Installation Engineering Handbook 62
Western Electric Company, Incorporated
Columbus Works

Section 236
6-9-72

DIRECT ACCESS

PRETRANSLATOR CONNECTOR AND PREFERENCE CONTROL

Replaces: Section 236
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CONTENTS

1. GENERAL

1.1 This section outlines tests to be performed on Preference Control Circuit, SD-27821-01 and the associated Direct Access Pretranslator Connector, SD-27822-01.

1.2 Notice: On completion of tests of each connector, relays MP- and E- associated with unequipped markers should be blocked nonoperated in a permanent manner. This is done to prevent false operation of these relays in service and should be accomplished as follows:

With the relay armature in the nonoperated position, insert the broad end of a flat toothpick between the armature and core until a snug fit is obtained. Cut off the toothpick 1/4 inch beyond the end of the armature or even with the face of the relay contact cover.

2. RECORDS

2.1 Forms SD-4-1313 and SD-4-1315 are required for recording the results of these tests. For further information on records, see Section 3 of Handbook 3.

3. TEST EQUIPMENT

3.1 Test Sets and Accessories

Amt	Code	Description	With ITE
1	ITE-4442	Volt-Ohmmeter	4023
1	R-1824	Pencil Lamp	4023
2	R-9572	Test Receiver	4023
1	322A	Make Busy Plug	4023
1	349A	Make Busy Plug	4023

4. FUSING

4.1 At the Fuse Bay, using a test receiver or volt-ohmmeter, verify the absence of low resistance ground on the fuse posts associated with the circuit to be fused.

4.2 Using fuses of the correct type as indicated by circuit drawings and fuse panel designations, install the following fuses one at a time. Verify that each fuse is associated with its proper equipment and is free from crosses with other unfused posts on the fuse panel.

SD	FUSE DESIGNATION	POTENTIAL	TEST LOCATION T.S.	TEST LOCATION PCHG.
27821-01	A	-48V	C	31
27822-01	AO-A9	-48V	MAO-9	30
27822-01	B	-48V	C	11
27822-01	CO-C9	-48V	MAO-9	31
27822-01	D	-48V	C	21
27822-01	E	-48V	FA-D (TM-O)	59

NOTE: The DAPC normally receives ground on one of leads PC1 or PC2 from the associated DAP circuit. When the fuses are installed for the DAPC and this ground is not present, relay AL should operate activating the major alarm. In this case block operated relay RTR1 which should in turn operate relays TM1 and PS1. Relay AL should release, retiring the major alarm.

5. CONNECTOR AND PREFERENCE TESTS

5.1 Emergency Transfer and Alarm Circuit

5.11 Refer to Figure 1 and perform test operations specified in associated Table 1.

TABLE 1

PREFERENCE CHAIN TRANSFER AND ALARM TESTS			
NO.	TEST OPERATION	INDICATION	NOTES
1	(M) OPEN #8 CONTACT MPO RELAY	LAMP CH LIGHTS, TR- RELAYS OPERATE, MINOR ALARM OPERATES AND AISLE PILOT LIGHTS	* THESE TESTS REQUIRE THE CH LEAD TO BE CONNECTED TO THE ALARM CIRCUIT AND THE AR LEAD TO GROUND EITHER IN THE ALARM TRANSFER CIRCUIT OR BY Z OPTION WHICHEVER IS SPECIFIED. (M) INDICATES MOMENTARY OPERATION.
2	(M) OPERATE AR KEY	LAMP CH OUT, ALL TR- RELAYS RELEASE. ALARM RETIRED	
3	(M) OPEN #12 CONTACT MPO RELAY	LAMP CH LIGHTS, TR- RELAYS OPERATE	
4	(M) OPERATE AR KEY	LAMP CH OUT, ALL TR- RELAYS RELEASE	
5	OPERATE KEY TR	RELAYS TR- OPERATE	
6	(M) OPEN #8 CONTACT E-O RELAY	LAMP CH LIGHTS. TR- RELAYS RELEASE, MINOR ALARM OPERATES	
7	(M) OPERATE AR KEY	LAMP CH OUT, TR- RELAYS RE-OPERATE, MINOR ALARM RETIRED	
8	(M) OPEN #12 CONTACK E-O RELAY	LAMP CH LIGHTS. TR- RELAYS RELEASE	
9	RELEASE TR KEY	TR- RELAYS OPERATE	
10	(M) OPERATE AR KEY	LAMP CH OUT. ALL TR- RELAYS RELEASE	

