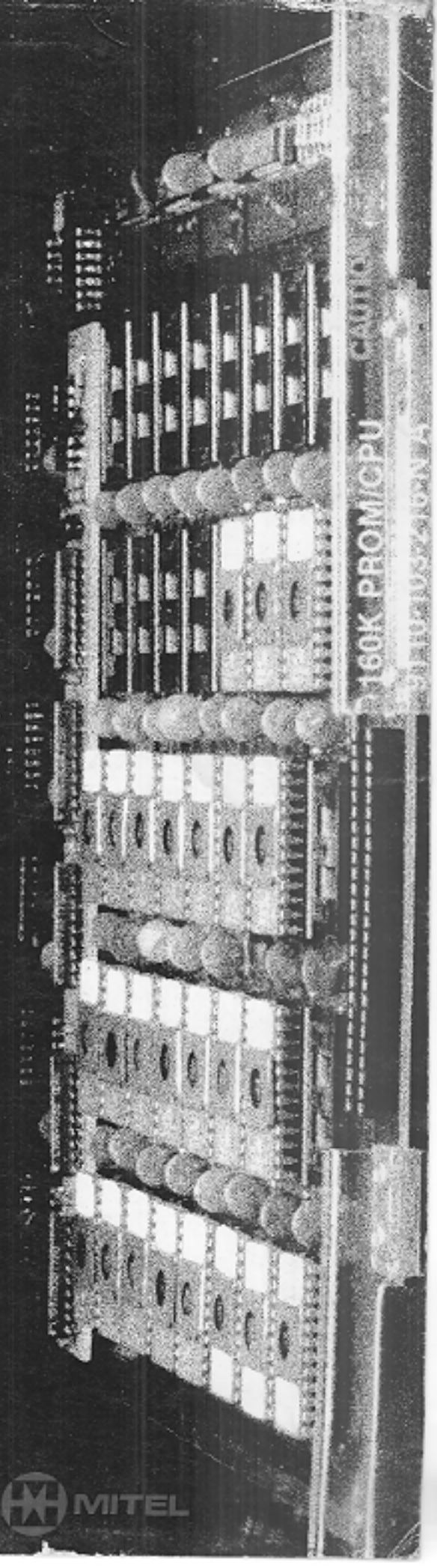
GENERIC 216.

GENERAL INFORMATION

SX-100/SX-200™



MITEL

This publication is designed to present general information on the MITEL SX-100* and SX-200* Private Automatic Branch Exchanges. It consists of selected Mitel Standard Practices and other documentation pertinent to the PABX's, as listed below:

SECTION MITL9105-097-100-NA General Description (SX-100)
SECTION MITL9110-097-100-NA General Description (SX-200)
FEATURES AND SERVICES DESCRIPTION (NOTE 1)
CONSOLE OPERATING INSTRUCTIONS
EXTENSION FEATURES OPERATION (NOTE 2)

Notes

1. The Features and Services Description has been abstracted from SECTION MITL9105/9110-097-105-NA and consists of the "description" elements of the Section. For the "conditions", "programming" and "operation" parts of each feature and service consult Section MITL9105/9110-097-105-NA.
2. The Extension Features Operation booklet is contained in the back cover pocket.

SEPT 81

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CONTENTS

UPPER CONSOLE DISPLAYS

TRUNK GROUP STATUS

One lamp per trunk group is used to signal the busy status of the group (BUSY). Another lamp per trunk group is used to indicate that the attendant has changed the trunk group from dial access to attendant access (ATT). These indications are provided for up to 10 trunk groups. (See "Making a Trunk Group Attendant Access" and "Making a Trunk Group Dial Access" descriptions).

CALL WAITING (CW)

This display indicates how many calls are waiting to be answered.

TIME

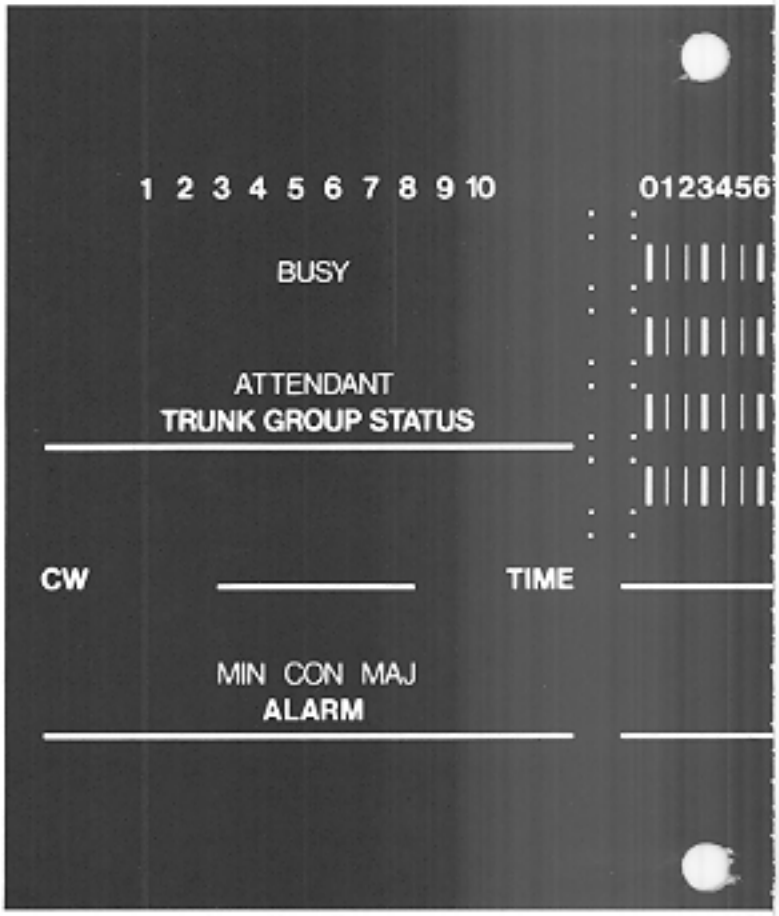
A digital clock is provided as a standard item and displays the time-of-day in hours and minutes. The TIME display may also be used to display the current date by pressing the console IDENT button.

ALARM

This area contains three lamps labeled MAJOR, CONSOLE and MINOR. When the MAJOR alarm lamp is on, emergency transfer has operated, connecting up to 12 extensions directly to outside lines. The CONSOLE lamp indicates a fault inside the console. The MINOR lamp indicates a minor system malfunction.

BUSY LAMP FIELD

The centre of the display area contains the busy lamp field which provides a lamp for each of 200 extensions and/or trunks. When an extension or trunk is busy, the associated lamp turns on. Optionally, this display may also be used to show all extensions with "Do Not Disturb" or "Message Waiting" set, or all extensions with a specific room status.



SOURCE

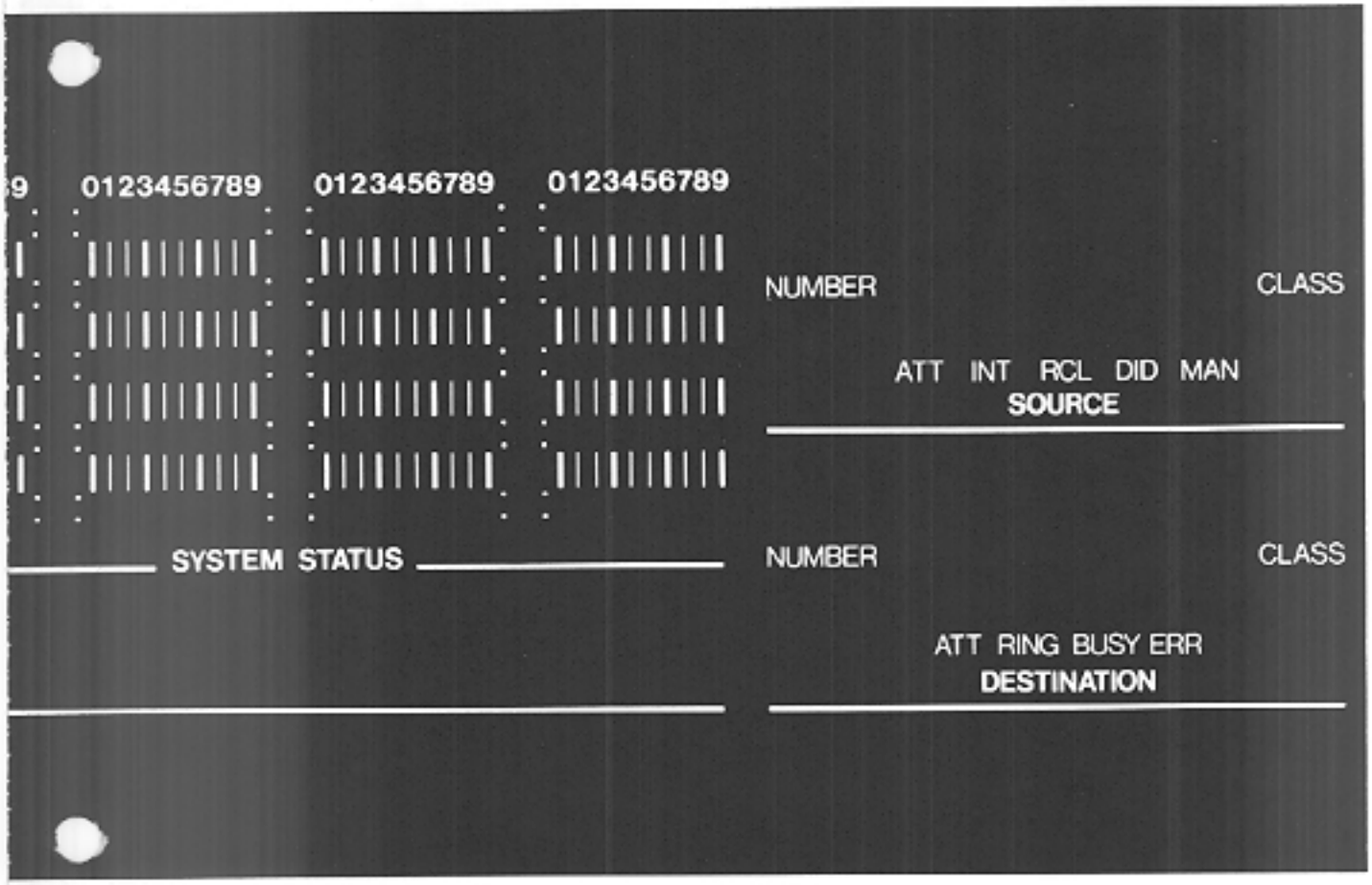
This area provides specific information on any party who calls the attendant.

NUMBER	Displays the calling number
CLASS	Displays the class of service of the calling party
ATT	Indicates that the attendant is talking to the calling party
INT	Identifies the call as an intercept call
RCL	Identifies the call as a recall
DID	Identifies the call as a Direct Inward Dial call to the attendant
MAN	Identifies the call as a manual line service call

DESTINATION

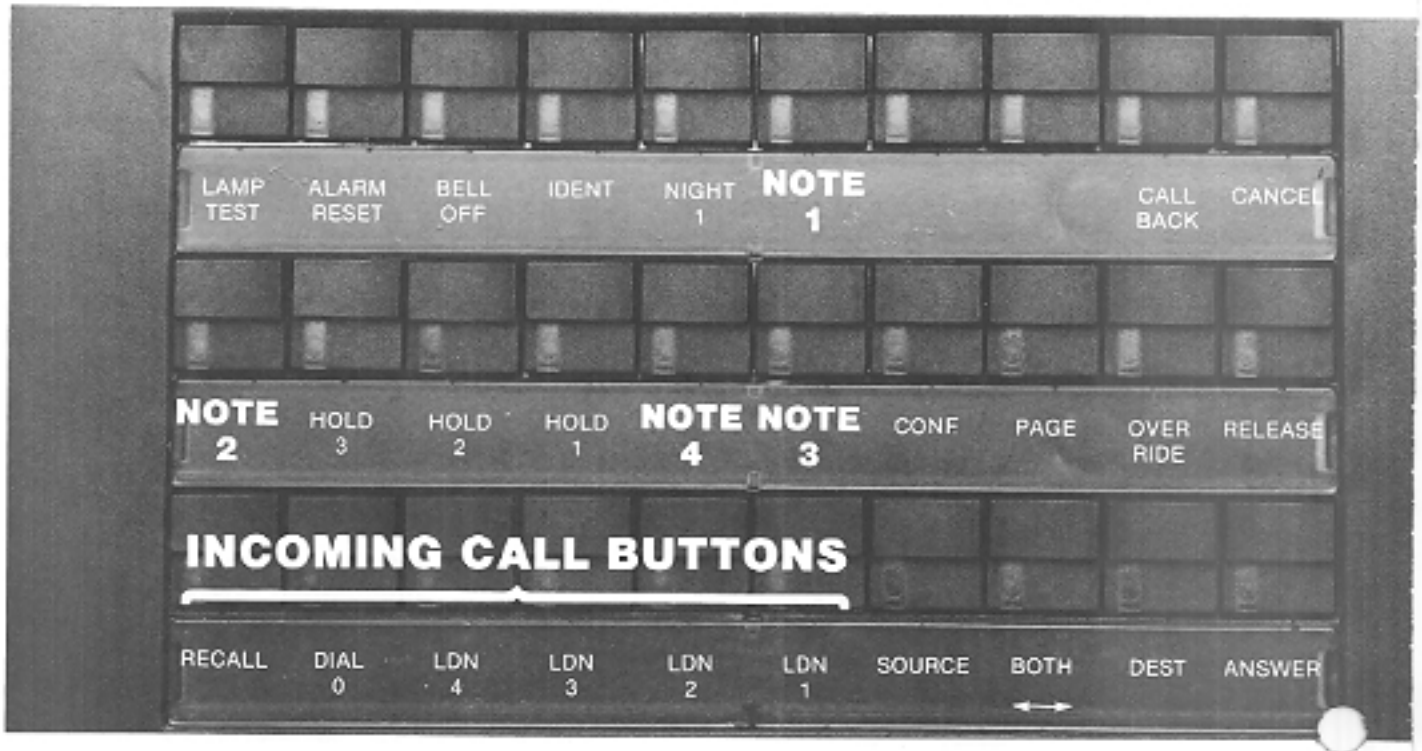
The destination area supplies specific information about the party called by the attendant.

NUMBER	Displays the number of the called party.
CLASS	Displays the class of service of the called party
ATT	Indicates that the attendant is talking to the called party
RING	Indicates that the called party is ringing
BUSY	Indicates that the called party is busy
ERROR	Indicates to the attendant that an unassigned number has been dialed

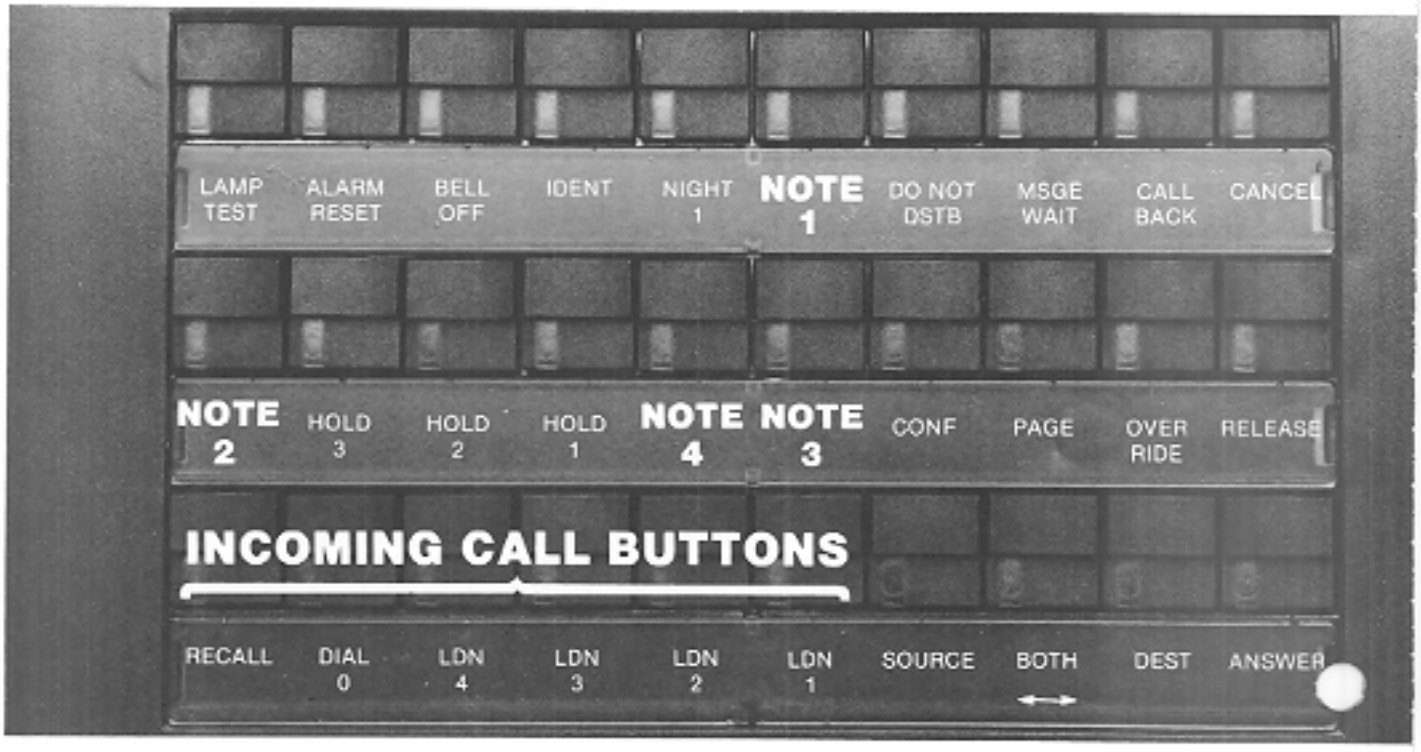


LOWER CONSOLE CONTROLS

COMMERCIAL



HOTEL/MOTEL



LAMP TEST

This button, when pressed, causes all the console lamps and displays to turn on. In this way faulty lamps or displays can be readily detected.

ALARM RESET

This button is pressed to reset the audible alarm signal in the event of an alarm and to identify the alarm condition.

BELL OFF

The console ringer is disabled when this button is pressed. The lamp associated with the button indicates the bell off condition. The ringer can be reactivated by pressing the button again.

IDENT

In the event of a faulty connection through the console, operation of this button will identify the circuits used for the connection on both the source and destination displays as long as the button is held down.

ROOM RESTR

Allows the attendant to restrict an extension from making trunk calls. (Note 1)

ROOM STATUS

May be substituted for ROOM RESTR. The ROOM STATUS button allows the attendant to display the status of a room. (Note 1)

NIGHT 1 and 2

These buttons are used to switch the PABX into and out of night service. The associated lamps indicate when the PABX is in night service. (Note 1)

DO NOT DSTB

Allows the attendant to restrict an extension from receiving any calls.

MSGE WAIT

The attendant may signal an extension that there is a message waiting by pressing this button.

Note 1: This button may be assigned to either ROOM RESTR, ROOM STATUS or NIGHT 2 features.

Note 2: This button may be assigned to either CALL BLOCK or HOLD 4 features.

Note 3: This button may be assigned to either GUEST ROOM or SERIAL CALL features.

Note 4: This button may be assigned to either FLASH or SERIAL CALL features.

LOWER CONSOLE CONTROLS (CONT'D)

CALLBACK

The attendant has access to the callback feature through this button.

CANCEL

The cancel button is used to cancel a misdialed or busy call.

CALL BLOCK

This button allows the attendant to inhibit selected room to room calling (Note 2).

HOLD 1-4

The attendant can place a call on hold by pressing one of the hold buttons. The associated lamp lights to indicate that the hold circuit is busy (Note 2).

FLASH

This button is pressed to flash the telephone company operator on long distance calls (Note4).

GUEST ROOM

Pressing this button allows the attendant to display the status of any room. (Note 3)

SERIAL CALL

This button is pressed to enable incoming central office calls to recall to the console when the called station hangs up (Note 3 and 4).

CONF

The conference button is used to set up an attendant conference. The associated lamp flashes to indicate a recall from the conference and remains in a steady on condition to indicate that the conference circuit is in use.

PAGE

Pressing the page button gives the attendant access to the paging equipment for as long as the button is held down. The associated lamp indicates that the paging equipment is busy.

OVERRIDE

This button allows the attendant to override an existing conversation.

RELEASE

The release button is used to release the attendant from connections made through the console.

RECALL

The lamp associated with the recall button flashes to indicate a recall to the attendant.

DIAL 0

This lamp flashes to indicate a "dial 0" call.

LDN 1-4

The lamps associated with these four buttons flash to indicate up to four different types of incoming trunk calls (eg. FX, CO, WATS, TIE).

SOURCE

This button is pressed to split the attendant to the source side of a call. The lamp indicates the connection to the source.

BOTH

This button is pressed to connect the attendant to both the source and destination parties. The associated lamp lights to indicate the three-way connection.

DEST

The destination button is pressed to connect the attendant to the destination side of a call. The associated lamp is on whenever the attendant is split to the destination.

ANSWER

This is a common answer button for calls appearing on the RCL, DIAL 0, and LDN 1-4 buttons. The ANS lamp flashes when any incoming call appears on the console, and remains in a steady on condition when the call is answered.

OPERATING CROSS REFERENCE

Feature	Initiating	Answering	Connecting	Holding	Cancelling	Printing / Displaying
Local Calls	A9, A10	A4	A5, A12, A14, A16	A19, A20	A17	
Incoming Calls		A11	A12, A14, A16, A22	A19	A17	
Outgoing Calls	A18		A21	A20		
Attendant Recalls		A6	A7			
Recalls		A13, A15				
Held Calls		A24	A21, A22		A23	
Alarm Calls		A8, D5, D6, D7				
Conference	B1	B2				
Callback	B3	B4			C4	
Call Forward	C1				C2, C3	
Serial Call	B5	B6			B6	
Override	B14					
Paging	B15					
Flashing	B18					
Do Not Disturb	B7				B8	B11, B19
Outgoing Call Restriction	B12				B13	B19
Message Waiting	B9				B10	B11, B19
Room to Room Restriction	B17				B17	
Room Status	B20, C5					B19, B21, B25
Message Register					B24	B19, B24, B26
Wake-Up	B22				B23	B19
Time	C15					
Date	C16					B27
Printer	C18				C17	
Trunk Busy Out	C9				C10	
Trunk Group Attendant Access	C11				C12	
Extension Service	C14				C13	
Night Service	B16				B16	

AUDIBLE TONE INDICATORS

The SX100/SX200 operators console has been equipped with a method of audio signalling which eliminates the need of visual identification. The console tone ringer announces the arrival of calls in coded patterns for each of the four HOLD buttons, CONF button and MINOR ALARM LED. Until the appropriate button is pressed the pattern is repeated as follows:

- ALARM: The console ringer gives a short burst immediately followed by a slightly longer one, somewhat like the pronunciation of the word "alarm".
- CONFERENCE: The console ringer gives a long burst immediately followed by a shorter one, somewhat like the pronunciation of the word "conference".
- HOLD BUTTONS: These are identified by one or more short blips from the console ringer — one blip for hold button one, two blips for hold button two, etc.

The operator may also identify a button whose LED is lit (i.e. function in effect). This may be done by

- Pressing and holding down the LAMP TEST button in the silent position.
- Press any of the remaining buttons. Any button whose LED is lit will activate the tone ringer.

CALL HANDLING

NOTES

NOTES ON MULTI-TENANT SERVICE

This PABX may be arranged to serve up to four tenants or users. If your console is shared between tenants, (users) operation will change slightly as noted below.

1 ● You CANNOT make any connection from one tenant to another

2 ● When you receive a call the Source display will show you which tenant originated the call. Proceed as detailed in this booklet.

● If you wish to originate a call (no Source or Destination party) you MUST dial the appropriate tenant number (1-4) before dialing the extension number, or trunk access code

e.g. You wish to call extension 223, Tenant 1.

1
- Dial 1 (the tenant number)
- Dial 223 (the extension number)
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- Tenant number, extension number and its class
- ATT lamp lit
- RING lamp lit

● For dialing common attendant function (setting the Digital Clock, cancelling a Minor Alarm and Assigning a New DISA code) you may dial any tenant number before proceeding.

A1

NOTES ON CALL SPLITTING

Whenever you have both a source party and a destination party on the console, you may talk to each party privately or to both the source and destination parties at the same time, by pressing the SOURCE, DESTINATION or BOTH buttons.

To talk to the Source party privately

1
- Press SOURCE button
- SOURCE lamp lights
- DESTINATION lamp goes out

To talk to the Destination party privately

2
- Press DESTINATION button
- DESTINATION lamp lights
- SOURCE lamp goes out

To talk to both Source and Destination parties simultaneously

3
- Press BOTH button
- BOTH lamp lights
- SOURCE lamp, and DESTINATION lamp. go out

4
- The ATT lamp in the Source and Destination displays will always show you the party or parties to which you are connected

NOTES ON SINGLE DIGIT DIALING

A number of facilities in the hotel/motel (room service, restaurant, etc.) may be assigned a special single digit code. To dial any of these services:

1
- Dial required single digit
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- The single digit number dialed
- Att lamp lit

3
- Dial #

4 **Destination display shows:**
- The digit dialed and ⌟
- Class of calling extension
- Called station is ringing (RING lamp lit)

5
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

ANSWERING A DIAL 0 CALL

1
- DIAL 0 lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- ANSWER lamp lights
- DIAL 0 lamp lights
- SOURCE lamp lights
- You are connnected to the caller
- If MSGE WAIT lamp lights, the extension has a message waiting

3
Source display shows:
- Number and class of the calling extension
- You are connected to the calling extension (ATT lamp lit)

4
- To cancel the message waiting, press MSGE WAIT button

Note: If a period appears after each digit in the class of the calling extension, the extension cannot make long distance calls.

GIVING AN OUTSIDE LINE TO A DIAL 0 CALL

1 After answering a **DIAL 0** call
- Dial outside line access code
- DESTINATION lamp lights
- Listen for outside dial tone

2 **Destination display shows:**
- Trunk number
- You are connected to the outside line (ATT lamp lit)

3
- Press RELEASE button
- Source and Destination displays clear
- ANSWER, DESTINATION and DIAL 0 lamps go out
- The caller is connected to the outside line

ANSWERING AN ATTENDANT RECALL

1
- RECALL lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- ANSWER lamp lights
- RECALL lamp lights
- SOURCE lamp lights
- You are connected to the recalling extension

3 **Source display shows:**
- Recalling extension number and class
- You are connected to recalling extension (ATT lamp lit)
- (RCL lamp lit)

4 **Destination display shows:**
- Number of the party to which the recalling extension was connected

HANDLING AN ATTENDANT RECALL

After answering a recall, if the extension wishes to be reconnected to original party,

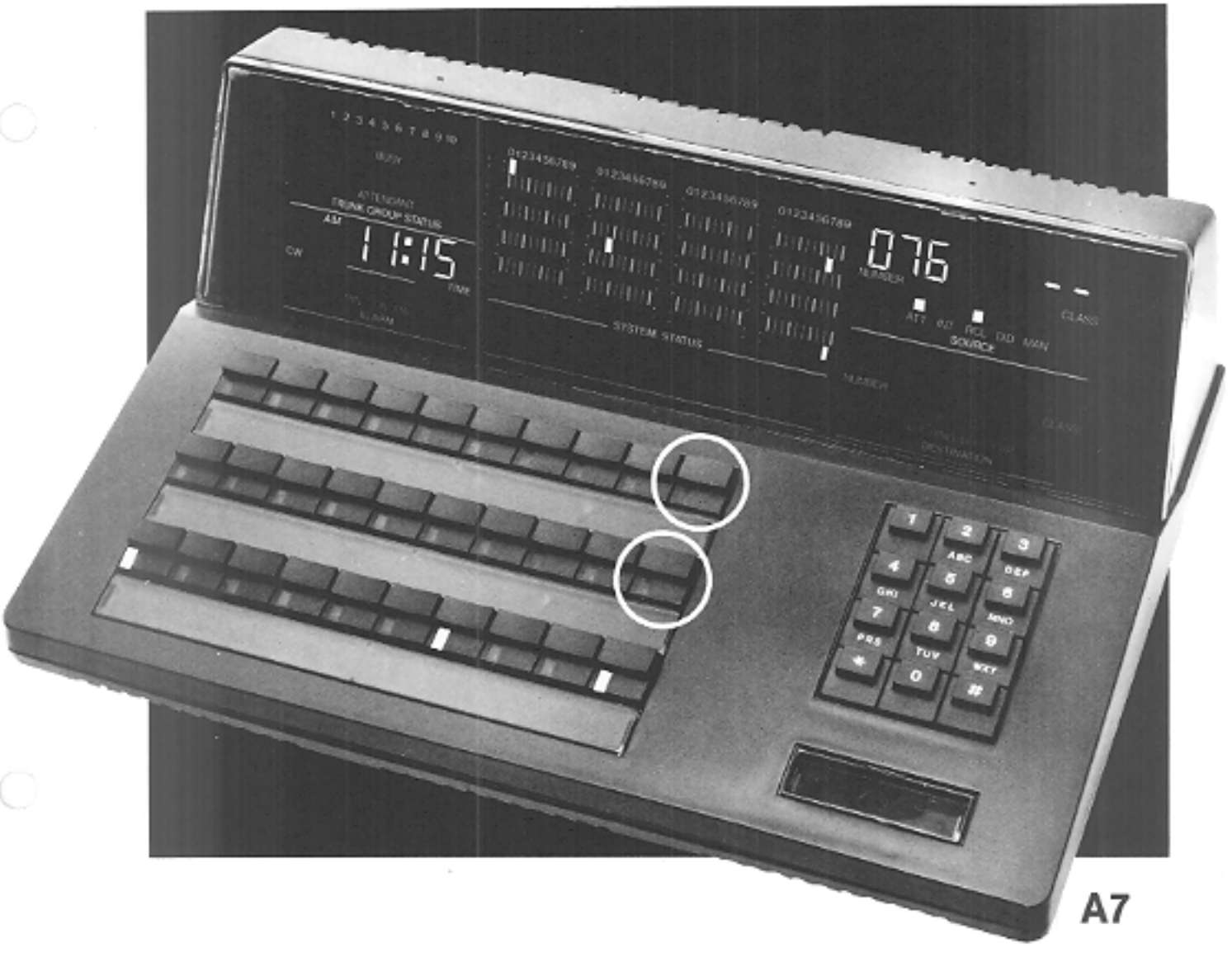
1
- Press RELEASE button
- RECALL , SOURCE and ANSWER lamps go out
- Source and Destination displays clear

After answering a recall, if the extension wishes to transfer the original party to you,

2
- Press CANCEL button
- The extension is released
- You are connected to the original party

3 **Source display shows:**
- Number and class of original party
- You are connected to original party (ATT lamp lit)
(RCL lamp lit)

4
- Proceed as if extending a call to a new extension



ANSWERING A CALL FROM AN EXTENSION ALARM CIRCUIT

Some extension lines may be connected to alarm circuits (fire, smoke, burglar etc.), which require special treatment.

1
- DIAL 0 lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- ANSWER lamp lights
- DIAL 0 lamp lights
- SOURCE lamp lights

3 **Source display shows:**
- Number of alarm circuit
- AL indicating it is an alarm

4
- Take established alarm reporting procedure

CALLING AN EXTENSION

1
- Dial extension number
- Listen for ringing or busy tone
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- Number and class of called extension
- ATT lamp lit
- RING lamp lit if extension if ringing
- BUSY lamp lit if extension is busy

Note: If an extension is dialed with DO NOT DISTURB in effect, the error lamp lights in the Destination display and the DO NOT DISTURB lamp flashes. To override DO NOT DISTURB press the DO NOT DISTURB button.

CALLING A LOCKED OUT EXTENSION

If an extension user has accidentally left the phone off-hook (and is not a hands free extension), the line will be "locked out".

1
- Dial the extension number
- ANSWER lamp lights
- DESTINATION lamp lights
- You hear busy tone

2 **Destination display shows:**
- Extension number
- Extension is locked out, "LO"
- Extension is busy (BUSY on)
- ATT lamp lit

3
- Press the RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

4
- Inform the extension user that the phone is off-hook

Note: If the ALARM RESET button is pressed and held down, the busy lamp field will show extensions and trunks that have been busied out or are locked out.

