Installation and Operating Instructions

PROGRAMMING MANUAL

MDC-16CET DIGITAL CONTROL COMMUNICATOR and MPC-32D PERSONAL CONTROL

OPTEX
MORSE

INTRODUCTION

All programming for the **MDC-16CET Digital Control Communicator** is done from the **MPC-32D Personal Control.** The menu prompted system, displaying all of the programs in the menu on the 32 character English language alphanumeric display of the Personal Control, guides you through the programming procedure.

The program for the MDC-16CET 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-16CET Program Chart).

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.

8/93 3440-0194 REV H

12960 Bradley Avenue Sylmar, California 91342 (818) 367-5951

TABLE OF CONTENTS

EXHIBIT A

MDC-16CET PROGRAM CHART

- [1] DELAY TIMES
  - [1] EXIT
  - [2] ENTRANCE
  - [3] PREALARM
  - [4] SELF TEST
    - [1] CONDITIONAL
    - [2] UNCONDITIONAL
    - [3] FIXED TIME
  - [5] AC POWER FAIL
- [2] CUTOFF TIMES
  - [1] BELL
  - [2] SIREN
  - [3] AUX 1
  - [4] AUX 2
  - [5] LISTEN IN
  - [6] BATTERY TEST
  - [7] TIME CLOCK
    - [1] SET CLOCK
    - [2] DAYLIGHT SAVE
    - [3] DISPLAY
    - [4] SET BY USER
- [3] ZONE CONFIG
  - SET ZONE NUMBER
    - [1] ALARM OUTPUTS
      - [1] TELEPHONE
      - [2] RADIO
      - [3] STEADY BELL
      - [4] PULSING BELL
      - [5] STEADY SIREN
      - [6] PULSING SIREN
      - [7] AUX 1 RELAY
      - [8] AUX 2 RELAY
    - [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
      - [6] DAY CIRCUIT
    - [4] ZONE FEATURES
      - [1] BYPASS
      - [2] LOOP RESPONSE
      - [3] ENTRANCE DELAY
      - [4] DISPLAY ARMED
      - [5] DISPLAY UNARMED
      - [6] MONITOR MODE
      - [7] NUMBER OF ALARM
      - [8] TIME PERIOD
    - [5] REPORT CODES
      - [1] ALARM
      - [2] RESTORE
      - [3] CANCEL
      - [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] BOX TAMPER
    - [6] TAMPER RESTR
    - [7] SELF TEST
  - [2] REPORT MENU 2
    - [1] ENTER PROGRAM
    - [2] EXIT PROGRAM
    - [3] DURESS
    - [4] COMM FAIL
    - [5] BELL RESTORE
    - [6] OPEN RESTORE
    - [7] ON PREMISE
  - [3] REPORT MENU 3
    - [1] OPEN EXCEPTION
    - [2] CLOSE EXCEPTION
    - [3] CLOCK CHANGE
    - [4] PERM. SCHEDULE CHANGE
    - [5] TEMP. SCHEDULE CHANGE
    - [6] O-C BUFFER OVERFLOW
    - [7] O-C BUFFER FULL
- [5] RECEIVER
  - [1] RECEIVER 1
    - [1] TELEPHONE
    - [2] ACCOUNT 1-8
    - [3] ACCOUNT 9-16
    - [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] RECEIVER 3
    - SAME AS RECEIVER 1 (ONLY 1 ACCOUNT NUMBER
  - [4] ANTI JAM
  - [5] RESOURCES
    - [1] TELCO LINES
    - [2] LINE TYPE
    - [3] RADIO ATTEMPTS
    - [4] RADIO FORMAT
    - [5] DIGITAL FIRST
    - [6] BOTH RECEIVERS
  - [6] GROUND START
  - [7] RADIO ACCOUNT #
- [6] PIN NUMBERS
  - [1] REVIEW PIN
  - [2] INSTALLER PIN
  - [3] ALL OPEN CODE
  - [4] ALL CLOSE CODE
  - [5] OPEN CODE
  - [6] CLOSE CODE
  - [7] SPECIAL PIN
- [7] SUPERVISORY
  - [1] SUPERVISED
  - [2] CLOSE RINGBACK
  - [3] OPEN RINGBACK
  - [4] P.C. RINGBACK
  - [5] SIREN RINGBACK
  - [6] BELL RINGBACK
  - [7] AUX 1 RINGBACK
  - [8] AUX 2 RINGBACK
- [8] EMERGENCY
  - [1] REPORT CODE
  - [2] STEADY BELL
  - [3] PULSING BELL
  - [4] STEADY SIREN
  - [5] PULSHING SIREN
  - [6] AUX 1 RELAY
  - [7] AUX 2 RELAY
- [9] OPTIONS
  - [1] VIEW PROGRAM
  - [2] PRINT PROGRAM
  - [3] MINI LOADER
    - [1] TO CONTROL
    - [2] FROM CONTROL
  - [4] MONITOR MODE
    - [1] DISPLAY ZONE
    - [2] ACKNOWLEDGE
    - [3] BELL
    - [4] SIREN
    - [5] AUX 1 RELAY
    - [6] AUX 2 RELAY
    - [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] RDM
  - [7] U.L. FIRE
  - [8] AUX ARM
    - [1] PARTIAL ARM
    - [2] GROUP ARM/USER
    - [3] TOTAL GROUPS
    - [4] GROUP NUMBER
      - [1] DESCRIPTION
      - [2] ZONES 1-16
      - [3] OPEN CODE
      - [4] CLOSE CODE
      - [5] COMMON GROUP
  - [9] SCHEDULING
    - [1] TYPES
      - [1] O/C WINDOWS
      - [2] CLOSE W/BYPASS
      - [3] CLOSE W/ALARMS
      - [4] SCHEDULE 1
      - [5] SCHEDULE 2
    - [2] USER SET
    - [3] WINDOW SYSTEM
      - [1] SCHEDULE 1
      - [2] SCHEDULE 2
      - [3] HOLIDAY SCHEDULE
      - [4] TEMP SCHEDULE 1
      - [5] TEMP SCHEDULE 2
    - [4] HISTORY
      - [1] PRINT
      - [2] VIEW
      - [3] USER VIEW

A. 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 ENTRANCE	For delayed entry to disarm the system. Adjustable for all delay zones in one second increments from 0 to 255 seconds. Individual delay zone adjustments are made in Zone Configuration, Menu 3.
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. Selectable programs for daily, weekly or monthly test signal transmissions are available.
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 SIREN	To automatically cut off the ringing siren. Adjustable in 10 second increments up to 2550 seconds.
3 AUXILIARY 1 RELAY	To automatically cut off relay #1. Adjustable in 10 second increments up to 2550 seconds.
4 AUXILIARY 2 RELAY	To automatically cut off relay #2. Adjustable in 10 second increments up to 2550 seconds.
5 LISTEN-IN	To enable listen in from the central station. Adjustable in 1 second increments up to 255 seconds.
6 BATTERY TEST	To enable automatic battery test to meet UL requirements. Adjustable in ten second increments up to 2550 seconds.
7 TIME CLOCK	To enable programming of the time clock for Date, Time, Daylight Savings, Keypad display and User Setting of the date and time.

