INCOMING LINK AND CONNECTOR CIRCUITS
TESTS
NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a method of making tests of the incoming link and connector circuits in No. 1 crossbar offices.

1.02 This section is reissued to combine former Test L with Test A, to revise Test I to include tests where individual ESM key operation is provided and to revise Test K to include wire-spring-type multicontact relays. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests and features covered are:

A. Marker Preference Chain Transfer and Alarm Features: This test checks that the operation of a CH relay of a connector causes a transfer to an alternate set of marker preference relays and causes an audible and visual alarm signal.

B. Primary Switch Hold Magnet Winding Leads: This test checks that the proper primary switch hold magnet operates when ground is connected to a selected terminal. The MB- jack control of the primary hold magnet leads is also verified.

C. Primary Switch Selecting Magnet Winding Leads: This test checks that the proper primary selecting magnet operates when ground is connected to a selected terminal.

D. Secondary Switch Hold Magnet Winding Leads: This test checks that the secondary hold magnet operates when ground is applied to the No. 0 contact of the corresponding vertical unit.

E. Secondary Switch Selecting Magnet Winding Leads: This test checks that the secondary selecting magnet, corresponding to the operated LC- relay, operates. It also checks the MB- jack control of the secondary selecting magnet leads.

F. Secondary Switch Selecting Magnet Lockout Features (Offices Arranged for Mate Frame Operation): This test checks the operating condition of the secondary switch selecting magnet lockout features in offices arranged for mate frame operation.

G. Secondary Switch Selecting Magnet Lockout Features (Offices Arranged for Mate Frame Operation — Mate Frame Unequipped): This test checks the operating condition of the secondary switch selecting magnet lockout features in offices arranged for mate frame operation but with the mate frame unequipped.

H. Secondary Switch Selecting Magnet Lockout Features (Offices Not Arranged for Mate Frame Operation): This test checks the operating condition of the secondary switch selecting magnet lockout features in offices not arranged for mate frame operation.

I. Manual Transfer to Emergency Selecting Magnet Circuit (Offices Arranged for Mate Frame Operation): This test checks that the operation of the ESM key signals the marker to use the emergency preference and lockout relays on first trial calls.

J. Trouble Indicator Cut-In (TI) Relay Features: This test checks that the proper lamps are lighted at the terminating trouble indicator to identify the primary switch and incoming trunk.

K. Check for False Continuities and Crosses: This test checks that there are no false continuities between certain contacts of connector relays. It also checks the cross test feature of the terminating marker as it pertains to the incoming link and connector circuit.

1.04 Tests A, J, and K require actions and verifications at the terminating trouble indicator.

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1.05 Tests D, F, and I require actions and verifications at the mate incoming link and connector frame.

1.06 While performing Tests B through H, J and K, it is necessary to make busy all trunks on the incoming link frame and, if provided, on the mate incoming link frame.

1.07 ***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 the test. Where a condition does not apply, all steps designated by the letter should be omitted.

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

2. APPARATUS

2.01 The apparatus required for each test is shown in Table A. The details of each item are covered in the paragraph as indicated by the number in parentheses.

TABLE A

APPARATUS	TESTS										
	A	B	C	D	E	F	G	H	I	J	K
Trouble Indicator (2.02)	1									1	1
Receiver (2.03)		1	1	1		1	1	1	1		1
Cord (2.04)		1	1		1					1	
Cord (2.05)					2						1
Cord (2.06)			1			2	1	1		1	1
Cord (2.07)											1
No. 349A (make-busy) Plug		10			10						
No. 322A (make-busy) Plug										✓	✓
Tool (2.08)	✓									✓	✓

✓ As required

2.02 Terminating trouble indicator frame (SD-25284-01).

2.03 Test receiver, No. 716C receiver attached to a W2AB cord equipped with two No. 360A tools (No. 2W21A cord) and one KS-6278 connecting clip and one No. 411A (test pick) tool (for use in checking the presence or absence of ground or battery or applying ground to relay springs or terminal punchings).

2.04 Testing cord, No. 893 cord, 6 feet long, equipped with two No. 360A tools (No. 1W13B cord), a KS-6278 connecting clip, and a No. 547A (magnet winding connector) tool, or a No. 509A (relay winding connector) tool, or a No. 510A (relay winding connector) tool, as required (for connecting battery or ground to relay or magnet winding terminals).

