TRAFFIC REGISTERS—PART 13

TESTS USING MASTER TEST FRAME

NO. 5 CROSSBAR OFFICES

1. General

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

1.02 This section is reissued to make minor changes and additions as required. Revision arrows are used to emphasize the more significant changes.

1.03 This reissue affects Equipment Test Lists.

1.04 The tests covered are:

1.05 All tests require action and verification at the traffic register cabinet.

1.06 Tests A through H require action at the relay rack frame of the trunk circuit associated with the traffic register under test.

1.07 Tests I and J require action and verification at the master test frame (MTF) and combined or completing marker frame. ▶Both the IFM and IFFM registers may score while perfoming these tests.◀

1.08 ***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, the steps designated by that letter should be omitted.

1.09 The manner of selecting some circuits and test conditions at the master test frame (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.

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

2. Apparatus

All Tests Except B

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

Tests B, C, I, and J

2.02 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 tool, one 419A (test connector) tool (for use in connecting battery or ground to springs of nonwire-spring relays), and one 639A (relay contact connector) tool (for use in connecting battery or ground to springs of wire-spring relays).

Tests C, D, F, and G

2.03 KS-3008 stopwatch.

Tests I and J.

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

2.05 322A (make-busy) plugs as required.

2.06 349A (make-busy) plugs as required.

2.07 The following apparatus may also be required.

(a) Apparatus covered in 2.08 and 2.09 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.

(d) Two 26 cords are required in offices where it is necessary to patch the traffic register to the circuit under test and to patch the traffic register to a battery supply.

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

2.09 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
1a	If traffic registers are arranged for patching— At traffic register cabinet— Insert cord tip of 26 cord into P- jack for circuit associated with register to be tested.	
2a	Insert cord tip on other end of 26 cord into black jack associated with register to be tested (black jack is located on mounting plate with register).	
3a	Insert cord tip of 26 cord into red jack on mounting plate with register to be tested.	
4a	Insert cord tip on other end of 26 cord into any S- jack located at bottom of jack field.	
5b	If traffic registers are arranged for patching and if battery supply for register to be tested is controlled by C- toggle switch— If C- toggle switch is in OFF position— Operate to ON position.	
6c	If traffic registers are not arranged for patching— Determine, from local office records, functional designation of peg count BAT key associated with register to be tested.	
7c	At traffic register frame— Operate BAT key associated with register to be tested.	
8d	If tests are to be performed without portable lamp— Establish talking circuit between frames where test is to be performed and where observations are to be made.	
9e	If tests are to be performed with portable lamp— At frame where action is to be taken— Insert plug of 2W17C cord, equipped with	

STEP	ACTION	VERIFICATION
	two KS-6278 tools, into SP jack of miscellaneous circuit.	
10e	Determine, from circuit drawing of circuit associated with register to be tested, location of terminal on terminal strip at which common lead to traffic register circuit is connected.	
11e	Connect one lead of 2W17C cord to terminal on terminal strip determined in Step 10e.	
12e	Connect other lead of 2W17C cord to battery.	
13e	Connect leads of 38B lamp socket to leads of another 2W17C cord equipped with two KS-6278 tools.	
14e	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.	
15e	Place lamp so that it can be observed easily.	
16f	If tests are performed with portable lamp and circuit associated with register to be tested removes ground from common lead to traffic register circuit to operate register— Observe lamp when register operates.	Lamp extinguished.
17g	If tests are performed with portable lamp and circuit associated with register to be tested applies ground to common lead to traffic register circuit to operate register— Observe lamp when register operates.	Lamp lighted.
18	If tests are to be performed with portable lamp— To observe scoring of register when using test lamp, proceed as follows: (a) For first observation of scoring of register, observe that test lamp indicates proper condition on common lead and that register scores as required. (b) For subsequent observations of scoring of same register, observe lamp indications only. ***Note:*** When the register to be tested scores at timed intervals, the test lamp will not flash with the scoring of the register.	

