

COMBINED AND COMPLETING MARKER CIRCUITS—PART 7
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL		PAGE
1.01	This section is Part 7 in a series of sections for testing combined and completing markers.	
1.02	This reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. This issue does not affect Equipment Test Lists. (a) To revise test procedures to include offices arranged with Electronic Translation System (ETS). (b) To make minor changes as required.	
1.03	The tests covered are:	
	AE. Reorder Feature: This test checks that the marker sets up reorder in the trunk when requested to do so by the incoming register, intermarker group sender, or CAMA sender. . . .	2
	AF. Incoming Register Link Release Feature: This test checks that the marker sets the incoming trunk to overflow when signaled by the incoming register that the incoming register link failed to release.	3
	AG. Incoming Register Link Double-Connection Feature: This test checks 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.	4
	AH. Free Number Feature: This test checks that the marker recognizes a call to a free number.	5
	AI. Permanent Signal Features: This test checks that the marker detects customer line permanent signals from information received from originating registers and routes these lines to appropriate terminations. The markers may or may <i>not</i> be arranged for permanent signal expanded routing feature.	8
	AJ. Partial Dial Feature: This test checks that the marker recognizes a partial dial condition from the originating register and routes the customer to a tone or special service trunk.	17
1.04	Lettered Steps: A letter a, b, c, etc, added to a step number in Part 3 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.	
1.05	The manner of selecting some circuits and test conditions at the master test frame (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.	

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

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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 ♦When the office is arranged for LAMA-C or ETS, the distributors and scanners associated with the marker and trunk used in the test call must be in service or in a ***maintenance-busy*** condition—not in an ***out-of-service*** condition. To change a scanner or distributor from an ***out-of-service*** to a ***maintenance-busy*** condition, use the procedure given in the following sections for the office arrangement.

218-798-308—Taking LAMA-C Equipment Out-of-Service

218-799-701—Taking ETS Equipment Out-of-Service.

1.08 Additional test procedures are available for verification of leads between the completing marker and the distributor and scanner (DAS).

3. METHOD

STEP	ACTION	VERIFICATION
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Note: Refer to paragraphs 1.05, 1.06, 1.07, 1.08, and 1.09.

AE. Reorder Feature

- | | | |
|----|---|-------------------------|
| 1 | At MTF—
Restore all keys and switches. | |
| 2 | Momentarily operate RL key. | All lamps extinguished. |
| 3 | Select INC class of test. | |
| 4 | Select A_ through G_ digits as required to direct call to any line. | |
| 5 | Select any trunk link frame. | |
| 6a | If 4-wire switching route is selected—
Operate 4W key. | |
| 7b | If office is arranged for multilevel preemption—
Select CDP, CDA, CD control digits as required for access to called line. | |
| 8c | If office is arranged for multilevel preemption and call is directed to line with multilevel | |

Refer to Section 218-122-531 for DAS application to LAMA-C or Section 218-799-321 for DAS application to ETS.

1.09 When making tests in No. 5 crossbar offices arranged with Electronic Translation System and test verification requires a completing marker trace output (teletype printout) to determine the data used to process a call, operate the TCPO key at the master test frame (MTF). The data or trace output received at the maintenance teletypewriters (TTY) maybe in a ***raw*** form (binary or hexadecimal numbering system), formatted into decimal and written text, or a combination of both. For additional information on trace outputs and formats used, refer to Section 218-799-102.♦

2. APPARATUS

All Tests

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

STEP	ACTION	VERIFICATION
	preemption features— Operate AD key.	
9d	If office is arranged for multilevel preemption and call is directed to line without multilevel preemption features— Operate OD key.	
10	Select incoming trunk class as required for completion to called line.	
11	Select marker under test.	
12	Operate RO, REC keys.	
13e	If ETS provided and CM dump is required— Operate TCPO key.	
	<i>Note:</i> See paragraph 1.09.4	
14	Momentarily operate ST key.	OFL, MRL lamps lighted. Trouble record taken. RO, OV, OFH, RS0, RS9 designations perforated.
15	Momentarily operate RL key.	All lamps extinguished.
16	Restore all keys and switches.	
AF. Incoming Register Link Release Feature		
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select INC class of test.	
4	Select A_ through G_ digits as required to direct call to any line.	
5	Select any trunk link frame.	
6	Select incoming trunk class as required for completion to called line.	
7a	If 4-wire switching route is selected— Operate 4W key.	
8b	If office is arranged for multilevel preemption— Select CDP, CDA, CD control digits as required for access to called line.	