3. ZONE CONFIGURATION

The third main menu is **"ZONE CONFIGURATION"**. This menu provides the programming of all the functions relating to the 16 programmable zones, such as outputs, loop types, features, etc. The **"ZONE CONFIGURATION"** menu consists of seven sub-menus as follows:

1. ALARM OUTPUTS	DESCRIPTION
1 TELEPHONE	To program zone for digital transmission.
2 RADIO	To program zone for long range radio transmission. Must use Varitech FSK Format.
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 STEADY SIREN	To program zone for steady siren output on alarm.
6 PULSING SIREN	To program zone for pulsing siren output on alarm.
7 AUXILIARY 1 RELAY	To program zone to activate auxiliary relay 1 on alarm.
8 AUXILIARY 2 RELAY	To program zone to activate auxiliary relay 2 on alarm.

2. LOOP TYPE		DESCRIPTION
1	N.O. - NO TRBL	To program zone for use with normally open sensing devices (that close on alarm). No Trouble Report to central station or local annunciation.
2	N.C. - NO TRBL	To program zone for use with normally closed sensing devices (that open on alarm). No Trouble Report to central station or local annunciation.
3	OPEN OR CLOSE	To program zone for use with either open or closed circuit sensing devices. No Trouble Report to the central station or local annunciation. (Must use EOL resistor 2.2K)
4	N.O. - TRBL BRK	To program zone for use with normally open sensing devices (that close on alarm) with a break in the circuit sending a Trouble Report to the central station when system is armed. (Must use EOL resistor 2.2K)
5	N.C. - TRBL SHRT	To program zone for use with normally closed sensing devices (that open on alarm) with a short in the circuit sending a Trouble Report to the central station when armed. (Must use EOL resistor 2.2K)

3. ZONE TYPE		DESCRIPTION
1	PERIMETER INS	To program zone for instant alarm in all arming modes.
2	PERIMETER DLY	To program zone for exit/entry delay when system is in any of the delayed arming modes.
3	INTERIOR INS	To program zone for instant alarm when system is in "Off-Premise" mode. In "On-Premise" mode these zones will automatically be bypassed.
4	INTERIOR DLY	To program zone for delayed arming when arming the system in an Off-Premise Exit/Entry delay mode. This zone is automatically bypassed during the exit delay time and becomes instant as soon as the system arms. When entry is through a Perimeter Delay Zone, this zone (Interior Delay) then becomes delayed.
5	24 HOUR	To program zone for twenty-four (24) hour alarm signalling to the central station regardless of whether the system is armed or disarmed.
6	DAY CIRCUIT	To program zone for day circuit providing local annunciation and/or trouble reporting to the central station in unarmed mode.

4. ZONE FEATURES		DESCRIPTION
1	BYPASS	To program zone for selective bypass by user. **CAUTION: Zones programmed for "24 hour" 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 MODE	To select the zone to be part of the Monitor Mode. These zones, during a Monitor Mode, will not transmit to the central station. During Monitor Mode these zones can be programmed for local annunciation.
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: For Swinger Shunt, you must program #7 (Number of Alarms) and #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 code for alarm and trouble restore to be transmitted by this zone.
3	CANCEL	To select the actual cancel code to be transmitted by this zone.
4	TROUBLE	To select the actual trouble code to be transmitted by this zone. Trouble Restore will transmit zone restore code.
5	BYPASS	To select the actual bypass code to be transmitted by this zone when system is armed.

6. COPY ZONE	To copy all of the zone configuration data, except zone name, 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 three sub-menus, **"REPORT MENU 1"** and **"REPORT MENU 2"** and **"REPORT MENU 3"**.

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	BOX TAMPER	To select the actual code to be transmitted when the tamper circuit (if provided) in the control communicator is tripped.
6	TAMPER RESTORE	To select the actual code to be transmitted when the tamper circuit is restored.
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.
7	ON PREM ARM CODE	To select a code to be transmitted when the system is armed on premise.

3. REPORT MENU 3		DESCRIPTION
1	OPEN EXCEPTION	To select a code to be transmitted if the system is not disarmed by the end of the opening window.
2	CLOSE EXCEPTION	To select a code to be transmitted if the system is not armed by the end of the closing window.
3	CLOCK CHANGE	To select a code to be transmitted when a change is made in the time clock.
4	PERMANENT SCHEDULE CHANGE	To select a code to be transmitted if a change is made in one of the permanent schedules.
5	TEMPORARY SCHEDULE CHANGE	To select a code to be transmitted if a change is made in the temporary schedule program.
6	OPEN/CLOSE BUFFER OVERFLOW	To select a code to be transmitted when the buffer has reached its maximum capacity of 127 events. The buffer will transmit all new open/close events to central station. Store the latest events and drop the oldest events maintaining total capacity of 127 events in buffer.
7	OPEN/CLOSE BUFFER FULL	To select a code to be transmitted when the buffer reaches 75% of its capacity.

5. RECEIVER

The fifth main menu is for programming **"RECEIVER"** information. The system has the capability of communicating with three receivers (or three different telephone lines at the central station). For receivers one and two you can assign one account number for the system or two account numbers, one for zones 1 thru 8 and one for zones 9 thru 16, to accommodate the receiving system you have at the central station. Receiver three provides the capability of assigning only one account number and allows you to program all of your supervisory signals to that receiver so that you do not overload your first and/or second line with supervisory signals, such as openings, closings and self test.

NOTE: Receiver 3 **must** be programmed when opening and closing and/or self test codes are programmed.

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. Z1-8	To program an account number for zones 1 thru 8 reporting to receiver 1.
3	ACCT. NO. Z9-16	To program an account number for zones 9 thru 16 reporting to receiver 1.
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. Z1-8	To program an account number for zones 1 thru 8 reporting to receiver 2.
3	ACCT. NO. Z9-16	To program an account number for zones 9 thru 16 reporting to receiver 2.
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. RECEIVER 3

NOTE: All opening, closing, open exception, close exception, buffer status and self test signals are automatically transmitted to Receiver 3.

1 TELEPHONE — To program the telephone number of the central station (or line) to which this control will communicate.

2 ACCOUNT NUMBER — To program the account number reporting to receiver 3.

3 REVIEW FORMAT — To review the format selected for receiver 3.

4 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 3.

10 PPS 3-1	20 PPS 3-1
10 PPS 3-1 EXT	20 PPS 3-1 EXT
10 PPS 4-1	20 PPS 4-1
10 PPS 4-2	20 PPS 4-2

2 ADVANCED — Provides for selection of advanced format for transmission to receiver 3.

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.

