TROUBLE REFERENCE GUIDE

PART 11

TEST METHODS

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This part of the Trouble Reference Guide covers the use of the office test frame to detect, locate, and clear trouble.

1.02 Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph. This issue does not affect Equipment Test Lists.

1.03 Exception reports generated by the ATA system and manual analysis of trouble indicator displays are used for localizing trouble conditions in No. 5 crossbar offices using office test frames. These trouble conditions may involve a path through one, two, or several relay contacts in one or more circuits. Relay contacts are often closed for a fraction of a second when establishing these paths. Therefore, it is desirable to reproduce the trouble condition in order to isolate and correct equipment malfunctions. The office test frame used in conjunction with exception reports and simulation tables shown in this Section provide the recommended methods for controlling the duplication of actual trouble conditions without causing service interruptions.

2. USE OF TROUBLE REFERENCE FILE

Class of Test Tables

2.01 Each class of test table provided in this Section, lists in tabular form, the keys and switches that are used to establish a particular class of test. Horizontal lines separate the functions of the individual keys and switches along with note and figure or option reference. Notes are provided to indicate the following:

(a) The key(s) or switch(es) that must be operated to perform the particular test.

(b) The key(s) or switch(es) to be operated to simulate the exception report and trouble indicator displays.

(c) The key(s) or switch(es) which may be optionally operated to permit additional actions or test variations as required.

(d) Additional test set-up information as required, ie; patching cord arrangements, optional test features, etc.

2.02 Test Tables are provided for the following classes of test.

CLASS OF TEST	SECTION	DESIGNATION TAB DESIGNATE
Pretranslator Class of Test	A	PTT
Dial Tone Class of Test	B	DT
Outgoing Trunk Class of Test	C	OGT
Incoming Trunk Class of Test	D	INC
Intraoffice Trunk Class of Test	E	IAO
Automatic Intercept Service Class of Test	F	AIS
Line Test Class of Test	G	LT

In addition, tests of the following circuits and equipment are included in the class of test Sections.

Circuits and Equipment	Section
Dial Tone Markers	A
Completing Markers	B
Originating Registers	B
Originating Line Identifiers	C
DP and MF Incoming Registers	D
DP and MF Outgoing Senders	C
LLP Senders	D
AIS Senders	F
Transverters	C, E
Translators	C, E
Recorders	C, E
2-Way Intertoll Outgoing Trunks	C
2-Way Intertoll Incoming Trunks	D
Operator Trunks	C
ACD Intercept Trunks	C
TSPS Trunks	C
Miscellaneous Trunks	C
Reverting Call Trunks	E
911 Emergency Service Trunks	E
Line Link Pulsing (with or without AIS)	D
AMA	C, E
ANI	C
PBX	D

Simulation Tables

2.03 Simulation Tables are provided to correlate exception reports and trouble indicator displays with the operated keys and switches at the office test frame. The Tables are divided into two parts. The left side of the table indicates the functions used and the designations printed on a teletypewriter output. The right side of the table indicates various keys and switches used to duplicate trouble record indications, depending upon the office test frame used.

2.04 The following example demonstrates the use of this Section to duplicate calls that resulted in exception reports and trouble indicator displays.

Analysis of the exception report (ER) shown in Fig. 1 indicates a GT2 trouble condition. After checking the GT2 bin listing in Part 5 of the Trouble Reference Guide, it is determined that an IAO trunk class of test must be performed since ITR is also printed on the ER. The following Steps in conjunction with the simulation table for the IAO trunk class of test are to be performed to duplicate the call failure. The numbers in parentheses in Fig. 1 correspond to Steps 1 through 8.

1. Select IAO trunk class of test (ITR printed on ER).

2. Select marker 0 (MKR DR.0 printed on ER).

3. Select line location FU0, VG02, HG0, VF3 (FU.0, VG.02, HG.0, VF.3 printed on ER).

4. Select the total number of called digits (7D) then select the called digits 7, 2, 9, 6, 0, 9, 9 (A7, B2, C9, D6, E0, F9, G9, Hm7 shown on ER).

5. Select trunk link frame 1 (FS.1 shown on ER).

6. Select trunk 6 (TS.6 shown on ER).

7. Select channel 5 (CH.5 shown on ER).

8. Select junctor group 1 (JG.1 shown on ER).

9. Select TOUCH-TONE dialing if calling line location is arranged for T-T originating registers (not shown on ER).

10. Select pulse speed control 11-56 (not shown on ER).

11. Select loop and leak 0 (not shown on ER).

12. Select tip party test if tip party features are provided (not shown on ER).

13. Select no-charge test if trunk under test is flat rate (not shown on ER).

14. Select coin ground test if trunk under test is coin (not shown on ER).

15. Select group A or B if trunk under test is allotted (not shown on ER).

It should be noted that the class of service function is not selected because a particular line location rather than the originating test line (OTL) is under test. Also, sender selection (AMA), ringing selection, reverting call trunk test, and AMA test functions are not pertinent to the duplication of this trouble condition. This concludes the preparation of the test and the operation of the ST key may now be initiated.

ATA—CO Status Change

Trouble indicator made busy

%

* Feb 1 15:19 pklk ATA REPORT

ER104-1 Feb 1 (gt2) NAT

 198 2 1 FUT.0 VGT.2 HGT.9 VFT.3

 date time CH A B C D E F G H J K
                              (4)
Feb 1 15:18 5   7 2 9 6 0 9 9 m=7

Feb 1 15:12 6   7 2 9 6 0 9 9 m=7

     (2)   (1)
MKR DR.0 ITR FLG GT2

RP

OR

FR.0 CN.1 CN-RG.6
    (5)   (6)
TB.4 FS.1 TS.6 LC.7 LV.6 FBK RK
 (7) (8)
CH.5 JG.1

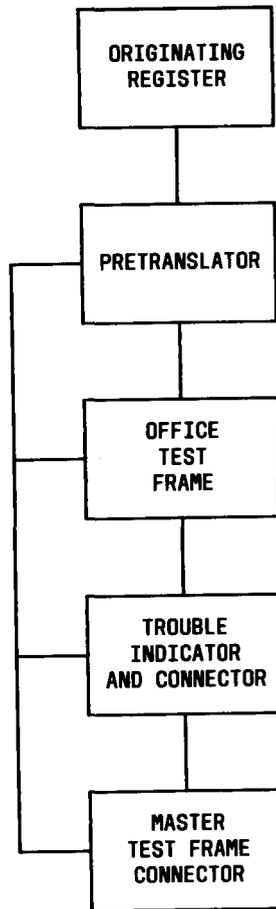FUT.0 VG.2 HG.0 VF.3
    (3)
FU.0 VG.2 HG.0 VF.3

CT.0 CU0

%

FIG. 1 — TYPICAL EXCEPTION REPORT

SECTION A — PRETRANSLATOR CLASS OF TEST

PTT

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┌─────────────────┐
│   ORIGINATING   │
│    REGISTER     │
└────────┬────────┘
         │
┌────────┴────────┐
│  PRETRANSLATOR  │
└────────┬────────┘
         │
┌────────┴────────┐
│     OFFICE      │
│      TEST       │
│     FRAME       │
└────────┬────────┘
         │
┌────────┴────────┐
│    TROUBLE      │
│   INDICATOR     │
│  AND CONNECTOR  │
└────────┬────────┘
         │
┌────────┴────────┐
│     MASTER      │
│   TEST FRAME    │
│    CONNECTOR    │
└─────────────────┘
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SECTION A

PTT

PTT CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1.2	52	PRT (0-1) key	**PRETRANSLATOR**—Conditions the OTF for testing pretranslator 0 or 1.
1,2, 3	3	MKR (2-3) key	**MARKER SELECTION** — Directs the OTF to connect to completing marker 0 or 1.
	3	MKR (0-1) key	**MARKER SELECTION** — Directs the OTF to connect to completing marker 0 or 1 if office is equipped with originating line identifiers.
1,2, 3	3,YT	OLI key	**ORIGINATING LINE IDENTIFIER** — Ensures that MCB relay in the OTF does not operate. Must be operated in addition to REC key to force trouble indicator display on test call using originating line identifiers.
1,2	3,Z	MCB key	**MARKER CONTROL BUSY**—Provides completing marker make-busy control.
1,2	3	CB key	**CALL BLOCK**—Prevents operation of the line link select magnet associated with the dialed number when the MCB key is operated.
1,2	3	OTL key	**ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber line.
1,2	3,Y	CST (0-9) switch	**CLASS-OF-SERVICE TENS**—Controls the class of-service tens digit for the simulated calling subscriber line transmitted to the marker.
1,2	3,Y	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS**—Controls the class-of-service units digit for the simulated calling subscriber line transmitted to the marker.
	3,V	CL (0-5) key	**CLASS-OF-SERVICE**—Controls the class-of service of the simulated calling subscriber line transmittted to the marker.
1,2	3,N	L-L switch	**LOOP-LEAK**—Selects various loop and leak conditions for testing originating registers with the pulse generator circuit.
1,2	3,N	PS switch	**PULSE SPEED CONTROL**—Selects pulsing speeds and percent break in the pulse generator circuit.
1,2	3,S	3D key	**3-DIGIT**—Total number of digits to be dialed into the originating register.

SECTION A
PTT

PTT CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3,E,S	DIAL A-C (TST, 0-9) switch	**DIAL DIGIT CONTROL**—The digits to be dialed into the originating register representing a three-digit area code, a three-digit office code, or a three- digit service code.
1,2	3,ZL,ZM	FS (0-4) key	**FRAME SELECT**—Makes busy all trunk link frames except the frame corresponding with the operated FS__key.
1,2, 3	3,ZH	RSG (ORB) switch	**REGISTER SENDER GROUP CONTROL**— Controls the circuit busy conditions for a group of originating registers (if Z option for selecting a particular originating register is not provided).
1,2, 3	3,ZH	RSS (0-9) switch	**REGISTER AND SENDER SELECT**— Selects a particular originating register within a group of originating registers (if Z option for selecting a particular originating register is not provided).

Notes:
1. Key(s) or switch(es) that must be operated to perform this test.
2. Key(s) or switch(es) used to simulate a trouble record (see Page 4).
3. If the RSG and RSS switches are not provided, patch the MB2__ OR jack to the MB__ jack associated with any originating register to be used for test, then patch the MB1 (0-9) jacks to the MB__ jacks associated with all other originating registers on the same trunk link frame as the originating register selected.

SECTION A

PTT

SIMULATION TABLE

| AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIGN.	POS
Type of Call			PRT	PRT (0-1)		
Marker Selection			MKR	MKR (2-3),/ MKR (0-1), OLI		
			DR.X			
Line Location	LLF		FU.X	OTL		
	VERT.GRP.		VG.XX			
	HOR.GRP.		HG.X			
	VERT.FILE		VF.X			
Class of Service	TENS	1	CT.X		CST	0-9
	UNITS		CU.X		CSU	0-9
	UNITS		CU.X	CL(0-5)		
Loop and Leak		2			L-L	0-10
Pulse Speed Control		2			PS	OFF,7-50 10-34,10-66 11-44,11-56 15-65,24-55, 24-70,SLOW
Number of Called Digits				3D		
Called Digits A-C (0-9)			A.X-C.X		DIAL A-C	1-9,0,TST
Trunk Link Frame Selection			FS.X	FS(0-4)		
Originating Register Selection		3	CN.X		RSG	ORB
			RG.X		RSS	0-9

Notes:
1. To select the class of service, set the CST and CSU switches or the CL(0-5) key as required.
2. Consult CD-27633-01 to determine pulsing speed and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.
3. If the RSG and RSS switches are not provided, patch the MB2-OR jack to the MB_ jack associated with any originating register to be used for test, then patch the MB1(0-9) jacks to the MB_ jacks associated with all other originating registers on the same trunk link frame as the originating register selected.

