

## COMBINED AND COMPLETING MARKER CIRCUITS—PART 17

### TESTS USING MASTER TEST FRAME

### NO. 5 CROSSBAR OFFICES

#### 1. GENERAL

1.01 This section is Part 17 in a series of sections for testing combined and completing markers.

1.02 The 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 exclude under verification in all tests, reference to "class of test" lamps.
- (c) To make minor changes as required.

1.03 The test covered is:

**BZ. Echo Suppressor and Universal Pad Control Feature:** This test checks the marker 4-wire switching echo suppressor and 2-wire switching universal pad control feature.

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.

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 On issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, DT, ORIG, ITDO, ITNP, OGT, INC, OR, SDR, IR, MISC, IAO, MLV, LT, IMS, PTT, TVT, ATNT, and IMT.

1.08 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.

1.09 Additional test procedures are available for verification of leads between the completing marker and the distributor and scanner (DAS). Refer to Section 218-122-531 for DAS application to LAMA-C or Section 218-799-321 for DAS application to ETS.

#### NOTICE

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

**SECTION 218-122-517**

**1.10** When making tests in No. 5 crossbar offices arranged with Electronic Translation System and test verification requires a completing marker trace output (teletype printout or data dump) to determine the data used to process a call, operate the TCPO key at the master test frame (MTF). The data dump received at the maintenance teletypewriters (TTY) may be in a raw form (binary

or hexadecimal numbering system), formatted into decimal and written text, or a combination of both. For additional information on data dumps and formats used, refer to Section 218-799-102.♦

**2. APPARATUS**

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

**3. METHOD**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
-------------	---------------	---------------------

*Note:* Refer to paragraphs 1.04 through 1.10.

**BZ. Echo Suppressor and Universal Pad Control Feature**

**Toll Tandem Outgoing Call**

1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select INC class of test.	
4a	If testing 2-wire offices— Select A_ through K_ digits as required to direct call to toll tandem outgoing route.	
5b	If testing 4-wire offices— Select A_ through K_ digits as required to direct call to toll tandem nonspecial grade outgoing route.	
6	Select TOL class of call with translator indication as required for access to selected route.	♦TOL lamp lighted.♦
7	Select trunk number having access to selected route.	
8	Select route advance as required for access to selected route.	
9c	♦If ETS provided— Operate PTS key.♦	
10	Select any trunk link frame.	
11d	If 4-wire switching route is selected— Operate 4W key.	

STEP	ACTION	VERIFICATION
12e	If office is arranged for multilevel preemption— Select CDP, CD, CDA control digits as required for access to selected route.	
13f	If office is arranged for multilevel preemption and call is directed to line with multilevel preemption features— Operate AD key.	
14g	If office is arranged for multilevel preemption and call is directed to line without multilevel preemption features— Operate OD key.	
15h	If polygrid route is selected— Select junctor sequence as required for routing control.	
16	Select marker under test.	
17	Operate TES key.	
18	Momentarily operate ST key.	◆ENFL,◆ ES, MRL lamps lighted. ◆If ETS not provided— TNK lamp lighted if equipped.◆
19	Momentarily operate RL key.	All lamps extinguished ◆except TOL.◆
20	Restore TES key; operate LES key.	
21	Repeat Steps 18, 19.	
22	Operate TES key.	
23	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted. ◆If ETS not provided— TNK lamp lighted if equipped.◆
24	Momentarily operate RL key.	All lamps extinguished ◆except TOL.◆
25	Restore TES, LES keys.	
26	Operate NLES key.	
27	Momentarily operate ST key.	TRL lamp lighted. ◆If ETS not provided— TNK lamp lighted if equipped.◆ Trouble record taken. ESCK designation not perforated.
28	Momentarily operate RL key.	All lamps extinguished ◆except TOL.◆