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 TELCO LINES — To select one or two telephone lines for transmission from the control panel.

2 LINE TYPE — To select for connection to a touch tone system.

3 RADIO ATTEMPTS — To select the number of attempts (1-9) for radio transmission to the central station, when long range radio is used in addition to digital.

4 RADIO FORMAT — To select Varitech 4/2 format for radio transmission. System is defaulted with Varitech 4/1.

5 DIGITAL FIRST — To select either digital or radio as your first form of communication to the central station. If digital is selected and it completes its transmission, long range radio will not transmit.

6 BOTH RECEIVERS — To select transmission af all signals to two receivers. These receiver numbers will be programmed in Receiver 1 and Receiver 2 menus.

7 RADIO ACCOUNT NO — To program account number to be transmitted via Long Range Radio on Varitech format only.

6. GROUND START

To select for use in ground start telephone systems. Telephone line output 1 and Aux Relay 1 must be used. Aux Relay 1 cannot be used for any other function if Ground Start is selected.

NOTE: **If remote downloading is selected, only MDC-RDM can be used. MDC-RDL cannot be used in ground start 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 cannot 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 SPECIAL PIN	To select a user's **PIN**, to trip Aux Relay 1 or Aux Relay 2 or both. Application: Door strike.

7. SUPERVISORY

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

1 SUPERVISED	To set system for digital transmission of Opening and Closing signals. 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 SIREN RINGBACK	To select the siren output as the ringback signal.

6	BELL RINGBACK	To select the bell as the ringback signal.
7	AUXILIARY 1 RINGBACK	To select auxiliary 1 relay for ringback output.
8	AUXILIARY 2 RINGBACK	To select auxiliary 2 relay for ringback output.
9	BELL TEST	To select a momentary bell voltage output upon arming to test bell to meet UL standard.

8. EMERGENCY

The eighth main meno 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	STEADY SIREN	To select a steady siren output.
5	PULSING SIREN	To select a pulsing siren output.
6	AUXILIARY 1 RELAY	To select Auxiliary Relay 1 as an output.
7	AUXILIARY 2 RELAY	To select Auxiliary Relay 2 an an output.

9. OPTIONS

The ninth main menu consists of 9 optional programs. The following sub-menus identifies each of these programs.

PROGRAM		DESCRIPTION
1	VIEW PROGRAM	To provide a quick review of all programs in the system.
2	PRINT PROGRAM	Provides for use of an external printer to print all programs in the system for hard copy files. RS422 to RS232 converter is required.
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 the option to display and acknowledge violated zones in Monitor Mode, with the option to select output to be activated when a zone in Monitor Mode is violated.

1 DISPLAY ZONE — To select display of violated zone.

2 ACKNOWLEDGE — To select manual or automatic acknowledgement.

3 BELL — To select bell output.

4 SIREN — To select siren output.

5 AUXILIARY 1 RELAY — To select relay #1 output.

6 AUXILIARY 2 RELAY — To select relay #2 output.

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.

NOTE: If Display of the Time Clock has been selected in Menu 2, Program 7, then "System Ready" will not display. In its place will be the date and time.

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. **NOTE:** MDC-RDM is required required when download feature will be initiated from the remote location. If subscriber has a telephone answering machine on line use MDC-RDL in place of MDC-RDM.

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 RDM — To program for use with an MDC-RDM Ring Detect Module.

7 UL FIRE — To program for use as a Commercial Fire Panel.

8 AUXILIARY ARM — To select the Partial Arm or Group Arm/User program.

NOTE 1: The Auxiliary Arm program is designed for single subscriber premises partitioning. It is not recommended for multiple subscriber installations.

NOTE 2: You cannot select "Partial Arm" and "Group Arm/User" for the same system. Selecting "YES" for one will automatically program "NO" for the other.

NOTE 3: If "Standard Arming" and Disarming is used you must program "NO" for both "Partial Arm" and "Group Arm/User".

NOTE 4: If Partial Arm or Group Arm/User is selected only MPC-32D, MPC-32DL, MPC-8D or MPC-8DL Personal Controls can be used.

NOTE 5: It is recommended that a zone only be programmed to one group when Group Arm is selected.

NOTE 6: Do not use Partial Arming or Group Arming by User in U.L. installations. Program "NO" to both.

NOTE 7: Only one group can be programmed as a "common" group.

1 PARTIAL ARM — To select Partial Arm program.

2 GROUP ARM/USER — To select Group Arm/User program.

3 NUMBER OF GROUPS — To select number of groups to be assigned (maximum 8).

4 GROUP NUMBER — To select description, zones, open codes and close codes for each of the groups.

5 COMMON GROUP — To select one group only to be common to all users. Arm when the last user arms his group(s).

9 SCHEDULING — To program the schedules for opening and closing (arming and disarming). In this menu you program the daily schedules, holiday schedules, and temporary schedules.

1 TYPES — In this program you select the following:

1 Open/Close windows
2 Closing with bypass
3 Closing with alarms
4 Schedule One
5 Schedule Two

2 USER SET — To select program allowing the user to set schedules.

3 WINDOW SYSTEM

To select the opening windows, closing windows, and opening/closing times for the following:

1 Schedule One

2 Schedule Two

3 Holiday Schedule

4 Temporary Schedule One

5 Temporary Schedule Two

4 HISTORY

To select the printing, viewing and user restrictions for the event buffers.

1 Print - To select printing of both the alarm and Open/Close buffers and to reset the memory buffers.

2 View - To view the events that are in the buffers.

3 User View - To select the restrictions for the user. The user can be programmed to view alarms only, all History or Open/Close History only.

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 32 character alphanumeric display in the MPC-32 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: An alarm company PIN is required to enter the Program mode. The system is preprogrammed with an alarm company PIN (9999). 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 appear 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-16CET 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 Sheet (3440-0192) 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 or step from one program to another.

For example: 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 appear in the display. To change this time press the digits representing 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]** twice to return to the **"Enter Response"** mode.

Note: If this was the only program information you wanted to change, press **[CLEAR]** again to return to the **"System Ready"** mode.

IMPORTANT NOTE: 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 **[2]** for the **"Entrance Delay"** program. Now enter the time you want by pressing the desired digits and **[ENTER]**.

Note: This program sets a common entrance delay time for all delay zones. In Zone Configuration (Main Menu 3), Zone Features (Sub-Menu 4), Program 3, you can selectively program the entrance delay time for each zone.

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

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

Note: 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).

