COMPLETING MARKER TESTS-PART 1

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

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is reissued for the following reasons:

(a) To remove Tests G through AZ from this section. These tests will be provided in a series of consecutively numbered sections: 218-423-502, 218-423-503, etc.

(b) To make minor changes as required.

Since this issue covers a general revision, arrows ordinarily used to indicate changes are omitted.

1.02 This issue affects Equipment Test Lists.

1.03 The tests covered are:

1.04 In Test B it is necessary to make busy all trunks on one trunk link frame in an allotted group.

1.05 ***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.

1.06 During test C and D the originating matching loss register will score and in Test F the incoming matching loss register will score. The reporting of these register operations should be in accordance with local instructions.

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.

TABLE A

APPARATUS	TEST					
	A	B	C	D	E	F
Office Test Frame (OTF)	1	1	1	1	1	1
Trouble Indicator and Connector Circuit (TIC)		1				
32A Test Set	1	1	1	1	1	1
322A (make-busy) Plug	√	√			√	√
349A (make-busy) Plug			√	√		√
Tools (2.02)		√				
Cord (2.03)					√	
Cord (2.06)						2
Cord (2.07)						1
Tool (2.04)					√	
Tool (2.05)					√	
Diode (2.08)					3	

√ As required.

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 and 2.05.)

2.04 624A (terminal connector) tools (used for making test connection to winding terminals of wire-spring-type relays).

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

2.06 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).

2.07 Patching cord, W3M cord, 15 feet long, equipped with one 320 plug, one 360A tool, one 360B tool, one 360C tool (3W4B cord), and one KS-6278 connecting clip (used to connect SP jack to unit terminal strip).

2.08 420J diode.

Note: Polarity of diode is indicated on the body of the diode as shown in Fig. 1.

Fig. 1

3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
1	At OTF— 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 desiredd— Operate TT key.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Trunk Link Frame 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 an intraoffice route that has at least one trunk on each trunk link frame.	
7	At OTF— Operate OTL, 7D, IAO, MCB keys.	
8	Set CST, CSU, switches for class of service having access to route selected.	
9	Set A through G DIAL switches to select intraoffice code and any test number.	
10	Operate MKR_ key for marker under test.	
11	At marker— Insert plug of 32A test set into RC jack.	
12	Observe setting of FM_, FMG_ relays.	
13	Momentarily operate white (ST) button on 32A test set.	With intraoffice trunks available on all trunk link frames, starting with FMG_ and FM_ relays operated corresponding to the highest numbered trunk link frame, FS_ relays operated in the following order—FS0, FS2, FS4, etc, corresponding to even numbered trunk link frames provided, then FS1, FS3, corresponding to the odd numbered trunk link frames provided. ***Note:*** If FMG_ and FM_ relays are not operated corresponding to the highest numbered trunk link frame provided, momentarily operate red (RL) button on 32A test set. Repeat this step until these relays are operated.
14	Momentarily operate red (RL) button on 32A test set.	
15	Repeat Steps 13, 14 until all FS_ relays have been operated for equipped trunk link frames.	Observe proper sequence of FS_ relays.
16	Remove plug of 32A test set from RC jack.	

STEP	ACTION	VERIFICATION
17	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
18	At OTF— Restore all keys and switches.	
B.	**Two-Step Allotter Feature—More Than 20 Trunks on a Trunk Link Frame for a Particular Route**	
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 route having allotted groups.	
7	At OTF— Operate OTL, 7D, MCB, REC keys.	
8	Set CST, CSU switches for class of service having access to route selected.	
9	Set A through G DIAL switches to select allotted route and any test number.	
10	Operate MKR_ key for marker under test.	
11	At marker— Insert plug of 32A test set into RC jack.	
12	Momentarily operate white (ST) button on 32A test set.	GPA relay operated. ***Note:*** If GPB relay operated instead of GPA, momentarily operate red (RL) button on 32A test set and repeat Step 11.
13	Momentarily operate red (RL) button on 32A test set.	GPA relay operated.
14	Repeat Steps 12, 13.	GPB relay operated and released.
15	At OTF— Operate FS_ key to select any trunk link frame having trunks in groups A and B.	
16b	If trunks selected appear at jack, lamp, and key circuit— Insert make-busy plugs into MB jacks of all trunks assigned to group A on selected trunk link frame.	