2.05 Testing cord, No. 893 cord, 6 feet long, equipped with two No. 360A tools (No. 1W13B cord), a KS-6278 connecting clip, and a No. 607A (relay winding connector) tool (for connecting battery or ground to relay winding terminals).

2.06 Testing cord, No. 893 cord, 6 feet long, equipped with two No. 360A tools (No. 1W13B cord), a KS-6278 connecting clip, and a No. 624B (terminal connector) tool or another KS-6278 connecting clip insulated with a No. 108 cord tip (insulating tubing), as required (for connecting battery or ground to terminal strip punchings).

2.07 Testing cord, No. 893 cord, 6 feet long, equipped with two No. 360A tools (No. 1W13B cord), a KS-6278 connecting clip and a No. 419A (test connector) tool (for connecting battery or ground to relay winding terminals).

2.08 Blocking and insulating tools, as required. Use tools and apply, as covered in Section 069-020-801.

3. PREPARATION

STEP	ACTION	VERIFICATION
Tests B through H, J, and K		
1	Make arrangements to have all trunks connected to the incoming link frame made busy at originating office. *Note:* Tests D and F require trunks made busy to both the regular and mate incoming link frames.	
2	Check that frame is free of service.	All hold magnets are normal.

4. METHOD

STEP	ACTION	VERIFICATION
	A. Marker Preference Chain Transfer and Alarm Features	
Connector Equipped with MTR and SA Keys		
1a	If SA key is in operated (vertical) position — Momentarily operate MTR key, then restore SA key to normal (horizontal) position.	
2	Momentarily operate MTR key.	CH lamp lights. Minor alarm sounds. TR- relays operate. Green aisle pilot and main aisle pilot lamps light. *Note:* Green aisle pilot and main aisle pilot lamps need be checked only once for all frames in same aisle.
3	Operate SA key.	CH lamp extinguished. Minor alarm silenced. Green aisle pilot and main aisle pilot lamps extinguished.
4	At terminating trouble indicator — Operate BAT key.	
5	Route test calls through connector under test using a different marker for each test call.	Associated I- (incoming frame busy) lamp lights on each test call.
6	At incoming link and connector frame — Momentarily operate MTR key.	CH lamp lights. Minor alarm sounds.
7	Restore SA key.	CH lamp extinguished. Minor alarm silenced. TR- relays release.
8	At terminating trouble indicator — Route test calls through connector under test using a different marker for each test call.	Associated I- (incoming frame busy) lamp lights on each test call.

STEP	ACTION	VERIFICATION
Connector Equipped with TR and AR Keys		
9b	If TR key is in operated (vertical) position — Restore TR key to normal (horizontal) position.	
10	Momentarily insulate 2T contact of AL relay long enough to operate CH relay.	CH lamp lights. Minor alarm sounds. TR- relays operate. Green aisle pilot and main aisle pilot lamps light. *Note:* Green aisle pilot and main aisle pilot lamps need be checked only once for all frames in same aisle.
11	Momentarily operate AR key.	CH lamp extinguished. Minor alarm silenced. TR- relays release. Green aisle pilot and main aisle pilot lamps extinguished.
12	Operate TR key.	TR- relays operate.
13	At terminating trouble indicator — Operate BAT key.	
14	Route test calls through connector under test using a different marker for each test call.	Associated I- (incoming frame busy) lamp lights on each test call.
15	At incoming link and connector frame — Momentarily insulate 2T contact of AL relay long enough to operate CH relay.	CH lamp lights. Minor alarm sounds. TR- relays release.
16	Momentarily operate AR key.	CH lamp extinguished. Minor alarm silenced. TR- relays operate.
17	Restore TR key.	TR- relays release.
18	At terminating trouble indicator — Route test calls through connector under test using a different marker for each test call.	Associated I- (incoming frame busy) lamp lights on each test call.
	B. Primary Switch Hold Magnet Winding Leads	
3	Insert No. 349A plugs into MB0 to MB9 jacks.	
4	Check for presence of ground on terminals 10 to 29 inclusive at the MC relay terminal strip.	Ground not present.
5	Remove No. 349A plugs from MB- jacks.	
6	Connect ground to T winding terminal of LC0 relay.	LC0 relay operates.