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

G. Press **[4]** for **"SELF TEST"** program. The display will be scrolling the three selections for "SELF TEST". Press the number (1, 2 or 3) to select the "SELF TEST" program you require. If you've selected "CONDITIONAL" [1] or "UNCONDITIONAL" [2], enter the time you want by pressing the desired digits and **[ENTER]**. If you've selected "FIXED TIME" [3], the display will be scrolling your choices, [1] DAILY, [2] WEEKLY, [3] MONTHLY. **SELECT ONE.**

1) Press **[1]** to select **"DAILY"**. The display will read **"HR MIN DAILY TEST"** on the top line. Select the time you want by pressing the digits for the hour and minutes (hours and minutes require two digit numbers each). The display will show this time as "AM". If "PM" is required press [1] before pressing [ENTER].

2) Press **[2]** to select **"WEEKLY"**. The display will read **"SELECT DAY"** on the top line and the bottom line will be scrolling the seven days of the week. Select the day by pressing the corresponding number. The top line will read **"HR:MIN TEST 'DAY'"** (DAY = day you selected). Select the time you want by pressing the digits. If "PM" is required press [1] before [ENTER]. Press [CLEAR] and select the next day. Repeat this procedure for each day you require a self test signal.

3) Press **[3]** to select **"MONTHLY"**. The display will read **"SELECT DAY"** on the top line and the bottom line will be scrolling the day and time. Press **[1]** to select the day. The number of the day is based on a twenty-eight day calendar month. Press the digit(s) for the day of the month and [ENTER]. Press [CLEAR].

Press **[2]**. The top line will read **"HR:MIN TST/MONTH"**. Select the time you want by pressing the digits for the hour and minutes.

Press **[CLEAR]** until you return to **"DELAY TIMES"** on the top line and the scrolling menus on the bottom line.

H. Press **[5]** to enter **"AC FAILURE"** program. Enter the time you want by pressing the desired digits and [ENTER].

Press **[CLEAR]** twice 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 **[2]** for the "Siren Cutoff" program. Now enter the time you want by pressing the desired digits and **[ENTER]**.

D. Press **[CLEAR]** to exit the "Siren Cutoff" program.

Note: Repeat steps 2-A through 2-D for programs 3 thru 5 in in the **"Cutoff Times"** menu.

E. Press **[6]** for **"Battery Test"** program. Enter the time you want by pressing the desired digits and **[ENTER]**. To cancel, set time to zero.

F. Press **[7]** for **"Time Clock"** program. The display will read **"TIME CLOCK"** on the top line and will be scrolling the four programs on the bottom line.

1) Press **[1]** to enter **"Set Clock"** program. The display will now be scrolling 1 = Date, 2 = Time.

a. Press **[1]** to set the date. The display will read **"MON/DAY/YEAR"** on the top line and on the bottom line you will enter the date using two digits for each number. Your selection will flash. Press **[ENTER]**.

Press **[CLEAR]** once.

b. Press [2] to set the time. The display will read **"HR MIN"** on the top line and on the bottom line you will enter the time using two digits for each number. Press **[1]** if "PM" is required. Your selection will flash. Press **[ENTER]**.

Press **[CLEAR]** twice.

2) Press **[2]** to enter **"Daylite Save"** program. The top line will ready **"DAYLITE SAVINGS"** and the bottom line will read **"0 = NO 1 = YES"**. Select NO or YES by pressing either [0] or [1] and [ENTER]. Press **[CLEAR]** once.

3) Press **[3]** to enter **"Display"**. The top line will read **"DISPLAY FOR USER"** and the bottom line will read "0 = **NO** 1 = **YES**". Select NO or YES by pressing either **[0]** or **[1]** followed by **[ENTER]**. Press **[CLEAR]** once.

4) Press **[4]** to enter **"Set by User"**. The top line will read **"SET BY USER"** and the bottom line will read "0 = **NO** 1 = **YES**". Select either NO or YES by pressing **[0]** or **[1]** and **[ENTER]**.

Press **[CLEAR]** three times to return to **"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 sixteen individually programmable zones.

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

NOTE: 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. 23), allows you to copy all of the features of one zone to another. For example, if zones 10 thru 16 were all to have exactly the same features you could copy these features in one simple step which will be 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 read **"SET ZONE NUMBER - ZONE 1"**.

C. Press **[CLEAR]** and **[1]** to enter the "Alarm Outputs" sub-menu. The display will read **"ALARM OUTPUTS"** on the top line and the bottom line will be scrolling the eight (8) 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 the following:

a. Use bell or siren outputs for both Fire and Burglary Do not use bell and siren in same system.

b. Program Fire for pulsing audible and Burglary for steady audible.

Press the digit **[1]**. The display will read **"Z-1 TELEPHONE"** on the top line and the bottom line will read **"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 **"Z-1 RADIO"** on top line and bottom line will read **"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 reads **"ZONE 1 TYPE"** on top line and bottom line will be scrolling the five choices for the type of loop with each choice preceded by a number.

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

Press **[CLEAR]** 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 reads **"ZONE 1 TYPE"** on top line and bottom line will be scrolling the six choices for the type of zone with each choice preceded by a number.

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

Press **[CLEAR]** 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 read **"Z-1 BYPASS"** on top line and bottom line will read **"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".**

NOTE 2: **If Partial Arm is selected, all zones (except 24 Hour zones) must be programmed "YES" for "BYPASS".**

Press **[CLEAR]** and **[2]**. The display will read **"Z-1 LOOP RESPONSE"** on the top line and the bottom line will have a number times (x) 50ms. To select your Loop Response for this zone, press the digit which when multiplied by 50ms, will give you the Loop Response you desire.

That digit will flash in 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]**. The display will read **"ENTRANCE DELAY"** on the top line and the bottom line will read **"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.

NOTE: **If a common Entrance Delay was programmed in Menu 1, and selective Entrance Delays are not required, this program can be skipped.**

Press **[CLEAR]** and **[4]**. The display will read **"DISPLAY ARMED"** on the top line and the bottom line will read **"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 read **"DISPLAY UNARMED"** on the top line and the bottom line will read **"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: **Only 24 Hour zones can be programmed to display in Unarmed Mode.**

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 read **"MONITOR"** on the top line and the bottom line will read **"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: Monitor Mode outputs will be selected in Menu 9 (Options) Program 4.

NOTE: Auto zone shunt should not be used on 24 hour zones.

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

Press **[CLEAR]** and **[7]**. The display will read **"NUMBER OF ALARMS"** on the top line and **"NO ALARMS"** on the bottom line. 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 read **"TIME PERIOD"** on the top line and the bottom line will read **"NO 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. 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 read **"ZONE 1 ALARM"** on top line and bottom line will read **"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 read **"ZONE 1 RESTORE"** on top line and bottom line will read **"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]** twice to return to **"Zone Configuration"** with the scrolling menu.

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

The display will now read **"COPY FROM"** on the top line and the bottom line will read **"COPY TO"**. Since we are in the process of programming zone number 1 the top line will read **"COPY FROM 1"** and the bottom line may have a **DEFAULT ZONE**.

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. The top line of the display will indicate the zone number that you are presently programming.

