INSTALLATION AND OPERATING INSTRUCTIONS
Programming Manual

MDC-8CE DIGITAL CONTROL COMMUNICATOR AND MPC-8D PERSONAL CONTROL

OPTEX

1845 W. 205th Street,
Torrance, CA 90501-1510
(800) 423-5669

INTRODUCTION

All programming for the **Morse MDC-8C Digital Control Communicator**
is done from the **MPC-8D Personal Control**. The menu prompted system,
displaying all of the programs in the menu on the 16 character English
language alphanumeric scrolling display of the Personal Control, guides
you through the programming procedure.

The program for the MDC-8C is made up of nine main menus:

1 DELAY TIMES

2 CUTOFF TIMES

3 ZONE CONFIGURATION

4 REPORT CODES

5 RECEIVER

6 PIN NUMBERS

7 SUPERVISORY

8 EMERGENCY

9 OPTIONS

Each of the nine menus are broken down into sub-menus (programs)
which are arranged by system functions to simplify the programming
procedure. See Exhibit A (MDC-8C Program Chart). To further simplify
programming, we have maintained the same program numbering sequence as
in our MDC-16 Systems, indicating "NOT USED" for those programs which
are only in the MDC-16.

The following pages describe the available programs in each of the
menus. These pages should be thoroughly read prior to performing
actual programming of the system.

TABLE OF CONTENTS

INTRODUCTION

PROGRAM CHART A - EXHIBIT A

EXHIBIT A

MDC-8CE PROGRAM CHART

[1] DELAY TIMES
- [1] EXIT
- [2] NOT USED
- [3] PREALARM
- [4] SELF TEST
- [5] AC POWER FAIL

[2] CUTOFF TIMES
- [1] BELL
- [2] NOT USED
- [3] AUX RELAY
- [4] NOT USED
- [5] NOT USED
- [6] BATT TEST

[3] ZONE CONFIG
SET ZONE NUMBER
- [1] ALARM OUTPUTS
  - [1] TELEPHONE
  - [2] RADIO
  - [3] STEADY BELL
  - [4] PULSING BELL
  - [5] NOT USED
  - [6] NOT USED
  - [7] AUX RELAY
  - [8] NOT USED
- [2] LOOP TYPE
  - [1] N.O. NO TRBL
  - [2] N.C. NO TRBL
  - [3] OPEN OR CLOSE
  - [4] N.O. TRBL-BRK
  - [5] N.C. TRBL-SHRT
- [3] ZONE TYPE
  - [1] PERIMETER INS
  - [2] PERIMETER DLY
  - [3] INTERIOR INS
  - [4] INTERIOR DLY
  - [5] 24 HOUR
- [4] ZONE FEATURES
  - [1] BYPASS
  - [2] LOOP RESPONSE
  - [3] ENTRANCE DELAY
  - [4] DISPLAY ARMED
  - [5] DISPLAY UNARMED
  - [6] MONITOR
  - [7] NUMBER OF ALARM
  - [8] TIME PERIOD
- [5] REPORT CODES
  - [1] ALARM
  - [2] RESTORE
  - [3] NOT USED
  - [4] TROUBLE
  - [5] BYPASS
- [6] COPY ZONE
- [7] NAME THAT ZONE

[4] REPORT CODES
- [1] REPORT MENU 1
  - [1] LOW BATTERY
  - [2] BATTERY RESTR
  - [3] AC FAIL
  - [4] AC RESTORE
  - [5] NOT USED
  - [6] NOT USED
  - [7] SELF TEST
- [2] REPORT MENU 2
  - [1] ENTER PROGRAM
  - [2] EXIT PROGRAM
  - [3] DURESS
  - [4] COMM FAIL
  - [5] BELL RESTORE
  - [6] OPEN RESTORE

[5] RECEIVER
- [1] RECEIVER 1
  - [1] TELEPHONE
  - [2] ACCOUNT NUMBER
  - [3] NOT USED
  - [4] REVIEW FORMAT
  - [5] FORMAT
    - [1] BASIC
      - [1] 10 PPS 3-1
      - [2] 10 PPS 3-1 EXT
      - [3] 10 PPS 4-1
      - [4] 10 PPS 4-2
      - [5] 20 PPS 3-1
      - [6] 20 PPS 3-1 EXT
      - [7] 20 PPS 4-1
      - [8] 20 PPS 4-2
    - [2] ADVANCED
      - [1] VARITECH 4-1
      - [2] VARITECH 4-2
      - [3] 40 PPS W/PAR
      - [4] 40 PPS W/PAR EXT
      - [5] BFSK
- [2] RECEIVER 2
  - SAME AS RECEIVER 1
- [3] NOT USED
- [4] ANTI JAM
- [5] RESOURCES
  - [1] NOT USED
  - [2] LINE TYPE
  - [3] RADIO ATTEMPTS
  - [4] RADIO FORMAT
  - [5] ACCOUNT NUMBER
- [6] GROUND START

[6] PIN NUMBERS
- [1] REVIEW PIN
- [2] INSTALLER PIN
- [3] ALL OPEN CODE
- [4] ALL CLOSE CODE
- [5] OPEN CODE
- [6] CLOSE CODE

[7] SUPERVISORY
- [1] SUPERVISED
- [2] CLOSE RINGBACK
- [3] OPEN RINGBACK
- [4] P.C. RINGBACK
- [5] NOT USED
- [6] BELL RINGBACK
- [7] AUX RELAY
- [8] NOT USED
- [9] BELL TEST

[8] EMERGENCY
- [1] REPORT CODE
- [2] STEADY BELL
- [3] PULSING BELL
- [4] NOT USED
- [5] NOT USED
- [6] AUX RELAY
- [7] NOT USED

[9] OPTIONS
- [1] NOT USED
- [2] NOT USED
- [3] MINI LOADER
  - [1] TO CONTROL
  - [2] FROM CONTROL
- [4] MONITOR MODE
  - [1] DISPLAY ZONE
  - [2] ACKNOWLEDGE
  - [3] BELL
  - [4] NOT USED
  - [5] AUX RELAY
  - [6] NOT USED
  - [7] SCROLL OPEN ZONE
  - [8] SCROLL BYPASS ZONE
- [5] PROMPT MENUS
  - [1] SYSTEM READY
  - [2] ZONES NORMAL
- [6] C.S. DOWNLOAD
  - [1] TELEPHONE
  - [2] RINGS
  - [3] LOCAL
  - [4] PIN NUMBER
  - [5] NOT USED
- [7] UL FIRE
- [8] NOT USED

DESCRIPTION OF MENUS AND PROGRAMS

1. DELAY TIMES

The first main menu is "DELAY TIMES". This menu provides the programs for all of the system functions that require a delayed time setting. The following list provides a description of the programs in this menu.

PROGRAM	DESCRIPTION
1 EXIT	For delayed exiting after arming the system. Adjustable in one second increments from 0 to 255 seconds.
2 NOT USED	
3 PREALARM	To delay the prealarm alert in the PC upon entry. Adjustable in one second increments from 0 to 255 seconds.
4 SELF TEST	To automatically transmit a test signal to the central station. Adjustable in 1 hour increments from 0 to 255 hours.
5 AC POWER FAIL	To delay the transmission to the central station after an AC power failure. Adjustable in one minute increments from 0 to 255 minutes.

2. CUTOFF TIMES

The second main menu is **"CUTOFF TIMES"**. This menu provides the program for all of the system functions that require a cutoff time setting. The following list provides a description of the programs in this menu.

PROGRAM	DESCRIPTION
1 BELL	To automatically cut off the ringing bell. Adjustable in 10 second increments up to 2550 seconds.
2 NOT USED	
3 AUXILIARY RELAY	To automatically cut off Auxiliary Relay. Adjustable in 10 second increments up to 2550 seconds.
4 NOT USED	
5 NOT USED	
6 BATTERY TEST	To enable Automatic Battery Test to meet U.L. requirements. Adjustable in one second increments up to 255 seconds.

3. ZONE CONFIGURATION

The third main menu is **"ZONE CONFIGURATION"**. This menu provides the programming of all the functions relating to the 8 programmable zones, such as outputs, loop types, features, etc. For Commercial Fire, you must order separately, and install an MDC-FSM Fire Supervisory Module.

1. ALARM OUTPUTS	DESCRIPTION
1 TELEPHONE	To program zone for digital transmission.
2 RADIO	To program zone for long range radio transmission.
3 STEADY BELL	To program zone for steady bell output on alarm.
4 PULSING BELL	To program zone for pulsing bell output on alarm.
5 NOT USED	
6 NOT USED	
7 AUXILIARY RELAY	To program zone to activate auxiliary relay 1 on alarm.
8 NOT USED	

2. LOOP TYPE

DESCRIPTION

1 N.O. - NO TRBL

To program zone for use with normally open sensing devices (that close on alarm) and No Trouble

4. ZONE FEATURES   DESCRIPTION

1 BYPASS

To program zone for selective bypass by user.
CAUTION: Zones programmed for Fire should not be programmed for Bypass.

2 LOOP RESPONSE

To select a multiplier of 50 ms for zone Loop Response.

3 ENTRANCE DELAY

To selectively program the entry delay time of zone, Adjustable in 1 second increments from 0 to 255 seconds.

4 DISPLAY ARMED

To select the display of a violated zone in the armed mode.

5 DISPLAY UNARMED

To select the display of a violated 24 hour zone in the unarmed mode.

6 MONITOR

To select the zone to be part of the Monitor Mode.

7 NUMBER OF ALARMS

To select the number of alarms that must occur prior to automatic zone bypass (swinger shunt).

8 TIME PERIOD

To select the time (programmable in 10 minute increments) in which the number of alarms must occur prior to automatic zone bypass (swinger shunt).

NOTE 1: For Swinger Shunt, you **must** program #7 (Number of Alarms) **and** #8 (Time Period).

NOTE 2: If a Zone is to be programmed for Fire, select: "YES" for sub-menu 5 (Display Unarmed); "NO" for sub-menu 7 (Number of Alarms); "0" for sub-menu 8 (Time Period).

5. REPORT CODES

1 ALARM

To select the actual alarm code to be transmitted by this zone.

2 RESTORE

To select the actual restore code to be transmitted by this zone.

3 NOT USED

4 TROUBLE

To select the actual trouble code to be transmitted by this zone. Trouble Restore will transmit zone zone restore code.

5 BYPASS

To select the actual bypass code to be transmitted by this zone.

6. COPY ZONE

To copy all of the zone configuration data from one zone to one or more other zones without repeating all of the programming procedures in the Zone Configuration menu.

7. NAME THAT ZONE

To personalize the description of zone with English language alphanumerics.

4. REPORT CODES

The fourth main menu is **"REPORT CODES"**. This menu provides the program for selecting the reporting codes for all of the ancillary functions. This menu consists of two sub-menus, **"REPORT MENU 1"** and **"REPORT MENU 2"**.

1. REPORT MENU 1	DESCRIPTION
1 LOW BATTERY	To select the actual code to be transmitted for a low battery condition.
2 BATTERY RESTORE	To select the actual code to be transmitted when the battery is restored to its normal voltage.
3 AC FAIL	To select the actual code to be transmitted when AC power is lost.
4 AC RESTORE	To select the actual code to be transmitted when AC power is restored.
5 NOT USED	
6 NOT USED	
7 SELF TEST	To select the actual code to be transmitted if self test feature is being used.

