1. GENERAL

1.01 This section describes a method of testing traffic registers associated with: (1) line circuits SD-2R002-01 and SD-2R049-01; (2) link circuits SD-2R008-01 and SD-2R054-01; (3) register-sender circuit SD-2R051-01; and (4) marker circuit SD-2R004-01 for use with the large and/or small MJ Mobile Radio and Telephone Systems in No. 5 crossbar offices.

1.02 The tests covered are:

A. Line Circuit (Large and/or Small System) (PC Lead): This test checks the operation of the line circuit traffic register upon completion of a call.

B. Call Check (Small System) (RA, RLCR Leads): This test checks registration of calls completed by the link circuit to a local area by mobile station roaming out of the home area. This test also checks registration of calls extended to the switchboard of the link circuit.

C. Call Check (Large System) (MA, RA, OC Leads): This test checks registration upon call completion employing the following conditions:
   (1) Manual mobile calls
   (2) Calls to an operator
   (3) Calls from a switchboard.

D. Register-Sender (Small System) (RPC, SPC Leads): This test checks registration upon completion of a call in

E. Marker Operation (Large and/or Small System) (OCCI, IMAI, ICC1, OMAI Leads): This test checks the traffic registration under the following conditions:
   (1) End of pulsing land-to-mobile call
   (2) Marker ready to establish link on mobile-to-land call
   (3) Line-to-link connections established
   (4) Land-to-mobile call completed.

1.03 All tests require action and/or verification at the traffic register circuit and at the MJ mobile telephone control terminal.

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

1.05 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.

2. APPARATUS

All Tests

2.01 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 applying ground momentarily to the contacts of nonwire-spring-type relays).

**Test E**

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

2.03 The following apparatus may also be required:

(a) 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.

(b) 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).

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

(d) Two head telephone sets (required when a portable test lamp is not used).

### 3. PREPARATION

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<th>ACTION</th>
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| 1a | If traffic registers are arranged for patching—
At traffic register circuit—
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 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 circuit—
Operate C-toggle switch to ON. |
| 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 test 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 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.

10e Determine, from circuit drawing of circuit associated with register to be tested, location of punching on terminal strip at which common lead to traffic register circuit is connected.

11e Connect one lead of 2W17C cord to punching 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 portable test lamp so that it can be easily observed.

16f If tests are performed with portable test lamp and circuit associated with register to be tested removes ground from common lead to traffic register circuit to operate register—
Observe portable test lamp when register operates.

17g If tests are performed with portable test lamp and circuit associated with register to be tested applies ground to common lead to traffic register circuit to operate register—
Observe portable test lamp when register operates.

18e If tests are to be performed with portable test lamp—
To observe scoring of register when using...
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STEP ACTION

portable test lamp, proceed as follows: (a) For first observation of scoring of register, observe that portable test lamp indicates proper condition on common lead and that register scores as required and (b) for subsequent observations of scoring of same register, observe portable test lamp indications only.

All Tests

19 At test panel for large and/or small mobile radio switching systems—Restore all keys, set all switches to OFF.

4. METHOD

STEP ACTION

A. Line Circuit (Large and/or Small System) (PC Lead)

20h If testing large system line circuit—At line circuit—Momentarily apply ground to 5T of RD relay.

21h At line circuit—Repeat Step 20h for each line circuit.

22i If testing small system line circuit—At line circuit—Momentarily apply ground to 3B of BY relay.

23i At line circuit—Repeat Step 22i for each line circuit.

B. Call Check (Small System) (RA, RLCR Leads)

Call Extended to Switchboard

20 At link circuit—Momentarily apply ground to 9B of RO relay.

21 At link circuit—Repeat Step 20 for each link circuit.

Roam Line Used

22 At link circuit—Momentarily apply ground to 9B of RLC relay.

23 Repeat Step 22 for each link circuit.

VERIFICATION

At traffic register cabinet—Register associated with PC lead scored once.

At traffic register cabinet—Register associated with PC lead scored once.

At traffic register cabinet—Register associated with RA lead scored once.