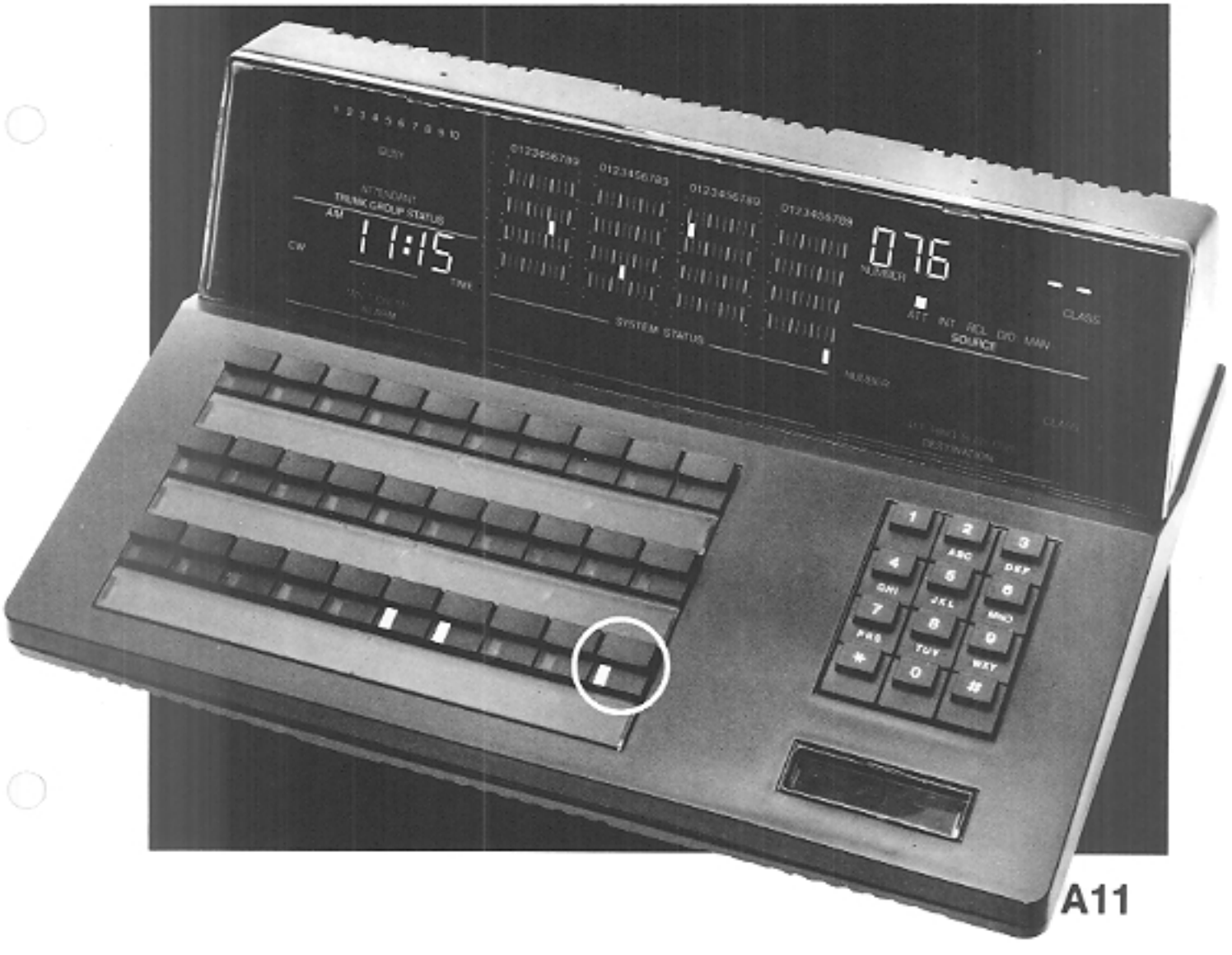
ANSWERING AN OUTSIDE CALL

1
- Incoming Call lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- Incoming Call lamp lights
- ANSWER lamp lights
- SOURCE lamp lights
- You are connnected to the caller

3

Source display shows:
- Number of calling trunk
- You are connected to the caller (ATT lamp lit)



EXTENDING A CALL TO A FREE EXTENSION

1 **After answering the call**
- Dial the required extension number
- Listen for ringing
- DESTINATION lamp lights
- SOURCE lamp goes out

2 **Destination display shows:**
- Number and class of the called extension
- You are connected to called number (ATT lamp lit)
- Called number is ringing (RING lamp lit)

3
- Press RELEASE button
- Source and Destination display clear
- Incoming Call, ANSWER and DESTINATION lamps go out.
- Calling party is connected to the ringing extension

EXTENDING A CALL TO A BUSY EXTENSION (CAMP-ON)

1 **After answering the call**
- Dial the required extension number
- You will hear busy tone
- DESTINATION lamp lights
- SOURCE lamp goes out

2 **Destination display shows:**
- Number and class of called extension
- You are connected to the called number (ATT lamp lit)
- The called number is busy (BUSY lamp lit)

3
- Press SOURCE button
- SOURCE lamp lights
- DESTINATION lamp goes out
- You are connected to the caller
- Advise calling party that the called extension is busy
- Caller wants to wait (CAMP-ON)

4
- Press RELEASE button
- Source and Destination displays clear
- The caller is camped on to the busy extension
- Incoming Call, SOURCE and ANSWER lamps go out

ANSWERING A DON'T ANSWER RECALL

1
- RECALL lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- RECALL lamp lights
- ANSWER lamp lights
- SOURCE lamp lights
- You are connnected to the caller

3 **Source display shows:**
- Number and class of recalling party
- You are connected to recalling party (ATT lamp lit)
- This is a recall (RCL lamp lit)

4 **Destination display shows:**
- Number and class of called extension
- Extension is ringing (RING lamp lit)

5
- Proceed as if extending the call to a new extension

ANSWERING A CAMP-ON RECALL

1
- RECALL lamp flashes
- ANSWER lamp flashes

2
- Press ANSWER button
- RECALL lamp lights
- ANSWER lamp lights
- SOURCE lamp lights
- You are connected to the caller

3 **Source display shows:**
- Number and class of recalling party
- You are connected to recalling party (ATT lamp lit)
  This is a recall (RCL lamp lit)

4 **Destination display shows:**
- Number and class of called extension
- Extension is busy (BUSY lamp lit)

5
- Proceed as if extending the call to a new extension

EXTENDING A CALL TO A BUSY EXTENSION (DIAL NEW EXTENSION)

After dialing the busy extension

1
- Press SOURCE button
- SOURCE lamp lights
- DESTINATION lamp goes out
- You are connected to the calling party
- Advise the calling party that the extension is busy
- Calling party wants new extension

2
- Dial new extension
- Listen for ringing
- DESTINATION lamp lights
- SOURCE lamp goes out

Destination display shows:

3
- New extension number and its class
- You are connected to the called number (ATT lamp lit)
- Called number is ringing (RING lamp lit)

4
- Press RELEASE button
- Source and Destination displays clear
- Incoming Call, ANSWER and DESTINATION lamps go out
- The calling party is connected to the ringing extension

EXTENDING A CALL TO A BUSY EXTENSION — (ABANDON CALL)

After dialing a busy extension

1
- Press SOURCE button
- SOURCE lamp lights
- DESTINATION lamp goes out
- You are connected to the caller
- Advise the caller that the extension is busy
- Caller wants to abandon the call

2
- Press CANCEL button
- Press RELEASE button
- Source and Destination displays clear
- Incoming Call, SOURCE and DESTINATION lamps go out

MAKING AN OUTSIDE CALL

1
- Dial trunk group access code
- Dial tone returned
- ANSWER lamp lights
- DESTINATION lamp lights
- Dial local directory number
- Ringback tone

Destination display shows:

2
- Trunk access code
- ATT lamp lit

PUTTING AN INCOMING CALL ON HOLD

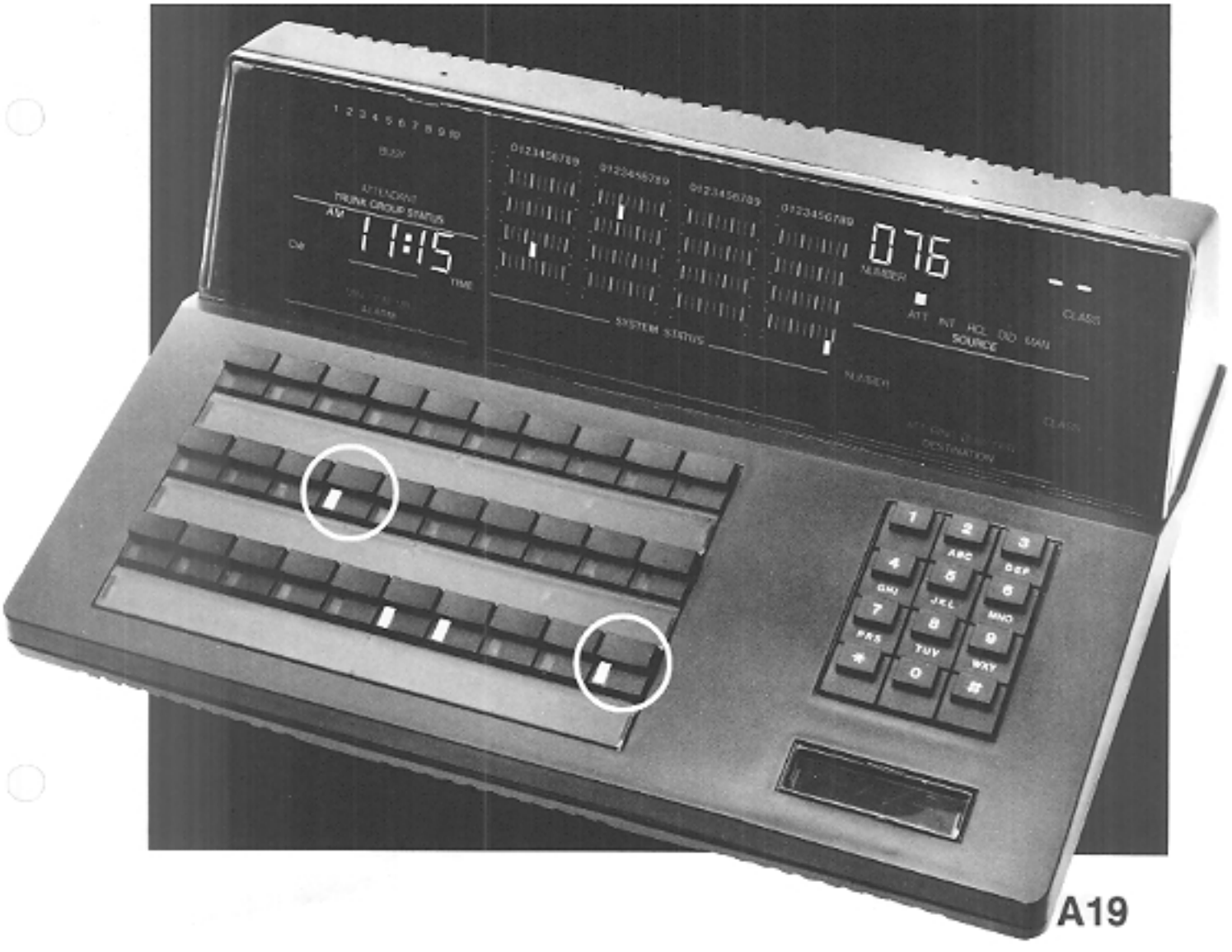
To answer the incoming call:

1
- Press ANSWER button
- ANSWER lamp lights
- Incoming Call lamp lights
- SOURCE lamp lights
- You are connected to the caller

Source display shows:

2
- Number and class of caller
- You are connected to caller (ATT lamp lit)

3
- Press any HOLD button that is not in use (unlit)
- HOLD lamp lights
- Incoming Call lamp and ANSWER lamps go out
- Source display clears
- The caller is on hold



PUTTING AN OUTGOING CALL ON HOLD

1
- Dial required number
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- Number and class of called party
- You are connected to called party (ATT lamp lit)

3 **After the called party answers,**
- Press any HOLD button that is not in use (unlit)
- HOLD lamp lights
- ANSWER and DESTINATION lamps go out
- Destination display clears
- The called party is on hold

CONNECTING AN OUTGOING CALL TO A PARTY ON HOLD

1
- Dial the number of the required party
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- The number and class of the called party
- You are connected to the called party (ATT lamp lit)

3 **After called party answers:**
- Press appropriate HOLD button
- HOLD lamp goes out

4 **Source display shows:**
- The number and class of the called party

5 **Destination display shows:**
- The number and class of the party who was on hold
- You are connected to the party who was on hold (ATT lamp lit)

6
- Press RELEASE button
- Source and Destination displays clear
- ANSWER and DESTINATION lamps go out
- Called party is connected to the party who was on hold

CONNECTING AN INCOMING CALL TO A PARTY ON HOLD

1
- Press ANSWER button
- ANSWER lamp lights
- SOURCE lamp lights
- Incoming Call lamp lights
- You are connected to the caller

2
- Press desired HOLD button
- HOLD lamp goes out
- SOURCE lamp goes out
- DESTINATION lamp lights

3
Source display shows:
- The number and class of the caller

4
Destination display shows:
- The number and class of the party who was on hold
- You are connected to the party who was on hold (ATT lamp lit)

5
- Press RELEASE button
- Source and Destination displays clear
- ANSWER, Incoming Call and DESTINATION lamps go out
- Caller is connected to party who was on hold

TAKING A CALL OFF HOLD

1

- Press HOLD button
- HOLD lamp goes out
- You are connected to the party who was on hold
- ANSWER lamp lights
- SOURCE lamp lights

2 **Source display shows:**

- The number and class of the party who was on hold
- You are connected to the party who was on hold (ATT lamp lit)

3

- Proceed as if extending a call to a new extension

ANSWERING A HOLD RECALL

1
- HOLD lamp flashes

2
- Press HOLD button
- ANSWER lamp lights
- SOURCE lamp lights
- HOLD lamp goes out
- You are connected to the recalling party

3
Source display shows:
- The number and class of the party who was on hold
- You are connected to the party who was on hold (ATT lamp lit)

4
- Proceed as if extending a call to a new extension

TO USE A SPEED CALL ENTRY

1
- Dial Speed Call Access Code
- Dial Speed Call Entry Code
- BOTH and ANSWER lamps lit

Destination display shows:

2
- Trunk number
- ATT lamp lit

Source display shows:

3
- ATT lamp lit

4
- Trunk busy lamp lit
- Number outpulsed

MAKING AN OUTSIDE CALL WITH ARS

1
- Dial ARS code
- ANSWER lamp lights
- DESTINATION lamp lights

2
- Dial directory number
- Ringback tone

3 **Destination display shows:**
- Trunk access code
- ATT lamp lit

FEATURE HANDLING

NOTES

SETTING UP A CONFERENCE CALL

You have been asked to set up a conference call (maximum of six parties)

1
- Dial the number of the next party in the conference. When they answer
- Press CONF button
- CONF lamp lights
- ANSWER lamp lit
- DESTINATION lamp lit

2 **Destination display shows:**
- [(conference)
- You are connected to the calling party

3
- All parties hear a short burst of tone indicating that you and the called party are connected to the conference.

4
- Press RELEASE button
- CONF lamp lit
- ANSWER lamp goes out
- DESTINATION lamp goes out
- Destination display clears
- You are disconnected from the conference

5
- To add additional parties to the conference, repeat steps 1, 2 and 3.

The CONF lamp remains lit for as long as the conference is in use. You may enter the conference at any time by pressing the CONF button.

ANSWERING A CONFERENCE RECALL

You have set up a conference, and one of the parties in the conference wishes to recall you (by flashing the switchhook).

1 ●CONF lamp flashes

2
- ●Press CONF button
- ●CONF lamp lights, ANSWER lamp lights
- ●All parties in the conference hear a short tone
- ●You are connected to the conference

3 **Destination display shows:**
- ● [(Conference)

After speaking with the conference:

4
- ●Press RELEASE button
- ●CONF lamp lit
- ●ANSWER lamp goes out
- ●Destination display clears
- ●You are disconnected from the conference

5 ● To add additional parties to the conference, see page B1

SETTING UP A CALLBACK

If the extension you have dialed is busy or doesn't answer, you may set-up a Callback to the extension

Having dialed the extension number:

1
- Press CALLBACK button
- Destination display clears

2
- Press RELEASE button
- ANSWER lamp goes out
- DESTINATION lamp goes out
- ATT lamp goes out

3
- When the extension becomes available you will be called back automatically
- When you answer the call, the CALLBACK lamp will light.

ANSWERING A CALLBACK RECALL

1
- ANSWER lamp flashes
- RECALL lamp flashes

2
- Press ANSWER button
- ANSWER lamp lights
- CALLBACK lamp lights
- DESTINATION lamp lights
- Listen for ringback tone
- RECALL lamp goes out

3 **Destination display shows:**
- Number and class of the extension being called back
- The extension is ringing (RING on)
- You are connected to the ringing extension (ATT on)

4
- Proceed as required

ESTABLISHING A SERIAL CALL

After answering an incoming call

1
- Press SERIAL CALL button
- Dial extension number
- SERIAL CALL lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- Number and class of called extension
- You are connected to called station (ATT lamp lit)
- Called station is ringing (RING lamp lit)

3
- Press RELEASE button
- Source and Destination displays clear
- Incoming Call, ANSWER, SERIAL CALL, and DESTINATION lamps go out

Note: In some systems the FLASH button has been replaced with the SERIAL CALL button and GUEST ROOM features are still available.

ANSWERING A SERIAL CALL RECALL

1
- ANSWER lamp flashes
- RECALL lamp flashes

2
- Press ANSWER button
- RECALL lamp lights
- ANSWER lamp lights
- SOURCE lamp lights
- SERIAL CALL lamp lights
- You are connected to the recalling party

3
Source display shows:
- Number of the recalling party
- The call is a recall (RCL lamp lit)
- You are connected to the recalling party (ATT lamp lit)

4
- You may cancel further serial call requests by pressing the SERIAL CALL button, the SERIAL CALL lamp goes out

5
- Proceed as if extending a call to a new extension

SETTING UP DO NOT DISTURB

Using the GUEST ROOM button

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number

Source display shows:

2
- Extension number
- Message register
- ATT lamp lit

3
- Press DO NOT DSTB button
- DO NOT DSTB lamp lights
- Busy lamp field shows extension busy

4
- Press RELEASE button
  All displays clear
- Busy lamp field shows extension busy

Automatic Wake – Up will override Do Not Disturb.

Not using the GUEST ROOM button

You are connected to a Source or Destination

Source or Destination display shows:

1
- Extension number
- Class of Service
- ATT lamp lit

2
- Press DO NOT DSTB button
- DO NOT DSTB lamp lights
- Busy lamp field shows extension busy

3
- Press RELEASE button
- All displays clear
- Busy lamp field shows extension busy

CANCELLING DO NOT DISTURB

Using the GUEST ROOM button

1. ● Press GUEST ROOM button
   ● Dial extension number
   ● GUEST ROOM lamp lights
   ● DO NOT DSTB lamp lights

Source display shows:

2. ● Number dialed
   ● Message Register
   ● ATT lamp lit

3. ● Press DO NOT DSTB button
   ● DO NOT DSTB lamp goes out

4. ● Press RELEASE button
   ● Source display clears

Not using the GUEST ROOM button

You are connected to a Source

Source display shows:

1. ● Extension number
   ● Class of Service
   ● ATT lamp lit

2. ● Do Not Disturb lamp lit
   ● Press DO NOT DISTURB button
   ● DO NOT DISTURB lamp goes out

3. ● Press RELEASE button
   ● All displays clear

SETTING UP MESSAGE WAITING

Using the GUEST ROOM button

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number

2 **Source display shows:**
- Number dialed
- ATT lamp lit
- Message Register

3 **Destination display shows:**
- If MSGE WAIT lamp is lit, extension has a message waiting OR
- If MSGE WAIT lamp is out, press MSGE WAIT button
- MSGE WAIT lamp lit

4 **At extension:**
- Extension message waiting lamp flashes or extension rings every 20 minutes

5
- Press RELEASE button
- All displays clear

Not using the GUEST ROOM button

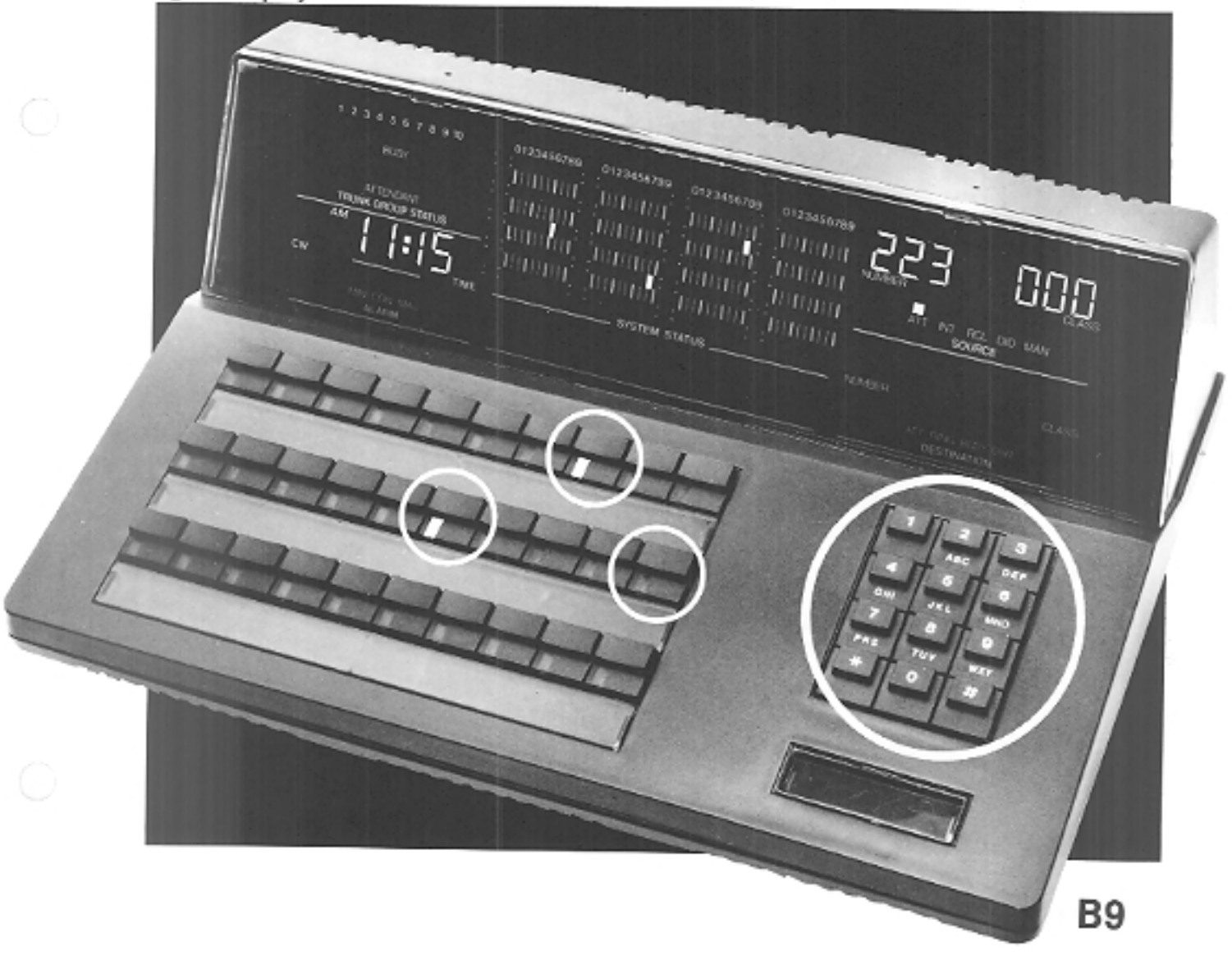
You are connected to a Source or Destination

1 **Source or Destination display shows:**
- Extension number
- Class of Service
- ATT lamp lit

2
- Press MSGE WAIT button if MSGE WAIT lamp is not lit
- MSGE WAIT lamp lit

3
- Press RELEASE button
- All displays clear

Note: If a printer is used a record is printed.



CANCELLING MESSAGE WAITING

Using the GUEST ROOM button

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number
- MSGE WAIT lamp lights
- ATT lamp lit

2 **Source display shows:**
- Extension number
- Message Register

- Press MSGE WAIT button
- MSGE WAIT lamp goes out

4
- Press RELEASE button
- Source display clears

Note: If a printer is used a record is printed.

Not using the GUEST ROOM button

You are connected to a Source or Destination

Source or Destination display shows:

1
- Extension number
- Class of Service
- ATT lamp lit

2
- MSGE WAIT lamp lit

3
- Press MSGE WAIT button
- MSGE WAIT lamp goes out

4
- Press RELEASE button
- All displays clear

DISPLAYING ALL MESSAGE WAITING OR DO NOT DISTURB SETUPS

To check which guest rooms have a message waiting

1 ● Press and hold down MSGE WAIT button
● Busy lamp field shows the extensions that have a message waiting

Source display shows:

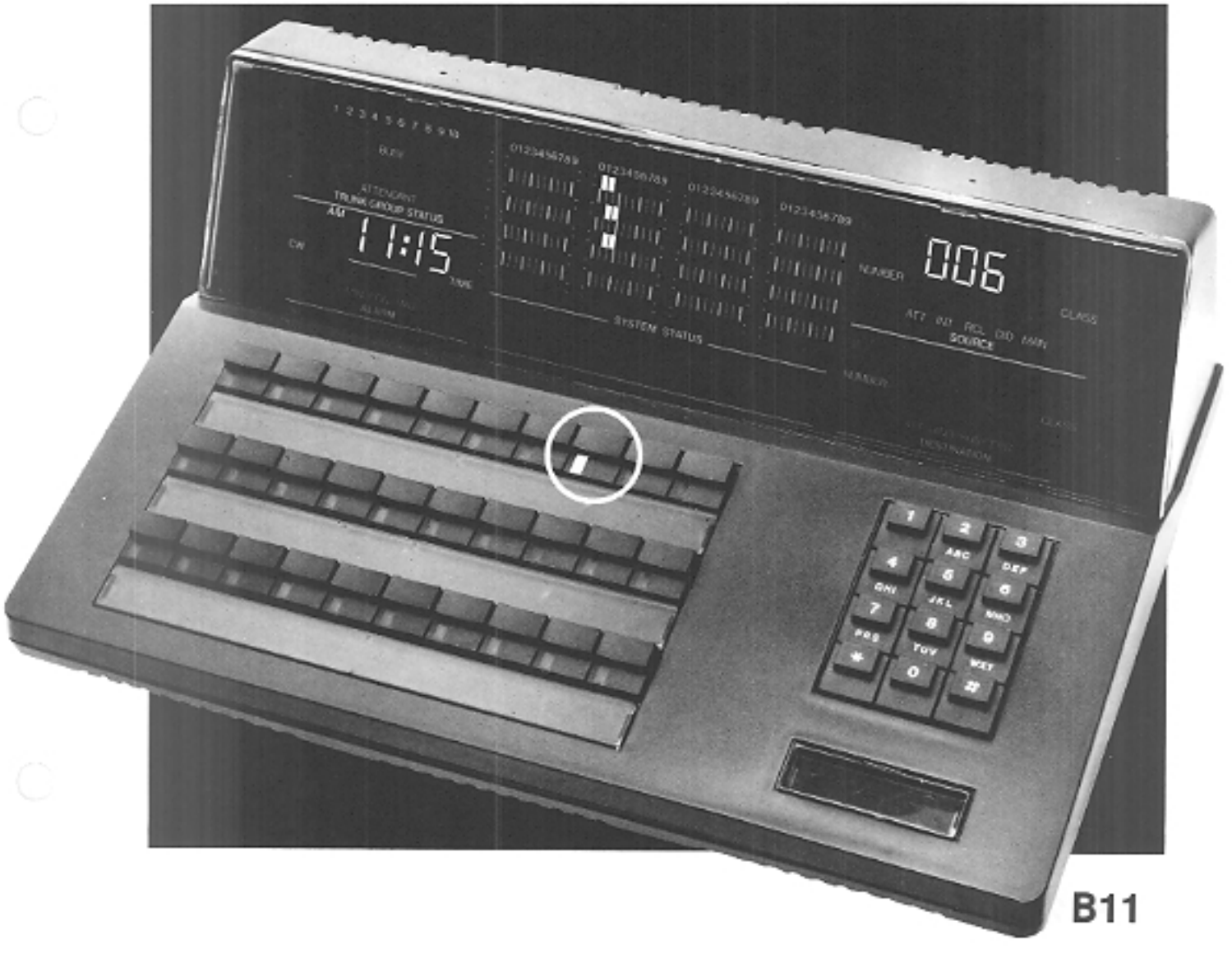
2 ● Number of rooms with a message waiting

To check which guest rooms have Do Not Disturb applied

1 ● Press and hold down DO NOT DSTB button
● Busy lamp field shows the extensions that have Do Not Disturb applied

Source display shows:

2 ● Number of rooms with Do Not Disturb set



SETTING OUTGOING CALL RESTRICTION

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number (not required if connected to extension)

2 **Source display shows:**
- Extension number
  Message register
- ATT lamp lit

3
- Press ROOM RESTRICT button
- ROOM RESTRICT lamp lights

- Press RELEASE button
- GUEST ROOM and ROOM RESTRICT lamps go out
- Source display clears

CANCELLING OUTGOING CALL RESTRICTION

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number (not required if connected to extension)

2 **Source display shows:**
- Extension number
- Message register
- ROOM RESTRICT lamp lights
- ATT lamp lit

3
- Press ROOM RESTRICT button
- ROOM RESTRICT lamp goes out

4
- Press RELEASE button
- GUEST ROOM lamp goes out
- Source display clears

The extension may now make outgoing calls.

OVERRIDING A BUSY EXTENSION OR TRUNK

1
- You have dialed an extension which is busy and wish to talk to the busy extension

2
- Press and hold OVERRIDE button
- You will hear a short tone, and will be connected to the called extension's call, for as long as you hold down the OVERRIDE button

3
- Some extensions may have a class of service preventing override, or may be on a call which cannot be overridden. In these cases, you will not hear the short tone. When you press the OVERRIDE button, you will hear re-order tone.

MAKING A PAGING ANNOUNCEMENT

1

- If you wish to page someone, press the PAGE button, and hold it down
- As long as the PAGE button is down, you will be connected to the paging loudspeakers
- The PAGE lamp lights as long as the button is depressed

2

- If someone else is using the paging loudspeakers, the PAGE lamp will be on
- If you press the PAGE button while someone else is using the paging loudspeakers, they will be disconnected and you will be connected to the loudspeakers for as long as the button is held down

SETTING UP AND CANCELLING NIGHT SERVICE

The commercial console provides two night service assignments NIGHT 1 and NIGHT 2. Hotel/Motel consoles provide only NIGHT 1 service.

To turn on night service

1
- Press required NIGHT button
- NIGHT lamp lights

To turn off night service

2
- Press required NIGHT button again
- NIGHT lamp goes out

SETTING UP AND CANCELLING ROOM TO ROOM RESTRICTION

Calls between guest rooms can be prevented by using the Call Blocking feature.

To Set-Up Call Blocking

1
- Press CALL BLOCK button
- CALL BLOCK lamp lights

To Remove Call Blocking

2
- Press CALL BLOCK button
- CALL BLOCK lamp goes out

FLASHING FOR THE LONG DISTANCE OPERATOR

If after answering an attendant recall, the extension wants to be reconnected to the long distance operator.

1
- Press FLASH button several times
- DESTINATION lamp lights
- SOURCE lamp goes out
- Wait for long distance operator to answer
- Advise the long distance operator of the situation

2 **Source display shows:**
- The number of the recalling extension and it's class of service
- ATT lamp lit

3 **Destination display shows:**
- Trunk number

4
- Press RELEASE button
- Source and Destination displays clear
- DIAL 0, DESTINATION and ANSWER lamps go out

DISPLAYING INDIVIDUAL GUEST ROOM INFORMATION

You wish to display guest room information.

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights

2
- Dial extension number (not required if connected to the extension)
- ROOM RESTR lamp lights if the room has outgoing restriction applied. (See Page B12)
- DO NOT DSTB lamp lights if the room has Do Not Disturb assigned. (See Page B7)
- MSGE WAIT lamp lights if the room has a message waiting. (See Page B9)

3 **Source display shows:**
- Extension number
- Message register
- ATT lamp lit

4 **Destination display shows:**
- Room status code (See Page B20)
  1 - Room vacant and clean
  2 - Room occupied and clean
  3 - Room vacant but not clean
  4 - Room is occupied and needs cleaning
- Extensions with a status code of 1 or 3 may be arranged to be automatically restricted from making outgoing calls
- If the maid is in the room a "." is displayed after the Room Status code
- Wake-up time in hours and minutes (See Page B22)

5
- Press RELEASE button
- All lamps go out
- Source and Destination display clears

CHANGING THE ROOM STATUS CODE OF AN EXTENSION

To change the status of a room

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights

2
- Dial extension number (not required if connected to extension)

3 **Source display shows:**
- Extension number
- ATT lamp lit
- Message register

4 **Destination display shows:**
- Room status code

5
- Dial new status code 1-4

6
- Press RELEASE button (when wishing to release connection with extension)
- All lamps go out
- Source and Destination displays clear

B20

DISPLAYING ALL EXTENSIONS WITH THE SAME ROOM STATUS CODE

1
- Press ROOM STATUS button
- Room Status lamp lit

2
- Dial, and hold down, selected room status code digit
  - 0 - Maid in rooms
  - 1 - Rooms vacant and clean
  - 2 - Rooms occupied and clean
  - 3 - Rooms vacant but not clean
  - 4 - Rooms occupied and need cleaning
- Busy lamp display shows all rooms with the selected status.

3

Source display shows:
- The number of rooms with specified room status.

The ROOM STATUS button must be pressed before each status code is dialed.

Note: The status of each room can be changed from 4 to 2 and from 3 to 1 by the maid. This is accomplished by dialing special codes from the room phone.

B21

SETTING AUTOMATIC WAKE-UP

To set or modify

1
- Press GUEST ROOM button
- Dial extension number (not required if connected to extension)
- GUEST ROOM lamp lights

2 **Source display shows:**
- Number dialed
- Message register
- ATT lamp lit

3 **Destination display shows:**
- Room status code
- Wake-up time if set

4
- Dial ✳, wake-up time, then # (or ✳ if 12 hour clock for P.M.)

5 **Destination display shows:**
- Room status code
- Wake-up time (P if PM)

6
- Press RELEASE button
- Destination display clears

Note: If a printer is used a record is printed when the RELEASE button is pressed.

CANCELLING AUTOMATIC WAKE-UP

To cancel

1
- Press GUEST ROOM button
- Dial extension number (not required if connected to extension)
- GUEST ROOM lamp lights

2 **Source display shows:**
- Extension number
- Message register displayed

3 **Destination display shows:**
- Present wake-up time (P if PM)
- Room status code

4
- Press * # (or * *)
- Wake-up time display clears

5
- Press RELEASE button
- All displays clear

Note: If a printer is used a record is printed when the RELEASE button is pressed.

RESETTING THE MESSAGE REGISTER OF AN EXTENSION

1
- Press GUEST ROOM button
- GUEST ROOM lamp lights
- Dial extension number
- ATT lamp lit

2 **Source display shows:**
- Extension number
- The number of local call units made from the room. The display can show a value of up to 999. After this decimal points are lit in sequence starting from the right of the display, to indicate an increment of 10,000, e.g. a display of 43.2.8. denotes a value of 34328.

3 **Destination display shows:**
- Room status code

4
- Press # button

5 **Source display shows:**
- Extension number and 000

6
- Press RELEASE button
- Destination and Source displays clear
- All lamps go out

Note: If a printer is used the contents of the message register is printed before it is reset.

DISPLAYING THE DATE

1 ●Press and hold IDENT button

Time display shows:

2 ●Date as month and day

Source display shows:

3 ●Generic issue number

Destination display shows:

4 ●Internal software code and console number

5 ●Release IDENT button
●Time display returns
●Source and Destination displays clear

TO ENTER A SPEED CALL NUMBER

1
- Update Speed Call Number Record

2
- Dial Speed Call Access Code
- Dial 0
- Dial Speed Call Entry Code

3
- Enter digits required as in the Speed Call Number Record
- BOTH and ANSWER lamps lit

Destination display shows:

4
- The digits entered (most recent on the right)
- ATT lamp lit

Source display shows:

5
- Speed Call Entry Code

6
- Press RELEASE button
- All displays clear

Note: To receive a printout of Speed Call numbers.

7
- Dial * 19 *
- Press RELEASE button

DISPLAYING A SPEED CALL NUMBER

1
- Dial Speed Call Access Code
- Dial #
- Dial Speed Call Entry Code
- Dial #

2 **Source display shows:**
- Entry Code (ATT lamp lit)

3 **Destination display shows:**
- Trunk access code
- Up to the first 7 digits of the number entered

4
- Continue to dial #.
  For each # dialed, the number in the Destination display will be moved to the left 1 segment until all the number has been displayed

5
- Press RELEASE button
- All displays clear

Note: To receive a printout of Speed Call numbers:

6
- Dial ✳ 19 ✳
- Press RELEASE button

TO CANCEL A SPEED CALL NUMBER

1 ●Update Speed Call Number Record

2 ●Dial Speed Call Access Code
●Dial 0
●Dial Speed Call Entry Code
●Dial ✱

3 **SOURCE display shows:**
●The Speed Call Entry Code of the number to be cancelled
●ATT lamp lit

4 **DESTINATION display shows:**
●L

5 ●Press RELEASE button
●All displays clear

Note: To Receive a printout of Speed Call numbers:

6 ●Dial ✱19✱
●Press RELEASE button

PRINTING CUSTOMER DATA

You may wish to print all data you have access to

1
- Dial * 19 #
- Press RELEASE button

2
- All customer data you have access to is printed

You may wish to print Speed Call numbers

3
- Dial * 19 *
- Press RELEASE button

4
- Speed Call numbers are printed

NOTES

ATTENDANT FUNCTIONS

NOTES

SETTING UP CALL FORWARDING FOR AN EXTENSION

You have been asked to set up call forwarding for an extension.

1
- Dial ✳11 followed by the number of the extension requesting the call forwarding
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Source display shows:**
The number of the requesting extension and existing call forwarding code, if any

3 **Destination display shows:**
- The number to which the calls are to be forwarded, if any
- ATT lamp lit

4
- Dial the required call forwarding code
  - 1 - Call Forward - Busy
  - 2 - Call Forward - Don't Answer
  - 3 - Call Forward Follow Me
  - 4 - Call Forward Busy/Don't Answer
- Dial the number to which the calls are to be forwarded or Speed Call Access Code and Table Number for External Call Forwarding

5 **Source display shows:**
- The number of the requesting extension and the selected call forward code

6 **Destination display shows:**
- The number to which the calls are to be forwarded
- ATT lamp lit

7
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Source and Destination display clears

C1

CANCELLING CALL FORWARDING FOR AN EXTENSION

You have been asked to cancel the call forwarding assigned to an extension.

1
- Dial ✳ 11 followed by the number of the extension for which call forwarding is to be cancelled
- ANSWER lamp lights
- DESTINATION lamp lights

2
Source display shows:
- The number of the requesting extension and the existing call forwarding code

3
Destination display shows:
- The number to which calls are to be forwarded or E.C.F. for External Call Forwarding
- ATT lamp lit

4
- Dial #
- Destination display clears

5
Source display shows:
- Number of the requesting extension

6
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Source display clears

CANCELLING ALL CALL FORWARDING

You may be asked to cancel **all** call forwarding arrangements set up by extensions.