2. REPORT MENU 2	
1 ENTER PROGRAM	To select a code to be transmitted when the installer or service man enters the system program mode.
2 EXIT PROGRAM	To select a code to be transmitted when the installer or service man exits the system program mode by returning the system to "System Ready" status.
3 DURESS	To select a code to be transmitted when a user enters their duress PIN. A duress PIN will also Arm or Disarm the system.
4 COMM FAIL	To select a code to be transmitted when a trouble exists in the communications network of the system.
5 BELL RESTORE	To select a code to be transmitted at bell cutoff time.
6 OPEN RESTORE	To select a code to be transmitted when the system is disarmed after alarm.

5. RECEIVER

The fifth main menu is for programming **"RECEIVER"** information. The system has the capability of communicating with two receivers.

1. RECEIVER 1	DESCRIPTION
1 TELEPHONE	To program the telephone number of the central station (or line) to which this control will communicate.
2 ACCT. NO.	To program an account number reporting to receiver 1.
3 NOT USED	
4 REVIEW FORMAT	To review the format selected for receiver 1.
5 FORMAT	Refer to the Format Descriptions in Section III to determine which format you require.
1 BASIC	Provides for selection of basic formats for transmission to receiver 1.

      10 PPS 3-1

      10 PPS 3-1 EXT

      10 PPS 4-1

      10 PPS 4-2

      20 PPS 3-1

      20 PPS 3-1 EXT

      20 PPS 4-1

      20 PPS 4-2

2 ADVANCED	Provides for selection of advanced format for transmission to receiver 1.
1 VARITECH 4-1	To select Varitech FSK with 4 digit account number and 1 digit alarm code number.
2 VARITECH 4-2	To select Varitech FSK with 4 digit account number and 2 digit alarm code number.

3	40 PPS W/PAR	To select 40 pulse per second transmission speed with 3 digit account number and 1 digit alarm code number.
4	40 PPS W/PAR EXTENDED	To select 40 pulse per second transmission speed with 3 digit account number and 2 digit alarm code number with extended message.
5	BFSK	To select BFSK transmission speed with 3 digit account number and 2 digit alarm code number.

2. RECEIVER 2

1	TELEPHONE	To program the telephone number of the central station (or line) to which this control will communicate.
2	ACCT. NO.	To program an account number reporting to receiver 2.
3	NOT USED	
4	REVIEW FORMAT	To review the format selected for receiver 2.
5	FORMAT	Refer to the Format Descriptions in Section III to determine which format you require.

1	BASIC	Provides for selection of basic format for transmission to receiver 2.

10 PPS 3-1

10 PPS 3-1 EXT

10 PPS 4-1

10 PPS 4-2

20 PPS 3-1

20 PPS 3-1 EXT

20 PPS 4-1

20 PPS 4-2

2	ADVANCED	Provides for selection of advanced format for transmission to receiver 2.

1	VARITECH 4-1	To select Varitech FSK with 4 digit account number and 1 digit alarm code number.

2	VARITECH 4-2	To select Varitech FSK with 4 digit account number and 2 digit alarm code number.
3	40 PPS W/PAR	To select 40 pulse per second transmission speed with 3 digit account number and 1 digit alarm code number.
4	40 PPS W/PAR EXTENDED	To select 40 pulse per second transmission speed with 3 digit account number and 2 digit alarm code number with extended message.
5	BFSK	To select BFSK transmission speed with 3 digit account number and 2 digit alarm code number.

3. NOT USED

4. ANTI JAM

To program the anti-jam time in one second increments from 0 to 255 seconds. **At least 5 seconds of anti jam must be programmed.**

5. RESOURCES

1	NOT USED	
2	LINE TYPE	To select for connection to a touch tone system.
3	RADIO	To select for long range radio transmission attempts.
4	RADIO FORMAT	To select the format in which the radio will transmit (if used).
5	ACCOUNT NUMBER	To select the account number to be transmitted on Long Range Radio.

6. GROUND START

To select for use in ground start telephone systems.

6. PIN NUMBERS

The sixth main menu is for review and selection of "PIN's". The following list identifies the functions of each of the sub-menus.

PROGRAM	DESCRIPTION
1 REVIEW PIN 1	This will display user number one's PIN number and <u>cannot</u> be changed by the installer (to be available to the installer to allow operation of the system, as a user, during installation and/ or service).
2 INSTALLER PIN	To select an alarm company PIN, to gain access to the program by the alarm company, if the factory preset PIN is not used.
3 ALL OPEN CODE	To select a common code for opening signals by all users.
4 ALL CLOSE CODE	To select a common code for closing signals by all users.
5 OPEN CODE USER CODE	To select an individual opening code for each user.
6 CLOSE CODE USER CODE	To select an individual closing code for each user.

7. SUPERVISORY

The sixth main menu is to select "SUPERVISORY" transmission features. The following list identifies the functions of each of the sub-menus.

1 SUPERVISED	In systems with both Digital transmission and Long Range Radio, this program will allow for selection of Long Range Radio transmission only, for Opening and Closing signals.
2 CLOSE RINGBACK	To set the system for closing signal ringback.
3 OPEN RINGBACK	To set the system for opening signal ringback.
4 PC RINGBACK	To select the sounder in the PC as the ringback signal.
5 NOT USED	
6 BELL RINGBACK	To select the bell as the ringback signal.
7 AUXILIARY RELAY RINGBACK	To select the Auxiliary Relay for ringback output.
8 NOT USED	
9 BELL TEST	To select one second bell test upon arming.

8. EMERGENCY

The eighth main menu is to select the "EMERGENCY" transmission features. The following list identifies the choices in each of the sub-menus.

1 REPORT CODE

To set the code that the emergency circuit (dual keys at the Personal Control) will report to the central station.

2 STEADY BELL

To select a steady bell output.

3 PULSING BELL

To select a pulsing bell output.

4 NOT USED

5 NOT USED

6 AUXILIARY RELAY

To select the Auxiliary Relay as an output.

7 NOT USED

9. OPTIONS

The ninth main menu consists of optional programs. The following sub-menus identifies each of these programs.

PROGRAM	DESCRIPTION
1 NOT USED	
2 NOT USED	
3 MINI LOADER	Provides for the storage of four master program files.
1 TO CONTROL	Provides for loading program from one of the four files in the Mini Loader to the control panel.
2 FROM CONTROL	Provides for loading program from the control to one of the four files in the Mini Loader.

4	MONITOR MODE	Provides option to display and acknowledge violated zones, in the monitor mode, with the option to select an output to be activated when a monitored zone is violated.
	1 DISPLAY ZONE	To select whether violated zone will be displayed.
	2 ACKNOWLEDGE	To select manual or automatic acknowledgement.
	3 BELL	To select bell output.
	4 NOT USED	
	5 AUXILIARY RELAY	To select the auxiliary relay output.
	6 NOT USED	
	7 SCROLL OPEN ZONE	To scroll open zones until cleared.
	8 SCROLL BYPASS ZONE	To scroll bypassed zones until cleared.
5	PROMPT MENUS	To rename **"System Ready"** and **"Zones Normal"** displays.
	1 SYSTEM READY	To rename **"System Ready"** to any other name with a maximum of 16 characters including spaces.
	2 ZONES NORMAL	To rename **"Zones Normal"** to any other name with a maximum of 16 characters including spaces.
6	CENTRAL STATION DOWNLOAD	Provides programming and system operation capability from a remote location (additional equipment required).
	1 TELEPHONE	To program the remote location telephone number which is automatically dialed (security callback) before the remote location can get on line with the account.
	2 NUMBER OF RINGS	To program the number of rings required before connection is made between the remote location and the control panel.
	3 LOCAL DOWNLOAD	To initiate the downloading capability from the control panel.
	4 DOWNLOAD PIN	To assign PIN for local download.
	5 NOT USED	
7	UL FIRE	To program when any Zone is used for Residential or Commercial Fire.

B. PROGRAMMING PROCEDURE

I. INTRODUCTION

Before beginning the actual programming of the system, read Section A "General Information". Understanding all the programs that are available in this system will simplify programming.

Each control panel is shipped with a Programming Chart. Prior to programming the system, fill in the information on the Programming Chart. Once this is done you will find that the actual programming procedure becomes a simple flow of entering information into the system. The alphanumeric display in the MPC-8D Personal Control will prompt you during the programming procedure. We strongly suggest that you read the programming procedure in its entirety before actually beginning the entry of the program information.

NOTE: The system is pre-programmed with a PIN for the alarm company to enter the program mode. This procedure is as follows:

Press [0000] and [PROGRAM]

"ENTER YOUR COMPANY PIN" will appear in the display.

Press [9999] and the display will read "ENTER RESPONSE" while scrolling the nine main menus.

At this time you can either retain "9999" as your company access code or change "9999" to another four digit code. If you elect to change the code proceed as follows:

Press [6] followed by [2]. "INSTALLER PIN" with "9999" will scroll in the display.

Select the four digits you would like to have as your company PIN by pressing those four digits and [ENTER]. The new number will now appear in the display.

Press [CLEAR] twice to return to "ENTER RESPONSE" which will be scrolling the nine main menus.

Note the alarm company PIN so that you have a record of it.

REMEMBER – any time you send an MDC-8CE back to our factory for service you must let us know what the alarm company PIN is, so that we can get into the program.

With "ENTER RESPONSE" in the display you are now ready to start to program the system.

II. PROGRAMMING INSTRUCTIONS

Make sure the Programming Chart (#3440-0181) has been completed prior to beginning the programming of information into the system.

Each of the main menus and sub-menus have a number preceding the name of the menu. These numbers are the ones which you will use to get into a specific program <u>or</u> step from one program to another.

> <u>For example</u>: To set a time for the pre-alarm delay you get to that program as follows:
>
> Press [1] & [3] (1 is **"Delay Times"** Main Menu and 3 is the **"Pre-Alarm"** program). In this example **Pre-Alarm Delay** with a time (in seconds) will scroll in the display. To change this time press the digits represent- ing the new time that you desire and then press [ENTER]. The new time which was flashing in the display will now appear as a steady number.
>
> Press [CLEAR] <u>twice</u> to return to the **"Enter Response"** mode.
>
> <u>Note</u>: If this was the only program information you wanted to change, press [CLEAR] again to return to the **"System Ready"** mode.

<u>IMPORTANT NOTE</u>: The system is shipped from the factory with a default setting for each program. The default setting is indicated next to the program name (in parentheses) on the Programming Chart. If you do not want to change the setting, skip that program and go on to the next one.

When programming a new system in its entirety from the **"Enter Response"** mode, proceed as follows:

1. Press [1] to enter **"Delay Times"** Menu.

   A. Press [1] for the **"Exit Delay"** program. Now enter the time you want by depressing the desired digits and [ENTER].

   B. Press [CLEAR] to exit the **"Exit Delay"** program.

   C. Press [3] for the **"Prealarm Delay"** program. Now enter the time you want by pressing the desired digits and [ENTER].

   > <u>Note</u>: When delaying **"Prealarm"** the amount of delay time is added to the **"Entrance Delay"**. For example: With an **"Entrance Delay"** of 30 seconds and a **"Prealarm Delay"** of 15 seconds, total entry delay equals 45 seconds. A selective Entrance Delay for each zone is programmed in Zone Configuration (Main Menu 3).

   D. Press [CLEAR] to exit the **"Prealarm Delay"** program.

   > <u>Note</u>: Repeat steps 1-A thru 1-D for programs 4 (Self Test) and 5 (AC Power Fail).

   Press [CLEAR] to return to the **"Enter Response"** mode.

