TRUNK CONTROL CIRCUIT SD-94810-01
TESTS USING MASTER TEST FRAME
NO. 5 CROSSBAR OFFICES
ARRANGED FOR AMA MAGNETIC TAPE RECORDING

1. GENERAL

1.01 This section describes a method of testing trunk control SD-94810-01 in No. 5 crossbar offices arranged for AMA magnetic tape recording. Tests are also included that do not require use of the master test frame.

1.02 The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are affected.

(a) To revise Tests A, F, and Q

(b) To delete Tests K, U

(c) To add paragraphs 1.05 and 1.12.

1.03 The tests covered are:

REGULAR TRUNK CONTROL

1.04 Tests B, H, I, K, L, M, S, and T require action and verification at the trunk control frame. Test J requires action and verification at the recorder and recorder control frame.

1.05 Tests A, F, and Q require action and verification at the trunk control frame and master test frame.

1.06 With a regular trunk control made busy, bulk-billed calls will be completed without a charge record and toll statement calls will be routed to overflow. Therefore, tests that require a regular trunk control to be made busy should be performed during periods of light traffic.

1.07 Tests B through G, M through R will score the REC PC plant register. Tests B, D through G, M, O through R will score the traffic register associated with the trunk control TPC lead. Reporting of these register operations should be in accordance with local instructions.

1.08 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 3 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.

1.09 The manner of selecting some circuits and test conditions at the MTF and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.

1.10 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

1.11 On Issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.

1.12 Test procedures G, H, and S require the TRR-AR key at the MTF to be in the normal position.

2. APPARATUS

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

2.02 Master test control circuit, SD-25800-01.

2.03 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, and one 411A (test pick) tool (for applying battery or ground to test points).

2.04 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, and one 624A (terminal connector) tool (for connecting battery or ground to winding terminals of wire-spring relays).

2.05 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, one 639A (contact connector) tool, and one 651-type (contact connector holder) tool (for connecting battery or ground to fixed contacts of wire-spring relays).

2.06 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, and one 624B (terminal connector) tool (for connecting battery or ground to terminal strip terminals arranged for solderless wrapped connections).

2.07 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one 411A (test pick) tool, and one 624A (terminal connector) tool (for applying resistance battery to test points from winding terminals of wire-spring relays).

2.08 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one 411A (test pick) tool, one 639A (contact connector) tool, and one 651-type (contact connector holder) tool (for applying resistance battery to test points from fixed contacts of wire-spring relays).

2.09 Patching cord, P3K cord, 6 feet long, equipped with two 310 plugs (3P15A cord) (for connecting battery and ground to relay timing test set).

2.10 Patching cord, W3M cord, 6 feet long, equipped with one 310 plug, one 360A tool,

TABLE A

APPARATUS	TESTS																	
	A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Q	R	S	T
Test Circuit (2.02)			1	1	1	1	1			1			1	1	1	1	1		
Cord (2.03)	1	1				1						1				1			
Cord (2.04)	1	2										2							
Cord (2.05)		1										1							
Cord (2.06)						1										1			
Cord (2.07)						1										1			
Cord (2.08)						1										1			
Cord (2.09)																			
Cord (2.10)																			
Test Set (2.11)																			
Test Set (2.12)									1										1
KS-3008 Stopwatch or Equivalent								1										1	
322A (make-busy) Plug	✓	✓				✓		✓	✓		✓	✓			✓	✓		✓	✓
Tools (2.13)	✓	✓				✓		✓	✓			✓			✓	✓		✓	✓

✓ As Required

one 360B tool, one 360C tool (3W4A cord), one KS-6278 connecting clip, one 624A (terminal connector) tool, one 419A (test connector) tool (for connecting relay under test to relay timing test set).

2.11 Relay timing test set, J24753A (SD-25707-01).

2.12 67C test set, or equivalent (for use in checking for presence of battery).

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

2.14 When making connections to relays and other apparatus using test cords listed in this section, use as covered in Section 069-131-811.

3. METHOD

STEP	ACTION	VERIFICATION
	REGULAR TRUNK CONTROL	
	A. Manual and Automatic Transfer Features	
	Note: Refer to paragraphs 1.05 through 1.11.	
1	At MTF— Verify that emergency trunk control is not in use or made busy.	TC_ TC EMER lamps extinguished.
2	Insert make-busy plug into TC-TR jack associated with trunk control under test.	TC_ lamp associated with trunk control under test lighted. At trunk control frame—

STEP	ACTION	VERIFICATION
		EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted.
	Caution: Performance of Steps 3 through 14 will cause a trunk control to be made busy to service traffic. Therefore, this portion of the test should be made during light traffic periods.	
3	At MTF— Insert make-busy plug into TC-TR jack associated with any other trunk control.	Associated TC_ lamp lighted. At trunk control frame— Associated EW lamp ***not*** lighted.
4	At MTF— Remove make-busy plug from TC-TR jack used in Step 3.	Associated TC_ lamp extinguished.
5	Remove make-busy plug from TC-TR jack of trunk control under test.	TC_ lamp associated with trunk control under test extinguished. At trunk control frame— EW lamps extinguished.
6	At MTF— Insert make-busy plug into TC-TR jack associated with trunk control under test.	TC_ lamp associated with trunk control under test lighted.
7	At trunk control under test— Block nonoperated TN5 relay.	
8	Block operated XOST relay.	Major alarm sounds. Trouble record taken. TNR, TRL, XOST designations perforated. At trunk control frame— EW lamp associated with emergency trunk control lighted. EW lamp associatd with trunk control under test ***not*** lighted.
9	At trunk control under test— Remove blocking tools from TN5 and XOST relays.	EW lamp associated with trunk control under test lighted. ▶XOST relay remains operated.◀
10	At trunk control under test— Momentarily operate AR key.	Major alarm silenced. ▶XOST relay released.◀
11	At MTF— Remove make-busy plug from TC-TR jack.	TC_ lamp associated with trunk control under test extinguished. At trunk control frame— EW lamps extinguished.