1
- Dial ✳, 1,
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- 1_ 1
- ATT lamp lit

3
- Dial #
- Press RELEASE button
- ANSWER and DESTINATION lamps go out

All extension call forwarding has been cancelled.

Note: If trunk is assigned to a busy lamp number, then that lamp lights.

CANCELLING ALL CALLBACKS

You may be asked to cancel all callback arrangements set up be extensions.

1
- Dial ✱ , 4
- ANSWER lamp lights
- DESTINATION lamp lights

Destination display shows:

2
- ⌐ 4
- ATT lamp lit

3
- Dial #
- Press RELEASE button
- ANSWER lamp goes out
- DESTINATION lamp goes out

All outstanding callbacks are cancelled

CHANGING THE ROOM STATUS CODE OF ALL EXTENSIONS

To change the status of all occupied clean rooms, to rooms occupied and need cleaning:

1
- Dial ✳10
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows:**
- ⌐ 4
- Att lamp lit

3
- Dial ✳
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

To change the status of all occupied rooms that need cleaning, to rooms occupied and clean:

1
- Dial ✳10
- ANSWER lamp lights
- DESTINATION lamp lights

2 **Destination display shows**
- ⌐
- Att lamp lit

3
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
  Destination display clears

MAKING FLEXIBLE NIGHT SERVICE ASSIGNMENTS

1
- Dial ✳, 3
- ANSWER lamp lights
- DESTINATION lamp lights
- ATT lamp lit

2
- Dial required individual trunk access code

Destination display shows:

3
- Trunk access code

4
- Press NIGHT 1 or NIGHT 2 button
- If trunk cannot be given a flexible night service assignment, you will hear reorder tone and ERROR lamp will light

5
- Dial required extension number or Master Hunt Group number
- You will *not* hear ringing or busy
- You are *not* connected to the extension

Source display shows:

6
- Trunk number and night service number

Destination display shows:

7
- Extension number
- ATT lamp lit

8
- Press RELEASE button
- ANSWER lamp goes out
- Source and Destination displays clear

ASSIGNING A NEW DIRECT INWARD SYSTEM ACCESS (DISA) CODE

1
- Dial ✳ 7 followed by the new DISA access code (up to 4 digits)
- ANSWER lamp lights
- DESTINATION lamp lights

Destination display shows:

2
- The new DISA code
- ATT lamp lit

3
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

The new DISA code is now in effect.

Note: The DISA code must not conflict with the PABX numbering plan. If a conflicting number is entered, you will hear reorder tone, and the ERROR lamp in the Destination display will light.

ACCESSING AN INDIVIDUAL TRUNK

1
- Dial ✳, 20
- ANSWER lamp lights
- DESTINATION lamp lights

2
- Dial individual trunk access code
- Dial ✳
- You will hear outside dial tone if the trunk is free
- You will hear busy tone if the trunk is busy

3 **Destination display shows:**
- Individual Trunk access code
- You are connected to the trunk (ATT lamp lit)

4
- You may proceed normally

MAKING A TRUNK BUSY

1
- Dial ✳, 9 followed by the individual trunk access code
- ANSWER lamp lights
- DESTINATION lamp lights

Destination display shows:

2
- Individual Trunk access code
- ATT lamp lit

3
- Dial ✳

4
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

Trunk is now busy

MAKING A TRUNK NON BUSY

1
- Dial ✳, 9 followed by the individual trunk access code
- ANSWER lamp lights
- DESTINATION lamp lights
- ATT lamp lit

2 **Destination display shows:**
- Individual Trunk access code
- ATT lamp lit
- You are connected to the trunk

3
- Dial #

4
- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Destination display clears

Trunk is no longer busy

Note: If trunk is assigned to a busy lamp number, then that lamp goes out.

MAKING A TRUNK GROUP ATTENDANT ACCESS

1
- Dial ✳, 6
- ANSWER lamp lights
- DESTINATION lamp lights
- ATT lamp lit

2
- Dial trunk group (1 through 12)

3
- Dial ✳

4
- Press RELEASE button
- ANSWER lamp, and DESTINATION lamp, go out

Trunk group status display shows:

5
- Trunk group is now attendant access (Trunk Group status ATT lamp lit).

Note: Trunk Groups 11 and 12 are not assigned a Trunk Group Status lamp.

MAKING A TRUNK GROUP DIAL ACCESS

1
- Dial ✳, 6
- ANSWER lamp lights
- DESTINATION lamp lights
- ATT lamp lights

2
- Dial trunk group (1 through 12)

3
- Dial #
- ATT lamp lit

Destination display shows:

4
- Trunk group (1 through 12)
- -

5
- Press RELEASE button
- ANSWER and DESTINATION lamps go out

Trunk group status display shows:

6
- Trunk group no longer attendant access (Trunk Group status lamps dark)

REMOVING AN EXTENSION FROM SERVICE

If you have been asked to take an extension out of service temporarily

1
- Dial ✱, 12
- DESTINATION and ANSWER lamps light

2
- Dial the required extension number
- Dial ✱

3 **Destination display shows:**
- Number dialed and ·_
- ATT lamp lit

4
- Press RELEASE button
- Destination display clears
- DESTINATION and ANSWER lamps go out
- Extension busy lamp lights

Extension is now out of service

If you dial an extension that has been taken out of service, the Destination display will show a Class of Service of 00, and the ERROR lamp will light.

RESTORING EXTENSION SERVICE

To restore an extension to service

1
- Dial ✳, 12
- DESTINATON and ANSWER lamps light

2
- Dial the required extension number
- Dial #

3 **Destination display shows:**
- Number dialed and ⌟
- ATT lamp lit

4
- Press RELEASE button
- Destination display clears
- DESTINATION and ANSWER lamps go out
- Extension busy lamp goes out

Extension is restored to service

If you dial an extension that has been taken out of service, the Destination display will show a Class of Service of 00, and the ERROR lamp will light.

SETTING THE DIGITAL CLOCK

1
- Dial ✳, 5
- ANSWER lamp lights
- DESTINATION lamp lights

2
- Dial hours

3
- Dial minutes (must be 2 digits)

4
- Dial ✳, if time is p.m. **(Not required if 24 hour clock is used)**

5
Destination shows;
- Hours, minutes (and p if p.m. and 12 hour clock)
- ATT lamp lit

- Press RELEASE button
- ANSWER and DESTINATION lamps go out
- Time is displayed on digital clock

SETTING THE DATE

1
- Dial ✳15
- ANSWER lamp lights
- DESTINATION lamp lights

2
- Dial the one or two digit month
- Dial the two digit day

3 **Destination display shows:**
- Months/days
- ATT lamp lit

4
- Press RELEASE button
- Destination display clears

ADJUSTING THE TONE RINGER

1 ● To adjust the volume of the tone ringer, use the control on the back of the console

2 ● To turn the ringer off, press BELL OFF button

3 ● BELL OFF lamp lights, the tone ringer is now disconnected

4 ● To turn the ringer ON, press BELL OFF button again

● BELL OFF lamp goes out, the tone ringer is now reconnected

CONTROLLING THE PRINTER

To start the printer:

1. ●Dial ✳ 14
   ●ANSWER and DESTINATION lamps light

Destination display shows:

2. ●⌊ 14
   ●ATT lamp lit

3. ●Dial #

Destination display shows:

4. ● ⌟
   ●Printer starts

5. ●Press RELEASE button
   ●Destination display clears
   ●Printer starts

To temporarily stop the printer:

1. ●Dial ✳ 14 ✳
   ●DESTINATION and ANSWER lamps light

Destination display shows:

2. ●⌊
   ●ATT lamp lit

3. ●Press RELEASE button
   ●Destination display clears
   ●Printer stops

Note:
All system actions which require a print out are stopped while the printer is stopped (eg Wake-Up)

PRINTING THE ROOM STATUS OF ALL EXTENSIONS

1 ●Dial ✳ 18

Destination display shows:

2 ●L_18

3 ●Press RELEASE button
●Printer starts printout in the format: room number followed by the Room Status separated by a dash

PRINTING THE MESSAGE REGISTERS OF ALL EXTENSIONS

To request a print of room call counts

1
- Dial ✱16
- ANSWER lamp lights
- DESTINATION lamp lights

Destination display shows:

2
- ⌞ 16

3
- Press RELEASE button
- ANSWER lamp goes out
- DESTINATION lamp goes out
- Printout starts as soon as the printer is free. If the printer is in use when the request is made a warning tone is heard

ERROR HANDLING

OPTION	PAGE	PROVIDED YES	PROVIDED NO
ALARM HANDLING	Di		
Notes	Dii		
Resetting and Identifying Alarms	D1		
Identifying Faulty Circuits	D2		
Testing the Console Lamps	D3		
Using Emergency Transfer	D4		
Printer Alarm	D5		
Answering a No Answer Wake-Up Alarm	D6		
Answering a Lockout Alarm	D7		
Answering a Message Register Alarm	D8		

NOTES

RESETTING AND IDENTIFYING ALARMS

Whenever an alarm is detected, one of the following alarm lamps will flash:

MAJOR
MINOR
CONSOLE

1
- Press and hold ALARM RESET button
- Alarm lamp lights

2
- Source and Destination displays show codes which identify the alarm condition

3
- The busy lamp field display changes to show the extensions that are locked out and the trunks that have been made outgoing busy.

4
- Make a note of the alarm identity code and inform the repair person

A MAJOR alarm means that automatic emergency transfer has taken place

IDENTIFYING FAULTY CIRCUITS

If the extension that you are connected to is faulty (e.g. noisy; no tones etc.), you can identify the faulty circuit:

1 ● Press IDENT button

2 ● As long as the button is held down, the Source and/or Destination displays will indicate the circuit(s) being used for the connection.

● Make a note of the faulty circuit numbers and notify the repair person.

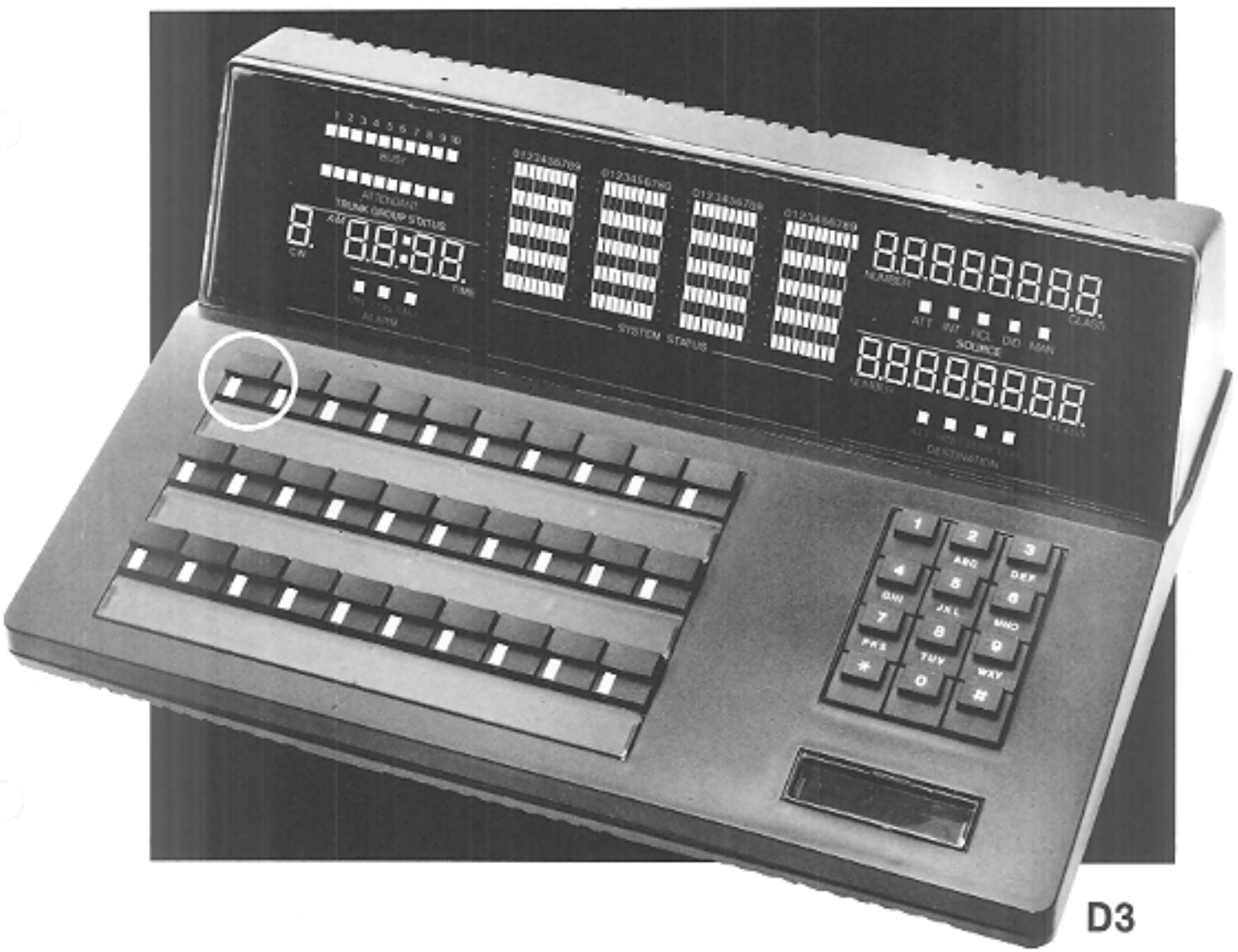
● The Date will appear in the TIME DISPLAY

TESTING THE CONSOLE LAMPS

1
- Press and hold LAMP TEST button
- All console lamps light
- The tone ringer sounds

2
- Press and hold LAMP TEST button again
- All console displays show 8.

Note: If the LAMP TEST button is held down longer than five seconds the display will lock. By operating any button on the console the display will be released.



USING EMERGENCY TRANSFER

If the PABX goes completely out of service and the MAJOR ALARM lamp is not on, the EMERGENCY TRANSFER switch, located on the back of the console can be used to manually set the PABX into emergency transfer operation.

Note: Operation of the switch will disconnect existing calls and connect up to 12 extensions directly to outside lines.

To operate the emergency transfer

1 ● Push the switch to the TRANSFER position

To restore normal operation

2 ● Push the switch to the NORMAL position

PRINTER ALARM

If the printer is suspended (✱14✱) for an extended period of time a minor alarm may occur.

1
- Minor alarm lamp lit
- Console ringer sounds

2
- Press ALARM RESET button and hold down

3
- Source display shows:
- E098

Destination display shows:

4
- Prntr

5
- Release ALARM RESET button
- Dial ✱ 8 #
- Press RELEASE button
- All displays clear
  Enable the printer

6
- Dial ✱ 14 #
- Press RELEASE button

ANSWERING A NO ANSWER WAKE-UP ALARM

If an extension fails to answer its Wake-Up call, the console will present a minor alarm.

1 ● Minor alarm lamp lit
Console ringer sounds

2 ● Press ALARM RESET and hold down

3 **Source display shows:**
● E088 and equipment number

4 **Destination dislay shows:**
● Extension number and nA

5 ● Release ALARM RESET
● Dial * 8 #
● All displays clear

ANSWERING A LOCKOUT ALARM

If an extension is left off hook the console will present a minor alarm.

1
- Minor alarm lamp lit
- Console ringer sounds
- Extension busy lamp lit

2
- Press ALARM RESET and hold down

3 **Source display shows:**
- E099 and equipment number

4 **Destination display shows:**
- Extension number and Lo

5
- Release ALARM RESET
- Dial * 8 #
- Press RELEASE
- All displays clear

ANSWERING A MESSAGE REGISTER ALARM

If an extension's message register overflows the console will present a minor alarm

1
- Minor alarm lamp lit
- Console ringer sounds
- Extension busy lamp lit

2
- Press ALARM RESET button and hold down

3
- **Source display shows:** E097 and equipment number

4
- **Destination display shows:** Extension number and ☐r

5
- Release ALARM RESET button
- Dial ✱ 8 #
- Press RELEASE
- All displays clear

6
- Refer to page B24 to clear the message register

OPERATING INFORMATION

NOTES

INTRODUCTION

This booklet is designed to tell you how to operate the SX-100 and SX-200 PABX consoles.
Your attendant console may be used with a handset or a headset, which may be plugged in either side of the console.
While the PABX offers many advanced operating features, the basic operation is very simple:

To answer a call:	press the Incoming Call button that is flashing, or press the ANSWER button
To call someone:	dial the required number
To complete calls:	press the RELEASE button

The console displays give you all the information you need to easily handle all types of calls.

NOTE:

1. In this booklet the attendant access code is shown as O and the attendant function code as *.
   Codes may be defined as any dial pad symbol or number when the system access codes are assigned.

2. Your console may not have access to all the features described in this book. If you try to access a feature that is not provided, you will hear reorder tone. You must press the CANCEL key and the RELEASE key to free the console.

3. If you accidentally attempt to make a connection, which is not allowed by the PABX, you will hear a distinctive "beep" tone in the handset or headset.

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SX-100™ / SX-200™

CONSOLE OPERATING INSTRUCTIONS

TABLE 1 — TRUNK INFORMATION

Trunk Number (Individual Trunk Access Code)	Trunk Group Number	Trunk Group Access Code	Notes

TABLE 2 — CLASS OF SERVICE DEFINITIONS

Extension Options	Class of Service															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Automatic Callback																
Call Forwarding - Busy																
Call Forwarding - Don't Answer																
Call Forwarding - Follow Me																
Call Park																
Never a Forwardee																
Directed Call Pickup																
Executive Busy Override																
Data Security																
Station Override Scurity																
Inward Restriction (DID)																
Originate Only																
Receive Only																
Flash Disable																
Never a Consultee																
Broker's Call																
Station Conference																
Meet-Me Conference																
Camp-On																
Do Not Overflow																
Paging Access																
Tafas Access																
Hold Pickup																
Account Code Access																
Manual Line																
Contact Monitor																
Non-CO Trunks Via Attendant Inhibit																
CO Trunks Via Attendant Inhibit																
No Dial Tone																
Flash for Attendant																
H/M Stn-Stn Restrict Applies																
Message Register																
Trunk Group 1 Access																
Trunk Group 2 Access																
Trunk Group 3 Access																
Trunk Group 4 Access																
Trunk Group 5 Access																
Trunk Group 6 Access																
Trunk Group 7 Access																
Trunk Group 8 Access																
Trunk Group 9 Access																
Trunk Group 10 Access																
Trunk Group 11 Access																
Trunk Group 12 Access																
Message Waiting Applies																
Room Do Not Disturb Enable																
Call Hold and Retrieve Access																
Room Status Applies																
Call Forward System Inhibit																
Alarm Call Enable																
Forced Account Code Entry																
No SMDR Record Applies																
Speed Call Table 1 & 2 Access																
Speed Call Table 3 & 4 Access																
Speed Call Table 5 & 6 Access																
Speed Call Table 7 & 8 Access																
Speed Call Table 9 & 10 Access																
Speed Call Table 11 & 12 Access																
Speed Call Table 13 & 14 Access																
Speed Call Table 15 & 16 Access																
Speed Call Table 17 & 18 Access																
Cannot Dial a Trunk after Flashing																
Hands Free Station																
A.R.S. Restricted																
External Call Forward Enable																
Transfer With Privacy																
Incoming Trunk Rotary Dial Only																
ARS Forced																

SX-100*
SUPERSWITCH*
ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE
GENERAL DESCRIPTION
GENERIC 214/215/216

CONTENTS PAGE

1. GENERAL

Introduction

1.01 This section contains a brief description of the SX-100. This section also details the physical and electrical characteristics of the system together with the installation and maintenance considerations. For complete details, refer to the required practice as listed in Table 1-1.

Reason For Issue

1.02 This section has been issued to update the general description of the SX-100 to Generic 216.

2. GENERAL DESCRIPTION

Introduction

2.01 The SX-100 is an advanced Electronic Private Automatic Branch Exchange (PABX) employing digitally controlled solid-state space-division switching and stored program control. The SX-100 has a capacity of 160 ports. One hundred and twelve of the ports are available for assignments to lines, trunks and additional receivers. The remaining 48 ports are reserved for common control functions. Fig. 2-1 shows the maximum line and trunk configuration. The SX-100 is electrically compatible with most existing extension, key-telephone, Private Branch Exchange (PBX) and Central Office (CO) equipment and provides:

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- service to a maximum of four individual customers
- the use of a flexible numbering plan
- the simultaneous use of DTMF and rotary dial stations
- optional use of attendant consoles – 2 maximum
- the sharing of attendant consoles between customers
- extensive selection of standard and optional features
- freedom from scheduled maintenance
- automatic diagnostics
- six power fail transfer circuits
- free standing, or wall mounting cabinet
- optional reserve power supply
- optional MITEL printer

2.02 The SX-100 consists of a single cabinet (containing the switching circuitry and the system power supplies) and a cordless desk type attendant console equipped with pushbutton dial pad and control keys. Connections between the equipment cabinet, the consoles, and the distribution frame are made using connectorized 25 pair cables.

2.03 Noiseless operation, exceptionally small size and environmental tolerance allow a wide choice of locations for the equipment cabinet.

Maintenance

2.04 The modular design and functional packaging of the SX-100 system permits rapid location and replacement of defective equipment. Circuit malfunctions are detected by diagnostic routines automatically initiated by the CPU. These diagnostic routines, which are detailed in MITL9105/9110-097-500-NA and MITL9105/9110-097-350-NA, and the use of Mitel Action Procedures (MAP) locate the defective circuit card or assembly and indicate to the service personnel the required field- replaceable unit. Diagnostic routines and maintenance procedures do not interfere with users not affected by the malfunction. Because the system employs only electronic circuits, preventative maintenance is not required.

TABLE 1-1 PRACTICE INDEX

VOLUME I	
Section No.	**Title**
MITL9105/9110-097-000-NA	Documentation Index
MITL9105-097-100-NA	General Description
MITL9110-097-100-NA	General Description
MITL9105/9110-097-105-NA	Feature and Services Description
MITL9105/9110-097-150-NA	Physical Description and Ordering Information
MITL9105/9110-097-180-NA	Engineering Information
MITL9105/9110-097-212-NA	Multi Digit Toll Control
MITL9105/9110-097-213-NA	Automatic Route Selection
MITL9105/9110-097-220-NA	Speed Call
MITL9105/9110-097-315-NA	Attendant Console Description
MITL9105/9110-098-317-NA	MITEL Printer
MITL9105/9110-097-450-NA	Traffic Measurement
MITL9105/9110-097-451-NA	Station Message Detail Recording
MITL9105/9110-097-500-NA	General Maintenance Information
VOLUME II	
Section No.	**Title**
MITL9105/9110-097-000-NA	Documentation Index
MITL9105/9110-097-200-NA	Shipping, Receiving and Installation
MITL9105/9110-097-205-NA	Installation Forms
MITL9105/9110-097-210-NA	System Programming
MITL9105/9110-097-215-NA	Installation Test Procedures
MITL9105/9110-097-320-NA	Extension Test Procedures
MITL9105/9110-097-350-NA	Troubleshooting
VOLUME III	
INSTALLATION FORMS	

2.05 System expansion is achieved by the addition of plug-in line and trunk printed circuit cards. Lines are added in increments of eight. CO trunks in increments of four and tie trunks in increments of two.

Physical Description

2.06 The SX-100 equipment cabinet (See Fig. 2-2) is of metal construction and has the following dimensions: Height 16.62in. (422mm), width 25in. (635mm) and depth 18.5in. (470mm). The weight of a fully equipped PABX is approximately 70lbs (31.8kg). For a full description, see MITL9105/9110-097-150-NA.

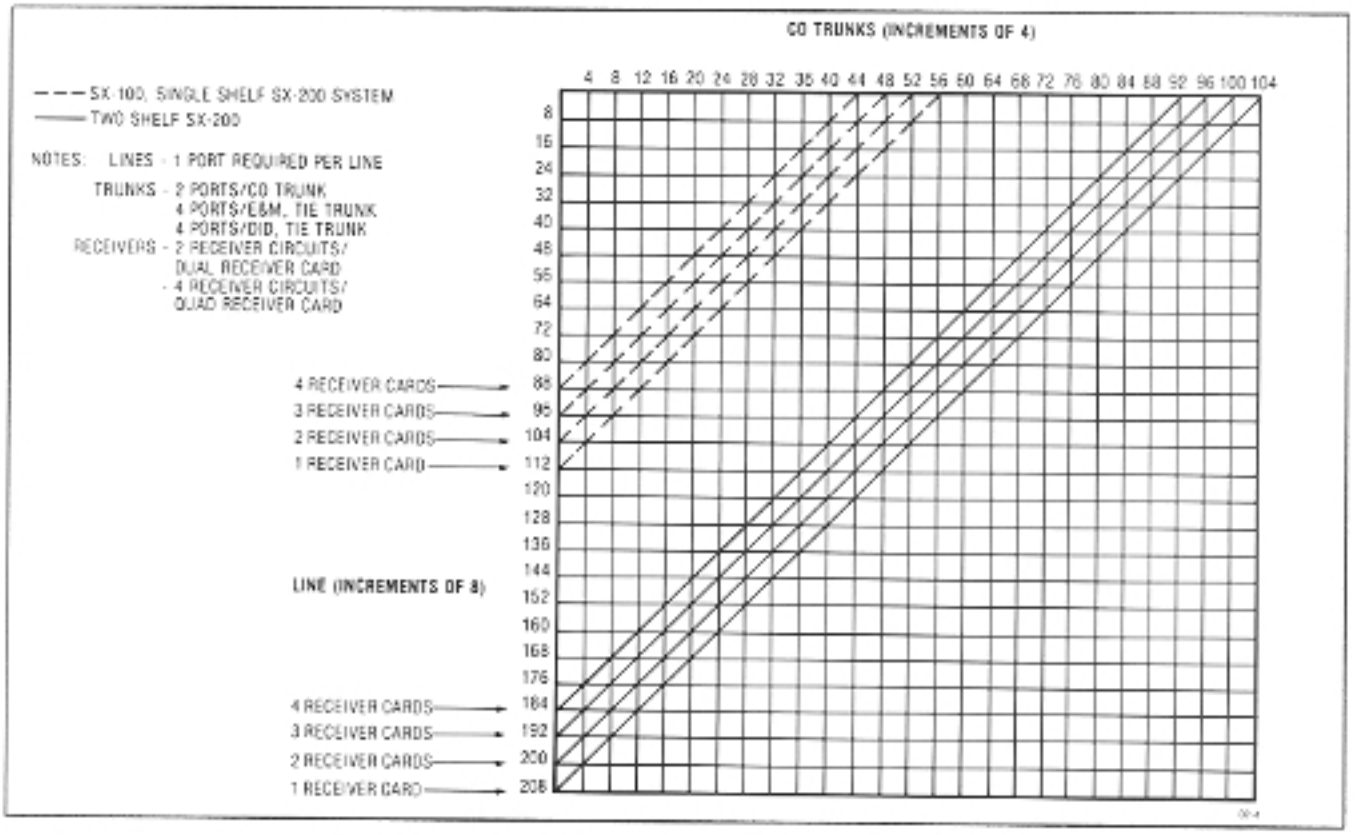


Fig. 2-1 Maximum Line and Trunk Configuration

2.07 All connections from the cross-connecting terminals to the SX-100 equipment cabinet are made using connectorized cables. Connections between the cross-connecting terminals and external equipment are made in accordance with accepted practice.

2.08 A reserve power supply consisting of a fully enclosed steel casement of batteries and charger is available as an option. These batteries provide a minimum of two hours reserve power.

SX-100 Equipment Cabinet

2.09 The door on the front of the cabinet provides access to the system maintenance panel and the printed circuit cards. The removable rear panel provides access to the system power supply, and the line and trunk connections. Cable entry to the equipment cabinet is provided through a cable duct in the rear of the cabinet.

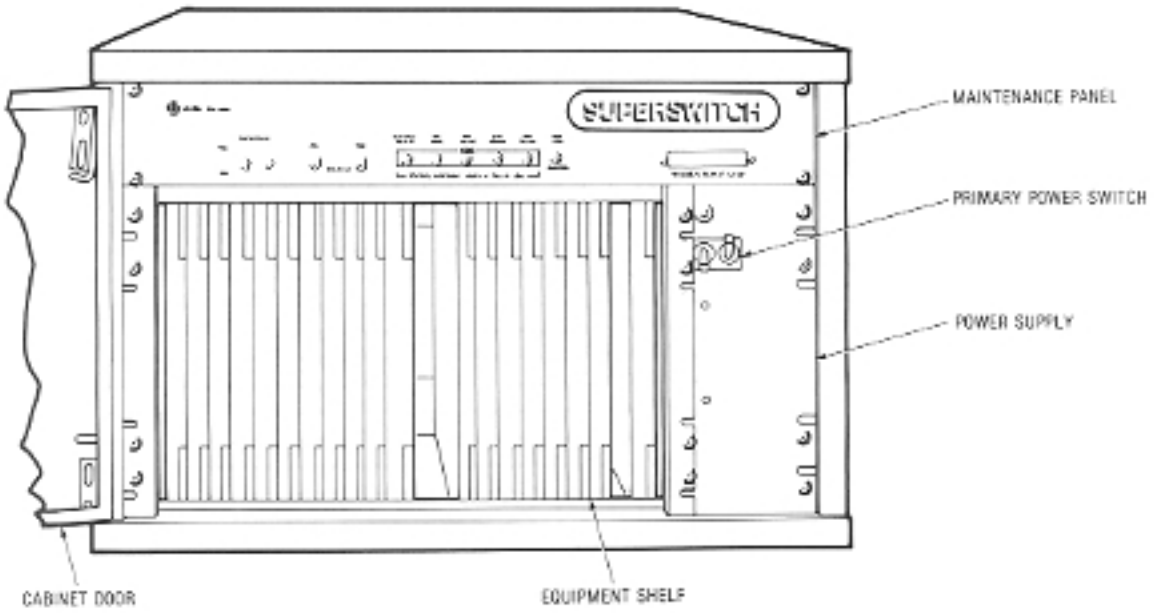
2.10 The equipment cabinet holds the maintenance panel, an equipment shelf, and the primary power supply.

Maintenance Panel

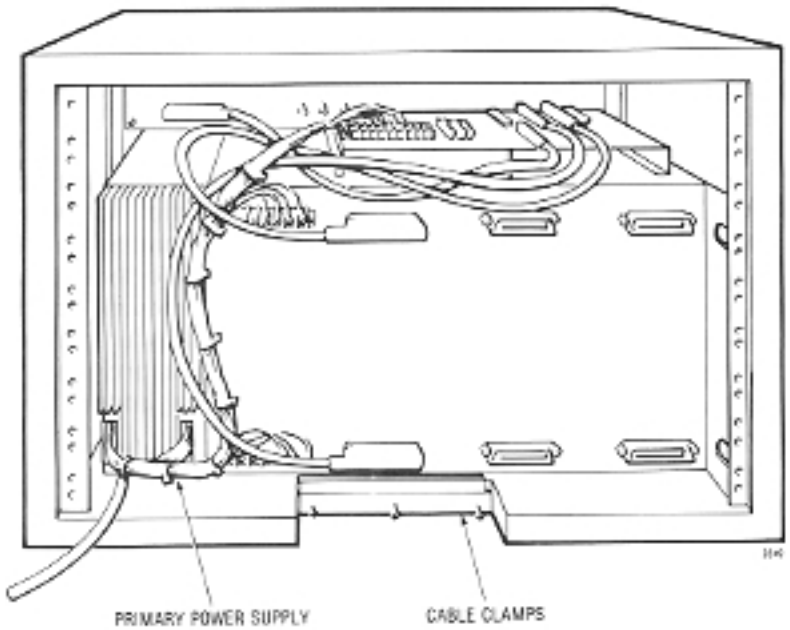
2.11 The maintenance panel, mounted at the top of the cabinet, provides access to the system from the maintenance console through a 50 pin connector. To the left of the maintenance plug is the master power fail transfer switch and five power fail transfer control switches. In addition, a test line is provided which allows service personnel to access individual lines and trunks.

Equipment Shelf

2.12 Mounted directly below the maintenance panel is the equipment shelf. This shelf contains the system control logic plus a number of trunk, line and receiver cards. All connections between shelves and external equipment are made by connectorized cables from the rear of the shelf. The system primary power supply located to the right of the equipment shelf, converts the commercial input power to the required system voltage levels.



FRONT VIEW



REAR VIEW

WEIGHT	HEIGHT	WIDTH	DEPTH
70lbs (31.8kg)	16.62in. (422mm)	25.0in. (635mm)	18.5in. (470mm)

Fig. 2-2 Equipment Cabinet

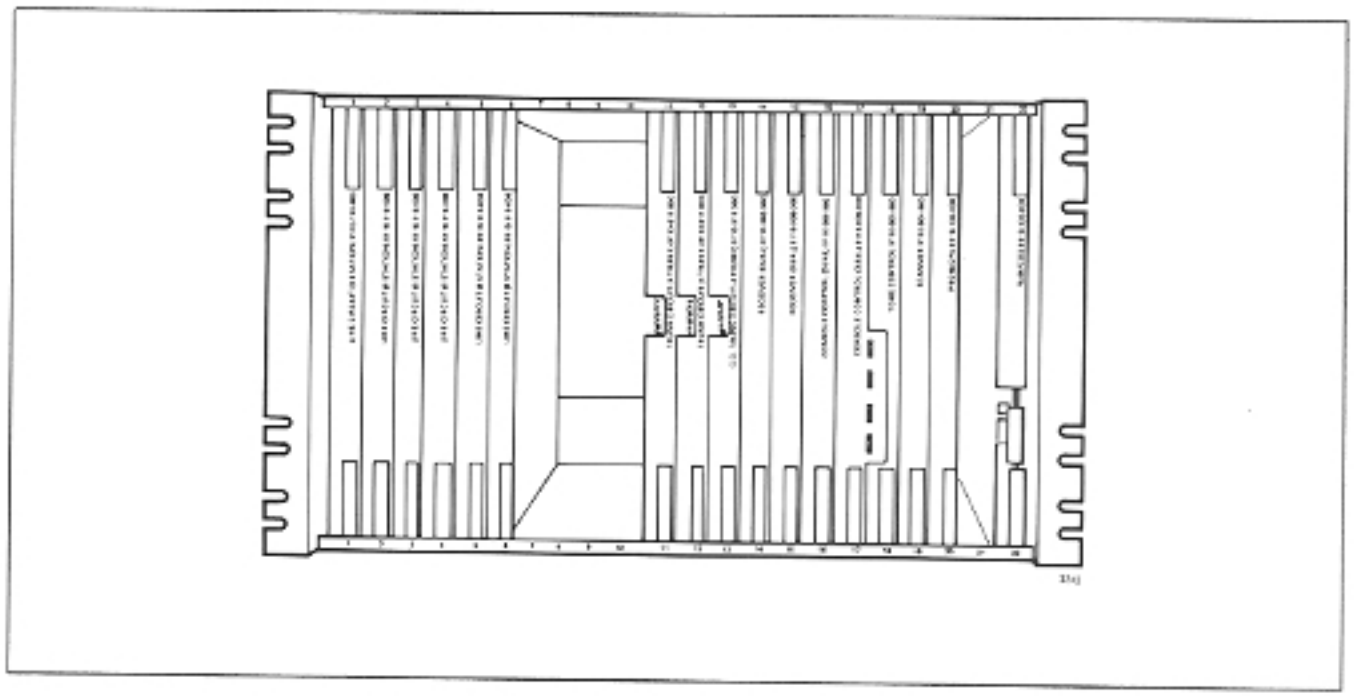


Fig. 2-3 Equipment Shelf

2.13 The equipment shelf holds up to 21 printed circuit cards which plug into the shelf backplane. On the rear of the backplane are a number of Amphenol plugs providing interconnections between the shelves and external equipment. In addition to the plugs are a number of screw down terminals allowing shelf connection to the primary power supply unit. The equipment shelves (Fig. 2-3) measures 10.75in. (273mm) high, 19in. (480mm) wide, 16.375in. (415mm) deep and weigh approximately 27lbs. (12.2kg) fully equipped.

