COMPLETING MARKERS
MISCELLANEOUS TESTS
OFFICES EQUIPPED WITH OFFICE TEST FRAME
NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of making miscellaneous tests on completing markers in offices equipped with the office test frame in No. 5 crossbar offices.

1.02 This section is reissued for the following reasons:

(a) To revise title.

(b) To revise test A to test the improved cross detection check on FTN_ relays and to provide a test for any trunk link frame equipped with twelve level junctor switches.

(c) To make minor changes as required.

This reissue does not affect Equipment Test Lists.

1.03 The tests covered are:

1.04 All tests require that the marker being tested be made busy.

1.05 Tests A, D, F, and G require action and verification at the marker frame. Test G may require action and verification at the associated switchboard.

1.06 ***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 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.

1.07 Local instructions should be followed for recording any register operations caused by performing these tests.

2. APPARATUS

All Tests

2.01 332A (make-busy) plugs, as required.

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

Tests A and F

2.03 Testing cord, two 893 cords, 6 feet long, equipped with two 360A tools (1W13B cord), one equipped with two KS-6278 connecting clips, the other equipped with one KS-6278 connecting clip and one 411A (test pick) tool (for connecting ground or battery to resistor and point under test).

Test A

2.04 The following resistors or their equivalent:

CODE RECOMMENDED	OHMS	VALUE TOLERANCE
18AK	60	±5%
18Y	90	±5%
18P	130	±5%
18F	150	±5%
18G	200	±5%
18AF	300	±5%
18AN	350	±5%
18AJ	400	±5%
19GP	475	±5%

Tests D and G

2.05 KS-3008 stopwatch or equivalent.

Test H

2.06 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools, (1W13B cord) and two 639A (relay contact connector) tools and two 651D (relay contact connector holder) tools (for strapping fixed contacts of wire-spring relays).

3. PREPARATION

STEP	ACTION	VERIFICATION

All Tests Except G

1	At jack, lamp, and key circuit— Insert make-busy plug into M-C-MB jack for marker being tested.	

STEP	ACTION	VERIFICATION

4. METHOD

STEP	ACTION	VERIFICATION
	A. Trouble Detecting Features for False Ground, Battery, and Crosses	
2	Record plant register MTR_ for marker under test.	
3	At marker frame— Momentarily connect ground to terminals 46 and 47, common equipment frame terminal strip (CE) MTFC-A1 as shown in Table A, first item.	At TIC— Display registered. MXT lamp lights.
4	At TIC— Momentarily operate RLS key.	Display released.
5	Insert make-busy plug into the TIC-MB jack for the marker under test.	
6	At marker frame— Momentarily connect ground or battery as required, to terminals in order as shown in Table A.	Marker relays operate corresponding with designations listed in Table A, under heading RELAYS OPERATED.
7	Record reading of plant register MTR_ for marker under test.	
8a	If no further tests are to be made at this time— At TIC— Remove make-busy plug from TIC-MB jack for marker under test.	
9a	At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack for marker under test.	
	B. Recycle of Work Timer	
2	At TIC— Insert make-busy plug into TIC-MB jack associated with marker under test.	
3	At marker frame— Block relays, as required, in order indicated in Table B.	Relays function as indicated in Table B.
4a	If no more marker tests are to be made at this time—	