SECTION A

PTT

SECTION B-DIAL TONE CLASS OF TEST

DT

SECTION B

DT
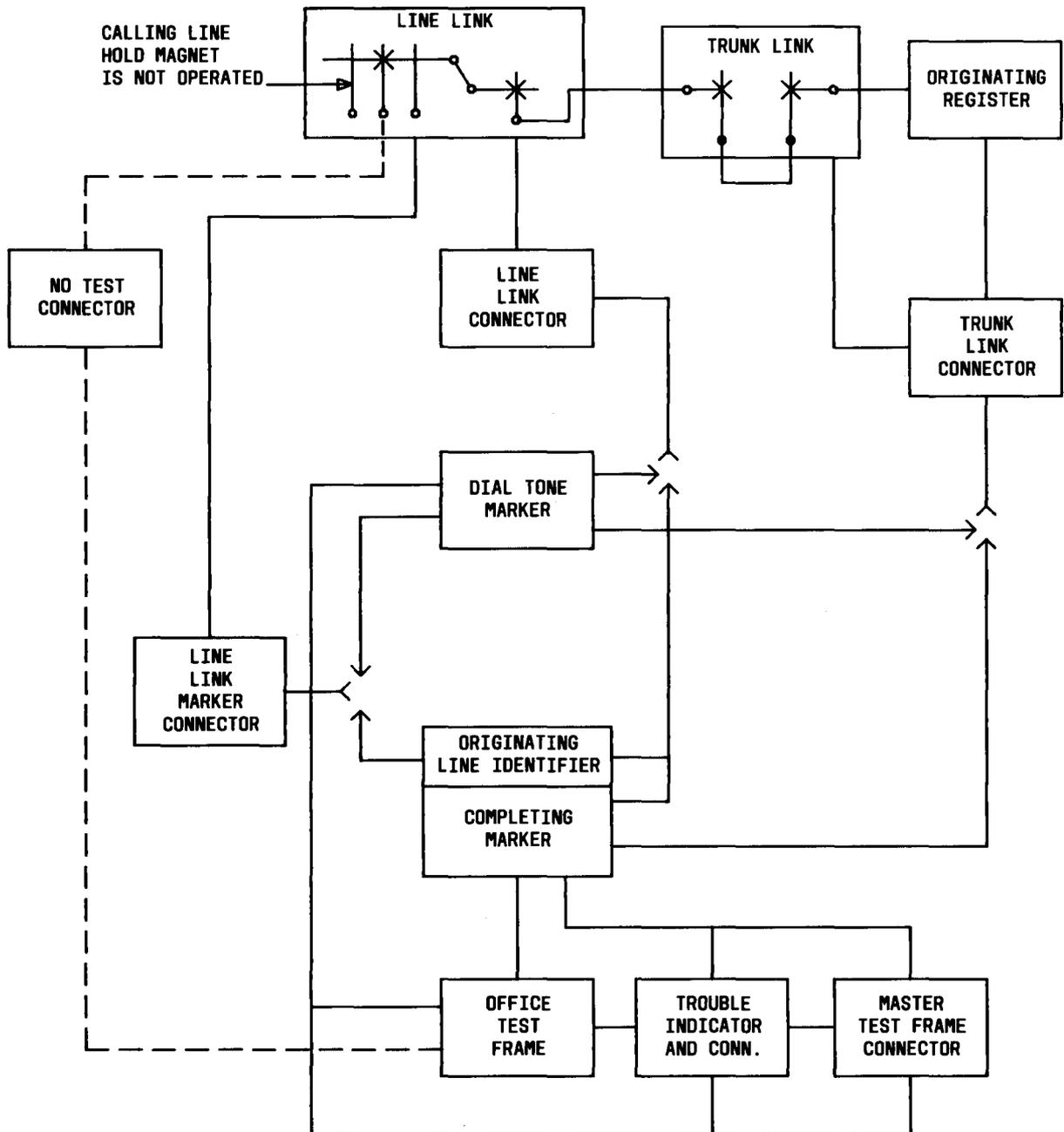
DT CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
1,2,3	3	MKR (2-3) key	**MARKER SELECTION**—Directs the OTF to connect to dial tone marker 0 or 1.
	3	MKR (0-1) key	**MARKER SELECTION**—Directs the OTF to connect to completing marker 0 or 1 if office is equipped with originating line identifiers.
1,2,3	3,YT	OLI key	**ORIGINATING LINE IDENTIFIER**—Ensures that MCB relay in the OTF does not operate. Must be operated in addition to REC key to force trouble indicator display on test call using originating line identifiers.
1,2,3,4	3	OTL key	**ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber line.
	3,H	COTL key	**COIN ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber coin line, if provided.
	3	OTLP key	**ORIGINATING TEST LINE PARTICULAR**—Provides access from the OTF to a particular subscriber line.
1,2,3,4	3,Y	CST (0-9) switch	**CLASS-OF-SERVICE TENS**—Controls the class-of-service tens digits for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line.)
1,2,3,4	3,Y	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS**—Controls the class-of-service units digit for the simulated calling line transmitted to the marker (not required when selecting a particular subscriber line).
	3,V	CL (0-5) key	**CLASS-OF-SERVICE**—Controls the class-of-service of the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
2,3	3,N	PS switch	**PULSE SPEED CONTROL**—Selects pulsing speeds and percent break in the pulse generator circuit.
1,2 3,	3,N	L-L (0-10) switch	**LOOP-LEAK**—Selects various loop and leak conditions for testing originating registers with the pulse generator circuit.

SECTION B

DT

DT CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
2,3	3,E, S	1D-12D key	**1-12-DIGIT**—Total number of digits to be dialed into the originating register.
2,3	3,E, S,XZ	DIAL A-Q (TST, 0-9) switch	**DIAL DIGIT CONTROL**—The digits to be dialed into the originating register including a one-digit "0" operator call, three-digit area code, three-digit service code, or a three-digit office code, and the called number.
1,2, 3	3	TP key	**TIP PARTY**— Signals marker that a tip party is being handled, if provided.
1,2, 3	3,M	CN key	**COIN**—Simulates a coin ground on the originating test line, if provided.
1,2, 3	3,M	STK-CN key	**STUCK COIN**—Simulates a stuck coin by placing a ground on the tip of the originating test line.
2,3	20	TT key	**TOUCH-TONE TEST**—Conditions the OTF to provide TOUCH-TONE signals to the tip and ring of the originating test line, if provided.
1,2 3,5	3,ZH	RSG (ORB) switch	**REGISTER/SENDER GROUP CONTROL**— Controls circuit busy conditions for a group of originating registers (if Z option for selecting a particular originating register is not provided).
1,2, 3,5	3,ZH	RSS (0-9) switch	**REGISTER AND SENDER SELECT**— Selects a particular originating register within a group of originating registers (if Z option for selecting a particular originating register is not provided).
1,2, 3	3,ZL, ZM	FS (0-4) key	**FRAME SELECT**—Makes busy all trunk link frames except frame corresponding with the operated FS—key.
1,2, 3	3	ST key	**START**—Operate to start all test calls. Restore to normal position to releases all test calls.
6	3	DIAL key	**DIAL LOCAL**—Disables the pulse generator and permits use of the OTF dial.
6	3	TLK key	**TALK**—Connects the telephone circuit at the OTF to the originating test line.
6	3	DL key	**DIAL**—Disables the pulse generator and permits dialing using an external dial associated with the DL jack.
6	3	ARC key	**AUTOMATIC RECYCLE**—Recycles the test circuit automatically after a successful test call without initially operating the ST key.
6	3	TRC key	**TROUBLE RECYCLE**—Recycles the test circuit automatically on trouble call when the TF lamp is lighted and the ST key is operated.
6	3,YB	RRC key	**REGISTER RETURN COIN**—Signals the marker that a coin was returned by the originating register.
6	3,YS, YT	REC key	**RECORD**—Causes the common control equipment to force a trouble indicator display prior to regular release of a test call.

SECTION B

DT

DT CLASS OF TEST TABLE

┌─SD-27633-01

SEE NOTE	FIG. OR OPT	KEY OR SWITCH	FUNCTION
6	20	FCA (1-4) switch	**FREQUENCY CONTROL A-TOUCH-TONE**—Selects marginal frequency test conditions received by the TOUCH-TONE receiver.
6	20	FCB switch	**FREQUENCY CONTROL B-TOUCH-TONE** — Selects marginal frequency test conditions received by the TOUCH-TONE receiver.
6	20	HLV key	**HIGH LEVEL (TOUCH-TONE)** — Conditions the OTF to provide transmission of a +3 dBm signal.
6	20	LLV key	**LOW LEVEL (TOUCH-TONE)** — Conditions the OTF to provide transmission of a −22 dBm signal.

Notes:

1. Key(s) or switch(es) that must be operated to perform the dial tone class of test.

2. Key(s) or switch(es) that must be operated to perform the originating register class of test.

3. Key(s) or switch(es) used to simulate a trouble record (see Page 5).

4. Select an originating test line or a particular subscriber line as follows:

    (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

    (b) To select the coin originating test line, if provided, operate the COTL key and the CL(0-5) key to select the class of service as required.

    (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

5. If the RSG and RSS switches are not provided, patch the MB2-OR jack to the MB‗ jack associated with the originating register to be used for test, then patch the MB1 (0-9) jacks to the MB‗ jacks associated with all other originating registers on the same trunk link frame as the originating register selected.

6. Key(s) or switch(es) which may be operated to cause additional actions or test variations for this particular test.

SECTION B

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SIMULATION TABLE

| AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIGN.	POS
Type of Call		1				
Marker Selection			MKR	MKR (2-3)/ MKR (0-1), OLI		
			DR.X			
Line Location	LLF	2	FU.X	OTL/COTL/ OTPL		
	VERT.GRP.		VG.XX			
	HOR.GRP.		HG.X			
	VERT.FILE		VF.X			
Class of Service	TENS	2	CT.X		CST	0-9
	UNITS		CU.X		CSU	0-9
	UNITS		CU.X	CL(0-5)		
TOUCH-TONE Dialing (if required)			MF	TT		
Pulse Speed Control		3			PS	OFF,7-50, 7-80 10-34,10-66 11-44,11-56 15-65,24-55, 24-70,SLOW
Loop and Leak		3			L-L	0-10
Tip Party Test (if required)			TP	TP		
Coin Test (if required)				CN		
Number of Called Digits				1D-12D		
Called Digits A-C (0-9)			A.X-Q.X		DIAL A-Q	1-9,0,TST
Originating Register Selection		4	CN.X		RSG	ORB0
			RG.XX		RSS	0-9
Trunk Link Frame Selection			FS.X		FS(0-4)	

SECTION B

DT

Notes:
1. The dial tone class of test is originated from the originating test line or from a particular subscriber line. The call may be directed to select a particular trunk link frame or a particular originating register, or both.

2. Select the line location as follows:

    (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL (0-5) key to select the class of service as required.

    (b) To select the coin originating test line, if provided, operate the COTL key and the CL (0-5) key to select the class of service as required.

    (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

3. Consult CD-27633-01 to determine pulsing speeds and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.

4. If the RSG and RSS switches are not provided, patch the MB2—OR jack to the MB__ jack associated with the originating register under test, then patch the MB1 (0-9) jacks to the MB__ jacks associated with all other orignating registers on the same trunk link frame as the originating register selected for test.