SECTION 218-122-517

STEP	ACTION	VERIFICATION
29	Restore NLES key.	
30	Operate NTES key.	
31	Repeat Steps 27, 28.	
32	Restore NTES key.	
33	Operate OESK, LES key.	
34	Repeat Steps 27, 28.	
35	Restore LES key.	
36	Operate TES key.	
37	Repeat Steps 27, 28.	
38	Restore OESK key.	
39	Operate GESK key.	
40	Repeat Steps 27, 28.	
41	Restore TES key.	
42	Operate LES key.	
43	Repeat Steps 27, 28.	
44	Operate TR2 key.	
45	Momentarily operate ST key.	♦ES,♦ MRL lamps lighted. ♦If ETS not provided— TNK lamp lighted if equipped.♦
46	Momentarily operate RL key.	All lamps extinguished ♦except TOL.♦
47	Restore all keys and switches.	♦TOL lamp extinguished.♦
48e	If office is arranged for multilevel preemption— Select A_ through K_ digits as required to direct call to special grade outgoing route.	
49e	Repeat Steps 3, 6 through 8, and 10 through 17.	
50e	Momentarily operate ST key.	♦ES,♦ MRL lamps lighted. ♦If ETS not provided— TNK lamp lighted if equipped.♦
51e	Momentarily operate RL key.	All lamps extinguished ♦except TOL.♦

STEP	ACTION	VERIFICATION
52e	Restore all keys and switches.	◆TOL lamp extinguished.◆
<b>Incoming Call</b>		
53	At MTF— Restore all keys and switches.	
54	Momentarily operate RL key.	All lamps extinguished.
55	Select INC class of test.	
56a	If testing 2-wire offices— Select A_ through K_ digits as required to direct call to local line.	
57b	If testing 4-wire offices— Select A_ through G_ digits as required to direct call to local line.	
58	Select incoming class of call with translator indication as required for completion to called line.	
59	Select incoming trunk class as required for completion to called line.	
60	Select any trunk link frame.	
61d	If 4-wire switching route is selected— Operate 4W key.	
62e	If office is arranged for multilevel preemption— Select CDP, CD, CDA control digits as required for completion to called line.	
63f	If office is arranged for multilevel preemption and call is directed to line with multilevel preemption features— Operate AD key.	
64g	If office is arranged for multilevel preemption and call is directed to line without multilevel preemption features— Operate OD key.	
65	Select marker under test.	
66	Operate TES, 2WD keys.	
67	Momentarily operate ST key.	◆ENFL,◆ ES, MRL lamps lighted.
68	Momentarily operate RL key.	All lamps extinguished.

**SECTION 218-122-517**

STEP	ACTION	VERIFICATION
69	Restore TES key; operate NTES key.	
70	Momentarily operate ST key.	TRL lamp lighted. Trouble record taken. ESCK designation not perforated.
71	Momentarily operate RL key.	All lamps extinguished.
72	Restore NTES key.	
73	Operate OESK, TES keys.	
74	Repeat Steps 70, 71.	
75	Restore OESK key; operate GESK key.	
76	Repeat Steps 70, 71.	
77	Operate TR2 key.	
78	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.
79	Momentarily operate RL key.	All lamps extinguished.
80	Restore all keys and switches.	
81e	If office is arranged for multilevel preemption— Select A_ through G_ digits as required to direct call to special grade local line.	
82e	Repeat Steps 55, 58 through 66.	
83e	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.
84e	Momentarily operate RL key.	All lamps extinguished.
85e	Restore all keys and switches.	

**Subscriber Outgoing Call**

86	At MTF— Restore all keys and switches.	
87	Momentarily operate RL key.	All lamps extinguished.
88	Select ORIG class of test.	
89a	If testing 2-wire offices— Select A_ through K_ digits as required to direct call to outgoing route.	