TABLE A

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES. OHMS	AT COMMON EQPT FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (CE) MTFC-A1		
PA and PB			46 and 47	XPG,PA,PB,MXT	
			TERM. STRIP (CE) TLC-MA1		
TSX	TSE1		11	XTS1,MXT	
TG0			40	XTG1,MXT	
TG1			41	XTG1,MXT	
TG2			42	XTG1,MXT	
TG3			43	XTG1,MXT	
TG4			44	XTG1,MXT	
TG5			50	XTG1,MXT	
TG6			51	XTG1,MXT	
TG7			52	XTG1,MXT	
TG8			53	XTG1,MXT	
TG9			54	XTG1,MXT	
			TERM. STRIP (CE) TLC-MA2		
TG10			40	XTG1,MXT	
TG11			41	XTG1,MXT	
TG12			42	XTG1,MXT	
TG13			43	XTG1,MXT	
TG14			44	XTG1,MXT	
TG15			50	XTG1,MXT	
TG16			51	XTG1,MXT	
TG17			52	XTG1,MXT	
TG18			53	XTG1,MXT	
TG19			54	XTG1,MXT	
			TERM. STRIP (CE) TLC-MB2		
AST	FAK		11	XSL,MXT	
			TERM. STRIP (CE) TLC-MC2		
BST	FBK		11	XSL,MXT	
0NN and 1SE			20 and 21	XPT,0NN,1SE,MXT	
			TERM. STRIP (CA) MTFC-C2		
RS0 and RS1			20 and 21	XRS3,RS0,RS1,MXT	
RS2 and RS3			22 and 23	XRS4,RS2,RS3,MXT	
			TERM. STRIP (CE) TLC-M		
XFT			22	XAFT,MXT	

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT COMMON EQPT FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (CB) LLC-MA2		
LL0			00	XACH,MXT	
			TERM. STRIP (CB) LLC-MB2		
LO			10	XLO,MXT	
LOB			11	XLO,MXT	
LOK			12	XLO,MXT	
G			14	XLO,MXT	
			TERM. STRIP (CB) LLC-MB1		
CS0 and CS1			00 and 01	XACS,MXT	
			TERM. STRIP (CC)		
RL	CB,FBK		32	XRL,MXT	
MRL			10	XMRL,MXT	
BT			11	XBT,MXT	
TRL			16	XTRL,MXT	
TRK	TR2		23	XTRK,MXT	
			CONNECT RES. GROUND TO TERMINALS		
			TERM. STRIP (CB) LLC-MA1		
HGK		150	12	XHG,HGK,MXT	
			TERM. STRIP (CF) OSC-CONT		
XS		350	24	XS,MXT	
XSA	CKG5,OGC	350	11	XSA,MXT	
			TERM. STRIP (CE) TLC-MB2		
LVK		150	01	XLV,MXT	
ALC		60	14	XALC,MXT	
			TERM. STRIP (CE) TLC-MC2		
BLC	BX	60	14	XALC,MXT	

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT COMMON EQPT FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			CONNECT RES. GROUND TO RELAY SPRING		
XCKR		0	13F of TER1	XCKR,MXT	
XLG		200	2F of HGK	XLG,MXT	
XVGB		475	17F of LLC1	XAVGB,MXT	1
XVGB		475	17F of LLC1	XAVGB,MXT	2
XF		475	10F of PR	XAF,MXT	3
XJC		60	3F of JG0	XAJC,MXT	3
XJG	JG0	350	4F of JG0	XATG,MXT	
XLR		130	9F of FUT0	XALR,MXT	
JS0	ONX	300	12F of CH0	XAJS,MXT	4
SBA2	BX,ONX	300	8F of BX	XJS1,XAJS,MXT	5
			AT COMMON EQPT FRAME CONNECT RES. BATTERY TO TERMINALS		
			TERM. STRIP (CE) TLC-MA1		
TSX	ONX	300	11	XATS,MXT	
			TERM. STRIP (CE) TLC-MC2		
RS0		90	40	XRS1,XARS,MXT	
RS1		90	41	XRS1,XARS,MXT	
RS2		90	42	XRS1,XARS,MXT	
RS3		90	43	XRS1,XARS,MXT	
RS4		90	44	XRS1,XARS,MXT	
RS5		90	50	XRS2,XARS,MXT	
RS6		90	51	XRS2,XARS,MXT	
RS7		90	52	XRS2,XARS,MXT	
RS8		90	53	XRS2,XARS,MXT	
RS9		90	54	XRS2,XARS,MXT	
BSM	ONX	300	10	XATS,MXT	
			TERM. STRIP (CE) TLC-MB2		
ASM	ONX	300	10	XATS,MXT	
			TERM. STRIP (CE) TLC-M		
SS0	SSB,ONX	300	30	XSS,MXT	6
SS1	SSB,ONX	300	31	XSS,MXT	6
SS2	SSB,ONX	300	32	XSS,MXT	6
SS3	SSB,ONX	300	33	XSS,MXT	6
SS4	SSB,ONX	300	34	XSS,MXT	6