SECTION B

DT

SECTION C — OUTGOING TRUNK CLASS OF TEST
OGT
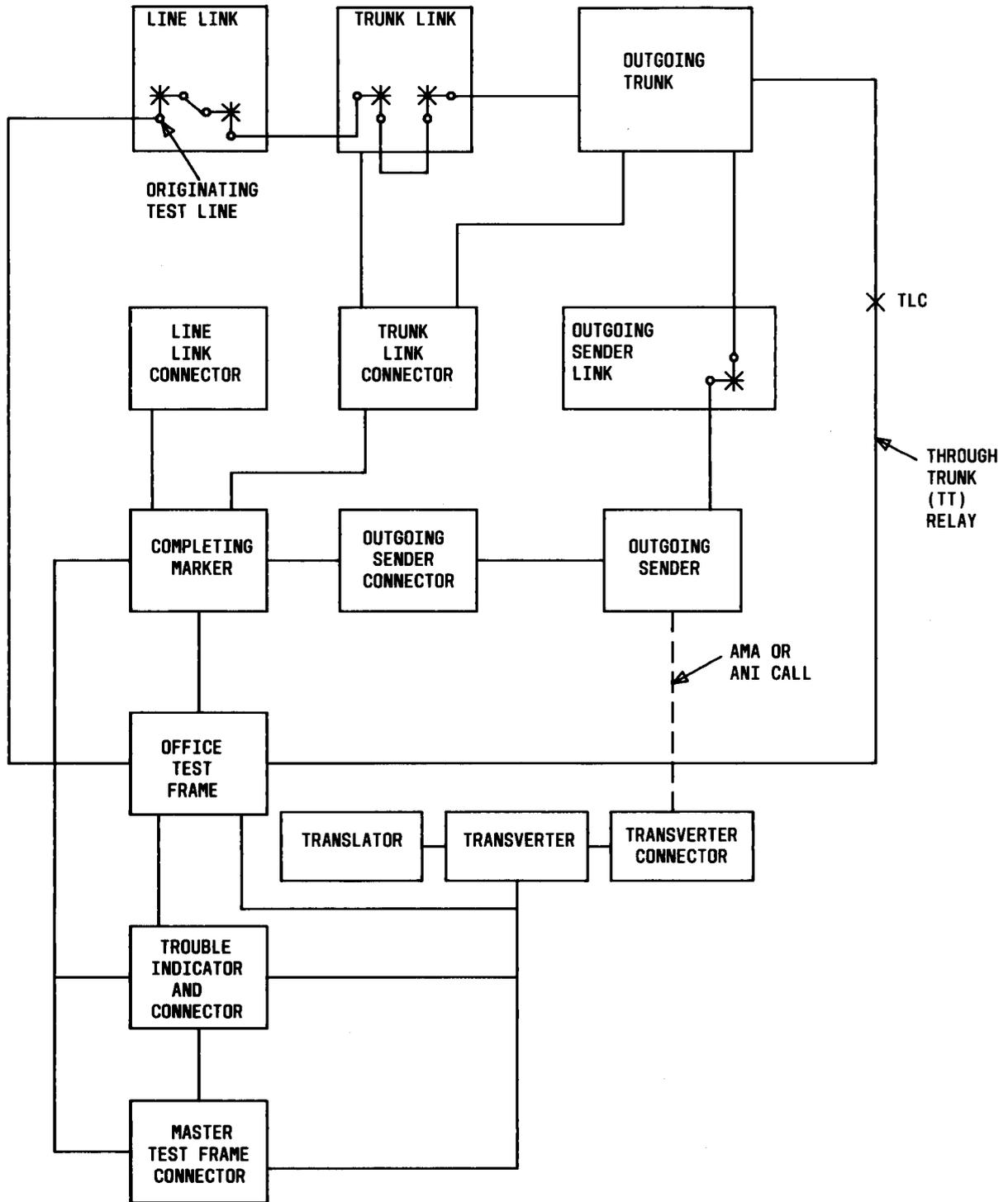
SECTION C
OGT

OGT CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1, 2	3	OGT key	**OUTGOING TRUNK TEST** — Conditions the OTF for testing local outgoing trunks and 2-way intertoll outgoing trunks directed back to the OTF through TT relays.
	3	DO key	**DISTANT OFFICE** — Conditions the OTF for testing outgoing trunks directed to a distant office.
	3, G	DOT key	**DISTANT OFFICE TOLL** — Conditions the OTF for miscellaneous trunk test features (transmission tests, etc), directed to a distant office.
		NONE	When testing miscellaneous trunks associated with "0" operator calls, 3-digit service calls, ACD intercept calls, etc.
1, 2	21	TOL key	**TOLL** — Conditions the 2-way intertoll test trunk to seize an incoming register required for through-switched intertoll outgoing trunk tests in conjunction with the OGT key.
1, 2	3	MF key	**MULTIFREQUENCY** — Provides pulsing control for incoming registers associated with 2-way intertoll outgoing trunks arranged for MF pulsing.
1, 2	3, ZG	MF switch	**MULTIFREQUENCY** — Selects marginal conditions for MF pulsing tests of receivers and incoming registers arranged for MF pulsing in conjunction with the MF key.
1, 2	3	BL key	**BYLINK** — Provides a bylink path to actuate the incoming register before the incoming register link switch is operated on calls to step-by-step offices using 2-way intertoll outgoing trunks.
1, 2	44	ACDL key	**ACD TEST WITH DELAY** — Provides a TOUCH-TONE® test signal to the ACD office with a delay after the trunk is connected on calls using SF signaling.
	44	ACND key	**ACD TEST WITHOUT DELAY** — Provides a TOUCH-TONE test signal to the ACD office without a delay after the trunk is connected on calls without SF signaling.
1, 2	3, V2	TSPS key	**TRAFFIC SERVICE POSITION TRUNK TEST** — Conditions the OTF for testing trunks terminating at a traffic service position in conjunction with the OGT key.
1, 2	3	MKR (0-1) key	**MARKER SELECTION** — Directs the OTF to connect to completing marker 0 or 1.
1, 2	3, Z	MCB key	**MARKER CONTROL BUSY** — Provides completing marker make-busy control.

OGT CLASS OF TEST TABLE

—SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1, 2, 3	3	OTL key	**ORIGINATING TEST LINE** — Provides access from the OTF to the simulated calling subscriber line.
	3, H	COTL key	**COIN ORIGINATING TEST LINE** — Provides access from the OTF to the simulated calling subscriber coin line, if provided.
	3	OTLP key	**ORGINATING TEST LINE PARTICULAR** — Provides access from the OTF to a particular subscriber line.
1, 2, 3	3, Y	CST (0-9) switch	**CLASS-OF-SERVICE TENS** — Controls the class-of-service tens digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
1, 2, 3	3, Y	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS** — Controls the class-of-service units digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
	3, V	CL (0-5) key	**CLASS-OF-SERVICE** — Controls the class-of-service of the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
1, 2	3, N	PS switch	**PULSE SPEED CONTROL** — Selects pulsing speeds and percent break in pulse generator circuit.
1, 2	3, N	L-L switch	**LOOP-LEAK** — Selects various loop and leak conditions for testing originating registers with the pulse generator circuit.
1, 2	3, S	1D key	**1-DIGIT** — Total number of digits for "0" operator call to be dialed into the originating register.
	3, S	3D key	**3-DIGIT** — Total number of digits for a 3-digit service code to be dialed into the originating register.
	3, E,	7D, 10D, 11D key	**7, 10, or 11-DIGIT** — Total number of digits to be dialed into the originating register for a call directed back to the OTF or to a distant office.
1, 2	3, E, S	DIAL A (TST, 0-9) switch	**DIAL DIGIT CONTROL** — The digit to be dialed into the originating register for a "0" operator call.
	3, E, S	DIAL A-C (TST, 0-9) switch	**DIAL DIGIT CONTROL** — The digits to be dialed into the originating register for a three-digit area code, a three-digit office code, or a three-digit service code.
1, 2	3, E S	DIAL D-L (TST, 0-9) switch	**DIAL DIGIT CONTROL** — The digits to be dialed into the originating register representing the called number.

OGT CLASS OF TEST TABLE

┌SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1, 2	3, E, S	1SD-11SD key	**1-11 SENDER DIGITS** — Total number of digits to be outpulsed by the sender.
1, 2	3, S	SDR A-L (0-9) switch	**SENDER DIGIT CONTROL** — The matching digits to be outpulsed by the sender. (If the sender deletes digits, the first digit outpulsed must be set on the A switch.
1, 2	3	DPS key	**DIAL PULSE SENDER** — Conditions the OTF to receive dial pulses from an outgoing dial pulse sender.
	3	MFS key	**MULTIFREQUENCY SENDER** — Conditions the OTF to receive multifrequency pulses from an outgoing multifrequency sender.
1, 2	3	WK key	**WINK** — Sender times before closing loop, then awaits off-hook followed by on-hook signal before outpulsing (not used for step-by-step class).
	3	CLS2 key	**CLASS 2 SENDER** — Sender closes loop immediately and starts pulsing on an on-hook signal after a delay of 300 to 500 ms. (not used for step-by-step class).
1, 2	20	TT key	**TOUCH-TONE-TEST** — Conditions the OTF to provide TOUCH TONE signals to tip and ring of originating test line if dial pulse signals are not required.
1, 2	3,ZL, ZM	FS (0-4) key	**FRAME SELECT** — Makes busy all trunk link frames except frame corresponding with operated FS_ key.
1, 2, 4	3,ZH	TS (0-19) switch	**TRUNK SELECT** — Controls selection of a particular trunk through the ODD or EVEN key (if Z option or the alternate method for selecting a particular trunk is not provided.)
1, 2, 4	3, ZH	ODD key	**ODD TRUNK SELECT** — Discriminates TS switch setting for odd numbered trunks (if Z option or the alternate method for selecting a particular trunk is not provided.)
	3,ZH	EVEN key	**EVEN TRUNK SELECT** — Discriminates TS switch setting for even numbered trunks (if Z option or the alternate method for selecting a particular trunk is not provided.)
1, 2	3, ZD	RA key	**ROUTE ADVANCE** — Causes the marker to route advance to a second trunk group or to an overflow trunk depending on the code dialed.
1, 2	3	GPA key	**GROUP A** — Conditions marker for selecting trunks in allotter group A.
	3	GPB key	**GROUP B** — Conditions marker for selecting trunks in allotter group B.

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OGT

OGT CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1, 2	3	NT key	**NO TEST** — Momentarily releases trunk made busy to permit seizure by the OTF.
1, 2, 5	3, ZH	RSG (OSB0-OSB1) switch	**REGISTER/SENDER GROUP CONTROL** — Controls circuit busy conditions for a group of senders (if Z option for selecting a particular sender is not provided).
1, 2, 5	3, ZH	RSS (0-9) switch	**REGISTER AND SENDER SELECT** — Selects a particular sender within a subgroup of senders (if Z option for selcting a particular sender is not provided.)
2	3, ZG	CH key	**CHANNEL SELECT** — Conditions the OTF for selecting the junctor sequence and channel.
2	3, ZG	CH (0-9) switch	**CHANNEL SELECT** — Controls the selection of a particular channel by the marker.
2	3, ZG	JSQ (0-5) switch	**JUNCTOR SEQUENCE** — Controls the junctor sequence position in the marker.
2	3, ZG	STP1 key	**STEP 1** — Permits marker to make channel selection in junctor group Step 1. If no channel is available, marker advances to Step 2.
	3, ZG	STP 2 key	**STEP 2** — Makes all channels in group Step 1 appear busy, causing marker to advance to make channel selection in group Step 2.
1, 2	3	ST key	**START** — Operate to start all test calls. Restore to release all test calls.
1, 2	3	TP key	**TIP PARTY** — Signals marker that a tip party call is being handled.
1, 2	3, M	CN key	**COIN** — Simulates a coin ground on the originating test line.
1, 2	18, 31	ANI key	**AUTOMATIC NUMBER IDENTIFICATION** — Conditions the OTF for receiving the calling directory and provides control for selection of an ANI transverter.
1, 2	31	AMA key	**AUTOMATIC MESSAGE ACCOUNTING** — Provides control for selection of transverters in offices arranged for local automatic message accounting (LAMA).
1, 2	13, 18, 31, YV, YT	TV (0-1) keys	**TRANSVERTER** — Permits testing of AMA or ANI features and transverter that is made busy.

OGT CLASS OF TEST TABLE

┌─SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
6	3,M	STK-CN key	**STUCK COIN** — Simulates a stuck coin by placing a ground on the tip of the originating test line.
6	3	RVT key	**REVERSE TRUNK** — Permits reversal of the tip and ring conductors between the OTF and the trunk TT multiple.
6	3	RTL key	**RELEASE RETURN TEST LINE** — Permits opening of tip and ring conductors between the OTF and the trunk TT Multiple.
6	3	OF key	**TRUNK TEST OVERFLOW** — Provides stop-dial signals by reversing the loop at the end of the first and second digits as pulsed by the DP sender before setting the trunk to overflow.
6	3	OF1 key	**TRUNK TEST OVERFLOW 1** — Provides a stop-dial signal by reversing the loop at the end of the first digit as pulsed by the MF sender before setting the trunk to overflow.
6	13, 18	TVR key	**TRANSVERTER RECORD** — Causes the selected transverter to force a trouble indicator display just prior to release.
6	3	TLK key	**TALK** — Connects the telephone circuit at the OTF to the originating test line.
6	3	DL key	**DIAL** — Disables the pulse generator and allows use of an external dial associated with the DL jack.
6	3, YS, YT	REC key	**RECORD** — Causes the common control equipment to force a trouble indicator display prior to a regular release of a test call.
6	3	CB key	**CALL BLOCK** — Pervents the marker from completing the call when the MKR_ and MCB keys are operated.
6	3, E	OI key	**OPERATOR IDENTIFICATION** — Provides for receiving a single digit from the sender.
6	3	ARC key	**AUTOMATIC RECYCLE** — Recycles the test circuit automatically after a successful test call without operating the ST key.
6	3	TRC key	**TROUBLE RECYCLE** — Recycles the test circuit automatically on any trouble call when the TF lamp is lighted and the ST key is operated.
6	3,ZY	STP switch	**START PULSE** — Provides means for checking the start pulse when variable frequency combinations are used on calls to the TSPS system.
6	3,YB	RRC key	**REGISTER RETURN COIN** — Signals the marker that a coin was returned by the originating register.

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OGT

OGT CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	29	EM key	**E&M LEAD TRUNK TEST** — Conditions the OTF for testing outgoing trunks that are arranged for E&M lead supervision.
6	2,UL	DAC key	**DIRECTORY ASSISTANCE CHARGING TRUNK TEST** — Modifies the amount of current supplied on regular and release tests of the CS relay in the trunk.
6	3	NCH key	**NONCHARGE** — Eliminates charge test on OGT type of test.

Notes:

1. Key(s) or switch(es) that must be operated to perform this test.

2. Key(s) or switch(es) used to simulate trouble record (see page 9).

3. Select an originating test line or a particular subscriber line as follows:

   (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

   (b) To select the coin originating test line, if provided, operate the COTL key and the CL(0-5) key to select the class of service as required.

   (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

   (d) To select the toll originating test line when simulating the line link appearance of a 2-wire intertoll trunk, operate the OTL and TOL keys.

4. If the TS switch and ODD and EVEN keys are not provided, insert a 329A make-busy plug into the TS_ jack associated with the trunk under test (if Z option is provided) or patch the MB2-TRK jack to the MB_ jack associated with the trunk under test (if the alternate method is provided).

5. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1(0-9) jacks to the MB_ jacks associated with all other senders of the same type.