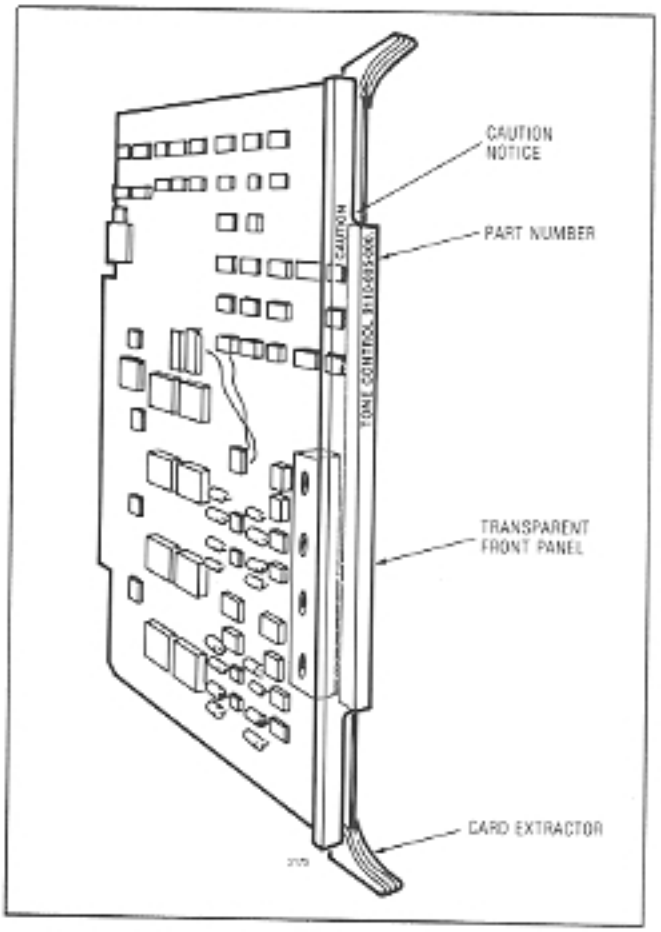


Fig. 2-4 Typical Printed Circuit Card

Printed Circuit Cards

2.14 All circuit cards (Fig. 2-4) within the SX-100 are identical in construction and consist of a fibreglass board with printed wiring patterns on both of its faces. Riveted to the front of each board is a transparent faceplate which allows the LEDs mounted on the front of the boards to be easily seen. The color-coded card extractors located at the top and bottom of the faceplate identify the card position within a shelf and ensure that the card is seated correctly in the backplane connector.

Primary Power Supply

2.15 The system primary power supply (Fig. 2-5) mounted to the right of the equipment shelf (total weight 15lbs. (35kg)) provides all system power from 115Vac or 230Vac, 48Hz to 64Hz commercial power supply. With a special 220Vac adapter the SX-100 may be operated from 220Vac 48Hz to 64Hz.

Reserve Power Supply

2.16 The reserve power supply is designed to maintain complete system operation for a minimum of two hours in the event of a commercial power failure. The batteries and the charger are enclosed in a metal casement that forms a pedestal for the SX-100 equipment cabinet weighing a total of 125lbs (56.7kg).

Attendant Console

2.17 The SX-100 attendant console (Fig 2-6) is enclosed in a housing with a smoked plastic faceplate. Located on either side of the console are a pair of headset/handset jacks allowing simultaneous operation and supervision. The console keyboard holds three rows of ten nonlocking keys for the selection of features and completion of calls. On the right of the keyboard is a 12-key pushbutton dial pad. The console display, mounted above the keyboard, displays the active states of calls in progress. In addition to the call status display is a busy lamp field, a trunk group status field, a call waiting indicator, a digital clock and three alarm indicators. The weight of the attendant console is approximately 13lbs. (5.9kg) and its dimensions are: 13.75in. (350mm) wide, 6.8in. (176mm) high, 9.25in. (236mm) deep.

A complete description of the attendant consoles is given in Section MITL9105/9110-097-315-NA.

Maintenance Console

2.18 The construction of the maintenance console is identical to that of the attendant console, the only difference is in the functions of the call and feature selection keys. A complete description of the maintenance console is given in Section MITL9105/9110-097-315-NA.

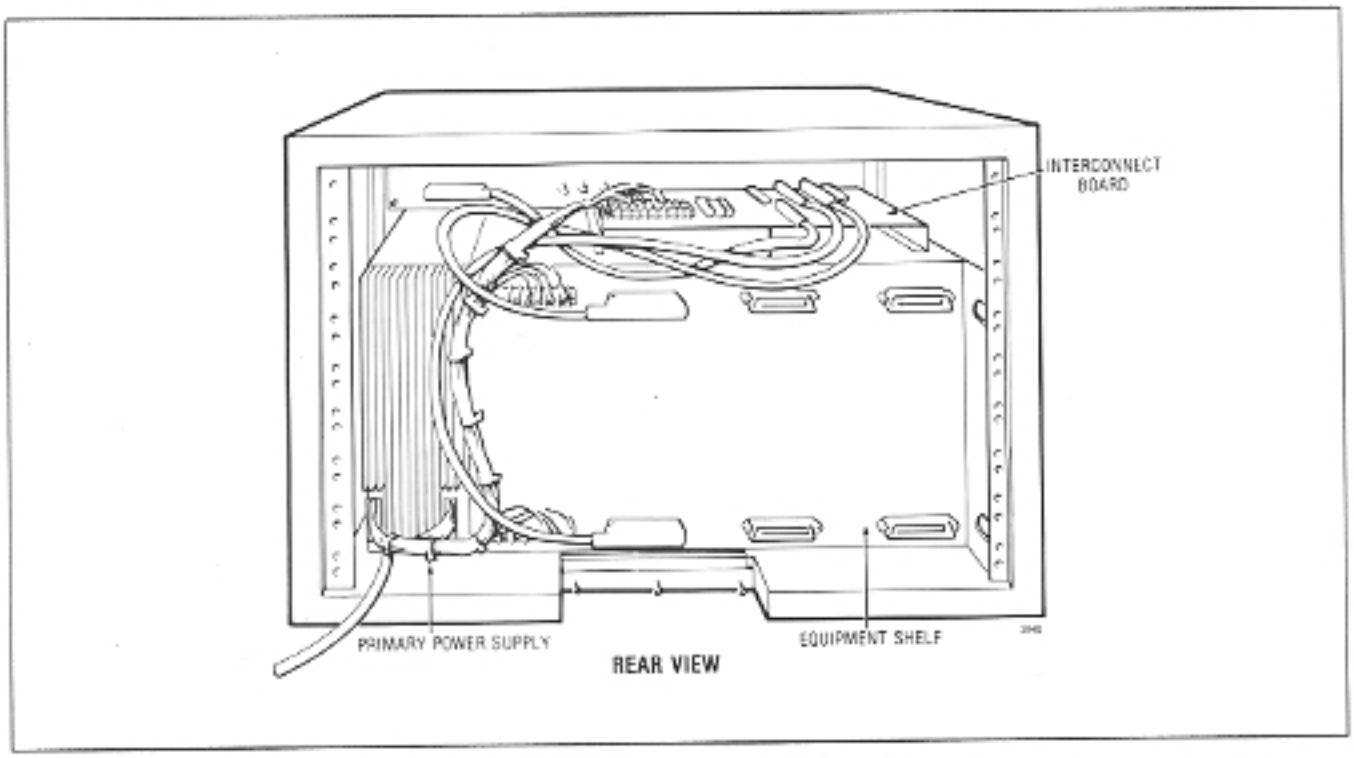


Fig. 2-5 Primary Power Supply

Features

2.19 Features are provided with the SX-100 system in the form of Feature packages (Generics). Table 2-1 lists the contents of these Generics. For a detailed description refer to Section MITL9105/9110-097-105-NA.

Feature Provisioning

2.20 All extension features provided by the SX-100 may be grouped into different classes of service, each Class of Service (a maximum of 16) may contain any mixture of features. Feature installation consists of entering into the system memory the number of the extension to which the features are to be assigned, followed by the required class of service code. All data entries into the system may be made from the attendant, or maintenance consoles. To prevent the loss of customer data in the event of a power failure, the memory holding the data associated with each line or trunk is equipped with its own reserve power supply. This power supply is sufficient to maintain the memory intact for a period of 4 weeks.

Electrical Characteristics

2.21 The electrical characteristics of the SX-100 are listed in Table 2-2.

2.22 The SX-100 is designed to operate from a 48Vdc source. This can be provided by the customer from a suitable source of 48Vdc. In the event of a power failure with no reserve power available, the SX-100 can be arranged to automatically connect up to six Central Office trunks to pre-selected extensions.

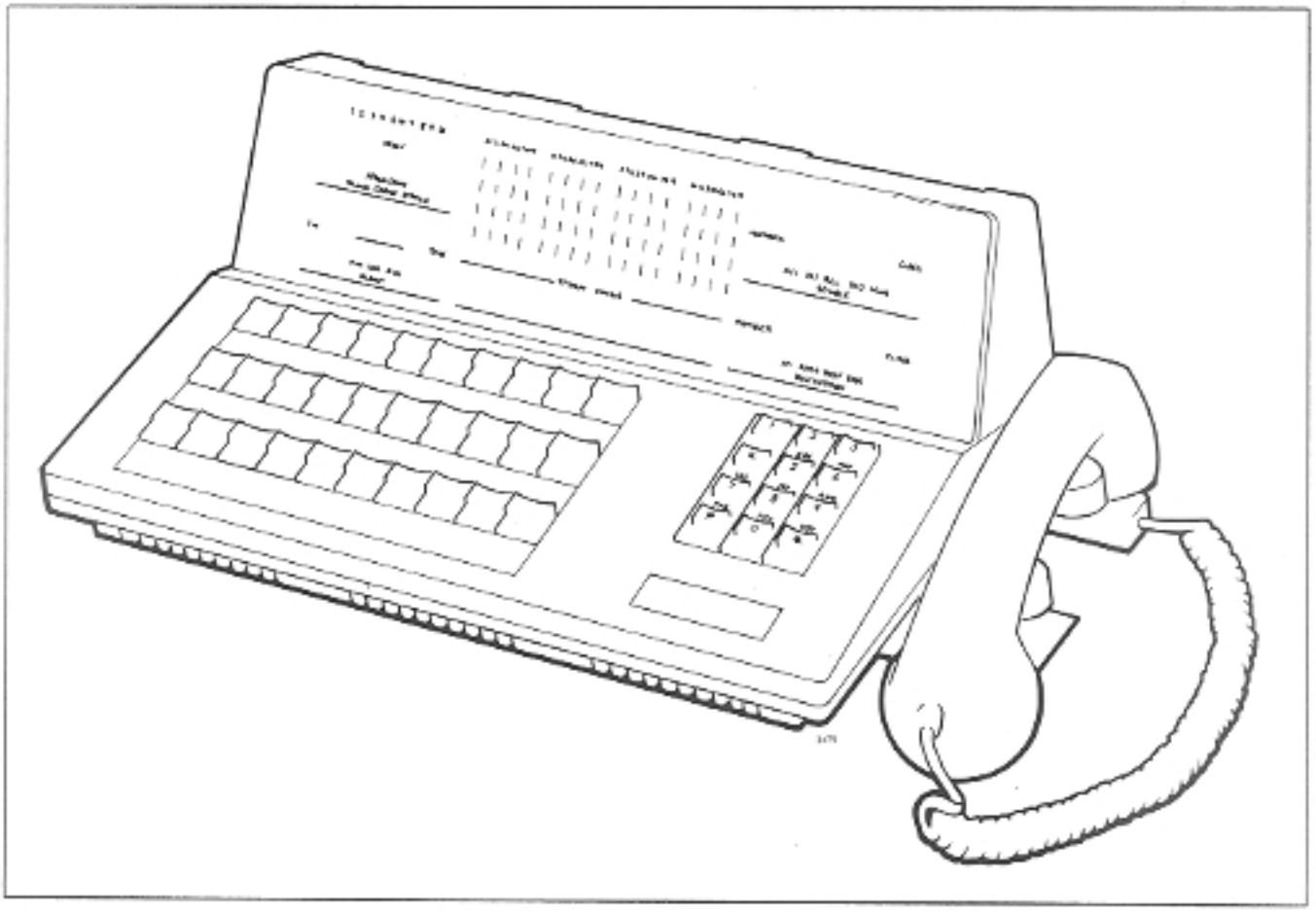


Fig. 2-6 Attendant Console

TABLE 2-1
SYSTEM FEATURES AND SERVICES

	214	215	216
Account Codes		•	•
Aphanumeric Display for Attendant Position	•	•	•
Attendant Camp-On	•	•	•
Attendant CCSA Access	•	•	•
Attendant Console (Maximum 2)	•	•	•
Attendant Control of Trunk Group Access	•	•	•
Attendant Controlled Conference	•	•	•
Attendant Flash Over Trunks	•	•	•
Attendant Lockout	•	•	•
Attendant Position (2 Maximum)	•	•	•
Attendant Transfer - All Calls	•	•	•
Automatic Callback Busy/Don't Answer (Station to Station Calls)	•	•	•
Automatic Callback - Busy (Station to Trunk)	•	•	•
Automatic Night Service Switching	•	•	•
Automatic Route Selection			•
Automatic Queuing to Attendant Position	•	•	•
Broker's Call	•	•	•
Busy Lamp Field	•	•	•
Busy Verification of Station Lines	•	•	•
Call Forwarding - All Calls	•	•	•
Call Forwarding - Busy And Don't Answer	•	•	•
Call Forwarding - Busy Line (DID)	•	•	•
Call Forwarding - Don't Answer (DID)	•	•	•
Call Hold	•	•	•
Call Pick-Up	•	•	•
Call Waiting Service			
Attendant Call Waiting	•	•	•
Terminating Call Waiting	•	•	•
Distinctive Tone Signals	•	•	•
Calling Number Display to Attendant	•	•	•
Calls Waiting Indication at Attendant Position	•	•	•
CCSA Access	•	•	•
Class of Service Display to Attendant	•	•	•
Code Calling Access	•	•	•
Code Restriction	•	•	•
Conference Calling	•	•	•
Contact Monitor *	•	•	•
Controlled Outward Restriction	•	•	•
Controlled Station-To-Station Restriction	•	•	•
Controlled Termination Restriction	•	•	•
Controlled Total Restriction	•	•	•
Customer Programming	•	•	•
Data Restriction	•	•	•
Date Display on Console(s)	•	•	•
Diagnostics - Automatic	•	•	•
Dial Access to Attendant	•	•	•
Digital Clock on Attendant Position	•	•	•
Direct Department Calling (DDC)	•	•	•
Direct Inward Dialing (DID)	•	•	•
Direct Outward Dialing (DOD)	•	•	•
Direct Termination of Miscellaneous Circuits On Attendant Position	•	•	•
Direct Trunk Group Selection (DTGS)	•	•	•
Directed Call Pick-Up	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Hands-Free Operation			•
Hold-For-Pick-Up Option	•	•	•
Distinctive Ringing	•	•	•
DTMF And/Or DCKP On Attendant Position	•	•	•
DTMF Calling	•	•	•
DTMF To Dial Pulse Conversion	•	•	•
Dump and Load of Customer Data	•	•	•
Executive Override	•	•	•
Flash for Attendant	•	•	•
Flexible Numbering of Stations	•	•	•
Foreign Exchange (FX) Access	•	•	•
Fully Restricted Station	•	•	•
Identified Trunk Group	•	•	•
Immediate Audible Ring on Attendant Handled Calls	•	•	•
Immediate Ring	•	•	•
Incoming Call Identification (ICI)	•	•	•
Indication of Camp-On	•	•	•
Intercept Treatment			
Attendant Intercept	•	•	•
Intercept Tone	•	•	•
Interposition Calling	•	•	•
Interposition Transfer	•	•	•
Inward Restriction	•	•	•
Line Lockout With Warning	•	•	•
Listed Directory Number (LDN) Service	•	•	•
Loudspeaker Paging *			
Direct Access by Attendant	•	•	•
Dial Access	•	•	•
Multizone	•	•	•
Priority Paging	•	•	•
Main/Satellite Service	•	•	•
Manual Originating Line Service	•	•	•
Manual Terminating Line Service	•	•	•
Meet Me Conference	•	•	•
Message Waiting (Audible)	•	•	•
Message Waiting (Lamp)	•	•	•
Miscellaneous Trunk Restriction	•	•	•
Multiple Listed Directory Numbers (LDN)	•	•	•
Multiple Access Codes for a single trunk group (10 maximum)	•	•	•
Music On Hold *	•	•	•
Music on Attendant Position Hold *	•	•	•
Night Console Position	•	•	•
Night Service			
Fixed	•	•	•
Flexible	•	•	•
Night Station Service - Fixed Service	•	•	•
Night Station Service - Full Service	•	•	•
Origination Restriction	•	•	•
Outgoing Trunk Callback	•	•	•
Outgoing Trunk Camp-On	•	•	•
Outgoing Trunk Queuing	•	•	•
Outward Restriction	•	•	•
Power Failure Transfer	•	•	•
Priority Queue	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Privacy and Lockout	•	•	•
Radio Paging Access *	•	•	•
Range Programming	•	•	•
Recall Dial Tone	•	•	•
Recorded Telephone Dictation Access *	•	•	•
Remote Access to PBX Services	•	•	•
Remote Administration and Maintenance (hardware option)	•	•	•
Re-ring From Toll (on Toll Terminal)	•	•	•
Reserve Power (hardware option)	•	•	•
Room Audit	•	•	•
Room Status	•	•	•
Rotary Dial Calling	•	•	•
Route Advance	•	•	•
Saved Number Redial		•	•
Serial Call	•	•	•
Sharing (4 Tenant)	•	•	•
Shared Attendant Service	•	•	•
Single Digit Dialing (Non-conflicting)	•	•	•
Single Digit Dialing (Conflicting)	•	•	•
Speed Call			
System - wide		•	•
Personal		•	•
Splitting			
One-Way Manual Splitting	•	•	•
Two-Way Manual Splitting	•	•	•
One-Way Automatic Splitting	•	•	•
Two-Way Automatic Splitting	•	•	•
Station Hunting			
Terminal Hunting	•	•	•
Circular Hunting	•	•	•
Secretarial Hunting	•	•	•
Station Message Detail Recording		•	•
Station Message Register Service	•	•	•
Electronic Storage and Display	•	•	•
Internal Charging	•	•	•
Station Override Security	•	•	•
Station-to-Station Calling	•	•	•
Straightforward Outward Completion	•	•	•
Switched Loop Operation	•	•	•
Tandem Tie Trunk Switching	•	•	•
Termination Restriction	•	•	•
Threeway Conference Transfer	•	•	•
Through Dialing	•	•	•
Tie Trunk Access	•	•	•
Timed Reminders	•	•	•
Toll Restriction	•	•	•
Battery Reversal	•	•	•
0/1 Access	•	•	•
Multi Digit	•	•	•
Toll Terminal Access	•	•	•
Total "Do Not Disturb" Display	•	•	•
Total "Message Waiting" Display	•	•	•
Total "Room Status" Display	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Traffic Data Collection ×	•		•
Traffic Display to Customer	•		•
Transfer into Busy	•	•	•
Trunk Answer From Any Station	•	•	•
Trunk Group Busy (TGB) Indicators on Attendant Position	•	•	•
Trunk Status Field	•	•	•
Trunk-To-Trunk Connections	•	•	•
Trunk Verification by Customer (TVC)	•	•	•
Trunk Verification by Station (TVS)	•	•	•
Uniform Call Distribution	•	•	•
Wake-Up Service	•		•
WATS Access	•	•	•
Wideband Data Switching	•	•	•
Wide Frequency Tolerant Power Plant	•	•	•
× Requires external customer provided equipment			

3. SYSTEM OPERATION

3.01 The SX-100 is a solid-state PABX employing space division switching and microprocessor control of call processing. A block diagram of the PABX is shown in Fig. 3-1.

3.02 The SX-100 has a capacity of 112 ports which may be assigned to receivers, lines, and trunks. The ports are scanned sequentially for detection of signals every 3.2 milliseconds.

3.03 Call origination is detected during scanning, an interrupt signal to the microprocessor is generated and a speech path and receiver are assigned to the originating station. After dialing, the receiver is released and the called party is connected to the same speech path as the originator. There are 31 speech paths available in the SX-100, and each of the 112 ports has access to all 31 speech paths.

4. SYSTEM CONFIGURATION

General

4.01 Fig. 4-1 illustrates the SX-100 cabinet layout

Equipment Shelf

4.02 Equipment Shelf 1 contains the four common control cards plus the required number of line trunk, console control and receiver cards. The common control cards are color coded and held in card positions 18 through 22. The console control cards occupy positions 16 and 17, and the first receiver card position 15. These card positions are fixed for all systems. Card positions 1 through 14 may be equipped with line, trunk or receiver cards as shown in Fig. 4-2.

- **Line Card.** Provides 8 line circuits which serve as interfaces between the station equipment and SX-100 switching circuitry.

- **Trunk Card.** Provides either interfacing between the Central office and the SX-100 switching circuitry for 4 trunks, or between other PABX's and the SX-100 for 2 tie trunks.

- **Receiver Card.** The Dual Receiver or Quad Receiver Cards respectively contain 2 or 4 sets of rotary dial and DTMF receivers, which are used to detect dialed digits and transfer them to a temporary store for call processing.

TABLE 2-2
SX-200 ELECTRICAL CHARACTERISTICS

Station Loop Limit	1200 ohms including set
Maximum Number of Ringers per Line	5
Ringing	90V,20Hz - immediate ringing(option of 17Hz or 25Hz)
Standard	1s on, 3s off
Special	0.5s on, 0.5s off, 0.5s on, 2.5s off
Ring Trip	During silent or ringing period
Dial Tone	350/440Hz, continuous
Transfer Dial Tone	350/440Hz, 3 bursts of 100ms, then continuous
Busy Tone	480/620Hz, interrupted at 60ipm
Special Busy Tone	350/440Hz interrupted at 60ipm
Standard Ringback Tone	440/480Hz, 1s on, 3s off
Special Ringback Tone	440/480Hz, 0.5s on, 0.5s off, 0.5s on, 2.5s off
Callback	6 rings of standard ringing
Reorder Tone	480/620Hz, interrupted at 120ipm
Conference Tone	440Hz, 1 burst of 1s
Camp-On Tone	440 Hz,one burst of 200ms for station camp-on 440Hz, two bursts 100ms on, 50ms off, 100ms on for trunk camp-on
Override Tone	440Hz, one burst of 800ms followed by a 200ms burst every 6s
Crosstalk Attenuation	75dB minimum
Insertion Loss, Station-to-Station	5dB ±0.5dB at 1004Hz
Station-to-Trunk	0.5dB ±0.3dB at 1004Hz
Trunk-to-Trunk	0.5dB ±0.3dB at 1004Hz
Longitudinal Balance	54dB minimum, 200-3000Hz
Return Loss	14dB minimum
Idle Circuit Noise	16dBrnC maximum
Impulse Noise	No counts over 46dBrnC
Envelope Delay Difference	200μs maximum
System Impedance	600 ohms nominal for lines 600 or 900 ohms nominal for trunks
Traffic Capacity	7.5ccs/line minimum at 100 lines at P = 0.01
Primary Power	100-125V, 47-63Hz, 2A maximum
Central Office Trunk Loop Limit	1600 ohms
Maximum Distance of Console from Equipment	1000ft. (300m) of 26AWG cable
Operating Environment	0 C to 40 C, 10% to 90% Relative Humidity

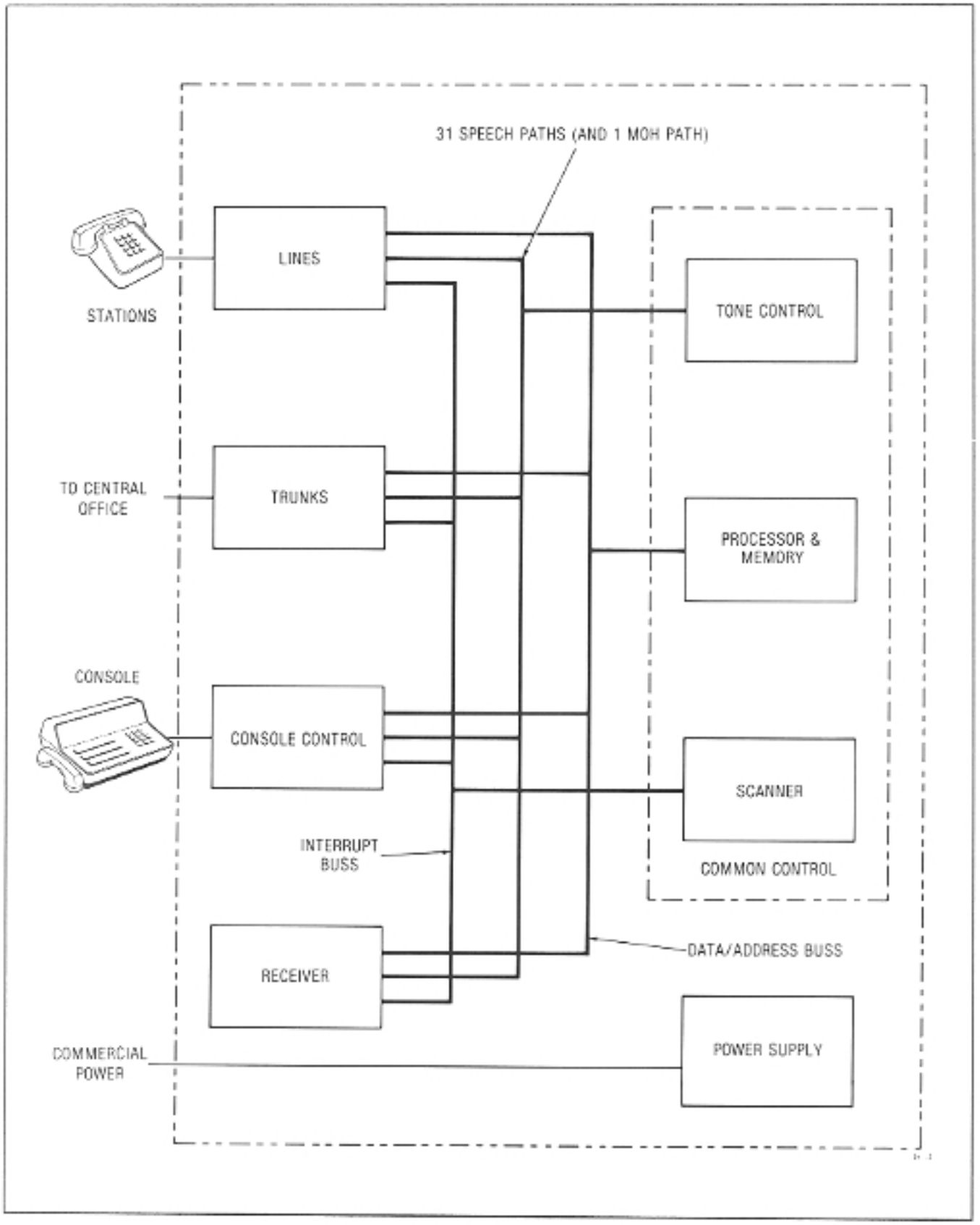
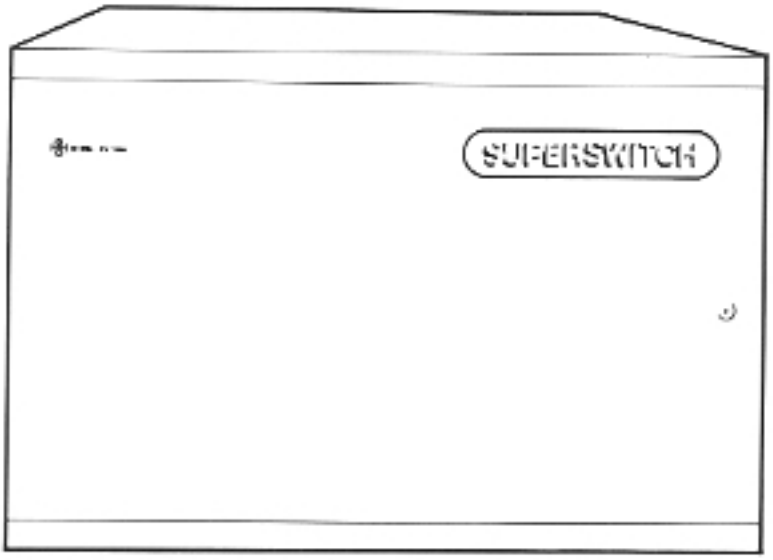
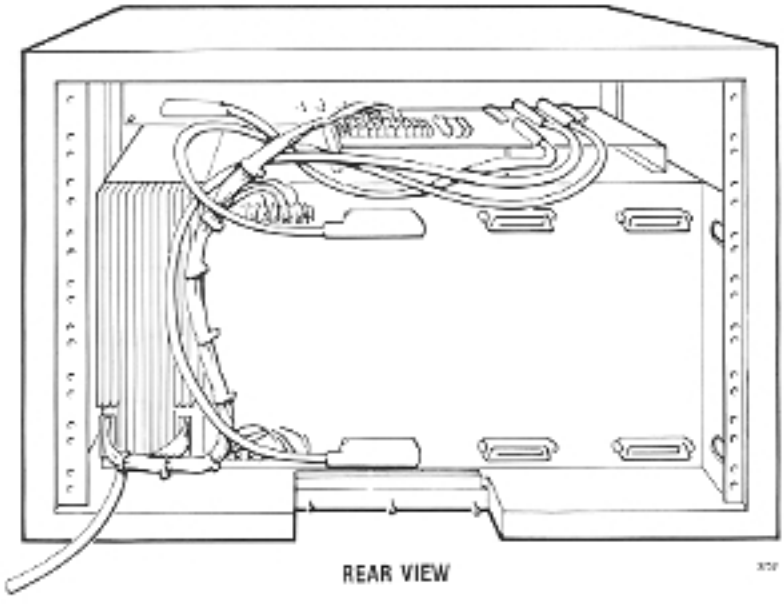


Fig. 3-1 SX-100 Block Diagram



FRONT VIEW



REAR VIEW

Fig. 4-1 Cabinet Layout

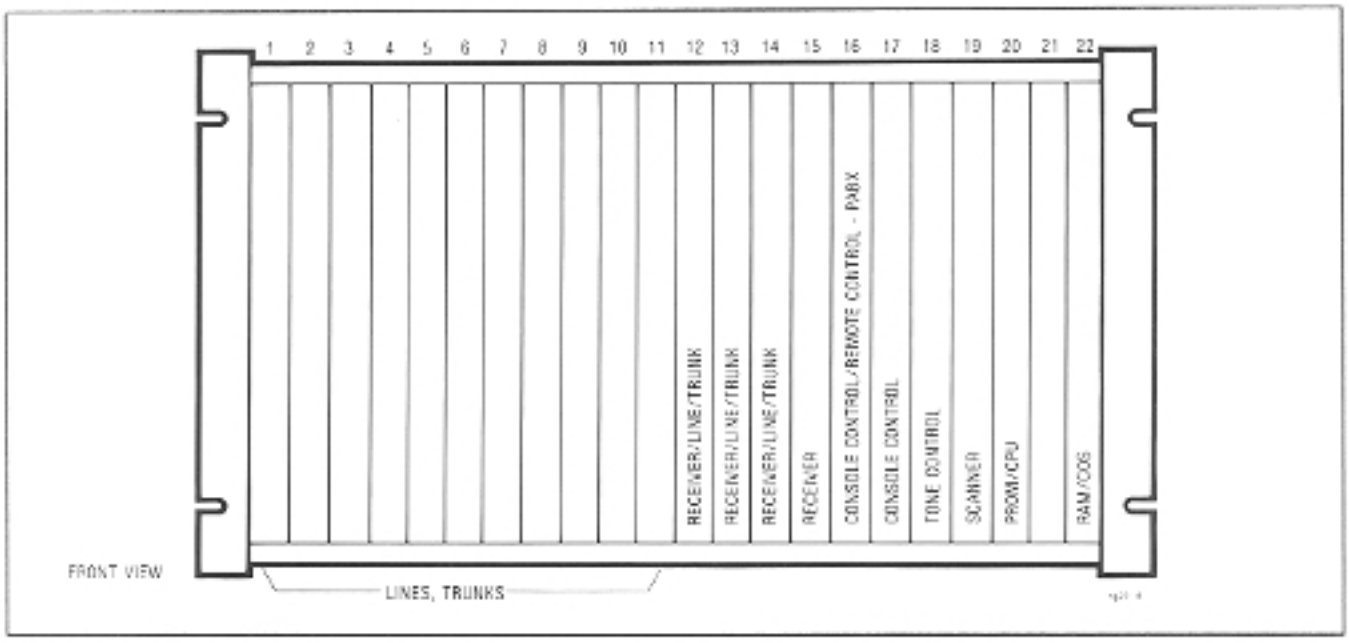


Fig. 4-2 Shelf Card Position

- **Console Control Card.** This card provides the interface between the common control and two consoles. The first console control card (in position 17) is assigned to Attendant Console 1 and the Maintenance Console. The second console control card (in position 16) is assigned to Attendant Console 2.

- **Remote Control - PABX Card.** This card allows the PABX to be accessed from a remote maintenance centre for the purpose PABX. The card is not normally supplied with the PABX and forms of conducting administrative, maintenance and test routines on the PABX. The card is not normally supplied with the PABX and forms part of the RMAT System (consult Section MITL9105/9110-098-101-NA Remote Maintenance, Administration and Test System).

- **Tone Control Card.** All call progress tones are supplied by this card. In addition this card contains the DTMF and DP pulse generators, voice paging circuitry and diagnostic testing functions.

- **Scanner Card.** Sequentially scans all ports to detect signals that require processor action. This card also contains the night bell, paging control relays, 2 digit display and the master reset button. This card also sets the baud rate for the RS232 printer port as 300 or 1200 baud.

- **PROM/CPU Card.** Contains part of the operating software in the form of a PROM card module. This card contains the microprocessor and associated circuitry.

- **RAM/COS.** Provides CMOS-RAM memory for customer data and a scratch pad RAM memory. The CMOS memory is protected from power failure by a card mounted battery pack.

Primary Power Supply

4.03 The SX-100 primary power supply generates 48Vdc from a 115Vac power main input, and uses the 48Vdc to derive the system operating voltages of +8V, -5V, -10V, -48V and 90Vac ringing voltage.

4.04 The power failure transfer relays allow for the connection of up to 6 Central Office trunks to selected PABX stations in the event of a major system failure or a power failure.

Reserve Power Supply

4.05 The reserve power supply is designed to maintain complete system operation for a minimum of two hours in the event of a primary power failure. The reserve power supply is housed in a completely enclosed unit and forms a base unit on which the standard SX-100 cabinet can be mounted. A cable harness is supplied to interconnect the two units. In the case of wall mounted version of the SX-100 the reserve power supply may be installed adjacent to the SX-100.

Attendant Console

4.06 The layout of the SX-100/SX-200 attendant console is shown in Fig. 4-3. The three rows of buttons on the console faceplate are used to select and handle calls. Each button has a light emitting diode (LED) associated with it to indicate the operational status of the button.

4.07 The console display area provides the attendant with specific information concerning the call which is being handled, as well as general information such as the time of day, and the busy/ idle status of PABX stations and trunk groups.