STEP	ACTION	VERIFICATION
17c	If trunks selected have make-busy switches on relay rack— Operate MB switches of all trunks assigned to group A on selected trunk link frame.	
18	At TIC— Momentarily operate RLS key.	All lamps extinguished.
19	At OTF— Operate ST key.	At TIC— Trunk location FS_, LC_, LV_, TB_, FAK or FBK lamps lighted for trunk in group B.
20	At OTF— Restore ST key.	
21	At TIC— Momentarily operate RLS key.	All lamps extinguished.
22b	If trunks selected appear at jack, lamp, and key circuit— Remove all make-busy plugs from MB jacks.	
23c	If trunks selected have make-busy switches on relay rack— Restore all MB switches.	
24	At marker— Momentarily operate white (ST) button on 32A test set.	GPA relay operated.
25	Momentarily operate red (RL) button on 32A test set.	
26	Repeat Steps 16b through 23c as required, making busy trunks in group B.	At TIC— Lamp verification is for trunk in group A.
27	At marker— Remove plug of 32A test set from RC jack.	
28	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
29	At OTF— Restore all keys and switches.	

C. Failure-to-Match Feature Using Allotted Intraoffice Trunks

5	Select from office records a trunk link frame having allotted intraoffice trunks in groups A and B and a tone trunk.	

STEP	ACTION	VERIFICATION
6	At OTF— Operate FS_ key for selected trunk link frame.	
7	Operate OTL, CH, 7D, MCB keys.	
8	Set CST, CSU switches for class of service having access to route selected.	
9	Set A through G DIAL switches for intraoffice route and any number that terminates on same line link frame as originating test line.	
10	Operate MKR_ key for marker under test.	
11	Set JSQ switch to 0.	
12	Set CH switch to 9.	
13	At line link frame selected— Insert 349A make-busy plug into JS9 jack.	
14	At marker Insert plug of 32A test set into RC jack.	
15	Momentarily operate white (ST) button on 32A test set.	GPA, GPB, RAV1, FM, 1FA, 2FA, SOG1 relays momentarily operated. At OTF— Overflow tone heard.
16	At marker— Momentarily operate red (RL) button on 32A test set.	At OTF— Overflow tone silenced.
17	Remove plug of 32A test set from RC jack.	
18	At line link frame selected— Remove 349A make-busy plug from JS9 jack.	
19	At OTF— Restore all keys and switches.	

D. Failure-to-Match Feature Using Nonallotted Intraoffice Trunks

5	Select from office records a trunk link frame having an intraoffice and a tone trunk.	
6	At OTF— Operate FS_ key for selected trunk link frame.	
7	Operate OTL, CH, 7D, MCB keys.	

STEP	ACTION	VERIFICATION
8	Set CST, CSU switches for class of service having access to route selected.	
9	Set A through G DIAL switches for intraoffice route and any number that terminates on same line link frame as originating test line.	
10	Operate MKR_ key for marker under test.	
11	Set JSQ switch to 0.	
12	Set CH switch to 9.	
13	At line link frame selected— Insert 349A make-busy plug into JS9 jack.	
14	At marker— Insert plug of 32A test set into RC jack.	
15	Momentarily operate white (ST) button on 32A test set.	SOG1, FM, 1FA, 2FA relays momentarily operated. At OTF— Overflow tone heard.
16	At marker— Momentarily operate red (RL) button on 32A test set.	At OTF— Tone silenced.
17	Remove plug of 32A test set from RC jack.	
18	At line link frame selected— Remove 349A make-busy plug from JS9 jack.	
19	At OTF— Restore all keys and switches.	