2. Press [2] to enter "Cutoff Times" Menu.

  A. Press [1] for the "Bell Cutoff" program. Now enter the time you want by pressing the desired digits and [ENTER].

  B. Press [CLEAR] to exit the "Bell Cutoff" program.

  C. Press [3] for the "Aux Relay" program. Now enter the time you want by pressing the desired digits and [ENTER].

  D. Press [6] for "Battery Test" program. Now enter the time you want by pressing the desired digits and [ENTER].

  Press [CLEAR] twice to return to the "Enter Response" mode.

3. Press [3] to enter "Zone Configuration" menu. The display will read "SET ZONE NUMBER".

  In the "Zone Configuration" menu you will program all of the features for each of the eight individually programmable zones.

  The following is the programming procedure for Zone 1 and is to be repeated for each of the eight zones.

NOTE 1: Since many zones will have exactly the same features, it will not be necessary to repeat the entire programming procedure for these zones. Sub-Menu 6, Copy Zone (see Para. 3-H on Pg. 18) features of one zone to another. For example, if zones 1 thru 8 were all to have exactly the same features you could copy these features in one simple step which will b described in the "Copy Zone" sub-menu.

  With the system now displaying "SET ZONE NUMBER" refer to your program chart and proceed as follows:

  A. Press [1] and [ENTER].

  B. The display will now scroll "SET ZONE NUMBER - ZONE 1".

  C. Press [CLEAR] and [1] to enter the "Alarm Outputs" sub-menu. The display will read "ALARM OUTPUT" and be scrolling the programs in this sub-menu.

    This menu allows the selection of the type of output(s) required for each zone. For each selection press either [0] (NO) or [1] (YES) followed by [ENTER]. The procedure is as follows:

  NOTE: When using Control Panel for combination Fire/Burglary, some jurisdictions require an audible fire signal to have priority over any other audible signal. If required, we suggest that you program Fire for pulsing bell and Burglary for steady bell.

Press the digit **[1]**. The display will read be scrolling
"Z-1 TELEPHONE" and **"0 = NO 1 = YES"**.

Press either **[0]** (NO) or **[1]** (YES). Your choice will flash
on the left side of the display until **[ENTER]** is pressed.
At this time either **YES** or **NO** will appear in the display.

Press **[CLEAR]** and **[2]**. The display will read be scrolling
"Z-1 RADIO" and **"0 = NO 1 = YES"**.

Press either **[0]** (NO) or **[1]** (YES). Your choice will flash
in the display until **[ENTER]** is pressed. At this time either
YES or **NO** will appear in the display.

Press **[CLEAR]** and **[3]** and repeat the above procedure. Repeat
this procedure for all of the remaining output selections.
Remember to press **[CLEAR]** after each selection is completed.

Press **[CLEAR]** to return to **"Zone Configuration"** and the
scrolling menu.

D. Press **[2]** to enter **"Loop Type"** sub-menu.

This menu allows the selection of the type of loop for the
zone. Only one selection is required in this menu. At this
time the display will be scrolling **"ZONE 1 TYPE"** and the five
choices for the type of loop with each choice preceded by a
number. Select Type 4 for zones programmed for Fire.

Press the digit representing the number of the required **"Loop
Type"** for this zone. The display will now be flashing
indicating your choice. Press **[ENTER]** and your choice will
appear fixed in the display.

Press **[CLEAR]** twice to return to **"Zone Configuration"** with
the scrolling menu.

E. Press **[3]** to enter the **"Zone Type"** sub-menu.

This menu allows the selection of the type of zone. Only
one selection is required in this menu. At this time the
display will be scrolling **"ZONE 1 TYPE"** and the five choices
for the type of zone with each choice preceded by a number.
Select Type 5 for zones programmed for Fire.

Press the digit representing the number of the required
"Zone Type" for this zone. The display will now be flashing
indicating your choice. Press **[ENTER]** and your choice will
appear fixed in the display.

Press **[CLEAR]** twice to return to **"Zone Configuration"** with
the scrolling menu.

F. Press [4] to enter the "Zone Features" sub-menu.

This menu allows the selection of special features for each zone. At this time the display will be scrolling the eight (8) programmable features. The procedure is as follows:

Press [1]. The display will be scrolling "Z-1 BYPASS" and "0 = NO 1 = YES". If you want to selectively bypass this zone press [1]. If you do not want to selectively bypass this zone press the digit [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice, either YES or NO, will appear in the display.

NOTE 1: Zones programmed for 24 Hour features such as Fire and Holdup should be programmed "NO" for "BYPASS".

Press [CLEAR] and [2]. The display will be scrolling "Z1 Loop Resp" and "x50MS". To select your loop response for this zone press the digit when multiplied by 50 will give you one loop response you desire. That digit will flash on the left side of the display. Press [ENTER]. Your selection will now be fixed in the display.

Press [CLEAR] and [3]. The display will be scrolling "ENTRANCE DELAY" and "SECONDS". To select the Entrance Delay for this zone press the digit(s) for the time you desire. That selection will flash on the left side of the display until [ENTER] is pressed. At this time your choice will be fixed in the display.

Press [CLEAR] and [4]. The display will be scrolling "DISPLAY ARMED" and "0 = NO 1 = YES". If you want to display the violated zone in an Armed mode press [1]. If you do not want to display the violated zone press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either YES or NO, will appear in the display.

Press [CLEAR] and [5]. The display will be scrolling "DISPLAY UNARMED" and "0 = NO 1 = YES". If you want to display the violated zone in an Unarmed mode press [1]. If you do not want to display the zone press [0].

NOTE 1: Only 24 Hour zones can be programmed to display in Unarmed Mode.

NOTE 2: Zones programmed for Fire, select "YES" for Display Unarmed.

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until enter is pressed. At this time your choice, either YES or NO, will appear in the display.

Press [CLEAR] and [6]. The display will be scrolling "MONITOR" and "0 = NO 1 = YES". If you want this zone to be active in the Monitor Mode, press [1]. If you do not want this zone to be active in the Monitor Mode press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice, either YES or NO will appear in the display.

NOTE 1: Programs 7 and 8 must be programmed for automatic zone shunt feature.

NOTE 2: If Zone 1 is being programmed for Fire, sub-menu 7 (Number of Alarms) must be programmed "NO" and sub-menu 8 (Time Period) must be programmed "0".

Press [CLEAR] and [7]. The display will be scrolling "NUMBER OF ALARMS" and "NO ALARMS". Press the digit(s) for the number of alarms you want to occur prior to automatic zone shunting. Your choice will flash on the left side of the display until [ENTER] is pressed. Your choice will then appear fixed in the display.

NOTE: To return to "NO ALARMS" after a number has been entered, press [RESET].

Press [CLEAR] and [8]. The display will be scrolling "TIME PERIOD" and "0 X 10 MIN". Select the time you want, for the number of alarms to occur prior to automatic zone shunting, by pressing the digit(s) to be multiplied by 10 minutes. Your choice will flash on the left side of the display until [ENTER] is pressed. Your choice will then be fixed in the display.

Press [CLEAR] twice to return to "Zone Configuration" with the scrolling menu.

G. Press [5] to enter the "Report Codes" sub-menu.

This menu allows the assignment of the reporting code to be transmitted to the central station. For each selection you will assign a code number or press [RESET] if no code is to be transmitted to the central station. When [RESET] is pressed the word "NO" will appear in the display indicating that no code will be transmitted to the central station.

NOTE: The system is shipped from the factory with all functions preprogrammed for "NO" code transmission.

The following paragraphs explain how to program the codes. The ten digit keyboard provides the numerical digits and the letters "A" thru "F" are as follows:

HEX LETTER	BUTTON TO PRESS
A	[ARM]
B	[ARM/AUX]
C	[MONITOR]
D	[MEMORY]
E	[PROGRAM]
F	Right [EMERGENCY]

Therefore, to program code **E5**, press **[PROGRAM]** and **[5]**, followed by **[ENTER]**. The display will read "**E5**".

Press **[1]**. The display will be scrolling "**ZONE 1 ALARM**" and "**CODE NO**". If you want to assign a code number for the alarm transmission, press the digit(s) representing the code. The number selected will begin to flash on the left side of the display until **[ENTER]** is pressed. At this time the number will appear fixed in the display next to the word **CODE**.

Press **[CLEAR]** and **[2]**. The display will be scrolling "**ZONE 1 RESTORE**" and "**CODE NO**". If you want to assign a code number for the restore transmission, press the digit(s) representing the code. The selected number will begin to flash on the left side of the display until **[ENTER]** is pressed. At this time the number will appear fixed in the display next to the word **CODE**.

Press **[CLEAR]** and repeat the above procedure for the remaining functions in the "**Report Code**" menu.

At the conclusion of the last function press **[CLEAR]** <u>twice</u> to return to "**Zone Configuration**" with the scrolling menu.

H. Press **[6]** to enter the "**Copy Zone**" program.

The display will be scrolling "**COPY FROM**" and "**COPY TO**". Since we are in the process of programming zone number 1 the display will be scrolling "**COPY FROM 1**" and "**COPY TO**".

In this program you can automatically copy the programmed features from the zone that you are programming to one or more other zones that will have the same features. Name that Zone (Menu 7) <u>will not</u> be copied from one zone to another.

Press the digit of the zone you want to be copied from the zone that you are presently programming. The selected zone number will flash in the display until **[ENTER]** is pressed. At this time the selected zone number will appear fixed in the "**COPY TO**" line of the display.

If more than one zone is to be copied press the digit of the selected zone and repeat the preceding procedure.

At the conclusion of the "**Copy Zone**" program, press **[CLEAR]** to return to "**Zone Configuration**" with the scrolling menu.

I. Press [7] to enter the **"Name That Zone"** program. (Continue using Zone 1 as an example.)

The display will now read **"ZONE 1"**. The cursor will be in the far left space of the bottom line.

NAME THAT ZONE consists of two charts (Charts A & B on Page 31) Chart A lists 63 most commonly used words that can be instantly programmed into the zone. Chart B is a table of letters and designations with a number representing each to make up words and names.

DESCRIPTION OF KEYS

[ENTER] Press to enter a character, after the number for that character has been selected. If [ENTER] is pressed without selecting a number, the character in the display where the cursor is will be blanked. The cursor will always move one space to the right after [ENTER] is pressed.

[PROGRAM] Press to advance the character at the cursor by one. To move the cursor press the right or left [EMERGENCY].

[RESET] Press to decrease the character at the cursor by one. To move the cursor press the right or left [EMERGENCY].

[MEMORY] Press after selecting the digits representing the name you require from Chart A.

[EMERGENCY] (Left) Moves the cursor one space at a time to the left.

[EMERGENCY] (Right) Moves the cursor one space at a time to the right.

[CLEAR] Press [CLEAR] only if you've entered a number that you wish to change prior to using [ENTER] or [MEMORY] keys.

Select the word (or words) for that zone and move the cursor to the space where you want to begin to center the name in the display.

To select a name from Chart A, enter the number representing that name followed by [MEMORY]. Your selection will now appear in the display.

To create your own name from Chart B, select the number for each letter followed by [ENTER]. Or, use [PROGRAM] and [RESET] to find the character you desire and the left or right [EMERGENCY] keys to move the cursor.

To erase a character move the cursor to that character and press [ENTER].

At the conclusion of "NAME THAT ZONE" program, press [CLEAR] twice to return to "Set Zone Number" and repeat the procedure beginning with Paragraph 3-A for the next zone to be programmed.

At the conclusion of programming all of the zones press [CLEAR] until you return to the "Enter Response" mode.

