

TRAFFIC REGISTERS—PART 3
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section is Part 3 of a series of sections that describe methods for testing traffic registers.

1.02 This section is reissued to revise Tests B and C to include test procedures for incoming registers serving more than one intertoll class of trunk.

This reissue does not affect Equipment Test Lists.

1.03 The tests covered are:

PAGE

A. Peg Count Register for Incoming Register Group—Total Seizure Peg Count (PC Lead): This test checks that the peg count register operates when any register in the associated group is seized to serve a call. **7**

B. Peg Count Register for Intertoll Trunks—Permanent Signal Peg Count (PS Lead): This test checks that the peg count register operates when an associated dial or multifrequency pulse incoming register recognizes a permanent signal on toll calls. **8**

C. Peg Count Register for Intertoll Trunks—Partial Dial Peg Count (PD Lead): This test checks that the peg count register operates when an associated dial pulse or multifrequency pulse incoming register recognizes a partial dial on toll calls. **10**

D. Group-Busy or Group-Busy Time Register for Incoming Registers (GB Lead): This test checks that the register operates once every second while all incoming registers of the associated group are busy. **11**

E. Peg Count Register for CAMA Trunks—Permanent Signal or Partial Dial Peg Count (PS and PDI Leads): This test checks that the peg count register operates when a dial pulse incoming register recognizes a permanent signal or partial dial condition on calls over CAMA trunks. **12**

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	✓	✓	✓	✓	✓
Traffic Register Circuit	✓	✓	✓	✓	✓
Incoming Register Circuit	—	✓	—	—	✓

✓ As required.

1.05 Test D requires that all incoming registers of a group be made busy and that the tests are to be made during periods of light traffic.

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

1.07 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

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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 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.

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 2.04 and 2.05 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 master test frame 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.

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

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

2.04 Two W2W cords, 10 feet long, each equipped with a 310 plug and two 360-type tools

TABLE B

APPARATUS	TESTS				
	A	B	C	D	E
TEST CIRCUIT (2.02)	✓	✓	✓	✓	✓
TOOLS (2.03)				✓	✓
CORD (2.04)	✓	✓	✓		✓
LAMP (2.05)	✓	✓	✓		✓
TEST CIRCUIT (2.06)	✓	✓	✓		✓
PLUG (2.07)	✓	✓	✓	✓	✓
TEST CIRCUIT (2.08)	✓	✓	✓		✓
TEST SET (2.09)	✓	✓	✓		✓
CORD (2.10)	✓	✓	✓		✓
HAND SET (2.10)	✓				
KS-3008 STOPWATCH OR EQUIVALENT		✓	✓	✓	✓

✓ AS REQUIRED

(2W17C cords), two KS-6278 connecting clips, and two 108 cord tips (required when a portable test lamp is used).

2.05 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

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

2.07 322A (make-busy) plug.

2.08 Test circuit for incoming register and CAMA sender circuits, SD-25988-01.

2.09 Test set circuit for register and CAMA sender circuits, SD-25676-01.

2.10 Testing cord, 20-conductor cord, 6 feet long, equipped with one KS-13875 plug and one KS-13895 plug (W20C cord).

2.11 1014A handset or equivalent, equipped with 2W38A cord assembly, consisting of a W2CK cord, a 310 plug, and a 471A jack.

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

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|----|---|--|
| 1a | If traffic registers are arranged for patching—
At traffic register cabinet—
Insert cord tip of 26 patching cord into P_ jack for circuit associated with register to be tested. | |
| 2a | Insert cord tip on other end of 26 patching 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 on which the register to be tested is located. | |
| 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 circuit—
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. | |

All Tests Except D

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|----|---|--|
| 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 | |
|----|---|--|

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STEP	ACTION	VERIFICATION
	two KS-6278 connecting clips, 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 connecting clips.	
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: (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
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Tests A, C, E

19 At MTF—
Restore all keys and switches.

20 Momentarily operate RL key.

All lamps extinguished.

Tests B, E—Using Incoming Register Test Circuit

21 At MTF—
Insert make-busy plug into IRMB_ jack of register used in test.

Tests A, B, C, E—Using Incoming Register Test Circuit.

22 Select incoming register.

23 Select trunk class as required.

24 At test set—
Patch IRT jack of test set to IRT jack of incoming register and CAMA sender circuit.

25h If testing traffic register associated with MF incoming register—
Operate MF key.

26h Set MF switch to MAX L.

Tests A, C—Using Incoming Register Test Circuit

27 At MTF—
Operate ITRR key.

28i If testing traffic register associated with DP incoming register—
At test set—
Set L switch to select loop condition as required.

Test A—Using Incoming Register Test Circuit

29j If testing traffic register associated with RP incoming register or RP incoming register for tandem operation—
At test set—
Operate RP key.

30k If testing traffic register associated with FSP incoming register—
At MTF—
Operate CTCN0 key.

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STEP	ACTION	VERIFICATION
31k	Set FSP switches to select A_ through K_ digits as required.	
32k	Set MF switch to FSP.	

