CENTREX CONSOLE

DEMAND EXERCISE PROGRAM

PROCEDURES

NO. 2 ELECTRONIC SWITCHING SYSTEM

1. GENERAL

1.01 This section describes the use of the centrex console lamp and key demand exercise program as a maintenance aid in identifying and in locating faults in centrex attendant telephone consoles, centrex console control cabinets, and centrex data links associated with the No. 2 Electronic Switching System (ESS).

1.02 Improper console lamp operations and key signals may be caused by faults occurring in a centrex attendant telephone console (hereafter referred to as console), a centrex console control cabinet, the interconnecting data link circuitry, or the No. 2 ESS central office equipment.

1.03 When a fault becomes apparent at the attendant consoles (Fig. 1), attempts may be made at the ESS central office to determine and to correct the faults. Data link diagnostic programs may be requested to determine if the fault is occurring in the data link circuitry. The data link diagnostic programs may be requested automatically due to repeated parity failures or they may be requested manually from the maintenance teletypewriter (TTY). TTY messages are printed out to indicate any difficulties in the data link circuitry discovered by diagnostic routines.

1.04 If the trouble cannot be located and corrected from the central office, it may be necessary for maintenance personnel to go to the Centrex customer's location to aid in determining the trouble.

1.05 When a fault causing a trouble occurs at a centrex customer location, its cause may not be readily apparent to maintenance personnel on the customer's premises. By requesting that the exercise program be performed at the ESS central office, routine exercises may be directed to the desired console (and associated equipment) to aid in locating and identifying the fault. These routines may be performed only on consoles and console controls (or trunk busy memory units) which previously have been removed from service by the proper TTY input message.

1.06 If a request is made to initiate exercise routines and the console and console control to which they are directed have not been removed from service, the request is denied by the ESS.

1.07 The exercise program is capable of encoding and transmitting data which attempts to operate the lamps on the consoles to all of the states to which they may normally be operated. The exercise program can also receive and analyze key signal data originating from consoles. When key signals are analyzed by the exercise program, a signal is encoded and is then transmitted back to the console to indicate to personnel at the console whether or not the proper key signal was received. Lamps or keys may be exercised either individually or in special sequences.

1.08 When a major trouble (such as a loss of console power) occurs at the console or when troubles occur in the data link serving the console control cabinet, the use of the exercise routines may not be practical.

1.09 A console and a console control unit may be returned to service at any time during the progress of a test by a TTY input message. Exercise routines which are in progress when a console is returned to service are aborted. A

12 TRUNK GROUP BUSY LAMPS
6 TRUNK GROUP BUSY OR CALL INDICATOR LAMPS
6 CALL INDICATOR LAMPS

LOOP
LAMPS
AND KEYS
(MAX 6)

COMMON LAMPS AND KEYS

IB TYPE ATTENDANT CONSOLE

60 TRUNK
GROUP BUSY LAMPS

24 CALL
INDICATOR
LAMPS

LOOP
LAMPS
AND KEYS
(MAX 6)