4. Press **[4]** to enter the **"Report Codes"** menu.

This menu allows the assignment of reporting codes to be transmitted to the central station for all of the system supervisory functions. For each selection you will assign a code number <u>or</u> press [RESET] if no code is to be transmitted to the central station. When [RESET] is pressed the word "NO" will appear in the display.

NOTE: **The system is shipped from the factory with all functions preprogrammed for "NO" code transmissions.**

The following paragraphs explain how to program the codes. The ten digit keyboard provides the numerical digits and the letters "A" thru "F" are as follows:

HEX LETTER	BUTTON TO PRESS
A	[ARM]
B	[ARM/AUX]
C	[MONITOR]
D	[MEMORY]
E	[PROGRAM]
F	Right [EMERGENCY]

Therefore, to program code E5, press [PROGRAM] and the digit [5], followed by [ENTER]. The display will read "E5".

The **"Report Code"** menu is divided into two sub-menus, **"Report Menu 1"** and **"Report Menu 2"**.

A. Press **[1]** to enter "Report Menu 1" sub-menu.

The display will be scrolling "REPORT MENU 1" and the programs in this menu.

Press [1]. The display will be scrolling "LOW BATTERY" and "CODE NO". If you want to assign a code number for a low battery transmission, press the digit(s) representing that number. The number selected will begin to flash until [ENTER] is pressed. At this time the number will appear fixed in the display.

Press [CLEAR] and [2]. The display will read be scrolling "BATTERY RESTORE" and "CODE NO". If you want to assign a code number for the battery restore transmission, press the digit(s) representing that number. The selected number will begin to flash on the left side of the display until [ENTER] is pressed. At this time the number will appear fixed in the display.

Press [CLEAR] and repeat the above procedure for the remaining programs in "Report Menu 1".

At the conclusion of the last function in "Report Menu 1" press [CLEAR] <u>twice</u> to return to "Report Codes".

B. Press [2] to enter "Report Menu 2" sub-menu.

The display will be scrolling "REPORT MENU 2" and the programs in this menu. Repeat the procedure as described for "Report Menu 1" until all of the programs in this menu have been programmed.

<u>At the conclusion of programming all of the Report Codes press [CLEAR] until you return to the "ENTER RESPONSE" mode.</u>

5. Press [5] to enter the "Receiver" menu.

The "Receiver" menu is divided into sub-menus: "Receiver 1", "Receiver 2", "NOT USED", "Anti-Jam", "Resources" and "Ground "Start".

A. Press [1] to enter "Receiver 1" sub-menu.

The display will be scrolling "RECEIVER 1" and the programs in this sub-menu.

Press [1]. The display will read "TELEPHONE NUMBER". Enter the telephone number. There are sixteen (16) digits which can be used for the telephone number <u>and</u> any required delays.

NOTE 1: "3 Second Delay" must be programmed as the first digit of each phone number. The right Emergency button provides this function. A ":" (colon) will appear for each 3 second delay programmed.

NOTE 2: It is recommended that the communicator not be connected to a telephone line with "Call Waiting". However, if subscriber phone system has "Selective Call Waiting" then a special code number must be used immediately following the three second delay to disable "Call Waiting" during alarm dialing and transmission. Check with your local phone company for the code number.

NOTE 3: Press [BYPASS] for pound ("#").
        Press [SCAN] for asterisk ("*").

Example #1:

A "Wait for Dial Tone" is provided before each phone number. If
you require a second "Wait for Dial Tone" condition, such as in
a "dial 9" type system (PBX), press [9] and then the left
[EMERGENCY]. A ";" (semicolon) will appear after the "9". The
communicator will wait 5 seconds for dial tone; if not
received it will automatically begin dialing. Now put in the
rest of your telephone number. The number you want to enter
will now be flashing in display. Press [ENTER].

Example #2:

If you require delays between or before digits of your phone
number, press right [EMERGENCY] for each three second delay
you require. A ":" (colon) will appear in the display for
each three second delay. Using Example #1, if you require a
six second delay after the digit 9, you would press [9]
followed by right [EMERGENCY] twice. Two "::" (colons) will
appear after the digit 9. Enter the rest of the telephone
number. The number you want to enter will be flashing in the
display. Press [ENTER].

Example #3:

If no delays are required put in the phone number you want.
That number will flash in the display.
Press [ENTER].

NOTE: If you've made a mistake or wish to change any of the
data you've entered you can do so as follows:

a) If you have not yet pressed [ENTER],
press [CLEAR] and return to the original infor-
mation that was in the display.
Note: The number that you put in that was flashing
will be erased.
Now you can re-enter the number you want.

b) If you have already entered the number by pressing
[ENTER], you can put in a new number by merely
following the programming procedure previously
outlined in this section.

After the telephone number has been entered press
[CLEAR] and [2].

The display will be scrolling "ACCOUNT NUMBER" and
"ACCNT 0000". Here you will program the account number
reporting to Receiver 1. You may use either a three digit or
four digit account number depending on the format you've chosen
for transmission to your central station. (Refer to Section
III, Format Descriptions, on Pg. 32, for explanation.)

Press the digits representing the account number you wish to
enter. These digits will be flashing in the left side of the
display. Press [ENTER] and [CLEAR].

Press [4]. This is the "Review Format" program. In this program you can review only the format that has been selected for Receiver 1. The actual selection of the format is accomplished in the next program (Program 5). Press [CLEAR].

Press [5]. The display will be scrolling "FORMATS" and 1 BASIC and 2 ADVANCED. In this program you will select the communication format for transmission to Receiver 1. There are several selections in both the Basic and Advanced programs.

Refer to the Format Descriptions in Section III to determine which format you require.

If you require a format in the Basic program press [1] to enter Basic program. The display will be scrolling "BASIC FORMATS" and the eight different formats. Press the number corresponding to the specific format you require.

For example: If you wanted "20 pps 3-1", press [5]. The display will be flashing your selection. Press [ENTER] and your selection will be fixed in the display.

Press [CLEAR] twice to return to "Formats" or three times to return to "Receiver 1" sub-menu.

NOTE: If you require a format in the Advanced program, with the display reading "FORMATS" and scrolling "BASIC" and "ADVANCED" programs, press [2] followed by the digit representing your selection.

After selecting the format for Receiver 1 press [CLEAR] repeatedly until you return to the main "Receiver Menu".

B. Press [2] to enter "Receiver 2" sub-menu.

The programming procedure for Receiver 2 is the same as that as described for Receiver 1. Use the same instructions beginning with paragraph 5.A to program the data for Receiver 2.

After selecting the format for Receiver 2 press [CLEAR] repeatedly until you return to the main "Receiver Menu".

C. Press [4] to enter "Anti-Jam Time" sub-menu.

NOTE: At least 5 seconds of Anti-Jam Time must be programmed.

The display will be scrolling "ANTI-JAM TIME" and "SECONDS". Press the digit representing the time you require. That number will be flashing on the left side of the display. Press [ENTER]. Press [CLEAR] to return to the main "Receiver Menu".

E. Press [5] to enter **"Resources"** sub-menu.

The display will be scrolling **"RESOURCES"** and the communication menus in this sub-menu. This menu requires a selection of system communication transmission programs.

Press [2]. The display will be scrolling **"TOUCH TONE LINE"** and **"0 = NO 1 = YES"**. If you require touch tone, press 1. If your do not require touch tone, press 0. Your choice will flash on the left side of the display. Press [ENTER].

Press [CLEAR] and [3]. The display will be scrolling **"NUMBER OF ATTEMPTS"** and **"NUMBER"**. In this program you will select the number of transmission attempt by radio that you desire. Press the digit(s) for the number of radio attempts you desire. That selection will flash in the left side of the display. Press [ENTER].

Press [CLEAR] and [4]. The display will be scrolling **"4-2 RADIO FORMAT"** and **"0 = NO 1 = YES"**. If you wish to use the 4-2 Radio Format press 1. If you are not using the 4-2 Radio Format press 0. Your selection will flash in the left side of the display. Press [ENTER].

Press [CLEAR] and [5]. The display will be scrolling **"ACCOUNT NUMBER"** and **"ACCOUNT"**. In this program you will select the account number to be transmitted by Long Range Radio. You may select a 3 digit or 4 digit account number, either the same or different than the previously selected customer account number.

Press the digits representing the account number you wish to enter. These digits will be flashing in the left side of the display. Press [ENTER].

At the conclusion of programming all of the resources functions, press [CLEAR] to return to main "Receiver Menu".

F. Press [6] to enter **"Ground Start"** sub-menu.

The display will be scrolling **"GROUND START"** and **"0 = NO, 1 = YES"**. If the phone system is a ground start system press [1]. If the phone system is not a ground start system press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either YES or NO, and "GROUND START" in the display.

Press [CLEAR] until you return to **"Enter Response"** mode.

6. Press [6] to enter "PIN Numbers" menu.

   This menu requires the assignment of the installer and supervisory
   (Open/Close) PIN numbers.

   A. Press [1] to enter "Review PIN 1" program.

      The display will read the PIN of user #1. The PIN of user #1
      can only be programmed in the user program mode and by a user
      with an authorization level of 1. This program allows the
      installer to review that PIN so that the installer can perform
      user functions during installation or service. After reviewing
      the PIN of user 1 press [CLEAR].

   B. Press [2] to enter "Installer PIN" program.

      The display will be scrolling "INSTALLER PIN" and the installer
      entry code to the program mode. The installer entry code can
      be changed from "9999" (preset at the factory) to any other
      four digit number.

      Press the four digits you want as your company PIN. These
      digits will be flashing on the left side of the display. Press
      [ENTER] and the four digits and "INSTALLER PIN" will be
      scrolling. Press [CLEAR].

   NOTE: If you do not want to change the installer entry code merely
         press [CLEAR] to return to the "PIN Numbers"

NOTE: Programs 3 thru 6 provide Open and Closing code programming.
      A common Open and Close Code can be assigned for all users
      (Programs 3 and 4) or individual Open and Close Codes can be
      assigned for each user (Programs 5 and 6). Common codes and
      individual codes can be assigned in the same system. When Open
      and/or Close codes are not required for a user press [RESET].

   C. Press [3] to enter "All Open Codes" program.

      The display will be scrolling "ALL OPEN CODES" and "NO". In
      this program you can select a common open code, one or two
      digits, for all users in the system. You also have the option
      to select the word "No" which indicates that there will not be
      a common open code for this system.

      Press the digit(s) you want as the common open reporting code,
      or [RESET] (if you do not want a common code), and [ENTER].
      Either a number representing the common code or the word "NO"
      will appear in the display.

      Press [CLEAR] to return to the "PIN Numbers" main menu.

   D. Press [4] to enter "All Close Codes" program.

      In this program you can select a common closing code, one or
      two digits, for all users in the system.

      Repeat procedure 'C' for the selection of the common closing
      code. Upon completion, press [CLEAR] to return to the
      "PIN Numbers" main menu.

E. Press [5] to enter "User Open Code" program.

The display will be scrolling "USER OPEN CODE" and "USER". In this program you can assign individual opening codes for each user.

Press the digit representing the user number. That number will be flashing on the left side of the display. Press [ENTER]. The "USER NUMBER" you have selected and "USER OPEN CODE" will be scrolling. Press [CLEAR]. The display will be scrolling "USER NUMBER (OPEN)" and "CODE".

Press the digit(s) representing the code number you want assigned to this user. That number will be flashing on the left side. Press [ENTER]. The "Open" code number for the user will now be fixed in the display. Press [RESET] if no Open Code is required for this user. Press [CLEAR] and repeat this procedure for each user.

After completing the above procedure for all users in the system, press [CLEAR] to return to the "PIN Numbers" main menu.