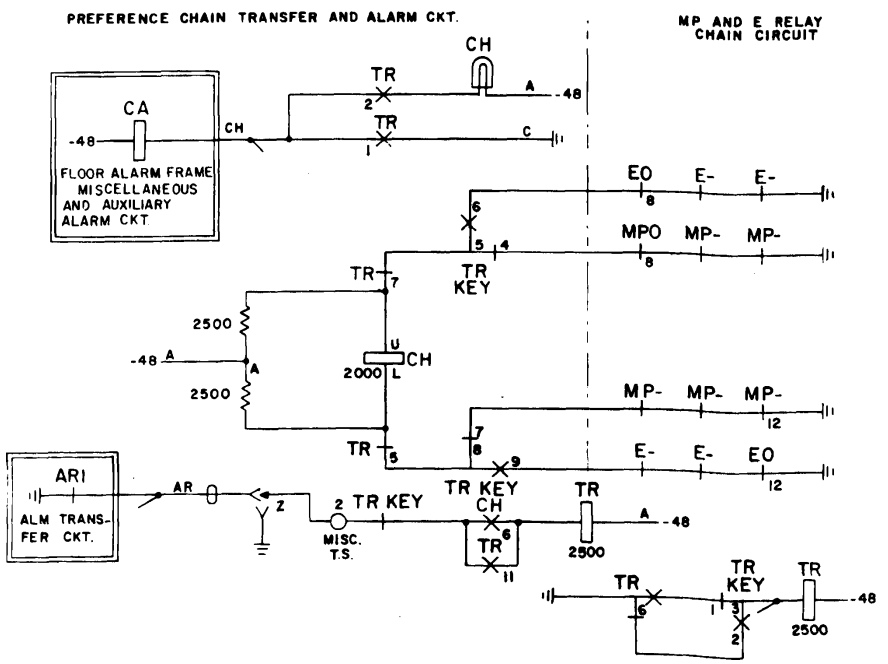

FIG. I EMERGENCY TRANSER AND ALARM CIRCUIT TEST

5.2 Marker Preference Chains

5.21 MP- Relay Chains

5.211 Using two test receivers connected to 48V battery, apply and remove battery at unit terminal strip punching associated with MP- relays in the Direct Access Pretranslator connector control circuit under test in the ascending sequence shown in Table 2. Check that the MP- relays operate in the order given and that only the correct MCA-, MCB-, and MCC- relays in the associated DAPC operate and release as specified. Lamp CH in the associated transfer and alarm circuit should not light during this test.

5.212 Apply and remove battery at unit terminal strip punching associated with MP- relays in descending sequence shown in Table 3. Check that MP- relays operate and release in order indicated.

5.22 E- Relay Chains

5.221 Operate key TR of associated transfer and alarm circuit. Associated TR- relay should operate.

5.222 Repeat test operations 5.211 and 5.212 applying battery to unit terminal strip punching associated with E relays instead of MP- relays. Check that E-relays operate and release as specified in Tables 2 and 3.

5.223 Release key TR on completion of test.

5.224 Perform tests 5.21 and 5.22 on each DAPC preference and control circuit.

TABLE 2

TEST OPERATIONS DAPCC MP- AND E- RELAY WORK CHAINS

TEST STEP (NOTE)	TEST CONN. UNIT TS B PCHG.		OBSERVE RELAYS MP- OR E- AT DAPCC CKT.		OBSERVE RELAYS MCA-, MCB- AND MCC- AT DAPC CKT.	
	CONN. BAT.	REM. BAT.	OPER.	RLS.	OPER.	RLS.
1	15		0	-	0	
2	25		1	-	-	-
3		15	-	0	1	0
4	35		2	-	-	-
5		25	-	1	2	1
6	45		3	-	-	-
7		35	-	2	3	2
8	55		4	-	-	-
9		45	-	3	4	3

TABLE 2 (Cont'd.)

TEST OPERATIONS DAPCC MP- AND E- RELAY WORK CHAINS

TEST STEP (NOTE)	TEST CONN. UNIT TS B PCHG.		OBSERVE RELAYS MP- OR E- AT DAPCC CKT.		OBSERVE RELAYS MCA-, MCB- AND MCC- AT DAPC CKT.	
	CONN. BAT.	REM. BAT.	OPER.	RLS.	OPER.	RLS.
10	18		5	-	-	-
11		55	-	4	5	4
12	28		6	-	-	-
13		18	-	5	6	5
14	38		7	-	-	-
15		28	-	6	7	6
16	48		8		-	-
17		38	-	7	8	7
18	58		9	-	-	-
19		48	-	8	9	8
20		58		9	-	9

NOTE: If less than ten MP- relays are equipped, continue test to include operation and release of highest numbered relay.

