

COMPLETING MARKER TESTS—PART 4
USING OFFICE TEST FRAME TEST CIRCUIT SD-27633-01 (J23260)
NO. 5 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section is Part 4 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:

that the marker sets the incoming trunk to overflow when signaled by an incoming register that there is a double connection on the incoming register link. This test also checks the link release feature and that trouble indications will be canceled when the CLRR key is operated.

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Q. Allotted PBX or Line Circuit Group—Number Group Preference and All-Lines-Busy Feature: This test checks marker preference for a number group having an idle line in an allotted PBX group. It also checks the all-lines-busy feature.

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1.04 Tests S and T require action and verification at the local test desk, or No. 3 local test cabinet, and a line link frame, and must be completed before the originating register times and routes call to overflow.

R. Outgoing Sender Preference and Lockout Feature: This test checks the sender selection feature of the marker.

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1.05 In test S it is necessary to make nine junctor switches busy on a line link frame.

S. No-Test Feature—Special Markers: This test checks that the marker no-test feature, with or without message register potential detection, functions properly under a called-line-busy condition.

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1.06 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 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.

T. Special Hunt (Nontest) Feature—Special Markers: This test checks that the marker recognizes a special hunt call and establishes the connection on a special hunt basis. A special hunt call is also known as a regular test call.

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2. APPARATUS

U. Reorder Feature: This test checks that the marker sets up reorder in the trunk when requested to do so by the incoming register.

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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 KS-3008 stopwatch or equivalent.

V. Incoming Register DCK and Link Release Feature: This test checks

2.04 1014A dial hand test set (handset) equipped with 3W8A cord assembly consisting of a

TABLE A

APPARATUS	TESTS					
	Q	R	S	T	U	V
Office Test Frame (OTF)	1	1				1
Trouble Indicator and Connector Circuit (TIC)	1	1				1
322A (make-busy) Plug		✓	✓	✓	✓	✓
32A Test Set		1				
349A (make-busy) Plug			✓			
Tools (2.02)	✓					
Stopwatch (2.03)					1	
Handset (2.04)			1	1	1	
Cord (2.05)					1	
Cord (2.06)						✓
Tool (2.07)						✓
Cord (2.08)						1

✓ As Required

W3AA cord, 471A jack, 351A plug and KS-8010 switch (for regular crossbar switch), or W3BK cord assembly consisting of a W3AA cord, 471A jack, 459F plug and KS-8010 switch (for small crossbar switch).

2.05 Patching cord, 2W38A cord assembly consisting of a W2CK cord, 471A jack, and 310 plug.

2.06 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord). (Use with tools specified in 2.07.)

2.07 624A (terminal connector) tools (used for making test connection to winding terminals of wire-spring-type relays).

2.08 Patching cord, P3E cord, 8 feet long, equipped with two 310 plugs (3P6E cord) (used for patching from ITT jack to T jack of incoming trunk).

3. PREPARATION

STEP	ACTION	VERIFICATION
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Tests Q, R and V

- | | | |
|---|---|--|
| 1 | At OTF—
Restore all keys and switches. | |
| 2 | Set L-L switch to 0. | |
| 3 | Set PS switch to 11/56. | |

STEP	ACTION	VERIFICATION
4a	If TOUCH-TONE® dialing is desired— Operate TT key.	

4. METHOD

STEP	ACTION	VERIFICATION
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Q. Allotted PBX or Line Circuit Group—Number Group Preference and All-Lines-Busy Feature

5	Select from office records an allotted PBX terminal hunting group that uses the largest number of number groups.	
6	At OTF— Operate OTL, 7D, MCB keys.	
7	Set CST, CSU switches for class of service having access to route selected.	
8	Operate NGA key.	
9	Set NGT switch as required to select a number group associated with the allotted PBX terminal hunting group selected.	
10	Operate CB key.	
11b	If PBX group is provided— Set A through G DIAL switches to direct call to line in the selected allotted group.	
12c	If PBX route is not provided and line circuit group is provided— Set A through G DIAL switches to direct call to any line requiring allotted line circuit group to complete.	
13	Operate MKR_ key for marker under test.	
14	At TIC— Momentarily operate RLS key.	All lamps extinguished.
15	At OTF— Operate ST key.	At TIC— DIS1, NGA, NGK lamps lighted. NGCU_ lamp lighted corresponding to number group selected. (Refer to Table B.) FU_, VG_, HGT_, VFT_ lamps lighted for line associated with PBX terminal hunting group selected.

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STEP	ACTION	VERIFICATION
16	At OTF— Restore ST key.	
17	At TIC— Momentarily operate RLS key.	All lamps extinguished.
18	At OTF— Repeat Steps 9 through 17 for each number group associated with the allotted PBX terminal hunting group selected.	
19d	If all number groups associated with allotted PBX terminal hunting groups have not been tested in Steps 9 through 18— Select from office records allotted PBX terminal hunting groups having numbers in the untested number groups.	
20d	Repeat Steps 9 through 18 for untested number groups selected.	
21d	Set NGT switch to AB.	
22	Select from office records an allotted PBX terminal hunting group or line circuit group.	
23	Set A through G DIAL switches to direct call to selected allotted or line circuit group to complete.	
24	Operate ST key.	At OTF— Busy tone heard.
25	Restore ST key.	Busy tone silenced.
26	Restore all keys and switches.	

