PLANT REGISTERS—PART 14

TESTS USING MASTER TEST FRAME

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 14 in a series of sections that describe methods for testing plant registers.

1.02 This section is reissued to add a test for an AIS sender usage plant register and to make minor changes.

This issue affects Equipment Test Lists.

1.03 The tests covered are:

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.

1.06 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Parts 3 and 4

TABLE A

ACTION AND VERIFICATION REQUIRED AT	TESTS				
	BD	BD.1	BE	BF	BG
Master Test Frame	✓	✓	✓	✓	✓
Marker Frame				✓	✓
Plant Register Circuit	✓	✓	✓	✓	✓
AIS Sender Circuit	✓	✓	✓		

✓ As Required

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.

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 2.09 and 2.10 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				
	BD	BD.1	BE	BF	BG
Test Circuit (2.02)	1	1	1	1	1
Test Circuit (2.03)	1	1		1	
Test Circuit (2.04)			1		1
Test Set (2.05)			1		1
Cord (2.06)			1		1
Cord (2.07)				1	
Cord (2.08)	1	1	1		
Tools (2.11)				✓	✓
322A (make-busy) Plug	✓	✓	✓	✓	✓

✓ As Required

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

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

2.04 Sender test circuit, SD-25675-01 (for use in testing senders when the automatic monitor, register, and sender test circuit is not provided).

2.05 Sender test set, J24756A (SD-25674-01) (for use with the sender test circuit when the automatic monitor, register, and sender test circuit is not provided).

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

2.07 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 fixed contacts of wire-spring-type relays).

2.08 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, one 419A (test connector) tool (for use in connecting ground to movable contacts of wire-spring-type relays).

2.09 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).

2.10 38B lamp socket equipped with a 2Y lamp (required when a portable test lamp is used).

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

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
	Note: Refer to ▶1.07 through 1.09.◀	
All Tests		
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.	

STEP	ACTION	VERIFICATION
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 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.

4. METHOD

STEP	ACTION	VERIFICATION
BD.	**Automatic Intercept Service Sender Time-Out Register (AIS Register)—Line Link Pulsing Not Provided—Using Automatic Monitor, Register, and Sender Test Circuit**	
▶Not Required for ETS◀		
12	Select marker.	
13	Select SDR class of test.	
14	Select incoming class of call with an OA translator indication.	

STEP	ACTION	VERIFICATION
15	Select A_ through E_digits to direct call to any directory number.	
16	Select incoming trunk class.	
17	Select AIS sender.	
18	Operate MAC key.	
	Note: Allow 1 minute for tubes to heat.	
19	Operate STT, OTR, AISD, AIRI keys.	
20	Insert make-busy plug into MB jack associated with sender selected for test.	
21	Release (push-in) CTR key associated with sender selected for test.	
22	At sender circuit under test— Connect ground to 6B of T relay.	
23c	If AIS line circuits are arranged for CX supervision— At MTF— Operate CX key.	
24	Momentarily operate ST key.	At plant register circuit— AIS plant register associated with AIS sender scored once.
25	At MTF— Momentarily operate RL key.	
26	At sender circuit under test— Remove test connection from T relay.	
27	At MTF— Restore CTR key to its original position.	
28	Remove make-busy plug from sender MB- jack.	
29	Repeat Steps 12 through 28 for each AIS sender to be tested for plant register operation.	
30	Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
BD.1	▶**Automatic Intercept Service Sender Usage Register (AI Register)—Line Link Pulsing Not Provided—Using Automatic Monitor, Register, and Sender Test Circuit**	
12	Select marker.	
13	Select SDR class of test.	
14	Select incoming class of call with an OA translation indication.	
15	Select A_ through E_ digits to direct call to any directory number.	
16	Select incoming trunk class.	
17	Set AIS (0-2) switch to select sender 0-2 within selected group.	
18	Operate SG(0-10) key or set SG SEL (0-10) switch to select sender group 0-10.	
19	Operate AIS and MAC keys. *Note:* Allow 1 minute for tubes to heat.	
20	Operate STT, OTR, AIRI keys.	
21	Select route advance 0.	
22	Make-busy AIS sender selected for test.	
23	Operate MF key.	
24	Release (push-in) CTR_ key.	
25	Momentarily operate ST key.	OK lamp lighted. At plant register cabinet— AI register scored once.
26	At MTF— Momentarily operate RL key.	All lamps extinguished.
27	Restore CTR_ key to its original position.	
28	Remove make-busy plug from sender MB jack.	
29	Repeat Steps 12 through 27 for each AIS sender to be tested for plant register usage operation.	