Tests A, B, C, E—Using Automatic Monitor, Register, and Sender Test Circuit

- 33 At MTF—
Operate MAC key.

Note: Wait 1 minute for tubes to heat.
- 34 Operate STT key.
- 35 Select IR class of test.
- 36 Select incoming register.
- 37 Select incoming class with translator indication as required.
- 38l If NBL key is provided and non bylink test is being made—
Operate NBL key.
- 39m If bylink test is being made—
Operate BL key.

Tests A, C—Using the Automatic Monitor, Register, and Sender Test Circuit

- 40n If testing traffic registers associated with DP or MF incoming registers—
Select A_ through K_ digits as required.
- 41o If testing traffic registers associated with RP incoming registers—
Select A_ through D_ digits as required.
- 42p If testing traffic registers associated with DP incoming register—
Operate 15 MAX key.
- 43q If testing traffic registers associated with 4-wire incoming register—
Operate 4W, 4WM, STP keys.

STEP	ACTION	VERIFICATION
4. METHOD		

STEP	ACTION	VERIFICATION
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A. Peg Count Register for Incoming Register Group—Total Seizure Peg Count (PC Lead)

Using Automatic Monitor, Register, and Sender Test Circuit

44	Momentarily operate ST key.	At traffic register cabinet— Register scored once.
45	Momentarily operate RL key.	All lamps extinguished.
46	Repeat Steps 33 through 45 for each incoming register associated with traffic register under test.	
47	Restore all keys and switches.	
48	Remove all patching cords used for test.	

Using Incoming Register Test Circuit

49	At test set— Operate STT key.	If testing registers associated with FSP incoming registers— At traffic register cabinet— Register scored once.
50i	If testing traffic registers associated with DP incoming registers— Using 10/18/20 dial on test set— Dial A_ through G_ digits as required.	At traffic register cabinet— Register scored once.
51r	If testing traffic registers associated with RP incoming registers or RP incoming registers—tandem operation— At test set— Key A_ through E_ digits as required for five selections (IB, IG, FB, FT, FU) for transmitting a four-digit number.	
52r	Operate SF-1A key.	At traffic register cabinet— Register scored once.
53r	Restore SF-1A key.	
54s	If testing traffic registers associated with RP incoming registers for use with Central B switchboard— At test set—	

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STEP	ACTION	VERIFICATION
	Insert plug of a telephone handset into the PLS jack of the register test set.	
55s	Request the assistant at the central B position to key a code and number for a test call.	At traffic register cabinet— Register scored once.
56h	If testing traffic registers associated with MF incoming register— At test set— Momentarily operate KP key.	
57h	Key digits A_ through K_ as required.	
58	Momentarily operate ST key.	At traffic register cabinet— Register scored once.
59	At test set— Momentarily operate RL key.	All lamps extinguished.
60	Repeat Steps 21 through 59 for each incoming register associated with traffic register under test.	
61	Restore all keys and switches.	
62	Remove all patching cords used for test.	

B. Peg Count Register for Intertoll Trunks—Permanent Signal Peg Count (PS Lead)

Using Automatic Monitor, Register, and Sender Test Circuit

40	Operate RPS, RRO keys.	
41	Momentarily operate ST key; <i>start timing</i> .	In 20 to 32 seconds— At traffic register cabinet— Register scored once.
42	At MTF— Momentarily operate RL key.	All lamps extinguished.
43t	◆If incoming register serves more than one intertoll class of trunk— Select incoming class of call with translator indication for each intertoll class of trunk and repeat Steps 41 and 42 as required.◆	
44	Repeat Steps 33 through 43t for each incoming register associated with traffic register under test.	

STEP	ACTION	VERIFICATION
45	Restore all keys and switches.	
46	Remove all patching cords used for test.	
Using Incoming Register Test Circuit		
47	Operate H key.	
48r	If traffic register to be tested is associated with dial pulse incoming registers— At incoming register— Block nonoperated OVL relay.	
49s	If traffic register to be tested is associated with 4-wire multifrequency incoming registers— At incoming register— Insulate 8M of M relay.	
50u	If traffic register to be tested is associated with multifrequency pulse incoming register and if register is nonwire-spring relay type— At register circuit— Insulate 3 and 4B of M relay.	
51v	If traffic register to be tested is associated with multifrequency pulse incoming register and if register is wire-spring relay type— At register circuit— Insulate 8M of M relay.	
52	At test set— Momentarily operate STT key; <i>start timing</i> .	After 20 to 32 seconds— At traffic register cabinet— Register scored once.
53	At test set— Momentarily operate RL key.	All lamps extinguished.
54t	◆If incoming register serves more than one intertoll class of trunk— Select trunk class for each intertoll class of trunk and repeat Steps 52 and 53 as required.◆	
55	Repeat Steps 21 through 54t for each incoming register associated with traffic register under test.	
56	Restore all keys and switches.	
57	Remove all patching cords used for test.	
58	Remove blocking tools or insulation from relays.	