F. Press [6] to enter "User Close Code" program.

Repeat procedure 'E' to assign individual closing codes by user.

At the conclusion of programming all of the "User Close Codes" press [CLEAR] repeatedly until you return to the "Enter Response" mode.

7. Press [7] to enter "Supervisory" menu.

This menu allows the selection of the Digital transmission for Opening and Closing signals, as well as selection of Ringback signal.

NOTE: For systems with both Digital and Long Range Radio transmission you may want to transmit Opening and Closing signals by Radio only. If so, then program "NO" in program [1] "Supervised".

At this time the display will be scrolling "SUPERVISORY" and the program selections in this menu. For each selection press either [0] (NO) or [1] (YES) followed by [ENTER]. The procedure is as follows:

Press [1]. The display will be scrolling "SUPERVISED" and "0 = NO" and "1 = YES". If digital transmission of Opening and Closing signals is required, press [1]. If Digital transmission of Opening and Closing signals is not required press [0]. Your choice will be flashing in the display. Press [ENTER], your choice will now be fixed in the display.

Press [CLEAR] and [2]. Repeat the above procedure for each of the programs in this menu.

At the conclusion of programming all of the selections in the "Supervisory" menu press [CLEAR] until you return to "Enter Response" mode.

8. Press [8] to enter the "Emergency" menu.

This menu enables you to select the reporting code and the method of audible signalling for the dual [EMERGENCY] buttons on the Personal Control.

At this time the display will be scrolling "EMERGENCY" and the program selections in this menu.

Press [1]. The display will be scrolling "REPORT CODE" and "CODE".

Press the digit(s) representing the code number for the Emergency function. That digit will now be flashing on the left side of the display. Press [ENTER]. The code number will now be fixed in the display.

NOTE: If you do not want to transmit a code to the central station press [RESET] and the word "NO" will appear in the bottom line of the display. Press [CLEAR].

For the remaining programs in this menu press either [0] (NO) or [1] (YES) for your selection. For example:

Press [2]. The display will be scrolling "BELL" and "0 = NO, 1 = YES". Press [0] if you do not want the bell or [1] if you want the bell. Your selection will be flashing on the left side of the display. Press [ENTER]. Your selection will now be fixed in the bottom line of the display.

Press [CLEAR] and [3]. Repeat the above procedure for each of the programs in this menu.

At the conclusion of programming all of the selections in the "Emergency" menu press [CLEAR] until you return to "Enter Response" mode.

9. Press [9] to enter the "Options" menu.

This display will be scrolling "OPTIONS and the sub-menus.

A. Press [3] to enter "Mini Loader" sub-menu. Plug Mini Loader into Control Panel (see Control Panel Wiring Diagrm).

The display will be scrolling "SET FILE NUMBER" and "FILE". Press the digit (1 thru 4) for the File you require. The number selected will begin to flash until [ENTER] is pressed. At this time the number will appear fixed in the display.

Press [CLEAR]. The display will be scrolling "MINI LOADER" and [1] "TO CONTROL" and [2] "FROM CONTROL".

Select [1] or [2] and the display will indicate the information being transferred until it is completed. If the Mini Loader is not connected an "ERROR" message will appear in the display and the Personal Control will beep for approximately 3 seconds.

Upon conclusion press [CLEAR] until the display returns to "Options".

B. Press [4] to enter **"Monitor Mode"** sub-menu.

The display will be scrolling **"MONITOR MODE"** and the programs in this sub-menu.

Press [1]. The display will be scrolling **"DISPLAY ZONE"** and **"0 = NO 1 = YES"**. If you want to display the violated zone in the Monitor Mode press [1]. If you do not want to display the violated zone press [0].

After pressing either [0] (NO) or [1] (YES) your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice, either **YES** or **NO** will appear in the display.

Press [CLEAR] and [2]. The display will be scrolling **"ACKNOWLEDGE"** and **"0 = NO 1 = YES"**. To manually acknowledge a violated zone in the Monitor Mode by pressing [RESET], press [1]. For automatic acknowledgement press [0]. When automatic acknowledgement is selected a 2 second signal will sound when a zone is violated.

After pressing either [0] (NO) or [1] (YES) your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice, either **YES** or **NO**, will appear in the display.

Press [CLEAR] and [3]. The display will be scrolling **"STEADY "BELL"** and **"0 = NO 1 = YES"**. For steady bell output press [1]. If you do not want a bell output press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either **YES** or **NO** will appear in the display.

Press [CLEAR] and [5]. The display will be scrolling **"AUX RELAY"** and **"0 = NO 1 = YES"**. For Auxiliary Relay output press [1]. If you do not want a Auxiliary Relay output press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either **YES** or **NO** will appear in the display.

Press [CLEAR] and [7]. The display will be scrolling **"SCROLL OPEN ZONE"** and **"0 = NO 1 = YES"**. To scroll open zones press [1]. If you do not want to scroll open zones press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either **YES** no **NO** will appear in the display.

Press [CLEAR] and [8]. The display will be scrolling "SCROLL BYP ZONE" and "0 = NO 1 = YES". To scroll bypassed zones press [1]. If you do not want to scroll bypassed zones press [0].

After pressing either [0] (NO) or [1] (YES), your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either YES or NO will appear in the display.

NOTE: If "YES" is selected for program [7] or [8] you must select "YES" for program [1] "Display Zone".

Press [CLEAR] twice to return to "Options" display.

C. Press [5] to enter "Prompt Menus" sub-menu.

The display will be scrolling "Prompt Menus" and [1] "System Ready, [2] "Zones Normal".

To rename these displays follow the same procedures as outlined in Zone Configuration, sub-menu 7, "Name That Zone" (Pages 19 & 20).

Press [1] to rename "System Ready". The display will read "SYSTEM READY". After completing this program press [CLEAR] once.

Press [2] to rename "Zones Normal". The display will read "ZONES NORMAL". After completing this program press [CLEAR] twice to return to the "Options" display.

D. Press [6] to enter "Central Station Download" sub-menu.

The display will be scrolling "C S Download" and the programs in this sub-menu.

NOTE 1: Uploading or Downloading from a remote location may be performed without a Security Callback Telephone Number. In this case NO NUMBER SHOULD BE ENTERED in the telephone number program. If any number, partial or complete is entered, this feature is inhibited and a complete telephone number is required to perform the uploading or downloading programs.

NOTE 2: It is recommended that the communicator not be connected to a telephone line with "Call Waiting". However, if subscriber phone system has "Selective Call Waiting" then a special code number must be used immediately following the three second delay to disable "Call Waiting" during alarm dialing and transmission. Check with your local phone company for the code number. Press [BYPASS] for pound ("#"). Press [SCAN] for the asterisk ("*").

Press [1]. The display will read "TELEPHONE NUMBER". Enter the Security Callback Telephone Number that must be dialed from the control panel after the remote location equipment and the control panel have successfully performed the initial handshake. This is necessary prior to beginning the uploading or downloading program.

Press the digits of the telephone number you require. This number will now flash in the display. Press [ENTER] and the number will become fixed in the display. Press [CLEAR] once.

Press [2]. The display will be scrolling "NUMBER OF RINGS" and "RINGS". Program the number of rings required at the control panel prior to performing the hand-shake. Press the digit(s) of the number you require. (NOTE: Number of rings should never be less than 2.) That number will flash in the display. Press [ENTER] and that number will become fixed in the display. Press [CLEAR] once.

Press [3]. The display will be scrolling "Local Download" and "0 = NO   1 = YES".

If you want to be able to initiate downloading from the control panel press [1]. If you do not want to be able to initiate downloading from the control panel press [0].

After pressing [0] (NO) or [1] (YES) your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice, either YES or NO, will appear fixed in the display. Press [CLEAR] once.

Press [4]. The display will read "DOWNLOAD PIN". Enter the digits for the PIN that will be required to initiate downloading from the control panel. Press the four digits of the desired PIN. Your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice will appear fixed in the display. Press [CLEAR] once.

E. Press [7] to enter "UL FIRE" sub-menu.

The display will be scrolling "UL FIRE" and "0 = NO 1 = YES". To select UL Fire press [1]. After pressing either [0] (NO) or [1] (YES) your choice will flash on the left side of the display until [ENTER] is pressed. At this time your choice either YES or NO will appear in the display.

This concludes the programming for the MDC-8CE Personal Control. Press [CLEAR] repeatedly until you return to "System Ready" status (user operating mode). At any time you can enter your authorized access number to the programming menus and select any of the programs for review or change. You can also access the system via a Remote Downloader and effect program changes or system operation from the remote location if the system was programmed for this feature.

For example:

If you desire to change "Bell Cutoff" time, from the control panel you would merely enter the program mode via your installer PIN and when "Enter Response" appears in the display press [2] followed by [1].

CHART A

1	=	AREA	17	=	ENTRANCE	33	=	LOADING	49 = SCREEN
2	=	ATTIC	18	=	EXIT	34	=	LOBBY	50 = SHIPPING
3	=	BASEMENT	19	=	FAMILY	35	=	MAIN	51 = SIDE
4	=	BATHROOM	20	=	FENCE	36	=	MANAGER	52 = SKYLIGHT
5	=	BEDROOM	21	=	FIRE	37	=	MASTER	53 = SMOKE
6	=	BUTTON	22	=	FLOOR	38	=	MEDICAL	54 = SOUTH
7	=	COMPUTER	23	=	FRONT	39	=	NORTH	55 = STAIRS
8	=	CORRIDOR	24	=	FURNACE	40	=	OFFICE	56 = STOCK
9	=	DEN	25	=	GARAGE	41	=	OVERHEAD	57 = STORAGE
10	=	DETECTOR	26	=	GATE	42	=	PANIC	58 = STUDY
11	=	DINING	27	=	HALL	43	=	PATIO	59 = TRANSOM
12	=	DOOR	28	=	HATCH	44	=	PORCH	60 = VAULT
13	=	DRAWER	29	=	HEAT	45	=	REAR	61 = WATER
14	=	EAST	30	=	HOLDUP	46	=	ROOF	62 = WEST
15	=	ELEVATOR	31	=	KITCHEN	47	=	ROOM	63 = WINDOW
16	=	EMRGNCY	32	=	LIVING	48	=	SAFE	

To select a name from Chart A, enter the number representing that name followed by [MEMORY]. Your selection will now appear in the display.

CHART B

1	=	A	27	=	a	53	=	:	70	=	!
2	=	B	28	=	b	54	=	;	71	=	"
3	=	C	29	=	c	55	=	<	72	=	#
4	=	D	30	=	d	56	=	>	73		(not used)
5	=	E	31	=	e	57	=	=	74	=	$
6	=	F	32	=	f	58	=	?	75	=	%
7	=	G	33	=	g	59	=	@	76	=	&
8	=	H	34	=	h				77	=	'
9	=	I	35	=	i				78	=	(
10	=	J	36	=	j	60	=	0	79	=	)
11	=	K	37	=	k	61	=	1	80	=	*
12	=	L	38	=	l	62	=	2	81	=	+
13	=	M	39	=	m	63	=	3	82	=	,
14	=	N	40	=	n	64	=	4	83	=	-
15	=	O	41	=	o	65	=	5	84	=	.
16	=	P	42	=	p	66	=	6	85	=	/
17	=	Q	43	=	q	67	=	7	86	=	[
18	=	R	44	=	r	68	=	8	87	=	]
19	=	S	45	=	s	69	=	9	88	=	∧
20	=	T	46	=	t				89	=	—
21	=	U	47	=	u				90	=	|
22	=	V	48	=	v				91	=	←
23	=	W	49	=	w				92	=	←
24	=	X	50	=	x				93	=	\
25	=	Y	51	=	y				94	=	{
26	=	Z	52	=	z				95	=	}

To create your own name from Chart B, enter the number for each letter, number or character followed by [ENTER].