6. Key(s) or switch(es) which may be operated to cause additional actions or test variations for this particular test.

JUNCTOR GROUP TABLE

JUNCTOR SUBGROUP SELECTED (JG. DESIGNATION PRINTED)

NUMBER OF TRUNK LINK FRAMES	JUNCTOR STEP POSITION (STP1 OR STP2)	JUNCTOR SEQUENCE (JSQ)					
		0	1	2	3	4	5
2	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG4	JG3	JG4	JG3	JG4
2-3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG1	JG2	JG0	JG1	JG2	JG0
3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG3	JG3	JG3	JG3	JG3
4	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG2	JG2	JG2	JG2	JG2	JG2
5	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG1	JG0	JG1	JG0	JG1	JG0

SIMULATION TABLE

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIG.	POS.
Type of Call		1	SOG	OGT/DO/DOT/ NONE		
			TOL	TOL,BL/MF/,	MF	MIN L, MAX L, TWT, MPT
				ACDL/ACND/ TSPS		
Marker Selection			MKR	MKR(0-1), MCB		
			DR.X			
Line Location	LLF	2	FU.X	OTL/COTL/ OTLP		
	VERT. GRP.		VG.XX			
	HOR. GRP		HG.X			
	VERT. FILE		VF.X			
Class of Service	TENS	2	CT.X		CST	0-9
	UNITS		CU.X		CSU	0-9
	UNITS		CU.X	CL(0-5)		
Touch-Tone Dialing (if required)			MF	TT		
Pulse Speed Control		3			PS	Off, 7-50, 7-80, 10-34, 10-66, 11-44, 11-56, 15-65, 24-55, 24-70, SLOW
Loop and Leak		3			L-L	0-10
Tip Party Test (if required)			TP	TP		
Charge or No Charge Test	COIN GRD.	4		CN		
	NO CHARGE			NCH		

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SIMULATION TABLE (Contd)

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIG.	POS.
Number of Called Digits				1D/3D/7D/ 10D/11D		
Called Digits A-L (0-9)			A.X-L.X		DIAL A-L	1-9,0, TST
Number of Digits Outpulsed by Sender				1SD/3SD/7SD/ 8SD/10SD/11SD		
Digits Outpulsed by Sender			A.X-L.X		SDR A-L	1-9,0, TST
Type of Sender Pulsing	DIAL PULSE			DPS		
	MF PULSE			MFS		
Sender Selection		5	OSG.X		RSG	OSB0-1
			OS.X		RSS	0-9
			SSA/SSB			
Sender Trunk Test (not used on Step-by-Step)	WINK SIG.			WK		
	IMED. CLOSURE			CL2S		
Trunk Link Frame Selection			FS.X	FS(0-4)		
Trunk Select		6	TS.X(ODD)	ODD	TS	0-19
			TS.X(EVEN)	EVEN		
Trunk Allotter	GROUP A		GPA	GPA		
	GROUP B		GPB	GPB		
Route Advance		7	RA	RA		
			GS.X			
No Test				NT		
Channel Selection			CH.X	CH	CH	0-9
Junctor Group		8	JG.X		JSQ	0-5

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OGT

SIMULATION TABLE (Contd)

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
					SWITCH	
FUNCTION	SEE NOTE	TTY OUTPUT	KEY DESIG.		DESIG.	POS.
Junctor Step			STP1			
		STP2	STP2			
AMA Test (if required)	9	AMA	AMA			
		TV	TV(0-1)			
		DR.X				
ANI Test (if required)	10	AMA	ANI			
		TV	TV(0-1)			
		DR.X				

Notes:

1. Select the type of call as follows:

   (a) To test local outgoing trunks, 2-way intertoll outgoing trunks, and TSPS trunks, operate the OGT key [see (e), (f), and (i)].

   (b) To test outgoing trunks directed to a distant office, operate the DO key.

   (c) To test 2-way intertoll outgoing trunks, operate the TOL key using the toll originating test line.

   (d) To test miscellaneous trunks associated with "O" operator calls, 3-digit service calls, ACD intercept calls, etc. Restore all of the preceding keys to normal [see (g) and (h)].

   (e) To test 2-way intertoll outgoing trunks arranged for MF pulsing, operate the MF key and MF switch as required.

   (f) To test intercept trunks into an ACD office arranged for SF signaling, operate the ACDL key.

   (g) To test intercept trunks into an ACD office **not** arranged for SF signaling, operate the ACND key.

   (h) To test TSPS trunks, operate the TSPS key.

2. Select the line location as follows:

   (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

   (b) To select the coin originating test line, if provided, operate the COTL key and the CL(0-5) key to select the class of service as required.

   (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

   (d) To select the toll originating test line when simulating the line link appearance of a 2-wire intertoll trunk, operate the OTL and TOL keys.
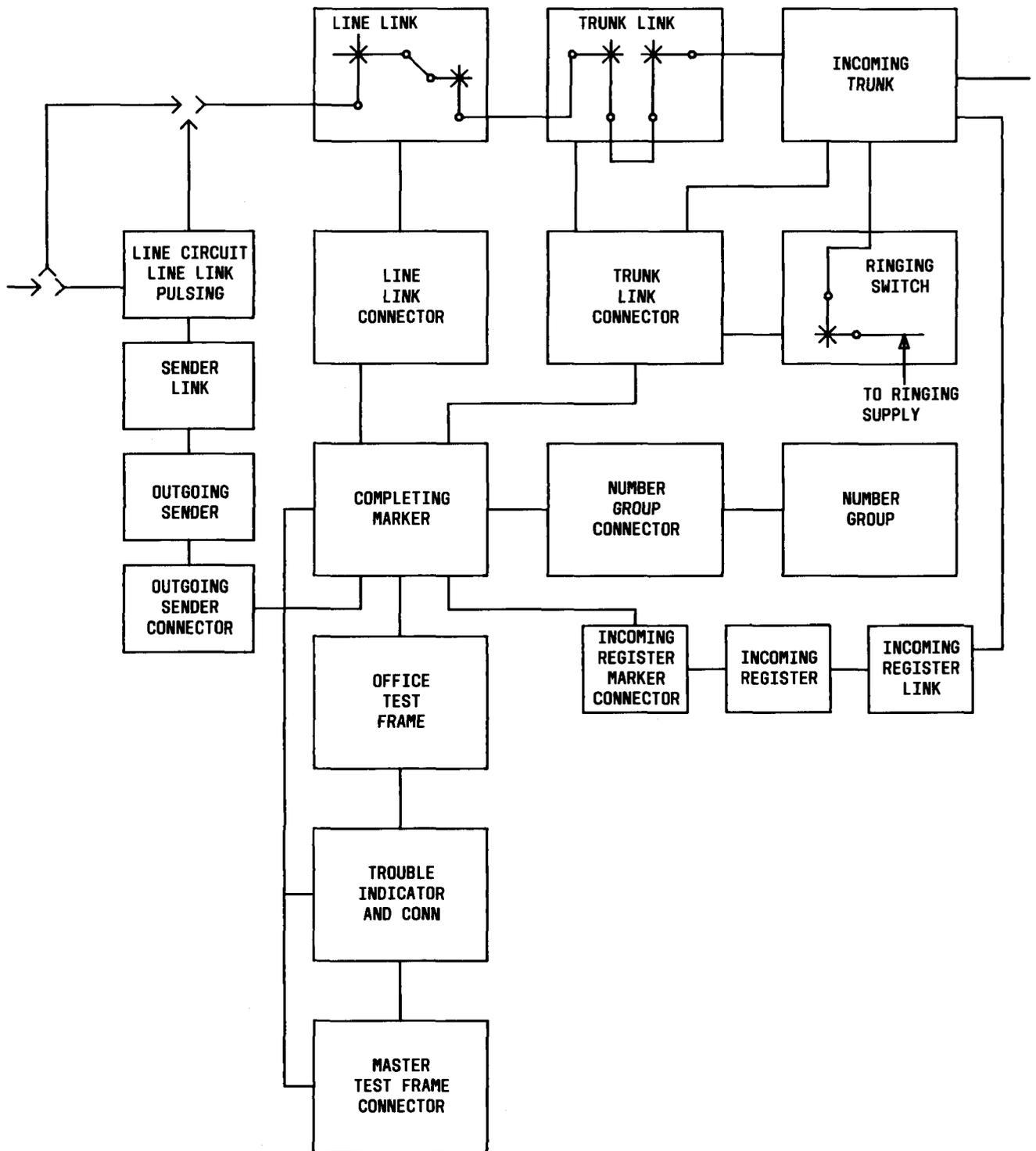
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OGT

Notes: (Contd)

3. Consult CD-27633-01 to determine pulsing speeds and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.

4. Operate the CN key if a coin subscriber line is being simulated or the NCH key, if no charge is expected from the outgoing trunk.

5. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1(0-9) jacks to the MB_ jacks associated with all other senders of the same type.

6. If the TS switch and ODD and EVEN keys are not provided, insert a 329A make-busy into the TS_ jack associated with the trunk under test (if Z option is provided) or patch the MB2-TRK jack to the MB_ jack associated with the trunk under test (if the alternate method is provided.)

7. The GS.X entry indicates the ground supply from which the call has route advanced.

8. Consult junctor group table on page 10 for setting the JSQ switch to select the particular JG_ sequence.

9. The AMA key may or may not be provided.

10. The ANI key may or may not be provided.

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SECTION D — INCOMING TRUNK CLASS OF TEST

SECTION D
INC

INC TRUNK CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2, 3	3	ITT key	**INCOMING TRUNK TEST** — Conditions the OTF for testing an incoming class of call directed to a terminating test line, a particular directory number associated with a LLP circuit, or to any directory number.
1,2 3	3	ITT1 key	**INCOMING TRUNK TEST 1** — An incoming supervisory auxiliary used in conjunction with the ITT key when E and M supervision is not provided.
	21	ITT2 key	**INCOMING TRUNK TEST 2** — An incoming supervisory auxiliary used in conjunction with the ITT key when E and M supervision is provided.
1,2	26	LLP key	**LINE LINK PULSING** — Conditions the marker to seize a LLP circuit, if required.
1,2	3,XS	LLS (0-9) switch	**LINE LINK SELECTOR** — Controls the selection of a line link frame when arranged for LLP tests.
1,2	39	AIS key	**AUTOMATIC INTERCEPT SERVICE** — Conditions the marker for handling intercepted directory number calls when arranged for AIS using existing LLP feature (Standard).
1,2	3	MKR (0-1)	**MARKER SELECTION** — Directs the OTF to connect to completing marker 0 or 1.
1,2	3,Z	MCB key	**MARKER CONTROL BUSY** — Provides completing marker make-busy control.
1,2	3	CST (0-9) switch	**CLASS-OF-SERVICE TENS** — Controls the class-of-service tens digit for the terminating test line transmitted to the marker (not required when selecting a LLP circuit or any directory number).
1,2	3	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS** — Controls the class-of-service units digit for the terminating test line transmitted to the marker (not required when selecting a LLP circuit or any directory number).
	3,V	CL (0-5) key	**CLASS-OF-SERVICE** — Controls the class-of-service for the terminating test line transmitted to the marker (not required when selecting a LLP circuit or any directory number.
1,2,	3,N	L-L switch	**LOOP-LEAK** — Selects various loop and leak conditions for testing incoming registers with the pulse generator circuit.
1,2	3,N	PS switch	**PULSE SPEED CONTROL** — Selects pulsing speeds and percent break in the pulse generator circuit.
1,2	3,E,S	1D-12D key	**1-12 DIGIT** — Total number of digits to be dialed into the incoming register to select a terminating test line, a particular directory number associated with a LLP circuit, or to any directory number.

INC TRUNK CLASS OF TEST TABLE (Contd)

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3,E,S	DIAL A-N switch	**DIAL DIGIT CONTROL** — The digits to be dialed into the incoming register associated with the 1D-12D keys.
1,2, 4	3,E,S	5SD-8SD key	**4-8 SENDER DIGITS** — The total number of digits to be outpulsed by the LLP sender, if required.
1,2, 4	3,E,S	SDR A-H (0-9) switch	**SENDER DIGIT CONTROL** — The matching digits to be outpulsed by the sender associated with the 5SD-8SD keys (if the sender deletes digits, the first digit outpulsed must be set on the SDR A switch).
1,2, 5	3,ZH	RSG (OSB2) switch	**REGISTER/SENDER GROUP CONTROL** — Controls circuit busy conditions for a group of LLP senders (if Z option for selecting a particular sender is not provided).
1,2, 5	3,ZH	RSS (0-9) switch	**REGISTER AND SENDER SELECT** — Selects a particular sender within a subgroup of LLP senders (if Z option for selecting a particular sender is not provided).
1,2	3	DPS key	**DIAL PULSE SENDER** — Conditions the OTF to receive dial pulses from a LLP sender not arranged for AIS.
	3	MFS key	**MULTIFREQUENCY SENDER** — Condtions the OTF to receive multifrequency pulses from a LLP sender arranged for AIS.
1,2	3	PBX2 key	**PBX2** — Conditions the OTF for selecting a particular LLP circuit within a tens block
1,2	26	TBT (0-9) switch	**TENS BLOCK TENS-LLP** — Provides tens block tens digit information to number group to force a particular tens block translation associated with a LLP circuit.
1,2	26	TBU (0-9) switch	**TENS BLOCK UNITS-LLP** — Provides tens block units digit information to number group to force a particular tens block translation associated with a LLP circuit.
1,2	3	S (0-9) key	**PBX SLEEVE** — Directs the connection to a particular LLP circuit in a tens block in conjunction with the TBT and TBU switches.
1,2	26,XV	NTLS key	**NO TEST LINE SELECTION-LLP** — Selects the individual test line in conjunction with the S0-9 keys.
1,2	29	EM key	**E&M LEAD LINE TEST** — Conditions the OTF for testing LLP circuits arranged for E and M supervision.
1,2	3,K	RS1 (00-09) switch	**RINGING SELECT 1** — Controls the ringing combination set up by the marker on the ringing switch associated with an incoming trunk.