STEP	ACTION	VERIFICATION
Tests I and J		
19	At MTF— Restore all keys and switches.	
20	Momentarily operate RL key.	All lamps extinguished.
21h	If testing traffic registers in 4-wire offices— Operate 4-W key.	
22h	Set CD switch as required for control digit information.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Peg Count Register for Incoming or Intertoll Trunk Terminating Peg Count, Through Peg Count, or Operator Assist Peg Count ▶PCL or PCT Lead◀		
19	Make busy trunk circuit in incoming trunk group to all traffic in approved manner.	
20	Determine from SD drawing of trunk circuit associated with register under test, designation of relays which have make contacts in series with ▶PCL◀ lead (local).	
21	At relay rack frame of trunk circuit associated with register under test— Block operated all relays except one as determined in Step 20.	
22	Momentarily operate remaining relay to connect ground to ▶PCL◀ lead.	At traffic register cabinet— Register scored once.
23	At relay rack frame of trunk circuit associated with register under test— Remove blocking tools from all relays.	
24h	If trunk circuit associated with register under test is arranged for through-switched calls— Determine from SD drawing of trunk circuit, designations of relays which have make contacts in series with ▶PCT◀ lead (through).	
25h	Block operated all relays except one as determined in Step 24h.	

STEP	ACTION	VERIFICATION
26h	Momentarily operate remaining relay to connect ground to ◗PCT◖ lead.	At traffic register cabinet— Register scored once.
27h	At relay rack frame of trunk circuit associated with register under test— Remove blocking tools from all relays.	
28	Repeat Steps 19 through 27h for each trunk circuit associated with register under test.	
29	Restore all trunk circuits made busy in approved manner.	
30	At traffic register cabinet— Restore all keys operated for test.	
31	Remove all patching cords placed for test.	
B. Peg Count Register for Directional Reservation Peg Count (PC Lead)		
19	At relay rack frame of circuit associated with register under test— Operate B key to TEST RLS position.	
20	Connect ground to contact 12 fixed of A relay.	
21	Momentarily operate A key.	At traffic register cabinet— Register scored once.
22	At relay rack frame of circuit associated with register under test— Disconnect ground from A relay.	
23	Restore B key to NORM position.	
24	At traffic register cabinet— Restore all keys operated for test.	
25	Remove all patching cords placed for test.	
C. Group-Busy Time Register for Directional Reservation of 2-Way Intertoll Trunks (GB Lead)		
19	At relay rack frame of circuit associated with register under test— Operate B key to TST RLS position.	
20	Block nonoperated MB0, MB1 relays.	
21	Connect ground to contact 12 fixed of A relay.	

STEP	ACTION	VERIFICATION
22	Operate A key.	A relay operated. At traffic register cabinet— Register scored at 6-second intervals.
23	At relay rack frame of circuit associated with register under test— Disconnect ground from contact 12 fixed of A relay.	A relay released. At traffic register cabinet— Register stopped scoring.
24	At relay rack frame of circuit associated with register under test— Restore A key.	
25	Restore B key to NORM position.	
26	Remove blocking tools from MB0, MB1 relays.	
27	At traffic register cabinet— Restore all keys operated for test.	
28	Remove all patching cords placed for test.	

D. Group-Busy Time Register for Intertoll Trunk Concentrating Equipment Outgoing Trunks (GB Lead)

19	At relay rack frames of all trunk circuits associated with register under test— Insulate contact 6 top of OS relays.	At traffic register cabinet— Register scored at 6-second intervals.
20	At relay rack frames of all trunk circuits associated with register under test— Remove insulators from OS relays.	At traffic register cabinet— Register stopped scoring.
21	At traffic register cabinet— Restore all keys operated for test.	
22	Remove all patching cords placed for test.	

E. Peg Count Register for Intertoll Trunk Concentrating Equipment Peg Count (PC Lead)

Note: Perform Steps 19 through 22 as rapidly as possible, since all associated trunk circuits in the controller are busy when GP- relays are blocked nonoperated.