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT COMMON EQPT FRAME CONNECT RES. BATTERY TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (CE) TLC-M		
SS5	SSA,ONX	300	40	XSS,MXT	6
SS6	SSA,ONX	300	41	XSS,MXT	6
SS7	SSA,ONX	300	42	XSS,MXT	6
SS8	SSA,ONX	300	43	XSS,MXT	6
SS9	SSA,ONX	300	44	XSS,MXT	6
SS0	SSB,ONX	300	30	XSS,MXT	5
SS1	SSB,ONX	300	31	XSS,MXT	6
SS2	SSB,ONX	300	32	XSS,MXT	6
SS3	SSB,ONX	300	33	XSS,MXT	6
SS4	SSB,ONX	300	34	XSS,MXT	6
SS5	SSB,ONX	300	40	XSS,MXT	6
SS6	SSB,ONX	300	41	XSS,MXT	6
SS7	SSB,ONX	300	42	XSS,MXT	6
SS8	SSB,ONX	300	43	XSS,MXT	6
SS9	SSB,ONX	300	44	XSS,MXT	6
TB0		350	10	XTB1,MXT	
TB1		350	11	XTB1,MXT	
TB2		350	12	XTB1,MXT	
TB3		350	13	XTB1,MXT	
TB4		350	14	XTB1,MXT	
TB5		350	20	XTB1,MXT	
			TERM. STRIP (CB) LLC-MA2		
SM0		350	20	XLS,MXT	
SM1		350	21	XLS,MXT	
SM2		350	22	XLS,MXT	
SM3		350	23	XLS,MXT	
SM4		350	24	XLS,MXT	
SM5		350	30	XLS,MXT	
SM6		350	31	XLS,MXT	
SM7		350	32	XLS,MXT	
SM8		350	33	XLS,MXT	
SM9		350	34	XLS,MXT	
XN	XNS			XN,MXT	
XN	BNA,RIA			XN,MXT	7
XN	RIA,TBIA			XN,MXT	7
XN	BNA,TBIA			XN,MXT	7
XN	BNA,TRN			XN,MXT	8

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT COMMON EQPT FRAME CONNECT RES. BATTERY TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (CB) LLC-MA2		
XN	RIA,TRN			XN,MXT	8
XN	TBIA,TRN			XN,MXT	8
XN	BNA,NE			XN,MXT	8
XN	RIA.NE			XN,MXT	8
XN	TBIA,NE			XN,MXT	8
XN	SAE,UC			XN,MXT	
XN	ECN,OCN			XN,MXT	
XN	TRN,NE			XN,MXT	
XN	KK,NE			XN,MXT	9
XN	TRN,DC1A			XN,MXT	8
XN	TRN,VC1A			XN,MXT	8
XN	NANS,AN			XN,MXT	10
XN	NANS,ANS			XN,MXT	10
MXT	SQA			MXT	
FS0	FTC0			FTCK,FS0	
FS-	FTC- (to last equipped FTC-relay)			FTCK,FS- (to last equipped FTC-relay operated)	
			AT TRANSLATOR AND CODE TREATMENT FRAME CONNECT GROUND TO TERMINALS		
			TERM. STRIP (TR) OSC-MA1		
CL1			01	XT5,MXT	5
CL2			02	XT5,MXT	5
CL3			03	XT5,MXT	5
CL4			04	XT5,MXT	5
			TERM. STRIP (TR) OSC-MB2		
AR0			10	XT5,MXT	5
AR1			11	XT5,MXT	5
AR2			12	XT5,MXT	5
AR4			13	XT5,MXT	5
AR7			14	XT5,MXT	5
BR0			20	XT5,MXT	5
BR1			21	XT5,MXT	5
BR2			22	XT5,MXT	5
BR4			23	XT5,MXT	5
BR7			24	XT5,MXT	5