STEP	ACTION	VERIFICATION
12	At trunk control under test— Block operated TN5 relay.	Major alarm sounds. Trouble record taken. TNR, XRB designations perforated. ▶XRB relay operated.◀
13	Remove blocking tool from TN5 relay.	
14	Momentarily operate AR key.	Major alarm silenced. XRB lamp extinguished. EW lamp associated with trunk control under test extinguished. EW lamp associated with emergency trunk control extinguished. ▶XRB relay released.◀
15	At trunk control under test— Momentarily apply ground to U winding terminal of RTL relay.	▶XRTL relay operated.◀ EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted. Major alarm sounds. At MTF— Associated TC_ lamp lighted. Trouble record taken. TNR, XRTL designations perforated.
16	At trunk control under test— Momentarily operate AR key.	▶XRTL relay released.◀ Major alarm silenced. EW lamp extinguished. At MTF— Associated TC_ lamp extinguished.
17	Insert make-busy plug into TVMB_ jack for any transverter.	
18	At trunk control under test— Momentarily open 1B of TP_ relay associated with transverter made busy in Step 17.	▶XTPA relay operated.◀ EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted. Major alarm sounds. At MTF— Associated TC_ lamp lighted. Trouble record taken. TNR, XTP designations perforated.
19	At trunk control under test— Momentarily operate AR key.	▶XTPA relay released.◀ Major alarm silenced. EW lamp extinguished. At MTF— Associated TC_ lamp extinguished.

STEP	ACTION	VERIFICATION
20	Remove make-busy plug from TVMB_ jack.	
21	At trunk control under test— Momentarily apply ground to terminal strip B, terminal 36.	▶XRL relay operated.◀ EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted. Major alarm sounds. At MTF— Associated TC_ lamp lighted. Trouble record taken— TNR, XRL1 designations perforated.
22	At trunk control under test— Momentarily operate AR key.	▶XRL relay released.◀ Major alarm silenced. EW lamp extinguished. At MTF— Associated TC_ lamp extinguished.
23	At trunk control under test— Momentarily apply battery to terminal strip D, terminal 14.	▶FA lamp lighted.◀ EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted. Major alarm sounds. At MTF— Associated TC_ lamp lighted.
24	At trunk control under test— Momentarily operate AR key.	▶FA lamp extinguished.◀ Major alarm silenced. EW lamp extinguished. At MTF— Associated TC_ lamp extinguished.
25	At trunk control under test— Momentarily connect ground to terminal strip B, terminal 16.	XRL relay operated. ▶EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted. Major alarm sounds. At MTF— Associated TC_ lamp lighted. Trouble record taken. XRL1, TNR designations perforated.◀
26	At trunk control under test— Momentarily operate AR key.	▶XRL relay released. Major alarm silenced. EW lamp extinguished. At MTF— Associated TC_ lamp extinguished.◀

STEP	ACTION	VERIFICATION
B. Transverter Preference Relays—Operation and Lockout		
1	At MTF— Verify that emergency trunk control is not in use or made busy.	TC_, TC EMER lamps extinguished.
2	Insert make-busy plug into TC-TR jack associated with trunk control under test.	Associated TC_ lamp lighted. At trunk control frame— EW lamps associated with trunk control under test and emergency trunk control lighted.
3	Block nonoperated TV, ON, XTP, RD, ◗DS◖ relays.	
4	Insulate 7M of IP relay.	
5	Block operated IP, ON1, TRL relays.	
6	Momentarily apply battery to L winding terminal of highest numbered TP_ relay.	Highest numbered TP_ relay ***not*** operated.
7	Remove blocking tool from IP relay.	
8	Connect ground to 6 of RTL relay.	RIP1 relay operated.
9	Connect battery to L winding terminal of highest numbered TP_ relay.	Highest numbered TP_ relay ***not*** operated.
10	Insulate 41M of highest numbered TC_ relay.	
11	Remove ground from 6 of RTL relay.	Highest numbered TP_ relay operated. Highest numbered TC_ relay ***not*** operated. RIP1 relay released.
12	Remove blocking tool from ON1 relay.	RTL, highest numbered TC_ relays operated.
13	Momentarily apply ground to 6F of RTL relay.	RTL, highest numbered TC_ relays remain operated.
14	Momentarily apply battery to 1F of TV1 relay.	IP relay ***not*** operated.
15	Block operated ON1 relay.	RTL, higher numbered TC_ relays remain operated.
16	Connect battery to L winding terminal of next lower numbered TP_ relay.	Next lower numbered TP_ relay operated. Next lower numbered TC_ relay ***not*** operated.
17	Remove battery from winding terminal of higher numbered TP_ relay.	RTL, higher numbered TP_, TC_ relays released. Next lower numbered TC_ relay ***not*** operated.

STEP	ACTION	VERIFICATION
18	Remove insulator from higher numbered TC_ relay.	
19	Insulate 41M of next lower numbered TC_ relay.	
20	Remove blocking tool from ON1 relay.	RTL, next lower numbered TC_ relays operated.
21	Repeat Steps 15 through 20 for remaining TP_ relays.	
22	Remove battery from TP0 relay.	RTL, TP0, TC0 relays released.
23	Remove blocking tools from TV, ON, XTP, TRL, RD, ◗DS◖ relays.	
24	Remove insulator from IP relay and lowest numbered TC_ relay.	
25	At MTF— Remove make-busy plug from TC-TR jack.	Associated TC_ lamp extinguished. At trunk control frame— EW lamps extinguished.

C. Initial Entry

Note: Refer to paragraph 1.09.

1	At MTF— Select transverter.	
2	Select TVT (AMA) class of test.	
3	Operate TVT1, DR, RST, 4DG keys.	
4	Select code pattern 3.	
5	Select message billing index 9.	
6	Set TNT, TNU switches to OFF.	
7	Set TCU switch to select regular trunk control for test.	
8a	If trunk control 10 through 19 is selected for test— Operate TCNT key.	
9	Set RN switch to select any trunk control units digit.	
10	Operate AD/OD (1/0) key to select trunk control tens digit.	