STEP	ACTION	VERIFICATION
7	Apply ground through a receiver to terminals 10 to 29, in turn, at MC relay terminal strip.	Associated primary hold magnets operate.
8	Remove ground from T winding terminal of LC0 relay.	LC0 relay releases.
9	Repeat Steps 6 through 8 for all other LC-relays.	
10	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

C. Primary Switch Selecting Magnet Winding Leads

3a	If 100 trunk incoming link frame, and B lead is wired — Connect direct battery to terminal 7 of LC relay terminal strip.	
4b	If 160 trunk incoming link frame — Connect direct battery to terminal 9 of LC relay terminal strip.	
5	Connect ground to T winding terminal of LC0 relay.	LC0 relay operates.
6	Apply ground through a receiver to terminal 40 of LC relay terminal strip.	Selecting magnet 0 operates on primary switch 0.
7	Remove ground from terminal 40 of LC relay terminal strip.	Selecting magnet releases.
8	Repeat Steps 6 and 7 grounding in turn through receiver terminals 41 to 49.	Selecting magnets 1 to 9 operate in turn on primary switch 0.
9	Remove ground from T winding terminal of LC0 relay.	LC0 relay releases.
10	Repeat Steps 5 through 9 substituting LC1 to LC9 relays, in turn, for LC0 relay.	Substitute primary switches 1 to 9 in turn for switch 0.
11a	If 100 trunk incoming link frame, and B lead is wired — Remove battery from terminal 7 of LC relay terminal strip.	
12b	If 160 trunk incoming link frame — Remove battery from terminal 9 of LC relay terminal strip.	
13	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

STEP	ACTION	VERIFICATION
	D. Secondary Switch Hold Magnet Winding Leads	
3	Apply ground through a receiver to 0 contact of 0 hold magnet of 0 secondary switch.	Associated hold magnet operates. *Note:* In offices arranged for mate frame operation observe that corresponding secondary switch hold magnet operates on mate frame.
4	Remove ground applied in Step 3.	Associated hold magnet releases.
5	Repeat Steps 3 and 4 for all other secondary hold magnets to be tested including those on the extension frame, if equipped.	
6	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	
	E. Secondary Switch Selecting Magnet Winding Leads	
	Note: Secondary selecting magnets on an extension frame, if equipped, are wired in parallel with secondary selecting magnets on regular frame.	
3	Connect ground to T winding terminal of LC0 relay.	LC0 relay operates.
4	Insert No. 349A plugs into MB0 to MB9 jacks.	
5a	If arranged for mate frame operation — Connect ground to T winding terminal of RS relay.	
6	Connect battery to B winding terminal of RS relay.	RS relay operates.
7	Remove No. 349A plug from MB9 jack.	Selecting magnet 0 of secondary switch 9 operates.
8	Remove No. 349A plugs from MB0 to MB8 jacks.	Selecting magnets 0 on associated secondary switches operate.
9	Remove ground from T winding terminal of LC0 relay.	LC0 relay releases. Secondary selecting magnets release.
10	Connect ground to T winding terminal of LC1 relay.	LC1 relay operates. Selecting magnets 1 on all secondary switches operate.
11	Remove ground from T winding terminal of LC1 relay.	LC1 relay releases. Secondary selecting magnets release.
12	Repeat Steps 10 and 11 for LC2 to LC9 relays, in turn.	LC2 to LC9 relays operate, in turn, instead of LC1. Selecting magnets 2 to 9 operate, in turn, on all secondary switches.

STEP	ACTION	VERIFICATION
13	Remove battery from B winding terminal of RS relay.	RS relay releases.
14a	If arranged for mate frame operation — Remove ground from T winding terminal of RS relay.	
15	Connect ground to T winding terminal of LC- relay.	Associated LC- relay operates.
16a	If arranged for mate frame operation — Connect ground to T winding terminal of ES relay.	
17	Connect battery to B winding terminal of ES relay.	ES relay operates. Associated secondary selecting magnets operate.
18	Remove battery from B winding terminal of ES relay.	ES relay releases. Secondary selecting magnets release.
19a	If arranged for mate frame operation — Remove ground from T winding terminal of ES relay.	
20	Remove ground from T winding terminal of LC- relay. *Note:* It is necessary to check the selecting magnets using the ES relay through only one LC- relay.	LC- relay releases.
21	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

F. Secondary Switch Selecting Magnet Lockout Features (Offices Arranged for Mate Frame Operation)

	Note: In this test, terminals specified for connecting battery or ground or for checking for presence of battery or ground are located on the MC relay terminal strip.	
3	At even frame — Connect direct battery to terminal 42.	FP relay operates.
4	Block operated FP relay.	
5	Remove battery from terminal 42.	
6	Connect battery to terminal 41.	RS relay operates.
7	Check for presence of ground on terminals 44 and 45.	Ground present on terminal 44. Ground not present on terminal 45.
8	At odd frame — Check for presence of ground on terminals 46 and 47.	Ground present on terminal 46. Ground not present on terminal 47.

