# COMPLETING MARKER TESTS—PART 10

## USING OFFICE TEST FRAME TEST CIRCUIT SD-27633-01 (J23260)

## NO. 5 CROSSBAR OFFICES

### 1. GENERAL

**1.01** This section is Part 10 of a series of sections for marker tests previously covered in Section 218-423-501.

**1.02** This issue affects Equipment Test Lists.

**1.03** The tests covered are:

**1.04** *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 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 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

**2.01** The apparatus required for each test is listed in Table A. The details of each item are covered in the paragraph indicated by the number in parentheses.

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

**2.03** Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord). (Use with tools specified in 2.04 through 2.06.)

**2.04** KS-6278 connecting clips (used for making connection to battery and ground terminals).

**2.05** 651D (relay contact connector holder) tools (used for holding relay contact connector tools when making test connections to fixed contacts of wire-spring-type relays).

**2.06** 639A (relay contact connector) tools (used in conjunction with 651D tool).

**2.07** Surge tester (made up locally). Use a General Electric NE-5 lamp, or equivalent, inserted into a 47B lamp socket. Solder one terminal of the jack to a 10,000-ohm, 106A resistor or equivalent.

TABLE A

| APPARATUS | TESTS | | | | |
|---|---|---|---|---|---|
| | AS | AT | AU | AV | AW |
| Office Test Frame (OTF) | 1 | 1 | 1 | 1 | 1 |
| Trouble Indicator and Connector Circuit (TIC) | 1 | | | 1 | 1 |
| 322A (make-busy) Plug | | √ | √ | | |
| 32A Test Set | | 1 | 1 | | |
| Cord    (2.03) | | | √ | | |
| Tools    (2.02) | | √ | | | |
| Tools    (2.04) | | | √ | | |
| Tools    (2.06) | | | √ | | |
| Tools    (2.05) | | | √ | | |
| Surge Tester    (2.07) | | | 1 | | |

√  As Required

## 3.  PREPARATION

| STEP | ACTION | VERIFICATION |
|---|---|---|

**All Tests**

| 1 | At OTF—<br>Restore all keys and switches. | |
| 2 | Set L-L switch to 0. | |
| 3 | Set PS switch to 11/56. | |
| 4a | If TOUCH-TONE® dialing is desired—<br>Operate TT key. | |

## 4.  METHOD

| STEP | ACTION | VERIFICATION |
|---|---|---|

**AS.  Vacant Code Feature**

| 5 | Set A through N DIAL switches as required to select vacant code and any other digits required to satisfy originating register. | |
| 6 | Set CST, CSU switches for class of service having access to route selected. | |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 7 | Operate OTL, MCB keys. | |
| 8b | If coin class of service is used—<br>Operate CN key. | |
| 9 | Operate _D key for number of digits to be dialed. | |
| 10 | Operate MKR_ key for marker under test. | |
| 11 | Operate REC key. | |
| 12 | At TIC—<br>Momentarily operate RLS key. | |
| 13 | At OTF—<br>Operate ST key. | At TIC—<br>DR_, FS_, LC_, LV_, TB_, FAK or FBK lamps lighted identifying vacant code or tone trunk. |
| 14 | Restore ST key. | If coin class of service is used—<br>At OTF—<br>CR lamp momentarily lighted.<br>CND lamp lighted. |
| 15b | If coin class of service is used—<br>Restore CN key. | CND lamp extinguished. |
| 16 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 17 | At OTF—<br>Restore all keys and switches. | |

**AT.  Sender Group Release Feature**

| | | |
|------|--------|--------------|
| 5 | At jack, lamp, and key circuit—<br>Insert make-busy plug into M_C_MB jack of marker under test. | |
| 6 | At OTF—<br>Operate OTL, 7D, MCB keys. | |
| 7 | Set A through G DIAL switches to select route associated with a sender group served by sender group release circuit and any number. | |
| 8 | Set CST, CSU switches for class of service having access to route selected. | |
| 9 | Operate MKR_ key for marker under test. | |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 10 | At marker—<br>Block nonoperated SIA, SIB relays. | |
| 11 | At sender group release circuit—<br>Insert plug of 32A test set into RC jack. | |
| 12 | Momentarily operate white (ST) button of 32A test set. | R relay momentarily operated. |
| 13 | Momentarily operate red (RL) button of 32A test set. | |
| 14 | Remove plug of 32A test set from RC jack. | |
| 15 | At marker—<br>Remove blocking tool from SIA, SIB relays. | |
| 16 | At jack, lamp, and key circuit—<br>Remove make-busy plug from M_C_MB jack. | |
| 17 | At OTF—<br>Restore all keys and switches. | |

**AU. Dual Voltage Hold Magnet Operation Feature**

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 5 | At jack, lamp, and key circuit—<br>Insert make-busy plug into M_C_MB jack of marker under test. | |
| 6 | At OTF—<br>Operate OTL, 7D, MCB keys. | |
| 7 | Set A through G DIAL switches to select an intraoffice code and any number. | |
| 8 | Set CST, CSU switches for class of service having access to route selected. | |
| 9 | Operate MKR_ key for marker under test. | |
| 10 | At marker—<br>Connect free end of 10,000-ohm resistor of surge tester to −48 volt test terminal. | |
| 11 | Insert plug of 32A test set into RC jack. | |
| 12 | Connect free terminal of surge tester to 5F of LXP1 relay. | |
| 13 | Momentarily operate white (ST) button of 32A test set. | NE-5 lamp momentarily lighted in surge tester. |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 14 | Momentarily operate red (RL) button of 32A test set. | |
| 15 | Remove connection from LXP1 relay. | |
| 16 | Repeat Steps 12 through 15 connecting surge tester in turn to 1F, 2F of LXP1 relay. | |
| 17 | Remove surge tester from LXP1 relay and −48 volt test terminal. | |
| 18 | Remove plug of 32A test set from RC jack. | |
| 19 | At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack. | |
| 20 | At OTF— Restore all keys and switches. | |