STEP	ACTION	VERIFICATION
11	Select line location.	
12	Momentarily operate ST key.	DRST, CS, DNK, LCP, TTC, IEC, DIS1, MRL lamps lighted. TST, TCTK lamps momentarily lighted.
13	Momentarily operate RL key.	All lamps extinguished.
14	Operate RCH1 key.	
15	Repeat Steps 12 and 13.	
16b	If 3-channel recording system is provided— Operate RCH2 key.	
17b	Repeat Steps 12 and 13.	
18	Restore all keys and switches not required in next test.	

D. Regular Timing and Timed-Disconnect Entry

1	At MTF— Verify that emergency trunk control is not in use or made busy.	
2	Operate DR, RST, ANSE keys.	
3	Set TNT, TNU switches to OFF.	
4	Set TCU switch to select regular trunk control for test.	
5a	If trunk control 10 through 19 is selected for test— Operate TCNT key.	
6	Momentarily operate ST key.	AEC, CS, DRST, LCP, MA lamps lighted. TTC, TST, TCTK lamps momentarily lighted.
7	Momentarily operate RL key.	All lamps extinguished.
8	Operate DISE key.	
9	Momentarily operate ST key.	AEC, DISC, CS, DRST, LCP, DEC lamps lighted. MA, TST, TCTK lamps momentarily lighted.
10	Momentarily operate RL key.	All lamps extinguished.
11	Operate RCH1 key.	

STEP	ACTION	VERIFICATION
12	Repeat Steps 2 through 10.	
13b	If 3-channel recording system is provided— Operate RCH2 key.	
14b	Repeat Steps 2 through 10.	
15	Restore all keys and switches not required in next test.	
E. Output Lead Integrity Check		
1	At MTF— Verify that emergency trunk control is not in use or made busy.	TC_, TC EMER lamps extinguished.
2	Operate DR, RST, RECE keys.	
3	Set TCU switch to select regular trunk control for test.	
4a	If trunk control 00 through 09 is selected for test— Set TNT, TNU switches to 6.	
5a	Operate ANSE key.	
6a	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. Refer to Table B, Regular Entry, for designations perforated. ▶Major alarm sounds.◀
7a	Momentarily operate RL key.	All lamps extinguished.
8a	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
9	At MTF— Set TNT, TNU switches to 7.	
10a	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. Refer to Table B, Regular Entry, for designations perforated. ▶Major alarm sounds.◀

STEP	ACTION	VERIFICATION
11a	Momentarily operate RL key.	All lamps extinguished.
12a	◗At trunk control— Momentarily operate AR key.	Major alarm silenced.◖
13a	At MTF— Set TNT, TNU switches to 8.	
14a	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. Refer to Table B, Regular Entry, for designations perforated. ◗Major alarm sounds.◖
15a	Momentarily operate RL key.	All lamps extinguished.
16a	At trunk control— Momentarily operate AR key.	◗Major alarm silenced.◖
17a	At MTF— Set TNT, TNU switches to 6.	
18a	Operate DISE key.	
19a	Momentarily operate ST key.	AEC, CS, DISC, DRST, LCP, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. MA lamp extinguished. DEC lamp lighted. Refer to Table B, Timed Disconnect Entry, for designations perforated. ◗Major alarm sounds.◖
20a	Momentarily operate RL key.	All lamps extinguished.
21a	◗At trunk control— Momentarily operate AR key.	Major alarm silenced.◖
22b	At MTF— If trunk control 10 through 19 is selected for test— Operate TCNT, ANSE keys.	
23b	Set TNT, TNU switches to 6.	
24b	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken.

STEP	ACTION	VERIFICATION
		TTC lamp extinguished. AEC lamp lighted. Refer to Table C, Regular Entry, for designations perforated. ▶Major alarm sounds.◀
25b	Momentarily operate RL key.	All lamps extinguished.
26b	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
27b	At MTF— Set TNT, TNU switches to 7.	
28b	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. Refer to Table C, Regular Entry, for designations perforated. ▶Major alarm sounds.◀
29b	Momentarily operate RL key.	All lamps extinguished.
30b	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
31b	At MTF— Set TNT, TNU switched to 8.	
32b	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. Refer to Table C, Regular Entry, for designations perforated. ▶Major alarm sounds.◀
33b	Momentarily operate RL key.	All lamps extinguished.
34b	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
35b	At MTF— Set TNT, TNU switches to 6.	
36b	Operate DISE key.	
37b	Momentarily operate ST key.	AEC, CS, DISC, DRST, LCP, MA lamps lighted.

STEP	ACTION	VERIFICATION
		TST, TCTK lamps momentarily lighted. Trouble record taken. MA lamp extinguished. DEC lamp lighted. Refer to Table C, Timed Disconnect Entry for designations perforated. ▶Major alarm sounds.◀
38b	Momentarily operate RL key.	All lamps extinguished.
39b	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
40	At MTF— Operate RCH1 key.	
41	Repeat Steps 3 through 38b, as required.	
42c	If 3-channel recording system is provided— Operate RCH2 key.	
43c	Repeat Steps 3 through 38b, as required.	
44	Restore all keys and switches not required in next test.	

F. Trouble Cross-Detecting Features—XTC1, XTOK, XOST Relays

1	At MTF— Verify that emergency trunk control is not in use or made busy.	TC_, TC EMER lamps extinguished.
2	Operate DR, RST, ANSE, XTC keys.	
3	Set TNT, TNU switches to OFF.	
4	Set TCU switch to select regular trunk control for test.	
5a	If trunk control 10 through 19 is selected for test— Operate TCNT key.	
6	Momentarily operate ST key.	CS, DRST, LCP, MA lamps lighted. TST, TCTK TTC lamps momentarily lighted. Trouble record taken. ▶AEC,◀ TCTR lamps lighted. XTL, XTC, IPA, MRST, MRRL, TNR designations perforated. Major alarm sounds.