STEP	ACTION	VERIFICATION
9	At even frame — Remove battery from terminal 41.	RS relay releases.
10	Check for presence of ground on terminal 44.	Ground not present.
11	At odd frame — Check for presence of ground on terminal 46.	Ground not present.
12	Connect ground to terminal 48.	At even frame — TR relay does not operate.
13	At odd frame — Remove ground from terminal 48.	
14	Connect battery to terminal 42.	FP relay operates.
15	Block FP relay operated.	
16	Remove battery from terminal 42.	
17	Connect battery to terminal 41.	RS relay does not operate.
18	At even frame — Remove blocking tool from FP relay.	FP relay releases. At odd frame — RS relay operates.
19	At odd frame — Check for presence of ground on terminals 44 and 45.	Ground present on terminal 44. Ground not present on terminal 45.
20	At even frame — Check for presence of ground on terminals 46 and 47.	Ground present on terminal 46. Ground not present on terminal 47.
21	Connect ground to terminal 48.	TR relay does not operate.
22	Remove ground from terminal 48.	
23	At odd frame — Connect ground to terminal 48.	RS relay releases. At even frame — TR relay operates.
24	At even frame — Block TR relay operated.	
25	At odd frame — Remove ground from terminal 48.	
26	Remove blocking tool from FP relay.	FP relay releases.
27	Remove battery from terminal 41.	
28	At even frame — Connect battery to terminal 43.	FE relay operates. If ESM key is provided — ES relay operates.
29	Block FE relay operated.	
30	Remove battery from terminal 43.	

STEP	ACTION	VERIFICATION
31a	If ESM key is not provided — Connect battery to terminal 40.	ES relay operates.
32	Check for presence of ground on terminals 44 and 45.	Ground not present on terminal 44. Ground present on terminal 45.
33	At odd frame — Check for presence of ground on terminals 46 and 47.	Ground not present on terminal 46. Ground present on terminal 47.
34a	At even frame — If ESM key is not provided — Remove battery from terminal 40.	ES relay releases.
35a	Check for presence of ground on terminal 45.	Ground not present.
36a	At odd frame — Check for presence of ground on terminal 47.	Ground not present.
37	Connect battery to terminal 43.	FE relay operates. ES relay does not operate.
38	Block FE relay operated.	
39	Remove battery from terminal 43.	
40a	If ESM key is not provided — Connect battery to terminal 40.	ES relay does not operate.
41	At even frame — Remove blocking tool from FE relay.	FE relay releases. If ESM key is provided — ES relay releases. At odd frame — ES relay operates.
42	At odd frame — Check for presence of ground on terminals 44 and 45.	Ground not present on terminal 44. Ground present on terminal 45.
43	At even frame — Check for presence of ground on terminals 46 and 47.	Ground not present on terminal 46. Ground present on terminal 47.
44a	If ESM key is not provided — At odd frame — Remove battery from terminal 40.	ES relay releases.
45	At odd frame — Remove blocking tool from FE relay.	FE relay releases. If ESM key is provided — ES relay releases.
46	At even frame — Remove blocking tool from TR relay.	TR relay releases.
47	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

STEP	ACTION	VERIFICATION
	G. Secondary Switch Selecting Magnet Lockout Features (Offices Arranged for Mate Frame Operation — Mate Frame Unequipped)	
	Note: In this test, terminals specified for connecting battery or ground or for checking for presence of battery or ground are located on the MC relay terminal strip.	
3	Connect direct battery to terminal 42.	FP relay operates.
4	Block FP relay operated.	
5	Remove battery from terminal 42.	
6	Connect battery to terminal 41.	RS relay operates.
7	Check for presence of ground on terminals 44 and 45.	Ground present on terminal 44. Ground not present on terminal 45.
8	Remove battery from terminal 41.	RS relay releases.
9	Check for presence of ground on terminal 44.	Ground not present on terminal 44.
10	Connect direct ground to terminal 48.	TR relay does not operate.
11	Remove blocking tool from FP relay.	FP relay releases. TR relay operates.
12	Block TR relay operated.	
13	Remove ground from terminal 48.	
14	Connect direct battery to terminal 43.	FE relay operates. If ESM key is provided — ES relay operates.
15	Block FE relay operated.	
16	Remove battery from terminal 43.	
17a	If ESM key is not provided — Connect direct battery to terminal 40.	ES relay operates.
18	Check for presence of ground on terminals 44 and 45.	Ground is not present on terminal 44. Ground is present on terminal 45.
19a	If ESM key is not provided — Remove battery from terminal 40.	ES relay releases.
20	Remove blocking tool from FE relay.	FE relay releases. If ESM key is provided — ES relay releases.
21	Remove blocking tool from TR relay.	TR relay releases.
22	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

