PLANT REGISTERS—PART 13
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 13 in a series of sections that describe methods for testing plant registers.

1.02 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.

TABLE A

ACTION AND/OR VERIFICATION REQUIRED AT:	TESTS			
	AZ	BA	BB	BC
Master Test Frame	√	√	√	√
Plant Register Circuit	√	√	√	√
Marker Frame	√	√		
Coin Supervisory Link Frame			√	√
Coin Supervisory Circuit			√	√
Trunk Relay Rack			√	√
Voice Alarm and Control Circuit				√

√As required.

1.06 When the test intraoffice trunk is not provided, Tests BB and BC are made with the trunks made busy which have appearances in the same horizontal group of the coin supervisory link frame as the intraoffice trunk selected for test.

1.07 In Test BC, space is provided to enter the number of minutes which must elapse between the operation of the ANS key and subsequent actions when the test IAO trunk is not provided. In all cases, this interval is either the initial timing period, or the initial timing period less thirty seconds, as established for the local area.

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

1.09 ***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.

1.10 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.

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

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 2.06 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 B

APPARATUS	TESTS			
	AZ	BA	BB	BC
Test Circuit (2.02)	1	1	1	1
Test Circuit (2.03)	1	1	1	1
Head Telephone Set (2.04)			1	1
Cord (2.05)			1	1
322A (make-busy) Plug	✓	✓	✓	✓
Tools (2.08)	✓	✓	✓	✓

✓As required.

2.02 Master test control circuit SD-25800-01.

2.03 MTF trunk test circuit SD-25918-01.

2.04 Head telephone set (for use at MTF).

2.05 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).

2.06 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).

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

2.09 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 1.10 and 1.11.	
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.	
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.	

STEP	ACTION	VERIFICATION
	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.
Tests AZ, BA		
12c	If testing 4-wire switching systems— Operate 4W key.	
13c	Select control digits.	
Tests BB, BC		
14d	If test IAO trunk is not provided— Determine from office records an IAO trunk arranged for coin service which has access to coin supervisory circuit under test.	
15d	At coin supervisory link frame— Determine which trunks have appearances in same horizontal group as trunk selected in Step 14d.	
16d	At relay rack or OGT bay (as required)— Make busy all trunks in horizontal group.	
17e	If test IAO trunk is not provided and coin supervisory link circuit is nonwire-spring-relay type— At coin supervisory link frame— Block operated all RB- relays in same horizontal group as selected trunk, except RB0 relay.	
18f	If test IAO trunk is not provided and coin supervisory link circuit is wire-spring-relay type— At coin supervisory line frame— Block operated all SB- relays in the same horizontal group as selected trunk, except SB0 relay.	
19g	If test IAO trunk is provided— Determine from office records test IAO trunk having access to coin supervisory circuit under test.	

STEP	ACTION	VERIFICATION
20g	At MTF— Insert make-busy plug into MB- jack associated with selected test IAO trunk.	IAOMB- lamp associated with test IAO trunk lighted when trunk is available for test.
21g	Set CSS switch to select first coin supervisory circuit in group.	
22	Select completing marker.	
23	Select OR class of call and associated translator indication.	
24	Select coin class of service and rate treatment as required.	
25	Select IAO class of test.	
26	Select route advance 0.	
27	Select ringing combination 1.	
28	Select trunk as determined in Step 14d or 19g.	
29	Select A-, B-, C- digits to direct call to IAO trunk under test.	
30	Operate GPA/GPB key when selected trunk is in an allotted group.	
31	Operate NTFS, NTTS, TTL keys.	

4. METHOD

STEP	ACTION	VERIFICATION
AZ.	**Call Waiting Service Usage Register (CWP Register)**	
14	Select marker.	
15	Select LT class of test.	
16	Set FT, FU switches to select a call waiting link.	
17	Set CWC switch to select a call waiting circuit on the selected call waiting link.	
18	Select office designation.	