INC TRUNK CLASS OF TEST TABLE (Contd)

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3,K	RS2 (10-15)	**RINGING SELECT 2** — Controls the ringing combination set up by the marker on the ringing switch associated with an incoming trunk.
1,2	3	MF key	**MULTIFREQUENCY** — Conditions the OTF for MF pulsing for multifrequency incoming registers, if provided.
1,2	3,ZG	MF switch	**MULTIFREQUENCY** — Selects marginal conditions for MF pulsing tests of the receiver and multifrequency incoming register in conjunction with the MF key.
1,2	3	WK key	**WINK** — Sender times before closing loop, then awaits off-hook followed by on-hook before outpulsing.
	3	CL2S key	**CLASS 2 SENDER** — Sender closes loop immediately and starts pulsing on an on-hook signal after a delay of 300 to 500 ms.
12	3	GS key	**GROUND SHUNT** — Reduces loop resistance of A relay in incoming trunk used for test.
1,2	3	SLP key	**SHORT LOOP** — Permits testing incoming trunks with a short conductor loop.
1,2	3	ONHK key	**ON-HOOK** — Conditions the OTF for testing incoming trunks which do not transmit a start-dial signal.
1,2	3	BL key	**BYLINK** — Conditions the OTF with a bylink path to actuate the incoming register before the incoming register link switch is operated as in step-by-step calls.
1,2	3,ZG	CH key	**CHANNEL SELECT** — Conditions the OTF for selecting the junctor sequence and channel.
1,2	3,ZG	CH (0-9) switch	**CHANNEL SELECT** — Controls the selection of a particular channel by the marker.
1,2	3,ZG	JSQ (0-5) switch	**JUNCTOR SEQUENCE** — Controls the junctor sequence position in the marker.
1,2	3,ZG	STP1 key	**STEP 1** — Permits marker to make channel selection in junctor group Step 1. If no channel is available, marker advances to Step 2.
	3,ZG	STP2 key	**STEP 2** — Makes all channels in group Step 1 appear busy, causing marker to advance to make channel selection in group Step 2.
1,2	3	ST key	**START** — Operate to start all test calls. Restore to release all test calls.

INC TRUNK CLASS OF TEST TABLE (Contd)

┌─SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3	TTLD key	**TERMINATING TEST LINE DISCONNECT** — Opens the tip, ring, and sleeve leads of the terminating test line.
6	3,YS, YT	REC Key	**RECORD** — Causes the common control equipment to force a trouble indicator display prior to a regular release of a test call.
6	3	TLK key	**TALK** — Connects the telephone circuit at the OTF to the tip and ring leads of an incoming trunk through the ITT jack or T1 jack as required.
6	3	ANS key	**ANSWER** — Provides answer supervision to the terminating end of the trunk under test disconnecting the ringing loop.
6	3	CDR key	**CODED RINGING** — Prevents the ringing test from advancing until manually restored when coded ringing is expected.
6	3	R+ key	**RING POSITIVE** — Superimposed positive ringing expected on the ring side of the TTL on an incoming class of test.
	3	R— key	**RING NEGATIVE** — Superimposed negative ringing expected on the ring side of the TTL on an imcoming class of test.
	3	T+ key	**TIP POSITIVE** — Superimposed positive ringing expected on the tip side of the TTL on on incoming class of test.
	3	T— key	**TIP NEGATIVE** — Superimposed negative ringing expected on the tip side of the TTL on an incoming class of test.
6	3	PBX1 key	**PBX1** — Conditions the OTF for verification of idle lines in a terminal hunting group.
6	3	PBX2 key	**PBX2** — Conditions the OTF for the selection of a particular line in a terminal hunting group.
6	3	S (0-9) key	**PBX SLEEVE** — Provides means of selecting a particular line within a terminal hunting group.
6	27	NGA key	**NUMBER GROUP ALLOTTING** — Selects a particular number group when used in conjunction with the NGT switch.
6	27	NGT (A-H, AB) switch	**NUMBER GROUP TEST** — Indicates an all PBX allotted number group-busy condition to the marker except for the selected number group.
6	3	3F key	**THREE FREQUENCY-MF** — Conditions the OTF for transmitting a signal composed of 700, 900, and 1300 Hz. to the incoming register.

INC TRUNK CLASS OF TEST TABLE (Contd)

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
6	3	SF key	**SINGLE FREQUENCY-MF** — Conditions the OTF for transmitting a single signal of 900 Hz. to the incoming register.
6	3,ZG	FKP key	**FALSE KEYPULSE** — Simulates a second keypulse signal to be received by the incoming register before a full complement of digits have been recorded.
6	3,ZG	DSTP key	**DELAY START PULSE** — Delays a MF start pulse signal transmitted to the incoming register.
6	3,VZ	ASTP key	**AUXILIARY START PULSE** — Provides an additional delay of a MF start pulse signal transmitted to the incoming register in conjunction with the DSTP key.
6	3	CB key	**CALL BLOCK** — Prevents the marker from completing a test call when the MKR—and MCB keys are operated.
6	3	ARC key	**AUTOMATIC RECYCLE** — Recycles the test circuit automatically after a successful test call without operating the ST key.
6	3	TRC key	**TROUBLE RECYCLE** — Recycles the test circuit automatically on any trouble call when the TF lamp is lighted and the ST key is operated.
6	39	DL4 key	**DELETE 4** — Primes the marker to test 10X test lines arranged for AIS using a 7-digit intercept number ending with 10X.
6	39	LTH key	**LINE TEST HOLD** — Primes the marker to perform remote make-busy tests in the AIS line circuit.
6	3,G,YD XK	DOT key	**DISTANT OFFICE-TOLL** — Permits termination of an AIS test call to an automatic intercept center.
6	21	RR key	**RERING** — Conditions the OTF to test the ability of a 2-way incoming intertoll trunk to transmit a ringing signal sent forward by an operator.
6	21	TPO key	**TRANSMISSION PAD OUT** — Removes a 2 dB pad from a 2-way incoming intertoll trunk arranged for E and M supervision.
6	3	RVT key	**REVERSE TRUNK** — Permits reversal of the tip and ring conductors between the OTF and the LLP circuit LT multiple.
6	3	RTL key	**RELEASE RETURN TEST LINE** — Permits opening of tip and ring conductors. between the OTF and the LLP circuit LT multiple.
6	26	RTK key	**RING AND TIP CHECK-LLP** — Holds a seized LLP circuit for trunk test.

Notes:

1. Key(s) or switch(es) that must be operated to perform this test.

2. Key(s) or switch(es) used to simulate a trouble record (see Page 9).

3. Select an incoming trunk as follows:

   (a) To test incoming registers, incoming trunks, LLP, or AIS circuits not arranged for E and M supervision, patch the T jack of an incoming trunk to the ITT jack at the relay rack frame. Operate the ITT and ITT1 keys.

   (b) To test incoming registers, incoming trunks, LLP or AIS circuits arranged for E and M supervision, or 2-way intertoll incoming trunks, patch the T1 and T2 jacks of an incoming trunk to the T1 and T2 jacks at the relay rack frame. Operate the ITT and ITT2 keys.

4. On AIS calls, the sender will outpulse a 5 through 8-digit directory number as required. The first digit represents an intercept code assigned by the marker as determined by the type of intercept. The remaining digits represent the directory number as set up on the DIAL A-G switches.

5. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1 (0-9) jacks to the MB_ jacks associated with all other senders of the same type.

6. Key(s) or switch(es) which may be operated to cause additional actions or test variations for this particular test.

JUNCTOR GROUP TABLE

JUNCTOR SUBGROUP SELECTED (JG. DESIGNATION PRINTED)

NUMBER OF TRUNK LINK FRAMES	JUNCTOR STEP POSITION (STP1 OR STP 2)	JUNCTOR SEQUENCE (JSQ)					
		0	1	2	3	4	5
2	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG4	JG3	JG4	JG3	JG4
2-3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG1	JG2	JG0	JG1	JG2	JG0
3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG3	JG3	JG3	JG3	JG3
4	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG2	JG2	JG2	JG2	JG2	JG2
5	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG1	JG0	JG1	JG0	JG1	JG0

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INC

SIMULATION TABLE

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIG	POS.
Type of Call		1	TER	ITT		
				ITT1/ITT2		
		2		LLP		
		3	AIS	AIS		
LLP Line Circuit Selection	LLF	4	FUT.X	PBX2,NTLS, S(0-9)	LLS	0-9
	VERT.GRP.		VGT.XX		TBT	0-9)
	HOR.GRP.		HGT.X		TBU	0-9)
	VERT.FILE		VFT.X			
Marker Selection				MKR	MKR (0-1),	
				DR.X	MCB	
Class-of-Service (TTL Only)	TENS	5			CST	0-9
	UNITS				CSU	0-9)
	UNITS			CL(0-5)		
Loop and Leak		6			L-L	0-10
Pulse Speed Control		6			PS	OFF,7-50, 7-80,10-34, 10-66,,11-44, 11-56,15-65, 22-55,24-70, SLOW
E&M Supervision (if required)				EM		
Number of Called Digits		7		1D-12D		
Called Digits		8	A.X-N.X		DIAL A-N	TST 1-9, 0
Number of Digits Outpulsed by LLP Sender		9		5SD-8SD		
Digits Outpulsed by LLP Sender					SDR A-H	TST,1-9, 0

SIMULATION TABLE (Contd)

| AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH DESIG	POS.
LLP Sender Selection		10	OSG.2		RSG	OSB-2
			OS.X		RSS	0-9
			SSA-SSB			
Type of Sender Pulsing	DIAL PULSE OR MF SENDER			DPS/MFS		
	WINK SIGNAL OR IMED. CLOSURE			WK/CLS2		
E&M Supervision		11		EM		
Ringing Selection					RS1	00-09
					RS2	10-15
Inc. Trunk Test Features	GRD.SHUNT	12		GS		
	SHORT LOOP	13		SLP		
	ON-HOOK	14		ONHK		
	BYLINK	15		BL		
MF Pulsing Tests—Incoming Registers		16		MF	MF	MIN L, MAX L, TWT, MPT
Channel Selection			CH.X	CH	CH	0-9
Junctor Group			JG.X		JSQ	0-5
Junctor Step				STP1		
			STP2	STP2		
Terminating Test Line Supervision				TTLD		
Number Group Allotting		18		NGA	NGT	A-H, AB

SECTION D
INC

Notes:

1. Select an incoming trunk as follows:

    (a) To test incoming registers, incoming trunks, LLP or AIS circuits *not* arranged for E and M supervision, patch the T jack of an incoming trunk to the ITT jack at the relay rack frame, then operate the ITT and ITT1 keys.

    (b) To test incoming registers, incoming trunks, LLP or AIS circuits arranged for E and M supervision, or 2-way intertoll incoming trunks, patch the T1 and T2 jacks of an incoming trunk to the T1 and T2 jacks at the relay rack frame, then operate the ITT and ITT2 keys.

2. If test call is arranged for line link pulsing (LLP), operate the LLP key.

3. If test call is arranged for automatic intercept service (AIS), operate the AIS key.

4. To select the desired LLP line circuit, operate the PBX2 and NTLS keys, set the LLS switch to select the line link frame, set the TBT and TBU switches to select the number group tens block tens and units digits, and then operate the appropriate S(0-9) key to select a particular line within the tens block.

5. If test call terminates to the terminating test line (TTL), set the CST and CSU switches or operate the CL(0-5) key as required.

6. Consult CD-27633-01 to determine pulsing speeds and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.

7. Operate the appropriate 1D-12D key as required for the total number of digits to be dialed into the IR for either the terminating test line, a particular directory number associated with a LLP or AIS circuit, or to any other directory number.

8. Set the DIAL A-N switches as required for the digits to be dialed into the IR corresponding to the operated 1D-12D key.

9. On AIS calls, the MF sender will outpulse a 5 through 8-digit directory number as required. The first digit is an intercept code assigned by the marker as determined by the type of intercept. The remaining digits represent the directory number as set up on the DIAL A-G switches.

10. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1 (0-9) jacks to the MB_ jacks associated with all other senders of the same type.

11. If the selected incoming trunk or LLP circuit is arranged for E and M supervision, operate the EM key.

12. If the A relay in the incoming trunk used for test is arranged for ground shunt, operate the GS key.

13. If the incoming trunk used for test is arranged for a short conductor loop, operate the SLP key.

14. If the incoming trunk used for test is arranged to transmit a start-dial signal, operate the ONHK key.

15. If the incoming call originates from a step-by-step office, operate the BL key.

16. If the incoming trunk used for test is arranged for MF pulsing, operate the MF key and set the MF switch to select the marginal condition for pulsing.

17. Consult the junctor group table on page 8 for setting the JSQ switch to select the particular JG_ sequence.

18. If an all PBX allotted number group is used for the selection of a LLP line circuit, operate the NGA key and set the NGT switch as required.

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SECTION E—INTRAOFFICE TRUNK CLASS OF TEST
IAO
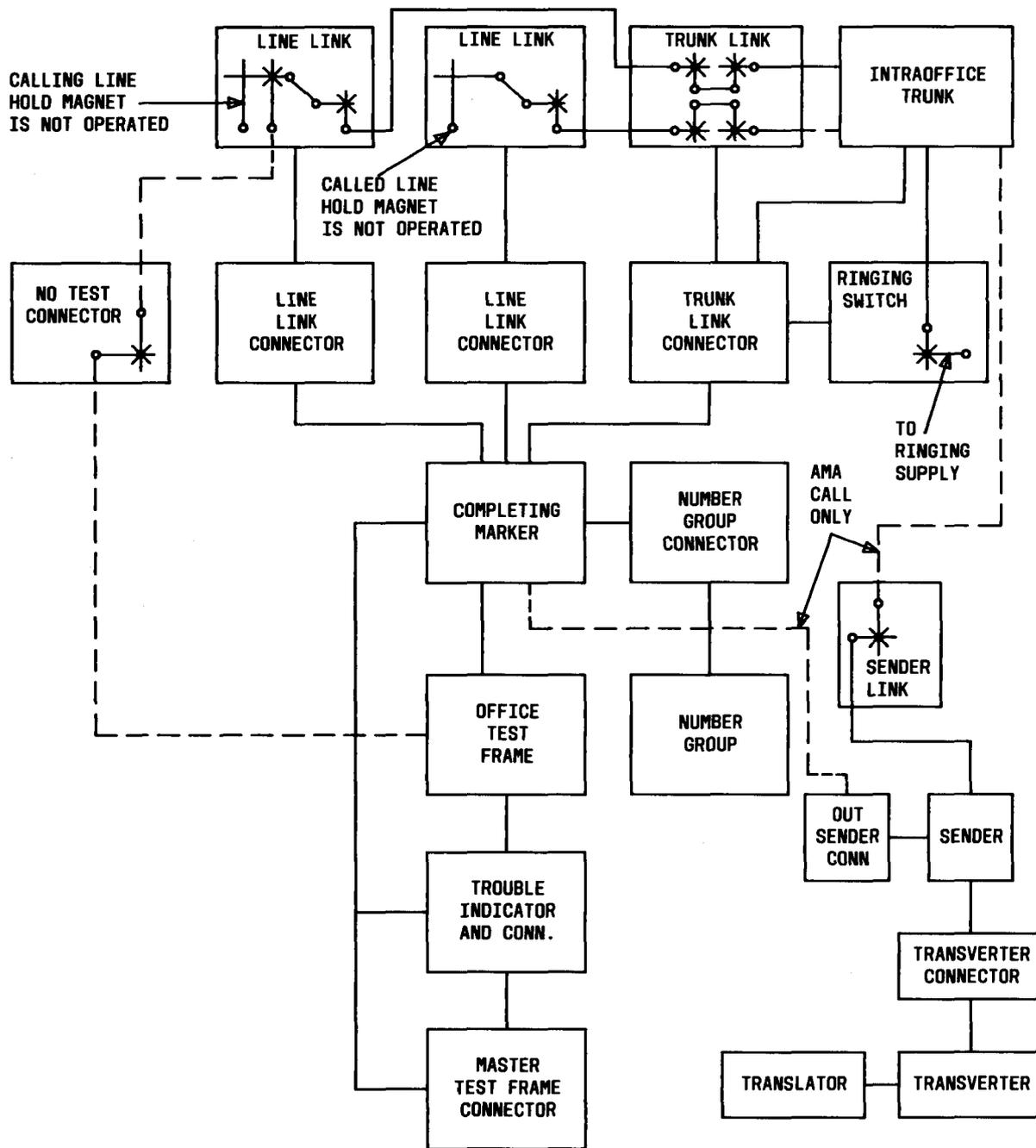
SECTION E

IAO

IAO TRUNK CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2 3	3	IAO key	**INTRAOFFICE TRUNK TEST**—Conditions the OTF for testing IAO trunks directed to the terminating test, or reverting call trunks directed to the originating test line.
1,2		911 key	**911 EMERGENCY SERVICE TRUNK TEST**—Modifies the IAO trunk test for testing emergency service trunks.
1,2	3	NCH key	**NONCHARGE**—Eliminates charge test on IAO, reverting call, and emergency service trunk tests.
1,2	3	MKR (0-1) key	**MARKER SELECTION**—Directs the OTF to connect to completing marker 0 or 1.
1,2	3,Z	MCB key	**MARKER CONTROL BUSY**—Provides completing marker make-busy control.
1,2, 3	3	OTL key	**ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber line.
	3,H	COTL key	**COIN ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber line, if provided.
	3	OTLP key	**ORIGINATING TEST LINE PARTICULAR**—Provides access from the OTF to a particular subscriber line using the OTL jack.
1,2, 3	3,Y	CST (0-9) switch	**CLASS-OF-SERVICE TENS**—Controls the class-of-service tens digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
	3,Y	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS**—Controls the class-of-service units digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
	3,V	CL (0-5) key	**CLASS-OF-SERVICE**—Controls the class-of-service of the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
1,2	3,N	PS switch	**PULSE SPEED CONTROL**—Selects pulsing speeds and percent break in pulse generator circuit.

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IAO TRUNK CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3,N	L-L switch	**LOOP-LEAK**—Selects various loop and leak conditions for testing originating registers with the pulse generator circuit.
1,2	3,S	3D, 7D key	**3, 7D-DIGIT**—Total number of digits to be dialed into the originating register for calls directed to the terminating or originating test line.
1,2	3,E, S	DIAL A-G (TST,0-9) key	**DIAL DIGIT CONTROL**—The digits to be dialed into the origi-nating register for a three-digit emergency service code or a three-digit office code and the called number of the termi-nating or originatng test line.
1,2	20	TT key	**TOUCH-TONE-TEST**—Conditions the OTF to provide TOUCH-TONE signals to tip and ring of originating test line if dial pulse signals are not required.
1,2	3,ZL, ZM	FS (0-4) key	**FRAME SELECT**—Makes busy all trunk link frames except frame corresponding with operated FS_ key.
1,2, 4	3,ZH	TS (0-19) switch	**TRUNK SELECT**—Controls selection of a particular trunk through the ODD or EVEN key (if Z option or the alternate method for selecting a particular trunk is not provided.)
1,2, 4	3,ZH	ODD key	**ODD TRUNK SELECT**—Discriminates TS switch setting for odd numbered trunks (if Z option or the alternate method for selecting a particular trunk is not provided.)
	3,ZH	EVEN key	**EVEN TRUNK SELECT**—Discriminates TS switch setting for even numbered trunks (if Z option or the alternate method for selecting a particular trunk is not provided.)
1,2	3,ZD	RA key	**ROUTE ADVANCE**—Causes the marker to route advance to a second trunk group or to an overflow trunk depending on the code dialed.
1,2	3	GPA key	**GROUP A**—Conditions marker for selecting trunks in allotter group A.
	3	GPB key	**GROUP B**—Conditions marker for selecting trunks in allotter group B.

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IAO TRUNK CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	3	NT key	**NO TEST**—Momentarily releases trunk made busy to permint seizure by the OTF.
1,2	3,K	RS1 (00-09) switch	**RINGING SELECT 1**—Controls the ringing combination set up by the marker on the ringing switch of the associated trunk.
	3,K	RS2 (10-15) switch	**RINGING SELECT 2**—Controls the ringing combination set up by the marker on the ringing switch of the associated trunk.
1,2	3,ZG	CH key	**CHANNEL SELECT**—Conditions the OTF for selecting the junctor sequence and channel.
1,2	3,ZG	CH (0-9) switch	**CHANNEL SELECT**—Controls the selection of a particular channel by the marker.
1,2	3,ZG	JSQ (0-5) switch	**JUNCTOR SEQUENCE**—Controls the junctor sequence position in the marker.
1,2	3,ZG	STP1 key	**STEP 1**—Permits marker to make channel selection in junctor group Step 1. If no channel is available, marker advances to Step 2.
1,2	3,ZG	STP2 key	**STEP 2**—Makes all channels in group Step 1 appear busy, causing marker to advance to make channel selection in group Step 2.
1,2	3	TP key	**TIP PARTY**—Signals marker that a tip party call is being handled.
1,2	3,M	CN key	**COIN**—Simulates a coin ground on the originating test line.
1,2	18,31	ANI key	**AUTOMATIC NUMBER IDENTIFICATION**— Conditions the OTF for receiving the calling directory number and provide control for selection of a transverter.
1,2	31	AMA key	**AUTOMATIC MESSAGE ACCOUNTING**— Provides control for selection of transverters in offices arranged for local automatic message accounting (LAMA).

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IAO TRUNK CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	13,18 31,YV, YT	TV (0-1) keys	**TRANSVERTER**—Permits testing of AMA features and transverter that is made busy.
1,2	3	ST key	**START**— Operate to start all test calls. Restore to release all test calls.
6	3,M	STK-CN key	**STUCK COIN**—Simulates a stuck coin by placing a ground on the tip of the originating test line.
6	3,M	TVR key	**TRANSVERTER RECORD**—Causes selected transverter to force a trouble indicator display just prior to release.
6	3	TLK key	**TALK**—Connects the telephone circuit at the OTF to the originating test line.
6	3	DL key	**DIAL**—Disables the pulse generator and allows use of an external dial associated with the DL jack.
6	3,YS, YT	REC key	**RECORD**—Causes the common control equipment to force a trouble indicator display prior to a regular release of a test call.
6	3	CB key	**CALL BLOCK**—Prevents the marker from completing a test call when the MKR_ and MCB keys are operated.
6	3	ARC key	**AUTOMATIC RECYCLE**—Recycles the test circuit automatically after a successful test call without operating the ST key.
6	3	TRC key	**TROUBLE RECYCLE**—Recycles the test circuit automatically on any trouble call when the TF lamp is lighted and the ST key is operated.
6	3	ANS key	**ANSWER**—Provides answer supervision to the terminating end of the trunk under test disconnecting the ringing loop.
6	3	CDR key	**CODED RINGING**—Prevents the ringing test from advancing until manually restored when coded ringing is expected.
6	3	R+ key	**RING POSITIVE**—Superimposed positive ringing expected on the ring side of the terminating test line.

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IAO TRUNK CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
6	3	R+ key	**RING NEGATIVE**—Superimposed negative ringing expected on the ring side of the terminating test line.
6	3	T+ key	**TIP POSITIVE**—Superimposed positive ringing expected on the tip side of the terminating test line.
6	3	T— key	**TIP NEGATIVE**—Superimposed negative ringing expected on the tip side of the terminating test line.
6		RRC key	**REGISTER RETURN COIN**—Signals the marker that a coin was returned by the originating register.
6	3,H	TM key	**TRANSMISSION**—Transfers the originating test line from the transmission path of the telephone circuit to the TM jack.
6	38	ORCT key	**ORIGINATING REGISTER COIN TEST (DTF)**—Verifies that the originating register checks for a coin ground on the tip lead and an open ring lead before seizing a marker.
6	38	SCD key	**SIMULATED CABLE DISCHARGE (DTF)**—Verifies that the originating register did not recognize a cable discharge as a coin ground.
6	38	OTCN key	**OVERTIME COIN (DTF)**—Simulates immediate deposit of a coin followed by a sequence of coin collect and coin present tests.
6	38	PPK key	**POSITIVE POLARITY CHECK (DTF)**—Verifies those trunks which are modified to provide +48V talk battery.
6	3	TTLD key	**TERMINATING TEST LINE DISCONNECT**—Permits opening of tip, ring, and sleeve conductors between the OTF and the terminating test line.
6	3	PBX1 key	**PBX1**—Conditions the OTF for verification of idle lines in a terminal hunting group.
6	3	PBX2 key	**PBX2**—Conditions the OTF for the selection of a particular line in a terminal hunting group.
6	3	S (0-9) key	**PBX SLEEVE**—Provides means of selecting a particular line within a terminal hunting group.