STEP	ACTION	VERIFICATION
	H. Secondary Switch Selecting Magnet Lockout Features (Offices Not Arranged for Mate Frame Operation)	
3	Connect direct battery to terminal 42 of MC relay terminal strip.	RS relay operates.
4	Check for presence of ground on terminals 44 and 45 of MC relay terminal strip.	Ground present on terminal 44. Ground not present on terminal 45.
5	Remove battery from terminal 42 of MC relay terminal strip.	RS relay releases.
6	Connect battery to terminal 43 of MC relay terminal strip.	ES relay operates.
7	Check for presence of ground on terminals 44 and 45 of MC relay terminal strip.	Ground not present on terminal 44. Ground present on terminal 45.
8	Remove battery from terminal 43 of MC relay terminal strip.	ES relay releases.
9	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	
	I. Manual Transfer to Emergency Selecting Magnet Circuit (Offices Arranged for Mate Frame Operation)	
	Where Manual Transfer on Either Mate Frame Is Accomplished by Operating Associated ESM Key	
1	At even frame — Operate ESM key.	ESM lamp lights.
2	Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.
3	Restore ESM key.	ESM lamp extinguished.
4	At odd frame — Operate ESM key.	ESM lamp lights.
5	Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.
6	Restore ESM key.	ESM lamp extinguished.
	Where Manual Transfer on Both Mate Frames Is Accomplished by Operating Either ESM Key	
7	At even frame — Operate ESM key.	ESM lamp lights. At odd frame — ESM lamp lights.
8	At odd frame — Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.
9	At even frame — Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.

STEP	ACTION	VERIFICATION
10	Restore ESM key.	ESM lamp extinguished. At odd frame — ESM lamp extinguished.
11	At odd frame — Operate ESM key.	ESM lamp lights. At even frame — ESM lamp lights.
12	At even frame — Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.
13	At odd frame — Check for presence of battery on terminal 40 of MC relay terminal strip.	Battery is present.
14	Restore ESM key.	ESM lamp extinguished. At even frame — ESM lamp extinguished.

J. Trouble Indicator Cut-in (TI) Relay Features

3	At terminating trouble indicator — Insert No. 322A plugs into TIB jacks of all markers associated with incoming link to be tested.	
4	At incoming link and connector — Block TI relay operated.	
5	At terminating trouble indicator — Block LP relay operated.	IF- lamp associated with incoming link frame being tested, lights.
6	At incoming link and connector — Connect direct ground to terminal 40 of LC relay terminal strip.	At terminating trouble indicator — M0 lamp lights.
7	At incoming link and connector — Remove ground from terminal 40 of LC relay terminal strip.	At terminating trouble indicator — M0 lamp extinguished.
8	Repeat Steps 6 and 7 grounding, in turn, terminals 41 to 49 of LC relay terminal strip.	Lamps M1 to M9 light, in turn.
9	At incoming link and connector — Connect ground to T winding terminal of LC0 relay.	LC0 relay operates. At terminating trouble indicator — LC0 lamp lights.
10	Remove ground from T winding terminal of LC0 relay.	LC0 relay releases. At terminating trouble indicator — LC0 lamp extinguished.
11	Repeat Steps 9 and 10, grounding T winding terminal, in turn, of LC1 to LC9 relays.	Lamps LC1 to LC9 light in turn.
12	At incoming link and connector — Remove blocking tool from TI relay.	TI relay releases. At terminating trouble indicator – Associated IF- lamp extinguished.

STEP	ACTION	VERIFICATION
13	At terminating trouble indicator — Remove blocking tool from LP relay.	LP relay releases.
14	Remove plugs from TIB jacks.	
15	Arrange for return to service of all trunks which were made busy in Step 1 unless other tests are to be made.	

K. Check for False Continuities and Crosses

Note: In Tables B and C, "stationary spring" and "operating spring" refer to springs of nonwire-spring-type multicontact relays; "fixed contact" and "movable contact" refer to wire-spring-type multicontact relays.