Press the digit(s) of the zone you want to be copied from the zone that you are presently programming. The selected zone number will flash in the bottom line of 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(s) of the selected zone(s) 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"** on the top line as well as **"ZONE 1"** on the bottom line. 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 45) 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 **[A]** or **[B]**.

[RESET] Press to decrease the character at the cursor by one. To move the cursor press **[A]** or **[B]**.

[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 "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 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.

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	**[EMERGENCY]** (Right)

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 three sub-menus, **"Report Menu 1"**, **"Report Menu 2"** and **"Report Menu 3"**.

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

The display will read **"REPORT MENU 1"** on top line and bottom line will be scrolling the seven programs in this menu.

Press **[1]**. The display will read **"LOW BATTERY"** on top line and bottom line will read **"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 **"BATTERY RESTORE"** on top line and bottom line will read **"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 3 through 7 in **"Report Menu 1"**.

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

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

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

At the conclusion of the last function in **"Report Menu 2"** press **[CLEAR]** twice to return to **"Report Codes"**.

C. Press **[3]** to enter **"Report Menu 3"** sub-menu.

The display will read **"REPORT MENU 3"** on the top line and the bottom line will scrolling the seven programs in this menu. Repeat the procedure as described for **"Report Menu 1"** until all the programs in this menu have been programmed.

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

5. PRESS [5] TO ENTER "RECEIVER" MENU.

The **"Receiver"** menu is divided into seven sub-menus: **"Receiver 1", "Receiver 2", "Receiver 3", "Anti-Jam", "Resources", "Ground "Start" and "Radio Account Number".**

NOTE: All Opening, Closing and Self Test signals are automatically transmitted to Receiver 3.

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

The display will read **"RECEIVER 1"** on top line and bottom line will be scrolling the programs in this sub-menu.

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

NOTE 1: **"3 Second Delay" must be programmed as the first digit of each phone number. The right [EMERGENCY] 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 the left **[EMERGENCY]** button. 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 on the bottom line of the display. Press **[ENTER]**. The phone number will now be fixed in the display.

Example #2:

If you require delays between or before digits of your phone number, press the right **[EMERGENCY]** button 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 the right **[EMERGENCY]** button 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 bottom line of the display. Press **[ENTER]**. Your phone number will now be fixed in the display.

Example #3:

If no delays are required put in the phone number you want. That number will flash in the bottom line of the display. Press **[ENTER]**. Your phone number will now be fixed in the bottom line of the display.

NOTE: If you've made a mistake or wish to change any of the data you've entered you can do so by pressing the **[RESET]** button.

After the telephone number has been entered press **[CLEAR]** and **[2]**. The display will read **"ACCOUNT NUMBER"** on top line and bottom line will read **"Z 1-8"**. Here you will program the account number for zones 1-8 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. 44, 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]**. The digits will now be fixed in the bottom line of the display. Press **[CLEAR]**.

Press **[3]**. The display will read **"ACCOUNT NUMBER"** on top line and bottom line will read **"Z 9-16"**. Here you will program the account number for zones 9 thru 16 reporting to Receiver 1.

You can use either a three digit or four digit account number depending on the format you've chosen for transmission to your central station. This account number can be the same or different from the account number you've chosen for Zones 1-8.

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]**. The digits will now be fixed in the bottom line of the display. Press **[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 top line of the display will read **"FORMATS"** while the bottom line is scrolling **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 read **"BASIC FORMATS"** on top line and bottom line will be scrolling 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 read **"BASIC FORMATS"** on top line and bottom line will be flashing your selection. Press **[ENTER]**.

Press **[CLEAR]** to return to **"Formats"** or **"Receiver 1"** sub-menu. 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. Press **[ENTER]**.

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 **[3]** to enter **"Receiver 3"** sub-menu.

The programming procedure for Receiver 3 is the same as that described for Receivers 1 and 2 with one exception. Only one account number is programmed for Receiver 3. Use the same instructions beginning with paragraph 5.A to program the data for Receiver 3. **Remember, all Opening, Closing and Self Test signals are automatically transmitted to Receiver 3.**

NOTE: If transmitting Opening and Closing codes, Self Test signals, Exception Reports and/or Buffer Status you must program Receiver 3. Opening and Closing codes selected in Main Menu 6, Self Test codes, Exception Report codes and Buffer Status codes selected in Main Menu 4 are automatically transmitted to Receiver 3.

After selecting the format for Receiver 3 press **[CLEAR]** repeatedly until you return to the main **"Receiver Menu"**.

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

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

The display will read **"ANTI-JAM TIME"** on top line and **"SECONDS"** on the bottom line. Press the digit representing the time you require. That number will be flashing on the left side of the bottom line. Press **[ENTER]**. The selected number will now be fixed in the bottom line of the display. Press **[CLEAR]** to return to the main **"Receiver Menu"**.

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

The display will read **"RESOURCES"** on top line and the bottom line will be scrolling the six communication programs. This menu requires the selection of system communication transmission programs. For each selection press either **[0]** (NO) or **[1]** (YES) followed by **[ENTER]**. The procedure is as follows:

Press **[1]**. The display will read **"TWO TELCO LINES"** on top line and bottom line will read **"0 = NO 1 = YES"**. If you require two telco lines, press **[1]**. If you do not require two telco lines press **[0]**. Your choice will be flashing on the left side of the bottom line. Press **[ENTER]**. Your choice will now appear as **"NO"** or **"YES"** fixed in the bottom line of the display.

Press **[CLEAR]** and repeat this procedure for all programs in the **"Resources"** menu.

NOTE: **For program [3] "Radio Attempts", select the number you want (1-9) and 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 read **"GROUND START"** on the top line and the bottom line will read **"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, will appear fixed in the display.

NOTE: **You cannot use Model MDC-RDL, Remote Downloader Module in a ground start system. If remote downloading is being used, then you must use Model MDC-RDM (Ring Detect Module) in this system.**

Press **[CLEAR]** to return to **"Main Receiver Menu"**.

G. Press **[7]**. The display will read **"RADIO ACCOUNT NO"** on the top line. Enter the four digit account number to be transmitted for all events via Varitech Long Range Radio.

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 **"REVIEW PIN 1"** on top line and bottom line 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 read **"INSTALLER PIN"** on top line and bottom line will read 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 in the lower left hand side of the display. Press **[ENTER]** and the four digits will now be fixed in the bottom line of the display. Press **[CLEAR].**

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

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 read **"ALL OPEN CODES"** on top line and bottom line will read **"NO"** or a number. 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 bottom line of the display.

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

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

In the 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 read **"USER OPEN CODE"** on top line and bottom line will read **"USER".** In this program you can assign individual opening codes for each user.

Press the digits(s) representing the user number. That number will be flashing on the left side of the bottom line. Press **[ENTER]**. The bottom line will now read the user number you selected. Press **[CLEAR]**. The display will read the selected **"USER NUMBER (OPEN)"** on top line and bottom line will read **"CODE"**.

