23	At transverter under test— Interconnect 4F and 4M of SC relay.	
24	At MTF— Select transverter under test.	
25	Momentarily operate ST key.	At plant register circuit— 2LLPC register operated.
26	At MTF— Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
27	At transverter under test— Remove interconnection from SC relay.	
28	At MTF— Restore transverter to service.	
29	Repeat Steps 22 through 28 for remaining transverter(s) to be tested.	
30	Restore all keys and switches not required for next test.	

BL. LAMA Transverter-Bulk Billing Failure Register-Magnetic Tape (LBBF Register)

14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG, ▶TKK,◀ TR2 keys.	
16	Select code pattern 3.	
17	Select message billing index for message unit call.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	
23	Insert make-busy plug into TRMB-TV jack associated with transverter under test.	
24	At transverter circuit— Interconnect 6F and 6M of SC relay.	
25	At MTF— Select transverter under test.	
26	Momentarily operate ST key.	At plant register circuit— LBBF register operated.

STEP	ACTION	VERIFICATION
27	At MTF— Momentarily operate RL key.	All lamps extinguished.
28	At transverter under test— Remove interconnection from SC relay.	
29	At MTF— Remove make-busy plugs from TVMB-, TRMB-TV jacks associated with transverter under test.	
30	Repeat Steps 22 through 29 for remaining transverter(s) to be tested.	
31	Restore all keys and switches not required for next test.	

BM. LAMA Transverter-Toll Statement Register-Magnetic Tape (LTC Register)

14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG keys.	
16	Select code pattern 3.	
17	Select message billing index 9.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	
23	At transverter under test— Interconnect 4F and 4M of SC relay.	
24	At MTF— Select transverter under test.	
25	Momentarily operate ST key.	At plant register circuit— LTC register operated.
26	Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
27	At transverter under test— Remove interconnection from SC relay.	
30	At MTF— Remove make-busy plug from TVMB- jack associated with transverter under test.	
31	Repeat Steps 22 through 30 for remaining transverters to be tested.	
32	Restore all keys and switches not required for next test.	

BN. LAMA Transverter-Toll Statement Free Register-Magnetic Tape (LFTC Register)

14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG, TR2, TKK, ANSE keys.	
16	Select code pattern 3.	
17	Select message billing index 9.	
18	Set TCU switch to E.	
19	Set RN switch to select any trunk control units digit.	
20	Operate AD/OD (1/O) key to select trunk control tens digit.	
21	Select originating line location.	
22	Insert make-busy plug into TVMB- jack associated with transverter under test.	
23	Insert make-busy plug into TRMB-TV jack associated with transverter under test.	
24	At transverter circuit— Interconnect 6F and 6M of SC relay.	
25	Block operated 2TF relay.	
26	At MTF— Select transverter under test.	
27	Momentarily operate ST key.	At plant register circuit— LFTC register operated.

STEP	ACTION	VERIFICATION
28	At MTF— Momentarily operate RL key.	All lamps extinguished.
29	Restore TKK key.	
30	Operate SP key.	
31	Momentarily operate ST key.	At plant register circuit— LFTC register operated.
32	At MTF— Momentarily operate RL key.	All lamps extinguished.
33	At transverter under test— Remove interconnection from SC relay.	
34	Remove blocking tool from 2TF relay.	
35	At MTF— Remove make-busy plug from TRMB-TV, TVMB- jacks.	
36	Restore SP key.	
37	Repeat Steps 22 through 35 for remaining transverter(s) to be tested.	
38	Restore all keys and switches not required for next test.	
BO.	**Trunk Control Usage-Magnetic Tape (REC PC-Register)**	
14	At MTF— Select TVT (AMA) class of test.	
15	Operate TVT1, DR, RST, 4DG keys.	
16	Select code pattern 3.	
17	Select message billing index 9.	
18	Set RN switch to 0.	
19	Select originating line location.	
20	Select any transverter.	
21	Set TCU switch to select trunk control circuit.	
22	If trunk control 10 through 19 is selected— Operate TCNT key.	

STEP	ACTION	VERIFICATION
23	Operate AD/OD (1/O) key to select trunk control tens digit.	
24	Momentarily operate ST key.	At plant register circuit— REC PC- register operated.
25	At MTF— Momentarily operate RL key.	
26	Repeat Steps 21 through 25 for remaining trunk control circuit(s).	
27	Restore TVT1, 4DG keys.	
28	Operate ANSE key.	
29	Repeat Steps 21 through 25 for all trunk control circuits to be tested.	
30	Restore all keys and switches not required for next test.	