4.08 A brief description of the display, and the functions of each pushbutton is given below.

Console Display

4.09 Housed on the upper face of the console are the following displays:

- **TRUNK GROUP STATUS.** One LED per trunk group is used to signal the busy status of the group (BUSY). Another LED per trunk group is used to indicate that the attendant has changed the trunk group

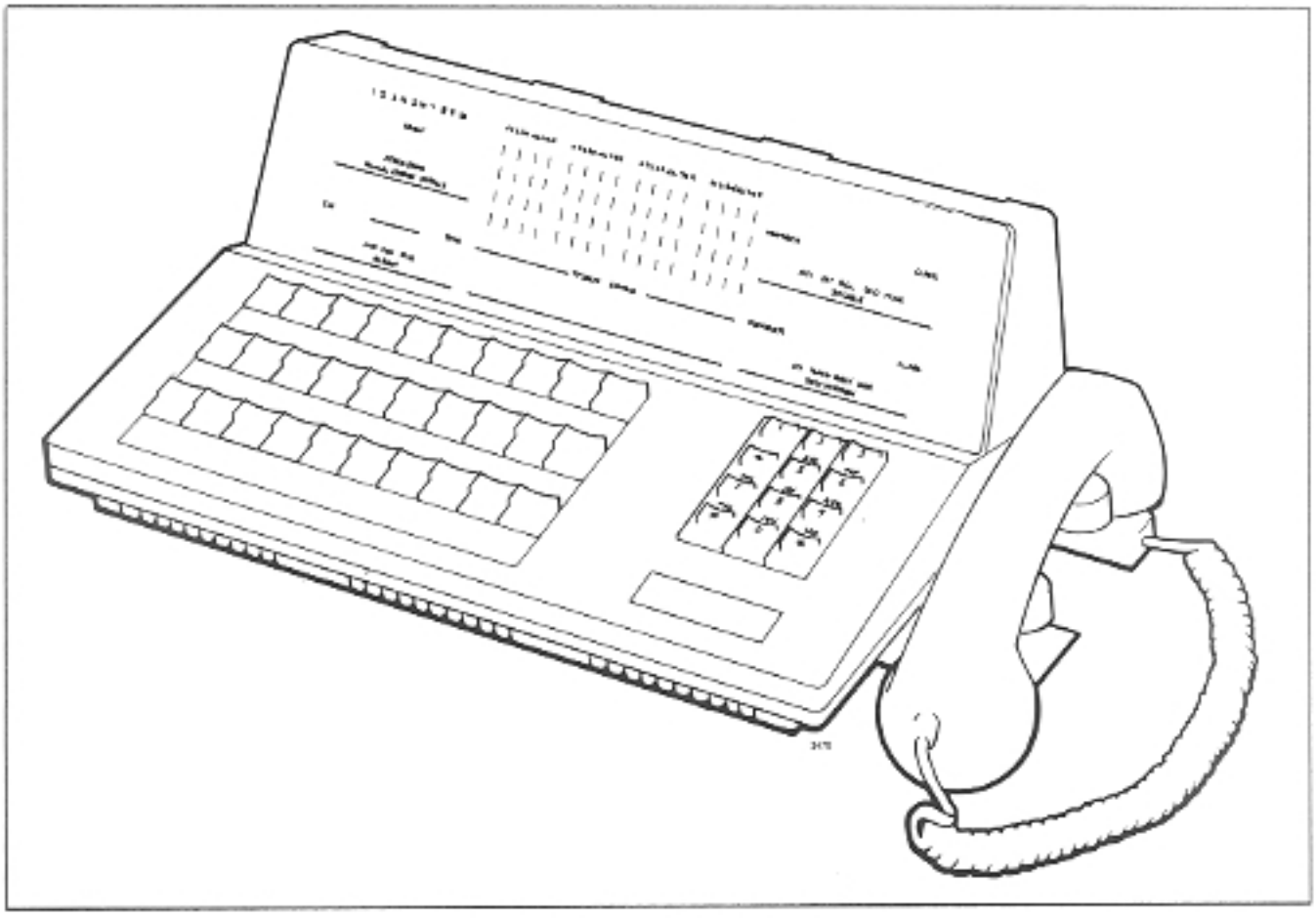


Fig. 4-3 Attendant Console

from dial access to attendant access (ATT). These indications are provided for up to 10 trunk groups.

- **CALL WAITING (CW).** Indicates how many calls to the console are waiting to be answered.

- **TIME.** A 12 hour or 24 hour digital clock is provided as a standard item. This display may optionally show the date when the IDENT button is pressed.

- **ALARM.** This area contains three LEDs labelled MAJOR, CONSOLE, and MINOR. A MAJOR alarm indicates a serious system malfunction and that failure transfer circuits have operated. A CONSOLE alarm indicates a console malfunction, and a MINOR alarm indicates that a non-essential circuit malfunction has been detected by the system.

- **BUSY LAMP FIELD.** The centre of the display area contains the busy lamp field which provides a LED for each of 200 stations or trunks. When a station or trunk is busy, the associated LED is illuminated.

- **SOURCE.** This area provides specific information on any party who calls the attendant.

  NUMBER. Displays the calling number.

  CLASS. Displays the calling party class of service.

  ATT. Indicates that the attendant is talking to the calling party.

  INT. Identifies the call as an intercept call.

  RCL. Identifies the call as a recall.

  DID. Identifies the call as a Direct Inward Dial call to the attendant.

  MAN. Identifies the call as a Manual Line Service call.

- **DESTINATION.** The destination area supplies specific information about the party called by the attendant.

  NUMBER. Displays the number of the called party.

  CLASS. Displays the class of service of the called party.

  ATT. Indicates that the attendant is talking to the called party.

  RING. Indicates that the called party is ringing.

  BUSY. Indicates that the called party is busy.

  ERROR. Indicates to the attendant that an invalid number has been dialed.

Console Faceplate

4.10 The console faceplate holds the following buttons:

- **LAMP TEST.** This button, when pressed, causes all the console LEDs and seven-segment displays to turn on. In this way faulty LEDs or displays can be readily detected.

- **ALARM RESET.** This button is pressed to reset the audible alarm signal in the event of an alarm and also displays an alarm identification code in the Source and Destination display areas.

- **BELL OFF.** The console bell is disabled when this button is pressed. The LED associated with the button indicates the bell off condition. The bell can be reactivated by pressing the button again.

- **IDENT.** In the event of a faulty connection through the console, operation of this button will display the circuits used in the connection. The circuits used are displayed for as long as the button is held down. When the console is idle pressing the ident key identifies the software installed in the

PABX and the console identification. In either situation the date will appear in the TIME display.

- **NIGHT 1.** This button is used to switch the PABX into and out of night service 1. The associated LED when lit indicates that the PABX is in night service 1.

- **NIGHT 2.** This button is used to switch the PABX into and out of night service 2. The associated LED when lit, indicates that night service 2 has been selected. Night service 1 and night service 2 are mutually independant of each other.

- **ROOM RESTR.** The ROOM RESTR button is used to prevent unauthorized outgoing calls from guest room when they are vacant.

- **MSGE WAIT.** This feature is enabled by the attendant calling a room and pressing the MSGE WAIT button. This causes the room telephone to receive a burst of 3 rings every 20 minutes.

- **CALLBACK.** This button allows the attendant to access the automatic callback feature.

- **CANCEL.** The cancel button is used to cancel a misdialed or busy call.

- **HOLD 1-4.** The attendant can place a current call on hold by pressing one of the hold buttons. The associated LED will light to indicate that the hold circuit is busy.

- **CALL BLOCK.** Rooms and all vacant rooms may be restricted from calling other rooms for specific time periods.

- **FLASH.** This button is pressed to flash the telephone company operator on long distance calls. The FLASH button may be programmed as the SERIAL CALL button.

- **SERIAL CALL.** This button is pressed to enable incoming Central Office calls to recall to the console when the called station hangs up.

- **GUEST ROOM.** When this button is pressed and the room number dialed certain information will be displayed.

(1) The room number and the "Message Register" status in the SOURCE display.

(2) The "Room Status" indicated by a digit (followed by "." if the maid is in the room) and a set Wake-Up in the Destination display.

(3) The "Do Not Disturb" status (indicated by DO NOT DISTURB lamp).

(4) The "Message Waiting" status (indicated by MSGE WAIT lamp).

(5) The "Controlled Outgoing Restriction" status (indicated by ROOM RESTR lamp).

(6) Automatic Wakeup

- **CONF.** The conference button is used to set up an attendant conference. The associated LED flashes to indicate a recall from the conference, and remains in a steady on condition to indicate that the conference circuit is in use.

- **PAGE.** Pressing the page button gives the attendant access to the paging equipment for as long as the button is held down. The associated LED indicates that the paging equipment is busy.

- **OVERRIDE.** This button allows the attendant to override an existing conversation.

- **RELEASE.** This release button is used to release the attendant from connections made through the console.

- **RECALL.** The LED associated with the RECALL button flashes to indicate a recall to the attendant. The recall may be answered by pressing the RECALL or ANSWER button. After answering, both the RECALL and ANSWER LEDs remain in a steady on condition.

- **DO NOT DISTURB.** This feature enables a guest at his request not to receive incoming calls.

- DIAL 0. This button flashes to indicate a dial "0" call which may be answered by pressing the DIAL 0 or ANSWER buttons. After answering both ANSWER and DIAL 0 LEDs remain in a steady on condition.

- LDN 1-4. The LEDs associated with these four buttons flash to indicate up to four different types of incoming trunk calls (eg. FX, CO, WATS, TIE). These may be answered by pressing the appropriate LDN button or the ANSWER button. After answering, both the LDN and ANSWER LEDs remain in a steady condition.

- SOURCE. This button is pressed to split the attendant to the source side of a call. The LED indicates the split condition to the source.

- BOTH. This button is pressed to connect the attendant to both the source and destination parties. The associated LED lights to indicate the three-way connection.

- DEST. The destination button is pressed to connect the attendant to the destination side of a call. The associated LED is activated whenever the attendant is split to the destination.

- ANSWER. This is a common answer button for calls appearing on the RECALL, DIAL 0 and LDN 1-4 buttons. The ANSWER LED flashes when any incoming call appears on the console, and remains in a steady on condition when the call is answered.

- ROOM STATUS. The function of this button is to monitor the status of each room. Pressing this button and dialing one of five possible single-digit codes indicates, on the BUSY LAMP FIELD display, which rooms correspond to a particular status condition.

4.11 In addition to the buttons and LEDs described above, the console has a 12 digit key pad which is used for dialing all calls, an emergency transfer switch (mounted on the back of the console) which switches the PABX into failure transfer mode, and a volume control (mounted on the back of the console) to vary the bell volume.

4.12 All console buttons are non-locking.

Audible Incoming Discrimination

4.13 The console incorporates audible signal discrimination. Under some conditions requiring attendant service distinctive audio codes are issued by the tone ringer. With this facility visually-impaired attendants can operate the console and be aware of the various calling-in situations that can arise. These situations are as follows:

- Incoming calls, i.e. LDN calls, Dial 0 calls or Recalls
- HOLD connection timeouts
- A "flash-for-attendant" occuring during an Attendant Controlled Conference
- A MINOR alarm flashing

4.14 For use by a visually-impaired attendant all events requiring attendant recognition are placed in a queue and give an audible signal on a first-in, first-out basis. In the case of the first situation (LDN's, Dial 0 or Recall) the same audible signal is given indicating that the call can be answered with the ANSWER button. To find the actual button the visually-impaired operator can poll the keyboard. The remaining events have distinctive audible signals and may be readily associated with the relevant button. For further information see Section MITL9105/9110-097-315-NA.

Keyboard Polling

4.15 For proper operation of the console a visually-impaired attendant must be aware of the status of the keyboard. For example he or she must know whether the BELL OFF or NIGHT 1 button has been enabled. To do the the attendant presses the LAMP TEST button in the silent mode (the ringer is off, the seven segment indicators are on and the LED's are off). While this key is held depressed the remaining relevant keys are pressed in turn. If the LED associated with a key is lit the ringer will sound as long as the key is pressed down. If the LED is flashing the ringer will give a 0.5 second on, 0.5 second off audible

signal. In this manner the status of the BELL OFF, NIGHT 1 or any key (including an incoming call) can be determined and appropriate action taken. When this operation takes place the LAMP TEST key is the last to be released, otherwise the current key being polled will become active when the LAMP TEST is released first.

SX-200*
SUPERSWITCH*
ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE
GENERAL DESCRIPTION
GENERIC 214/215/216

CONTENTS PAGE

1. GENERAL

Introduction

1.01 This section contains a brief description of the SX-200. This section also details the physical and electrical characteristics of the system together with the installation and maintenance considerations. For complete details, refer to the required practice as listed in Table 1-1. For complete ordering information see Section MITL9105/9110-097-150-NA.

Reason For Issue

1.02 This section has been reissued to update the general description of the SX-200 for Generics 214/215/216.

2. GENERAL DESCRIPTION

Introduction

2.01 The SX-200 is an advanced Electronic Private Automatic Branch Exchange (PABX) employing digitally controlled solid-state space-division switching and stored program control. The SX-200 has a capacity of 256 ports. Two hundred and eight of the ports are available for assignments to lines, trunks and additional receivers. The remaining 48 ports are reserved for common control functions. Figure 2-1 shows the maximum line and trunk configuration. The SX-200 is electrically compatible with most existing extension, key-telephone, Private Branch Exchange (PBX) and Central Office (CO) equipment and provides:

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- service to a maximum of four individual customers
- the use of a flexible numbering plan
- the simultaneous use of DTMF and rotary dial stations
- optional use of attendant consoles – 2 maximum
- the sharing of attendant consoles between customers
- extensive selection of standard and optional features
- freedom from scheduled maintenance
- automatic diagnostics
- twelve power fail transfer circuits
- optional reserve power supply
- optional MITEL printer

2.02 The SX-200 consists of a single cabinet (containing the switching circuitry and the system power supplies) and a cordless desk type attendant console equipped with pushbutton dial pad and control keys. Connections between the equipment cabinet, the consoles, and the distribution frame are made using connectorized 25 pair cables.

2.03 Noiseless operation, exceptionally small size and environmental tolerance allow a wide choice of locations for the equipment cabinet.

Maintenance

2.04 The modular design and functional packaging of the SX-200 system permits rapid location and replacement of defective equipment. Circuit malfunctions are detected by diagnostic routines automatically initiated by the CPU. These diagnostic routines, which are detailed in MITL9105/9110-097-500-NA and MITL9105/9110-097-350-NA, and the use of Mitel Action Procedures (MAP) locate the defective circuit card or assembly and indicate to the service personnel the required field-replaceable unit. Diagnostic routines and maintenance procedures do not interfere with users not affected by the malfunction. Because the system employs only electronic circuits, preventive maintenance is not required.

TABLE 1-1 PRACTICE INDEX

VOLUME 1	
SECTION NO.	TITLE
MITL9105/9110-097-000-NA	Documentation Index
MITL9105-097-100-NA	General Description
MITL9110-097-100-NA	General Description
MITL9105/9110-097-105-NA	Feature and Services Description
MITL9105/9110-097-150-NA	Physical Description and Ordering Information
MITL9105/9110-097-180-NA	Engineering Information
MITL9105/9110-097-212-NA	Multi Digit Toll Control
MITL9105/9110-097-213-NA	Automatic Route Selection
MITL9105/9110-097-220-NA	Speed Call
MITL9105/9110-097-315-NA	Attendant Console Description
MITL9105/9110-098-317-NA	MITEL Printer
MITL9105/9110-097-450-NA	Traffic Measurement
MITL9105/9110-097-451-NA	Station Message Detail Recording
MITL9105/9110-097-500-NA	General Maintenance Information
VOLUME II	
SECTION NO.	TITLE
MITL9105/9110-097-000-NA	Documentation Index
MITL9105/9110-097-200-NA	Shipping, Receiving and Installation
MITL9105/9110-097-205-NA	Installation Forms
MITL9105/9110-097-210-NA	System Programming
MITL9105/9110-097-215-NA	Installation Test Procedures
MITL9105/9110-097-320-NA	Extension Test Procedures
MITL9105/9110-097-350-NA	Troubleshooting
VOLUME III	
INSTALLATION FORMS	

2.05 System expansion is achieved by the addition of plug-in line and trunk printed circuit cards. Lines are added in increments of eight CO trunks in increments of four and tie trunks in increments of two.

Physical Description

2.06 The SX-200 equipment cabinet (See Fig. 2-2) is of metal construction and has the following dimensions: Height 38 in. (960mm), width 23.5 in. (600mm) and depth 27.5 (700mm). The weight of a fully equipped PABX is approximately 290lbs. (131.7kg).

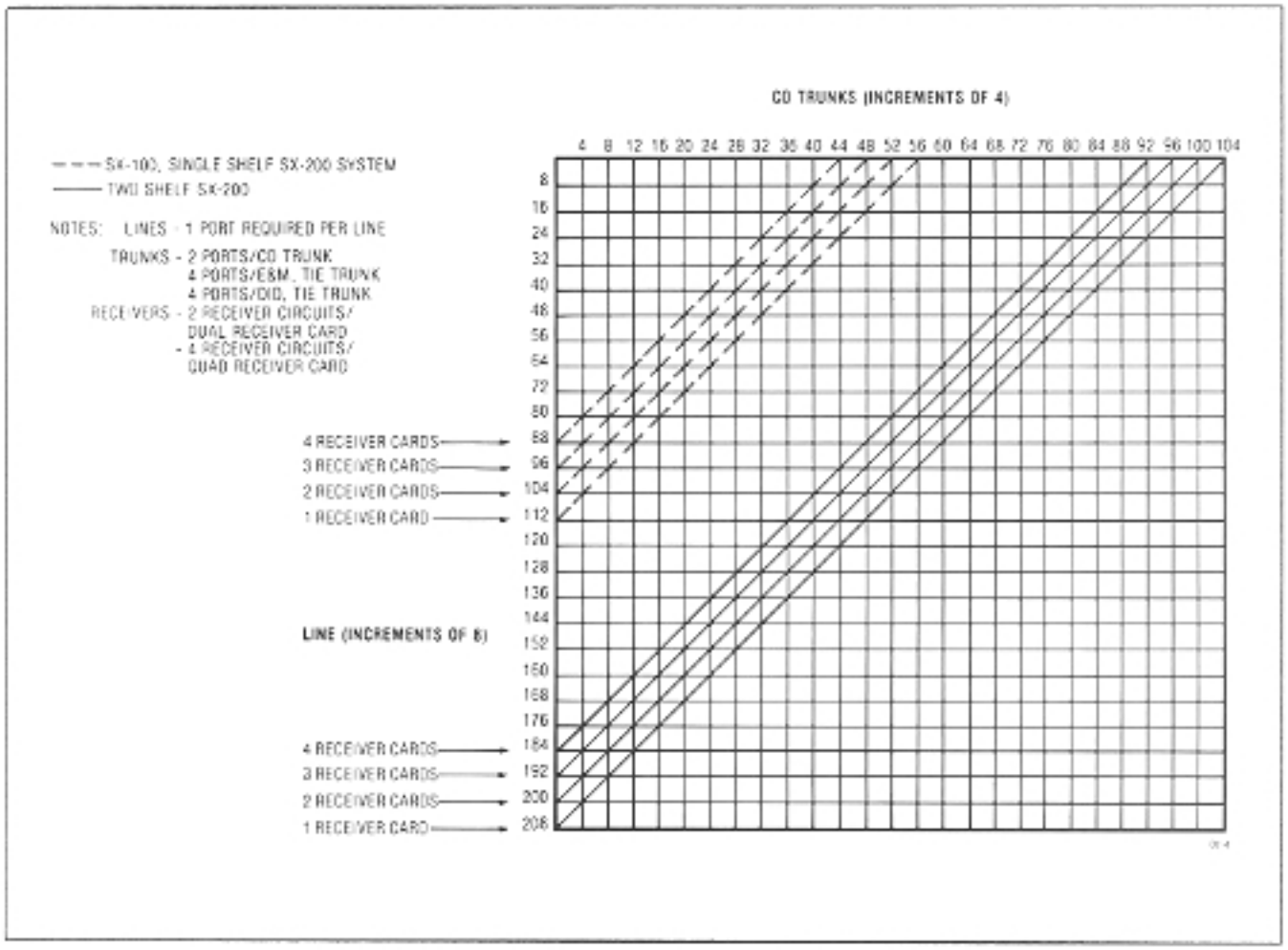


Fig. 2-1 Maximum Line And Trunk Configuration

2.07 All connections from the cross-connecting terminals to the SX-200 equipment cabinet are made using connectorized cables. Connections between the cross-connecting terminals and external equipment are made in accordance with accepted practice.

2.08 A reserve power supply and battery charging system are available as an option. The reserve power supply is designed to maintain system operation for a minimum of two hours in the event of a primary power failure.

SX-200 Equipment Cabinet

2.09 The door on the front of the cabinet provides access to the system maintenance panel, printed circuit cards and reserve battery supply shelf. The hinged rear panels hold the system power supply, and provide access to the line and trunk connections, and the reserve power controls. Cable entry to the equipment cabinet is provided through cable ducts on either side of the cabinet.

2.10 The equipment cabinet holds the maintenance panel, a maximum of two equipment shelves, the optional reserve battery supply and the primary power supply. The maintenance panel, mounted at the top of the cabinet, provides access to the system from the maintenance console through a 50 pin connector. Mounted directly below the maintenance panel is equipment shelf 2. This shelf holds line and trunk cards only. Below equipment shelf 2 is equipment shelf 1. This shelf contains the common control plus a number of trunk, line and receiver cards. The optional reserve power supply is located at the bottom of the cabinet. All connections between shelves and external equipment are made by

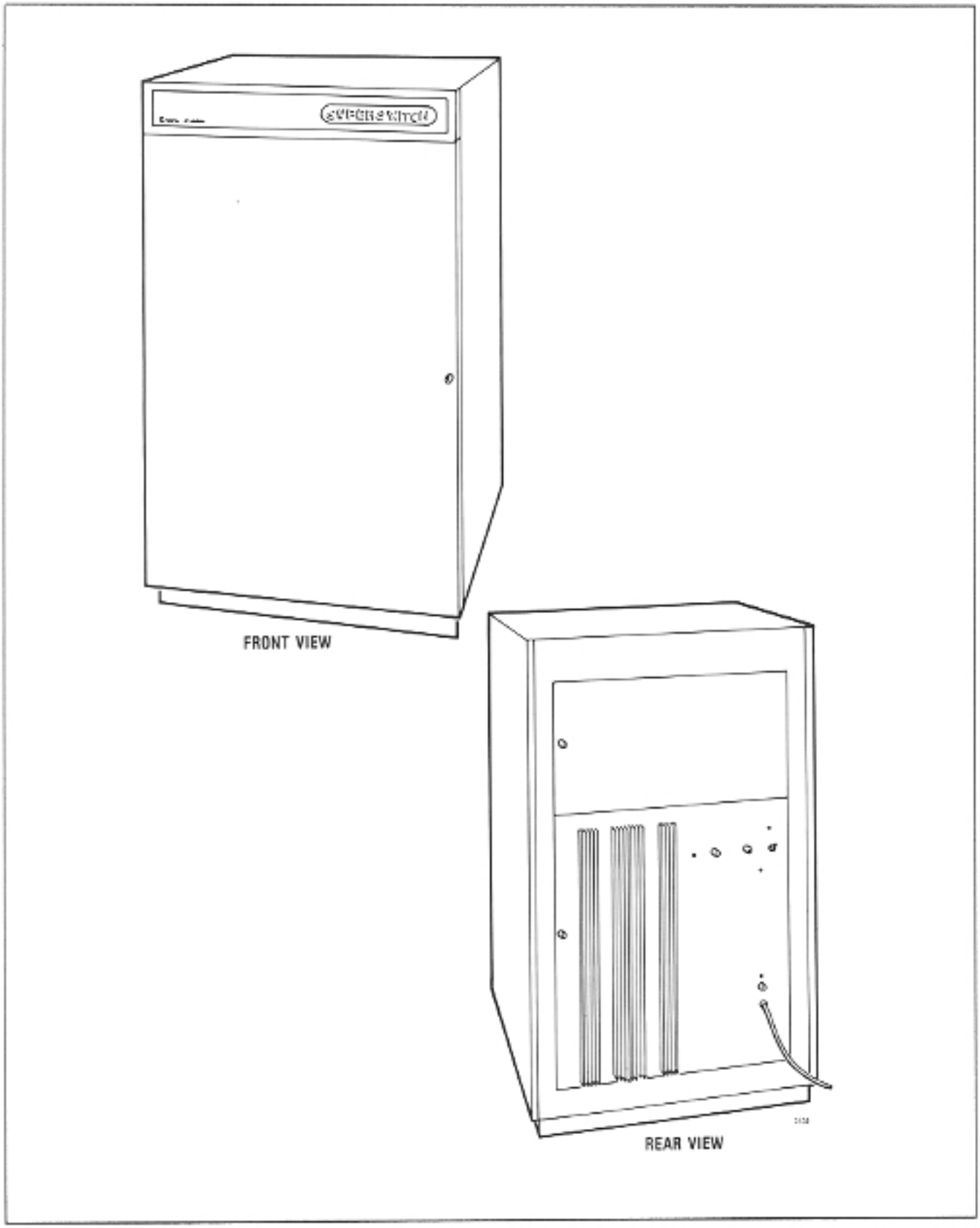


Fig. 2-2 Equipment Cabinet

connectorized cables from the rear of each shelf. The system primary power supply, held on the lower hinged back panel of the cabinet, converts the commercial AC power 115V or 230V to the required system voltage levels.

Maintenance Panel

2.11 The equipment cabinet holds the maintenance panel, an equipment shelf, and the primary power supply. The maintenance panel, mounted at the top of the cabinet, provides access to the system from the maintenance console through a 50 pin connector. To the left of the maintenance plug is the master power fail transfer switch and five power fail transfer control switches. In addition, a test line is provided which allows service personnel to access individual lines and trunks.

Equipment Shelves

2.12 Each equipment shelf holds up to 21 printed circuit cards which plug into the shelf back plane. On the rear of the back plane are a number of Amphenol plugs providing interconnections between the shelves and external equipment. In addition to the plugs are a number of screw down terminals allowing shelf connection to the primary power supply unit. The equipment shelves (Fig. 2-3) measure 10.75 in. (273mm) high, 19 in. (480mm) wide, 16.375 in. (415mm) deep and weigh approximately 27lbs. (12.2kg) fully equipped.

Printed Circuit Cards

2.13 All circuit cards (Fig. 2-4) within the SX-200 are identical in construction and consist of a fiberglass board with printed wiring patterns on both of its faces. Riveted to the front of each board is a transparent faceplate which allows the LEDs mounted on the front of the boards to be easily seen. The color-coded card extractors located at the top and bottom of the faceplate identify the card position within a shelf and ensure that the card is seated correctly in the back plane connector.

Primary Power Supply

2.14 The system primary power supply (Fig. 2-5) mounted directly on the cabinet back panel, (total weight 70lb., 32kg) provides all system power from 115Vac or 230Vac, 48Hz to 64Hz commercial power supply.

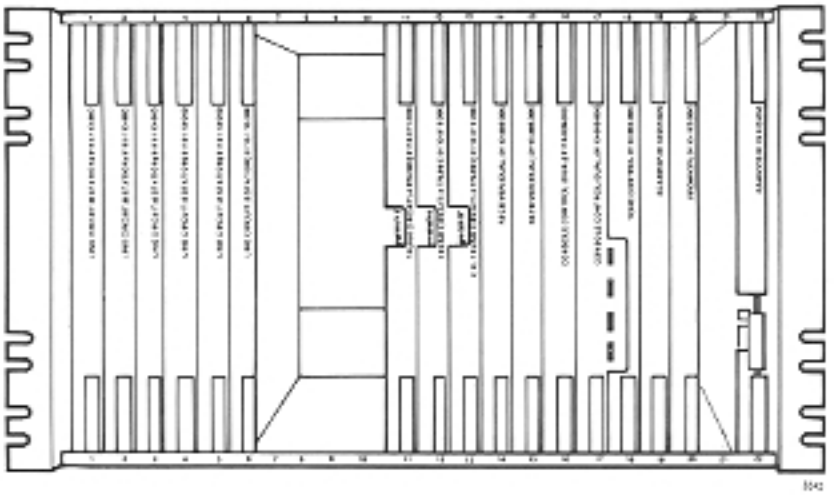


Fig. 2-3 Equipment Shelf

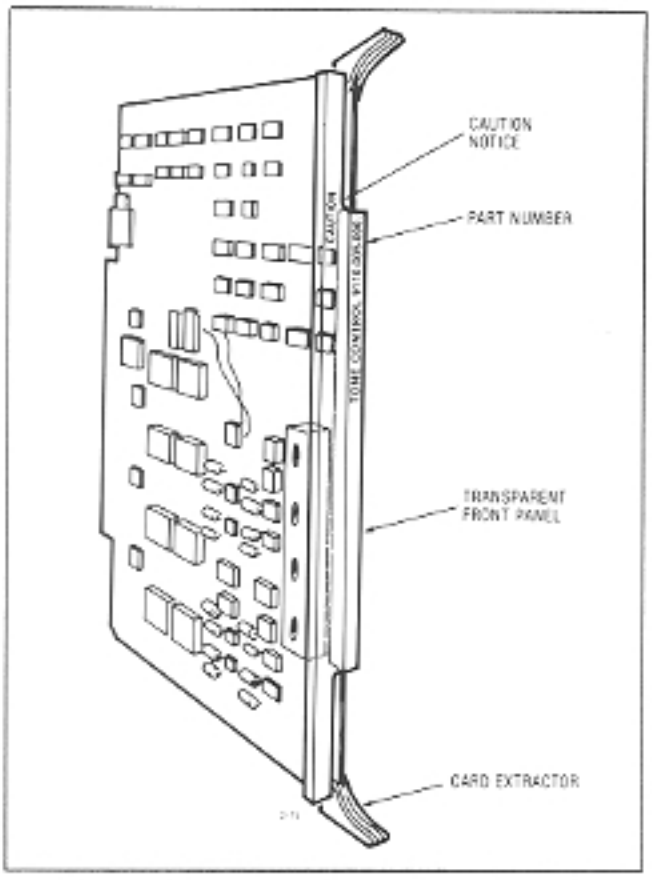


Fig. 2-4 Typical Printed Circuit Card

Reserve Power Supply

2.15 The reserve power supply is designed to maintain complete system operation for a minimum of two hours in the event of a primary power failure. The batteries are housed in a completely enclosed shelf measuring 7 in. (180mm) high, 19 in. (480mm) wide, 14.5 in. (370mm) deep and weighing approximately 125 lb (56.7kg).

Attendant Console

2.16 The SX-200 attendant console (Fig. 2-6) is enclosed in a housing with a smoked plastic faceplate. Located on either side of the console are a pair of headset/handset jacks allowing simultaneous operation and supervision. The console keyboard holds three rows of ten nonlocking keys for the selection of features and completion of calls. On the right of the keyboard is a 12-key pushbutton dial pad. The console display, mounted above the keyboard, displays the active states of calls in progress. In addition to the call status display is a busy lamp field, a trunk group status field, a call waiting indicator, a digital clock and three alarm indicators. The weight of the attendant console is approximately 13lbs. (5.9kg) and its dimensions are: 13.75 in (350mm) wide, 6.8 in. (176mm) high, 9.25 in (236mm) deep.

A complete description of the console is given in Section 9105/9110-097-315-NA for both Hotel/Motel and Business applications.

Programming and Maintenance Console

2.17 The construction of the maintenance console is identical to that of the attendant console, the only difference is in the functions of the call and feature selection keys. A complete description of the maintenance console is given in Section MITL9105/9110-097-315.

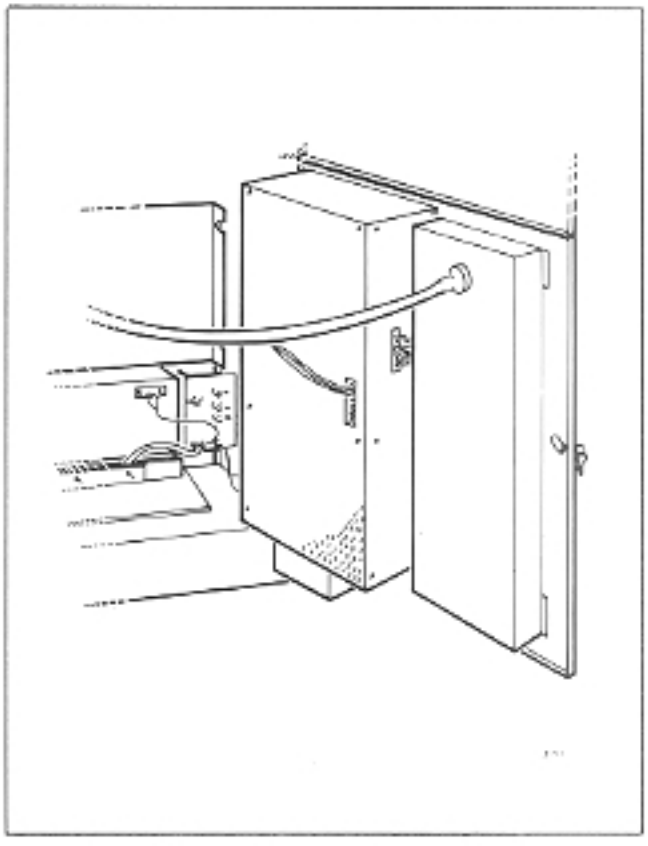


Fig. 2-5 Primary Power Supply

Features

2.18 Features are provided with SX-200 system in the form of Feature packages (Generics). Table 2-1 lists the contents of these Generics. For a detailed description refer to Section MITL9105-NA/9110-097-105.

Feature Provisioning

2.19 All extension features provided by the SX-200 may be grouped into different classes of service, each Class of Service (a maximum of 16) may contain any mixture of features. Feature installation consists of entering into the system memory the number of the extension to which the features are to be assigned, followed by the required class of service code. All data entries into the system may be made from the attendant, or maintenance consoles. To prevent the loss of customer data in the event of a power failure, the memory holding the data associated with each line or trunk is equipped with its own reserve power supply. This power supply is sufficient to maintain the memory intact for a period of 4 weeks.

Electrical Characteristics

2.20 The electrical characteristics of the SX-200 are listed in Table 2-2.

2.21 The SX-200 is designed to operate from a 48Vdc source. A 48Vdc power supply operating from a 115Vac or 230Vac power main is standard equipment. The SX-200 may be optionally equipped with a charger and battery arrangement which provides a minimum of 2 hours reserve power in the event of commercial power failure.