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT TRANSLATOR AND CODE TREATMENT FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (TR) OSC-MB2		
CL5			52	XT5,MXT	5
CL6			53	XT5,MXT	5
DL1			40	XT5,MXT	5
DL2			41	XT5,MXT	5
DL3			42	XT5,MXT	5
DL4			43	XT5,MXT	5
DL5			44	XT5,MXT	5
DL6			50	XT5,MXT	5
			TERM. STRIP (TR) OSC-MC1		
CP0			50	XT5,MXT	5
CP1			51	XT5,MXT	5
CP2			52	XT5,MXT	5
CP4			53	XT5,MXT	5
CP7			54	XT5,MXT	5
MB0			40	XT5,MXT	5
MB1			41	XT5,MXT	5
MB2			42	XT5,MXT	5
MB4			43	XT5,MXT	5
MB7			44	XT5,MXT	5
			TERM. STRIP (TR) OSC-MB1		
CR0			20	XT5,MXT	5
CR1			21	XT5,MXT	5
CR2			22	XT5,MXT	5
CR4			23	XT5,MXT	5
CR7			24	XT5,MXT	5
SC			30	XT5,MXT	
TVT			31	XT5,MXT	
			TERM. STRIP (TR) OSC-MC1		
AMA			24	XT5,MXT	
OBS			20	XT5,MXT	
NOB			21	XT5,MXT	
L5D			31	XT5,MXT	
LST			32	XT5,MXT	
4DG			33	XT5,MXT	
5DG			34	XT5,MXT	
			TERM. STRIP (TS) IRMC-MC		
OA and OB			21 and 22	XT,OA,OB,MXT	

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT TRANSLATOR AND CODE TREATMENT FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (TS) IRMC-MA		
INC and TAN	TCA		51 and 53	XCLX,INC,TAN,MXT	
			TERM. STRIP (TS) ORMC-MC		
OBS and NOB	CHA1		22 and 23	XOB,OBS,NOB,MXT	
TVA and SCC	OGC,TVA			XTV,MXT	5
			TERM. STRIP (RB)		
DL0P and DL1P			DL0P and DL1P	XDL,MXT	5
DL0S and DL1S			DL0S and DL1S	XDL,MXT	5
CR0P and CR1P			CR0P and CR1P	XCR,MXT	5
CR0S and CR1S			CR0S and CR1S	XCR,MXT	5
CP0P and CP1P			CP0P and CP1P	XCP,MXT	5
CP0S and CP1S			CP0S and CP1S	XCP,MXT	5
CL0P and CL1P			CL0P and CL1P	XCL,MXT	5
CL0S and CL1S			CL0S and CL1S	XCL,MXT	5
			AT COMMON EQPT FRAME CONNECT RES. BAT. TO TERMINALS		
			TERM. STRIP (CB) NGC-MCB		
FU0 and FU1	CKG1,CKG5	475	40 and 41	XFUN, MXT	
FTTB	CKG1	475	40	XFUN,FTTB	
FU0 and FU2	CKG1,CKG5	475	40 and 42	XFUN,MXT	
FU0 and FU3	CKG1,CKG5	475	40 and 43	XFUN,MXT	
FU0 and FU4	CKG1,CKG5	475	40 and 44	XFUN,MXT	
FU0 and FU5	CKG1,CKG5	475	40 and 50	XFUN,MXT	
FU0 and FU6	CKG1,CKG5	475	40 and 51	XFUN,MXT	
FU0 and FU7	CKG1,CKG5	475	40 and 52	XFUN,MXT	
FU0 and FU8	CKG1,CKG5	475	40 and 53	XFUN,MXT	
FU0 and FU9	CKG1,CKG5	475	40 and 54	XFUN,MXT	
FT0 and FT1	CKG1,CKG5	475	01 and 02	XFUN,MXT	
FTTB	CKG1	475	01	XFTN,FTTB	
FT0 and FT2	CKG1,CKG5	475	01 and 03	XFTN,MXT	
FT0 and FT3	CKG1,CKG5	475	01 and 04	XFTN,MXT	
			TERM. STRIP (CB) NGC-MCD		
FT4 and FT5	CKG1,CKG5	475	11 and 12	XFTN,MXT	5
			TERM. STRIP (TB) NSS		
NSS0 and NSS1			0 and 1	XN,MXT	5