STEP	ACTION	VERIFICATION
19	Select A- through E- digits as required to direct call to a call waiting line associated with the selected call waiting link.	
20	Operate CWTV, LBL, TLK, ANS keys.	
21	Insert make-busy plug into M-C-MB or MMB jack associated with combined or completing marker under test.	
22d	If marker is nonwire-spring-relay type— At marker frame— Block nonoperated MT13 relay.	
23e	If marker is wire-spring-relay type— At marker frame— Block nonoperated MT18 relay.	
24	At MTF— Momentarily operate ST key.	At plant register circuit— CWP plant register scored once.
25	At MTF— Momentarily operate RL key.	All lamps extinguished.
26	At marker frame— Remove blocking tool from MT13 or MT18 relay.	
27	At MTF— Remove make-busy plug from M-C-MB or MMB jack.	
28	Repeat Steps 14 through 27 for each combined or completing marker to be tested for plant register operation.	
29	Restore all keys and switches not required in next test.	

BA. Call Waiting Service First and Second Trial Failures (CW1F, CW2F Registers)

14	Select marker.	
15	Select LT class of test.	
16	Set FT, FU switches to select a call waiting link.	
17	Set CWC switch to select a call waiting circuit on selected call waiting link.	

STEP	ACTION	VERIFICATION
18	Select office designation.	
19	Select A- through E- digits as required to direct call to a call waiting line associated with selected call waiting link.	
20	Operate CWTV, LBL keys.	
21	Set CW switch to XCW.	
22	Insert make-busy plug into M-C-MB or MMB jack associated with combined or completing marker under test.	
23	At MTF— Insert make-busy plug into TRMB M- jack associated with combined or completing marker under test.	
24d	If marker is nonwire-spring-relay type— At marker frame— Block nonoperated MT13 relay.	
25e	If marker is wire-spring-relay type— At marker frame— Block nonoperated MT18 relay.	
26	At MTF— Momentarily operate ST key.	At plant register circuit— CW1F plant register scored once.
27	At MTF— Momentarily operate RL key.	All lamps extinguished.
28	Operate TR2 key.	
29	Momentarily operate ST key.	At plant register circuit— CW2F plant register scored once.
30	Momentarily operate RL key.	All lamps extinguished.
31	At MTF— Restore TR2 key.	
32	At marker frame— Remove blocking tool from MT13 or MT18 relay.	
33	At MTF— Remove make-busy plug from TRMB M- jack.	
34	Remove make-busy plug from M-C-MB or MMB jack.	

STEP	ACTION	VERIFICATION
35	Repeat Steps 14 through 34 for each combined or completing marker to be tested for plant register operation.	
36	Restore all keys and switches not required in next test.	

BB. Stuck Coin Recycle Attempt and Recycle Failure Registers (RC, RCF Registers)

32g	If test IAO trunk is provided— At coin supervisory circuit under test— Interconnect 8 of TSTA, 4 of RC relays.	
33h	If coin service improvement (dial tone first) is provided— At MTF— Operate DTNF key.	
34	Operate TLK, STK CN keys.	
35	Momentarily operate ST key.	AS, TS lamps lighted. R- lamp flashes. If test IAO trunk is provided— CSI lamp lighted.
36	Restore TLK key.	TS, R- lamps extinguished. CND lamp lighted. CR lamp momentarily lighted twice. At plant register circuit— RC, RCF plant registers associated with coin supervisory group containing coin supervisory circuit under test scored once.
37	At MTF— Restore STK CN key.	CND lamp extinguished.
38	Operate TLK key.	Signal to operator.
39	When operator answers— Advise operator this is a test call and to disconnect.	
40	Restore TLK key.	
41	Momentarily operate RL key.	All lamps extinguished.
42d	If test IAO trunk is not provided— At coin supervisory link frame— Block operated released RB- or SB- relay.	