At traffic register cabinet—Register associated with RLCR lead scored once.
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<tr>
<td>C. Call Check (Large System) (MA, RA, OC Leads)</td>
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<tr>
<td><strong>Manual Mobile Call Operation</strong></td>
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| 20 | At link circuit—
Momentarily apply ground to 7T of MC relay. | At traffic register cabinet—
Register associated with MA lead scored once. |
| 21 | At link circuit—
Repeat Step 20 for each link circuit. | | |
| **Call to Operator** | | |
| 22 | Momentarily apply ground to 3T of OA relay. | At traffic register cabinet—
Register associated with RA lead scored once. |
| 23 | At link circuit—
Repeat Step 22 for each link circuit. | | |
| **Call From Switchboard** | | |
| 24 | At link circuit—
Momentarily apply ground to 12T of SA relay. | At traffic register cabinet—
Register associated with OC lead scored once. |
| 25 | At link circuit—
Repeat Step 24 for each link circuit. | | |
| D. Register-Sender (Small System) (RPC, SPC Leads) | | |
| **Register Portion of Register-Sender Circuit** | | |
| 20 | At register-sender circuit—
Momentarily apply ground to 7B of REG relay. | At traffic register cabinet—
Register associated with RPC lead scored once. |
| **Sender Portion of Register-Sender Circuit** | | |
| 21 | At register-sender circuit—
Momentarily apply ground to 10B of SD relay. | At traffic register cabinet—
Register associated with SPC lead scored once. |
| E. Marker Operation (Large and/or Small System) (OCC1, IMA1, ICC1, OMA1 Leads) | | |
| **End of Pulsing Land-to-Mobile Call** | | |
| 20h | If duplicate service is provided—
At duplicate switching and test access circuit—
Operate MB MKR- key associated with marker selected for test. | | |
| 21h | At marker selected for test—
Block operated ES relay. | | |
| 22h | Block operated LCT relay. | | |
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STEPMOMENTarily operate ST1 relay.

24hAt marker selected for test—
Remove blocking tools from ES, LCT relays.

25hRestore MB MKR- key.

26hRepeat Steps 20h through 25h for other marker.

27iIf duplicate service is not provided—
At marker selected for test—
Momentarily apply ground to 7T of MTR relay.

Marker Ready to Establish Link on Mobile-to-Land Call

28hIf duplicate service is provided—
At duplicate switching and test access circuit—
Operate MB MKR- key associated with marker selected for test.

29hAt marker selected for test—
Momentarily operate INC relay.

30hRestore MB MKR- key.

31hRepeat Steps 28h through 30h for other marker.

32iIf duplicate service is not provided—
At marker circuit—
Momentarily apply ground to 1T of MTR relay.

Line-to-Link Connections Established

33hIf duplicate service is provided—
At duplicate switching and test access circuit—
Operate MB MKR- key.

34hAt marker circuit—
Insulate 9T, 10T of INC relay.

35hBlock operated INC relay.

36hMomentarily operate LCT relay.

37hAt marker circuit—
Remove blocking tool from INC relay.

VERIFICATION

At traffic register cabinet—
Register associated with OCC1 lead scored once.

At traffic register cabinet—
Register associated with OCC1 lead scored once.

At traffic register cabinet—
Register associated with IMA1 lead scored once.

At traffic register cabinet—
Register associated with IMA1 lead scored once.

At traffic register cabinet—
Register associated with ICC1 lead scored once.
38h Remove insulating tools from 9T, 10T of INC relay.

39h Repeat Steps 33h through 38h for other marker.

40i If duplicate service is not provided—
At marker circuit—
Momentarily apply ground to 1B of MTR relay.

At traffic register cabinet—
Register associated with ICC1 lead scored once.

Land-to-Mobile Call Completed

41h If duplicate service is provided—
At duplicate switching and test access circuit—
Operate MB MKR- key.

42h At marker circuit—
Block operated ST1 relay.

43h Momentarily operate OTG relay.

At traffic register cabinet—
Register associated with OMA1 lead scored once.

44h At marker circuit—
Remove blocking tool from ST1 relay.

45h Repeat Steps 41h through 44h for other marker.

46i If duplicate service is not provided—
At marker selected for test—
Momentarily apply ground to 4T of MTR relay.

At traffic register cabinet—
Register associated with OMA1 lead scored once.