COMMON LAMPS
AND KEYS

2B TYPE ATTENDANT CONSOLE
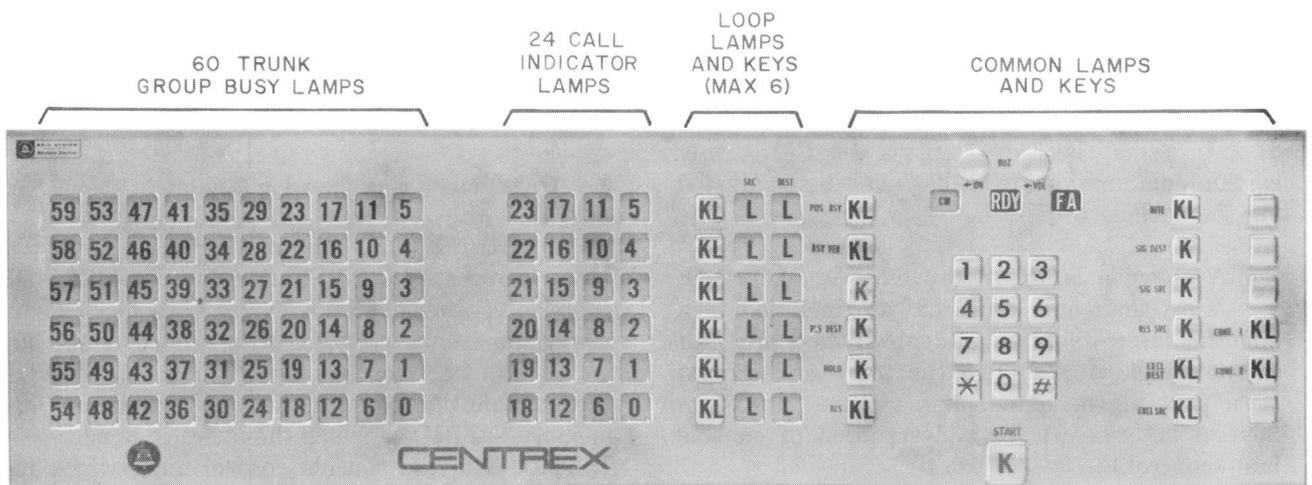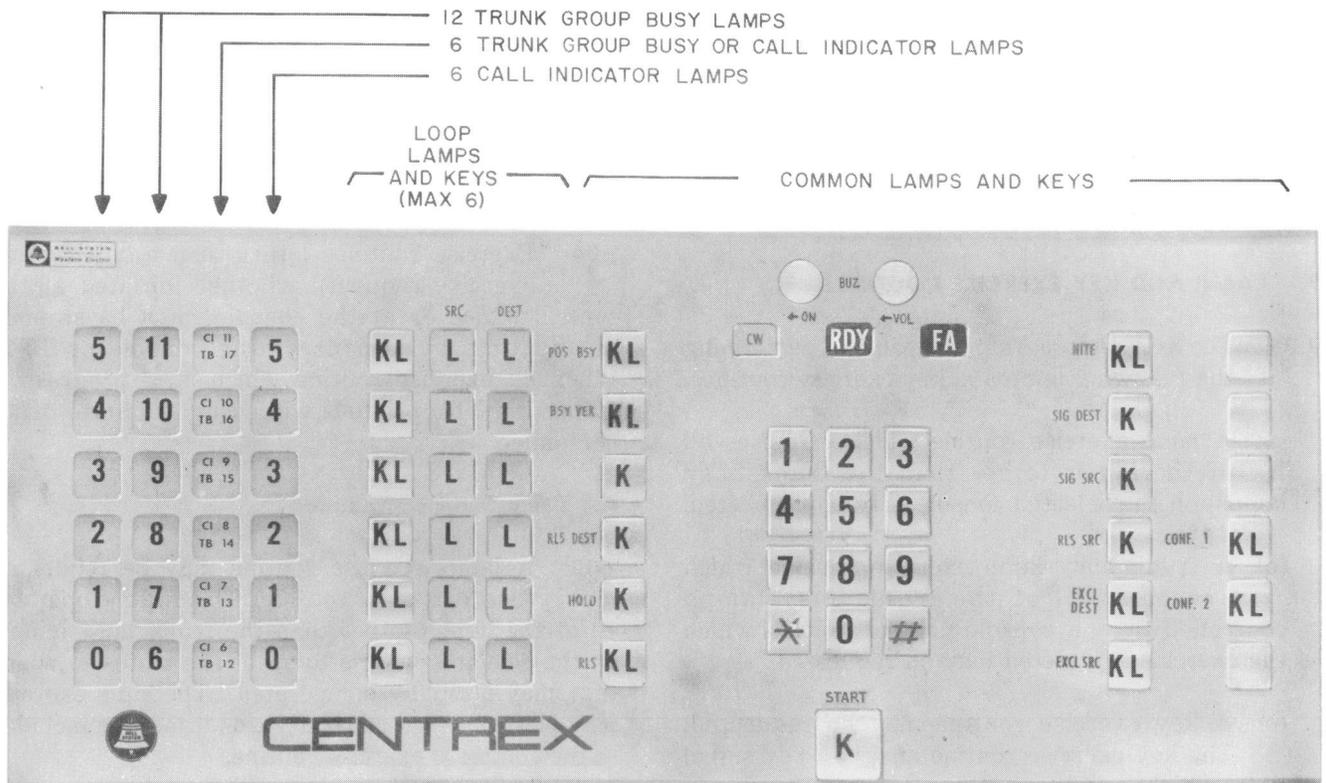
K—KEY
L—LAMP
KL—KEY AND LAMP
COMBINATION

Fig. 1—Attendant Telephone Console Lamp and Key Arrangements

TTY printout indicates that the exercise has been aborted.

1.10 Exercise routines may be requested for a console (which was previously removed from service) by an input message at the maintenance TTY or by actions by maintenance personnel at the console location. (Actions required at the console location are covered in Section 540-576-304.)

2. LAMP AND KEY EXERCISE ROUTINES

2.01 The exercise program is capable of performing the following lamp and key exercise routines.

(a) A lamp exercise routine which exercises all of the lamps (other than the trunk busy lamps) on the selected console may be requested.

(b) A trunk busy lamp exercise routine which exercises all of the trunk busy lamps controlled by the console control unit to which the exercise is directed may be requested.

(c) A key exercise routine may be requested. The key exercise routine analyzes key signal data which originates from consoles to verify that key signals are properly received and interpreted by the system.

(d) A complete exercise routine which performs, in succession, all of the exercise routines (lamp, trunk busy lamp, and key) previously described may be requested. (Any combination of a, b, c, may be requested via the TTY. Only certain combinations of a, b, c may be requested via the console.

(e) A specific lamp or key may be exercised. More than one lamp may be included in a specific lamp exercise if desired; however, all of the lamps to be included in the exercise must be a part of the same lamp group. (Refer to Section 232-202-101 for a description of console lamp control.)

2.02 The exercise program can perfrom all exercises at regular speed (4 seconds for each lamp response), at double speed (2 seconds for each lamp response) or at a quadruple speed (1 second for each lamp response).

2.03 When a request to initiate exercise routines is placed at the console, only a limited number of exercise routines may be performed. No request can be made for an individual lamp or key exercise from the console. When it is desirable to exercise a specific lamp(s) or key the exercise may be requested from the central office maintenance TTY.

2.04 Exercise routines (other than a specific key exercise request), whether initiated at the central office or at the console, may be stopped at any time by actions at the console or TTY. When an exercise routine which is in progress is stopped, a TTY printout will occur to inform office personnel.