Press the digit(s) representing the code number you want assigned to this user. That number will be flashing on the bottom line. Press **[ENTER]**. The "Open" code number for the user will now be fixed in the bottom line of 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.

Press the digits(s) representing the user number. That number will be flashing on the left side of the bottom line. Press **[ENTER]**. The bottom line will now read the user number you selected. Press **[CLEAR]**. The display will read the selected **"USER NUMBER (OPEN)"** on top line and bottom line will read **"CODE"**.

Press the digit(s) representing the code number you want assigned to this user. That number will be flashing on the bottom line. Press **[ENTER]**. The "Open" code number for the user will now be fixed in the bottom line of 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.

G. Press **[7]**. The display will read **"SPECIAL PIN"** on the top line. The bottom line will be scrolling **"1 SPECIAL PIN"**, **"2 AUX 1 RELAY"** and **"3 AUX 2 RELAY"**.

Press **[1]**. The top line will display **"SPECIAL PIN"** and the bottom line will be blank.

Press the four digits you want as your **"Special PIN"**. These digits will be flashing in the lower left hand side of the display. Press **[ENTER]** and the four digits will now be fixed in the bottom line of the display. Press **[CLEAR]** once.

Press **[2]**. The display will read **"AUX 1 RELAY"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If you want to operate Aux 1 Relay when the **"Special PIN"** is entered, press **[1]**.

After pressing [1] your choice will be flashing 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]** to return to **"Special PIN"** menu.

Press **[3]**. Repeat the above procedure for **"Aux 2 Relay"**.

At the conclusion of programming all of the **"Special PINs"** 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 reads **"SUPERVISORY"** on top line and bottom line is scrolling the eight (8) 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 read **"SUPERVISED"** on top line and bottom line will read **"0 = NO 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 on the bottom line. 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 reads **"EMERGENCY"** on top line and bottom line is scrolling the seven (7) program selections in this menu.

Press **[1]**. The display will read **"REPORT CODE"** on top line and **"CODE"** on the bottom line.

Press the digit(s) representing the code number for the Emergency function. That digit will now be flashing on the left side of the bottom line. Press **[ENTER]**. The code number will now be fixed in the bottom line of 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 read **"BELL"** on top line and bottom line will read **"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 bottom line in 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 read **"OPTIONS"** on the top line and the bottom line will be scrolling the nine sub-menus.

A. Press **[1]** to enter **"View Program"** sub-menu. Programming "YES" will allow you to go to any of the nine main menus and using the **[SCAN]** button view all the programs in those menus. Each time you enter the program mode of this system you must program "YES" for "View Program" if you wish to use this feature. When you exit the program mode of the system this program defaults to "NO".

At this time the display reads **"VIEW PROGRAM"** on the top line and the bottom line reads **"0 = NO 1 = YES"**. If you want to use the View Program press **[1]**. If you do not want to use the View Program 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.

To view a complete menu, press **[CLEAR]** twice to return to the **"Enter Response"** mode with the nine scrolling menus. Select the menu you want to view. Continuously press **[SCAN]** to view all of the programs in that menu. At the conclusion of that menu you will automatically return to **"Enter Response"** mode. Select the next menu you wish to view and follow the same procedure.

At the conclusion of viewing the programs, and with the system returned to **"Enter Response"** mode, press **[9]** to return to the **"Options"** menu and continue programming with sub-menu 2.

B. Press **[2]** to enter **"Print Program"** menu.

The display will read **"PRESS ENTER TO START PRINTING"**.

NOTE: A bidirectional converter (RS422 to RS232); DB25 connector and harness (Morse Part #5090-0190) are required. We recommend Okidata Microline Printer 182 (Morse Part #7131-0011). Refer to Installation and Operating Instructions, Morse Part #3440-0211.

CAUTION: DO NOT PRESS [ENTER] UNLESS YOU HAVE A PRINTER CONNECTED !

If **[ENTER]** is pressed with no printer connected there is a three minute wait before programming can continue. Upon conclusion press **[CLEAR]** to return to the **"Options"** display.

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

The display will read **"SET FILE NUMBER"** on the top line and the bottom line will read **"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 read **"MINI LOADER"** on the top line and the bottom line will be scrolling **[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"**.

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

The display will read **"MONITOR MODE"** on the top line and the bottom line will be scrolling the eight programs in this sub-menu.

Press **[1]**. The display will read **"DISPLAY ZONE"** on the top line and the bottom line will read **"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 read **"ACKNOWLEDGE"** on the top line and the bottom line will read **"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 read **"BELL"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. For 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 **[4]**. The display will read **"SIREN"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. For a siren output press **[1]**. If you do not want a siren 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 read **"AUX 1 RELAY"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. For Auxiliary 1 Relay output press **[1]**. If you do not want a Auxiliary 1 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 **[6]**. The display will read **"AUX 2 RELAY"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. For Auxiliary 2 Relay output press **[1]**. If you do not want Auxiliary 2 Relay 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 read **"SCROLL OPEN ZONE"** on the top line and the bottom line will read **"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 read **"SCROLL BYP ZONE"** on the top line and the bottom line will read **"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.

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

The display will read **"Prompt Menus"** on the top line and the bottom line will be scrolling **[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"** (Page 24).

Press **[1]** to rename **"System Ready"**. The display will read **"RENAME PROMPT"** on the top line and the bottom line will read **"SYSTEM READY"**. After completing this program press **[CLEAR]** once.

NOTE: **If Display of the Time Clock has been selected in Menu 2, Program 7, then "System Ready" will not display. In its place will be the date and time.**

Press [2] to rename **"Zones Normal"**. The display will read **"RENAME PROMPT"** on the top line and the bottom line will read **"ZONES NORMAL"**. After completing this program press **[CLEAR]** twice to return to the **"Options"** display.

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

The display will read **"C S Download"** on the top line and the bottom line will be scrolling the five 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, press [RESET] to clear the number from the display.**

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"** on the top line. On the bottom line 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 read **"NUMBER OF RINGS"** on the top line and the bottom line will read **"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 read **"Local Download"** on the top line and the bottom line will read **"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"** on the top line. On the bottom line you will 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.

Press **[5]**. The display will read **"RDM"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If Ring Detect Module (MDC-RDM) is going to be used in this system press **[1]**. If it is <u>not</u> going to be used 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]** twice to return to the **"Options"** display.

G. Press **[7]** to enter the **"UL FIRE"** sub-menu. The display will read "UL FIRE" on the top line and the bottom line will read **"0 = NO 1 = YES"**. If this control panel is being used in a UL Commercial Fire installation press **[1]**. If not, press **[0]**. Your choice 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] to return to **"Options"** display.