19	At relay rack frame of trunk circuit associated with register under test— Block nonoperated all GP- relays.	

STEP	ACTION	VERIFICATION
20	Momentarily operate HG1 relay.	At traffic register cabinet— Register scored once.
21	At relay rack frame of trunk circuit associated with register under test— Momentarily operate HG2 relay.	At traffic register cabinet— Register scored once.
22	At relay rack frame of trunk circuit associated with register under test— Remove blocking tools from all GP- relays.	
23	At traffic register cabinet— Restore all keys operated for test.	
24	Remove all patching cords placed for test.	

F. Group-Busy Time Register for 4-Wire, 2-Way Intertoll Trunks (GB Lead)

Caution: Incoming trunk portions of circuits are not removed from service for this test. Exercise caution so as not to interfere with service on a busy trunk. If a trunk is seized for service while being tested, remove insulating tools immediately and discontinue test until trunk is idle.

19	At relay rack frames of all trunk circuits associated with register under test— Insulate contact 7 break of MB1 relays.	At traffic register cabinet— Register scored at 6-second intervals.
20	At relay rack frames of all trunk circuits associated with register under test— Remove insulators from MB1 relays.	At traffic register cabinet— Register stopped scoring.
21	At traffic register cabinet— Restore all keys operated for test.	
22	Remove all patching cords placed for test.	

G. Group-Busy Register for B Switchboard, No. 5D Toll Switchboard Incoming Trunks, or for Intercepting Trunks (PB Lead)

19	At relay rack frames of all trunk circuits except one associated with register under test— Operate MB keys.	
20	Determine from SD drawing of trunk circuit associated with register under test, designation	

STEP	ACTION	VERIFICATION
	of relays which have break contacts in series with PB lead.	
21	At relay rack frame of trunk circuits associated with register under test— Momentarily operate MB key.	At traffic register cabinet— Register scored once.
22	At relay rack frame of trunk circuit associated with register under test— Momentarily operate in turn each relay which opens ground to PB lead.	At traffic register cabinet— Register scored once for each relay operated.
23	At relay rack frame of trunk circuit associated with register under test— Operate MB key.	
24	At relay rack frame of another trunk circuit associated with register under test— Release MB key.	
25	Repeat Steps 21 through 24 for each trunk in group.	
26	At traffic register cabinet— Restore all keys operated for test.	
27	Remove all patching cords placed for test.	

H. Peg Count Register for B Position Peg Count (PC or M Lead)

19	Make busy trunk circuit (from central B switchboard) in incoming trunk group to all traffic in approved manner.	
20	Determine from SD drawing of trunk circuit associated with register under test, designation of relays which have make contacts in series with PC or M lead.	
21	At relay rack frame of trunk circuit associated with register under test— Block operated all relays except one as determined in Step 20.	
22	Momentarily operate remaining relay to connect ground to PC or M lead.	At traffic register cabinet— Register scored once.
23	At relay rack frame of trunk circuit associated with register under test— Remove blocking tools from all relays.	

STEP	ACTION	VERIFICATION
24	Repeat Steps 19 through 23 for each trunk circuit associated with register under test.	
25	Restore all trunks circuits made busy in approved manner.	
26	At traffic register cabinet— Restore all keys operated for test.	
27	Remove all patching cords placed for test.	
I. Overflow Register for ▶Incoming Second◀ Failure to Match (IFM and IFMPR Leads)		
	▶*Note:* Refer to 1.07 and 1.11◀	
23	Insert make-busy plug into M-MB or M-C-MB jack of combined or completing marker associated with register under test.	
24i	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
25j	If MT18 relay is not provided— At marker frame— Connect ground to contact 2 top of MT13 relay.	
26	At MTF— Select marker.	
27	Select INC class of test.	
28	Select incoming class of call and translator indication as required for local termination.	
29	Select incoming trunk class as required for completion to called line.	
30	Select any trunk link frame.	
Overflow for ▶Incoming Second◀ Failure to Match (IFM Lead)—Nonpaired Line Link Frame		
31	Select A- through G- digits as required to terminate call to any line location in nonpaired line link frame.	
32	Select channel 0.	
33	Select junctor sequence 0.	