TABLE 3

TEST OPERATIONS MP- AND E- RELAY OPERATING CHAINS

TEST STEP (NOTE)	TEST CONN. UNIT TS B PCHG.		OBSERVE RELAYS MP- OR E- AT DAPCC CKT.	
	CONN. BAT.	REM. BAT.	OPER.	RLS.
1	58		9	-
2	48		-	-
3	-	58	8	9
4	38	-	-	-
5	-	48	7	8
6	28	-	-	-
7	-	38	6	7
8	18	-	-	-
9	-	28	5	6
10	55	-	-	-
11	-	18	4	5
12	45	-	-	-
13	-	55	3	4
14	35	-	-	-
15	-	45	2	3
16	25	-	-	-
17	-	35	1	2
18	15	-	-	-
19	-	25	0	1
20	-	15	-	0

NOTE: If less than 10 MP- relays are equipped, start test at highest numbered relay.

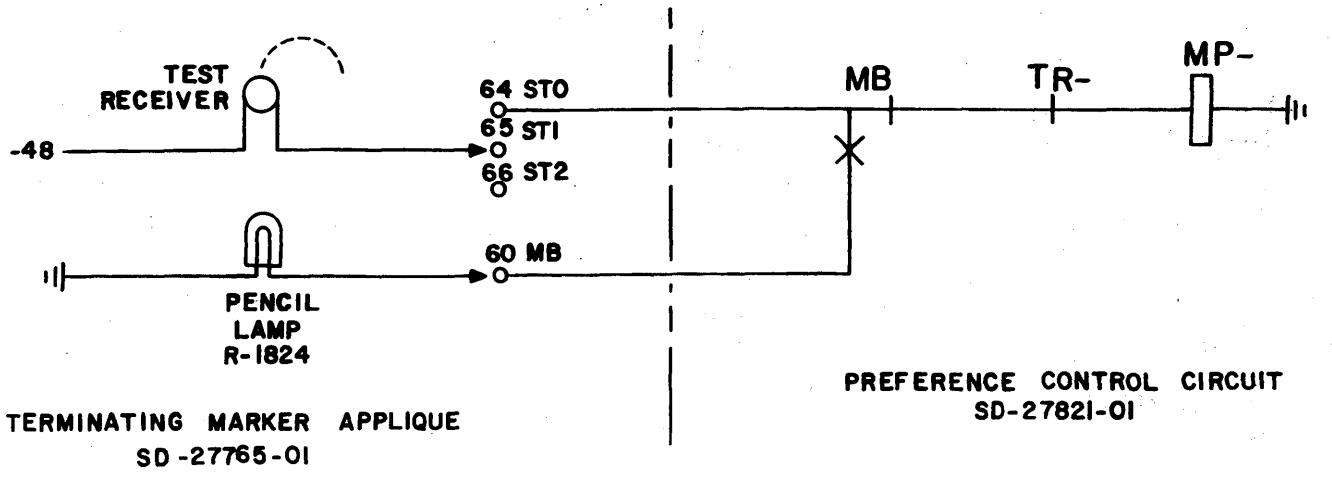

FIG.2 TEST SETUP FOR ST- LEADS

5.3 ST- Leads From Terminating Markers

5.31 This test verifies the association of ST- leads from each terminating marker to the associated MP- relays in the DAP preference control circuits and also checks the DAPC make busy feature. A talking line between the markers and the DAP connector frame is required for this test.

5.32 Connect an R-1824 pencil lamp to lead MB at the terminating marker as shown in Figure 2. Connect other side of lamp to ground.

5.33 Apply 48V through a test receiver to each assigned marker ST- lead terminal in order shown in Table 4. Check that the correct MP- relay associated with marker under test operates.

5.34 Manually operate and release relay MB- in the associated DAPC Control Circuit. Verify that pencil lamp is lighted and that relay MP- releases.

5.35 Apply tests 5.32 through 5.34 to each terminating marker. Remove test lamp on completion of test.

5.4 DAPC Make Busy and Alarm

5.41 At the DAPC insert a 349A make busy plug into jack PMB. Verify that, relay MB in the associated Preference Control Circuit is operated, major alarm sounds and lamp PMB on the connector frame is lighted.

