TRAFFIC REGISTERS—PART 1
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 1 of a series of sections that describe methods for testing traffic registers.

1.02 This section is reissued to make minor changes. Revision arrows are used to emphasize the more significant changes. The Equipment Tests Lists are not affected.

1.03 The tests covered are:

1.04 Table A indicates the tests that require action and verification at more than one location.

TABLE A

ACTION AND/OR VERIFICATION REQUIRED AT:	TESTS	
	A,B	C,D,E
Traffic Register Cabinet	✓	✓
Master Test Frame	✓	✓
Marker Circuit	✓	✓
Traffic Register Circuit	✓	✓
Line Link Frame	—	✓

✓As required.

1.05 Test C requires at least two idle originating registers available on trunk link frame selected for test.

1.06 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.

1.07 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 3 or 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.

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

1.09 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 shown 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 2.08 and 2.09 is required when a portable lamp is used to determine register operation.

(b) Two head telephone sets (headsets) are required when a portable lamp is not used.

(c) A 32A test set is required when the master test frame (MTF) is controlled from a remote point.

(d) Two 26 patching 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.

TABLE B

APPARATUS	TESTS				
	A,B	C	D	E	F
Test Circuit (2.02)	1	1	1	1	1
Cord (2.03)	1	1	1	✓	1
322A (make-busy) Plug (2.04)	1	1	1	1	1
349A (make-busy) Plug (2.05)	—	✓	—	✓	—
560A (make-busy) Tool (2.06)	—	—	—	✓	—
Tool (2.07)	✓	—	✓	✓	—

✓As required.

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

2.03 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.)

2.04 The 322A (make-busy) plug has an insulated tip and a common ring and sleeve. It is used with 92- or similar type jacks.

2.05 The 349A (make-busy) plug is a solid brass plug.

2.06 The 560A tool is used for grounding the outside springs of 245-, 254-, 263-, and 264-type relays by shorting the springs to the cover ground.

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

2.08 Two W2W cords, 10 feet long, each equipped with a 310 plug and two 360-type tools (2W17C cords), two KS-6278 tools, 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— At traffic register cabinet— 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 observaations are to be made.	
9e	If tests are to be performed with portable lamp— At frame where action is to be taken—	

STEP	ACTION	VERIFICATION
	Insert plug of 2W17C cord, equipped with 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 test 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 easily observed.	
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.
18e	If tests are to be performed with portable lamp— To observe scoring of register when using test lamp, proceed as follows:	
18	(a) For first observation of scoring of register, observe that test lamp indicates proper condition on common lead and that register scores as required.	
18	(b) For subsequent observations of scoring of same register, observe lamp indications only.	

STEP	ACTION	VERIFICATION
	Note: When the register to be tested scores at timed intervals, the test lamp will not flash with the scoring of the register.	
19	At MTF— Restore all keys.	
20	Momentarily operate RL key.	All lamps extinguished.
Tests A, C through E		
21h	If testing traffic register in 4-wire offices— At MTF— Operate 4W key.	
A. Peg Count Register for Line Link Originating Peg Count (LCB Lead)		
22	Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
23i	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
24j	If MT18 relay is not provided— At marker frame— Ground 4T of MT13 relay.	
25	Select ORIG class of test.	
26	Select OR class of call with translator indication for access to intraoffice route.	
27	Select any line location associated with register under test.	
28	Select any class of service except manual.	
29	Select intraoffice code and any numericals.	
30k	If office is arranged for multilevel preemption— Select control digits as required for access to selected route.	
31	Select rate treatment.	
32	Select marker made busy.	
33	Momentarily operate ST key.	At traffic register cabinet— Register scored once.

STEP	ACTION	VERIFICATION
34	At MTF— Momentarily operate RL key.	All lamps extinguished.
35	At marker frame— Remove blocking tool from MT18 relay or ground from MT13 relay.	
36	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register did not score.
37	At MTF— Momentarily operate RL key.	All lamps extinguished.
38	Restore keys or switches operated in Step 32.	
39	Remove make-busy plug from MMB or M_C_MB jack.	
40	Repeat Steps 22 through 39 for each combined or completing marker associated with register being tested.	
41	Restore all keys, remove all patching cords, set all switches to OFF.	

B. Peg Count Register for Line Link Terminating Peg Count (PCT, TER Leads)

21	Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
22h	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
23i	If MT18 relay is not provided— At marker frame— Ground 4T of MT13 relay.	
24	Select ORIG class of test.	
25	Select OR class of call with translator indication for access to intraoffice route.	
26	Select any line location.	
27	Select any class of service except manual.	
28	Select intraoffice code and numericals for line on line link frame associated with register being tested.	