NOTE: **If this control panel is used in a UL Commercial Fire System you must use Personal Control Model MPC-32DFA and Fire Supervisory module Model MDC-FSM.**

H. Press **[8]** to enter **"Auxiliary Arm"** sub-menu. The display will read **"AUXILIARY ARM"** on the top line and the bottom line will be scrolling the five programs in this sub-menu.

<u>NOTE 1</u>: **The Auxiliary Arm program is designed for single subscriber premises partitioning. It is not recommended for multiple subscriber installations.**

<u>NOTE 2</u>: **You cannot select "Partial Arm" and "Group Arm/User" for the same system. Selecting "YES" for one will automatically program "NO" for the other.**

<u>NOTE 3</u>: **If "Standard Arming" and Disarming is used you must program "NO" for both "Partial Arm" and "Group Arm/User".**

<u>NOTE 4</u>: **If Partial Arm or Group Arm/User is selected only MPC-32D and MPC-8D Series Personal Controls can be used.**

<u>NOTE 5</u>: **If a zone is programmed into more than one group the display will read "OVERLAPPED ZONE" and accept the program. It is recommended that a zone only be programmed to one group in Group Arming.**

<u>NOTE 6</u>: **Do not use Partial Arming or Group Arming by User in U.L. installations. Program "NO" to both.**

<u>NOTE 7</u>: **Only one group can be programmed as a "Common" group.**

Press **[1]**. The display will read **"PARTIAL ARM"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If you want to use the Partial Arm feature press **[1]**. If you do not want to use the Partial Arm feature 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, with appear fixed in the display. Press **[CLEAR]** once.

Press **[2]**. The display will read **"GROUP ARM/USER"** on the top line and the bottom line will read **"0 = NO 1 =YES"**. If you want to use the Group Arm/User feature press **[1]**. If you do not want to use the Group Arm/User feature press **[0]**.

After pressing either **[0]** (NO) or **[1]** (YES) your choice will flash in 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 **[3]**. The display will read **"NUMBER OF GROUPS"** on the top line and the bottom line will be where you will select the number of groups (maximum eight) you wish to assign. Press the digit representing the number of groups you wish to assign. 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.

Press **[4]**. The display will read **"GROUP NUMBER"** on the top line and the bottom line is where you will assign the group number to be programmed. Using Group 1 as an example, press **[1]**. 1 will flash on the left side of the display until [ENTER] is pressed. At this time 1 will appear fixed in the bottom of the display. Press **[CLEAR]** once.

The display will now read **"GROUP 1"** on the top line and the bottom line will be scrolling the four programs for Group 1.

Press **[1]**. The display will read **"PROMPT-GROUP 1"** on the top line and the cursor will be in the far left space of the bottom line.

To assign a name to Group 1, follow the same procedure as outlined in Zone Configuration, Sub-Menu 7, **"Name That Zone"** (Page 24). The Group Number should be in the first space. After completing the description press **[CLEAR]** once.

Press **[2]**. The display will read **"SELECT ZONES"** on the top line with the zone location of the cursor in the far right corner. The bottom line will have either a **"Y"** or an **"N"** in each of the sixteen spaces. Press **[A]** to move the cursor to the left. Press **[B]** to move the cursor to the right. The location of the cursor will change accordingly on the top line. To select a zone to be part of the Group you are programming move the cursor to that zone location and press **[1]** (YES). For those zones that will not be part of the Group you are programming move the cursor to that zone location and press **[0]** (NO). There will be either a **"Y"** or **"N"** in each of the sixteen zone locations. Press **[CLEAR]** once.

Press **[3]**. The display will read **"OPEN CODE 1"** on the top line and the bottom line will read **"CODE NO"**. Press the digit(s) for the Opening reporting code for this Group. Your choice will flash in the left side of the display until **[ENTER]** is pressed. Your choice will now be fixed in the display. If an Opening reporting code for this Group is not required press **[RESET]** and the word "NO" will reappear in the display. Press **[CLEAR]** once.

Press **[4]**. The display will read **"CLOSE CODE 1"** on the top line and the bottom line will read **"CODE NO"**. Press the digit(s) for the Closing reporting code for this Group. Your choice will flash in the left side of the display until **[ENTER]** is pressed. Your choice will now be fixed in the display. If a Closing reporting code for this Group is not required press **[RESET]** and the word "NO" will reappear in the display. Press **[CLEAR]** twice.

Select the next Group number and repeat this procedure for all Groups in the system (maximum eight).

Press **[5]**. The display will read **"COMMON GROUP"** on the top line and the bottom line is where you will assign the number of the Common Group. Remember, only one group can be programmed as common. Press the digit of the number of the group you want common. That number will flash on the left side of the display until **[ENTER]** is pressed. The group number will now be fixed in the display. Press **[CLEAR]** once.

Press **[CLEAR]** twice until you return to **"Options"** menu.

I. Press **[9]** to enter **"Scheduling"** sub-menu. The display will read **"SCHEDULING"** on the top line and the bottom line will be scrolling the four programs in this sub-menu.

Press **[1]** the display will read **"SCHEDULE TYPES"** on the top line and the bottom line will be scrolling the five selections in this program.

Press **[1]**. The display will read **"O/C WINDOWS"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If you want Open and Close Windows press **[1]** if you do not want Open and Close Windows press **[0]**.

After pressing either 0 (NO) or 1 (YES) or 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. Repeat this same procedure for selections 2 thru 5.

Press **[CLEAR]** twice to return to **"Scheduling"** sub-menu.

Press **[2]** the display will read **"USER SET"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If you want to allow the user to set schedules press **[1]**. If you do not want to allow the user to set schedules press **[0]**.

After pressing either 0 (NO)or1 (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 **[3]** the display will read **"WINDOW SYSTEM"** on the top line and the bottom line will be scrolling the five selections in this program.

Press **[1]**. The display will read **"SCHEDULE 1"** on the top line and the bottom line will be scrolling the three selections in this program.

Press **[1]**. The display will read **"OPEN WINDOW"** on the top line and the bottom line will read **"X 10 MIN"**. After determining the opening window that you require, enter the number which when multiplied by 10 will give you that window. For example: if you require a 30 minute window, enter the number 3. Press **[CLEAR]** once.

Press **[2]**. Repeat procedure 1 for the **CLOSED WINDOW**. Press **[CLEAR]** once.

Press **[3]**. The display will read **"DAILY START TIME"** on the top line and the bottom line will be scrolling the seven days of the week plus **"COPY DAYS"**.

FOR EACH DAY YOU WILL SELECT AN "OPEN" AND "CLOSE" STARTING TIME. IF THE OPEN AND CLOSE STARTING TIME IS THE SAME FOR ALL DAYS YOU CAN USE SELECTION 8 **"COPY DAYS"** TO COPY FROM THE FIRST DAY TO THE OTHERS. WE WILL USE MONDAY AS AN EXAMPLE ON HOW TO PROGRAM THE OPEN AND CLOSE STARTING TIMES.