E. Failure-to-Match Feature Using Outgoing Trunks

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 trunk link frame having an outgoing trunk with no alternate routes and a tone trunk. Record ground supply of outgoing trunk route.	
7	At OTF— Operate FS_ key for selected trunk link frame.	
8	Operate OTL, CH, 7D, MCB keys.	

STEP	ACTION	VERIFICATION
9	Set CST, CSU switches for class of service having access to route selected.	
10	Set A through G DIAL switches for outgoing trunk route and any test number.	
11	Operate MKR_ key for marker under test.	
12	Set JSQ switch to 0.	
13	Set CH switch to 9.	
14	At marker— Connect positive side of diode to upper winding terminal of STP1 relay and negative side to upper winding terminal of STP relay.	
15	Connect positive side of another diode to upper winding terminal of STP2 relay and negative side to lower terminal of J9 resistor.	
16	Connect positive side of another diode to upper winding terminal of GS_ relay associated with outgoing trunks ground supply number as determined in Step 6. Connect negative side to lower terminal of T9 resistor.	
17	Insert plug of 32A test set into RC jack.	
18	Momentarily operate white (ST) button on 32A test set.	FM, 1FA, 2FA, RAV1, SOG1 relays momentarily operated. At OTF— Overflow tone heard.
19	At maker— Momentarily operate red (RL) button on 32A test set.	At OTF— Overflow tone silenced.
20	At marker— Remove plug of 32A test set from RC jack.	
21	Remove diodes from STP, STP1, STP2, GS_ relays and J9, T9 resistors.	
22	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
23	At OTF— Restore all keys and switches.	

STEP	ACTION	VERIFICATION
	F. Failure-to-Match Feature Using Incoming Trunks	
5	At jack, lamp, and key circuit— Insert 322A make-busy plug into M_C_MB jack of marker under test.	
6	Select from office records an incoming DP or MF trunk and have trunk made busy at distant office.	
7	At relay rack frame— Patch from ITT jack to T jack of trunk selected.	
8	At OTF— Operate ITT, ITT1, MCB, and MKR_ keys for marker under test.	
9b	If trunk selected is MF— Operate MF key.	
10b	Set MF switch to MIN L.	
11c	If trunk selected has short conductor loop— Operate SLP key.	
12d	If trunk selected is bylink— Operate BL key.	
13d	Patch from BL jack to SP jack using P3E cord.	
14d	At relay rack frame— Patch W3M cord to SP jack and connect sleeve to terminal 42 on trunk unit terminal strip.	
15e	If trunk selected does not require dial start signal— At OTF— Operate ONHK key.	
16f	If trunk selected has A relay ground shunt— At OTF— Operate GS key.	
17	At OTF— Set A through G DIAL switches as required to select any test line number.	
18	Set CH switch to 9.	
19	Operate _D key corresponding to number of digits expected from incoming trunk selected.	

STEP	ACTION	VERIFICATION
20	At trunk link frame of selected incoming trunk— Insert 349A make-busy plug into JS9 jack.	
21	At marker— Insert plug of 32A test set into RC jack.	
22	Momentarily operate white (ST) button on 32A test set.	FM, OVC relays momentarily operated. At OTF— Overflow tone heard.
23	At marker— Momentarily operate red (RL) button on 32A test set.	At OTF— Tone silenced.
24	At marker— Remove plug of 32A test set from RC jack.	
25	At trunk link frame of selected incoming trunk— Remove make-busy plug from JS9 jack.	
26	At jack, lamp, and key circuit— Remove make-busy plug from M_C_MB jack.	
27d	If trunk selected is bylink— Remove patching cord from SP, BL jacks.	
28	At relay rack frame— Remove patching cords from ITT, T, SP jacks and from unit terminal strip.	
29	Have trunk restored to service at distant office.	
30	At OTF— Restore all keys and switches.	