STEP	ACTION	VERIFICATION
34	Operate STP1 key.	
35	At line link frame— Insert 349A plug into JS0 jack.	
36	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored once.
37	At MTF— Momentarily operate RL key.	All lamps extinguished.
38	Restore all keys not required in next test.	
39	At line link frame— Remove 349A plug from JS0 jack.	
40k	If only nonpaired line link frames are provided, proceed to Step 49i.	

Overflow for ⧐Incoming Second⧏ Failure to Match (IFMPR Lead)—Paired Line Link Frames

41	Select A- through G- digits as required to terminate call to any line location in paired line link frame.	
42	Select channel 0.	
43	Select junctor sequence 0.	
44	Operate STP2 key.	
45	At line link frame— Insert 349A plug into JS0 jack.	
46	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored once.
47	At MTF— Momentarily operate RL key.	All lamps extinguished.
48	At line link frame— Remove 349A plug from JS0 jack.	
49i	If MT18 relay is provided— At marker frame— Remove blocking tool from MT18 relay.	
50j	If MT18 relay is not provided— At marker frame— Disconnect ground from contact 2 top of MT13 relay.	

STEP	ACTION	VERIFICATION
51	At MTF— Remove make-busy plug from M-MB or M-C-MB jack of combined or completing marker.	
52	Repeat Steps 23 through 51 for each combined or completing marker associated with register under test.	
53	At traffic register cabinet— Restore all keys operated for test.	
54	Remove all cords placed for test.	

J. Overflow Register for Incoming First Failure to Match (IFFM and IFFMP Leads)

▶*Note:* Refer to 1.07 and 1.11.◀

23	Insert make-busy plug into M-MB or M-C-MB jack of combined or completing marker associated with register under test.	
24i	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
25j	If MT18 relay is not provided— At marker frame— Connect ground to contact 2 top of MT13 relay.	
26	At MTF— Select marker.	
27	Select INC class of test.	
28	Select incoming class of call and translator indication as required for local termination.	
29	Select incoming trunk class as required for completion to called line.	
30	Select any trunk link frame.	

Overflow for Incoming First Failure to Match (IFFM Lead)— Nonpaired Line Link Frames

31	Select A- through G- digits as required to terminate call to any line location in nonpaired line link frame.	
32	Select channel 0.	

STEP	ACTION	VERIFICATION
33	Select junctor sequence 0.	
34	Operate STP1 key.	
35	At line link frames— Insert 349A plug into JS0 jack.	
36	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored one.
37	At MTF— Momentarily operated RL key.	All lamps extinguished.
38	Restore all keys not required in next test.	
39	At line link frame— Remove 349 A plug from JS0 jack.	
40k	If only nonpaired line link frames are provided, proceed to Step 49i.	
Overflow for Incoming First Failure to Match (IFFMP Lead)— Paired Line Link Frames		
41	Select A- through G- digits as required to terminate call to any line location in paired line link frame.	
42	Select channel 0.	
43	Select junctor sequence 0.	
44	Operate STP2 key.	
45	At line link frame— Insert 349A plug into JS0 jack.	
46	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored once.
47	At MTF— Momentarily operate RL key.	All lamps extinguished.
48	At line link frame— Remove 349A plug from JS0 jack.	
49i	If MT18 relay is provided— At marker frame— Remove blocking tool from MT18 relay.	
50j	If MT18 relay is not provided— At marker frame—	

STEP	ACTION	VERIFICATION
	Disconnect ground from contact 2 top of MT13 relay.	
51	At MTF— Remove make-busy plug from M-MB or M-C-MB jack of combined or completing marker.	
52	Repeat Steps 23 through 51 for each combined or completing marker associated with register under test.	
53	At traffic register cabinet— Restore all keys operated for test.	
54	Remove all cords placed for test.	