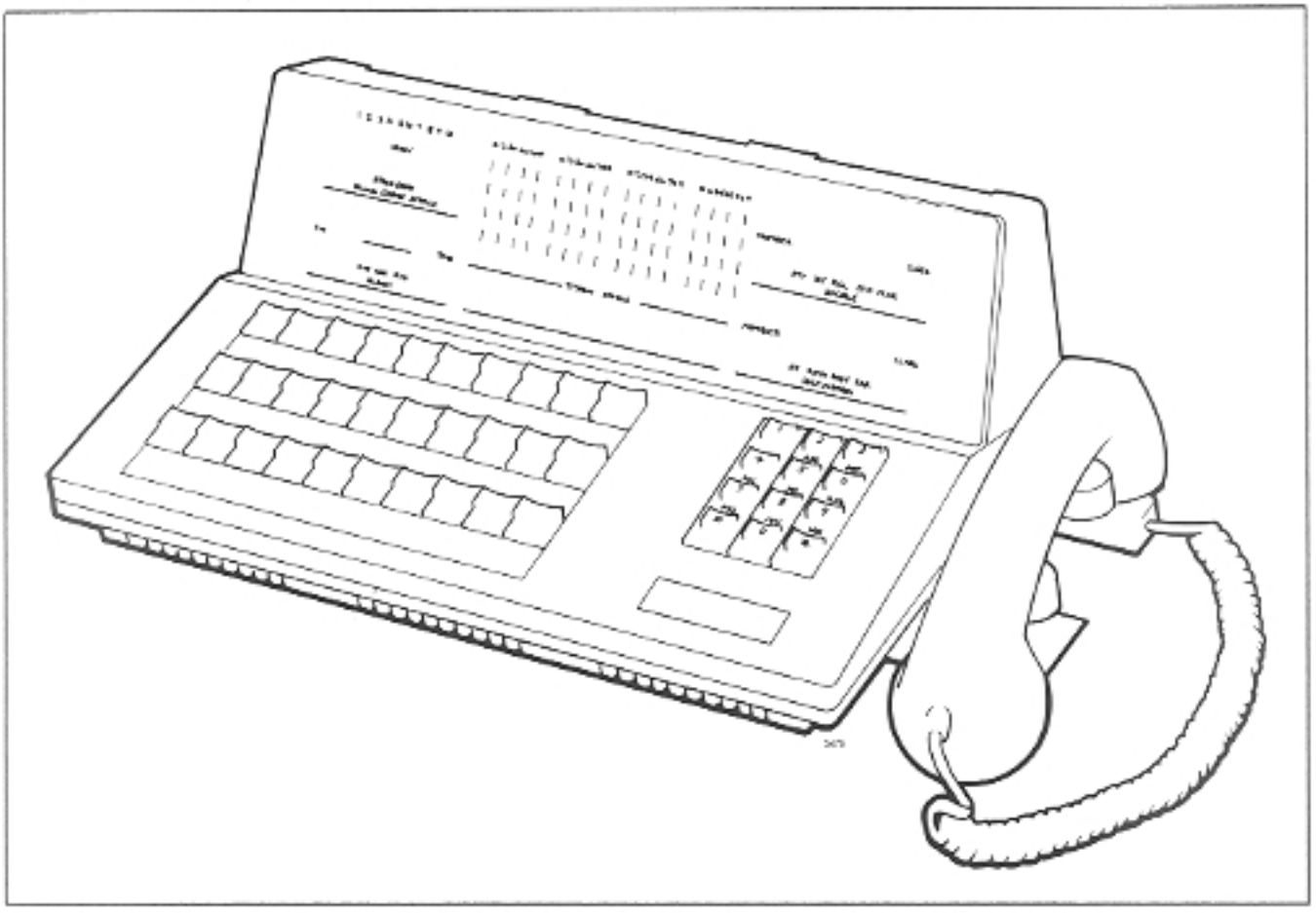


Fig. 2-6 Attendant Console

TABLE 2-1
SYSTEM FEATURES

	214	215	216
Account Codes		•	•
Aphanumeric Display for Attendant Position	•	•	•
Attendant Camp-On	•	•	•
Attendant CCSA Access	•	•	•
Attendant Console (Maximum 2)	•	•	•
Attendant Control of Trunk Group Access	•	•	•
Attendant Controlled Conference	•	•	•
Attendant Flash Over Trunks	•	•	•
Attendant Lockout	•	•	•
Attendant Position (2 Maximum)	•	•	•
Attendant Transfer - All Calls	•	•	•
Automatic Callback Busy/Don't Answer (Station to Station Calls)	•	•	•
Automatic Callback - Busy (Station to Trunk)	•	•	•
Automatic Night Service Switching	•	•	•
Automatic Route Selection			•
Automatic Queuing to Attendant Position	•	•	•
Broker's Call	•	•	•
Busy Lamp Field	•	•	•
Busy Verification of Station Lines	•	•	•
Call Forwarding - All Calls	•	•	•
Call Forwarding - Busy And Don't Answer	•	•	•
Call Forwarding - Busy Line (DID)	•	•	•
Call Forwarding - Don't Answer (DID)	•	•	•
Call Hold	•	•	•
Call Pick-Up	•	•	•
Call Waiting Service			
Attendant Call Waiting	•	•	•
Terminating Call Waiting	•	•	•
Distinctive Tone Signals	•	•	•
Calling Number Display to Attendant	•	•	•
Calls Waiting Indication at Attendant Position	•	•	•
CCSA Access	•	•	•
Class of Service Display to Attendant	•	•	•
Code Calling Access	•	•	•
Code Restriction	•	•	•
Conference Calling	•	•	•
Contact Monitor *	•	•	•
Controlled Outward Restriction	•	•	•
Controlled Station-To-Station Restriction	•	•	•
Controlled Termination Restriction	•	•	•
Controlled Total Restriction	•	•	•
Customer Programming	•	•	•
Data Restriction	•	•	•
Date Display on Console(s)	•	•	•
Diagnostics - Automatic	•	•	•
Dial Access to Attendant	•	•	•
Digital Clock on Attendant Position	•	•	•
Direct Department Calling (DDC)	•	•	•
Direct Inward Dialing (DID)	•	•	•
Direct Outward Dialing (DOD)	•	•	•
Direct Termination of Miscellaneous Circuits On Attendant	•	•	•
Position (Paging) *			
Direct Trunk Group Selection (DTGS)	•	•	•
Directed Call Pick-Up	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES

	214	215	216
Hands-Free Operation			•
Hold-For-Pick-Up Option	•	•	•
Distinctive Ringing	•	•	•
DTMF And/Or DCKP On Attendant Position	•	•	•
DTMF Calling	•	•	•
DTMF To Dial Pulse Conversion	•	•	•
Dump and Load of Customer Data	•	•	•
Executive Override	•	•	•
Flash for Attendant	•	•	•
Flexible Numbering of Stations	•	•	•
Foreign Exchange (FX) Access	•	•	•
Fully Restricted Station	•	•	•
Identified Trunk Group	•	•	•
Immediate Audible Ring on Attendant Handled Calls	•	•	•
Immediate Ring	•	•	•
Incoming Call Identification (ICI)	•	•	•
Indication of Camp-On	•	•	•
Intercept Treatment			
Attendant Intercept	•	•	•
Intercept Tone	•	•	•
Interposition Calling	•	•	•
Interposition Transfer	•	•	•
Inward Restriction	•	•	•
Line Lockout With Warning	•	•	•
Listed Directory Number (LDN) Service	•	•	•
Loudspeaker Paging *			
Direct Access by Attendant	•	•	•
Dial Access	•	•	•
Multizone	•	•	•
Priority Paging	•	•	•
Main/Satellite Service	•	•	•
Manual Originating Line Service	•	•	•
Manual Terminating Line Service	•	•	•
Meet Me Conference	•	•	•
Message Waiting (Audible)	•	•	•
Message Waiting (Lamp)	•	•	•
Miscellaneous Trunk Restriction	•	•	•
Multiple Listed Directory Numbers (LDN)	•	•	•
Multiple Access Codes for a single trunk group (10 maximum)	•	•	•
Music On Hold *	•	•	•
Music on Attendant Position Hold *	•	•	•
Night Console Position	•	•	•
Night Service			
Fixed	•	•	•
Flexible	•	•	•
Night Station Service - Fixed Service	•	•	•
Night Station Service - Full Service	•	•	•
Origination Restriction	•	•	•
Outgoing Trunk Callback	•	•	•
Outgoing Trunk Camp-On	•	•	•
Outgoing Trunk Queuing	•	•	•
Outward Restriction	•	•	•
Power Failure Transfer - Station	•	•	•
Priority Queue	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES

	214	215	216
Privacy and Lockout	•	•	•
Radio Paging Access *	•	•	•
Range Programming			•
Recall Dial Tone	•	•	•
Recorded Telephone Dictation Access *	•	•	•
Remote Access to PBX Services	•	•	•
Remote Administration and Maintenance (hardware option)	•	•	•
Re-ring From Toll (on Toll Terminal)	•	•	•
Reserve Power (hardware option)	•	•	•
Room Audit	•	•	•
Room Status	•	•	•
Rotary Dial Calling	•	•	•
Route Advance	•	•	•
Saved Number Redial		•	•
Serial Call	•	•	•
Sharing (4 Tenant)	•	•	•
Shared Attendant Service	•	•	•
Single Digit Dialing (Non-conflicting)	•	•	•
Single Digit Dialing (Conflicting)	•	•	•
Speed Call			
System - wide		•	•
Personal		•	•
Nesting		•	•
Splitting			
One-Way Manual Splitting	•	•	•
Two-Way Manual Splitting	•	•	•
One-Way Automatic Splitting	•	•	•
Two-Way Automatic Splitting	•	•	•
Station Hunting			
Terminal Hunting	•	•	•
Circular Hunting	•	•	•
Secretarial Hunting	•	•	•
Station Message Detail Recording		•	•
Station Message Register Service	•	•	•
Electronic Storage and Display	•	•	•
Internal Charging	•	•	•
Station Override Security	•	•	•
Station-to-Station Calling	•	•	•
Straightforward Outward Completion	•	•	•
Switched Loop Operation	•	•	•
Tandem Tie Trunk Switching	•	•	•
Termination Restriction	•	•	•
Threeway Conference Transfer	•	•	•
Through Dialing	•	•	•
Tie Trunk Access	•	•	•
Timed Reminders	•	•	•
Toll Restriction	•	•	•
Battery Reversal	•	•	•
0/1 Access		•	•
Multi Digit	•	•	•
Toll Terminal Access	•	•	•
Total "Do Not Disturb" Display	•	•	•
Total "Message Waiting" Display	•	•	•
Total "Room Status" Display	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES

	214	215	216
Traffic Data Collection *	•		•
Traffic Display to Customer	•		•
Transfer into Busy	•	•	•
Trunk Answer From Any Station	•	•	•
Trunk Group Busy (TGB) Indicators on Attendant Position	•	•	•
Trunk Status Field	•	•	•
Trunk-To-Trunk Connections	•	•	•
Trunk Verification by Customer (TVC)	•	•	•
Trunk Verification by Station (TVS)	•	•	•
Uniform Call Distribution	•	•	•
Wake-Up Service	•		•
WATS Access	•	•	•
Wideband Data Switching	•	•	•
Wide Frequency Tolerant Power Plant	•	•	•
* Requires external customer provided equipment			

2.22 In the event of a power failure with no reserve power available, the SX-200 can be arranged to automatically connect up to twelve Central Office trunks to pre-selected extensions.

3. SYSTEM OPERATION

3.01 The SX-200 is a solid-state PABX employing space division switching and microprocessor control of call processing. A block diagram of the PABX is shown in Fig. 3-1.

3.02 The SX-200 has a capacity of 256 ports. The ports are scanned sequentially for detection of signals, each port being scanned for 12.5 microseconds. All ports are therefore scanned every 3.2 milliseconds.

3.03 Call origination is detected during scanning, an interrupt signal to the microprocessor is generated and a speech path and receiver are assigned to the originating station. After dialing, the receiver is released and the called party is connected to the same speech path as the originator. There are 32 speech paths available in the SX-200 and each of the 256 ports has access to al 32 speech paths.

4. SYSTEM CONFIGURATION

General

4.01 Fig. 4-1 illustrates the SX-200 cabinet layout.

Equipment Shelf 1

4.02 Equipment Shelf 1 contains the four common control cards plus the required number of line trunk, console control and receiver cards. The common control cards are color coded and held in card positions 18 through 22. The console control cards occupy positions 16 and 17, and the first receiver card position 15. These card positions are fixed for all systems. Card positions 1 through 14 may be equipped with line, trunk or receiver cards as shown in Fig. 4-2.

- **Line Card.** Provides 8 line circuits which serve as interfaces between the station equipment and SX-200 switching circuitry.

- **Trunk Card.** Provides either interfacing between the Central office and the SX-200 switching circuitry for 4 CO trunks, or between other PABX's and the SX-200 for 2 tie trunks.

TABLE 2-2
SX-200 ELECTRICAL CHARACTERISTICS

Station Loop Limit	1200 ohms including set
Maximum Number of Ringers per Line	5
Ringing	90V,20Hz - immediate ringing(option of 17Hz or 25Hz)
Standard	1s on, 3s off
Special	0.5s on, 0.5s off, 0.5s on, 2.5s off
Ring Trip	During silent or ringing period
Dial Tone	350/440Hz, continuous
Transfer Dial Tone	350/440Hz, 3 bursts of 100ms, then continuous
Busy Tone	480/620Hz, interrupted at 60ipm
Special Busy Tone	350/440Hz interrupted at 60ipm
Standard Ringback Tone	440/480Hz, 1s on, 3s off
Special Ringback Tone	440/480Hz, 0.5s on, 0.5s off, 0.5s on, 2.5s off
Callback	6 rings of standard ringing
Reorder Tone	480/620Hz, interrupted at 120ipm
Conference Tone	440Hz, 1 burst of 1s
Camp-On Tone	440Hz,one burst of 200ms for station camp-on 440Hz, two bursts 100ms on, 50ms off, 100ms on for trunk camp-on
Override Tone	440Hz, one burst of 800ms followed by a 200ms burst every 6s
Crosstalk Attenuation	75dB minimum
Insertion Loss, Station-to-Station	5dB $\pm$0.5dB at 1004Hz
Station-to-Trunk	0.5dB $\pm$0.3dB at 1004Hz
Trunk-to-Trunk	0.5dB $\pm$0.3dB at 1004Hz
Longitudinal Balance	54dB minimum, 200-3000Hz
Return Loss	14dB minimum
Idle Circuit Noise	16dBrnC maximum
Impulse Noise	No counts over 46dBrnC
Envelope Delay Difference	200us maximum
System Impedance	600 ohms nominal for lines 600 or 900 ohms nominal for trunks
Traffic Capacity	7.5ccs/line minimum at 100 lines at P = 0.01
Primary Power	100-125V, 47-63Hz, 4A maximum
Central Office Trunk Loop Limit	1600 ohms
Maximum Distance of Console from Equipment	1000ft. (300m) of 26AWG cable
Operating Environment	0°C to 40°C, 10% to 90% Relative Humidity

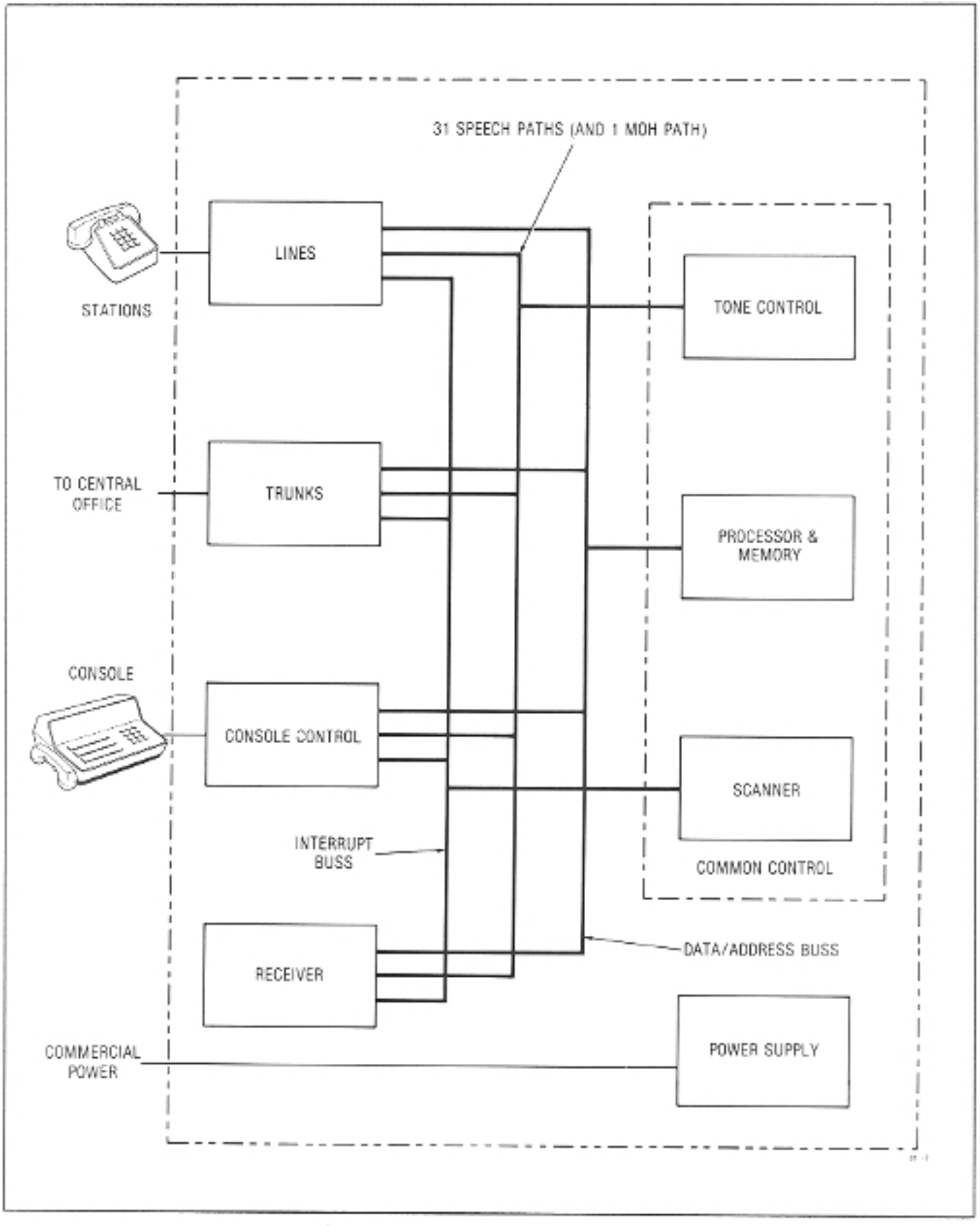


Fig. 3-1 SX-200 Block Diagram

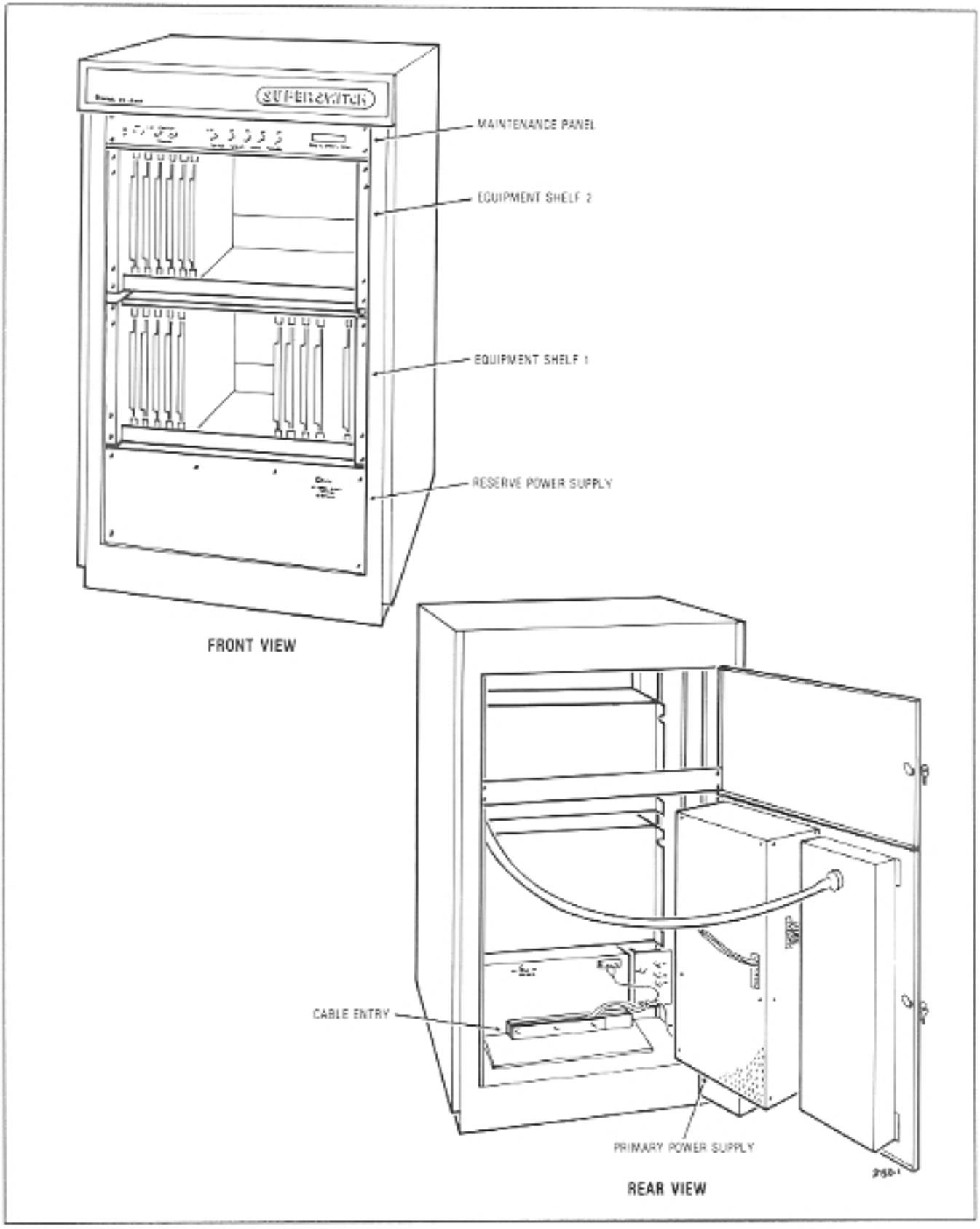
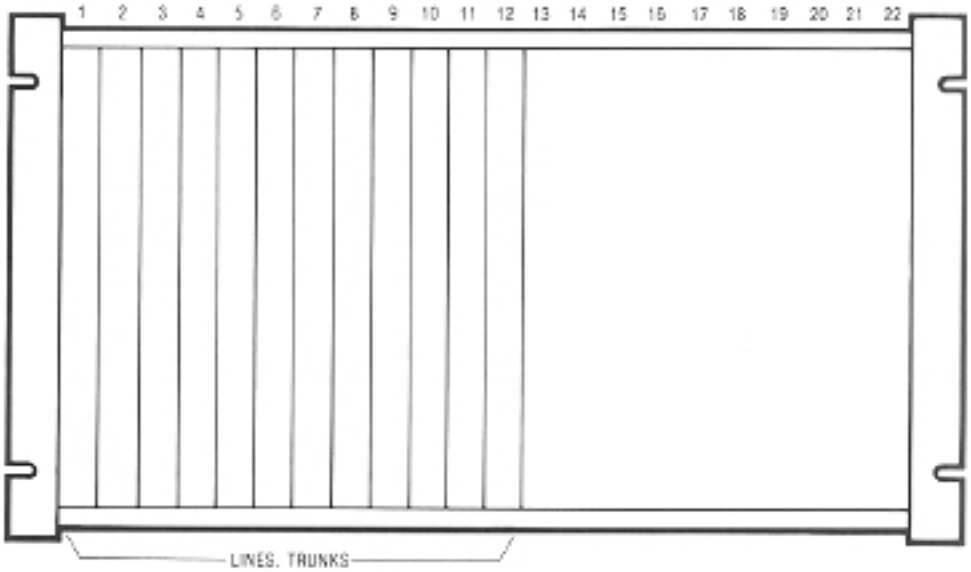
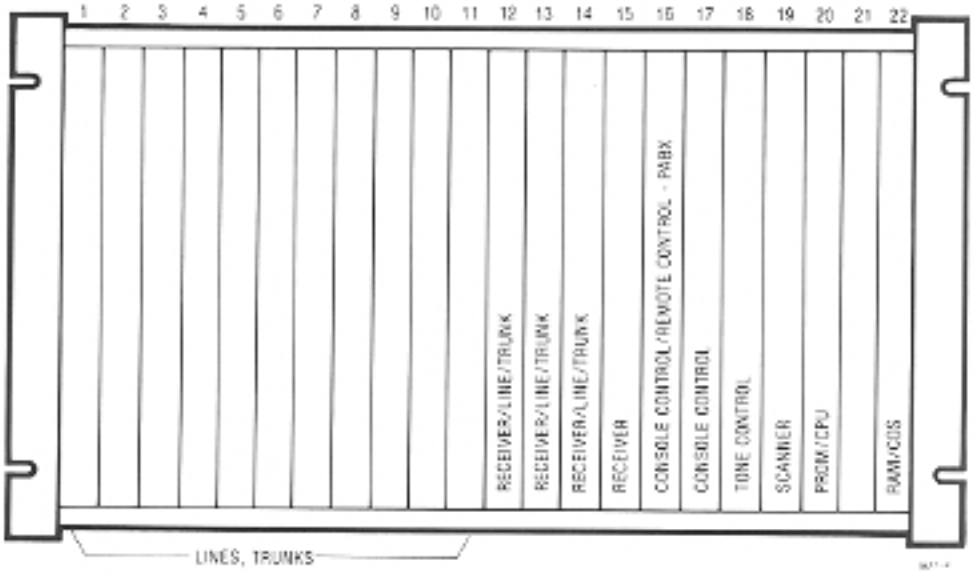


Fig. 4-1 SX-200 Cabinet Layout



FRONT VIEW

SHELF 2 (SX-200 ONLY)



FRONT VIEW

SHELF 1

Fig. 4-2 Shelf Card Positions

- **Receiver Card.** The Dual Receiver or Quad Receiver Cards respectively contain 2 or 4 sets of rotary dial and DTMF receivers, which are used to detect dialed digits and transfer them to a temporary store for call processing.

- **Console Control Card.** This card provides the interface between the common control and two consoles. The first console control card (in position 17) is assigned to Attendant Console 1 and the Maintenance Console. The second console control card (in position 16) is assigned to Attendant Console 2.

- **Remote Control - PABX Card.** This card allows the PABX to be accessed from a remote maintenance centre for the purpose of conducting administrative, maintenance and test routines on the PABX. The card is not normally supplied with the PABX and forms part of the RMAT System (consult Section MITL9105/9110-098-101 Remote Maintenance Administration and Test System).

- **Tone Control Card.** All card progress tones are supplied by this card. In addition, this card contains the DTMF and DP pulse generators, voice paging circuitry and diagnostic testing functions.

- **Scanner Card.** Sequentially scans all 256 ports to detect signals that require processor action. This card also contains the night bell, paging control relays, 2 digit display and the master reset button.

- **PROM/CPU Card.** Contains the operating software in the form of a PROM card module. This card contains the microprosessor and associated circuitry.

- **RAM/COS Card.** Provides CMOS-RAM memory for customer data and a scratch pad RAM memory. The CMOS memory is protected from power failure by a card mounted battery pack.

Equipment Shelf 2

4.03 To expand the system to its maximum capability, a second equipment shelf must be employed. Equipment shelf 2 is identical in construction to shelf 1 and provides an additional 12 card positions, which may be used to house line or trunk cards.

Primary Power Supply

4.04 The SX-200 primary power supply generates 48Vdc from a 115Vac or 230Vac power main input, and uses the 48Vac to derive the system operating voltages of +8V, -5V, -10V, -48V and 90Vac ringing voltage.

4.05 The power failure transfer relays allow for the connection of up to 12 Central Office trunks to selected PABX stations in the event of a major system failure or a power failure.

Attendant Console

4.06 The layout of the SX-100/SX-200 attendant console is shown in Fig. 4-3. The three rows of buttons on the console faceplate are used to select and handle calls. Each button has a light emitting diode (LED) associated with it to indicate the operational status of the button.

4.07 The console display area provides the attendant with specific information concerning the call which is being handled, as well as general information such as the time of day, and the busy/idle status of PABX stations and trunk groups.

4.08 A brief description of the display, and the functions of each pushbutton is given below.

Console Display

4.09 Housed on the upper face of the console are the following displays:

- **Trunk Group Status.** One LED per trunk group is used to signal the busy status of the group (BUSY). Another LED per trunk group is used to indicate that the attendant has changed the trunk group from dial ac-

cess to attendant access (ATT). These indications are provided for up to 10 trunk groups.

- **CALL WAITING (CW).** Indicates how many calls to the console are waiting to be answered.

- TIME. A 12 hour or 24 hour digital clock is provided as a standard item. this display may optionally show the date when the IDENT button is pressed.

- **ALARM.** This area contains three LEDs labelled MAJOR, CONSOLE, and MINOR. A MAJOR alarm indicates a serious system malfunction and that failure transfer circuits have operated. A CONSOLE alarm indicates a console malfunction, and a MINOR alarm indicates that a non-essential circuit malfunction has been detected by the system.

- **BUSY LAMP FIELD.** The centre of the display area contains the busy lamp field which provides a LED for each of 200 stations and or trunks. When a station or trunk is busy, the associated LED is illuminated.

- **SOURCE.** This area provides specific information on any party who calls the attendant.
  NUMBER. Displays the calling number.
  CLASS. Displays the calling party class-of-service.
  ATT. Indicates that the attendant is talking to the calling party.
  INT. Identifies the call as an intercept call.
  RCL. Identifies the call as a recall.
  DID. Identifies the call as a Direct Inward Dial call to the attendant.
  MAN. Identifies the call as a Manual Line Service call.

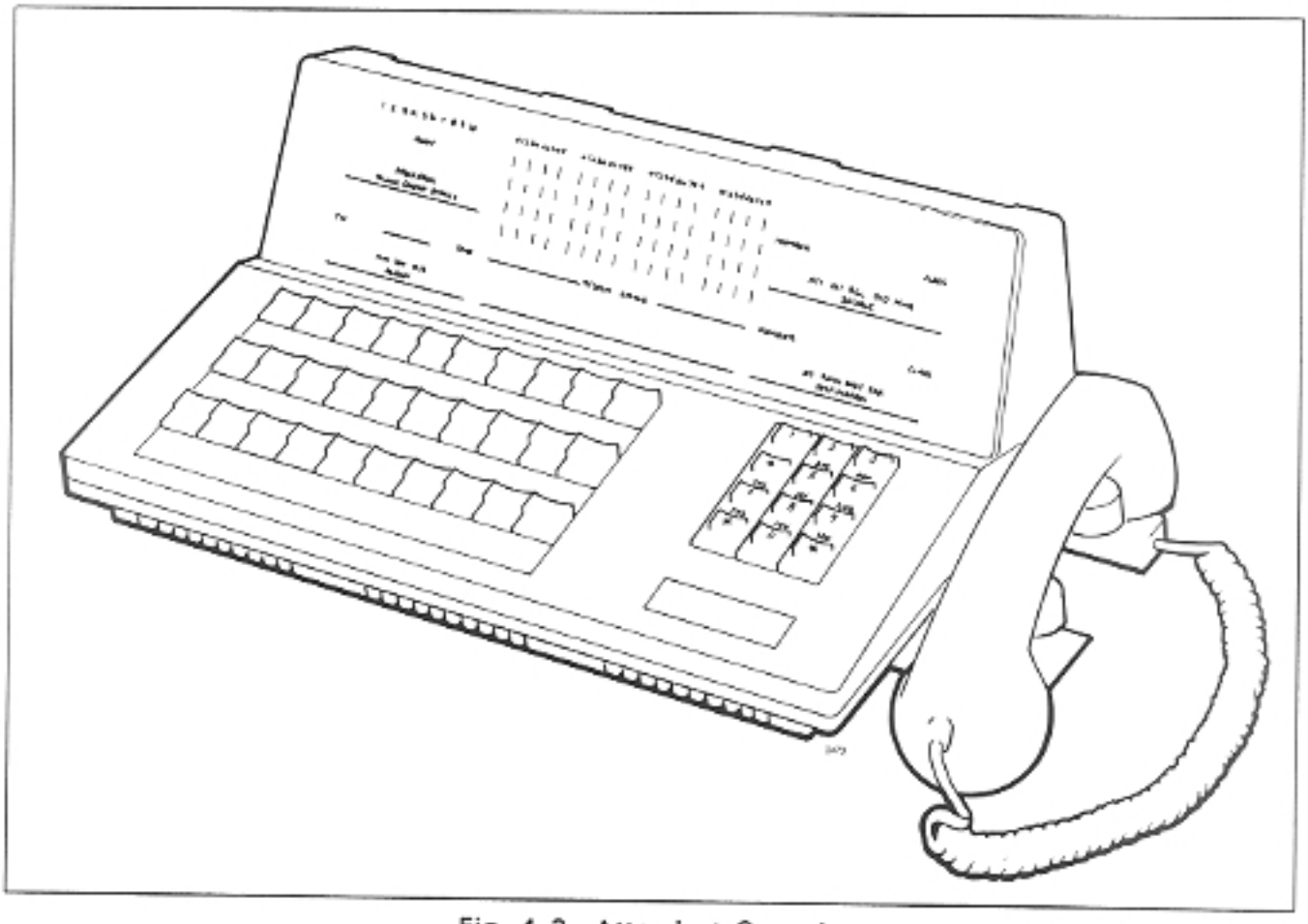


Fig. 4-3 Attendant Console

- **DESTINATION.** The destination area supplies specific information about the party called by the attendant.
  NUMBER. Displays the number of the called party.
  CLASS. Displays the class of service of the called party.
  ATT. Indicates that the attendant is talking to the called party.
  RING. Indicates that the called party is ringing.
  BUSY. Indicates that the called party is busy.
  ERROR. Indicates to the attendant that an invalid number has been dialed.

Console Faceplate

4.10 The console faceplate holds the following buttons:

- **LAMP TEST.** This button, when pressed, causes all the console LEDs and seven-segment displays to turn on. In this way, faulty LEDs or displays can be readily detected.

- **ALARM RESET.** This button is pressed to reset the audible alarm signal in the event of an alarm and also displays an alarm identification code in the Source and Destination display areas.

- **BELL OFF.** The console bell is disabled when this button is pressed. The LED associated with the button indicates the bell off condition. The bell can be reactivated by pressing the button again.

- **IDENT.** In the event of a faulty connection through the console, operation of this button will display the circuits used in the connection. The circuits used are displayed for as long as the button is held down. When the console is idle pressing the ident key identifies the software installed in the PABX and the console identification. In either case, the date will appear in the TIME display.

- **NIGHT 1.** This button is used to switch the PABX into and out of night service 1. The associated LED when lit, indicates that the PABX is in night service 1.

- **NIGHT 2.** This button is used to switch the PABX into and out of night service 2. The associated LED when lit, indicates that night service 2 has been selected. Night service 1 and night service 2 are mutually independent of each other.

- **ROOM RESTR.** The ROOM RESTR button is used to prevent unauthorized outgoing calls from guest rooms when they are vacant.

- **ROOM STATUS.** The function of this button is to monitor the status of each room. Pressing this button and dialing one of five possible single-digit codes indicates, on the BUSY LAMP FIELD display, which rooms correspond to a particular status condition.

- **MSGE WAIT.** This feature is enabled by the attendant calling a room and pressing the MSGE WAIT button. This causes the room telephone to receive a burst of 3 rings every 20 minutes or flash a special lamp.

- **DO NOT DISTURB.** This feature enables a guest at his request not to receive incoming calls.

- **CALLBACK.** This button allows the attendant to access the automatic callback feature. If a callback call has been answered the associated LED is on.

- **CANCEL.** The cancel button is used to cancel a misdialed or busy call.

- **HOLD 1-4.** The attendant can place a current call on hold by pressing one of the hold buttons. The associated LED will light to indicate that the hold circuit is busy.

- **CALL BLOCK.** Certain rooms and all vacant rooms may be restricted from calling other rooms for specific time periods.

- **FLASH.** This button is pressed to flash the telephone company operator on long distance calls.

- **SERIAL CALL.** This button is pressed to enable incoming Central Office calls to recall to the console when the called station hangs up. If a call has been answered the associated LED is on.

- **GUEST ROOM.** When this button is pressed and the room number dialed certain information will be displayed.

(1) The room number and the "Message Register" status in the SOURCE display.

(2) The "Room Status" indicated by a digit (followed by "." if the maid is in the room) and a set Wake-Up in the Destination display.

(3) The "Do Not Disturb" status (indicated by DO NOT DISTURB lamp)

(4) The "Message Waiting" status (indicated by MSGE WAIT lamp)

(5) The "Controlled Outgoing Restriction" status (indicated by ROOM RESTR lamp)

(6) The Automatic Wake Up Time if set.

- **CONF.** The conference button is used to set up an attendant conference. The associated LED flashes to indicate recall from the conference, and remains in a steady on condition to indicate that the conference circuit is in use. **D1 PAGE.** Pressing the page button gives the attendant access to the paging equipment for as long as the button is held down. The associated LED indicates that the paging equipment is busy.

- **OVERRIDE.** This button allows the attendant to override an existing conversation.

- **RELEASE.** This release button is used to release the attendant from connections made through the console.