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IAO TRUNK CLASS OF TEST TABLE

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
6	27	NGA key	**NUMBER GROUP ALLOTTING**—Selects a particular number group when used in conjunction with the NGT switch.
6	27	NGT (A-H, AB) switch	**NUMBER GROUP TEST**—Used to indicate an all PBX allotted number group —busy condtion to the marker except for the selected number group.
6	3	DIAL key	**DIAL LOCAL**— Permits the use of the OTF dial to manually dial the station digit into the reverting call trunk when used in conjunction with the RC and CDR keys.
6	3	RC key	**REVERTING CALL**—Transfers the ringing detection circuit from the terminating test line to the originating test line.
6		RCD key	**REVERTIVE CALL DIAL PULSING**—Permits station digit to be transmitted when DIAL switches are used in making dial pulsing marginal test on reverting call trunks.
6	19	RCT key	**REVERTIVE CALL TOUCH-TONE**—Permits station digit to be transmitted when DIAL switches are used in making TOUCH-TONE marginal test on reverting call trunks.
6	3,G	RMT key	**REVERTIVE MARGINAL TEST**—Prevents digit steering selector from stopping in position 10 and allows the station digit to be transmitted in this position.
6	3,ZH	RSG (OSB0-OSB1) switch	**REGISTER/SENDER GROUP CONTROL**—Controls circuit-busy conditions for a group of senders when arranged for an AMA call (if Z option for selecting a particular sender is not provided).
6	3,ZH	RSS (0-9) switch	**REGISTER AND SENDER SELECT**—Selects a particular sender within a subgroup of senders when arranged for an AMA call (if Z option for selecting a particular sender is not provided).

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Notes:

1. Key(s) or switch(es) that must be operated to perform this test.

2. Key(s) or switch(es) used to simulate a trouble record (see page 10).

3. Select an originating test line or a particular subscriber line as follows:

    (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

    (b) To select the coin originating test line, if provided, operate the COTL key and the CL (0-5) key to select the class of service as required.

    (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

4. If the TS switch and ODD and EVEN keys are not provided, insert a 329A make-busy plug into the TS_ jack associated with the trunk under test (if Z option is provided) or patch the MB2-TRK jack to the MB_ jack associated with the trunk under test (if the alternate method is provided).

5. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1(0-9) jacks to the MB_ jacks associated with all other senders of the same type.

6. Key(s) or switch(es) which may be operated to cause additional actions or test variations for this particular test.

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JUNCTOR GROUP TABLE

JUNCTOR SUBGROUP SELECTED (JG. DESIGNATION PRINTED)

NUMBER OF TRUNK LINK FRAMES	JUNCTOR STEP POSITION (STP1 OR STP2)	JUNCTOR SEQUENCE (JSQ)					
		0	1	2	3	4	5
2	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG4	JG3	JG4	JG3	JG4
2-3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG1	JG2	JG0	JG1	JG2	JG0
3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG3	JG3	JG3	JG3	JG3
4	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG2	JG2	JG2	JG2	JG2	JG2
5	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG1	JG0	JG1	JG0	JG1	JG0

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SIMULATION TABLE

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIGNATION	SWITCH	
					DESIG.	POS.
Type of Call		1	ITR/RV	IAO, 911		
Marker Selection			MKR	MKR (0-1), MCB		
			DR.X			
Line Location	LLF	2	FU.X	OTL/COTL/ OTLP		
	VERT. GRP.		VG.XX			
	HOR.GRP.		HG.X			
	VERT.FILE		VF.X			
Class of Service	TENS	2	CT.X		CST	0-9
	UNITS		CU.X		CSU	0-9
	UNITS		CU.X	CL(0-5)		
TOUCH-TONE Dialing (if required)			MF	TT		
Pulse Speed Control		3			PS	OFF, 7-50, 7-80, 10-34, 10-66, 11-44, 11-56, 15-65, 24-55, 24-70, SLOW
Loop and Leak		3			L-L	0-10
Tip Party Test (if required)			TP	TP		
Charge or no Charge Test	COIN GRD.	4		CN		
	NO CHARGE			NCH		
Number of Called Digits				7D		
Called Digits A-G (0-9)			A.X—G.X		DIAL A-G	1-9,0 TST

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SIMULATION TABLE

| AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TROUBLE RECORD		
					SWITCH	
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIGNATION	DESIG.	POS.
Sender Selection (AMA only)		5	OSG.X		RSG	OSB0-OSB1
			OS.X		RSS	0-9
			SSA/SSB			
Trunk Link Frame Selection			FS.X	FS (0-4)		
Trunk Select		6	TS.X (ODD)	ODD	TS	0-19
			TS.X (EVEN)	EVEN		
Trunk Allotter	GROUP A		GPA	GPA		
	GROUP B		GBP	GPB		
Route Advance		7	RA	RA		
			GS.X			
No Test				NT		
Ringing Selection					RS1	00-09
					RS2	10-15
Channel Selection			CH.X	CH	CH	0-9
Junctor Group		8	JG.X		JSQ	0-5
Junctor Step				STP1		
			STP2	STP2		
Reverting Call Trunk Test		9		RC/DIAL		
AMA Test (if required)		10	AMA	AMA		
			TV	TV (0-1)		
			DR.X			

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IAO

Notes:

1. If a 911 emergency service trunk test is required, operate the 911 key in addition to the IAO key.

2. Select a line location as follows:

   (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

   (b) To select the coin originating test line, if provided, operate the COTL key and the CL (0-5) key to select the class of service as required.

   (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

3. Consult CD-27633-01 to determine pulsing speeds and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.

4. Operate the CN key if a coin subscriber line is being simulated or the NCH key if no charge is expected from the trunk under test.

5. If the RSG and RSS switches are not provided, patch the MB2-SDR jack to the MB_ jack associated with the sender under test, then patch the MB1(0-9) jacks to the MB_ jacks associated with all other senders of the same type.

6. If the TS switch and ODD and EVEN keys are not provided, insert a 329A make-busy into the TS_ jack associated with the trunk under test(if Z option is provided) or patch the MB2-TRK jack to the MB_ jack associated with the trunk under test (if the alternate method is provided).

7. The GS.X entry indicates the ground supply from which the call has route advanced.

8. Consult junctor group table on page 9 for setting the JSQ switch to select the particular JG_ sequence.

9. If busy tone is heard after the reverting call trunk is seized, operate the RC key. If high tone is heard after the reverting call trunk is seized, operate the DIAL key and then dial the station digit using the OTF dial.

10. The AMA key may or may not be provided.

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SECTION F—AUTOMATIC INTERCEPT SERVICE CLASS OF TEST
(WITHOUT LINE LINK PULSING)
AIS
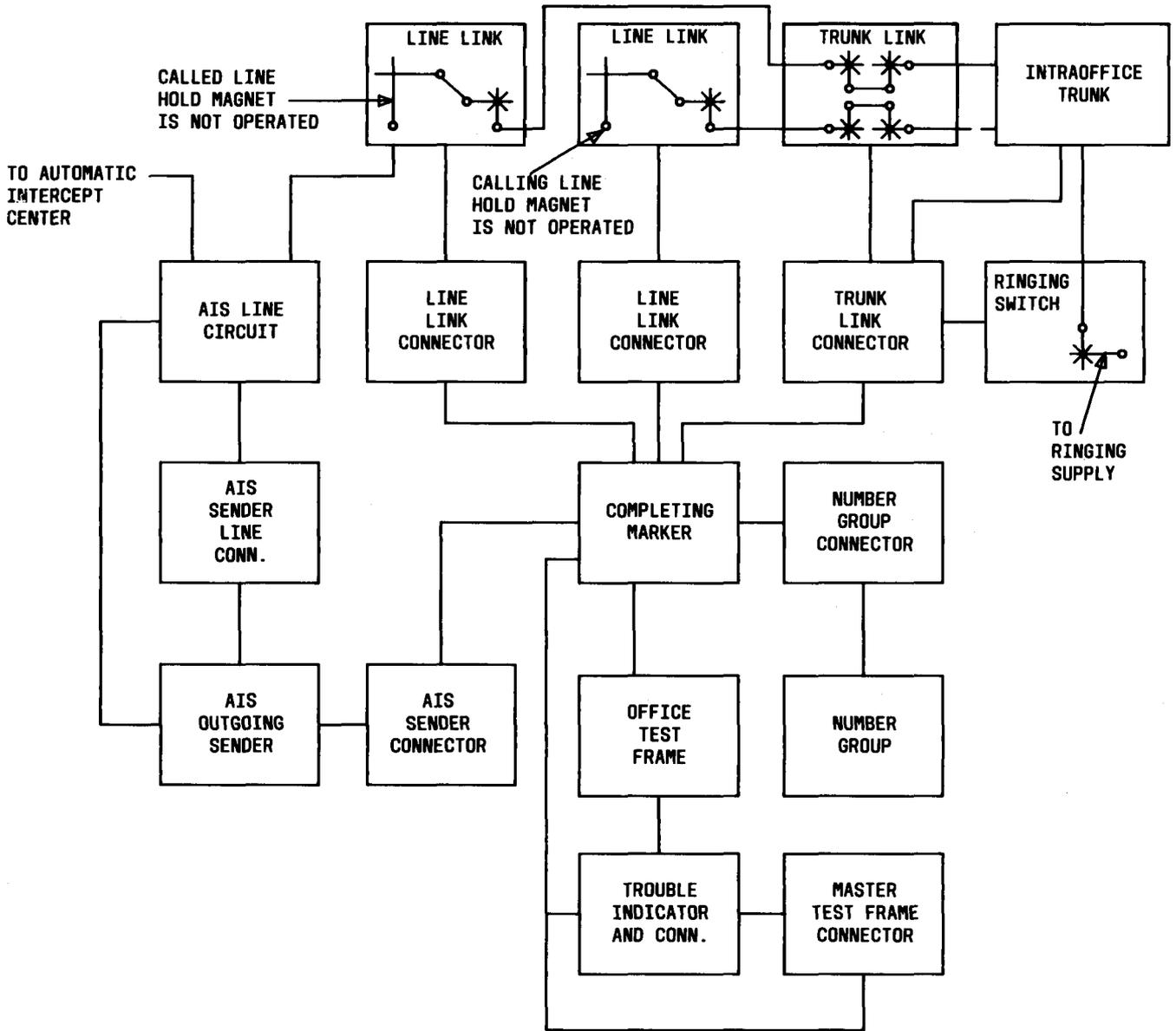
AIS CLASS OF TEST TABLE

SD-27633-01

SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	39,XK	AIS key	**AUTOMATIC INTERCEPT SERVICE TEST**—Conditions the OTF for handling intercepted directory number calls at local switching centers not arranged with LLP features.
1,2	3	IAO key	**INTRAOFFICE TRUNK TEST**—Provides means for testing LLP circuits directed from the originating test line or a particular subscriber line via an intraoffice trunk selected by the marker.
1,2	3	MKR (0-1) key	**MARKER SELECTION**— Directs the OTF to connect to completing marker 0 or 1.
1,2	3,Z	MCB key	**MARKER CONTROL BUSY**—Provides completing marker make-busy control.
1,2, 3	3	OTL key	**ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber line.
	3,H	COTL key	**COIN ORIGINATING TEST LINE**—Provides access from the OTF to the simulated calling subscriber coin line, if provided.
	3	OTLP key	**ORIGINATING TEST LINE PARTICULAR**—Provides access from the OTF to a particular subscriber line.
1,2	3,Y	CST (0-9) switch	**CLASS-OF-SERVICE TENS**—Controls the class-of-service tens digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
1,2	3,Y	CSU (0-9) switch	**CLASS-OF-SERVICE UNITS** —Controls the class-of-service units digit for the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
	3, V	CL (0-5) key	**CLASS-OF-SERVICE**—Controls the class-of-service of the simulated calling subscriber line transmitted to the marker (not required when selecting a particular subscriber line).
1,2	3,N	PS switch	**PULSE SPEED CONTROL**—Selects pulsing speeds and percent break in pulse generator circuit
1,2	3,N	L-L switch	**LOOP-LEAK**—Selects various loop and leak conditions for testing originating registers with the pulse generator circuit.
1,2	39,XK	AIS (0-1) key)	**AIS SENDER SELECT**—Selects a particular multifrequency AIS sender.