If you want a character to **flash**, add 100 to any of the numbers for the characters in Chart B, prior to pressing [ENTER], that character will flash. For example: 101 followed by [ENTER] will provide a flashing "A" in the display.

III. FORMAT DESCRIPTIONS

1. INTRODUCTION

   The MDC-8CE Control Communicator has the capability of trans-
   mitting in one of many formats. In this section we'll provide
   a brief description of each of the formats.

2. BASIC FORMATS

   <u>10 AND 20 PULSE FORMATS</u> - The only difference between the 10 and
   20 Pulse Per Second (PPS) formats is the speed and tone at which
   each pulse of a digit in a message is sent. With these formats,
   receivers that use either 1400 Hz or 2300 Hz handshakes and ac-
   knowledges, may be used <u>without</u> selecting any additional options.

   All of the 10 PPS formats are sent using 1900 Hz tones with a
   duration of 60 ms and a gap of 40 ms for each pulse of a digit.
   The 20 PPS formats are sent using 1800 Hz tones with a duration
   of 30 ms and a gap of 20 ms for each pulse of a digit.

   A. <u>3-1 FORMATS</u>

      A 3-1 format is capable of sending a 3 digit account number
      with a 1 digit message code (alarm, restore, etc.). A
      complete message consists of 2 identical rounds of account
      and message digits.

   B. <u>3-1 EXTENDED FORMAT</u>

      The net result of a 3-1 Extended Format is a 3 digit account
      number and a 2 digit message code (alarm, restore, etc.). The
      digits are sent in the same manner as in the basic 3-1 Format
      but the complete message consists of 2 rounds that will
      contain the account number and the high digit of the message
      code. This will be followed by 2 more rounds which will
      repeat the high digit of the message code, in place of the
      account code, and the low digit of the message code.

         <u>Example Message</u>: Account Number 123 Message Code F5
         This message would be transmitted as follows:

                        2 rounds of 123 **F**
                        2 rounds of FFF **5**

         Some receivers will print the above message just as it
         appears, while others will combine the 2 lines into a
         single line output such as: **123 F5.**

         There are still other receivers that will combine the mes-
         sage into an English printout such as: **123 TROUBLE ZONE 5.**

C. 4-1 FORMATS

A 4-1 Format is capable of sending a 4 digit account number with a 1 digit message code. A complete message will consist of 2 identical rounds of account and message digits.

D. 4-2 FORMATS

A 4-2 Format is capable of sending a 4 digit account number with a 2 digit message code. A complete message will consist of 2 identical rounds of account and message digits.

3. ADVANCED FORMATS

HANDSHAKE TONES - All of the Advanced Formats can be used with receivers that handshake and acknowledge with either 1400 Hz or 2300 Hz tones.

A. VARITECH 4-1

This format sends a 4 digit account number and a 1 digit message code. Unlike the 10 PPS and 20 PPS (pulse) formats, the Varitech format uses a technique that is called Frequency Shift Key (FSK). When using FSK the message is sent as a pattern of two changing tones rather than a continual on and off single tone as in pulse formats. The time it takes to send any message remains the same regardless of the digits being sent.

B. VARITECH 4-2

This format is the same as the Varitech 4-1 format above except 2 message digits will be sent instead of 1.

C. 40 PPS WITH PARITY

The 40 PPS with Parity format is a 3-1 format which means that it sends a 3 digit account number and a 1 digit message code. A complete message consists of a single round of account and message digits followed by 1 parity digit. This parity digit insures that the data received is correct without having to send 2 rounds. The pulses of each digit are sent using 1800 Hz tones with a duration of 13 ms with a gap of 12 ms.

D. 40 PPS WITH PARITY EXTENDED

The net result of a 40 PPS with Parity Extended format is a 3 digit account number and a 2 digit message code. The digits are sent in the same manner as in the 40 PPS with Parity format but the complete message consists of a round that will contain the account number and the high digit of the message code. This is followed by another round which repeats the high digit of the message code, in place of the account code, and the low digit of the message code.

Example Message: Account Number 123   Message Code E2
This message would be transmitted as follows:

1 round of   **123 E**
1 round of   **EEE 2**

Some receivers will print the message just as it appears above while others will combine the 2 lines into a single line **123 E2.**

There are others that will combine the message into an English printout such as: **123 RESTORAL ZONE 2.**

<u>Note</u>: A "0" in the high digit will force the message to be sent in only one round. This was done to be compatible with some English printout receivers that require a single round message when sending alarm messages.

E. <u>BFSK</u>

This format uses an FSK transmission technique that has built-in error detection and correction abilities that sends a message of 3 digit account numbers and a 2 digit message code.

Example Message: Account Number 123   Message Code D4
This message would be transmitted as follows:

1 round of   **123 D4**

Some receivers will print the message just as it appears· above while others will convert it into an English printout such as: **123 CANCEL ZONE 2.**

<u>Note</u>: In most situations the high digit of the message code is used as a condition identifier (cancel, trouble, opening, etc.), while the low digit of the message code is used as the zone or user identifier (as in the above example), but it is necessary to put the zone number in the high digit and a "0" in the low digit of the message code when sending <u>alarm</u> messages to certain English printout receivers.

UNDERWRITERS LABORATORIES COMPLIANCE VERIFICATION CHART
MDC-8CE/MPC-8D or MPC-32D

When programming the MDC-8CE the following programs must be maintained to meet the UL requirements for Household Burg and Fire Alarm Systems and/or Commercial Burglar and Fire Alarm Systems, and Police Connect. When using the control unit i fire protective signaling system (UL 864) the Morse Model MDC-FSM must be used to monitor the two telephone lines and to supervise a polarized fire bell. The module must be connected to a 24 hour, Type 4 zone.

Program [1] - DELAY TIMES

Exit time not to exceed 60 seconds
Entrance time not to exceed 45 seconds including pre-alarm delay.
Loop Response not to exceed 1 second.

Program [2] - CUTOFF TIMES

Bell and/or Siren - 4 minutes minimum (to meet UL Residential Burg and Fire).
Bell and or Siren - 15 minutes minimum (to meet UL Commercial Burglar Alarm and Police Connect).
Bell - must be set at zero (no cutoff time) to meet UL 864.
NOTE: Recommended bell to meet minimum 85 dB level: Wheelock #46T-G10-12.
Battery Test - 5 seconds minimum.

Program [3] - ZONE CONFIGURATION

1) Burglar alarm zones must alarm in an open or shorted condition.
2) Fire alarm zones must indicate "trouble" in an open condition and "alarm" when shorted.
3) Zone Features (Fire): Display unarmed   YES
                          Number of alarms 0
                          Time period   0

Program [4] - ZONE CONFIGURATION

Low Battery must be programmed to report.

Program [5] - RECEIVER

Two (2) separate telephone numbers must be programmed (Receiver 1 and Receiver 2).

Program [7] - SUPERVISORY

Close Ring back - Program "YES"
PC Ring back - Program "YES"
Bell test - Program "YES"

Program [9] - OPTIONS

UL. Fire must be programmed YES.

Notes   1) Four (4) wire smoke detectors must be used. The smoke detector power must be supervised by a UL. Listed E.O.L. device.

2) To meet UL. requirements, Powersonic Model PS-1265 standby battery must be used.

3) To comply with UL 864, effective May 11, 1993. The primary power failure trouble signal for the DACT shall not be transmitted until the standby power capacity is at least 25 percent depleted, but not more than 50 percent.

OPERATION

To reset Smoke Detector, enter four digit PIN and press [RESET].

NOTE TO UL INSPECTOR: To verify that all programs are in compliance proceed as follows:
1. Initiate Installer Program (0000, then PROGRAM, then COMPANY CODE), then
2. Press [9] to enter Options Menu, then
3. Press [1] to view program, then
4. Press [SCAN] key as many times as required to review complete program.

SMOKE DETECTOR PLACEMENT - Reprinted from NFPA Standard 74

B-2 Smoke Detection.

B-2.1 Where to Locate the Required Smoke Detectors.

B-2.1.1 The major threat from fire in a family living unit is at night when everyone is asleep. The principal threat to persons in sleeping areas comes from fires in the remainder of the unit; therefore, smoke detector(s) are best located between the bedroom areas and the rest of the unit. In units with only one bedroom area on one floor, the smoke detector should be located as shown in Figure B-2.1.1.
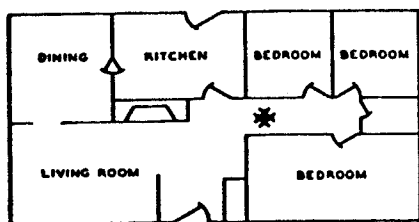

Figure B-2.1.1 A smoke detector (indicated by cross) should be located between the sleeping area and the rest of the family living unit.

B-2.1.2 In family living units with more than one bedroom area or with bedrooms on more than one floor, more than one smoke detector will be needed, as shown in Figure B-2.1.2.
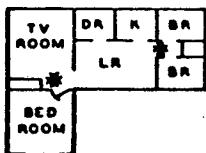

Figure B-2.1.2 In family living units with more than one sleeping area, a smoke detector (indicated by cross) should be provided to protect each.

B-2.1.3 In addition to smoke detectors outside of the sleeping areas, this standard requires the installation of a smoke detector on each additional story of the family living unit, including the basement. These installations are shown in Figure B-2.1.3. The living area smoke detector should be installed in the living room and/or near the stairway to the upper level. The basement smoke detector should be installed in close proximity to the stairway leading to the floor above. If installed on an open-joisted ceiling, the detector should be placed on the bottom of the joists. The detector should be positioned relative to the stairway so as to intercept smoke coming from a fire in the basement before the smoke enters the stairway.

B-2.2 Are More Smoke Detectors Desirable? The location of the required smoke detectors does not provide adequate protection for the occupants from a fire starting within their bedrooms, nor do the required smoke detectors provide reliable early warning protection for those areas separated by a door from the areas protected by the required smoke detectors. For these reasons, it is recommended that the householder consider the use of additional smoke detectors for those areas for increased protection. The additional areas include: basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required smoke detectors. The installation of smoke detectors in kitchens, attics (finished or unfinished), or in garages is not normally recommended as these locations occasionally experience conditions which may result in improper operation.

B-2.3 Smoke Detector Mounting — "Dead" Air Space.

B-2.3.1 The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this "dead" air space measures about 4 in. (0.1 m) along the ceiling from the corner and about 4 in. (0.1 m) down the wall as shown in Figure B-3.2.1. Detectors should not be placed in this "dead" air space.
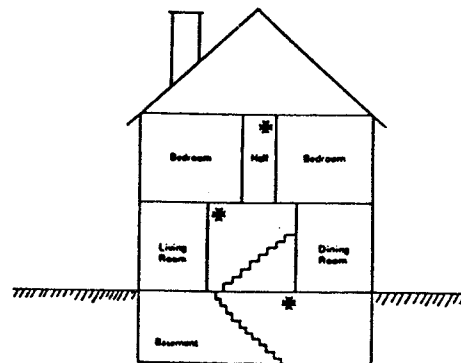
Figure B-2.1.3 A smoke detector (indicated by cross) should be located on each story.