- **RECALL.** The LED associated with the RECALL button flashes to indicate a recall to the attendant. The recall may be answered by pressing the RECALL or ANSWER button. After answering, both the RECALL and ANSWER LEDs remain in a steady on condition.

- **DIAL 0.** This button flashes to indicate a dial "0" call which may be answered by pressing the DIAL 0 or ANSWER buttons. After answering, both ANSWER and DIAL 0 LEDs remain in a steady on condition.

- **LDN 1-4.** The LEDs associated with these four buttons flash to indicate up to four different types of incoming trunk calls (eg. FX, CO, WATS, TIE). These may be answered by pressing the appropriate LDN button or the ANSWER button. After answering, both the LDN and ANSWER LEDs remain in a steady on condition.

- **SOURCE.** This button is pressed to split the attendant to the source side of a call. The LED indicates the split condition to the source.

- **BOTH.** This button is pressed to connect the attendant to both the source and destination parties. The associated LED lights to indicate the three-way connection.

- **DEST.** The destination button is pressed to connect the attendant to the destination side of a call. The associated LED is activated whenever the attendant is split to the destination.

- **ANSWER.** This is a common answer button for calls appearing on the RECALL, DIAL 0 and LDN 1-4 buttons. The ANSWER LED flashes when any incoming call appears on the console, and remains in a steady on condition when the call is answered.

4.11 In addition to the buttons and LEDs described above, the console has a 12 digit key pad which is used for dialing all calls, an emergency transfer switch (mounted on the back of the console) which switches the PABX into

failure transfer mode, and a volume control (mounted on the back of the console) to vary the bell volume.

4.12 All console buttons are non-locking.

Audible Incoming Discrimination

4.13 The console incorporates audible signal discrimination. Under some conditions requiring attendant service distinctive audio codes are issued by the tone ringer. With this facility visually-impaired attendants can operate the console and be aware of the various calling-in situations that can arise. These situations are as follows;

- Incoming calls, i.e. LDN calls, Dial 0 Calls or Recalls
- HOLD connection timeouts
- A "flash-for-attendant" occuring during an Attendant Controlled Conference
- A MINOR alarm flashing

4.14 When used by a visually-impaired attendant all events requiring attendant recognition are placed in a queue and give an audible signal on a first-in, first-out basis. In case of the first situation (LDN's, Dial 0 or Recall) the same audible signal is given indicating that the call can be answered with the ANSWER button. To find the actual button the visually-impaired operater can poll the keyboard. The remaining events have distinctive audible signals and may be readily associated with the relevant button. For further information see Section MITL9105/9110-097-315-NA.

Keyboard Polling

4.15 For proper operation of the console a visually-impaired attendant must be aware of the status of the keyboard. For example, he or she must know whether the BELL OFF or NIGHT 1 button has been enabled. To do this the attendant presses the LAMP TEST button in the silent mode (the ringer is off, the seven segment indicators are on and the LED's are off). While this button is held depressed the remaining relevant buttons are pressed in turn. If the LED associated with a button is lit the ringer will sound as long as the button is pressed down. If the LED is flashing the ringer will give a 0.5 second on, 0.5 second off audible signal. In this manner the status of the BELL OFF, NIGHT 1 or any button (including an incoming call) can be determined and appropriate action taken. When this operation takes place the LAMP TEST button is the last to be released, otherwise the current button being polled will become active when the LAMP TEST is released first.

SX-100*/SX-200*
SUPERSWITCH*
FEATURES AND SERVICES DESCRIPTION
GENERIC 214, 215, 216

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CONTENTS PAGE

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CONTENTS PAGE

1. GENERAL

Introduction

1.01 This section contains a description of the features and services provided by the SX-100 and SX-200 PABX. The selection of features and services are subject to minimal constraints, allowing each system to be configured to meet the individual requirements of the customer.

2. FEATURES AND SERVICES DESCRIPTION

Introduction

2.01 This part consists of abstracts taken from Section MITL9105/9110-097-105-NA insofar as the "description" elements of each feature or service is concerned. It does not contain the "conditions", "programming" and "operation" elements of each feature or service which appear in Section MITL9105/9110-097-105-NA.

2.02 As system and extension features interact, grouping of the feature and service descriptions under the headings System, Attendant and Extension is impractical. This part therefore lists the features and services alphabetically with references to any interdependant feature or service.

2.03 Table 2-1 lists the selectable features and services provided by the various Generic Programs. These features and services may be selected by programming the required parameters.

TABLE 2-1
SYSTEM FEATURES AND SERVICES

Account Codes	214	215	216
Alphanumeric Display for Attendant Position	•	•	•
Attendant Camp-On	•	•	•
Attendant CCSA Access	•	•	•
Attendant Console (Maximum 2)	•	•	•
Attendant Control of Trunk Group Access	•	•	•
Attendant Controlled Conference	•	•	•
Attendant Flash Over Trunks	•	•	•
Attendant Lockout	•	•	•
Attendant Position (2 Maximum)	•	•	•
Attendant Transfer - All Calls	•	•	•
Automatic Callback Busy/Don't Answer (Station to Station Calls)	•	•	•
Automatic Callback - Busy (Station to Trunk)	•	•	•
Automatic Night Service Switching	•	•	•
Automatic Route Selection			•
Automatic Queuing to Attendant Position	•	•	•
Broker's Call	•	•	•
Busy Lamp Field	•	•	•
Busy Verification of Station Lines	•	•	•
Call Forwarding - All Calls	•	•	•
Call Forwarding - Busy And Don't Answer	•	•	•
Call Forwarding - Busy Line (DID)	•	•	•
Call Forwarding - Don't Answer (DID)	•	•	•
Call Hold	•	•	•
Call Pick-Up	•	•	•
Call Waiting Service			
Attendant Call Waiting	•	•	•
Terminating Call Waiting	•	•	•
Distinctive Tone Signals	•	•	•
Calling Number Display to Attendant	•	•	•
Calls Waiting Indication at Attendant Position	•	•	•
CCSA Access	•	•	•
Class of Service Display to Attendant	•	•	•
Code Calling Access	•	•	•
Code Restriction	•	•	•
Conference Calling	•	•	•
Contact Monitor *	•	•	•
Controlled Outward Restriction	•	•	•
Controlled Station-To-Station Restriction	•	•	•
Controlled Termination Restriction	•	•	•
Controlled Total Restriction	•	•	•
Customer Programming	•	•	•
Data Restriction	•	•	•
Date Display on Console(s)	•	•	•
Diagnostics - Automatic	•	•	•
Dial Access to Attendant	•	•	•
Digital Clock on Attendant Position	•	•	•
Direct Department Calling (DDC)	•	•	•
Direct Inward Dialing (DID)	•	•	•
Direct Outward Dialing (DOD)	•	•	•
Direct Termination of Miscellaneous Circuits On Attendant Position	•	•	•
Direct Trunk Group Selection (DTGS)	•	•	•
Directed Call Pick-Up	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Hands-Free Operation			•
Hold-For-Pick-Up Option	•	•	•
Distinctive Ringing	•	•	•
DTMF And/Or DCKP On Attendant Position	•	•	•
DTMF Calling	•	•	•
DTMF To Dial Pulse Conversion	•	•	•
Dump and Load of Customer Data	•	•	•
Executive Override	•	•	•
Flash for Attendant	•	•	•
Flexible Numbering of Stations	•	•	•
Foreign Exchange (FX) Access	•	•	•
Fully Restricted Station	•	•	•
Identified Trunk Group	•	•	•
Immediate Audible Ring on Attendant Handled Calls	•	•	•
Immediate Ring	•	•	•
Incoming Call Identification (ICI)	•	•	•
Indication of Camp-On	•	•	•
Intercept Treatment			
Attendant Intercept	•	•	•
Intercept Tone	•	•	•
Interposition Calling	•	•	•
Interposition Transfer	•	•	•
Inward Restriction	•	•	•
Line Lockout With Warning	•	•	•
Listed Directory Number (LDN) Service	•	•	•
Loudspeaker Paging *			
Direct Access by Attendant	•	•	•
Dial Access	•	•	•
Multizone	•	•	•
Priority Paging	•	•	•
Main/Satellite Service	•	•	•
Manual Originating Line Service	•	•	•
Manual Terminating Line Service	•	•	•
Meet Me Conference	•	•	•
Message Waiting (Audible)	•	•	•
Message Waiting (Lamp)	•	•	•
Miscellaneous Trunk Restriction	•	•	•
Multiple Listed Directory Numbers (LDN)	•	•	•
Multiple Access Codes for a single trunk group (10 maximum)	•	•	•
Music On Hold *	•	•	•
Music on Attendant Position Hold *	•	•	•
Night Console Position	•	•	•
Night Service			
Fixed	•	•	•
Flexible	•	•	•
Night Station Service - Fixed Service	•	•	•
Night Station Service - Full Service	•	•	•
Origination Restriction	•	•	•
Outgoing Trunk Callback	•	•	•
Outgoing Trunk Camp-On	•	•	•
Outgoing Trunk Queuing	•	•	•
Outward Restriction	•	•	•
Power Failure Transfer	•	•	•
Priority Queue	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Privacy and Lockout	•	•	•
Radio Paging Access *	•	•	•
Range Programming	•	•	•
Recall Dial Tone	•	•	•
Recorded Telephone Dictation Access *	•	•	•
Remote Access to PBX Services	•	•	•
Remote Administration and Maintenance (hardware option)	•	•	•
Re-ring From Toll (on Toll Terminal)	•	•	•
Reserve Power (hardware option)	•	•	•
Room Audit	•	•	•
Room Status	•	•	•
Rotary Dial Calling	•	•	•
Route Advance	•	•	•
Saved Number Redial		•	•
Serial Call	•	•	•
Sharing (4 Tenant)	•	•	•
Shared Attendant Service	•	•	•
Single Digit Dialing (Non-conflicting)	•	•	•
Single Digit Dialing (Conflicting)	•	•	•
Speed Call			
System - wide		•	•
Personal		•	•
Splitting			
One-Way Manual Splitting	•	•	•
Two-Way Manual Splitting	•	•	•
One-Way Automatic Splitting	•	•	•
Two-Way Automatic Splitting	•	•	•
Station Hunting			
Terminal Hunting	•	•	•
Circular Hunting	•	•	•
Secretarial Hunting	•	•	•
Station Message Detail Recording		•	•
Station Message Register Service	•	•	•
Electronic Storage and Display	•	•	•
Internal Charging	•	•	•
Station Override Security	•	•	•
Station-to-Station Calling	•	•	•
Straightforward Outward Completion	•	•	•
Switched Loop Operation	•	•	•
Tandem Tie Trunk Switching	•	•	•
Termination Restriction	•	•	•
Threeway Conference Transfer	•	•	•
Through Dialing	•	•	•
Tie Trunk Access	•	•	•
Timed Reminders	•	•	•
Toll Restriction	•	•	•
Battery Reversal	•	•	•
0/1 Access	•	•	•
Multi Digit	•	•	•
Toll Terminal Access	•	•	•
Total "Do Not Disturb" Display	•	•	•
Total "Message Waiting" Display	•	•	•
Total "Room Status" Display	•	•	•

TABLE 2-1 CONT'D
SYSTEM FEATURES AND SERVICES

	214	215	216
Traffic Data Collection *	•		•
Traffic Display to Customer	•		•
Transfer into Busy	•	•	•
Trunk Answer From Any Station	•	•	•
Trunk Group Busy (TGB) Indicators on Attendant Position	•	•	•
Trunk Status Field	•	•	•
Trunk-To-Trunk Connections	•	•	•
Trunk Verification by Customer (TVC)	•	•	•
Trunk Verification by Station (TVS)	•	•	•
Uniform Call Distribution	•	•	•
Wake-Up Service	•		•
WATS Access	•	•	•
Wideband Data Switching	•	•	•
Wide Frequency Tolerant Power Plant	•	•	•

Account Codes

Description

An extension may have the option or be forced to enter an account code for trunk calls. The account code may be 1-12 digits maximum and will appear on all SMDR records. (see also Section MITL9105/9110-097-451-NA).

Alarm Indication

Description

Each attendant console is equipped with three alarm lamps; MINOR, MAJOR and CONSOLE. The minor alarm lamp, when lit, indicates that the system has detected a malfunction which has not seriously degraded the customer's service. A major alarm indicator is caused by the system detecting a failure which affects the complete system operation and indicates that a failure transfer has taken place. The console alarm is raised when a malfunction affecting the console operation is detected. If the PABX is equipped with an optional reserve power supply, there are provisions for a "battery on" indicator. This indicator may be wired to provide a Contact Monitor alarm to alert the attendant that the system is on battery (i.e. AC power failure). See SECTION MITL9105/9110-097-200-NA. See SECTION MITL9105/9110-097-500-NA General Maintenance Information.

A.R.S. Allowed

Description

If this COS Option is enabled in an extension's COS it will allow access to a trunk group (not enabled in the extension's COS) if the extension is routed to that Trunk Group by ARS. That is an extension may access a Trunk Group that is not in its COS if forced to, by the forced ARS feature. This option must be enabled if an extension is to use ARS.

Attendant Bell OFF

Description

Selection of this option activates the attendant console BELL OFF button. Pressing the button turns off the console tone ringer; incoming calls are identified by flashing LEDs only. Pressing the BELL OFF button again enables the console bell.

Attendant Busy Override

Description

This option allows the attendant who encounters a busy connection, to override the connection and enter the call. Before the attendant enters the connection, all parties in the call hear an 800ms burst of warning tone, after which the attendant is connected to the call and the warning tone continues for a further 200ms. A single 200ms burst of warning tone is repeated every six seconds for the duration of the override. If the call cannot be overriden, reorder tone is returned.

Attendant Call Forward Setup and Cancel

Description

This feature allows the attendant to set up, review and cancel call forwarding for any extension. (The extension for which the attendant sets up forwarding need not have any of the call forwarding features in its COS). The attendant may also set up call forwarding from the extension to the attendant.

Attendant Callback Cancel

Description

The attendant may cancel all system callbacks from the console.

Attendant Called Number Display

Description

If the attendant dials an extension or trunk access code, that number will appear in the first three segments of the DESTINATION display. The Class of Service of the extension or trunk will appear in the last segment of the DESTINATION display. The ATT LED in the DESTINATION and SOURCE displays will light. If the extension or trunk is busy the BUSY LED will light. If the extension or trunk is available the RING LED will light. If an invalid number is dialed, the error lamp will be lit in the DESTINATION display.

Attendant Calling Number Display

Description

A trunk or extension that calls to the attendant will have its number displayed. This will appear in the first three segment of the SOURCE display when the ANSWER button is pressed. The Class of Service will be displayed in the last segment of the SOURCE display.

Attendant Calls Waiting Indicator

Description

The attendant may have queued calls that are directed to the console (outside trunks and PABX extensions). The total number of calls in the queue will be displayed in the CW (Call Waiting) display. The console tone ringer will ring and one of the call LEDs may flash (Dial 0, LDN 1, 2, 3 or 4) with the ANSWER LED.

Attendant Camp-On with Indication

Description

This feature allows the attendant to connect calls to busy extensions or trunks for automatic completion when the busy party becomes free.

When a call is Camped-On to an extension, the called extension, and only that extension, will hear a burst of Camp-On tone indicating the existence of a Camped-On call. If the Camped-On call is a trunk, two bursts of Camp-On tone are given. If the Camped-On call is an extension, a single burst of tone is given.

Calls that are not completed within the Camp-On timeout will recall to the console.

If Music on Hold is provided, the Camped-On party will hear music until the called party answers or the call recalls to the console.

Attendant CCSA Access

Description

The attendant may access the common controlled switching arrangement trunks. These trunks are similar to DID trunks in all respects except that they are considered to be Non-CO and may be used as bothway trunks. For further information see Direct Trunk Access and CCSA.

Attendant Class of Service Display

Description

The attendant may display the Class of Service of any extension or trunk in the system. The Class of Service will appear in the last two segments of the SOURCE or DESTINATION displays over the title of CLASS. For further information see Class of Service.

Attendant CO Trunk - CO Trunk Connect Enable

Description

Selection of this option allows the attendant to connect a CO trunk call to another CO trunk, then release the call from the console. See End of Dial Signal for Outgoing Trunks.

Attendant Console Emergency Transfer

Description

If the PABX goes completely out of service and the MAJOR ALARM LED is not on, the EMERGENCY TRANSFER switch may be activated. It is located on the base of the console and may be used to manually set the PABX into the emergency transfer position.

Attendant Console Flash

Description

The attendant may flash for the long distance operator by pressing the FLASH button.

Attendant Console Ringer Codes

Description

The latest version attendant console issues distinctive audible ringer patterns on certain calls to the attendant, which can be of assistance to a visually-impaired attendant. These ring patterns, repeated each second, are as follows:

Incoming Call - Standard 0.5s tone on, 0.5s tone off

HOLD 1 Call Timeout - One 62.5 ms tone

HOLD 2 Call Timeout - Two 62.5 ms tones, separated by 48 ms tone off interval

HOLD 3 Call Timeout - Three 62.5 ms tones, separated by 48 ms tone off intervals

HOLD 4 Call Timeout - Four 62.5 ms tones, separated by 48 ms tone off intervals

Flash for Attendant - 250 ms tone on, 83 ms tone off and 250 ms tone on

(Attendant Controlled Conference) Minor Alarm - 62.5 ms tone on, 83 ms tone off and 250 ms tone on.

As each one of the foregoing conditions arises it is queued, with the attendant being able to test and/or answer the latest call in turn from the queue.

Attendant Controlled Conference

Description

This feature allows the attendant to set up a conference with up to six conferees plus the attendant. The conferees may be any combination of extensions and trunks. To set up a conference the attendant must have a completed Source and/or a Destination call. If only one party is in the conference it will hear music, if provided. Each time the attendant enters the conference, all parties in the conference hear a warning tone. The attendant may reenter the conference or be recalled to the conference, by an extension switchhook flash, at any time.

Attendant Date Display

Description

The attendant may set, modify or display the date from the console. This date will appear on all SMDR, Traffic Measurements and Data dumps.

Attendant DISA Code Setup Enable

Description

This option allows the attendant to change the Direct Inward System Access (DISA) security code that a caller must dial to access the system.

Attendant Function

Description

By assigning a code to the Attendant Function the attendant may access all Attendant Function codes. For further information see Table 6-3 of SECTION MITL9105/9110-097-500-NA.

Attendant Hold Circuits

Description

The attendant may put an extension or trunk on hold at any one of four HOLD positions. The system may be programmed for a call hold recall of a variable time (see Variable Timers).

Attendant Individual Trunk Access

Description

The attendant may access an individual trunk to; busy or debusy it, dial out on it or make a night service assignment.

Attendant Jacks

Description

Each attendant console is equipped with two sets of attendant jacks. Either set of jacks may be used by the attendant. The other set provides a monitoring, supervisory or training position. Most commonly used handsets or headsets may be used with the attendant console. Removal of both handsets and headsets from the console(s) causes the console(s) to become inoperative. If the handsets are removed from both console one and console two, the system will switch to Night Service 1. The presence or absence of a maintenance console does not affect the switching to Night Service.

Attendant Lamp Test

Description

The attendant may test all the console LEDs, seven segment displays and tone ringer on the console by pressing the LAMP TEST button.

Attendant Lock Out

Description

The attendant is in a locked out condition, after establishing a call from a trunk or station to another trunk or station, and then releasing from the connection. The lock out implies that the attendant cannot re-enter the established speech paths unless one of the parties "flashes" the attendant.

Attendant Non CO Trunk - Non CO Trunk Connect Enable

Description

This option allows the attendant to connect a Non CO Trunk call to another Non CO Trunk, then release the call from the console. See End of Dial Signal for Outgoing Trunks.

Attendant Secrecy

Description

The attendant may "split" between calls (see Both Button Enable, Brokers Call, Both Mode Standard) and talk to each call without the other overhearing.

Attendant Serial Call

Description

This feature allows the attendant to have incoming trunk calls automatically returned to the console when the original call is finished.

Attendant Station Busy-Out

Description

This feature allows the attendant to busy-out any extension (the extension cannot originate or receive any calls), and to remove the busy-out condition. If the attendant dials the number of a busied out extension, the console will display the extension number and "oo" in the Destination display, the ERROR lamp is lit, the busy lamp field shows the extension is busy, and the attendant will receive reorder tone. The attendant may display all extensions that have been busied-out on the console busy lamp field (see Locked Out Display).

Attendant Time Display

Description

Each attendant console is equipped with a digital clock that continuously displays the time-of-day in hours and minutes. The time may be displayed in 12 or 24 hour mode. The clock display is driven by pulses derived from the CPU master clock. The fact that the clock is on is thus a direct indication that the CPU is running. The time displayed by the clock is used by Automatic Wake Up, Message Waiting and Traffic Measurement.

Attendant Timed Recall

Description

This feature automatically alerts the attendant when a call extended through the console or a call held at the console has not been answered within the preselected time. Selectable recall times are:

- Attendant Timed Recall - Camp-On 20s, 30s or 40s.
- Attendant Timed Recall - Don't Answer 20s, 30s or 40s.
- Attendant Timed Recall - Hold 20s, 30s, or 40s.

Attendant Trunk Busy Out

Description

The attendant may make a trunk busy to prevent access to the trunk, and may remove the busy condition as required. If the Trunk Busy-Out Enable option is not selected the attendant may still access individual trunks, but is unable to force them into a busy condition.

Automatic Callback-Busy (Extensions)

Description

Automatic Callback-Busy allows an extension user, upon encountering a busy extension number (or trunk access code, see Outgoing Trunk Callback), to have the call completed when the extension becomes idle. After the feature has been activated, the system continuously monitors the originating extension, and the called number. When both become idle, the system rings the originating extension, and when that extension goes off-hook, the called extension is rung. If more than one callback request is active on any number, the requests are queued and serviced on a first-in, first-out basis. All callbacks may be cancelled from the attendant console.

Automatic Callback - Don't Answer

Description

This feature allows an extension user, upon encountering an extension which does not answer, to have the call completed after the called extension has gone off and on hook. After the feature has been activated the system continuously monitors the originating extension and the required number. After the called extension goes off hook the callback will be handled in the same way as an Automatic Callback-Busy. If more than one callback request is active on any extension, the requests are queued and serviced on a first-in, first-out basis. All callbacks may be cancelled from the attendant console.

Automatic Route Selection Generic 216

Description

The Automatic Route Selection (A.R.S.) feature simplifies the dialing of long-distance calls by PABX users; by automatically selecting the most optimum route for the time of day, and automatically inserting and/or deleting the proper routing digits to obtain the desired party. Further information is contained in SECTION MITL9105/9110-097-213-NA.

Automatic Station Release

Description

This system feature automatically releases and locks out an extension if it does not dial a digit within the dial timeout period, or exceeds the interdigit timeout period, or does not hang-up within one minute of finishing a call. If the extension has a trunk call on Hold when it becomes locked out, the held trunk call will be returned to the console as a recall. If the attendant dials the number of an extension that is locked out, the console DESTINATION display will display the extension's class of service as Lo. The System may be programmed to raise a Minor Alarm when a lockout condition is detected.

- If at the end of a call an extension does not go on-hook within one minute, the extension is locked out. The extension will also be locked out if ringing tone is returned for more than five minutes or if busy tone is returned for more than 30s and the extension has not camped on to the busy number. An extension will also be locked out if a vacant or illegal number is reached and reorder is supplied for more than 30 seconds.
- Dial Timeout: If an extension does not dial a digit within 15 seconds after going off-hook, dial tone is replaced with reorder tone. If the extension remains off-hook for an additional 30 seconds, reorder tone is removed and the extension is locked out.
  If an extension is programmed as Hands-Free it will receive 5 seconds reorder tone then becomes Hands-Free. If it remains off hook for more than 1 minute after termination of a call it becomes Hands-Free. The extension does not lock out.
- Interdigit Timeout: If after dialing the initial digit of a call, a user fails to dial further digits within the interdigit timeout period (extension to extension call timeout is 15 seconds, extension to trunk call timeout is 10 seconds), reorder tone is applied to the extension. If the extension remains off-hook for an additional 30 seconds, reorder tone is removed and the extension is locked out.

Automatic Wake-Up (Alarm Call) Generic 214, 216

Description

This feature allows either the attendant or an extension user to set up a Wake-Up alarm call that will ring the extension at a prearranged time. After answering a wake-up alarm call, the extension user receives either a special tone (100ms on, 400ms off of miscellaneous tone) or music. If the call is not answered within six rings, or if the extension is busy, the call will repeat two more times at five minute intervals. (see also MITEL Printer)

Both Button Enable

Description

Selecting this option enables the attendant console BOTH button. In normal console operation (automatic split mode), the console is either connected to the source or destination party of a call. Pressing the BOTH button allows the attendant to speak to both the calling and called parties at the same time. See also Both Mode Standard.

Both Mode Standard

Description

When selected, this option causes the attendant to be normally connected to both the SOURCE and DESTINATION parties on all calls through the console. Manual splitting may still be achieved using the console SOURCE and DEST buttons. If this option is not selected, the attendant will be connected to the SOURCE party on answering the call, and the DESTINATION party as soon as the destination number is dialed (Automatic Split Mode). See also Both Button Enable.

Broker's Call

Description

The Broker's Call allows an extension user, while engaged in a call, to hold the first call and originate a new call. Once the new call has been established, the originating extension may alternate between the calls, and carry on a PRIVATE conversation with either party. If the extension originating the Broker's Call hangs up with a party on hold, the extension will be rung back by the held party. (see also Transfer With Privacy)

Busy Lamp Field

Description

Each attendant console is equipped with a Equipment Status Lamp Field which displays the busy/idle state of any 150 (200 for the later version console) selected trunks or extensions. The Busy Lamp Field can also display the status of assigned extensions. See Do Not Disturb, Message Waiting Display, Busy Verification, Room Status, Automatic Station Release, and Maid in Room.

Busy Trunk Release

Description

This feature allows the attendant or repair person to release a trunk that has been busied out from the console.

Busy Verification

Description

This feature allows the attendant to view the busy/idle status of lines and trunks using the Busy Lamp Field. The Busy Lamp Field is a standard feature. The attendant may further investigate apparent busy conditions by using the Busy Override feature.

Call Blocking

Description

This feature allows the attendant to restrict extensions with 'Hotel/Motel Station to Station Restriction Applies' in their COS, from making calls to other extensions with the same option, by activating Call Blocking. Calls to the attendant or to extensions without the option selected may be made normally. During Day Service calls made between restricted extensions are intercepted to the attendant or receive reorder tone. During Night Service interception is to reorder tone only.

Callback Button

Description

Selection of this feature allows the attendant to set up a Don't Answer or Busy Callback by pressing the CALLBACK button.

Call Forwarding - Busy (Extensions)

Description

This feature allows a user to have all calls which are directed to his extension, forwarded to the attendant to a selected extension number within the PABX, or to a selected external number, WHEN THE EXTENSION IS BUSY. While the feature is active and the extension is idle, calls may be made and received normally (see also Call Forwarding - Busy/Don't Answer).

Call Forwarding - Busy/Don't Answer (Extensions)

Description

This feature allows a user to have all calls which are directed to his extension, forwarded to the attendant or to a selected extension number within the PABX, WHEN THE EXTENSION IS BUSY or NOT ANSWERED WITHIN THE SELECTED TIME. While the feature is active and the extension is idle, calls may be made and received normally.

Call Forwarding - Busy (System - DID, CCSA, Dial In Tie Trunks)

Description

This feature allows a customer to specify that all DID, CCSA and Dial-In tie trunk calls directed to a busy extension will be forwarded to the attendant. The forwarded calls will appear at the attendant console as recalls.

Call Forwarding - Busy/Don't Answer (System - DID, CCSA, Dial In Tie Trunks)

Description

This feature allows a customer to specify that all DID, CCSA and Dial-In tie trunk calls directed to a busy extension, or one which does not answer within a selected time period, will be forwarded to the attendant. The forwarded calls will appear at the attendant console as recalls.

Call Forwarding - Don't Answer (Extensions)

Description

This feature allows an extension user to have all calls directed to the extension that are not answered within a selected time to be forwarded to the attendant or to another extension number specified. The forwarded calls will appear at the attendant's console as recalls. (see also Call Forwarding Busy/Don't Answer)

Call Forwarding - Don't Answer (System - DID, CCSA, Dial In Tie Trunks)

Description

This feature allows a customer to specify that all DID, CCSA or Dial In Tie Trunk calls directed to an extension or hunt group, that are not answered within the selected time, will be forwarded to the attendant. The forwarded calls appear on the attendant console as recalls.

Call Forwarding - Follow Me

Description

This feature allows an extension user to have all calls which are directed to the extension, to be forwarded to the attendant or a selected extension within the PABX. The number to which the calls are forwarded is the only originating party that may call the forwarding extension. While Call Forwarding - Follow Me is active, the forwarding extension may originate calls in the normal manner. Extension call forwarding takes precedence over system call forwarding, i.e. extension call forwarding is tested initially and system call forwarding test is then forwarded to a number. (see also External Call Forwarding)

Call Forwarding System Inhibit

Description

This feature allows System Call Forwarding to be inhibited on an extension basis. If a DID, CCSA or Dial-In Tie Trunk call is directed to an extension with this feature active, the calling party will continue to hear ringing (extension idle) or busy tone (extension busy); the call will not be forwarded to the attendant.

Call Hold

Description

Call Hold allows an extension user engaged in an active call, to place the call on hold, then to replace the extension handset or use the extension for other calls. All features normally active on the extension may be selected while the call is held. The held call may be retrieved locally or remotely (from a different extension) by dialing the required Call Hold Retreive code. A held call may be retrieved as part of consultation hold or conferencing. The extension may interchange the held call with an active call or conference the two calls. If the held call is not retrieved within the selected recall time, the holding extension is automatically recalled.

Call Park

Description

This feature allows an extension user to park an active call and replace the extension handset. The call may be retrieved at the extension at which the call was parked, or at any remote extension within the system. The parked party hears music while the call is parked, or nothing if Music On Hold is not employed.

If a parked call is not retrieved within the selected recall time (2, 3 or 4 minutes), the parking extension is rung. If the parked call was a trunk call and the extension does not answer the recall within the selected recall timeout period (20, 30 or 40 seconds), the parked call will be routed to the attendant console and will appear as a RECALL. If the parked call was an internal call, the parking extension will continue to ring until it is answered or until the parked extension goes on-hook.

Call Retrieve (Extensions)

Description

Calls may be parked or held (see Call Park and Call Hold) and retrieved either locally or remotely by an extension. For further information see Call Hold or Call Park.

Call Selection

Description

This feature allows the attendant to answer calls either in the order in which they arrive at the console, or by selecting a specific call type. As calls arrive at the console they are queued and the LED associated with the call flashes. The attendant may answer the first call in the console queue by pressing the ANSWER button, or may select a call of a specific type by pressing the button associated with the flashing LED. The LEDs associated with the calls remaining in the attendant queue continue to flash. Six incoming call indicators are provided, identifying the following call types:

- DIAL 0 - calls from extensions.
- RECALL - recalls.
- LDN 1-4 - These buttons may be assigned to incoming trunks in order to arrange the trunks in up to 4 different groups as required. Additional button labels are provided to identify these 4 buttons as TIE, WATS, FX or LDN type calls.

Camp-On

Description

When an extension user who is equipped with the Camp-On feature reaches a busy extension, hunt group or trunk group and remains off-hook for ten seconds, it will be Camped-On to the busy equipment. At this time, a special busy tone is received (350/440Hz interrupted at 60 ipm) and the called equipment receives a Camp-On tone (a single burst of 440Hz tone for 200ms or a double burst if a trunk) if it is not dialing or listening to a tone. When the busy equipment hangs up, the calling extension receives ring-back tone and the (formerly busy) equipment is rung. The attendant or an extension may also transfer a call into busy (camp the call onto a busy extension).

Can Flash if on an Incoming Trunk

Description

When selected, this option allows extension users to flash the switchhook while connected to an incoming trunk. This enables the trunk call to be Transferred, Held, Parked or added to a conference.

Can Flash if on an Outgoing Trunk

Description

When selected, this option allows extension users to flash the switchhook while connected to an outgoing trunk. This enables the trunk call to be Transferred, Held, Parked or added to a conference.

Can Flash if Talking to an Extension

Description

This option allows an extension user to flash the switchhook while talking to an extension. This enables the extension to Hold, Park, Transfer or Conference the internal call.

Cannot Dial a Trunk After Flashing

Description

This option inhibits an extension from accessing a trunk after flashing the switchhook.

Cannot Dial a Trunk After Flashing if Holding or in Conference with a Trunk

Description

This system option prevents extensions from holding a trunk call by flashing the switchhook, then dialing a second trunk.

CCSA

Description

The system can accomodate Common Control Switching Arrangement trunks. These trunks are similar to DID trunks in all respects except that they are considered to be Non-CO trunks and may be used as bothway trunks.

Class of Service (COS)

Description

The system allows up to 16 independant COS to be defined. Each COS specifies the features and options that may be accessed by an extension, dial-in trunk or DISA trunk assigned that COS.

Common Alerting Devices (Nightbells)

Description

This feature allows incoming calls directed to the attendant console to appear also at one of three common alerting devices. The call may be answered either from the attendant console, or from a station with TAFAS Access in its COS. The system provides a contact closure which is used to operate the alerting device. See TAFAS.

Console-less Operation

Description

The system may be operated without the use of an attendant console. Under these conditions all features associated with the console will be unavailable.

Contact Monitor

Description

This feature allows a station line to be used for monitoring an alarm contact. The contact to be monitored is connected across Tip and Ring of a line. When the contact closes, the call is presented to the attendant as a DIAL 0 call. On answering the call, the SOURCE display on the console shows the extension number assigned to the contact and a COS of AL. An extension may be programmed as a Contact Monitor. If the PABX is equipped with an optional reserve power supply, there are provisions for an "on battery indicator". This indicator may activate a Contact Monitor to alert the attendant that the system is on battery power (AC power failure). See MITL9105/9110-097-200-NA.

Control of Trunk Group Access

Description

Each attendant console provides a Trunk Group Status display. This display continuously shows the Busy and Attendant Access status of the first ten trunk groups. The attendant may restrict a trunk group to Attendant Access only, or return it to Dial Access. An extension which dials a trunk in a trunk group that has been made Attendant Access will be intercepted to the attendant (Illegal Access Intercept to the Attendant) or reorder tone will be returned.

Controlled Outgoing Restriction Setup

Description

If this feature is selected, the attendant may restrict an extension from making any outgoing trunk calls. The attendant may also remove the restriction. While the restriction is in force, any outgoing trunk call from the extension is intercepted to the attendant (Illegal Access Intercept to the Attendant) or reorder tone. If this option, and System Options 172 (Guest Room Button Enable) and 173 (Room Status Button and Display Enable) are selected, outgoing restriction is automatically set when the room status is set to "1", Room Vacant and Ready to be Sold or "3" Room Vacant but not ready.

Controlled Station Restriction (Do Not Disturb)

Description

The Do Not Disturb feature allows a user to have all incoming calls to the extension, routed to the attendant or reorder tone. The feature may be activated by the extension user or by the attendant. If the attendant calls an extension with Do Not Disturb active, the console DO NOT DSTB lamp flashes and the ERROR lamp lights in the DESTINATION display. The attendant may override the feature by pressing the DO NOT DSTB button. All other calls directed to the extension receive reorder tone or are intercepted to the attendant. Other features (e.g. Hunting, Call Forwarding) work as if the extension were busy. Call origination from an extension with this feature active is not affected in any way.

CO Trunk Via Attendant Inhibit

Description

This feature denies an extension the ability to be connected to a CO trunk through the attendant. This restriction applies to both incoming and outgoing calls.

Customer - Controlled Programming Generic 216

Description

The customer may perform limited programming of the PABX system by dialing the Limited Programming Security Code. This programming is possible only if the relevant System Options had been set at the time of installation (or on a subsequent occasion).

Customer Data Dump/Load

Description

This feature allows the contents of the non volatile RAM (the customer data) to be dumped on a storage device. Any RS232 compatible, recording device, may be used. This data may be used to reprogram a system or program an alternate system (with the same customer data).