A. Lamp Exercise Routine

2.05 A lamp exercise routine may be requested for a particular console. This routine operates all of the lamps (other than the trunk busy lamps) on the selected console to all of the states to which they may normally be operated. The lamp exercise may be performed separately, or it may be included in the complete exercise routine.

2.06 During a lamp exercise routine, data which attempts to light and extinguish lamps in logical groupings is transmitted. Several lamps may be included in a single request. Lamp failures (either a failure to light or to be extinguished) should be readily recognized by maintenance personnel at the console location.

B. Trunk Busy Lamp Exercise Routine

2.07 A trunk busy lamp exercise routine may be requested for a particular console. This exercise routine does not exercise all of the trunk busy lamps on a console. Only those trunk busy lamps will be exercised which are controlled by the console control unit (or optional trunk busy memory, OTBM) to which the exercise is addressed. Table A lists the console control units which may be assigned to a customer group and the trunk busy lamps which may be controlled by each of the console control units. Personnel in the central office must be aware of which console control position to direct an exercise to in order to exercise the desired trunk busy lamps.

TABLE A

TRUNK BUSY LAMP CONTROL

	1B-TYPE CONSOLES		2B-TYPE CONSOLES	
	CONSOLE CONTROL POSITION	TRUNK BUSY LAMPS	CONSOLE CONTROL POSITION	TRUNK BUSY LAMPS
Multiple 1B-Type Console or Single or Multiple 2B-Type Console	0 1 2-31	0-11 12-17 None	0 1 (OTBM) 2 3 4-31	0-11 12-35 36-47 48-59 None
Single 1B-Type Console	0, 1, 2, or 3	0-11		

2.08 When a customer group is equipped with several console control cabinets, the trunk busy lamps are normally controlled by the first console control cabinet installed for the customer's use.

Single 1B-Type Console (Z Option)

2.09 When a customer group is equipped with a single 1B-type console, trunk busy lamps 0 through 11 are controlled by the console control unit which controls the console in question and which may occupy any one of the control positions.

Two Or More 1B-Type Consoles

2.10 When a customer group is equipped with two or more 1B-type consoles, trunk busy lamps 0 through 11 are controlled by the console control unit installed in control position 0 and trunk busy lamps 12 through 17 are controlled by the console control unit installed in control position 1.

2B-Type Consoles

2.11 When a customer group is equipped with the 2B-type consoles, trunk busy lamps 0 through 11 are controlled by the console control unit installed in control position 0. Trunk busy lamps 12 through 35 are controlled by the optional trunk busy memory unit installed in control position 1, trunk busy lamps 36 through 47 are controlled by the console control unit installed in control position 2,

and trunk busy lamps 48 through 59 are controlled by the console control unit in control position 3.

C. Key Exercise Routine

2.12 A key exercise routine may be requested for a particular console. This routine tests key signals which originate at consoles to verify that they are properly received and interpreted at the central office. This routine may be requested from either the central office maintenance center (MC) TTY or from the console. A key exercise may be performed separately or may be included in a complete exercise routine.

2.13 When a key request is initiated, maintenance personnel at the control location must depress each key on the console in a special sequence. (Refer to Section 540-576-304). The key signal data received at the central office is analyzed and a reply is returned which gives an indication at the console of the success or failure of the central office to receive a valid signal. An indication is also given if the same key is depressed twice.

D. Specific Lamp Exercise Request

2.14 A request to exercise a specific lamp may be initiated only at the central office maintenance TTY using the M AC:EX input message.

2.15 A request may be made for an exercise to be performed only once or to be repeated until stopped. A specific lamp exercise may be

stopped at either the central office maintenance TTY or the console on the customer's premises.

2.16 Two or more lamps may be included in a specific request; however, all of the lamps to be included must be part of the same lamp group. When it appears desirable to exercise specific lamps which are in different lamp groups, it is necessary either to request a complete lamp exercise routine or to type in separate, but not simultaneous, requests directed to the different lamp groups.

2.17 Data must be encoded and entered into the "k" and "m" fields of the M AC:EX input message to select a specific lamp and to determine the state to which it is to be operated. The "k" and "m" fields also include the address (lamp group select code) of the lamp group containing the lamp or lamps to which the exercise is being directed and a control field which specifies the console.

2.18 Four formats (Fig. 2) are provided to encode the data to exercise specific lamps. The proper format must be selected and bits must be set to 1's in the proper bit slots in the format to operate the selected lamp(s) to the desired state(s). The data is then converted to its octal equivalent and is entered into the "k" and "m" fields of the M AC:EX input message.

> *Note:* When encoding data for the "k" and "m" fields entry, care should be taken not to set bits which will cause a lamp to be operated to more than one state. This could cause a lamp to operate improperly.