TABLE B

TYPE OF ENTRY	SWITCHES			DESIGNATIONS PERFORATED								*	*
	TCU	TNT	TNU										
Regular		6	6	ALS,1	AR4,7	T2,4	U2,4	CKLS,1	CKR4,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	0	6	6	AL4,7	ARS,1	T2,4	U2,4	CKL4,7	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR4,7	T0,7	U0,7	CKLS,1	CKR4,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR4,7	T1,7	U1,7	CKLS,1	CKR4,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR0,1	T2,4	U2,4	CKLS,1	CKR0,1	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	1	6	6	AL0,1	ARS,1	T2,4	U2,4	CKL0,1	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR0,1	T0,7	U0,7	CKLS,1	CKR0,1	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR0,1	T1,7	U1,7	CKLS,1	CKR0,1	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR0,2	T2,4	U2,4	CKLS,1	CKR0,2	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	2	6	6	AL0,2	ARS,1	T2,4	U2,4	CKL0,2	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR0,2	T0,7	U0,7	CKLS,1	CKR0,2	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR0,2	T1,7	U1,7	CKLS,1	CKR0,2	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR1,2	T2,4	U2,4	CKLS,1	CKR1,2	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	3	6	6	AL1,2	ARS,1	T2,4	U2,4	CKL1,2	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR1,2	T0,7	U0,7	CKLS,1	CKR1,2	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR1,2	T1,7	U1,7	CKLS,1	CKR1,2	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR0,4	T2,4	U2,4	CKLS,1	CKR0,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	4	6	6	AL0,4	ARS,1	T2,4	U2,4	CKL0,4	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR0,4	T0,7	U0,7	CKLS,1	CKR0,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR0,4	T1,7	U1,7	CKLS,1	CKR0,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR1,4	T2,4	U2,4	CKLS,1	CKR1,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	5	6	6	AL1,4	ARS,1	T2,4	U2,4	CKL1,4	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR1,4	T0,7	U0,7	CKLS,1	CKR1,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR1,4	T1,7	U1,7	CKLS,1	CKR1,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR2,4	T2,4	U2,4	CKLS,1	CKR2,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	6	6	6	AL2,4	ARS,1	T2,4	U2,4	CKL2,4	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR2,4	T0,7	U0,7	CKLS,1	CKR2,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR2,4	T1,7	U1,7	CKLS,1	CKR2,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR0,7	T2,4	U2,4	CKLS,1	CKR0,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	7	6	6	AL0,7	ARS,1	T2,4	U2,4	CKL0,7	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR0,7	T0,7	U0,7	CKLS,1	CKR0,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR0,7	T1,7	U1,7	CKLS,1	CKR0,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR1,7	T2,4	U2,4	CKLS,1	CKR1,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	8	6	6	AL1,7	AR1,7	T2,4	U2,4	CKL1,7	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	ARS,1	T0,7	U0,7	CKLS,1	CKR1,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR1,7	T1,7	U1,7	CKLS,1	CKR1,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,1	AR2,7	T2,4	U2,4	CKLS,1	CKR2,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	9	6	6	AL2,7	ARS,1	T2,4	U2,4	CKL2,7	CKRS,1	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,1	AR2,7	T0,7	U0,7	CKLS,1	CKR2,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,1	AR2,7	T1,7	U1,7	CKLS,1	CKR2,7	BL1,7	BR1,7	CL1,7	CR1,7

* CL- and CR- punches are from the master timing circuit.

TABLE C

TYPE OF ENTRY	SWITCHES			DESIGNATIONS PERFORATED								*	*
	TCU	TNT	TNU										
Regular		6	6	ALS,2	AR4,7	T2,4	U2,4	CKLS,2	CKR4,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	0	6	6	AL4,7	ARS,2	T2,4	U2,4	CKL4,7	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR4,7	T0,7	U0,7	CKLS,2	CKR4,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR4,7	T1,7	U1,7	CKLS,2	CKR4,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR0,1	T2,4	U2,4	CKLS,2	CKR0,1	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	1	6	6	AL0,1	ARS,2	T2,4	U2,4	CKL0,1	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR0,1	T0,7	U0,7	CKLS,2	CKR0,1	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR0,1	T1,7	U1,7	CKLS,2	CKR0,1	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR0,2	T2,4	U2,4	CKLS,2	CKR0,2	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	2	6	6	AL0,2	ARS,2	T2,4	U2,4	CKL0,2	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR0,2	T0,7	U0,7	CKLS,2	CKR0,2	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR0,2	T1,7	U1,7	CKLS,2	CKR0,2	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR1,2	T2,4	U2,4	CKLS,2	CKR1,2	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	3	6	6	AL1,2	ARS,2	T2,4	U2,4	CKL1,2	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR1,2	T0,7	U0,7	CKLS,2	CKR1,2	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR1,2	T1,7	U1,7	CKLS,2	CKR1,2	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR0,4	T2,4	U2,4	CKLS,2	CKR0,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	4	6	6	AL0,4	ARS,2	T2,4	U2,4	CKL0,4	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR0,4	T0,7	U0,7	CKLS,2	CKR0,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR0,4	T1,7	U1,7	CKLS,2	CKR0,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR1,4	T2,4	U2,4	CKLS,2	CKR1,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	5	6	6	AL1,4	ARS,2	T2,4	U2,4	CKL1,4	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR1,4	T0,7	U0,7	CKLS,2	CKR1,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR1,4	T1,7	U1,7	CKLS,2	CKR1,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR2,4	T2,4	U2,4	CKLS,2	CKR2,4	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	6	6	6	AL2,4	ARS,2	T2,4	U2,4	CKL2,4	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR2,4	T0,7	U0,7	CKLS,2	CKR2,4	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR2,4	T1,7	U1,7	CKLS,2	CKR2,4	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR0,7	T2,4	U2,4	CKLS,2	CKR0,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	7	6	6	AL0,7	ARS,2	T2,4	U2,4	CKL0,7	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR0,7	T0,7	U0,7	CKLS,2	CKR0,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR0,7	T1,7	U1,7	CKLS,2	CKR0,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR1,7	T2,4	U2,4	CKLS,2	CKR1,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	8	6	6	AL1,7	AR2,7	T2,4	U2,4	CKL1,7	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR1,7	T0,7	U0,7	CKLS,2	CKR1,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR1,7	T1,7	U1,7	CKLS,2	CKR1,7	BL1,7	BR1,7	CL1,7	CR1,7
Regular		6	6	ALS,2	AR2,7	T2,4	U2,4	CKLS,2	CKR2,7	BL2,4	BR2,4	CL2,4	CR2,4
TMD DISC	9	6	6	AL2,7	ARS,2	T2,4	U2,4	CKL2,7	CKRS,2	BL2,4	BR2,4	CL2,4	CR2,4
Regular		7	7	ALS,2	AR2,7	T0,7	U0,7	CKLS,2	CKR2,7	BL0,7	BR0,7	CL0,7	CR0,7
Regular		8	8	ALS,2	AR2,7	T1,7	U1,7	CKLS,2	CKR2,7	BL1,7	BR1,7	CL1,7	CR1,7

* CL- and CR- punches are from the master timing circuit.