Customer Data Print

Description

If this System Option is enabled the customer data may be output in a logical form in one of three forms, Customer Accessable Data, Speed Call Data and all Customer RAM data. The console operator may request a Customer Accessable Data Print of customer data provided the Attendant console has access to it (see Customer Controlled Programming). The installer or repair person may request a dump of all Speed Call Data and or complete Customer Data Dump. The complete Customer Data Dump may be initiated from the test line if desired. (see also MITEL Printer)

Data Demultiplexer

Description

The Data Demultiplexer allows a different recording device to be used for; Traffic Measurement S.M.D.R., Hotel/Motel and Maintenance. The Demultiplexer card may be plugged in any slot 1-17 or slot 21.

Data Security

Description

Any call which includes an extension with a COS containing Data Security cannot be overridden or receive Camp-On Tone. The extension may be Camped-On to but is secure against any form of audio intrusion.

Diagnostics

Description

The system continuously runs diagnostic checks on the system operation and if a malfunction is detected raises an alarm. Refer to MITL9105/9110-0097-500-NA General Maintenance Information for a full description of diagnostics.

Dial Access to the Attendant

Description

An extension may access the attendant by dialing a code (Feature number one). This code will generally be the numeral zero.

Dial Call Pickup

Description

This feature allows an extension to be assigned to a Pick-Up group and to answer any call to that group, by dialing the Dial Call Pick-Up code.

Dial Pulse Signalling

Description

The PABX may accept or generate dial pulses. The systems Central Processor Unit (CPU) reads dialed digits (decoded by the Receiver card) and validates and or causes the necessary operation. The CPU may also cause the trunk card accessed by an extension to outpulse digits.

DID/Dial-In/CCSA Vacant/Illegal Access Intercept to Attendant

Description

Selection of this System Option causes all DID, CCSA or Dial-In tie trunk calls to vacant or unauthorized levels or numbers to be routed to the attendant. If this option is not selected, these calls receive reorder tone.

Direct-In Lines

Description

This feature allows incoming trunks to be assigned to a specific extension or hunt group. Incoming calls from the trunk ring the extension (or hunt group) directly. The calls do not appear at the attendant console. If the assigned extension is busy when a call arrives, the call will be camped-on. If all extensions of a Hunt Group are busy the call will be queued. In no case will the call be answered, therefore the caller will hear ringback tone from the CO. Camp-On tone will be heard by an extension which is Camped-On to. If a Hunt Group is Camped-On to, no tone is heard. All Call Forwarding features may be activated on incoming trunk calls to extensions.

Direct Inward Dial (DID) Trunks

Description

This feature allows DID Trunks to be used in the system. The length of the incoming number, the number of digits to be absorbed, and a prefix digit, if required, may also be specified.

Direct Inward System Access (DISA)

Description

This feature allows an external caller access to the PABX by selecting a special trunk and dialing a security code. After the code is dialed the System returns dial tone to the caller, who may then access any features in the DISA trunk's COS except for those which require a switchhook flash.

Direct Outward Dialing

Description

The Direct Outward Dialing feature allows an extension user to make external calls without the assistance of the attendant.

Direct Trunk Access

Description

The console or test line may directly access a trunk for maintenance or operational procedures.

Directed Call Pick-Up

Description

Directed Call Pick-Up allows an extension user to answer any ringing telephone within the PABX. If more than one party attempts to pick-up the call, the call will be completed to the first party, other parties will receive busy tone.

Discriminating Dial Tone

Description

An extension having Do Not Disturb or a Call Forward Follow Me in effect, will hear a distinct dial tone (350/440 Hz, 400 ms on, 100 ms off for 6 cycles then continuous tone) when going off-hook.

Discriminating Ringing

Description

Selection of this option allows a user to distinguish between internal calls and incoming trunk or attendant calls by the assignment of different ringing patterns. Internal calls have a ringing pattern of 1s on and 3s off. Trunk or attendant calls have a ringing pattern of 0.5s on, 0.5s off, 0.5s on and 2s off.

Do Not Disturb

Description

An attendant or extension may set up or cancel Do Not Disturb for an extension.

Do Not Disturb Display

Description

This feature allows the attendant to display all extensions that have Do Not Disturb set. When the attendant presses and holds the DO NOT DSTB button (while the console is idle), the busy lamp field goes dark, leaving only the lamps lit for the rooms that have Do Not Disturb active. In addition the SOURCE display shows the total number of extensions with a Busy Lamp assigned and Do Not Disturb set.

Do Not Overflow (Trunks)

Description

If an extension has Do Not Overflow in its COS and dials a busy trunk group, busy tone is returned by the system and trunk group overflow is denied. See Trunk Groups.

DTMF to Rotary Dial Conversion (Tone to Pulse Conversion)

Description

This feature automatically converts DTMF tones from DTMF equipment to rotary dial outpulsing on outing trunks which have been programmed as rotary dial trunks.

Enable Non CO Trunk-Trunk Connect by Extension

Description

This feature enables an extension to connect a non-CO trunk to a CO or non-CO trunk, then go on hook and leave the two trunks connected.

End of Dial Signal on Outgoing Trunks

Description

This option, if selected, allows the attendant or extension to access a trunk, dial the required directory number, then complete the call to an internal extension without delay, by pressing the # button to stop digits being passed to the trunk. Digits dialed after the # will be interpreted by the PABX as a new number i.e. an extension.

Executive Busy Override (Extensions)

Description

This feature allows a user who encounters a busy extension to dial a code and enter the conversation. Eight hundred milliseconds before override voice contact is established, both parties in the original conversation receive a warning tone (440Hz). The tone continues for 200ms after override is established. A 200ms burst of the 440Hz tone is repeated every 6s for the duration of the override. If the overridden extension flashes the switchhook or goes on-hook the overriding extension is dropped and receives reorder tone.

External Call Forwarding Generic 216

Description

This feature allows an extension user to set up call forwarding to a number external to the PABX. This is accomplished by storing the external number as a speed call entry, and using the entry as the number to which the caller is forwarded.

Feature Access

Description

An attendant, extension or trunk may access certain features by dialing an access code. The ability of an extension or trunk to access features is limited by their Class of Service.

First Digit Toll Deny

Description

If this option is selected, Toll Denial applies only to the first, rather than the first two digits. A call is denied if the first digit dialed after accessing a trunk is 0, 1, # or *.

Fixed Night Service

Description

This feature allows calls normally directed to the attendant console to be routed to preselected extensions, hunt groups or common alerting devices when the system is in night service. After selection of night service all calls directed to the attendant are routed to the selected night assignment. Calls held in the attendant queue when night service is selected, remain at the console and may be answered in the normal manner. The system provides two independant night service assignments, NIGHT 1 and NIGHT 2. The calls are directed to the assignment selected.

Flash Disable

Description

This feature inhibits a switchhook flash from an extension. All features using the switchhook in the selection of the feature are therefore inhibited.

Flash For Attendant

Description

An extension with this option specified in its COS will automatically ring the attendant console if the switchhook is flashed while in an established call. The call will appear at the console as a Dial 0 call.

Flexible Night Service

Description

This option allows the attendant to change the night service assignment of trunks associated with extensions or hunt groups. The system allows full flexibility of trunk assignment, all trunks may be assigned to one extension, each trunk may be assigned to a different extension, or a hunt group.

Flexible Numbering Plan

Description

The numbering plan used within the system is completely flexible. The user may select any combination of 1, 2, 3 and 4 digit numbers. The only constraint in the selection of a numbering plan is that it does not conflict with an access code.

Guest Room Button

Description

The console GUEST ROOM button, when enabled, allows the attendant to display the current status of a room. The status display shows:

- SOURCE display shows the extension number of the room and the number of local call units made from the room.
- DESTINATION display shows the current room status code, (1-4).
  1 - Room vacant and ready to be sold
  2 - Room occupied and clean
  3 - Room vacant but not ready to be sold
  4 - Room occupied but needs cleaning
  A period displayed after the room status code indicates that the maid is currently in the room.
- If the DO NOT DSTB LED lights, the room has Do Not Disturb set.
- If the MSGE WAIT LED lights, the room has a message waiting.
- If the ROOM RESTR LED is lit or if the room status code is 1 or 3, Controlled Outgoing Restriction is enabled and the ROOM STATUS button enabled. Controlled Outgoing Restrictions are in effect for that extension.
- See "Do Not Disturb", "Maid In Room", "Message Registration", "Message Waiting", "Message Waiting Lamp", "Room Status", "Automatic Wakeup (Alarm Call)" and Controlled Outgoing Restrictions descriptions.
- If Automatic Wakeup is in effect the time of the wakeup will appear in the Destination Display.

Hands-Free Operation
Generic 216

Description

A Hands-Free" extension is one which is placed in the off-hook condition (for 15 seconds) and allowed to enter the "HANDS-FREE IDLE" state. At this time due to a COS option being set in its Class Of Service, a call may be put through to this extension. Alternately the extension may dial the Hands Free access code. A caller will receive one second of ringback and then be connected to the station. The called party will also hear one second of ringback tone to indicate that a call is coming through. They are then connected. At the termination of a call, the called party (with the 'hands-free' phone) will hear one second of miscellaneous tone to indicate that the calling party has hung up. The 'hands-free' phone is placed back into the 'HANDS-FREE IDLE' state, and may receive a new call. To originate a call the 'hands-free' extension must first go on-hook to return to the 'Idle' state and may then originate a call in the standard manner.

Hold Pick Up

Description

The Hold Pick Up feature allows an extension user to pick up a call held at the attendant console on one of the console HOLD keys. If a single console is employed, four HOLD buttons (HOLD buttons 1 through 4) are provided. A second console provides four additional HOLD positions (HOLD buttons 5 through 8).

Hunting

Description

Master number hunting allows a user to dial an access code (the master hunt number of the hunt group), and have the call completed to the first idle extension in that hunt group. Any extension within a hunt group may be accessed directly by dialing the extension number; hunting will not take place if the extension is busy. Three types of hunting are provided by the system; Circular, Terminal and Secretarial hunting. Trunks may also be placed in circular or terminal hunt groups.

Circular Hunting starts at the extension after the last extension in the hunt group to which a call was completed (the extension rung), and hunts over all extensions in the hunt group in the sequence programmed. Hunting stops at the first idle extension found. If all extensions are busy the calling extension hears busy tone, and may Camp-On to the Hunt Group. A Dial-In trunk receives ringback, while a transferred trunk will receive Music On Hold if provided.

Terminal Hunting starts at the first extension in the hunt group and terminates at the first idle extension found. Hunting takes place in the order in which the extensions were programmed into the hunt group.

Secretarial Hunting is the same as terminal hunting, except that the terminating extension (the secreterial positions) are the same for more than one hunt group.

Identified Trunk Groups

Description

When an identified trunk group is accessed, the trunk group access code is repeated as the first digit (or digits) dialed into the trunk. For example, the trunk access code is 2, and the digits 35 are dialed, the trunk will be seized when the digit 2 is dialed. The 2 will be repeated to the trunk, followed by the digits 3 and 5. The equipment (usually a PBX) at the other end of the trunk will see the digits 235.

The purpose of the repeating digits is to allow a common numbering plan between two or more PBX's. In the above example, an extension numbered 235 could be accessed from the PBX in which it was programmed, or from another PBX with an identified trunk group which is seized by dialing the digit 2.

Trunk group one can have more than one access code; a maximum of ten different codes are allowed. If programmed as an identified Trunk Group each code will be repeated and may be part of an extension number or feature. Alternatively, the leading digit or digits may in turn seize other trunk groups allowing tandeming between two or more switches.

Illegal Access Intercept Attendant

Description

Calls to non-programmed or restricted access codes or extension numbers will be routed to the attendant. Calls routed to the console in this way appear as DIAL 0 calls, with the INT indicator lit in the SOURCE display, defining the calls as intercept calls. See also Vacant Number Intercept to Attendant, and DID/Dial-In/CCSA Vacant Number Intercept to Attendant.

Immediate Ring

Description

Ringing is applied to a called free extension number within 100ms of the last digit in the number being dialed.

Incoming Trunk Call Rotary Only

Description

This Option has been added to eliminate receiving digits twice on tie trunks from other PBX's. In some tandem situations the outpulsing PBX may send both tones and rotary digits. With this COS Option in a tie trunks COS a tie trunk will ignore incoming DTMF signalling.

Individual Trunk Access

Description

This feature allows the attendant to access individual trunks within a trunk group.

Inhibit Automatic Supervision

Description

This System Option applies to tie trunks dialing a CO trunk through the PABX. Some networks require all CO answer supervisions be passed back to the tie trunk. This option will allow CO supervision to be passed back to the tie trunk.

Limited Wait For Dial Tone

Description

This option, when set, causes the "Wait for Dial Tone" feature on outgoing trunks to wait only 5 seconds and then enable outgoing audio even if no dial tone is received.

Line Lock Out

Description

The attendant may be alerted that an extension has gone off hook and timed out (not dialed within a certain period by the console tone ringing and the minor alarm LED flashing. Upon pressing the ALARM RESET button the SOURCE display shows E099 and the equipment number. The DESTINATION display shows the extension number and LO for locked out. See also Automatic Station Release.

Listed Directory Numbers (LDN)

Description

The attendant console will identify Listed Directory Numbers (LDN's) at the console. Each Listed Directory Number may be assigned to a separate LDN button (1-4), allowing the attendant to answer the incoming call with the correct response.

Lockout Alarm

Description

This system option causes a minor alarm to come up at the attendant's console when an extension is locked out.

Maid In Room

Description

This feature allows the maid to change the status of the room from the room's telephone, and also to indicate on the attendant console which room the maid is in (see Room Status).

Manual Line

Description

An extension with this option specified in its COS is routed directly to the attendant console when going off-hook. The extension can receive calls, but all call originations must be made with the assistance of the attendant.

Meet-Me Conference

Description

The Meet-Me Conference feature allows up to seven extensions to dial the Meet-Me Conference access code at a specified time, and to be connected into a conference. As each conferee joins the conference, a single 200ms burst of a 440Hz tone is superimposed on the conference. When a conference is full (seven conferees), parties trying to enter the conference receive busy tone.

Message Registration

Description

This feature allows the system to accumulate the number of completed local call units made from an extension. The number of call units counted for each call is dependant on the call unit modifiers selected. The accumulated call unit counts are held in the system message registers. These registers are protected against power failure, so that call counts are not lost in the event of a power outage.

Message Register Audit

Description

This feature allows the attendant to request a printed list of all extensions that have made local calls, and the total number of call units made from each extension. The printout format includes date, time, extension number and the message register value for each extension.

Message Waiting

Description

This feature allows the attendant to inform a guest that there is a message waiting. The message waiting indication may take the form of a continuously flashing lamp on the extension, or the extension may be rung every 20 minutes with a distinctive ringing pattern (3 cycles of 3.5ips ringing). If the extension is busy, or has Do Not Disturb active, when Message Waiting is activated, the message waiting indication is initiated as soon as the extension becomes idle. If the message waiting indication is given by a lamp, the lamp flashes (at 60 IPM). If the message waiting indication is given by ringing the extension, the first ring starts ten seconds after the extension becomes idle. The extension will ring every twenty minutes after an off-on hook condition or until the message waiting is cancelled. When the guest returns and calls the attendant, the MSGE WAIT lamp lights to indicate that there is a message waiting for that extension.

Message Waiting Display

Description

This feature allows the attendant to display all extensions that have a Message Waiting. When the attendant presses and holds the MSGE WAIT button, the busy lamp field goes dark, leaving only the lamps lit for the rooms that have a Message Waiting. In addition the SOURCE display shows the total number of extensions with a Message Waiting.

Message Waiting Print

Description

The message waiting status of a room can be printed whenever the attendant changes the status of the room. (see MITEL Printer)

MITEL Printer

Description

The MITEL printer is an advanced microprocessor controlled impact serial printer. It uses a 7 dot matrix technique for character generation. The printer is available as 115Vac compatible (MITEL part number 9110-077-000-NA) or 220Vac compatible (MITEL part number 9110-177-000-NA). The printer has the following features:

- EIA RS232 serial data input
- 7 bit ASC II
- Selectable baud rates
- Reverse channel polarity and data terminal ready condition
- 10 or 16.7 characters per inch (cpi)
- 80 characters per line (cpl) at 10 cpi or 132 cmpl at 16.7 cpi
- 7 X 7 dot matrix at a rate of 100 characters per second (cps)
- Selectable character sets (by dip switch) for U.S.A., France, United Kingdom, Germany, Italy and Sweden/Finland
- 3 way paper handling system for: 9-1/2 inch computer fanfold forms, teletype style roll feed, 8-1/2 inch wide single sheets
- Printer is completely self contained.

For further information see Section MITL9105/9110-98-317-NA.

Mixed Station Dialing

Description

This feature allows the simultaneous use of rotary and DTMF telephones. All features provided to telephones.

Multi Console Operation

Description

In systems employing two attendant consoles the following features apply:

- All calls appear on both consoles.
- Either attendant may answer any call.
- Attendant 1 may hold calls on HOLD buttons 1, 2, 3 and 4.
- Attendant 2 may hold four additional calls on HOLD buttons 5, 6, 7 and 8.
- Either attendant may select night service for the system.

Multi Digit Toll Control

Description

Multi Digit Toll Control provides a method of controlling the sequence of digits which an extension may dial into a trunk. Toll Control is applied on an extension basis, that is, the control applied to digits can vary depending on which extension has accessed the trunk. Should no toll restrictions on an extension be required, the extension may be Toll Allowed, i.e., dialing is unrestricted. For further information see SECTION MITL9105/9110-097-212-NA.

Multiple Extensions

Description

A maximum of seven extensions with bells may be connected (hardwired) together.

Multiple Trunk Groups With Overflow

Description

The system permits up to twelve independant trunk groups to be defined. Each trunk group may be specified to overflow to another trunk group when all trunks in the called group are busy. Extensions may be prevented from using the overflow group on an individual extension basis. See COS Option Number 52 (Do Not Overflow), Trunk Groups and Trunk Groups, two types.

Music on Hold

Description

A music source may be connected to the System via the cross connect field for use with Camp-On and Hold features. If music is not provided calls that are held or Camped-On will hear nothing.

Music On Hold Disable

Description

This option should be selected if music on hold is not provided. It will leave a trunk or extension in a suspended state. That is the party on hold will not be on any speech path.

Never A Consultee

Description

This Class of Service feature denies an extension the ability to be dialed from extensions that have a call on hold or are part of a conference call.

Never a Forwardee

Description

Inclusion of this feature in an extension's Class of Service prevents an extension from having any calls forwarded to it by an extension. If an extension attempts to forward a call to an extension with this option in its COS, he will receive reorder tone or intercept to the attendant. Calls directed to the extension by hunting are not affected by the selection of this feature.

New Call Tone

Description

If this option is selected, the first call placed in the attendant call waiting queue when the console is not free signals the attendant with a single burst of tone. Subsequent calls do not alert the attendant when they are added to the queue. Their presence is shown by the CW (call waiting) indicator. If the option is not selected, incoming calls do not signal the attendant until the console is free.

Night Service Automatic Switching

Description

This feature automatically switches the system into night service if an incoming call or recall to the attendant console is not answered within the selected Night Service Timeout period.

No Dial Tone

Description

Assignment of this feature to a dial-in tie trunk suppresses dial tone on an incoming trunk call. If this feature is assigned to an extension, the extension will not receive dial tone when going off-hook.

Non CO Trunk via Attendant Inhibit

Description

This option denies an extension the ability to access a Non-CO Trunk through the attendant.

Originate Only

Description

An extension with this COS option may originate calls but cannot receive any calls dialed to its number unless they are forwarded. If calls are dialed to the extension, the calls are intercepted and routed to the attendant or to reorder tone.

Outgoing Trunk Callback

Description

Outgoing Trunk Callback allows the attendant or an extension user who receives a busy signal after dialing a trunk group access code, to have the call completed when a trunk in the called trunk group becomes free. When a trunk becomes free, the system seizes the required trunk and rings the originating party. See Automatic Callback.

Outgoing Trunk Camp-On

Description

When an extension user who is equipped with the Camp-On feature reaches a busy trunk group, he receives a special busy tone (350/440 interrupted at 60ipm). If the originating extension remains off-hook for ten seconds the special busy tone changes to regular busy tone. When one of the trunks in the group becomes free, the caller is connected to the trunk and receives Central Office dial tone.

Page Button

Description

Selection of this option enables the PAGE button on the attendant console to be used. When the PAGE button is pressed, the console handset is connected directly to both zones of the paging equipment, overriding any extension announcement in progress. The attendant may access either of the individual paging circuits by dialing the required paging access codes (see Paging Access).

Paging Access (Extensions)

Description

An extension equipped with this feature is permitted access to the system paging equipment by dialing the required access code. Access may be restricted to zone 1 only, zone 2 only, or zones 1 and 2 depending upon the access code dialed. If an extension tries to access busy paging equipment, busy tone is returned.

Pick-Up Groups

Description

An extension may be programmed into a Pick-Up Group permitting it to pick-up a call within that group. See Dial Call Pick-Up.

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Power Failure Transfer

Description

In the event of a common control or power failure which would cause a major loss of call processing, preselected CO trunks are automatically switched to designated extensions. Failure transfer may be selected automatically under control of the system, or manually by setting the console or maintenance panel transfer switches to TRANSFER. When normal system operation is restored, calls on transfer circuits remain in effect until the calls are terminated, then the circuits are returned to normal operation. The POWER FAIL TRANSFER (PFT) control switches on the Maintenance Panel may be used to locate and isolate the source of Transfer condition. See SECTION MITL9105/9110-097-500-NA General Maintenance Information.

Power Supply Requirements

Description

The SX-100/SX-200 PABX's are designed to operate from 120Vac or 240Vac, 44 to 64Hz. The SX-200 requires factory strapping to operate from 240Vac. Older SX-100's require a 240 volt adapter (MITL part number 9110-047-000-NA) while newer systems require factory strapping. In addition, either PABX has the ability to run from a -48Vdc source or reserve battery pack (see Reserve Power Supply).

Printer and Recording Devices

Description

The system may output data to a printer or recording device. This allows the hotel attendant to print information such as the number of local call units charged to a hotel room. An installer may write customer data to a storage device like cassette tape for backup. See Automatic WAKE-UP (Alarm Call), Message Register Print, Room Audit and Traffic Measurement, Customer Data Dump & Load, MITEL Printer and Customer Data Print.

Programming Security

Description

This feature allows installation or maintenance staff to program a system without changing the switches on the Tone Control card. To safeguard against misuse a two to four digit security code may be used to enter Programming.

Range Programming Generic 216

Description

This feature allows RANGE programming of extensions in blocks in the SX-100 or SX-200. By entering a range of equipment numbers, one may assign extension numbers, busy lamp numbers, toll deny status, a class of service, or a pickup group to a selected range of equipment numbers. The start extension number, busy lamp number COS number or pickup group number is supplied. The extensions and busy lamps are assigned sequentially starting at the entered value, and the COS number, pickup group and toll denial are assigned to the entire group. As in regular extension programming, any or all of the extension attributes may be assigned at once, terminating with the ENTER key. All the usual defaults for extensions (such as COS #1) apply in RANGE programming as well.

Receive Only

Description

An extension with this COS option may receive calls but cannot originate calls. The extension may, however, originate calls and select features specified in its COS after having received a call, and placing the call on hold by flashing. If System Option 116 (Illegal Access Intercept to the Attendant) is selected, when the extension goes off hook to dial it will be forwarded to the attendant.

Receiver - Busy Out

Description

This feature allows a particular receiver circuit to be busied out or debusied for maintenance purposes (i.e. pinpointing faulty receiver circuitry). The receiver circuit may be busied out from the test line or from any console.

Receiver Direct Selection

Description

For maintenance purposes a specific receiver may be selected and tested from the test line.

Remote Maintenance Administration and Test System (RMATS)

Description

The RMAT System allows personnel at maintenance centres to remotely access an SX-100 or SX-200 PABX. This access allows the maintenance centre to obtain data information relating to maintenance aspects, or to cause programming changes. The system provides a means of remotely identifying PABX alarm conditions. It also allows programming changes to be done, without the necessity of visiting the user's premises. For further information see SECTION MITL9105/9110-98-101-NA and 9105/9110-98-301-NA.

Remote System Reset - Protection Override

Description

This system option allows the PABX to be reset from the test line or console without setting the thumbwheel switches on the Tone Control card to 777n. See also Reset the System.

Reserve Power Supply

Description

The SX-100/SX-200 PABXs may be optionally equipped with a Reserve Power Supply. The supply is capable of sustaining normal operation in the event of a commercial power failure for a minimum of 2 hours. The SX-200 reserve power supply (MITL9110-000) is mounted in the bottom of the equipment cabinet. The SX-100 reserve power supply (MITL9105-000) is mounted in a separate pedestal designed to support the SX-100. For further information as to the installation of the Reserve Power Supply see SECTION MITL9105/9110-097-200-NA.

Reset the System

Description

This feature allows the console or test line to reset the system. See also Remote System Reset - Protection Override.

Room Status Audit

Description

This feature allows the attendant to request a printout that will show the room status of all rooms. The format of this printout is:

First Line:

_ _ _ _ _ mm/dd_hh:mmp_ _ _ ROOM_ - _ STATUS

Subsequent Lines:

rrr-_sn_ _ _ _ (repeated in turn for other extensions to a maximum of five entries per line)

Where:

rrr is the extension number (room number)

s is the room status (see Room Status Update codes)

n is printed as * if the room is not ready. It will be blank if the room is ready.

Room Status Update (Maid in Room)

Description

This feature allows the Hotel/Motel attendant to monitor, display and change the status of a room. The functions which may be monitored are –

- Room Condition – Vacant and Clean (Status code 1), Occupied and Clean (Status code 2), Vacant and needs Cleaning (Status code 3), Occupied and needs Cleaning (Status code 4).
- Location of the maids (displayed as a period (.) after the room Status code).

Serial Call Override Flash Button

Description

Ths System Option allows both the Guest Room button and the Serial Call button to be used on the same console. This is done by programming the system to treat the Flash button as the Serial Call button.

Single Digit Dialing

Description

This feature, allows selected features such as hunt groups, trunk groups or extensions to be accessed by dialing a single digit number even though it conflicts with the system numbering plan. When programming the system the access code or extension number is entered as N#, where N is any single digit number. The # character is assigned an interdigit timeout period. If an extension dials a digit and does not dial a second digit within the timeout period, the system assumes that the # character was dialed and completes the call. The # character may be dialed from an extension in place of waiting for the timeout period.

Speech Path - Busy Out

Description

This feature allows a particular speech path circuit to be busied out or be put in service again.

Speech Path - Direct Selection

Description

The status of a speech path and or a receiver may be displayed on the scanner card. This may be done from the test line and using the Tone Control card switches to select a receiver and speech path. For further information see SECTION MITL9105/9110-097-500-NA.

Speed Call Generics 215, 216

Description

This feature allows extensions to program and use directory numbers in a speed call application. The attendant may program numbers or may view programmed numbers. Individual extensions may also be assigned personal tables which the extension programs. Number redial (10, 16, 24 digits) is also available on an extension basis.

Tie Trunks

Description

Tie trunks may be arranged to terminate on the console, at night bells, at extensions, in hunt groups, or they may be Dial-In Tie Trunks. Tandem operation may also be arranged. Tie trunks are arranged in groups in the same way as CO trunks. Extensions have access to tie trunk groups through the extension options selected in their Class of Service. Dial-In Tie Trunks are assigned a Class of Service in the same manner as extensions, and thus may be given access to selected PABX features.

Timed Automatic Answer Supervision

Description

This option allows answer supervision to be given to an incoming dial-in tie trunk accessing a CO trunk. Answer supervision may be supplied by the CO or the PBX after a timeout of 10 seconds.

Toll Restriction

Description

Toll restriction denies an extension or Dial-In Tie Trunk the ability to make toll calls. Toll denial may be specified to be active on the first, or first and second digits dialed. Toll calls are defined as those calls which have a 0, 1, * or #, as the first or second digit after the trunk access code has been dialed, or as calls which receive toll supervision. Denial may be specified to be active on the first and second digits dialed (see SECTION MITL9105/9110-097-212-NA).

Toll Reversal

Description

Trunk Groups may be programmed to recognise that a reversal on a trunk represents a toll call detection by the Central Office. The first digit of the Trunk Group must be programmed as a type 3 (see the Trunk Group programming form SECTION MITL9105/9110-097-205-NA).

Test Line

Description

The test line, equipment number 001, is hard wired to the test terminals on the maintenance panel. This line, in addition to normal extension facilities, has access to special features used for maintenance and testing. These exclusive features allow the service personnel to:

- Directly access an extension.
- Directly access a trunk.
- Set and clear busy-out condition of speech paths and receivers.
- Clear all busy-out conditions except trunks.
- Clear all errors.
- Select a specific speech path and receiver for use, and display their status.
- Initialize the hardware status of circuit cards.
- Reset the System.
- Reserve the printer for dump.
- Suspend the printout.
- Enable the printout.
- Ignore the printout.

Tenant Service

Description

This feature allows up to four individual tenants (customers) to share the system. Each tenant may have the same numbering plan or an independant numbering plan. If tenant service is selected the attendant consoles may be assigned as:

Shared Consoles - any console may answer or originate any call to any tenant, or

Separate Consoles - attendant console 1 may answer or originate calls to tenant 1 only. Attendant console 2 may answer or originate calls to tenant 2 only. Tenants 3 and 4 have no console and are permanently in "Night Service 1" mode.

Through Dialing

Description

This feature allows the attendant to select an outgoing trunk and connect the extension to the trunk. The call may be completed by the extension.

Station Conference

Description

This feature allows an extension user to set up a conference with up to six conferees (plus the originating extension), without the assistance of the attendant. The conferees may be any combination of extensions and trunks. To originate a conference an extension user first establishes a two party call, then adds-on the remaining conferees. Any extension in the conference with an appropriate COS may add additional parties to the conference to a maximum of seven. If the originator encounters a busy or unanswered extension number, he may flash the switchhook to return to the conference. If after flashing out of the conference, the extension hangs up, the extension will automatically be recalled to the conference. If a CO trunk is to be added to the conference and the number dialed is incorrect or unanswered, the calling party must hang up to release the connection. The extension will automatically be recalled to the conference.

Station Message Detail Recording (SMDR) Generics 215, 216

Description

Station Message Detail Recording (SMDR) allows data to be collected for each outgoing and, optionally, incoming trunk call. This data may be output to a printer or recording device (see Printer and Recording Devices). This data includes:

- Records of outgoing and/or incoming calls.
- Records of up to 26 digits dialed on the trunk.
- Account codes of up to 12 digits.
- Optional meter pulses.
- Outgoing trunk number.
- Optional system ID.
- Long calls identifications.
- Time to answer for incoming calls.
- Identifies other extensions in a transfer.
- Identifies conferences and transfers.
- Records answer supervisions.
- Identifies speed call originated calls.

Station Override Security

Description

This option provides an extension with security against Executive Busy Override. See Executive Busy Override.

Station Transfer Consultation Hold/Add-On

Description

This feature allows an extension user on an established call to hold the call, add a third party to the call, or transfer the original call to a third party. By programming selected options the feature may be restricted on the basis of the type of the second party in the call.

Station Transfer Security

Description

This feature is designed to prevent "lost" calls, i.e. mishandled calls. If a trunk call is transfered to a ringing extension, and the extension does not answer within the timeout period, this feature will route the call to the attendant during day service, or to the extension that originally answered the call during night service. Also, if an extension, during transfer, hangs up before completing dialing, the call which was held (by the original extension flashing) automatically calls back the extension.

Switchhook Flash Timer

Description

This feature defines the maximum duration of a switchhook flash. An on-hook condition of longer will be considered by the software as a valid on-hook (disconnect). An on-hook condition of less than 190ms is filtered by the line circuit hardware, and is not detected by the software. The maximum duration of a valid flash condition may be selected to be between the limits of; 700 ms, 900 ms, 1100 ms, or 1500 ms.

System Identifier

Description

This feature allows a unique identifier to be assigned to the system. This code identifies the system when central polling equipment is used for traffic data collection. It also appears on the customer data dump.

Trunk Answer From Any Station (TAFAS) Available During the Day

Description

TAFAS Available During the Day allows incoming trunk calls to ring common alerting device(s) when the system is in day service. Any extension user, with the appropriate COS, may answer the call by dialing the required access code. The answering extension may exercise any feature associated with incoming calls that are normally available at the extension.

Trunk Answer From Any Station (TAFAS) (Night Service)

Description

TAFAS allows incoming calls, normally directed to the attendant, to appear also at a common alerting device when the system is in night service, (or when TAFAS day service has been specified, see TAFAS Available During the Day). TAFAS enables any extension user with the correct COS to answer incoming calls appearing at the common alerting devices. TAFAS 1, 2 and 3 access codes are used to answer calls ringing at common alerting devices 1, 2 and 3. The TAFAS ALL access code allows the user to answer any call appearing at any alerting device. The answering extension may exercise any feature associated with the incoming call that is normally available at that extension.

Trunk Busy-Out Enable

Description

Selection of this option allows the attendant to make a trunk busy to prevent access to the trunk, and to remove the busy condition as required. If this option is not selected the attendant may still access individual trunks, but is unable to force them into a busy condition.

Traffic Measurement Generics 214, 216

Description

Traffic measurements can be made on Generic 214 or 216 PABX Systems, and the results presented at an RS232C port for subsequent printout on a suitable output device (e.g. printer or magnetic tape unit). The types of measurements made include the following:

- Trunk Group peg usages.
- Incoming trunk peg counts and usages.
- Console traffic data counts.
- System elements usage data.

Information is accumulated during a 1 hour block, and is then available for printout. The start time and number of consecutive data blocks during each day is specified from the attendant's console. The manner in which the data is to be output is selected by System Options. The system can also provide traffice measurement data to an external agency by means of the following two mutually exclusive features programmable by the selection of the appropriate system option:

- Polling by external devices.
- Automatic data printout.

Transfer Dial Tone

Description

Selection of this option returns transfer dial tone in place of regular dial tone. This occurs when the extension flashes the switchhook to put an established call on Hold in order to Park, Consult or Transfer the call. Regular dial tone is 350/440Hz continuous tone, Transfer dial tone is 350/440Hz, three bursts of 100ms on, 100ms off, followed by continous tone.

Transfer With Privacy

Description

This option allows an extension to converse with two extensions privately and connect them by hanging up. (see also Broker's Call)

Trunk-to-Trunk Connections (Extensions)

Description

This feature allows an extension user who has an established trunk call to hold the call and dial a second trunk. The user may then converse privately with the third party, transfer between parties or form a three party conference. This feature may be inhibited on an extension or on a system basis.

Vacant Number Intercept to the Attendant

Description

Selection of this option causes all calls other than DID, CCSA or Dial-In Tie Trunk calls to vacant numbers or levels to be routed to the attendant for completion. If this option is not selected these calls receive reorder tone.

Variable Timers

Description

Some timeout periods, e.g. switchhook flash (switchhook flash recognition) and recall times may be programmed.

Trunk Groups

Description

This feature controls extension access to selected Trunk Groups. An extension has access to all trunk groups specified in its COS by dialing the assigned access code. See Trunk Groups - Two Types

Trunk Groups - Hunting

Description

This feature allows trunk group hunting to be setup as; terminating or circular. If the trunk group is programmed as a terminating group, trunks are always selected in a predetermined order. If the trunk group is programmed as a circular group, trunks are selected in a distributed manner, the next free trunk being the new first choice.

Trunk Recall Partial Inhibit

Description

By selecting this option all switchhook flashes that occur while an extension is on a trunk will be partially inhibited. This will avoid the system mistaking a hang-up for a switchhook flash and ringing the extension back (i.e. phantom ringback).

Trunk-to-Trunk Connections (Attendant)

Description

This feature allows the attendant to connect any two trunks together, then release them from the console. The trunks involved may be CO and/or Non-CO trunks depending on the system options selected.