2.19 Fig. 3 is an example of how the data for the "k" and "m" fields of the M AC:EX message is derived when several lamps (in the same lamp group) are to be included in the exercise. If it is desirable to operate call indicator lamp 9, the SRC lamp for loop 2 to the 120 state, the audible signal, and the RLS lamp, FORMAT A (Fig. 2) must be used to encode the data. Bits 0, 1, and 3 must be set to 1 to select call indicator lamp 9 (Table B on Fig. 2). Bit 12 (Fig. 3) must be set to operate the SRC lamp to the 120 state. Bits 15 and 16 must be set to operate the audible signal and the RLS lamp. Bits 19, 18, and 17 which select the lamp group must be set to 0, 1, and 0, respectively, to have the exercise directed to lamp group 2 (Table C on Fig. 2). These bits are then

converted to their octal equivalent and are entered into the "k" and "m" fields of the M AC:EX input message used to request the exercise. Bits 21 and 20 which select the console must be set to 00 to select console 0 and bit 22, which selects a lamp or maintenance (L/M) message, must be set to 1. Field "k" may specify up to 16 bits but all other bits are ignored.

Lamp Groups 0 through 5 on a 1B- or 2B-Type Console

2.20 These lamp groups include the loop lamps (key, SRC, or DEST lamps for loops 0 through 5), the audible signal, the RLS lamp, and the call indicator lamps on either a 1B- or a 2B-type console. To exercise any of the lamps in lamp groups 0 through 5, data must be entered into FORMAT A (Fig. 2).

2.21 Bits 19, 18, and 17 must be set to the proper states to address the exercise to the lamp group (0 through 5) desired (Table C on Fig. 2).

> *Note:* The audible signal, the RLS lamp, and the optional call indicator lamps may be operated by data addressed to *any one* of the six groups of loop lamps.

2.22 The call indicator lamps are exercised by a one out of eight vertical select code and a one out of four horizontal select code. To determine which bits must be set to a 1 to exercise a particular call indicator lamp, see Table B on Fig. 2.

> *Note:* Refer to Fig. 2 to obtain the correct format and Table C on Fig. 2 to derive the lamp group select code specified in 2.22 through 2.34.

Common Lamps on a 1B- or 2B-Type Console

2.23 To exercise any of the common lamps (CW, POS BSY, EXCL DEST, EXCL SRC, or NITE lamp), data must be entered into FORMAT B. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively, to direct the exercise to lamp group 6.

Trunk Busy Lamps 0 through 11 for a Customer Group Equipped with a Single 1B-Type Console (Z Option)

2.24 To exercise trunk busy lamps 0 through 8, data must be entered into FORMAT C. Bits

TABLE B
CALL INDICATOR LAMP CONTROL

CONTROL BIT NOS.

4	3		CALL INDICATOR LAMPS					
0	0		0	4	8	12	16	20
0	1	*	1	5	9	13	17	21	†
1	0		2	6	10	14	18	22
1	1		3	7	11	15	19	23

CONTROL BIT NO.									
2	0	0	0	0	1	1	1	1	†
1	0	0	1	1	0	0	1	1	
0	0	1	0	1	0	1	0	1	

* WHEN CONTROL BITS 0, 1, AND 2 ARE 000, CALL INDICATOR LAMPS SELECTED BY BITS 3 AND 4 REMAIN UNCHANGED.
† WHEN CONTROL BITS 0, 1, AND 2 ARE 111, ALL OF THE LAMPS IN THE ROW SELECTED BY BITS 3 AND 4 WILL BE RESET.

FORMAT A
LOOP LAMPS, CALL INDICATOR LAMPS, RLS LAMP AND AUDIBLE SIGNAL

LAMP GROUPS 0 - 5

21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CON-SOLE CODE		LAMP GROUP CODE 1/8 (TABLE C)			RLS	AUD	LOOP KEY		LOOP SRC					LOOP DEST					CALL INDICATOR (SEE TABLE B)		
					S	S	W	S	120	60	W	S	120	60	W	S	HORI/4		VERT 1/8		

FORMAT B
COMMON LAMPS, BSY VER, CONF. 1, AND TRUNK BUSY LAMPS 9-11, 45-47, 57-59

LAMP GROUP 6

21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
CON-SOLE CODE		LAMP GROUP CODE 1/8			SPARE	BSY VER		TRUNK BUSY LAMPS			NITE	EXCL SRC	EXCL DEST	POS BSY	CW		SPARE		CONF. 1			
0	0					W	S								W	S			0	0	1	STEADY
1	0							11	10	9									0	1	0	WINK
1	1							47	46	45									0	1	1	60 IPM
1	1	0						59	58	57									1	0	0	120 IPM
																			1	1	1	OFF

TABLE C
LAMP GROUP SELECT CODES

LAMP GROUP SELECTED	CONTROL BIT NOS.		
	19	18	17
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

LOOP LAMP GROUPS 0-5, CALL INDICATOR LAMPS, RLS LAMP, AND AUDIBLE SIGNAL

TRUNK BUSY LAMPS 12-19

COMMON LAMPS AND TRUNK BUSY LAMPS 9-11, 20-27, 45-47, 57-59

TRUNK BUSY LAMPS 0-8, 28-35, 36-44, 48-56

OPT TRUNK BUSY MEMORY

FORMAT C
TRUNK BUSY LAMPS 0-8, 12-17, 36-44, 48-56 AND CONF. 2

LAMP GROUP 7

21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
CON-SOLE CODE		LAMP GROUP CODE 1/8			SPARE			TRUNK BUSY LAMPS									SPARE		CONF. 2			
0	0											8	7	6	5	4	3	2	1	0		
0	1								17	16	15	14	13	12					0	0	1	STEADY
1	0						44	43	42	41	40	39	38	37	36				0	1	0	WINK
1	1						56	55	54	53	52	51	50	49	48				0	1	1	60 IPM
1	1	1																	1	0	0	120 IPM
																			1	1	1	OFF