FOR GRADE A LOCAL MERCANTILE INSTALLATIONS

The minimum requirements to form a Listed Grade A Local system includes:

Low Battery alarm annunciation (unless dialer is used to transmit a low battery message), Model CCS alarm control enclosure with tamper switch (TS/B 8403-0220), a suitable listed bell with bell housing, audible test on arming and a maximum entry and exit delay of 60 seconds.

This product has not been Underwriters Laboratories investigated for medical emergency, panic and/or help signal applications

The Model MDC-8 is listed under UL 1023, UL 985, UL 1610, UL 1635, UL 365, UL 609, UL 611.

U.L.Verification Information - MDC-8 Series:

CURRENT RATING CHART

Control	(MDC-8)	= 200 ma
Keypad	(MPC-32D)	= 70 ma
Keypad	(MPC-32D/L)	= 130 ma (max intensity)
Keypad	(MPC-8D)	= 80 ma
Keypad	(MPC-8D/L)	= 155 ma (max intensity)
Fire Supervision Module (MDC-FSM)		= 7 ma
Bell (Wheelock #46T-G10-12)		= 125 ma

BATTERY CALCULATIONS

Example:

4 hour standby plus 15 minute bell ringing.

MDC-8 (w/1 MPC-8D) = 280 x 4 hours = 1.12 ah

$$Bell = \frac{125 \text{ ma} \times 15 \text{ min}}{60} = .031 \text{ ah}$$

$$Control = \frac{280 \text{ ma} \times 15 \text{ min}}{60} = .070 \text{ ah}$$

TOTAL: 1.221 ah

WORKSHEET:

Control (MDC-8)	200 ma x _____ hours	= _____ ah
Keypad (MPC-8D)	80 ma x 15 minutes	= _____ ah
Bell	125 ma x 15 minutes	= .031 ah
FSM*	7 ma x _____ hours	= _____ ah
Control (while bell ringing)	230 ma x 15 minutes	= .058 ah
AUX Devices (PIR, Glassbreak, etc)	_____ ma x _____ hours	= _____ ah
	TOTAL:	_____ ah

* Fire Supervisory Module, required for Commercial Fire.

BATTERY PART NUMBERS

RB-1215	1.5 ah	(minimum for 4 hours)
RB-1226	2.6 ah	(alternate for 4 hours)
RB-1265	6.5 ah	(two required for 24 hours)
RB-8012	33 ah	(required for 72 hours)

PROGRAMMING SHEET - MDC-8CE - MPC-8D

Default (factory programmed) settings are in parentheses.

1. DELAY TIMES

1. Exit   (60 sec.) ____ x 1 sec.
2. Not Used
3. Prealarm   (0 sec.) ____ x 1 sec.
4. Self Test   (0 hrs.) ____ x 1 hr.
5. A.C. Power Fail   (15 min.) ____ x 1 min.

2. CUTOFF

1. Bell   (15 min.) ____ x 10 sec.
2. Not Used
3. Aux Relay   (15 min.) ____ x 10 sec.
4. Not Used
5. Not Used
6. Battery Test   (0) ____ x 1 sec.

3. ZONE CONFIG. (See back of this sheet)

4. REPORT CODES

1. Report Menu 1

1. Low Battery   (No) ____
2. Battery Restore   (No) ____
3. A.C. Fail   (No) ____
4. A.C. Restore   (No) ____
5. Not Used
6. Not Used
7. Self Test   (No) ____

2. Report Menu 2

1. Enter Program   (No) ____
2. Exit Program   (No) ____
3. Duress   (No) ____
4. Comm. Fail   (No) ____
5. Bell Restore   (No) ____
6. Open Restore   (No) ____

5. RECEIVER

1. Receiver 1

1. Telephone No. _____
2. Account No. (0000) _____
3. Not Used
4. Review Format (10 PPS 3-1)
5. Format (See Chart II)

2. Receiver 2

1. Telephone No. _____
2. Account No. (0000) _____
3. Not Used
4. Review Format (10 PPS 3-1)
5. Format (See Chart II)

3. Not Used

4. Anti Jam   (5 sec.) ____ x 1 sec.
(Must be at least 5 seconds)

5. Resources

1. Not Used
2. Touch Tone   (No) ____
3. Radio Attempts   (No) ____
4. Radio Format   (No) ____
5. Account No. (0000) _____

6. Ground Start   (No) ____

6. PIN NUMBERS

1. Review PIN (1234)
2. Installer PIN (9999) _____
3. All Open Code   (No) ____
4. All Close Code   (No) ____
5. User Open Code (Enter User #1)
6. User Close Code (Enter user #1)

User #	Open Code	Close Code	User #	Open Code	Close Code
1	____	____	9	____	____
2	____	____	10	____	____
3	____	____	11	____	____
4	____	____	12	____	____
5	____	____	13	____	____
6	____	____	14	____	____
7	____	____	15	____	____
8	____	____	16	____	____

7. SUPERVISORY

1. Supervised   (No) ____
2. Close Ringback   (No) ____
3. Open Ringback   (No) ____
4. P.C. Ringback   (No) ____
5. Not Used
6. Bell Ringback   (No) ____
7. Aux Ringback   (No) ____
8. Not Used
9. Bell Test   (No) ____

8. EMERGENCY

1. Report Code   (No) ____
2. Steady Bell   (No) ____
3. Pulsing Bell   (No) ____
4. Not Used
5. Not Used
6. Aux Relay   (No) ____
7. Not Used

9. OPTIONS

1. Not Used
2. Not Used
3. Mini Loader*
4. Monitor Mode
   1. Display Zone   (No) ____
   2. Acknowledge   (No) ____
   3. Bell   (No) ____
   4. Not Used   (No) ____
   5. Aux Relay   (No) ____
   6. Not Used   (No) ____
   7. Scroll Open Z   (No) ____
   8. Scroll Bypass Z   (No) ____
5. Prompt Menus
   1. (System Ready) _____
   2. (Zones Normal) _____
6. C.S. Download
   1. Telephone _____
   2. Rings   (12) ____
   3. Local Download   (No) ____
   4. Download PIN _____
   5. Not Used
7. UL Fire   (No) ____
8. Not Used

* No programming required

11/91 3440-0181 E

ZONE CONFIGURATION CHART - MDC-8CE - MPC-8D
Default (factory programmed) settings are in parentheses.

1. ALARM OUTPUT
1. Telephone   (Yes)   ___
2. Radio   (No)   ___
3. Steady Bell   (Yes)   ___
4. Pulsing Bell   (No)   ___
5. Not Used
6. Not Used
7. Aux Relay   (No)   ___
8. Not Used

2. LOOP TYPE   (3)   ___
1. N.O. No Trbl.
2. N.C. No Trbl.
3. Open or Close
4. N.O. Trbl. Brk.
5. N.C. Trbl. Shrt.

3. ZONE TYPE   (1)   ___
1. Perimeter Inst.
2. Perimeter Dly.
3. Interior Inst.
4. Interior Dly.
5. 24 Hour

4. ZONE FEATURES
1. Bypass   (Yes)   ___
2. Loop   (50 ms.)   ___
3. Entrance Delay   (45 sec.) ___ x 1 sec.
4. Display Armed   (No)   ___
5. Display Unarmed (No)   ___
6. Monitor   (No)   ___
7. Number of Alarms (No)   ___
8. Time Period   (0)   ___ x 10 min.

5. REPORT CODES
1. Alarm   (No)   ___
2. Restore   (No)   ___
3. Not Used
4. Trouble   (No)   ___
5. Bypass   (No)   ___

6. COPY ZONE
(See Installer Programming Manual, Page 18)

7. NAME THAT ZONE
(See Installer Programming Manual, Page 19)

Use Chart I below to enter the zone configuration program data for all 8 zones.

CHART I
ZONE CONFIGURATION PROGRAMS

ZONE #	1 ALARM OUTPUT * (Yes Only) X (Not used)								2 LOOP TYPE	3 ZONE TYPE	4 ZONE FEATURES *								5 REPORT CODES ** x (Not Used)					7 NAME THAT ZONE ***
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	1	2	3	4	5	
1					X	X		X													X			
2					X	X		X													X			
3					X	X		X													X			
4					X	X		X													X			
5					X	X		X													X			
6					X	X		X													X			
7					X	X		X													X			
8					X	X		X													X			

* All Loop Response Times in milliseconds, all Entrance Delay Times in seconds.

** Indicate (by number) only those functions, defaulted as "NO", which will be programmed "YES".

** Indicate (by code) only those functions that will transmit to the central station.

*** Maximum 16 characters including spaces.

CHART II
FOR CONFIGURATION RECEIVER FORMAT

Select the format that can be accepted by your receiver.
Check with the receiver manufacturer if you have any questions.

1. **BASIC**
   1 10 PPS 3-1 **(Factory Set)**
   2 10 PPS 3-1 Ext.
   3 10 PPS 4-1
   4 10 PPS 4-2
   5 20 PPS 3-1
   6 20 PPS 3-1 Ext.
   7 20 PPS 4-1
   8 20 PPS 4-2

2. **ADVANCED**
   1 Varitech 4-1
   2 Varitech 4-2
   3 40 PPS W/P
   4 40 PPS W/P Ext.
   5 BFSK

11/91   3440-0181   E

WIRING INSTRUCTIONS

TERMINALS

1, 2   **16 VAC Class II** plug in transformer (20 VA maximum). Use #18AWG twisted pair and keep wire run as short as possible

Earth Ground (cold water pipe) Connect with approved type of ground clamp (not furnished). Use #16AWG wire (or larger) and keep wire run as short as possible. This terminal is the circuit ground (common) and provides reference for ground fault detection.

3, 4   **Auxiliary Power** 12 V DC, terminal 4 is negative, terminal 3 is positive. Detection devices such as ultrasonic, passive infrared, photoelectric, sound discriminator, etc. may be powered from these terminals.

Terminal 3 is also used for smoke detector positive voltage. The smoke detector power must be supervised by a U.L. Listed end-of-line device.

Prior to connecting devices to these power terminals you must calculate the total power consumption of all devices used in the system.

NOTE: **The maximum combined current must not exceed 800 mA, including Alarm Bell Output Terminal 3, 4, 25, 26, 30.**

When calculating total current you must consider: remote stations, alarm bell, smoke detectors, and any other devices connected to these terminals.

NOTE 1:   Each MPC-8D and 32D = 70 mA. Each MPC-8DL and 32DL = 70 mA at its lowest brightness level. Each brightness level increases the current draw by 10 mA to a maximum of 150 mA at maximum brightness.

NOTE 2:   To meet UL requirements, a Powersonic Model PS-1265 standby battery must be used.

5, 6, 7, 8   **Remote Stations (Personal Control) - MPC-8D, MPC-8DL, MPC-32D & MPC-32DL** A maximum of four (4) MPC's (any combination) is allowed in a system.

To eliminate possible interference from extraneous sources, the data pair terminals 5 and 6 **must be minimum #22 AWG twisted pair.**

To enhance RFI and EMI rejection, the data pair must be terminated with an end-of-line resistor.

We suggest that keypads be wired in a daisy chain manner as shown in Fig. 1. In this configuration a 150 ohm terminating resistor is installed across the data pair at the last keypad.