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STEP	ACTION	VERIFICATION
9c	If office is arranged for multilevel preemption and call is directed to line with multilevel preemption features— Operate AD key.	
10d	If office is arranged for multilevel preemption and call is directed to line without multilevel preemption features— Operate OD key.	
11	Select incoming class of call with translator indication as required for completion to called line.	
12	Select marker under test.	
13	Operate LR key.	
14	Momentarily operate ST key.	OFL, BT-OF lamps lighted. Trouble record taken. DCK, LR designations perforated.
15	Momentarily operate RL key.	All lamps extinguished.
16e	If CLRR key is provided— Operate CLRR key.	
17e	Momentarily operate ST key.	OFL, BT-OF lamps lighted.
18e	Momentarily operate RL key.	All lamps extinguished.
19	Restore all keys and switches.	

AG. Incoming Register Link Double-Connection Features

1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select INC class of test.	
4	Select A_ through G_ digits as required to direct call to any line.	
5	Select any trunk link frame.	
6	Select incoming trunk class as required for completion to called line.	

STEP	ACTION	VERIFICATION
7a	If 4-wire switching route is selected— Operate 4W key.	
8b	If office is arranged for multilevel preemption— Select CDP, CDA, CD control digits as required for access to called line.	
9c	If office is arranged for multilevel preemption and call is directed to a line with multilevel preemption features— Operate AD key.	
10d	If office is arranged for multilevel preemption and call is directed to line without multilevel preemption features— Operate OD key.	
11	Select incoming class of call with translator indication as required for completion to called line.	
12	Select marker under test.	
13	Operate DCK key.	
14	Momentarily operate ST key.	BT-OFF lamp lighted. Trouble record taken. LR designation perforated. DCK designation not perforated.
15	Momentarily operate RL key.	All lamps extinguished.
16	Restore all keys and switches.	

AH. Free Number Feature**Intraoffice Call to Local Free Number**

1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select ORIG class of test.	
4	Select A_ through G_ digits as required to direct call through intraoffice route to individual or hunting line assigned free number service.	
5	Select OR class of call with LT translator indication.	

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STEP	ACTION	VERIFICATION
6	Select line location as required for line identification of any coin, or message rate line.	
7	Select class of service and rate treatment as required for access to selected route.	
8a	◆If ETS provided— Operate PCS key.◆	
9	Select marker under test.	
10	Operate REC key.	
11b	◆If ETS provided and CM dump is required— Operate TCPO key.	
	<i>Note:</i> See paragraph 1.09.◆	
12	Momentarily operate ST key.	MRL lamp lighted. Two trouble records taken. <i>First and second trouble records—</i> LCH, FNA designation perforated for individual line. LCH, FNA or FNB designations perforated for hunting line. ◆If ETS provided— FNB designation not perforated.◆
13	Momentarily operate RL key.	All lamps extinguished.
14	Restore all keys and switches.	

**Non-CAMA Incoming or Non-CAMA Intermarker Group
Call to Local Free Number**

15	At MTF— Restore all keys and switches.	
16	Momentarily operate RL key.	All lamps extinguished.
17	Select INC class of test.	
18	Select A_ through G_ digits as required to direct call to individual or hunting line assigned for free number service.	
19	Select any trunk link frame.	
20	Select incoming trunk class as required for completion to called line.	