FORMAT D
TRUNK BUSY LAMPS 12-35
(CONTROL POSITION 1 FOR 2B-TYPE CONSOLE ONLY)

21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CON-SOLE CODE									TRUNK BUSY LAMPS												
0	1	1	0	1					19	18	17	16	15	14	13	12					
0	1	1	1	0					27	26	25	24	23	22	21	20					
0	1	1	1	1					35	34	33	32	31	30	29	28					

Fig. 2—Formats for Encoding Lamp Data

BIT NUMBER	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
LAMP	L/M	CON- SOLE CODE		LAMP GROUP CODE 1/8			RLS	AUD	KEY		SRC				DEST				CALL INDICATOR				
STATE							S	S	W	S	120	60	W	S	120	60	W	S	HOR 1/4		VERT 1/8		
BINARY DIGITS	I	0	0	0	I	0	I	I	0	0	I	0	0	0	0	0	0	0	0	I	0	I	I
OCTAL EQUIVALENT	I		0		5		I		I		0		0		0		I			3			

k = 105   m = 110013
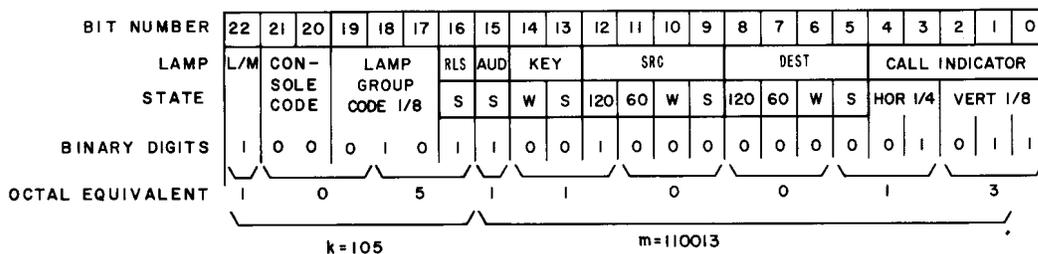
LAMPS TO BE EXERCISED IN

LAMP GROUP 2 OF CONSOLE 0

CI   9 − STEADY
SRC   2 − 120 ipm
AUD − STEADY
RLS − STEADY
L − LAMP
M − MAINTENANCE

Fig. 3—Encoding Data for "k" and "m" of Fields of Teletypewriter Input Message

19, 18, and 17 must be set to 1, 1, and 1, respectively, to direct the exercise to lamp group 7.

2.25 To exercise trunk busy lamps 9 through 11, data must be entered into FORMAT B. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively, to direct the exercise to lamp group 6.

Trunk Busy Lamps for a Customer Group Equipped with Two or More 1B-Type Consoles

2.26 To exercise trunk busy lamps 0 through 8, data must be entered into FORMAT C. Bits 19, 18, and 17 must be set to 1, 1, and 1, respectively, to direct the exercise to lamp group 7. The exercise must be directed to console control position 0.

2.27 To exercise trunk busy lamps 9 through 11, FORMAT B must be used to encode the data. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively, to direct the exercise to lamp group 6. The exercise must be directed to console control position 0.

2.28 To exercise trunk busy lamps 12 through 17, FORMAT C must be used to encode the data. Bits 19, 18, and 17 must be set to 1, 1, and 1, respectively, to direct the exercise to lamp group 7. The exercise must be directed to console control position 1.

Trunk Busy Lamps for a Customer Group Equipped with 2B-Type Consoles

2.29 To exercise trunk busy lamps 0 through 8, data must be entered into FORMAT C. Bits 19, 18, and 17 must be set to 1, 1, and 1, respectively, to direct the exercise to lamp group 7. The exercise should be directed to console control position 0.

2.30 To exercise trunk busy lamps 9 through 11, data must be entered into FORMAT B. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively, to direct the exercise to lamp group 6. The exercise must be directed to console control position 0.

2.31 To exercise trunk busy lamps 12 through 35, FORMAT D must be used. Bits 19, 18, and 17 must be set to 1, 0, and 1, respectively, (lamp group 5) to direct the exercise to trunk busy lamps 12 through 19; to 1, 1, and 0 (lamp group 6) to direct the exercise to trunk busy lamps 20 through 27; and to 1, 1, and 1 (lamp group 7) to direct the exercise to trunk busy lamps 28 through 35. Bits must be set in the proper slot to operate the desired lamp. The exercise must be directed to console control position 1 (which contains the optional trunk busy memory).

2.32 To exercise trunk busy lamps 36 through 44, data must be entered into FORMAT C. Bits 19, 18, and 17 must be set to 1, 1, and 1,

respectively, (lamp group 7). The exercise must be directed to console control position 2.

2.33 To exercise trunk busy lamps 45 through 47, data must be entered into FORMAT B. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively (lamp group 6). The exercise must be directed to console control position 2.

2.34 To exercise trunk busy lamps 48 through 56, data must be entered into FORMAT C. Bits 19, 18, and 17 must be set to 1, 1, and 1, respectively, (lamp group 7). The exercise must be directed to console control position 3.