STEP	ACTION	VERIFICATION
		▶At trunk control— XTC1 relay operated.◀
7	At MTF— Momentarily operate RL key.	All lamps extinguished.
8	Restore XTC key.	
9	Insert make-busy plug into TC-TR jack associated with trunk control selected in Step 4.	TC_ lamp associated with trunk control under test lighted. At trunk control frame— EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted.
10	At trunk control under test— Momentarily operate AR key.	Major alarm silenced. ▶XTC1 relay released.◀
11	Block nonoperated STE relay.	
12	At MTF— Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. In 2 seconds— Trouble record taken. TCTR lamp lighted. TM, DTK, IPA ▶XOST◀ designations perforated. Major alarm sounds. ▶At trunk control— XOST relay operated.◀
13	At MTF— Momentarily operate RL key.	All lamps extinguished.
14	At trunk control under test— Momentarily operate AR key.	▶XOST relay released.◀ Major alarm silenced.
15	Remove blocking tool from STE relay.	
16	Block nonoperated OTOA relay.	
17	Block operated OTO relay.	
18	At MTF— Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. Trouble record taken. TCTR lamp lighted. OTO, TRL, IPA, DTK, TNR designations perforated. Major alarm sounds.

STEP	ACTION	VERIFICATION
19	At MTF— Momentarily operate RL key.	All lamps extinguished.
20	At trunk control under test— Momentarily operate AR key.	Major alarm silenced.
21	Remove blocking tools from OTO, OTOA relays.	
22	Block operated OTOA relay.	
23	At MTF— Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. Trouble record taken. TCTR lamp lighted. XTOK, TRL, IPA, DTK, TNR designations perforated. Major alarm sounds. ▶At trunk control— XTOK relay operated.◀
24	At MTF— Momentarily operate RL key.	All lamps extinguished.
25	At trunk control under test— Momentarily operate AR key.	▶XTOK relay released.◀ Major alarm silenced.
26	Remove blocking tool from OTOA relay.	
27	At MTF— Remove make-busy plug from TC-TR jack.	Associated TC_ lamp extinguished. At trunk control frame— EW lamps extinguished.
28	At MTF— Restore all keys and switches not required in next test.	

G. Recorder Trouble Feature—

1	At MTF— Verify that emergency trunk control is not in use or made busy.	TC_, TC EMER lamps extinguished.
2	Operate DR, RST, ANSE, SP keys.	
3	Set TNT, TNU switches to OFF.	
4	Set TCU switch to select regular trunk control for test.	

STEP	ACTION	VERIFICATION
5a	If trunk control 10 through 19 is selected for test— Operate TCNT key.	
6	Momentarily operate ST key.	CS, DRST, LCP, MA, BAK, TTC, TCTR, ▶AEC, TCTK◀ lamps lighted. TST lamp momentarily lighted. Major alarm sounds.
7	Momentarily operate RL key.	All lamps extinguished.
8	▶At trunk control— Momentarily operate AR key.	Major alarm silenced.◀
9	At MTF— Operate NBA key.	
10	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC ▶AEC, TCTK◀ lamps lighted. TST lamp momentarily lighted. Trouble record taken. TCTR lamp lighted. SP, TRL, IPA, DTK, MRST, TNR designations perforated. Major alarm sounds.
11	At MTF— Momentarily operate RL key.	All lamps extinguished.
12	At trunk control— Momentarily operate AR key.	Major alarm silenced.
13	Restore all keys and switches not required in next test.	

H. Overall and Progression Timing Check

1	At MTF— Insert make-busy plug into TC-TR jack associated with trunk control under test.	Associated TC_ lamp lighted. At trunk control frame— EW lamp associated with trunk control under test lighted. EW lamp associated with emergency trunk control lighted.
2	At trunk control under test— Block nonoperated TBL, TMA relays.	
3	Block operated TM relay; ***start timing.***	In 3 to 4.5 seconds— TM1 relay operated. Major alarm sounds.
4	Remove blocking tool from TM relay.	TM1 relay released.

STEP	ACTION	VERIFICATION
5	At MTF— Momentarily operate TRRAR key.	Major alarm silenced.
6	Remove blocking tool from TBL relay.	
7	Insulate 2B of TBL1, 3M of TBL relays.	
8	Block nonoperated ON1, TM, DS, STE, XOST RD relays.	
9	Block operated ST (normally operated), AB relays.	
10	Block nonoperated RL, SP relays.	
11	Block operated RST relay.	
12	Block operated TRL relay; ***start timing.***	In 2 seconds— TM2 relay operated.
13	Remove blocking tool from RST relay.	TM2 relay released.
14	Block operated RST relay.	In 2 seconds— TM2 relay operated.
15	Block operated SP relay.	TM2 relay released.
16	Block operated BA1 relay.	In 2 seconds— TM2 relay operated.
17	Block operated RL relay.	TM2 relay released.
18	Block operated DS relay.	In 2 seconds— TM2 relay operated.
19	Remove blocking tools from RST, TRL, SP, BA1, RL, DS, ST, ON1, TM, TMA, STE, ◗AB,◖ XOST relays.	
20	Remove insulators from TBL1 and TBL relays.	
21	At MTF— Remove make-busy plug from TC-TR jack.	Associated TC lamp extinguished. At trunk control frame— EW lamps extinguished.

I. Alternate Battery Supply for MBJ, CH Relays.

1	At MTF— Insert make-busy plug into TC-TR jack associated with trunk control under test.	Associated TC_ lamp lighted. At trunk control frame— EW lamp associated with trunk control under test lighted.