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STEP	ACTION	VERIFICATION
C. Peg Count Register for Intertoll Trunks—Partial Dial Peg Count (PD Lead)		
Using Automatic Monitor, Register, and Sender Test Circuit		
44	Operate DSS key.	
45	Momentarily operate ST key twice; <i>start timing</i> .	In 20 to 32 seconds— TO lamp lighted. At traffic register cabinet— Register scored once.
46	At MTF— Momentarily operate RL key.	All lamps extinguished.
47r	◆If incoming register serves more than one intertoll trunk class— Select incoming class of call with translator indication for each intertoll class of trunk and repeat Steps 45 and 46 as required.◆	
48	Repeat Steps 33 through 47r for each incoming register associated with traffic register under test.	
Using Incoming Register Test Circuit		
49	At test set— Momentarily operate STT key.	IRT, IRON, RR lamps lighted.
50i	If traffic register to be tested is associated with dial pulse incoming registers— Dial A digit, using 10 PPS dial; <i>start timing</i> .	In 20 to 32 seconds— TO lamp lighted. At traffic register cabinet— Register scored once.
51i	At test set— Momentarily operate RL key.	All lamps extinguished.
52h	If traffic register to be tested is associated with multifrequency pulse incoming registers— At test set— Momentarily operate STT key.	IRT, IRON, RR lamps lighted.
53h	Momentarily operate KP key.	
54h	Key A digit; <i>start timing</i> .	In 20 to 32 seconds— TO lamp lighted. At traffic register cabinet— Register scored once.

STEP	ACTION	VERIFICATION
55h	At test set— Momentarily operate RL key.	All lamps extinguished.
56r	◆If incoming register serves more than one intertoll class of trunk— Select trunk class for each intertoll class of trunk and repeat Steps 49 through 55h as required.◆	
57	Repeat Steps 21 through 56r for each incoming register associated with traffic register under test.	
58	Restore all keys and switches.	
59	Remove all patching cords used for test.	
D. Group-Busy or Group-Busy Time Register for Incoming Registers (GB Lead)		
9e	If SD-25890-01 or SD-25672-01 is provided— At traffic register circuit— Block nonoperated E relay for incoming register group associated with group-busy register being tested.	
10f	If SD-25892-01 is provided— At traffic register circuit— Block nonoperated A relay for incoming register group associated with group-busy register being tested.	
11	At jack, lamp, and key circuit— Insert make-busy plugs into all IRMB_ jacks for incoming registers in incoming register group associated with group-busy register being tested.	At traffic register cabinet— Register scored at 1-second intervals.
Caution: Do not hold all incoming registers of a group busy longer than necessary as this may interfere with service.		
12	At jack, lamp, and key circuit— Remove plug from one of IRMB_ jacks.	At traffic register cabinet— Register stopped scoring.
Note: If the register continues to score, it may be scoring on a service call. Wait for the incoming register to release.		
13	At jack, lamp, and key circuit— Reinsert make-busy plug into IRMB_ jack.	At traffic register cabinet— Register scored at 1-second intervals.

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STEP	ACTION	VERIFICATION
14	Repeat Steps 12 and 13 for each incoming register in group.	
15	At jack, lamp, and key circuit— Remove all make-busy plugs from IRMB_ jacks used for test.	
16	At traffic register circuit— Remove blocking tool from A or E relay.	
17	Restore all keys and switches.	
18	Remove all patching cords used for test.	

E. Peg Count Register for CAMA Trunks—Permanent Signal or Partial Dial Peg Count (PS and PD1 Leads)

Using Automatic Monitor, Register, and Sender Test Circuit

Note: Select CAMA0 for incoming class.

40	Operate RPS, RPO keys.	
41	Momentarily operate ST key; <i>start timing.</i>	In 20 to 32 seconds— At traffic register cabinet— Register scored once.
42	Momentarily operate RL key.	All lamps extinguished.
43	Select CAMA1 for incoming class.	
44	Repeat Steps 41 and 42.	
45	Repeat Steps 33 through 44 for each incoming register associated with traffic register under test.	

Using Incoming Register Test Circuit

Note: Select CAMA0 for incoming trunk class.

46	Operate H key.	
47	At incoming register— Block nonoperated OVL relay.	
48	At test set— Momentarily operate STT key; <i>start timing.</i>	IRT, IRON, RR lamps lighted. In 20 to 32 seconds— RR, IRON lamps extinguished..

STEP	ACTION	VERIFICATION
49	At test set— Momentarily operate RL key.	In 20 to 32 seconds after RR lamp extinguished— TO lamp lighted. At traffic register cabinet— Register associated with PD lead scored once.
50	At register frame— Remove blocking tool from OVL relay.	All lamps extinguished.
51	Repeat Steps 21 through 50 for each dial pulse incoming register associated with traffic register being tested.	
52	Restore all keys and switches.	
53	Remove all patching cords used for test.	