STEP	ACTION	VERIFICATION
90b	If testing 4-wire offices— Select A_ through K_ digits as required to direct call to nonspecial grade outgoing route.	
91	Select originating class of call with translator indication as required for access to selected route.	
92	Select line location as required for line identification of any line having access to selected route.	
93	Select class of service and rate treatment as required for access to selected route.	
94c	◆If ETS provided— Operate PCS key.◆	
95	Select route advance as required for access to selected route.	
96c	◆If ETS provided— Operate PTS key.◆	
97d	If 4-wire switching route is selected— Operate 4W key.	
98e	If office is arranged for multilevel preemption— Select CDP, CD control digits as required for access to selected route.	
99h	If polygrid route is selected— Select junctor sequence as required for routing control.	
100	Select marker under test.	
101	Operate TES, 2WD keys.	
102	Momentarily operate ST key.	◆ENFL,◆ ES, MRL lamps lighted.
103	Momentarily operate RL key.	All lamps extinguished.
104	Restore TES key; operate NTES key.	
105	Momentarily operate ST key.	TRL lamp lighted. Trouble record taken. ESCK designation not perforated.
106	Momentarily operate RL key.	All lamps extinguished.
107	Restore NTES key.	

**SECTION 218-122-517**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
108	Operate OESK, TES key.	
109	Repeat Steps 105, 106.	
110	Restore OESK key; operate GESK key.	
111	Repeat Steps 105, 106.	
112	Operate TR2 key.	
113	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.
114	Momentarily operate RL key.	All lamps extinguished.
115	Restore all keys and switches.	
116e	If office is arranged for multilevel preemption— Select A_ through K_ digits as required to direct call to special grade outgoing route.	
117e	Repeat Steps 88, 91 through 93, 95, 97d through 101.	
118e	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.
119e	Momentarily operate RL key.	All lamps extinguished.
120e	Restore all keys and switches.	

**Intraoffice Call**

121	At MTF— Restore all keys and switches.	
122	Momentarily operate RL key.	All lamps extinguished.
123	Select ORIG class of test.	
124a	If testing 2-wire offices— Select A_ through G_ digits as required to direct call through intraoffice route to local line.	
125b	If testing 4-wire offices— Select A_ through G_ digits as required to direct call through nonspecial grade intraoffice route to local line.	
126	Select OR class of call with translator indication as required for access to selected route.	

STEP	ACTION	VERIFICATION
127	Select line location as required for line identification of any line having access to selected route.	
128	Select class of service and rate treatment as required for access to selected route.	
129c	◆If ETS provided— Operate PCS key.◆	
130	Select route advance and rate treatment as required for access to selected route.	
131c	◆If ETS provided— Operate PTS key.◆	
132d	If 4-wire switching route is selected— Operate 4W key.	
133e	If office is arranged for multilevel preemption— Select CDP, CD control digits as required for access to selected route.	
134	Select marker under test.	
135	Operate TES, 2WD keys.	
136	Momentarily operate ST key.	ES, ENFL, MRL lamps lighted.
137	Momentarily operate RL key.	All lamps extinguished.
138	Restore TES key; operate NTES key.	
139	Momentarily operate ST key.	TRL lamp lighted. Trouble record taken. ESCK designation not perforated.
140	Momentarily operate RL key.	All lamps extinguished.
141	Restore NTES key.	
142	Operate OESK, TES keys.	
143	Repeat Steps 139, 140.	
144	Restore OESK key; operate GESK key.	
145	Repeat Steps 139, 140.	
146	Operate TR2 key.	
147	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.

STEP	ACTION	VERIFICATION
148	Momentarily operate RL key.	All lamps extinguished.
149	Restore GESK, TR2 keys.	
150	Restore 2WD key; operate 2WCB key.	
151	Momentarily operate ST key.	ES, ENCB, CKCB, MRL lamps lighted.
152	Momentarily operate RL key.	All lamps extinguished.
153	Repeat Steps 138 through 149.	
154	Restore all keys and switches.	
155e	If office is arranged for multilevel preemption— Select A_ through G_ digits as required to direct call through special grade intraoffice route to local line.	
156e	Repeat Steps 123, 126 through 128, 130, 132d through 134.	
157e	Operate TES, 2WCB keys.	
158e	Momentarily operate ST key.	◆ES,◆ MRL lamps lighted.
159e	Momentarily operate RL key.	All lamps extinguished.
160e	Restore all keys and switches.	