STEP	ACTION	VERIFICATION
29	Select rate treatment.	
30	Select marker made busy.	
31	Momentarily operate ST key.	At traffic register cabinet— Register scored once.
32	At MTF— Momentarily operate RL key.	All lamps extinguished.
33	Restore ORIG class of test.	
34	Select INC class of test.	
35	Select trunk link frame.	
36	Select same numericals as in Step 28.	
37	Select incoming class of call with translator indication required for completion of selected number.	
38	Select incoming trunk class required for completion to selected number.	
39	Momentarily operate ST key.	At traffic register cabinet— Register scored once.
40	At MTF— Momentarily operate RL key.	All lamps extinguished.
41	At marker frame— Remove blocking tool from MT18 relay or ground from MT13 relay.	
42	At MTF— Remove make-busy plug from MMB or M_C_MB jack.	
43	Restore keys or switches operated in Steps 34 through 38.	
44	Repeat Steps 21 through 43 for each combined or completing marker associated with register being tested.	
45	Restore all keys, remove all patching cords, set all switches to OFF.	

STEP	ACTION	VERIFICATION
C.	**Overflow Register for Line Link Failure to Match (OF Lead)**	
22	Select ORIG class of test.	
23	Select OR class of call with translator indication for access to intraoffice route.	
24	Select any class of service except manual.	
25	Select intraoffice code and any numericals.	
26	Select rate treatment as required.	
27	Select junctor sequence 0.	
28	Select route advance 0.	
29	Operate STP1, CH0 keys.	
30	Select originating line location associated with register under test.	
31	At line link frame associated with register to be tested— Insert 349A plug into JS0 jack.	
32	Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
33i	If MT18 relay is provided and marker is nonwire-spring-relay type— At marker frame— Ground 4B of MT18 relay.	
34j	If marker is wire-spring-relay type— At marker frame— Ground 7F of MT18 relay.	
35k	If MT18 relay is not provided and marker is nonwire-spring type— At marker frame— Ground 2T of MT13 relay.	
36	Select marker made busy.	
37	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored twice.
38	At MTF— Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
39	At marker frame— Remove ground from MT18 or MT13 relay.	
40	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register did not score.
41	At MTF— Momentarily operate RL key.	All lamps extinguished.
42	Remove make-busy plug from MMB or M_C_MB jack.	
43	Repeat Steps 32 through 42 for each combined or completing marker associated with register under test.	
44	Restore ORIG class of test.	
45	Restore OR class of call and translator indication.	
46l	If dial tone markers are provided— Insert make-busy plug into M_D_MB jack of dial tone marker associated with register being tested.	
47m	If dial tone marker is nonwire-spring-relay type and MT18 relay is provided— At marker frame— Ground 4B of MT18 relay.	
48n	If dial tone marker is wire-spring-relay type— At marker frame— Ground 9F of MT13 relay.	
49o	If dial tone marker is nonwire-spring-relay type and MT18 relay is not provided— At marker frame— Ground 2T of MT13 relay.	
50l	If dial tone markers are provided— Select DT class of test.	
51l	Select marker made busy.	
52l	Repeat Steps 37 through 42.	
53l	Remove ground from MT18 or MT13 relay.	
54l	Remove make-busy plug from M_D_MB jack.	

STEP	ACTION	VERIFICATION
55l	Repeat Steps 46l through 54l for each dial tone marker associated with register being tested.	
56	At line link frame associated with register to be tested— Remove 349A plug from JS0 jack.	
57	At MTF— Restore all keys, remove all patching cords, set all switches to OFF.	

D. Overflow Register for Originating Matching Loss (FM, FMPR Leads)

22	Determine office codes required to select a group of outgoing or intraoffice trunks (with customer access) in each of ground supply groups 1 through 4.	
	Note: Select office codes associated with trunk groups that have a large number of trunks. The performance of this test is based on having at least two trunks in the group available at the time the test is made.	
23	At MTF— Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
24i	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
25j	If MT18 relay is not provided— At marker frame— Ground 2T of MT13 relay.	
26	At MTF— Select ORIG class of test.	
27	Select office code to use trunk in ground supply 1 and select any numericals.	
28	Select OR class of call with translator indication for access to selected route.	
29	Select class of service and rate treatment as required for access to selected route.	
30	Select route advance 0.	