STEP	ACTION	VERIFICATION
21	Select incoming class of call with translator indication as required for completion to called line.	
22	Select marker under test.	
23	Operate REC key.	
24b	◆If ETS provided and CM dump is required— Operate TCPO key.	
	Note: See paragraph 1.09.◆	
25	Momentarily operate ST key.	<p><i>Incoming Trunk Class (ITC_ Key or Switch) Causes Charge Supervision to be Returned to Originating Office</i> MRL lamp lighted. FL lamp not lighted. Trouble record taken. TER designation perforated. TCH, FNA designations perforated for individual line. TCH and FNA or FNB designations perforated for hunting line. ◆If ETS provided— FNB designation not perforated.◆</p> <p><i>Incoming Trunk Class (ITC_ Key or Switch) Does Not Cause Charge Supervision to be Returned to Originating Office</i> MRL, FL lamps lighted. Trouble record taken. TER designation perforated. LCH, FNA designations perforated for individual line. LCH and FNA or FNB designations perforated for hunting line. ◆If ETS provided— FNB designation not perforated.◆</p>
26	Momentarily operate RL key.	All lamps extinguished.
27	Restore all keys and switches.	
CAMA Incoming or CAMA Intermarker Group Call to Local Free Number		
28	At MTF— Restore all keys and switches.	
29	Momentarily operate RL key.	All lamps extinguished.

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STEP	ACTION	VERIFICATION
30	Select INC class of test.	
31	Select A_ through G_ digits as required to direct call to individual or hunting line assigned free number service.	
32	Select any trunk link frame.	
33	Select incoming trunk class as required for completion to called line.	
34	Select incoming class of call with translator indication as required for completion to called line.	
35	Select marker under test.	
36	Select ACD or LCD 1/2 as required for completion to called line.	
37	Operate REC key.	
38b	♦If ETS provided and CM dump is required— Operate TCPO key. Note: See paragraph 1.09.♦	
39	Momentarily operate ST key.	MRL, FL lamps lighted. Trouble record taken. TER designation perforated. LCH, FNA designations perforated for individual line. LCH and FNA or FNB designations perforated for hunting line. ♦If ETS provided— FNB designation not perforated.♦
40	Momentarily operate RL key.	All lamps extinguished.
41	Restore all keys and switches.	
A1. Permanent Signal Features		
2-Wire Switching Without Permanent Signal Expanded Routing Feature		
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select ORIG class of test.	

STEP	ACTION	VERIFICATION
4	Select OR class of call and translator indication as required.	
5	Select line location as required for line identification of noncoin line.	
6	Select class of service and rate treatment as required for noncoin line.	
7a	♦If ETS provided— Operate PCS key.♦	
8	Select marker under test.	
9	Select PS auxiliary originating translation indication.	
10	Operate APS key.	
11	Momentarily operate ST key.	LK2, MRL lamps lighted. Trouble record taken. PS designation perforated. FS_ TS_ TB_ TG_ designations perforated indicating location of 2-wire permanent signal holding trunk. ♦If ETS provided— TG_ designation not perforated.♦ If range extension for unigauge cabling is provided— LOLD designation perforated.
12	Momentarily operate RL key.	All lamps extinguished.
13	Select route advance 1.	
14a	♦If ETS provided— Operate PTS key.♦	
15	Momentarily operate ST key.	MRL, RA1 lamps lighted. Trouble record taken. PS designation perforated. FS_ TS_ TB_ TG_ designations perforated indicating location of 2-wire common overflow trunk. ♦If ETS provided— RA1 lamp not lighted. TG_ designation not perforated.♦ If range extension for unigauge cabling is provided— LOLD designation perforated.
16	Momentarily operate RL key.	All lamps extinguished.

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STEP	ACTION	VERIFICATION
17	Restore all keys and switches.	
4-Wire Switching—Without Permanent Signal Expanded Routing Feature		
18	At MTF— Restore all keys and switches.	
19	Momentarily operate RL key.	All lamps extinguished.
20	Select ORIG class of test.	
21	Select OR class of call and translator indication as required.	
22	Select line location as required for line identification of 4-wire line.	
23	Select class of service and rate treatment as required for 4-wire line.	
24a	◆If ETS provided— Operate PCS key.◆	
25	Operate 4W, APS key.	
26	Select PS auxiliary originating translator indication.	
27b	If office is arranged for multilevel preemption— Select CDP, CD control digits as required for any priority level.	
28	Select marker under test.	
29	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. 4W, PS designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of 4-wire permanent signal holding trunk. ◆If ETS provided— TG_ designation not perforated.◆ If office is arranged for multilevel preemption and priority level P0-3 is set up in Step 27b— LP0, LP1, LP2 lamps lighted.
30	Momentarily operate RL key.	All lamps extinguished.
31	Select route advance 1.	

