Installation Engineering Handbook 61
Western Electric Company, Incorporated
Columbus Works

Section 104
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TEST OF LINE LOAD CONTROL EQUIPMENT

CONTENTS

1. GENERAL INFORMATION

1.1 Description

1.11 This section provides information for testing Line Load Control Circuit, SD-96387-01.

1.2 Test Procedure

1.21 New Offices

1.211 Test operations should be performed in sequence given. Coordinate tests in this section with test of other equipment units in order to eliminate interference difficulties.

1.22 Addition

1.221 When adding line load control feature in working offices, the start leads should not be connected through contacts of B and C relays shown on SD-25003 until tests per Paragraphs 5 to 7 have been completed.

1.222 When tests per Paragraphs 5 to 7 have been made, connect start leads through B and C relay contacts on a transitition basis and then perform test per Paragraph 8 as quickly as possible in order to avoid traffic interference.

1.223 The tests included in Paragraph 9 should only be made during low traffic periods.

1.224 When adding line link frames in a working office already equipped with line load control feature, tests included in this section should be applied only to the added equipment units. It will not be necessary to operate B and C keys associated with working frames during these tests. It is suggested that any convenient method be used to insure against service interruptions due to accidental operation of keys mentioned.

1.225 When horizontal groups of working line links are extended, tests described in this section should be applied only to added line load equipment units. Since the application of these tests will require operation of B and C keys associated with working line link frames, arrange to perform tests during low traffic periods in order to avoid service interruptions.

2. RECORDS AND REQUIREMENTS

2.1 Records

2.11 Forms ID-1313 and ID-1315 are required for recording results of these tests. For further information regarding test record preparation refer to Section 3 of Handbook 50.

2.2 Requirements

2.21 Section 2B in this handbook lists all tests and ID-1313 file numbers associated with line load control circuits.

3. TEST EQUIPMENT

3.1 Accessories

Amt.	Code	Description	With ITE
1	R-9572	Test Receiver	¢ 4023
As Req.	ITE-4042	Hand Test Tel. Set	4023
As Req.	KS-16887L1 or 768A	Blocking Wedge	4023 ←

¢ Crossbar Test Accessory Set

4. FUSING

4.1 Using a test receiver or volt-ohmmeter check each fuse post for absence of battery and ground.

4.2 Install fuses of correct type and capacity indicated on circuit drawing one at a time. Verify that battery is present at indicated test point for associated fuse.

Fuse	Test Point
A	A Res.
B	B "
C	C "

5. COMMON CONTROL CIRCUIT

5.1 Push in all B and C keys at key and lamp panel.

5.2 Turn CLB key to ON position.

Result

(A) CLB lamp lights.
(B) All B but no C relays (Fig. 2) operate.
(C) Frame lamps B or C (Fig. 1) do not light.
(D) Associated aisle pilot lamp lights and major alarm sounds.

5.3 Momentarily operate AR key.

Result

(A) Alarm is retired, CLB lamp remains lighted.
(B) HB, AB, RB relays (Fig. 3) and all B relays remain operated.

5.4 Restore CLB key to normal.

Result

(A) CLB lamp out.
(B) All operated relays release.

5.5 Turn CLC key to ON position.

Result

(A) CLC lamp lights.
(B) All C relays (Fig. 2) operate.
(C) C or B frame lamps do not light.
(D) Associated aisle pilot lamp lights and major alarm sounds.

5.6 Momentarily operate AR key.

Result

(A) Alarm is retired.
(B) CLC lamp remains lighted.
(C) Relays HC, AC, RC and all C relays remain operated.

5.7 Restore CLC key to normal.

Result

(A) CLC lamp out.
(B) All operated relays release.

5.8 When Shelter Area Control Circuit Figure 8 is provided, repeat test of preceeding paragraphs to check associated CLB, CLC and AR keys.