STEP	ACTION	VERIFICATION
30	Restore all keys and switches not required in next test.◆	
BE.	**Automatic Intercept Service Sender Time-Out Register (AIS Register)—Line Link Pulsing Not Provided—Using Sender Test Circuit**	
12	At test set— Patch SDT1, SDT2 jacks to SDT1, SDT2 jacks of MTF.	
13	At MTF— Select marker.	
14	Select SDT class of test.	
15	Select incoming class of call with an OA translator indication.	
16	Select A_ through E_ digits to direct call to any directory number.	
17	Select incoming trunk class.	
18	Select AIS sender.	
19	Operate AIRI key.	
20c	If AIS line circuits are arranged for CX supervision— Set SDT switch to MF OCX.	
21d	If AIS line circuits are arranged for reverse battery supervision— Set SDT switch to MF.	
22	At test set— Operate REV key.	
23	At MTF— Insert make-busy plug into MB jack associated with sender selected for test.	
24	Release (push-in) CTR key associated with sender selected for test.	
25	At sender circuit under test— Connect ground to 6B of T relay.	
26	At test set— Momentarily operate ST key.	At plant register circuit— In 12 to 24 seconds—

STEP	ACTION	VERIFICATION
		AIS plant register associated with AIS sender scored once.
27	At test set— Momentarily operate RL key.	
28	At sender circuit under test— Remove test connection from T relay.	
29	At MTF— Restore CTR key to its original position.	
30	Remove make-busy plug from sender MB_ jack.	
31	Repeat Steps 12 through 30 for each AIS sender to be tested for plant register operation.	
32	Restore all keys and switches not required in next test.	

BF. Automatic Intercept Service Sender Time-Out and Trunk Guard Test Failure Register (SS Register)—Line Link Pulsing Provided—Using Automatic Monitor, Register, and Sender Test Circuit

12	Select SDR class of test.	
13	Select marker.	
14	Select sender.	
15	Select incoming class of call with an OA translator indication.	
16	Select A_ through E_ digits to direct call to a regular intercepted directory number.	
17	Select incoming trunk class.	
18	Operate MAC key. *Note:* Allow 1 minute for tubes to heat.	
19	Operate STT, LLPT, TMT keys.	
20	Release (push-in) CTR key associated with sender selected for test.	
21c	If SLL key is provided— Operate SLL key.	

STEP	ACTION	VERIFICATION
22d	If LLS switch is provided— Set LLS switch to 0.	
23e	If AIS line circuits are arranged for CX supervision— Operate CX key.	
24	Momentarily operate ST key.	At plant register circuit— In 12 to 24 seconds— SS plant register associated with sender group containing MF sender under test scored once.
25	At MTF— Momentarily operate RL key.	
26	Insert make-busy plug into MMB_ jack associated with marker selected for test.	
27	Insert make-busy plug into TRMB M_ jack associated with marker selected for test.	
28	At marker frame— Interconnect 7 of SCT, 7 of TRTR relays.	
29	Block nonoperated MT18 relay.	
30	At MTF— Momentarily operate ST key.	At plant register circuit— In 2 to 5 seconds— SS plant register associated with sender group containing MF sender under test scored once.
31	At MTF— Momentarily operate RL key.	
32	Restore CTR key to its original position.	
33	Repeat Steps 12 through 32 for each MF sender arranged for AIS.	
34	At marker frame— Remove test connection from SCT, TRTR relays.	
35	Remove blocking tool from MT18 relay.	
36	At MTF— Remove make-busy plug from TRMB M_ jack.	
37	Remove make-busy plug from MMB_ jack.	
38	Repeat Steps 12 through 37 for each completing marker.	

STEP	ACTION	VERIFICATION
39	Restore all keys and switches not required in next test.	
BG.	**Automatic Intercept Service Sender Time-Out and Trunk Guard Test Failure Register (SS Register) Line Link Pulsing Provided—Using Sender Test Set**	
12	At test set— Patch SDT1, SDT2 jacks to SDT1, SDT2 jacks of MTF.	
13	At MTF— Select marker.	
14	Select SDT class of test.	
15	Select incoming class of call with an OA translator indication.	
16	Select A_ through E_ digits to direct call to a regular intercepted directory number.	
17	Select incoming trunk class.	
18	Select sender.	
19c	If AIS line circuits are arranged for reverse battery supervision— Set SDT switch to MF.	
20d	If AIS line circuits are arranged for CX supervision— Set SDT switch to MF OCX.	
21	Operate LLPT, HTR keys.	
22	Release (push-in) CTR key associated with sender selected for test.	
23	At test set— Operate OT key.	
24	Momentarily operate ST key.	At plant register circuit— In 12 to 24 seconds— SS plant register associated with sender group containing MF sender under test scored once.
25	At test set— Momentarily operate RL key.	

STEP	ACTION	VERIFICATION
26	At MTF— Restore HTR key.	
27	Insert make-busy plug into MMB_ jack associated with marker selected for test.	
28	Insert make-busy plug into TRMB M_ jack associated with marker selected for test.	
29	At marker frame— Block nonoperated MT18 relay.	
30	At test set— Momentarily operate ST key.	At plant register circuit— In 2 to 5 seconds— SS plant register associated with sender group containing MF sender under test scored once.
31	At MTF— Momentarily operate RL key.	
32	Restore CTR key to its original position.	
33	Repeat Steps 12 through 32 for each MF sender arranged for AIS.	
34	At marker frame— Remove blocking tool from MT18 relay.	
35	At MTF— Remove make-busy plug from TRMB M_ jack.	
36	Remove make-busy plug from MMB_ jack.	
37	Repeat Steps 12 through 36 for each completing marker.	
38	Restore all keys and switches not required in next test.	