STEP	ACTION	VERIFICATION
		EW lamp associated with emergency trunk control lighted.
2	Block nonoperated TBL relay.	
3	Operate FA relay.	FA relay locks operated.
4	Remove A fuse from -48 fuse block associated with trunk control under test.	MBJ relay remains operated.
5	Test for battery at L winding terminal of CH relay.	Battery present.
6	Replace A fuse in -48 fuse block.	
7	Momentarily operate AR key.	FA relay released.
8	Remove blocking tool from TBL relay.	
9	At MTF— Remove make-busy plug from TC- TR jack.	Associated TC_ lamp extinguished. At trunk control frame— EW lamps extinguished.

J. Recorder Channel Not Available for Test Call

1	At MTF— Operate DR, RST, ANSE, RCH1 keys.	
2	Set TCU switch to select trunk control for test.	
3a	If trunk control 10 through 19 is selected for test— Operate TCNT key.	
4	At recorder and recorder control frame— Operate OMB key.	OMB lamp lighted.
5	At MTF— Momentarily operate ST key.	AEC, MA, CTR, NRST lamps lighted. TST, TCTK, TTC lamps momentarily lighted.
6	Momentarily operate RL key.	All lamps extinguished.
7	At recorder and recorder control frame— Release OMB key.	OMB lamp extinguished.
8	Operate 1MB key.	1MB lamp lighted.
9	At MTF— Restore RCH1 key.	

STEP	ACTION	VERIFICATION
10	Momentarily operate ST key.	AEC, MA, CTR, NRST lamps lighted. TST, TCTK, TTC lamps momentarily lighted.
11	Momentarily operate RL key.	All lamps extinguished.
12	At recorder and recorder control frame— Release 1MB key.	1MB lamp extinguished.
13	At MTF— Restore all keys and switches not required in next test.	

K. Deleted

EMERGENCY TRUNK CONTROL

L. Make-Busy Feature

1	At MTF— Insert make-busy plug into emergency trunk control MB jack.	TC EMER lamp lighted.
2	Insert make-busy plug into TC-TR jack associated with any trunk control. (Refer to 1.05.)	Associated TC_ lamp lighted. At trunk control frame— Associated EW lamp ***not*** lighted.
3	At MTF— Remove make-busy plug from TC-TR jack used in Step 2.	Associated TC_ lamp extinguished.
4	At emergency trunk control— Operate FA relay.	FA relay locks operated. Major alarm sounds.
5	At MTF— Remove make-busy plug from emergency trunk control MB jack.	TC EMER lamp remains lighted.
6	At emergency trunk control— Momentarily operate AR key.	FA relay released. Major alarm silenced. At MTF— TC EMER lamp extinguished.

M. Transverter Preference Relays—Operation and Lockout

1	At MTF— Insert make-busy plug into MB jack associated with emergency trunk control.	TC EMER lamp lighted.
2	At emergency trunk control— Block nonoperated TV, ON, RD, XTP, ◗DS◖ relays.	

STEP	ACTION	VERIFICATION
3	Insulate 7M of IP relay.	
4	Block operated TRL, IP, ON1 relays.	
5	Momentarily apply battery to L winding terminal of highest numbered TP_ relay.	Highest numbered TP_ relay ***not*** operated.
6	Remove blocking tool from IP, TRL relays.	
7	Connect ground to 6 of RTL relay.	RIP1 relay operated.
8	Connect battery to L winding terminal of highest numbered TP_ relay.	Highest numbered TP_ relay ***not*** operated.
9	Insulate 41M of highest numbered TC_ relay.	
10	Remove ground from 6 of RTL relay.	Highest numbered TP_ relay operated. Highest numbered TC_ relay ***not*** operated. RIP1 relay released.
11	Remove blocking tool from ON1 relay.	RTL, highest numbered TC_ relays operated.
12	Momentarily apply ground to 6 of RTL relay.	RTL, highest numbered TC_ relays remain operated.
13	Momentarily apply battery to 1 of TV1 relay.	IP relay ***not*** operated.
14	Block operated ON1 relay.	RTL, higher numbered TC_ relays remain operated.
15	Connect battery to L winding terminal of next lower numbered TP_ relay.	Next lower numbered TP_ relay operated. Next lower numbered TC_ relay ***not*** operated.
16	Remove battery from winding terminal of higher numbered TP_ relay.	RTL, higher numbered TP_, TC_ relays released.
17	Remove insulator from higher numbered TC_ relay.	
18	Insulate 41M of next lower numbered TC_ relay.	
19	Remove blocking tool from ON1 relay.	RTL, next lower numbered TC_ relays operated.
20	Repeat Steps 14 through 19 for remaining TP_ relays.	
21	Remove battery from TP0 relay.	RTL, TP0, TC0 relays released.
22	Remove blocking tools from TV, ON, XTP, ◗DS,◖ RD relays.	

STEP	ACTION	VERIFICATION
23	Remove insulator from IP relay.	
24	At MTF— Remove make-busy plug from emergency trunk control MB jack.	TC EMER lamp extinguished.