6. FRAME KEY AND LAMP CIRCUIT

6.1 Push in all B and C keys and operate CLB and CLC keys to ON position.

Result

(A) CLB and CLC lamps light.
(B) Alarm is sounded. (Operate AR key)
(C) All B and C frame lamps out.

6.2 Pull out B and C keys one at a time.

Result

(A) Associated B or C lamp lights.

6.3 With all B and C keys out and associated lamps lighted, momentarily insulate, one at a time, contacts B1, 3, 5, 7, 9 and T1, 3, 5, 7 and 9 contact of B and C relays.

Result

(A) As each contact is insulated the associated B or C lamps are extinguished.

6.4 Operate CLB and CLC keys to OFF position.

Result

(A) All B and C lamps remain lighted.
(B) CLB and CLC lamps remain lighted.

6.5 Push in B keys one at a time.

Result

(A) Associated B lamps extinguished.
(B) CLB lamp extinguished with all B keys in.

6.6 Push in C keys one at a time.

Result

(A) Associated C lamps extinguished.
(B) CLC lamp extinguished with all C keys in.

7. OPERATING CHAIN CIRCUITS

7.1 With all B and C keys in, block operated all B and C relays of Figure 2. Block operated RB and RC relays to open alarm circuits.

7.2 At first line link frame, block normal all class B line load control relays. Pull out associated B key at lamp and key panel.

Result

(A) Only lowest numbered B relay on line link frame is energized.
(B) Associated B lamp does not light.

7.3 Remove block from energized relay allowing it to operate.

Result

(A) CLB lamp lights.
(B) Next higher numbered B relay is energized.

7.4 Remove in turn blocks from each succeeding B relay associated with line link frame under test.

Result

(A) Operated B relay energizes only succeeding B relay.
(B) B lamp lights when block is removed from last B relay.

7.5 Push in B key.

Result

(A) Associated B and CLB lamps are extinguished.

7.6 Momentarily close 11 and 12 top contacts of each B relay of line link frame under test and check that CLB lamp lights.

7.7 Repeat preceeding tests for class C line load control equipment on first line link frame.

7.8 Perform tests of Paragraphs 7.1 to 7.7 on each line link frame as required.

7.9 When tests have been completed, remove all relay blocks from common control equipment and line link frame relays.

8. ST LEADS

8.1 Using hand telephone set ITE-4042 originate a call on one of the lines in line sub group under test. Check that dial tone is received and then release call.

8.2 Insulate B or C relay contact associated with start lead of line sub group under test.

8.3 Originate another call from same line and verify that dial tone is not received and no alarms are sounded.

8.4 Remove insulator and check for dial tone. Release the call.

8.5 Perform preceeding tests on each line sub group of line link frames arranged for load control.

9. DENIED SERVICE TEST

9.1 Block operated lowest numbered B and C relays at line link frames.

9.2 Originate a call in each class A line sub group using hand set ITE-4042 and check that dial tone is received.

9.3 Remove blocks from B and C relays.

9.4 Repeat preceeding test on each line link frame arranged for line load control.

10. LINE GROUP OVERLOAD

10.1 Manually operate and release in turn each G relay (Fig. 5) and check that associated G lamp lights.

NOTE: When testing working units, the following tests should be made during low traffic periods. Since tests will cause dial tone delay registers to score, the telephone company should be advised of any excessive operation of registers.

10.2 Block normal G relay associated with first line link frame. At traffic register relay rack, manually operate M relay of delay register circuit (SD-25317-01, Fig. 15) associated with frame under test. Relay M locks operated.

10.3 Remove block from G relay allowing it to operate. Check that relay M releases and in turn releases relay G.

10.4 Perform preceeding tests on line group overload circuits associated with each line link frame.

11. FRAME LINE JACKS

11.1 When key and lamp cabinet is provided with a multiple of frame line circuit, make a talking test between cabinet and one of the line link frames.

→ Arrowed lines show changed information

Manager, Crossbar Product Engineering
Control Center

Reason for Reissue:
To remove reference to toothpicks and make reference to standard blocking tool.