FIG. 1

**OPTEX MORSE INC.** 1845 W.205 St. Torrance, CA 90501 (310) 533-1500
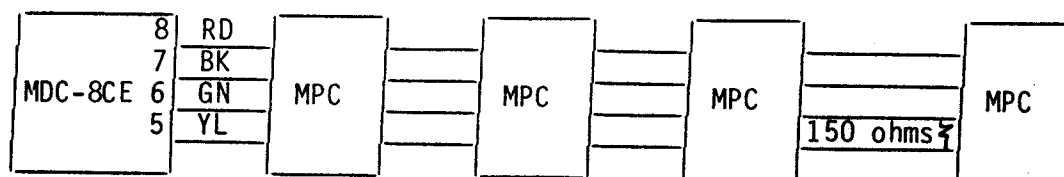
If the installation requires home run wiring (see Fig. 2) from each keypad to the control panel, a terminating resistor will be necessary across the data pair at each keypad. The value of the resistor will be as follows:

1	Keypad	=	150 ohms
2	Keypads	=	300 ohms each
3	Keypads	=	450 ohms each
4	Keypads	=	600 ohms each

NOTE: Resistors of these values may not be readily available from your supplier. Therefore, select a resistor value as close to, but greater than, the specified value. A 1/4 watt resistor will be adequate.

HOME RUN EXAMPLE:

FIG. 2
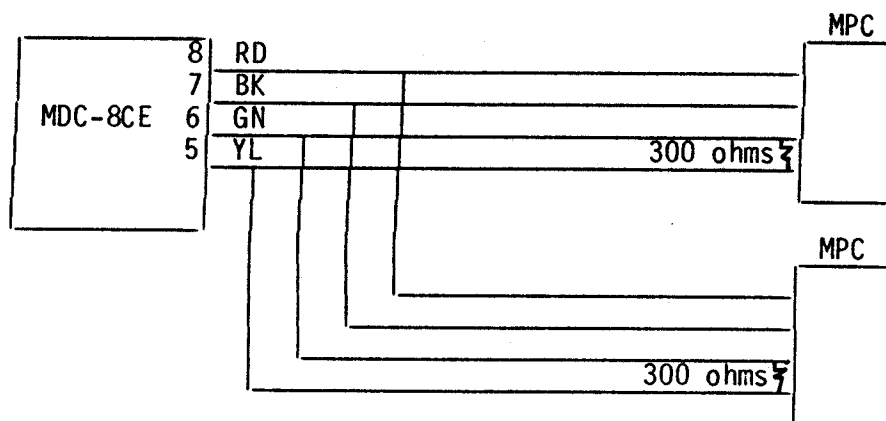
Each keypad must have its address selected by setting the two dip switches located on the back of the keypad. Each will be addressed (per model) as number 1 thru 4 as follows:

SWITCH	A	B
1st unit	Off	Off
2nd unit	On	Off
3rd unit	Off	On
4th unit	On	On

Keypad connections are:

MDC-8CE	MPC	
Data 5	Yellow	---- } 150 ohms
Data 6	Green	---- } Terminating
Ground 7	Black	} Resistor
Power 8	Red	

Each MPC-8D or 32D   = 70 mA   Maximum
Each MPC-8DL or 32DL = 70 mA (lowest brightness level)   4 - MPC's
                       150 mA (maximum brightness level)

9 thru 24   **Protection Loops** Zone 1 thru zone 8 are connected to these terminals as indicated in Fig. 3 (Pg. 5).

All loops are two wire and may be wired as the following "Loop Types".

1. **Normally Open:** This loop requires the use of detection devices or switches that close (short) on alarm.

2. **Normally Closed:** This loop requires the use of detection devices or switches that open on alarm.

3. **Normally Open and Normally Closed:** This loop requires an end of line resistor (2.2 K ohms) and will accept both types of switch operation (open or closed).

4. **Normally Open with Trouble Report on Break:** This loop requires an end of line resistor (2.2 K ohms) and detection devices or switches that "close" (short) on alarm. An open condition (loss of 2.2 K ohms resistor) will produce:

5. **Normally Closed with Trouble Report on Short:** This loop requires an end of line resistor (2.2 K ohms) and detection devices or switches that "open" on alarm. A short will produce:

25, 26   **Alarm Bell** 12 V DC is provided. Terminal 25 is negative, terminal 26 is positive. The positive terminal is the one being switched ON and OFF. The bell should be connected with 18 AWG wire as a minimum. For U.L. Bell Supervision use Model MDC-FSM with Wheelock Bell Model 46T-G10-12-R.

Remember, maximum combined current must not exceed 800 mA.

27, 28, 29 **Auxiliary Relay** Form "C" dry contacts. Terminal 27 is the relay common. Terminal 28 is the Normally Closed contact which will open during alarm. Terminal 29 is the Normally Open contact with will close during alarm.

30   **Smoke Detector** Negative voltage. Smoke Detector positive voltage is on Terminal 3.

31, 32   **Radio Transmitter Key and Ground Start** These terminals are normally open and will close on alarm. When programmed for R.F. transmission, the data to be transmitted will appear on terminals 31 and 32. Refer to hookup diagram for RF-RM1 for further details. When programming for Ground Start, a jumper must be installed from terminal 32 to terminal 35 or terminal 36.

NOTE: Ground Start and radio cannot be used in the same installation.

33, 34,   **Telephone Line Connections** Full line seizure will assure that house
35, 36   phones are disconnected from the telco network while the communicator is in operation.

	33 Premise Tip	To house phones
	34 Premise Ring	
PHONE LINE	35 Telco Ring	
	36 Telco Tip	From Telco

If two (2) phone lines are required, use Model MDC-FSM.

**BATTERY PLUG:** Use battery type 12 volt 1.8 amp-hr Morse Model RB-1215 or 12 volt 6.5 amp-hr Morse Model RB-1265 or equivalent.

OPTEX MORSE

8 CHANNEL CONTROL COMMUNICATOR
MODEL MDC-8C

CONNECT TO 24HR POWER SOURCE (SEE NOTE 4) — [1] [2] — 16VAC XFMR 20VA MAX

4-WIRE SMOKE (+) DETECTOR — [3] +] AUX POWER
[4] -] (SEE NOTE 1 & 2)

PERSONAL CONTROL: MODELS MPC-32D, MPC-32D/L (4 MAX) (SEE WIRING INSTRUCTIONS FOR REQUIRED EOL RESISTORS)
YEL [5] DATA] TWISTED
GRN [6] DATA] PAIR
BLK [7] GROUND
RED [8] POWER

LISTED AS CONTROL UNIT FOR:
HOUSEHOLD BURGLAR & FIRE ALARM
CENTRAL STATION BURGLAR ALARM
POLICE STATION ALARM
LOCAL ALARM

UL FILE NO. S-1152
APPLICABLE UL STANDARDS

SUITABLE AS A CENTRAL STATION BURGLARY ALARM CONTROL UNIT (UL 1610), POLICE CONNECT (UL 365), AND LOCAL BURGLAR ALARM SYSTEM CONTROL UNIT (UL 609), HOUSEHOLD FIRE (UL 985) AND BURGLAR WARNING SYSTEM CONTROL UNIT (UL 1023), DIGITAL DIALER COMMUNICATOR (UL 1635).
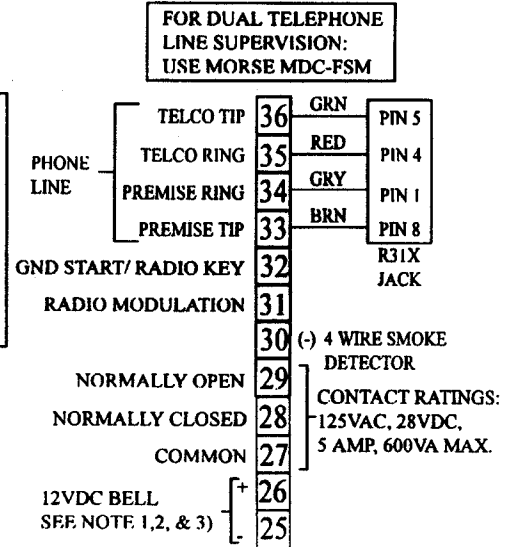
KEYPADS
| 1 AMP |
SMOKE/AUX
| 1 AMP |
BATTERY
| 3 AMP |
FUSES
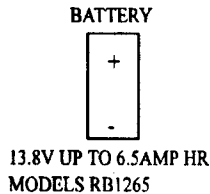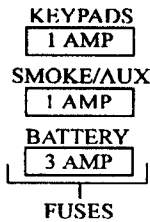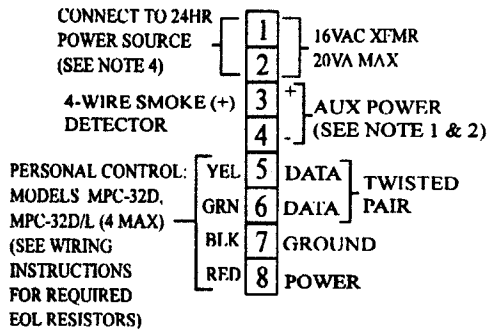
CAUTION:
INCORRECT TERMINAL BLOCK CONNECTIONS MAY DAMAGE EQUIPMENT

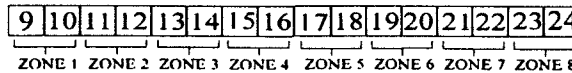THIS PRODUCT HAS NOT BEEN INVESTIGATED FOR MEDICAL EMERGENCY, PANIC, AND/OR HELP SIGNAL APPLICATIONS.

NOTE 1 : 1070mA IS MAX COMBINED POWER AVAIL. (TERM 3, 4, 25, 26 & 30).
NOTE 2 : OUTPUT PROVIDES 14.25VDC, UNDER 100% RATED INPUT CONDITIONS.
NOTE 3 : FOR SUPERVISED BELL CIRCUIT, USE MORSE MDC-FSM.
NOTE 4 : METAL-CLAD BOXED FT-16 XFMR AVAIL IF REQUIRED.

BATTERY
[+ -]
13.8V UP TO 6.5AMP HR
MODELS RB1265

COMPLIES WITH:
FCC RULES - PART 68
FCC REGULATION NUMBER: AMZ9SM-67968-AL-R
RINGER EQUIVALENCE: 0.0B

FOR DUAL TELEPHONE LINE SUPERVISION: USE MORSE MDC-FSM

PHONE LINE
TELCO TIP [36] GRN PIN 5
TELCO RING [35] RED PIN 4
PREMISE RING [34] GRY PIN 1
PREMISE TIP [33] BRN PIN 8
R31X JACK

GND START/ RADIO KEY [32]
RADIO MODULATION [31]
[30] (-) 4 WIRE SMOKE DETECTOR
NORMALLY OPEN [29] CONTACT RATINGS:
NORMALLY CLOSED [28] 125VAC, 28VDC, 5 AMP, 600VA MAX.
COMMON [27]
12VDC BELL SEE NOTE 1,2, & 3) [+ 26] [- 25]

SIREN/BELL
| 2 AMP |

O
EARTH GROUND

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ZONE 1		ZONE 2		ZONE 3		ZONE 4		ZONE 5		ZONE 6		ZONE 7		ZONE 8	

SUPERVISED PROTECTION ZONES
MAXIMUM ZONE RESISTANCE - 1KOHMS

EOL RESISTOR: 2.2K OHM, 1/2 WATT
MORSE PART NUMBER 1401-4649

TYPE 1
NO EOL RESISTOR NOT REQUIRED

TYPE 2
NC EOL RESISTOR NOT REQUIRED

TYPE 3
NO AND/OR NC SUPERVISED WITH EOL RESISTOR

TYPE 4
NO SUPERVISED WITH EOL RESISTOR REPORTS "TROUBLE" ON BREAK, "ALARM" ON SHORT

TYPE 5
NC SUPERVISED WITH EOL RESISTOR REPORTS "TROUBLE" ON SHORT, "ALARM" ON OPEN

3400-0115 REV M 8/95