2.35 To exercise trunk busy lamps 57 through 59, data must be entered into FORMAT B. Bits 19, 18, and 17 must be set to 1, 1, and 0, respectively, (lamp group 6). The exercise must be directed to console control position 3.

E.   Specific Key Exercise Request

2.36 A request for an individual key exercise may only be made from the maintenance TTY. A single exercise may be requested or the exercise may be repeated until stopped at the maintenance TTY.

2.37 When an individual key signal is to be checked, the octal equivalent of the key to be exercised is entered into the k field of the M AC:EX input message with different assignments for "e." Table D lists the octal equivalents for the console keys which may be entered into the k field.

3.   EXERCISE ROUTINE PROCEDURES

A.   Information To Obtain Prior to Requesting an Exercise Routine

3.01 Before consoles are removed from service or exercises are requested, personnel at the central office should have on hand the following information:

(a) the number (0 through 3) of the centrex data link frame which contains the data link circuit that controls the console and console control or trunk busy memory in question

(b) the number (0 through 7) of the controlling data link in the above frame

(c) the number (0 through 3) of the console and console control to which the exercise is to be directed

(d) the type of exercise desired (complete routine, specific lamp or key, etc.)

(e) the octal number of the lamp or key which is to be checked when a specific lamp or key is to be exercised

(f) whether it is necessary to run the exercise only once or repeatedly

(g) the speed at which to run the exercise

(h) the type (1B or 2B) of console(s) with which the customer group is provided

(i) the total number of consoles which are assigned to the customer group involved

(j) the trunk busy lamps which are controlled by the console control (or optional trunk busy memory) which is to be operated

(k) The multipling arrangements associated with the console control or trunk busy memory in question.

B.   Checking the Status of a Data Link Prior To Requesting an Exercise Routine

3.02 Prior to removing a console and its console control from service, maintenance personnel may wish to verify that the data link serving the console is in service. This may be done at the maintenance TTY by requesting the system to print out the status of all the data links in the office. Type in the input message M PU:SI. This message should be followed by a printout which indicates the status of all the peripheral units, including the data links in the office. (Refer to the output message manual.) The data link serving the console and console control in question should be in the normal-in-service state prior to requesting that an exercise routine be initiated.

C.   Removing Consoles and Console Controls from Service Prior To Requesting an Exercise Routine

Caution: Care must be used in entering data to remove a console and console control from service.   If the data is

incorrect, a console other than the one desired may be taken out-of-service.

3.03 After determining that the data link is operational, the console and console control unit must be removed from service prior to requesting an exercise by typing in the following TTY input message:

M AC:RMV:f d c!

Refer to the input message manual (IM-2H200) for an explanation of the input data fields.

3.04 If the ESS accepts the request, ØK is printed out on the maintenance TTY, verifying that the console and console control are taken out-of-service. (Refer to the output message manual.) Routine exercises may then be requested to start either at the maintenance TTY or by actions at the console location.

D. Requesting Lamp, Trunk Busy Lamp, and Key Exercise Routines Individually and in Combination from the Maintenance Teletypewriter

3.05 A complete exercise routine or lamp, trunk busy lamp, and key exercise routines in various combinations may be requested from the maintenance TTY. To initiate a request for these routines, proceed as follows:

(1) check the status of the data link, if necessary (3.02),

(2) remove the console and associated console control from service (3.03 and 3.04),

(3) initiate the request for the exercise with the M AC:EX input message. This message should include all of the parameters for the exercise routines which are being requested. The message appears in the following format:

M AC:EX f d rec kkkkkk mmmmmm!

Refer to IM-2H200 for an explanation of the input data fields.

3.06 This message should be followed by a printout of MR AC BGN indicating that an exercise routine is about to start. (Refer to the output message manual.) The requested routine begins

and progresses according to the sequence given in the appropriate table of Tables D through J.

TABLE D

KEY REQUEST ORDER SEQUENCE AND OCTAL ENTRIES FOR k FIELD OF TELETYPEWRITER INPUT MESSAGE FOR SPECIFIC KEY REQUEST

KEY	OCTAL ENTRY FOR K FIELD
Invalid	0
Loop 0	1
Loop 1	2
Loop 2	3
Loop 3	4
Loop 4	5
Loop 5	6
Invalid	7
POS BSY	10
NITE	11
Invalid	12
BSY VER	13
CONF 1	14
CONF 2	15
Invalid	16
Invalid	17
RLS	20
RLS SRC	21
RLS DEST	22
START	23
SIG SRC	24
SIG DEST	25
HOLD	26
EXCL SRC	27
EXCL DEST	30
Invalid	31
Invalid	32 and over

E. Requesting an Exercise for a Specific Lamp from the Maintenance Teletypewriter

3.07 To request an exercise for a specific lamp, proceed as follows.

(1) Verify that the data link serving the console and console control is operational, if necessary (3.02).