N. Initial Entry

1	At MTF— Select transverter.	
2	Select TVT (AMA) class of test.	
3	Operate TVT1, DR, RST, 4DG keys.	
4	Select code pattern 3.	
5	Select message billing index 9.	
6	Set TNT, TNU switches to OFF.	
7	Set TCU switch to E.	
8	Set RN switch to select any trunk control units digit.	
9	Operate AD/OD (1/0) key to select trunk control tens digit.	
10	Select line location.	
11	Momentarily operate ST key.	DRST, CS, DNK, LCP, TTC, IEC, DIS1, MRL lamps lighted. TST, TCTK lamps momentarily lighted.
12	Momentarily operate RL key.	All lamps extinguished.
13	Operate RCH1 key.	
14	Repeat Steps 11 and 12.	
15a	If 3-channel recording system is provided— Operate RCH2 key.	
16a	Repeat Steps 11 and 12.	
17	Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
O. Regular Timing and Time-Disconnect Entry		
1	At MTF— Operate DR, RST, ANSE keys.	
2	Set TNT, TNU switches to OFF.	
3	Set TCU switch to E.	
4	Momentarily operate ST key.	AEC, CS, DRST, LCP, MA lamps lighted. TTC, TST, TCTK lamps momentarily lighted.
5	Momentarily operate RL key.	All lamps extinguished.
6	Operate DISE key.	
7	Momentarily operate ST key.	AEC, DISC, CS, DRST, LCP, DEC lamps lighted. MA, TST, TCTK lamps momentarily lighted.
8	Momentarily operate RL key.	All lamps extinguished.
9	Operate RCH1 key.	
10	Repeat Steps 1 through 8.	
11a	If 3-channel recording system is provided— Operate RCH2 key.	
12a	Repeat Steps 1 through 8.	
13	Restore all keys and switches not required in next test.	
P. Output Lead Integrity Check		
1	At MTF— Insert make-busy plug into emergency trunk control MB jack.	TC EMER lamp lighted.
2	Operate DR, RST, ANSE, RECE keys.	
3	Set TCU switch to E.	
4	Set TNT, TNU switches to 0.	
5	Momentarily operate ST key.	CS, DRST, LCP, TTC, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. T0, U0, BL0, BR0, ALS, CKLS designations

STEP	ACTION	VERIFICATION
		perforated. ♦Major alarm sounds.♦
6	Momentarily operate RL key.	All lamps extinguished.
7	♦At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.♦
8	At MTF— Set TNT, TNU switches to 1.	
9	Momentarily operate ST key.	CS, DRST, LCP, TTC, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. T1, U1, BL1, BR1, ALS, CKLS designations perforated. ♦Major alarm sounds.♦
10	Momentarily operate RL key.	All lamps extinguished.
11	♦At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.♦
12	At MTF— Set TNT, TNU switches to 2.	
13	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. T2, U2, BL2, BR2, ALS, CKLS designations perforated. ♦Major alarm sounds.♦
14	Momentarily operate RL key.	All lamps extinguished.
15	♦At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.♦
16	At MTF— Operate RCH1 key.	
17	Repeat Steps 4 through 14.	
18a	If 3-channel recording system is provided— Operate RCH2 key.	
19a	Repeat Steps 4 through 15.	

STEP	ACTION	VERIFICATION
20	Set TNT, TNU switches to OFF.	
21	At emergency trunk control— Select a TCN_ relay corresponding to an equipped regular trunk control for test.	
22	Insulate 7M, 20M, 21M of TCN- relay selected in Step 21.	
23	Block operated TCN_ relay selected in Step 21.	
24b	If TCN00 through 09 is selected for test— At MTF— Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. TTC lamp extinguished. AEC lamp lighted. AR_, CKR_ designations corresponding to units digit of TCN_ relay under test, ALS, AL1, CKLS, CKL1 perforated. ▶Major alarm sounds.◀
25b	Momentarily operate RL key.	All lamps extinguished.
26b	▶At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.◀
27b	At MTF— Operate DISE key.	
28b	Momentarily operate ST key.	AEC, CS, DRST, LCP, DISC, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. MA lamp extinguished. DEC lamp lighted. AL_, CKL_ designations corresponding to units digit of TCN_ relay under test, ARS, AR1, CKRS, CKR1 perforated. ▶Major alarm sounds.◀
29b	Momentarily operate RL key.	All lamps extinguished.
30b	▶At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.◀
31b	At MTF— Operate ANSE key.	
32c	If TCN 10 through 19 is selected for test— At MTF— Momentarily operate ST key.	TTC, CS, DRST, LCP, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken.

STEP	ACTION	VERIFICATION
		TTC lamp extinguished. AEC lamp lighted. AR_, CKR_ designations corresponding to units digit of TCN_ relay under test, ALS, AL2, CKLS, CKR2 perforated. ▶Major alarm sounds.◀
33c	Momentarily operate RL key.	All lamps extinguished.
34c	▶At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.◀
35c	At MTF— Operate DISE key.	
36c.	Momentarily operate ST key.	AEC, CS, DRST, LCP, DISC, MA lamps lighted. TST, TCTK lamps momentarily lighted. Trouble record taken. MA lamp extinguished. DEC lamp lighted. AL_, CKL_, designations corresponding to units digit of TCN_ relay under test, ARS, AR2, CKRS, CKR2 perforated. ▶Major alarm sounds.◀
37c	Momentarily operate RL key.	All lamps extinguished.
38c	▶At emergency trunk control— Momentarily operate AR key.	Major alarm silenced.◀
39c	At MTF— Operate ANSE key.	
40	Operate RCH1 key.	
41	Repeat Steps 24b through 38c, as required.	
42a	If 3-channel recording system is provided— Operate RCH2 key.	
43a	Repeat Steps 24b through 38c, as required.	
44	At emergency trunk control— Remove blocking tool from TCN_ relay.	
45	Remove insulators from TCN_ relay.	
46	At MTF— Remove make-busy plug from emergency trunk control MB jack.	TC EMER lamp extinguished.

STEP	ACTION	VERIFICATION
47	Restore all keys and switches not required in next test.	
Q. Trouble Cross-Detecting Features—▶XTC1, XOST, XRL, and XTOK Relays◀		
1	At MTF— Operate DR, RST, ANSE, XTC keys.	
2	Set TCU switch to E.	
3	Momentarily operate ST key.	▶TCTK, TST, TTC lamps momentarily lighted.◀ CS, DRST, LCP, ▶AEC◀ , MA lamps lighted. Trouble record taken. TCTR lamp lighted. XTL, XTC, IPA, MRST, MRRL, TNR designations perforated. Major alarm sounds. ▶At emergency trunk control— XTC1 relay operated.◀
4	At MTF— Momentarily operate RL key.	All lamps extinguished.
5	Restore XTC key.	
6	Insert make-busy plug into ▶TCMB◀ jack associated with emergency trunk control.	TC EMER lamp lighted.
7	At emergency trunk control— Momentarily operate AR key.	▶XTC1 relay released.◀ Major alarm silenced.
8	Block nonoperated STE relay.	
9	At MTF— Momentarily operate ST key.	CS, MA, TTC, ▶TCTK◀ lamps lighted. TST lamp momentarily lighted. Within 2 seconds— TCTR lamp lighted. Trouble record taken. TM, DTK, IPA, MRST, TNR, ▶XOST◀ designations perforated. Major alarm sounds. ▶At emergency trunk control— XOST relay operated.◀
10	At MTF— Momentarily operate RL key.	All lamps extinguished.
11	At emergency trunk control— Momentarily operate AR key.	▶XOST relay released.◀ Major alarm silenced.
12	Remove blocking tool from STE relay.	