STEP **ACTION** **VERIFICATION**

TABLE A (Cont'd)

LEADS UNDER TEST	RELAYS BLOCKED OPERATED	RES OHMS	AT CODE CONVERSION FRAME CONNECT GROUND TO TERMINALS	RELAYS OPERATED	NOTES
			TERM. STRIP (CVC)		
AR0P and AR1P			AR0P and AR1P	XARN,MXT	5
AR0S and AR1S			AR0S and AR1S	XARN,MXT	5
BR0P and BR1P			BR0P and BR1P	XBRN,MXT	5
BR0S and BR1S			BR0S and BR1S	XBRN,MXT	5
			AT BPX ALLOTTER FRAME CONNECT GROUND TO CONTACT		
XAH			6 fixed of ANS relay	XAH,MXT	5
XAN	ANA0,ANA1, ANON			XAN	5

Notes:
1. Perform this test only when Fig. 160 is not provided.
2. Block operated LLC1 and LBTA when Fig. 160 is provided.
3. Block operated GT3 relay if option ZUY is provided.
4. Block operated 10LV relay if option ZZM is provided.
5. When equipped.
6. Release ONX relay between tests.
7. Perform this test only when option YF is provided.
8. Perform this test only when option YG is provided.
9. Perform this test only when option ZXE is provided.
10. Perform this test only when App. Fig. 60 is provided.

At jack, lamp, and key circuit—
Remove make-busy plug from M-C-MB jack.

5a At TIC—
Remove plug from TIC-MB make-busy jack associated with marker under test.

C. Seize Frame Timer—Miscellaneous

2 At TIC—
Insert make-busy plug into TIC-MB jack associated with marker under test.

TABLE B

STEP	OPERATIONS			OBSERVATIONS			
				OBSERVE RELAY			
	BLOCK RELAY		REMOVE BLOCKING TOOL FROM RELAY	OPERATES	RELEASES	DOES NOT OPERATE	DOES NOT RELEASE
	OPERATED	NONOPERATED					
1		TRT					
2	TMS			WT			
3			TMS		WT		
4		RYT1					
5	GLH			RYT		WT	
6	TM					WT	
7			RYT1	RYT1,WT	RYT		
8	GT1				RYT1		
9		RYT1					
10			TM,GLH,GT1		WT		
11	RAV1			RYT			
12	SNK					WT	
13			RAV1				RYT
14			SNK		RYT		
15	SNK			WT			
16	SFT*				WT*		
17	RCY			RYT	WT		
18	SP		SNK		RYT		
19			RCY,SP				
20	†AGP*			RYT*			
21	LK2*			RYT*			
22	†NT3*			RYT*			
23	OFH*			RYT*			
24	RSC			RYT			
25	SCB2*				RYT*		
26			RSC		RYT		
27	CK0			RYT			
28	RNG*				RYT*		
29			CK0		RYT*		
30	STP					RYT	
31	LLC1			RYT			

STEP **ACTION** **VERIFICATION**

TABLE B (Cont'd)

STEP	OPERATIONS			OBSERVATIONS			
				OBSERVE RELAY			
	BLOCK RELAY		REMOVE BLOCKING TOOL FROM RELAY	OPERATES	RELEASES	DOES NOT OPERATE	DOES NOT RELEASE
	OPERATED	NONOPERATED					
32	STP2*				RYT*		
33			LLC1,STP		RYT		
34	CKG1,OR, RGT,RV1				RYT		
35	DIS2*				RYT*		
36	NR*				RYT*		
37			CKG1*		RYT*		
38			OR*		RYT*		
39			RGT*		RYT*		
40			RV1		RYT		
41			CKG1,OR,RGT				
42	†GB			RYT			
43	†SP*				RYT*		
44	†		GB		RYT		
45	CA1*††			RYT*			
46	CB1*††			RYT*			
47			RYT1,TRT				

*Momentarily.
†When equipped →(Perform steps 43 through 45 when option XS is provided).←
††Located in foreign area translator connector frame.