TABLE E

LAMP ORDER SEQUENCE

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS				
		ON				OFF
		STEADY	WINK	60 IPM	120 IPM	
1	1a1 121041	RLS AUDIBLE KEY 0 SRC 0 DEST 0 CI 0				
2	1a2 021051	KEY 1 SRC 1 DEST 1 CI 1				RLS AUDIBLE
3	1a5 121061	RLS AUDIBLE KEY 2 SRC 2 DEST 2 CI 2				
4	1a6 021071	KEY 3 SRC 3 DEST 3 CI 3				RLS AUDIBLE
5	1b1 121042	RLS AUDIBLE KEY 4 SRC 4 DEST 4 CI 4				CI 0
6	1b1 021052	KEY 5 SRC 5 DEST 5 CI 5				CI 1 RLS AUDIBLE
7	1a1 142122	RLS AUDIBLE CI 6	KEY 0 SRC 0 DEST 0			CI 2
8	1a2 042132	CI 7	KEY 1 SRC 1 DEST 1			RLS AUDIBLE CI 3

* Where the middle k is:

   OCTAL a = xx0
   OCTAL b = xx1

with xx being the console
number in binary.

TABLE E

LAMP ORDER SEQUENCE (Cont)

SEQUENCE NO.	OCTAL ORDER *kkk	mmmmmm	EXPECTED LAMP RESULTS				
			ON				OFF
			STEADY	WINK	60 IPM	120 IPM	
9	1a5	142103	RLS AUDIBLE CI 8	KEY 2 SRC 2 DEST 2			CI 4
10	1a6	042113	CI 9	KEY 3 SRC 3 DEST 3			RLS AUDIBLE CI 5
11	1b1	142123	RLS AUDIBLE CI 10	KEY 4 SRC 4 DEST 4			CI 6
12	1b2	042133	CI 11	KEY 5 SRC 5 DEST 5			RLS AUDIBLE CI 7
13	1a1	124204	RLS AUDIBLE KEY 0 CI 12		SRC 0 DEST 0		CI 8
14	1a2	024214	KEY 1 CI 13		SRC 1 DEST 1		RLS AUDIBLE CI 9
15	1a5	124224	RLS AUDIBLE CI 14 KEY 2		SRC 2 DEST 2		CI 10
16	1a6	024234	KEY 3 CI 15		SRC 3 DEST 3		RLS AUDIBLE CI 11
17	1b1	124205	RLS AUDIBLE KEY 4 CI 16		SRC 4 DEST 4		CI 12
18	1b2	024215	KEY 5 CI 17		SRC 5 DEST 5		RLS AUDIBLE CI 13
19	1a1	130425	RLS AUDIBLE KEY 0 CI 18			SRC 0 DEST 0	CI 14

* Where the middle k is:

    OCTAL a = xx0
    OCTAL b = xx1

with xx being the console number in binary.

TABLE E

LAMP ORDER SEQUENCE (Cont)

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS				
		ON				OFF
		STEADY	WINK	60 IPM	120 IPM	
20	1a2 030435	KEY 1 CI 19			SRC 1 DEST 1	RLS AUDIBLE CI 15
21	1a5 130406	RLS AUDIBLE CI 20 KEY 2			SRC 2 DEST 2	CI 16
22	1a6 030416	KEY 3 CI 21			SRC 3 DEST 3	RLS AUDIBLE CI 17
23	1b1 130426	RLS AUDIBLE KEY 4 CI 22			SRC 4 DEST 4	CI 18
24	1b2 030436	KEY 5 CI 23			SRC 5 DEST 5	RLS AUDIBLE CI 19
25	1b4 043641	NITE EXCL SRC EXCL DEST POS BSY CW CONF 1 BUSY VERIFY				
26	1b4 103702	NITE EXCL SRC EXCL DEST POS BSY	CW CONF 1 BUSY VER			
27	1b4 103703	NITE EXCL SRC EXCL DEST POS BSY	BSY VER CW	CONF 1		
28	1b4 103704	NITE EXCL SRC EXCL DEST POS BSY	BSY VER CW		CONF 1	

* Where the middle k is:

    OCTAL a = xx0
    OCTAL b = xx1

with xx being the console
number in binary.

TABLE E

LAMP ORDER SEQUENCE (Cont)

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS					OFF
		ON					
		STEADY	WINK	60 IPM	120 IPM		
29	1b6 000001	CONF 2					
30	1b6 000002		CONF 2				
31	1b6 000003			CONF 2			
32	1b6 000004				CONF 2		
33	1a0 000007						KEY 0 SRC 0 DEST 0 CI 20
34	1a2 000017						KEY 1 SRC 1 DEST 1 CI 21
35	1a4 000027						KEY 2 SRC 2 DEST 2 CI 22
36	1a6 000037						KEY 3 SRC 3 DEST 3 CI 23
37	1b0 000000						KEY 4 SRC 4 DEST 4
38	1b2 000000						KEY 5 SRC 5 DEST 5
39	1b4 000007						NITE EXCL SRC EXCL DEST POS BSY CW, CONF 1 BUSY VER
40	1b6 000007						CONF 2

* Where the middle k is:

    OCTAL a = xx0
    OCTAL b = xx1

with xx being the console
number in binary.

TABLE F

TRUNK BUSY LAMP ORDER SEQUENCE FOR CONSOLE

CONTROL 0 OR ANY CONSOLE WITH Z OPTION

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULT	
		ON	OFF
1	1b6 037740	Trunk Busy 0-8	
2	1b4 034000	Trunk Busy 9-11 Steady	
3	1b6 000000		Trunk Busy 0-8
4	1b4 000000		Trunk Busy 9-11

*Where the middle k is:
   OCTAL a = xx0
   OCTAL b = xx1
with xx being the console
number in binary.