AIS CLASS OF TEST TABLE (Contd)

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	39,XK	AIL (0-9) switch	**AUTOMATIC INTERCEPT LINE SELECT**—Selects a particular line circuit arranged for AIS.
1,2	20	TT key	**TOUCH-TONE TEST**—Conditions OTF to provide TOUCH-TONE signals to the tip and ring of the OTL, if required.
1,2	3	WK key	**WINK**—Provides wink start signal for AIS sender.
1,2	3	MFS key	**MULTIFREQUENCY SENDER**—Conditions the OTF to receive multifrequency pulses from an AIS sender.
1,2	3,E	4D-7D key	**4-7 DIGITS**—Total number of digits to be dialed into the originating register associated with a directory number.
1,2, 4	3,E, S	DIAL A-G (TST, 0-9) switch	**DIAL DIGIT CONTROL**—The digits to be dialed into the originating register corresponding to an assigned, unassigned, changed, disconnected, or unequipped directory number.
1,2	3,E, 5	5SD-85D key	**4-8 SENDER DIGITS**—Total number of digits to be outpulsed by the AIS sender.
1,2	3,5	SDR A-H (0-9) switch	**SENDER DIGIT CONTROL**—The matching digits to be outpulsed by the AIS sender.
1,2	3,ZG	CH key	**CHANNEL SELECT**—Conditions the OTF for selecting the junctor sequence and channel.
1,2	3,ZG	CH (0-9) switch	**CHANNEL SELECT**—Controls the selection of a particular channel by the marker.
1,2	3,ZG	JSQ (0-5) switch	**JUNCTOR SEQUENCE**—Controls the junctor sequence position in the marker.
1,2	3,ZG	STP1 key	**STEP 1**—Permits marker to make channel selection in junctor group Step 1. If no channel is available marker advances to Step 2.
	3, ZG	STP 2 key	**STEP 2**— Makes all channels in group Step 1 appear busy, causing marker to advance to make channel selection in group Step 2.
1,2	29	EM key	**E&M LEAD LINE TEST** —Conditions the OTF for testing AIS line circuits arranged for E&M supervision, if required.

AIS CLASS OF TEST TABLE (Contd)

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SEE NOTE	FIG. OR OPT.	KEY OR SWITCH	FUNCTION
1,2	26,XV	NTLS key	**NO TEST LINE SELECTION —LLP**—Permits selection of plugged or made busy line circuit.
1,2	3	ST key	**START**—Operate to start all test calls. Restore to release all test calls.
5	3	TLK key	**TALK**—Connects the telephone circuit at the OTF to the originating test line.
5	3	DL key	**DIAL**—Disables the pulse generator and allows use of an external dial associated with the DL jack.
5	3,YS, YT	REC key	**RECORD**—Causes the common control equipment to force a trouble indicator display prior to a regular release of a test call.
5	3	OF1 key	**TRUNK TEST OVERFLOW 1**—Provides a stop-dial signal by reversing the loop at the end of the first digit as pulsed by the MF sender before setting the trunk to overflow.
5	3	ARC key	**AUTOMATIC RECYCLE**—Recycles the test circuit automatically after a successful test call without operating the ST key.
5	3	TRC key	**TROUBLE RECYCLE**—Recycles the test circuit automatically on any trouble call when the TF lamp is lighted and the ST key is operated.
5	39	LTH key	**LINE TEST HOLD**—Primes the marker to perform remote make - busy tests in the AIS line circuit.
5	39,XK	AIRI key	**SIMULATED REGULAR INTERCEPT**—Conditions the marker for testing 10X test lines.
5	39	DL4 key	**DELETE 4**—Primes the marker for testing 10X test lines using a 7-digit intercept number ending with 10X.
5	3,G, YD, XK	DOT key	**DISTANCE OFFICE - TOLL**—Permits termination of an AIS test call to an automatic intercept center.
5	3	RVT key	**REVERSE TRUNK**—Permits reversal of the tip and ring conductors between the OTF and the line circuit LT multiple.
5	3	RTL key	**RELEASE RETURN TEST LINE**—Permits opening of the tip and ring conductors between the OTF and the line circuit LT multiple.

Notes:

1. Key(s) or switch(es) that must be operated to perform this test.

2. Key(s) or switch(es) used to simulate trouble record (see page 7).

SECTION F
AIS

AIS CLASS OF TEST TABLE (Contd)

Notes:

3. Selects an originating test line or a particular subscriber line as follows:

   (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(05) key to select the class of service as required.

   (b) To select the coin originating test line, if provided, operate the COTL key and the CL(0-5) key to select the class of service as required.

   (c) To select a particular subscriber line, operate the OTLP key. Path the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

4. On AIS calls, the MF sender will outpulse a 5 through 8-digit directory number. The first digit is an intercept code assigned by the marker as determined by the type of intercept. The remaining digits represent the directory number as set up on the DIAL A-G switches.

5. Key(s) or switch(es) which may be operated to cause additional actions or test variations for this particular test.

JUNCTOR GROUP TABLE

JUNCTOR SUBGROUP SELECTED (JG. DESIGNATION PRINTED)

NUMBER OF TRUNK LINK FRAMES	JUNCTOR STEP POSITION (STP1 OR STP 2)	JUNCTOR SEQUENCE (JSQ)					
		0	1	2	3	4	5
2	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG4	JG3	JG6	JG3	JG4
2-3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG1	JG2	JG0	JG1	JG2	JG0
3	1	JG0	JG1	JG2	JG0	JG1	JG2
	2	JG3	JG3	JG3	JG3	JG3	JG3
4	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG2	JG2	JG2	JG2	JG2	JG2
5	1	JG0	JG1	JG0	JG1	JG0	JG1
	2	JG1	JG0	JG1	JG0	JG1	JG0

SECTION F
AIS

SIMULATION TABLE

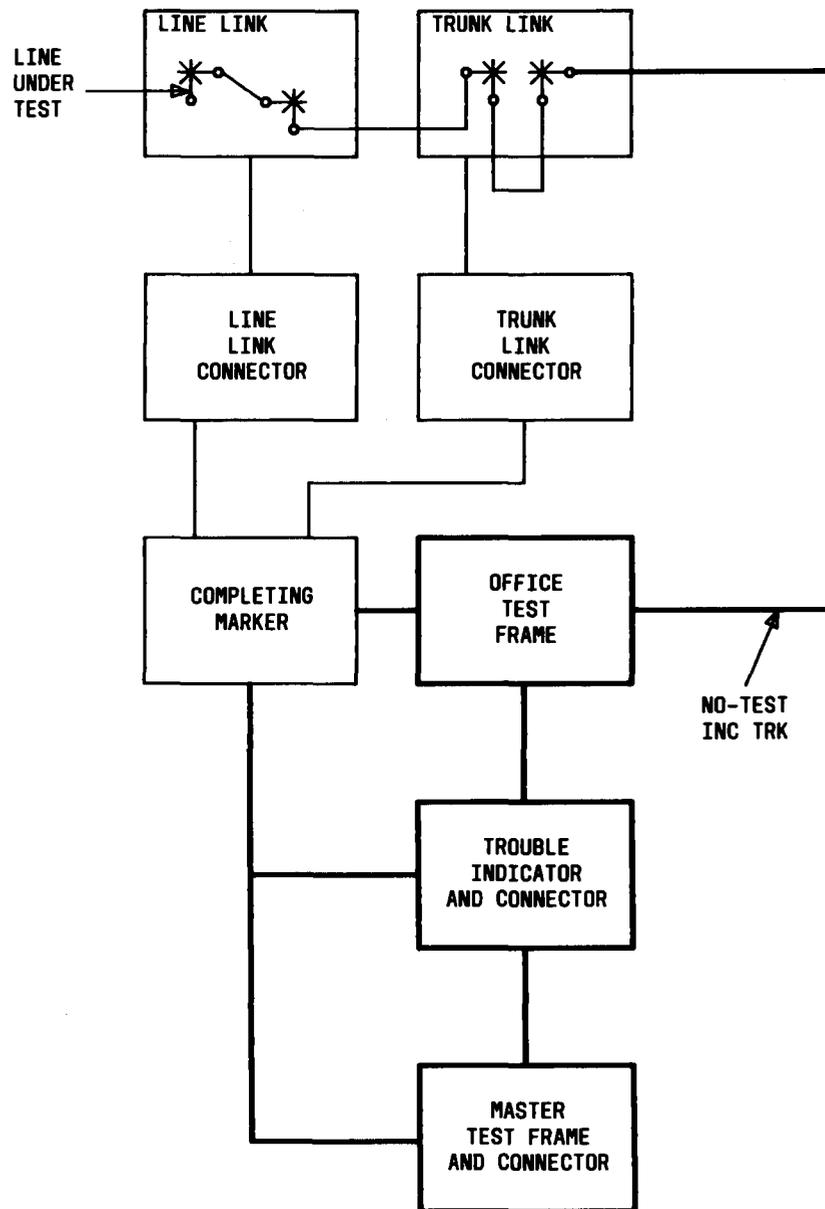| AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIG.	POS.
Type of Call			ITR, AIS	AIS,IAO		
Marker Selection			MKR	MKR (0-1).		
			DR.X	MCB		
Line Location	LLF	1	FU.X	OTL/COTL/ OTLP		
	VERT.GRP.		VG.XX			
	HOR.GRP		HG.X			
	VERT.FILE		VF.X			
Class of Service	TENS	1	CT.X		CST	0-9
	UNITS		CU.X		CSU	0-9
	UNITS		CU.X	CL(0-5)		
TOUCH-TONE Dialing (if required)			MF	TT		
Pulse Speed Control		2			PS	Off, 7-50, 7-80, 10-34, 10-66, 11-44, 11-56, 15-65, 24-55, 24-70, SLOW
Loop and Leak		2			L-L	0-10
Number of Called Digits				4D-7D		
Called Digits A-G (0-9)			A.X-G.X		DIAL A-G	1-9,0,TST
Number of Digits Outpulsed by Sender		3		5D-8D		
Digits Outpulsed by Sender		3	A.X-H.X		SDR A-H	1-9,0,TST
Type of Sender Pulsing (MF pulse)				MFS		

SIMULATION TABLE (Contd)

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT				KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
FUNCTION		SEE NOTE	TTY OUTPUT	KEY DESIG.	SWITCH	
					DESIG.	POS.
AIS Sender Selection			OSG.X	AIS(0-1)		
			OS.X			
			SSA/SSB			
Sender Start Signal (wink signal)				WK		
AIS Line Circuit Selection	LLF		FUT.X	NTLS	AIL	0-9
	VERT.GRP.		VGT.X			
	HOR.GRP,		HGT.X			
	VERT.FILE		VFT.X			
E&M Supervision (if required)				EM		
Channel Selection		4	CH.X	CH	CH	0-9
Junctor Group		5	JG.X		JSQ	0-5
Junctor Step				STP1		
			STP2	STP2		

Notes:

1. Select the line location as follows:

   (a) To select the originating test line, operate the OTL key and set the CST and CSU switches or operate the CL(0-5) key to select the class of service as required.

   (b) To select the coin originating test line, if provided, operate the COTL key and the CL(0-5) key to select the lcass of service as required.

   (c) To select a particular subscriber line, operate the OTLP key. Patch the SP jack to the line switch vertical at the line link frame and then patch the SP jack to the OTL jack at the OTF.

1. Consuld CD-27633-01 to determine pulsing speeds and percent break requirements and the loop and leak marginal line conditions associated with the pulse generator circuit.

3. On AIS calls, the MF sender will outpulse a 5 through 8-directory number as required. The first digit is an intercept code assigned by the marker as determined by the type of intercept. The remaining digits represent the directory number as set up on the DIAL A-G switches.

4. If the selected AIS line circuit is arranged for E&M supervision, operate the EM key.

5. Consult the junctor group table on page 6 for setting the JSQ switch to select the particular JG-sequence.

SECTION F
AIS

SECTION G — LINE TEST CLASS OF TEST

```
    ┌─────────────┐   ┌─────────────┐
    │  LINE LINK  │   │ TRUNK LINK  │
LINE│             │   │             │
UNDER─────▷       │   │             │
TEST│             │   │             │
    └─────────────┘   └─────────────┘

    ┌─────────────┐   ┌─────────────┐
    │    LINE     │   │   TRUNK     │
    │    LINK     │   │   LINK      │
    │  CONNECTOR  │   │ CONNECTOR   │
    └─────────────┘   └─────────────┘

    ┌─────────────┐   ┌─────────────┐
    │ COMPLETING  │   │   OFFICE    │
    │   MARKER    │   │    TEST     │        NO-TEST
    │             │   │   FRAME     │        INC TRK
    └─────────────┘   └─────────────┘

                      ┌─────────────┐
                      │   TROUBLE   │
                      │  INDICATOR  │
                      │ AND CONNECTOR│
                      └─────────────┘

                      ┌─────────────┐
                      │   MASTER    │
                      │ TEST FRAME  │
                      │AND CONNECTOR│
                      └─────────────┘
```

SECTION G
LT

SIMULATION TABLE

AUTOMATIC TROUBLE ANALYSIS EXCEPTION REPORT			KEY(S) OR SWITCH(ES) USED TO SIMULATE TBL. RECORD		
				SWITCH	
FUNCTION	SEE NOTE	TTY OUTPUT	KEY DESIG.	DESIG.	POS.
Type of Call		TER	LT,SCO		
		SL			
Marker		MKR			
		DR.X			
Called Digits	1	A.X—E.X			

Notes:

1. After operating the LT and SCO keys, dial or key 4 or 5-digits as required for access to the customer line to be tested. Restore the LT and SCO keys.