R. Outgoing Sender Preference and Lockout Feature

- | | | |
|---|---|--|
| 5 | At jack, lamp, and key circuit—
Insert make-busy plug into M_C_MB jack of marker under test. | |
| 6 | Select from office records a nonallotted outgoing route having maximum number of senders available. | |
| 7 | At OTF—
Operate OTL, 7D, MCB keys. | |
| 8 | Set CST, CSU switches for class of service having access to route selected. | |

STEP

ACTION

VERIFICATION

TABLE B
NUMBER GROUP CHOICES

HUNTING GROUP DISTRIBUTED OVER	ORDER OF CHOICE									
	CHOICE		NUMBER GROUP A-H CHOICE FOR MARKER NUMBER							
	WITHOUT RECYCLE	WITH RECYCLE	0,8	1,9	2,10	3,11	4	5	6	7
5, 6, 7, or 8 Number Groups	1st	5th	A	B	C	D	E	F	G	H
	2nd	6th	E	F	G	H	C	D	B	A
	3rd	7th	C	D	B	A	G	H	F	E
	4th	8th	G	H	F	E	B	A	D	C
	5th	1st	B	A	D	C	F	E	H	G
	6th	2nd	F	E	H	G	D	C	A	E
	7th	3rd	D	C	A	B	H	G	E	F
	8th	4th	H	G	E	F	A	B	C	D
3 or 4 Number Groups	1st	3rd	A	B	C	D	C	D	B	A
	2nd	4th	C	D	B	A	B	A	D	C
	3rd	1st	B	A	D	C	D	C	A	B
	4th	2nd	D	C	A	B	A	B	C	D
2 Number Groups	1st	2nd	A	B	B	A	B	A	B	A
	2nd	1st	B	A	A	B	A	B	A	B

- 9 Set A through G DIAL switches for outgoing trunk route and any test number.
- 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_, SSA, OS_ lamps lighted.
- 14 At OTF—
Restore ST key.
- Note:** If SSB lamp lights, repeat Steps 12, 13, and 14.
- 15 At TIC—
Momentarily operate RLS key. All lamps extinguished.

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STEP	ACTION	VERIFICATION
16	At marker— Block operated SKA relay.	
17	Repeat Steps 13, 14, 15.	
18	At marker— Remove blocking tool from SKA relay.	
19	Block operated SKB relay.	
20	At OTF— Operate ST key.	At TIC— DR_, SSB, OS_ lamps lighted.
21	Restore ST key.	
22	At TIC— Momentarily operate RLS key.	All lamps extinguished.
23	At marker— Remove blocking tool from SKB relay.	
24	At OTF— Operate JSQ key.	
25	Set JSQ switch to 0.	
26	At marker under test— Block operated SKA relay.	
27	Block nonoperated OS2, OS3, OS4 relays.	
28	At OTF— Operate ST key.	At TIC— DR_, SSA, OS0 lamps lighted.
29	At OTF— Restore ST key.	
30	At TIC— Momentarily operate RLS key.	All lamps extinguished.
31	At marker— Remove blocking tool from OS2 relay.	
32	Block nonoperated OS0 relay.	
33	Repeat Steps 28, 29, 30.	At TIC— DR_, SSA, OS1 lamps lighted.
34	At marker— Remove blocking tool from OS3 relay.	
35	Block nonoperated OS1 relay.	

STEP	ACTION	VERIFICATION
36	Repeat Steps 28, 29, 30.	At TIC— DR ₋ , SSA, OS2 lamps lighted.
37	At marker— Remove blocking tool from OS4 relay.	
38	Block nonoperated OS2 relay.	
39	Repeat Steps 28, 29, 30.	At TIC— DR ₋ , SSA, OS3 lamps lighted.
40	At marker— Block nonoperated OS3 relay.	
41	Repeat Steps 28, 29, 30.	At TIC— DR ₋ , SSA, OS4 lamps lighted.
42	At marker— Remove blocking tools from OS ₋ relays.	
43	At OTF— Set JSQ switch to 1.	
44	Operate ST key.	AT TIC— DR ₋ , SSA, OS1 lamps lighted.
45	At TIC— Momentarily operate RLS key	All lamps extinguished.
46	At OTF— Restore ST key.	
47	Repeat Steps 43 through 46 for JSQ switch settings 2 through 5.	DR ₋ , SSA lamps lighted. OS ₋ lamp lighted according to JSQ switch setting. See Table C.

TABLE C

JSQ SWITCH SETTING	OS LAMP INDICATION
0	0
1	1
2	2
3	3
4	4
5	0

STEP	ACTION	VERIFICATION
48	At marker under test— Remove blocking tool from SKA relay.	
49	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
50	At OTF— Restore all keys and switches.	