STEP	ACTION	VERIFICATION
13	Connect ground to terminal strip B, terminal 56.	XRL relay operated.
14	At MTF— Operate NBA key.	
15	Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. Trouble record taken. TCTR lamp lighted. XRL1, IPA, DTK, TRL, TNR designations perforated. Major alarm sounds.
16	At MTF— Momentarily operate RL key.	All lamps extinguished.
17	At emergency trunk control— Remove ground connection from terminal strip B.	
18	Momentarily operate AR key.	Major alarm silenced. ▶XRL relay released.◀
19	Connect ground to terminal strip B terminal 16.	XRL relay operated.
20	Repeat Steps 15 and 16.	
21	Restore NBA key.	
22	At emergency trunk control— Remove ground from terminal strip B.	
23	Momentarily operate AR key.	Major alarm silenced. ▶XRL relay released.◀
24	Block nonoperated OTOA relay.	
25	Block operated OTO relay.	
26	At MTF— Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. Trouble record taken. TCTR lamp lighted. OTO, TRL, IPA, DTK, TNR designations perforated. Major alarm sounds.
27	At MTF— Momentarily operate RL key.	All lamps extinguished.

STEP	ACTION	VERIFICATION
28	Momentarily operate ▶TRR-AR◀ key.	Major alarm silenced. AL lamp extinguished.
29	Remove blocking tools from OTO, OTOA relays.	
30	Block operated OTOA relay.	
31	At MTF— Momentarily operate ST key.	▶TST lamp momentarily lighted.◀ CS, MA, TTC, TCTK lamps lighted. Trouble record taken. TCTR lamp lighted. XTOK, TNR, TRL, IPA, DTK designations perforated. Major alarm sounds. ▶At emergency trunk control— XTOK relay operated.◀
32	At MTF— Momentarily operate RL key.	All lamps extinguished.
33	▶At emergency trunk control—◀ Momentarily operate AR key.	▶XTOK relay released.◀ Major alarm silenced.
34	Remove blocking tool from OTOA relay.	
35	At MTF— Remove make-busy plug from emergency trunk control MB jack.	TC EMER lamp extinguished.
36	Restore all keys and switches not required in next test.	

R. Recorder Trouble Feature

1	At MTF— Operate DR, RST, ANSE, SP keys.	
2	Set TCU switch to E.	
3	Momentarily operate ST key.	TST, CS, DRST, LCP, MA, BAK, TTC, TCTR, TCTK lamps lighted.
4	Momentarily operate RL key.	All lamps extinguished.
5	Operate NBA key.	
6	Momentarily operate ST key.	CS, DRST, LCP, MA, TTC lamps lighted— TST, TCTK lamps momentarily lighted. Trouble record taken. TCTR lamp lighted. MRST, TNR, SP, TRL, IPA, DTK designations

STEP	ACTION	VERIFICATION
		perforated. Major alarm sounds.
7	At MTF— Momentarily operate RL key.	All lamps extinguished.
8	▶At trunk control under test—◀ Momentarily operate AR key.	Major alarm silenced.
9	Restore all keys and switches not required in next test.	

S. Overall and Progression Timing Check

1	At MTF— Insert make-busy plug into emergency trunk control MB jack.	TC EMER lamp lighted.
2	At emergency trunk control— Block nonoperated TMA, TBL relays.	
3	Block operated TM relay; ***start timing.***	In 3 to 4.5 seconds— TM1 relay operated. Major alarm sounds.
4	Remove blocking tool from TM relay.	TM1 relay released.
5	At MTF— Momentarily operate ▶TRR-AR◀ key.	Major alarm silenced.
6	Remove blocking tool from TBL relay.	
7	Insulate 2B of TBL1, 3M of TBL relays.	
8	Block nonoperated ON1, TM, DS, STE, XOST, RD relays.	
9	Block operated ST (normally operated), AB relays.	
10	Block nonoperated RL, SP relays.	
11	Block operated RST relay.	
12	Block operated TRL relay; ***start timing.***	In 2 seconds— TM2 relay operated.
13	Remove blocking tool from RST relay.	TM2 relay released.
14	Block operated RST relay.	In 2 seconds— TM2 relay operated.

STEP	ACTION	VERIFICATION
15	Block operated SP relay.	TM2 relay released.
16	Block operated BA1 relay.	In 2 seconds— TM2 relay operated.
17	Block operated RL relay.	TM2 relay released.
18	Block operated DS relay.	In 2 seconds— TM2 relay operated.
19	Remove blocking tools from RST, TRL, SP, BA1, RL, DS, ST, ON1, TM, TMA, STE, XOST relays.	
20	Remove insulators from TBL1 and TBL relays.	
21	At MTF— Remove make-busy plug from emergency trunk control jack.	TC EMER lamp extinguised.

T. Alternate Battery Supply for Transfer Circuit

1	At MTF— Insert make-busy plug into emergency trunk control MB jack.	TC EMER lamp lighted.
2	At emergency trunk control— Block nonoperated TBL relay.	
3	Operate FA relay.	FA relay locks operated.
4	Remove A fuse from -48 fuse block associated with emergency trunk control.	
5	Test for presence of battery at 2 of FA relay.	Battery present.
6	Replace A fuse in -48 fuse block.	
7	Remove E fuse from -48 fuse block associated with emergency trunk control.	
8	Test for presence of battery at 12 of TST, 2 of MBJ relays.	Battery present.
9	Replace E fuse in -48 fuse block.	
10	Momentarily operate AR key.	FA relay released.
11	At MTF— Remove make-busy plug from emergency trunk control MB jack.	

STEP	ACTION	VERIFICATION
U.	Deleted	