Caution: Perform this test as rapidly as possible to prevent the prolonged conduction of the cold cathode tubes.

3	At marker frame— Block relays, as required, in order indicated in Table C.	Relays function as indicated in Table C.
4a	If no more marker tests are to be made at this time—	

STEP	ACTION	VERIFICATION
	At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	
5a	At TIC— Remove make-busy plug from TIC-MB jack associated with marker under test.	

D. Trouble Indicator Timer

2	At TIC— Insert make-busy plug into TIC-MB jack associated with marker under test.	
3	At marker frame— Block relay TR1 nonoperated.	

TABLE C

STEP	OPERATIONS			OBSERVATIONS			
				OBSERVE RELAY			
	BLOCK RELAY		REMOVE BLOCKING TOOL FROM RELAY	OPERATES	RELEASES	DOES NOT OPERATE	DOES NOT RELEASE
	OPERATED	NONOPERATED					
1		TRTR,LDT,SDT					
2	CKG2,TRT,TST			SF,SFT			
3			TST				SF,SFT
4			TRT		SF,SFT		
5	MON1			SF			
6	†SPL				SF		
7	†SFR*			SF*			
8			MON1,SPL				
9	†NTT*			SF*			
10			CKG2				
11	SFT						
12	TGT					SF	
13			SFT	SF			
14	RAV2*				SF*		
15			TGT		SF		
16			SDT,TRTR,LDT				

* Momentarily.
† When equipped.

STEP	ACTION	VERIFICATION
4	Block relay SDT operated, ***start timing.***	Within 2 to 4 seconds, TRT, TA lamps light. Major alarm sounds.
5	Remove blocking tool from TR1 relay.	
6	Remove blocking tool from SDT relay.	
7	Momentarily operate AR key.	TRT, TA lamps extinguished. Major alarm silenced.
8	At TIC— Momentarily operate TIC-AR key.	
9a	If no more tests are to be made at this time— At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	
10a	At TIC— Remove make-busy plug from TIC-MB jack associated with marker under test.	
E. Pattern Feature		
2	Insert make-busy plug into TIC-MB jack associated with marker under test.	
3	At marker frame— Block relays operated, as required, in order indicated in Table D.	Relays function as indicated in Table D.
4a	If no more tests are to be made at this time— At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	
5a	At TIC— Remove make-busy plug from TIC-MB jack associated with marker under test.	
F. Make-busy Feature		
2	At wiring side of marker frame— Connect 48-volt battery to 48-volt fuse alarm bar.	FA1, MB relays operate. FA lamp lights. Major alarm sounds.
3	Remove test connection from 48-volt battery and 48-volt fuse alarm bar.	FA lamp extinguished. FG lamp lights. Major alarm silenced.
4	At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	At marker frame— MB relay remains operated.

STEP	ACTION	VERIFICATION

TABLE D

RELAYS BLOCKED OPERATED	RELAYS OPERATED
PA,P0	TCH0,TCH7
PC,P0	TCH0,TCH2,TCH4,TCH6,TCH8
PC,P1	TCH1,TCH3,TCH5,TCH7,TCH9
PB,P1	TCH1
PA,P1	TCH1,TCH8
RA,P2	TCH2,TCH4,TCH6
PB,P2	TCH2
PB,P3	TCH3
PA,P3	TCH3,TCH5,TCH9
PA,P4	TCH0,TCH1,TCH7,TCH8
PB,P4	TCH4
PB,P5	TCH5
PA,P5	TCH1,TCH3,TCH5,TCH9
PA,P6	TCH2,TCH4,TCH6,TCH8
PB,P6	TCH6
PB,P7	TCH0,TCH7
PA,P7	TCH1,TCH3,TCH5,TCH7,TCH9
PA,P8	TCH0,TCH2,TCH4,TCH6,TCH8
PB,P8	TCH8
PB,P9	TCH9
PA,P9	TCH0,TCH1,TCH3,TCH5,TCH7,TCH8,TCH9
PNR	TCH0-9