TABLE 4

TEST CONNECTIONS ST- LEADS FROM TMA TO DAPCC		
APPLY TEST BATTERY TO ST- AT TERMINATING MARKER APPLIQUE		
TERMINAL STRIP	TERM	ASSOCIATED RELAY AT DAPCC OPERATES
FA-D MKRS 0 or 5	64	DAPC 0 MP-
FA-H MKRS 1 or 6	65	DAPC 1 MP-
FB-D MKRS 2 or 7	66	DAPC 2 MP-
FB-H MKRS 3 or 8		
FC-D MKRS 4 or 9		

5.42 Remove the make busy plug from jack PMB. Relay MB in the Preference Control Circuit restores to normal, major alarm is silenced and lamp PMB is extinguished.

5.5 DAPC Transfer and Alarm

5.51 At the Direct Access Pretranslator Frame, associated with the Connector under test, insulate contact 2 of relay PC in both associated DAP circuits. (If relay RTR1 in the connector has been previously blocked operated, remove blocking tool.) The major alarm sounds, the red aisle pilot lamp and lamp PCF at the connector frame are lighted.

5.52 Connect ground through a test receiver to Preference Control terminal strip C, punching 56. Relay RTR1 is operated, the major alarm is silenced and the aisle pilot lamp and lamp PCF are extinguished.

5.53 Connect ground through a test receiver to terminal strip C, punching 57. The major alarm sounds, the aisle pilot lamp and lamp PCF are lighted.

5.54 Remove ground connection from terminal strip C, punching 56. Relay RTR1 releases, relay RTR2 operates, the major alarm is silenced, the aisle pilot lamp and lamp PCF are extinguished.

5.55 Remove insulators from both associated DAP circuits and remove ground connection from terminal strip C, punching 57.

5.56 Repeat tests of Paragraphs 5.51 to 5.55 for each equipped connector.

5.6 Marker Seize Frame Timer Recycle

5.61 At the TTI frame, insert a 322A make busy plug into jack DB for Terminating Marker 0.

5.62 At the DAPC manually operate relay MCA-A associated with Terminating Marker 0 momentarily. At Terminating Marker 0, relay TRU0 is operated while relay MCA-A is operated.

5.63 At the DAPC manually operate relay MCA-B associated with Terminating Marker 0 momentarily. At Terminating Marker 0 relay TRU1 is operated while relay MCA-B is operated.

5.64 Remove make busy plug from jack DB for Terminating Marker 0.

5.65 Repeat tests of Paragraphs 5.61 to 5.64 for each Terminating Marker.

5.7 DAP- Lamp Lead Verification

5.71 At the TTI frame operate key BAT.

5.72 At DAPC-0 momentarily operate relay MCC-A. Lamp DAP-0 at the TTI is lighted while relay MCC-A is operated.

5.73 At DAPC-0 momentarily operate relay MCC-B. Lamp DAP-0 at the TTI is lighted while relay MCC-B is operated.

5.74 Repeat tests of Paragraph 5.72 and 5.73 to each equipped connector. Verify that associated lamp DAP- at the TTI is lighted.

5.75 Restore key BAT at TTI frame.

5.8 Connector Test Relay Operation

5.81 At the TTI frame, insert a 322A make busy plug into jack DB for Terminating Marker 0.

5.82 At Terminating Marker 0, block operated relay TSTC.

5.83 At the DAPC, manually operate one at a time, relays MCA-A and MCA-B associated with TM-0 in each connector. Verify that relay TST-0 in Connector 0 operates when MCA- relay is operated.

5.84 Remove blocking tool from relay TSTC in TM-0 and remove make busy plug at the TTI frame.

5.85 Repeat test of Paragraphs 5.81 to 5.84 for the remaining Terminating Markers. Verify that the associated TST- relay in Connector 0 operates.

5.9 Manual Transfer

5.91 Keys A and B are furnished for manual switching of on-line off-line status for maintenance purposes.

5.911 If Connector A is on-line, momentarily depress Key B. Connector B switches to on-line status and Connector A to off-line status.

5.912 If Connector B is on-line, momentarily depress Key A. Connector A switches to on-line status and Connector B to off-line status.

Lines Presented in Script Indicate New or Changed Information

Manager, Crossbar Product Engineering
Control Center

Reason for Reissue:
To correct Paragraphs 5.41 and 5.42 and to add Paragraph 5.9.