STEP	ACTION	VERIFICATION
32a	◆If ETS provided— Operate PTS key.◆	
33	Momentarily operate ST key.	MRL, RA1 lamps lighted. Trouble record taken. 4W, PS designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of 4-wire common overflow trunk. ◆If ETS provided— RA1 lamp not lighted. TG_ designation not perforated.◆ If office is arranged for multilevel preemption and priority level P0-3 is set up in Step 27b— LP0, LP1, LP3 lamps lighted.
34	Momentarily operate RL key.	All lamps extinguished.
35	Restore all keys and switches.	

**2-Wire Switching—With Permanent Signal Expanded
Routing Feature**

All Lines Except Coin and Two-Party

36	At MTF— Restore all keys and switches.	
37	Momentarily operate RL key.	All lamps extinguished.
38	Select ORIG class of test.	
39	Select OR class of call and translator indication as required.	
40	Select line location as required for line identification of any line except coin and two-party.	
41	Select class of service and rate treatment as required.	
42a	◆If ETS provided— Operate PCS key.◆	
43	Select marker under test.	
44	Select PS auxiliary originating translation indication.	
45	Operate APS key.	

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STEP	ACTION	VERIFICATION
46	Select route advance as required.	
47a	◆If ETS provided— Operate PTS key.◆	
48	Operate 1LTT key.	
49	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. Trouble record taken. PS, GT5 designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of PSG trunk (common overflow trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
50	Momentarily operate RL key.	All lamps extinguished.
51	Operate 2LTT key.	
52	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. Trouble record taken. PS, PS1, GT5 designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of PSG trunk (common overflow trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
53	Momentarily operate RL key.	All lamps extinguished.
54	Restore APS key.	
55	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. Trouble record taken. PS, PS1, GT5 designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of PSG trunk (common overflow trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
56	Momentarily operate RL key.	All lamps extinguished.
57	Operate NPS key.	
58	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. No trouble record taken.

STEP	ACTION	VERIFICATION
		♦If ETS provided— RA_ lamp not lighted.♦
59	Momentarily operate RL key.	All lamps extinguished.
60	Operate APS key.	
61	Restore 2LTT key.	
62	Momentarily operate ST key.	LK2, ROH, RA_, MRL lamps lighted. Trouble record taken. PS, PS1 designations perforated. GT5 designation <i>not</i> perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of ROH trunk (permanent signal holding trunk). ♦If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.♦
63	Momentarily operate RL key.	All lamps extinguished.
64	Restore APS key.	
65	Momentarily operate ST key.	LK2, ROH, RA_, MRL lamps lighted. No trouble record taken. ♦If ETS provided— RA_ lamp not lighted.♦
66	Momentarily operate RL key.	All lamps extinguished.
67	Operate APS key.	
68	Change route advance as required to select overflow trunk route.	
69	Operate 1LTT key.	
70	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. ♦If ETS provided— RA_ lamp not lighted.♦ Trouble record taken. PS, GT5 designations perforated. TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating location of <i>overflow link</i> . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
71	Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
72	Operate 2LTT key.	
73	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. ◆If ETS provided— RA_ lamp not lighted.◆ Trouble record taken. PS, PS1, GT5 designations perforated. TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating location of overflow link . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
74	Momentarily operate RL key.	All lamps extinguished.
75	Restore 2LTT key.	
76	Momentarily operate ST key.	LK2, ROH, RA_, MRL lamps lighted. ◆If ETS provided— RA_ lamp not lighted.◆ Trouble record taken. PS, PS1 designations perforated. GT5, TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating location of overflow link . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
77	Momentarily operate RL key.	All lamps extinguished.
78	Restore all keys and switches.	

Two-Party Lines

79	At MTF— Restore all keys and switches.	
80	Momentarily operate RL key.	All lamps extinguished.
81	Select ORIG class of test.	
82	Select OR class of call and translator indication as required.	
83	Select line location as required for line identification of a two-party line.	
84	Select class of service and rate treatment as required.	