5	At marker frame— Momentarily operate AR key.	FG lamp extinguished. MB, FA1 relays release.
6	Block relay FA1 nonoperated.	
7	Momentarily operate FA relay.	MB relay momentarily operated.
8	Remove blocking tool from FA1 relay.	
9	At jack, lamp, and key circuit— Insert make-busy plug into M-C-MB jack.	
10	At wiring side of marker frame— Connect 130-volt battery to 130-volt fuse alarm bar.	FA1, MB relays operated. FA lamp lighted. Major alarm sounded.

STEP	ACTION	VERIFICATION
11	Remove test connection from 130-volt battery and 130-volt fuse alarm bar.	FA lamp extinguished. FG lamp lighted. Major alarm silenced.
12	At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	At marker frame— MB relay remains operated.
13	At marker frame— Momentarily operate AR key.	FG lamp extinguished. MB, FA1 relays released.

G. All-Markers-Busy Alarm

1	At jack, lamp, and key circuit— Insert make-busy plug into M-C-MB jack of marker being tested.	At marker frame— AMB relay operated.
2	Remove make-busy plug from M-C-MB jack.	At marker frame— AMB relay released.
3	Repeat Steps 1 and 2 for each completing marker.	
4	At marker frame— Block operated relay AMB in all completing markers, ***start timing.***	At jack, lamp, and key circuit— C AMB lamp lighted. In 40 to 66 seconds, C MBA lamp lighted. Minor alarm sounds. If auxiliary signal at the associated switchboard is provided— Auxiliary signal sounds. ▶At line load control circuit— MBA lamp lighted.◀
5	▶At master traffic control circuit— Block nonoperated ALA, ALB relays.◀	
6	Block operated SRA, SRB relays.	TMA, TMB relays operated.
7	Remove blocking tools from ▶ALA, ALB,◀ SRA, SRB relays.	TMA, TMB relays released.
8	At marker frame— Momentarily remove blocking tool from AMB relay of each completing marker in turn.	At jack, lamp, and key circuit— C AMB lamp extinguished while blocking tool is removed.
9	Remove blocking tools from all AMB relays.	C AMB lamp extinguished.
10	At jack, lamp, and key circuit— Momentarily operate AMB-AR key.	Minor alarm silenced. C MBA lamp extinguished. ▶At line load control circuit— MBA lamp extinguished.◀

STEP	ACTION	VERIFICATION
11a	If auxiliary signal at associated switchboard is provided— At switchboard— Operate RL key.	Auxiliary signal silenced.
H. Trunk Test and Selection Feature		
2	At TIC— Insert make-busy plug in TIC-MB jack associated with marker under test.	
3	At marker frame— Block relays MAK1, TBK, TSE2, TLC1 operated.	
4	Strap fixed contact 10 of relay TBK to fixed contact 8 of relay TGT, using testing cord with 639A tools.	
5	Momentarily connect ground to contact 4M of highest numbered TS_ relay.	Highest numbered TS_ relay operated.
6	Momentarily connect ground to contact 4M of remaining TS_ relays, from highest to lowest numbered, in order.	TS_ relay to which ground was connected, operated. Next higher numbered TS_ relay released.
7	Momentarily remove blocking tool from TLC1 relay.	Lowest numbered TS_ relay released.
8	Momentarily connect ground to contact 2M of highest numbered TS_ relay.	Highest numbered TS_ relay operated.
9	Momentarily connect ground to contact 2M of remaining TS_ relays, from highest to lowest numbered, in order.	TS_ relay to which ground was connected, operated. Next higher numbered TS_ relay released.
10	Remove test connection from TBK, TGT relays.	
11	Remove blocking tools from MAK1, TBK, TSE2, TLC1 relays.	
12a	If no more marker tests are to be made at this time— At jack, lamp, and key circuit— Remove make-busy plug from M-C-MB jack.	
13a	At TIC— Remove make-busy plug from TIC-MB jack associated with marker under test.	