3	At terminating trouble indicator — Insert No. 322A plug into DB jack of marker associated with MC- relay to be tested.	
4a	If 100 trunk incoming link frame — If primary selecting magnet battery is supplied by marker — Connect ground to terminal 3 of MC relay terminal strip.	
5a	Check for presence of ground on terminals 13, 23, 33, 43, and 53 of MC relay terminal strip.	Ground not present.
6a	Remove ground from terminal 3 of MC relay terminal strip.	
7b	If 160 trunk incoming link frame — Connect ground to terminal 51 of MC relay terminal strip.	
8b	Check for presence of ground on terminals 11, 21, 31, and 41 of MC relay terminal strip.	Ground not present.
9b	Remove ground from terminal 51 of MC relay terminal strip.	
10	At incoming link and connector frame — Connect battery to ST lead of made busy marker on the proper TR- relay spring.	Proper MC- relay operates. At terminating trouble indicator — Associated I- lamp lights.
11	At incoming link and connector frame — Remove battery connected in Step 10.	MC- relay releases. At terminating trouble indicator — I- lamp extinguished.

STEP	ACTION	VERIFICATION
12	At incoming link and connector frame — Connect ground to springs or contacts of MC- relay being tested as indicated in Column 1 of Table B.	No ground or battery on springs or contacts of MC- relay being tested as indicated in Columns 2, 3, 4, and 5 of Table B.

TABLE B

USING A TEST CORD, CONNECT GROUND TO OPERATING SPRING OR FIXED CONTACT	USING A RECEIVER, CHECK FOR ABSENCE OF			
	GROUND ON		BATTERY ON	
	OPERATING SPRING OR FIXED CONTACT	STATIONARY SPRING OR MOVABLE CONTACT	OPERATING SPRING OR FIXED CONTACT	STATIONARY SPRING OR MOVABLE CONTACT
			4 to 9, 32, 34, 37, 38, 39, 41, 44, 46, 51	48, 49, 50, 53
	54, 56, 58	0, 1		
3		3		
10 to 31		10 to 31 respectively		
33		33		
35		35		
36		36		
43		43		
45		45		
47		47		
55		55		
57		57		
59		59		

13	At terminating trouble indicator — Remove No. 322A plug from DB- jack.	
14	Insert No. 322A plug into DB- jack of marker associated with next MC- relay to be tested.	
15	Repeat Steps 10 through 14 for all other MC- relays to be tested.	
16	At incoming link and connector frame — Check for presence of battery on terminals 10 to 39 and 50 on LC relay terminal strip.	No battery present.
17	Connect ground to terminals of LC relay terminal strip as indicated in Column 1 of Table C.	No ground present on springs or contacts of LC0 to LC9 relays as indicated in Column 2 of Table C.

STEP	ACTION	VERIFICATION

TABLE C

USING A TEST CORD, CONNECT GROUND TO TERMINAL OF LC RELAY TERMINAL STRIP	USING A RECEIVER, CHECK FOR ABSENCE OF GROUND ON STATIONARY SPRING OR MOVABLE CONTACT
	4
0 to 3	0 to 3 respectively
5 to 8	5 to 8 respectively
40 to 49	40 to 49 respectively
53	53
54	54

18	At terminating trouble indicator — Insert No. 322A plugs into DB and XT jacks of a selected marker.	
19	At incoming link and connector frame — Connect battery to ST lead of made busy marker on the proper TR- relay spring.	
20c	If arranged for mate frame operation — Connect ground to T winding terminal of RS relay.	
21	Connect battery to B winding terminal of RS relay.	RS relay operates. At terminating trouble indicator — XT lamp does not light.
22	At incoming link and connector — Remove battery from B winding terminal of RS relay.	RS relay releases.
23c	If arranged for mate frame operation — Remove ground from T winding terminal of RS relay.	
24	At made busy terminating marker — Block nonoperated the RIL and LIL relays.	
25	At incoming link and connector frame — Connect ground to terminals 10 to 29, in turn, at the LC relay terminal strip.	At terminating trouble indicator — XT lamp does not light.
26	At made busy terminating marker — Remove blocking tools from RIL and LIL relays.	

STEP	ACTION	VERIFICATION
27	At incoming link and connector frame — Remove battery from ST lead at TR- relay spring.	
28	At terminating trouble indicator — Remove No. 322A plugs from DB and XT jacks.	
29	Repeat Steps 18 through 28 for all other markers in the group.	