STEP	ACTION	VERIFICATION
85a	◆If ETS provided— Operate PCS key.◆	
86	Select marker under test.	
87	Select PS auxiliary originating translation indication.	
88	Operate APS key.	
89	Operate TP key.	
90	Select route advance as required.	
91a	◆If ETS provided— Operate PTS key.◆	
92	Operate 1LTT key.	
93	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. Trouble record taken. PS, GT5 designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of PSG trunk (common overflow trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
94	Momentarily operate RL key.	All lamps extinguished.
95	Operate 2LTT key.	
96	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. Trouble record taken. PS, PS1, GT5 designations perforated. FS_, TS_, TB_, TG_ designations perforated indicating location of PSG trunk (common overflow trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
97	Momentarily operate RL key.	All lamps extinguished.
98	Restore 2LTT key.	
99	Momentarily operate ST key.	LK2, ROH, RA_, MRL lamps lighted. Trouble record taken. PS designation perforated. GT5 designation <i>not</i> perforated. FS_, TS_, TB_, TG_ designations perforated

STEP	ACTION	VERIFICATION
		indicating location of ROH trunk (permanent signal holding trunk). ◆If ETS provided— RA_ lamp not lighted. TG_ designation not perforated.◆
100	Momentarily operate RL key.	All lamps extinguished.
101	Change route advance as required to select overflow trunk route.	
102	Operate 1LTT key.	
103	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. ◆If ETS provided— RA_ lamp not lighted. Trouble record taken. PS, GT5 designations perforated. TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating location of overflow link . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
104	Momentarily operate RL key.	All lamps extinguished.
105	Operate 2LTT key.	
106	Momentarily operate ST key.	LK2, PSG, RA_, MRL lamps lighted. ◆If ETS provided— RA_ lamp not lighted.◆ Trouble record taken. PS, PS1, GT5 designations perforated. TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating location of overflow link . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
107	Momentarily operate RL key.	All lamps extinguished.
108	Restore 2LTT key.	
109	Momentarily operate ST key.	LK2, ROH, RA_, MRL lamps lighted. ◆If ETS provided— RA_ lamp not lighted.◆ Trouble record taken. PS, PS1 designations perforated. GT5, TB_, TG_ designations <i>not</i> perforated. FS_, CH_ designations perforated indicating

STEP	ACTION	VERIFICATION
		location of <i>overflow link</i> . RK or LK designation perforated indicating overflow link on right or left side of selected trunk switch.
110	Momentarily operate RL key.	All lamps extinguished.
111	Restore all keys and switches.	
AJ. Partial Dial Feature		
2-Wire Switching		
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select ORIG class of test.	
4	Select OR class of call and translator indication as required.	
5	Select line location as required for line identification of any line with originating service.	
6	Select class of service and rate treatment as required.	
7a	♦If ETS provided— Operate PCS key.♦	
8	Select marker under test.	
9	Select PD auxiliary originating translator indication.	
10	Operate REC key.	
11b	♦If ETS provided and CM dump is required— Operate TCPO key.	
	Note: See paragraph 1.09.♦	
12	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. PD, OR designations perforated. FS, TS, TB, TG, LC, LV, FAK/FBK designations perforated indicating location of tone trunk or special service trunk.

STEP	ACTION	VERIFICATION
		◆If ETS provided— TG_ designation not perforated.◆
13	Momentarily operate RL key.	All lamps extinguished.
14	Restore all keys and switches.	
4-Wire Switching		
15	At MTF— Restore all keys and switches.	
16	Momentarily operate RL key.	All lamps extinguished.
17	Select ORIG class of test.	
18	Select OR class of call and translator indication as required.	
19	Select line location as required for line identification of 4-wire line.	
20	Select class of service and rate treatment as required for 4-wire line.	
21a	◆If ETS provided— Operate PCS key.◆	
22	Select marker under test.	
23	Select PD auxiliary originating translator indication.	
24	Operate 4W, REC keys.	
25b	◆If ETS provided and CM dump is required— Operate TCPO key.	
	Note: See paragraph 1.09.◆	
26	Momentarily operate ST key.	MRL lamp lighted. Trouble record taken. 4W, PD, OR designations perforated. FS_, TS_, TB_, TG_, LC_, LV_, FAK/FBK designations perforated indicating location of tone trunk, announcement trunk, or special service trunk. ◆If ETS provided— TG_ designation not perforated.◆
27	Momentarily operate RL key.	All lamps extinguished.

STEP

ACTION

VERIFICATION

28 Restore all keys and switches.