S. No-Test Feature—Special Markers

1	At jack, lamp, and key circuit— Insert 322A make-busy plug into M_C_MB jack of marker <i>not</i> under test.	
2	Select from office records a test line number and determine line link location.	
3	At line link frame— Insert plug of handset into line switch vertical of selected test line.	
4	When line is idle— Set TALK-MON switch to TALK.	Dial tone heard.
5	At local test desk or No. 3 local test cabinet— Using no-test trunk, originate a call to selected test line number.	Dial tone heard. Talking path established.
6	At local test desk or No. 3 local test cabinet— Release test connection.	Dial tone silenced. Talking path removed.
7	At line link frame— Restore TALK-MON switch to MON.	Dial tone silenced.
8	Remove handset.	
9	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	

T. Special Hunt (Nontest) Feature—Special Markers

1	At jack, lamp, and key circuit— Insert make-busy plug into M_C_MB jack of marker <i>not</i> under test.
2	Select from office records a hunting group and determine line link locations and directory numbers of the first two lines.

STEP	ACTION	VERIFICATION
3	At line link frame— Insert plug of handset into line switch vertical of first line.	
4	While line is idle— Set TALK-MON switch to TALK.	Dial tone heard.
5	At local test desk or No. 3 local test cabinet— Using regular test trunk, originate a test call to first line in hunting group.	At line link frame— Line hold magnet operated for second line.
6	Remove plug of handset from line vertical of first line and insert plug of handset into line vertical of second line.	Talking path established.
7	At local test desk or No. 3 local test cabinet— Release test connection.	At line link frame— Talking path removed.
8	Remove handset.	Line hold magnet released.
9	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	

U. Reorder Feature

1	At jack, lamp, and key circuit— Insert make-busy plug into M_C_MB jack of marker <i>not</i> under test.	
2	Select from office records an incoming DP or MF trunk.	
3	Have trunk selected made busy at distant office.	
4	At relay rack frame— When trunk selected has its A relay normal, insert plug of handset into T jack of trunk.	
5	Set TALK-MON switch to TALK; <i>start timing</i> .	Within 40 seconds— Reorder tone heard.
6	Remove plug of handset from T jack.	
7	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
8	Have trunk restored to service at distant office.	

STEP	ACTION	VERIFICATION
V. Incoming Register DCK and Link Release Feature		
5	At jack, lamp, and key circuit— Insert make-busy plug into M_C_MB jack of marker <i>not</i> under test.	
6	Select from office records a DP or MF incoming trunk.	
7	Have trunk selected made busy at distant office.	
8	At relay rack frame— When trunk selected has its A relay normal, patch ITT jack to T jack of incoming trunk.	
9b	If trunk selected is bylink— Patch W3M cord to SP jack and connect sleeve to terminal 42 on trunk unit terminal strip.	
10c	If trunk selected is MF— At OTF— Operate MF key.	
11c	Set MF switch to MIN L.	
12d	If trunk selected has short conductor loop— Operate SLP key.	
13b	If trunk selected is bylink— Operate BL key.	
14b	Patch from BL jack to SP jack using P3E cord.	
15e	If trunk selected does not require dial start signal— Operate ONHK key.	
16f	If trunk selected has A relay ground shunt— Operate GS key.	
17	Operate ITT, ITT1, REC, MCB keys and MKR_ key for marker under test.	
18	Select from office records an incoming register serving trunk selected.	
19	At OTF— Set RSG switch to IRB_ to select incoming register group.	MBG lamp lighted if provided.

STEP	ACTION	VERIFICATION
20	Set RSS switch to select the particular incoming register.	
21	At incoming register— Connect 1U winding terminal of DCK relay to U winding of H relay.	
22	At TIC— Momentarily operate RLS key.	All lamps extinguished.
23	At OTF— Operate ST key.	At TIC— DR_ INC, LR lamps lighted. DCK lamp <i>not</i> lighted. At OTF— Overflow tone heard.
24	Restore ST key.	Overflow tone silenced.
25	At TIC— Momentarily operate RLS key.	All lamps extinguished.
26	At jack, lamp, and key circuit— Operate CLRR key.	
27	At OTF— Operate ST key.	At TIC— DL_ lamp lighted At OTF— Overflow tone heard.
28	Restore ST key.	Overflow tone silenced.
29	At TIC— Momentarily operate TIR AR key.	DL_ lamp extinguished.
30	At jack, lamp, and key circuit— Restore CLRR key.	
31	At incoming register— Remove test connection from DCK, H relays.	
32	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
33	At relay rack frame— Remove patching cord from ITT, T jacks.	
34b	If trunk selected is bylink— Remove patching cord from SP jack and unit terminal strip.	

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STEP	ACTION	VERIFICATION
35b	At OTF— Remove patching cord from SP jack and BL jack.	
36	Have trunk restored to service at distant office.	
37	At OTF— Restore all keys and switches.	MBG lamp extinguished if provided.