**AV.  Diverted Route Feature**

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 5 | Operate OTL, MCB, TLK keys. | |
| 6 | Set CST, CSU switches for class of service having access to diverted route. | |
| 7b | If coin class of service is used— Operate CN key. | |
| 8 | Set A through N DIAL switches as required to select diverted route and any test line number. | |
| 9 | Operate _D key depending on number of digits to be dialed. | |
| 10 | Operate MKR_ key for marker under test. | |
| 11 | Operate REC key. | |
| 12 | At TIC— Momentarily operate RLS key. | All lamps extinguished. |
| 13 | At OTF— Operate ST key. | At TIC— DR_, FS_, LC_, LV_, TB_ and FAK or FBK lamps lighted identifying trunk in diverted route. |
| 14 | Restore ST key. | If coin class of service is being used— CR or CC lamp momentarily lighted. CND lamp lighted. |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 15b | If coin class of service is used—<br>Restore CN key. | CND lamp extinguished. |
| 16 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 17 | At OTF—<br>Restore all keys and switches. | |

**AW.  Call Class Marks to Traffic Service Position System (TSPS) No. 1**

**Zero Operator—Noncoin**

| | | |
|------|--------|--------------|
| 5 | Operate OTL, _D, OGT, MCB keys. | |
| 6 | Operate MKR_ key for marker under test. | |
| 7 | Set CST, CSU switches for class of service having access to TSPS No. 1. | |
| 8 | Operate REC key. | |
| 9 | Set A DIAL switch to 0. | |
| 10 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 11 | At OTF—<br>Operate ST key. | At TIC—<br>DR_, FS_, LC_, LV_ and FAK or FBK lamps lighted identifying trunk in route selected.<br>CR_ lamps lighted for arbitrary digits transmitted by marker. |
| 12 | Restore ST key. | |
| 13 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 14b | If no other tests are to be made—<br>At OTF—<br>Restore all keys and switches. | |

**Zero Operator—Coin**

| | | |
|------|--------|--------------|
| 15 | Operate OTL, _D, OGT, MCB keys. | |
| 16 | Operate MKR_ key for marker under test. | |
| 17 | Set CST, CSU switches for coin class of service having access to TSPS No. 1. | |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 18 | Operate REC key. | |
| 19 | Operate CN key. | |
| 20 | Set A DIAL switch to 0. | |
| 21 | Operate ST key. | At TIC—<br>DR_, FS_, LC_, LV_, FAK or FBK lamps lighted identifying trunk in route selected.<br>CR_ lamp lighted for arbitrary digits transmitted by marker. |
| 22 | At OTF—<br>Restore ST key. | CC or CR lamp momentarily lighted.<br>CND lamp lighted. |
| 23 | Restore CN key. | CND lamp extinguished. |
| 24 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 25b | If no other tests are to be made—<br>At OTF—<br>Restore all keys and switches. | |

**Prefix 0 or 1—Noncoin**

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 26 | Operate OTL, REC, _D, OGT, MCB keys. | |
| 27 | Operate MKR_ key for marker under test. | |
| 28 | Set CST, CSU switches for class of service having access to TSPS No. 1. | |
| 29 | Set A DIAL switch to 0 or 1 as required. | |
| 30 | Set B through N DIAL switches as required to route through TSPS No. 1. | |
| 31 | Operate ST key. | At TIC—<br>DR_, FS_, LC_, LV_, FAK or FBK lamps lighted identifying trunk in route selected.<br>CR_ lamps lighted for arbitrary digits transmitted by marker. |
| 32 | At OTF—<br>Restore ST key. | |
| 33 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 34b | If no other tests are to be made—<br>At OTF—<br>Restore all keys and switches. | |

**Prefix 0 or 1—Coin**

| STEP | ACTION | VERIFICATION |
|------|--------|--------------|
| 35 | Operate OTL, _D, OGT, MCB keys. | |
| 36 | Operate MKR_ key for marker under test. | |
| 37 | Set CST, CSU switches for coin class of service having access to TSPS No. 1. | |
| 38 | Operate REC key. | |
| 39 | Operate CN key. | |
| 40 | Set A DIAL switch to 0 or 1 as required. | |
| 41 | Set B through N DIAL switches as required to route through TSPS No. 1. | |
| 42 | Operate ST key. | At TIC—<br>DR_, FS_, LC_, LV_, FAK or FBK lamps lighted identifying trunk in route selected.<br>CR_ lamp lighted for arbitrary digits transmitted by marker. |
| 43 | At OTF—<br>Restore ST key. | CC or CR lamp momentarily lighted.<br>CND lamp lighted. |
| 44 | Restore CN key. | CND lamp extinguished. |
| 45 | At TIC—<br>Momentarily operate RLS key. | All lamps extinguished. |
| 46 | At OTF—<br>Restore all keys and switches. | |