TABLE G

TRUNK BUSY LAMP ORDER SEQUENCE FOR CONSOLE

CONTROL 1 IN 1B-TYPE CONSOLE INSTALLATION

EQUIPPED WITH MORE THAN 12 TRUNK GROUPS

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULT	
		ON	OFF
1	1b6 037740	Trunk Busy 12-17	
2	1b4 034000		Trunk Busy 12-17

*Where the middle k is:
   OCTAL a = xx0
   OCTAL b = xx1
with xx being the console
number in binary.

(2) Remove the console and associated console control from service (3.03 and 3.04).

(3) Initiate the request for the specific lamp exercise with the following input message:

M AC:EX:f d rec kkkkkk mmmmmm!

Refer to IM-2H200 for an explanation of the input data fields.

This message should be followed by a printout of PF indicating that the exercise routine is about to start. (Refer to output message manual.)

TABLE H

TRUNK BUSY LAMP ORDER SEQUENCE FOR

OPTIONAL TRUNK BUSY MEMORY ONLY

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS	
		ON (STEADY)	OFF
1	1b2 017740	TB12-TB19	
2	1b4 017740	TB20-TB27	
3	1b6 017740	TB28-TB35	
4	1b2 000000		TB12-TB19
5	1b6 000000		TB20-TB27
6	1b4 000000		TB28-TB35

*Where the middle k is:
  OCTAL a = xx0
  OCTAL b = xx1
with xx being the console
number in binary.

TABLE I

TRUNK BUSY LAMP ORDER SEQUENCE FOR

(CONSOLE CONTROL 2

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS	
		2B Console 2	
		ON (STEADY)	OFF
1	1b6 037740	TB36-TB44	
2	1b4 034000	TB45-TB47	
3	1b6 000000		TB36-TB44
4	1b4 000000		TB45-TB47

*Where the middle k is:
  OCTAL a = xx0
  OCTAL b = xx1
with xx being the console
number in binary.

F. Requesting an Exercise for a Specific Key from the Maintenance Teletypewriter

3.08 A request for a specific key exercise may only be made from the central office maintenance TTY. Data must be entered in the "k" field of the M AC:EX message used to initiate the exercise for the desired key. To request an exercise for a specific key, proceed as follows.

(1) Verify that the data link serving the console and console control in question is operational, if necessary (3.02).

TABLE J

TRUNK BUSY LAMP ORDER SEQUENCE FOR

CONSOLE CONTROL 3

SEQUENCE NO.	OCTAL ORDER *kkk mmmmmm	EXPECTED LAMP RESULTS	
		2B Console 3	
		ON (STEADY)	OFF
1	1b6 037740	TB48-TB56	
2	1b4 034000	TB57-TB59	
3	1b6 000000		TB48-TB56
4	1b4 000000		TB57-TB59

*Where the middle k is:
    OCTAL a = xx0
    OCTAL b = xx1
with xx being the console
number in binary.

(2) Remove the console and associated console control from service as described in 3.03 and 3.04.

(3) Initiate the request for the specific key exercise with the following input message:

M AC:EX f d rec kkkkkk mmmmmmmm!

Refer to IM-2H200 for an explanation of input data fields.

This message should be followed by a printout of MR AC BGN indicating that the exercise is about to start.

G. Initiating Exercise Requests by Actions at the Console

3.09 Certain limited exercise routines may be initiated by actions at the console location. Before an exercise routine which is going to be initiated from the console can be performed, the console and console control must be removed from service and the data link must be in service. To check the status of the data link, refer to 3.02. To remove the console and associated control from service, refer to 3.03 and 3.04. An exercise routine may then be started at any time by actions at the console location. When the necessary actions are performed at the console, an output message should be automatically printed out on the maintenance TTY to indicate that the exercise routine is about to start.

H. Stopping an Exercise Routine by Actions at the Maintenance Teletypewriter

3.10 Any of the exercise routines which are in progress may be stopped at any time from the central office maintenance TTY. To stop an exercise which is in progress, type in the following input message at the central office MC TTY:

M AC:ABT:f d c!

Refer to IM-2H200 for an explanation of the input data fields.

3.11 When this message is typed, the exercise routine should stop and output message MR AC ABT should be printed out as an indication to the central office personnel that the exercise routine has been stopped.

3.12 After stopping an exercise routine, the console and associated console control may be returned to service, if desired. Refer to 3.14 to return the console and console control to service.

I. Stopping Exercise Routines by Actions at the Consoles

3.13 Any exercise routine which is in progress (except a specific key exercise) may be stopped at any time by actions at the console. When an exercise routine is stopped by actions at the console, the MR AC ABT output message is printed out at the central office maintenance TTY as an indication that the exercise is stopped.

J. Restoring Consoles and Console Controls to Service

3.14 Consoles and associated console controls may be returned to service by typing the following TTY input message:

M AC:RST:a b c

Refer to IM-2H200 for an explanation of the input data fields.

3.15 If the system accepts the request, ØK will be printed out to verify that the console and console controls are restored to service.

K. Aborting an Exercise Routine in Progress

3.16 When data link conditions no longer permit an exercise routine to continue, the ESS may abort the routine in progress. When this occurs, MR AC ABT is printed out to indicate the new status of the routine.

L. Clearing Console Lamp States on the Console

3.17 When an exercise is stopped or aborted, console lamps are automatically cleared.