STEP	ACTION	VERIFICATION
31	Select channel 0.	
32	Operate STP1 key.	
33k	If office is arranged for multilevel preemption— Select control digits as required for access to selected route.	
34l	If testing traffic registers in office with paired line link frames— Select line location for paired line link frame.	
35	Select marker made busy.	
36	Select line location on line link frame 0.	
37	At line link frame 0— Insert 349A plug into JS0 jack.	
38l	If testing traffic register in office with paired line link frames— At paired line link frame selected— Insert 349A plug into JS0 jack.	
39	At MTF— Momentarily operate ST key.	At traffic register cabinet— Register scored once.
40	At MTF— Momentarily operate RL key.	All lamps extinguished.
41	Change setting of A through G digits to select trunk in ground supply 2.	
42	Repeat Steps 39, 40.	
43	Repeat Steps 41, 42 for each ground supply.	
44i	If MT18 relay is provided— At marker frame— Remove blocking tool from MT18 relay.	
45j	If MT18 relay is not provided— At marker frame— Remove ground from 2T of MT13 relay.	
46	At MTF— Remove make-busy plug from MMB or M_C_MB jack.	
47	Restore keys or switches operated in Step 35.	

STEP	ACTION	VERIFICATION
48	Repeat Steps 23 through 47 for each combined or completing marker associated with register being tested.	
49	At line link frame used in test— Remove make-busy plug from JS0 jack.	
50	At MTF— Restore all keys, remove all patching cords, set all switches to OFF.	
	E. Load Indicating Register for Line Link Frame or for Horizontal Line Group (PL-, FPL Leads)	
22	Determine from office records, number of busy line links required to operate load indicating registers.	
	Register Associated with Line Link Frame (FPL Lead)	
23	At line link frame associated with register being tested— Insert 349A plugs into number of JS_ jacks corresponding to one less than number of busy line links required to operate register.	
24	Wait for release of any operated hold magnets on junctor switches made busy.	
25i	If nonwire-spring-relay type line link frames are provided— Ground HG_ relay stationary springs connected to line link sleeves in any one horizontal line group that appears on junctor switches made busy.	
26j	If wire-spring-relay type line link frames are provided— Ground HGB_ relay movable springs connected to line link sleeves in any one horizontal line group that appears on junctor switches made busy.	
27	Remove 349A plugs from JS_ jacks.	
28	At MTF— Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	

STEP	ACTION	VERIFICATION
29k	If MT18 relay is provided— At marker frame— Block nonoperated MT18 relay.	
30l	If MT18 relay is not provided— At marker frame— Ground 4T of MT13 relay.	
31	Select ORIG class of test.	
32	Select intraoffice code and any numericals.	
33	Select OR class of call with translator indication for access to intraoffice route.	
34	Select class of service and rate treatment as required for access to intraoffice route.	
35	Select line location on link link frame associated with register under test.	
36	Select marker made busy.	
37	Momentarily operate ST key.	At traffic register cabinet— Register scored once.
38	At MTF— Momentarily operate RL key.	All lamps extinguished.
39k	If MT18 relay is provided— At marker frame— Remove blocking tool from MT18 relay.	
40l	If MT18 relay is not provided— At marker frame— Remove ground from 4T of MT13 relay.	
41	At MTF— Remove make-busy plug from MMB or M_C_MB jack.	
42	Restore keys or switches operated in Step 36.	
43	Repeat Steps 28 through 42 for each combined or completing marker associated with register being tested.	
44	At line link frame— Remove ground from HG_ or HGB relay springs.	

STEP	ACTION	VERIFICATION
	Register Associated with Horizontal Line Group (PL Lead)	
45	At line link frame— Make busy required number of line links of horizontal line group associated with register being tested, as directed in Steps 23 through 27.	
46	Select line location in horizontal group associated with the register under test.	
47	Repeat Steps 28 through 44.	
48	Repeat Steps 45 through 47 for each line link frame associated with register under test.	
49	Restore all keys, remove all patching cords, set all switches to OFF.	
	F. Peg Count Register for Mate Frame Lockout (MFL Lead)	
21	Insert make-busy plug into MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
22	Select ORIG class of test.	
23	Select any code and any numericals.	
24	Select OR class of call with translator indication for access to selected route.	
25	Select line location for paired line link frame.	
26	Select class of service and rate treatment as required for access to selected route.	
27	Operate MFSB, STP2 keys.	
28	Select marker made busy.	
29	Momentarily operate ST key.	At traffic register cabinet— Register scored three times.
30	At MTF— Momentarily operate RL key.	All lamps extinguished.
31	Restore keys or switches operated in Step 28.	

STEP	ACTION	VERIFICATION
32	Remove make-busy plug from MMB or M_C_MB jack of combined or completing marker associated with register being tested.	
33	Repeat Steps 21 through 32 for each combined or completing marker associated with register being tested.	
34	Restore all keys, remove all patching cords, set all switches to OFF.	