STEP	ACTION	VERIFICATION
43d	Remove blocking tool from next RB- or SB- relay.	
44g	If test IAO trunk is provided— At coin supervisory circuit under test— Remove test connection from TSTA, RC relays.	
45g	At MTF— Set CSS switch to select next coin supervisory circuit in group.	
46	Repeat Steps 14d through 45g for each coin supervisory circuit in group under test.	
47d	If test IAO trunk is not provided— At coin supervisory link frame— Remove blocking tools from RB- or SB- relays.	
48d	At relay rack or OGT bay (as required)— Restore to service trunks made busy for tests.	
49g	If test IAO trunk is provided— At jack, lamp, and key circuit— Remove make-busy plug from test IAO trunk MB- jack.	IAOMB- lamp extinguished.
50	Restore all keys and switches not required in next test.	

BC. Overtime Announcement Failure Register (OTM Register)

32g	If test IAO trunk is provided— At coin supervisory circuit under test— Interconnect 8 of TSTA, 2 of OTR relays.	
33h	If 6A announcement system is provided— At coin supervisory circuit under test— Insulate 3M of ANR relay.	
34i	If 7A announcement system is provided— At voice alarm and control circuit— Operate OS-AR key.	
35	At MTF— Operate TLK, CN keys.	
36	Momentarily operate ST key.	AS, TS lamps lighted. R- lamp flashes. If test IAO trunk is provided— CSI lamp lighted.

STEP	ACTION	VERIFICATION
37	Operate ANS key.	R- lamp extinguished. If test IAO trunk is not provided— 30 seconds before end of initial timing period, ( ) minutes— CC lamp momentarily lighted. CND lamp lighted. If test IAO trunk is provided— After 2 to 5 seconds— CC lamp momentarily lighted. CND lamp lighted.
38	Restore CN key.	CND lamp extinguished. If test IAO trunk is not provided and 6A announcement system is provided— 30 seconds after end of initial timing period, ( ) minutes— Signal to operator. At plant register circuit— OTM plant register associated with coin supervisory group containing coin supervisory circuit under test scored once. If test IAO trunk is not provided and 7A announcement system is provided— At end of initial timing period, ( ) minutes— Signal to operator. At plant register circuit— OTM plant register associated with coin supervisory group containing coin supervisory circuit under test scored once. If test IAO trunk and 6A announcement system are provided— In approximately 1 minute— Signal to operator. At plant register circuit— OTM plant register associated with coin supervisory group containing coin supervisory circuit under test scored once. If test IAO trunk and 7A announcement system are provided— After 15 seconds— Signal to operator. At plant register circuit— OTM plant register associated with coin supervisory group containing coin supervisory circuit under test scored once.
39	When operator answers— Advise operator this is a test call and to disconnect.	
40	At MTF— Restore TLK, ANS keys.	AS, TS lamps extinguished.

STEP	ACTION	VERIFICATION
41	Momentarily operate RL key.	All lamps extinguished.
42h	If 6A announcement system is provided— At coin supervisory circuit under test— Remove insulator from ANR relay.	
43d	If test IAO trunk is not provided— At coin supervisory link frame— Block operated released RB- or SB- relay.	
44d	Remove blocking tool from next RB- or SB- relay.	
45g	If test IAO trunk is provided— At coin supervisory circuit under test— Remove test connection from TSTA, OTR relays.	
46g	At MTF— Set CSS switch to select next coin supervisory circuit in group.	
47	Repeat Steps 14d through 46g for each coin supervisory circuit to be tested for plant register operation.	
48i	If 7A announcement system is provided— At voice alarm and control circuit— Restore OS-AR key.	
49d	If test IAO trunk is not provided— At coin supervisory link frame— Remove blocking tools from RB- or SB- relays.	
50d	At relay rack or OGT bay as required— Restore to service trunks made busy for tests.	
51g	If test IAO trunk is provided— At jack, lamp, and key circuit— Remove make-busy plug from test IAO trunk MB- jack.	IAOMB- lamp extinguished.
52	Restore all keys and switches not required in next test.	