Press **[2]**. The display will read **"MONDAY"** on the top line and the bottom line will be scrolling **"1 OPEN START"** and **"2 CLOSE START"**.

NOTE: Two digits for **HR** and two digits for **MIN** are required.

Press **[1]**. The top line will read **"HR:MIN OPEN MON"** and the bottom line will read **"NO"**. Select the time you want by pressing the digits for the hour and minutes followed by **[ENTER]**. If "PM" is required press **[1]** before **[ENTER]**. Press **[CLEAR]** once.

Press **[2]**. The display will read **"HR:MIN CLOSE MON"** on the top line and the bottom line will read **"NO"**. Select the closing time you want by pressing the digits followed by **[ENTER]**. If "PM" is required press [1] before **[ENTER]**. Press **[CLEAR]** twice.

Repeat this procedure for each of the days.

IF THE OPEN AND CLOSE START TIMES ARE GOING TO BE THE SAME FOR ALL DAYS, COPY AS FOLLOWS:

Press **[8]**. The top line will read **"COPY FROM DAY ___"** (the number of the day that you've already programmed) and the bottom line will read **"COPY TO DAY ___"**. Press the digit of the day you want to copy and **[ENTER]**. Repeat this for each day that you want to program copied.

Press **[CLEAR]** until you return to **"Window System"**.

Press [2] for **"SCHEDULE 2"**. The display will read **"DAILY O/C TIMES"** on the top line and the bottom line will be scrolling the seven days plus **"COPY DAYS"**.

Select the days that you want a Schedule 2 Open and Close time and proceed as follows:

Using "Monday" as an example press [2]. The display will read **"MONDAY"** on the top line and the bottom line will be scrolling **"1 OPEN"** and **"2 CLOSE"**.

Press [1]. The display will read **"HR:MIN OPEN MON"** on the top line and the bottom line will read **"NO"**. Press the digits for the open time that you require followed by [ENTER]. If "PM" is required press [1] before [ENTER]. Press [CLEAR] once.

Press [2]. The display will read **"HR:MIN CLOSE MON"** on the top line and the bottom line will read **"NO"**. Press the digits of the closing time that you require followed by [ENTER]. If "PM" is required press [1] before [ENTER].

If Open and Close times are going to be the same for all days, use Program 8, "Copy Days", as described in Schedule 1.

Press [CLEAR] till you return to **"Window System"** on the top line.

Press [3] for **"Holiday Schedule"**. The display will read **"HOLIDAY SCHEDULE"** on the top line and the bottom line will be scrolling **"1 ADD HOLIDAY"** and **"2 DELETE HOLIDAY"**.

Press [1] to **"ADD HOLIDAY"**. The display will be scrolling **"1 DATE"** and **"2 DAYS"**.

Press [1]. The display will read **"MON/DAY/YEAR"** on the top line and on the bottom line you will enter the date that the holiday begins on. Remember, you must use two digits for the month, day and year. For example: if the holiday were to begin on September 4, 1989 the digits you would enter would be 09, 04, 89 followed by [ENTER]. Press [CLEAR] once.

Press [2]. The display will read **"NUMBER OF DAYS"** on the top line and on the bottom line you will enter the number of days for this holiday. For example: if this were a five day holiday you would use the digit 5 followed by [ENTER]. Press [CLEAR] twice.

Press [2] to **"DELETE HOLIDAY"**. Follow the same procedure as described for **"Add Holiday"**.

Press [CLEAR] to return to **"Window System"**.

Press [4] for **"Temporary Schedule 1"**. The display will read **"TEMP SCHEDULE 1"** on the top line and the bottom line will be scrolling the **"1 DATE" "2 OPEN START"** and **"3 CLOSE START"**.

Press [1] for **"DATE"**. The display will read **"MON/DAY/YEAR"**. On the bottom line you will select the digits for the date and press **[ENTER]**. Press **[CLEAR]** once.

Press [2] for **"OPEN START"**. The display will read **"HR:MIN OPEN TMP 1"**. On the bottom line you will select the time you require followed by **[ENTER]**. If "PM" is required press **[1]** before **[ENTER]**. Press **[CLEAR]** once.

Press [3] for **"CLOSE START"**. The display will read **"HR:MIN CLS TMP 1"**. On the bottom line you will select the digits for the closing time you require followed by **[ENTER]**. If "PM" is required press **[1]** before **[ENTER]**. Press **[CLEAR]** twice to return to **"Window System"**.

Press [5] for **"Temporary Schedule 2"**. Follow the same procedure as described for **"Temporary Schedule 1"**.

Press **[CLEAR]** twice to return to **"Scheduling"**.

Press **[4]** for **"History"**. The display will read **"HISTORY"** on the top line and the bottom line will be scrolling **"1 PRINT"**, **"2 VIEW"** and **"3 USER VIEW"**.

Press [1] for **"PRINT"**. The display will read **"PRESS ENTER TO START PRINTING."**

NOTE: Refer to Printer Instructions on Page 34, Menu 9, Sub-Menu 2.

After the printer has completed printing the History, the display will read **"RESET O/C BUFFER"**. Press **[RESET]** to reset the Open and Close Buffer Counter or press **[CLEAR]**.

If the counter is not reset, the Open and Close signals will be transmitted to the central station if the system is armed and disarmed within the Open and Close windows.

CAUTION: DO NOT PRESS [ENTER] UNLESS YOU HAVE A PRINTER CONNECTED !!

If **[ENTER]** is pressed with no printer connected there is a three minute wait before programming can continue. Upon conclusion press **[CLEAR]** to return to **"History"** display.

Press [2]. The display will show the latest event in memory. Press **[SCAN]** to view the next event. Continue pressing **[SCAN]** until you've viewed the events you wanted. Press **[CLEAR]** to return to **"History"**.

Press [3]. The display will read **"USER VIEW"** on the top line and the bottom line will be scrolling **"1 ALL HISTORY"**, **"2 O/C HISTORY** and **"3 ALARMS"**.

Press [1] to enter **"ALL HISTORY"** sub-menu. At this time the display will read **"VIEW ALL HISTORY"** on the top line and the bottom line will read **"0 = NO 1 = YES"**. If you want the user to view **"All History"** press [1]. If you don't want the user to view **"All History"** press [0]. At this time your choice will be flashing on the left side of display until **[ENTER]** is pressed. At this time your choice, either YES or NO will appear in the display. Press **[CLEAR]** to return to **"User View"**.

Press [2] to **"View O/C History"**. Follow the same procedure as described for **"View All History"**. Press **[CLEAR]**.

Press [3] for **"View Alarms"**. Follow the same procedure as described for **"View All History"**.

This concludes the programming for the MDC-16CET. Press [CLEAR] repeatedly until you return to "System Ready" status (user operating mode). At any time you can enter the Installer PIN to select any of the programs for review or change.

NOTE: Prior to using these Charts, review the information in "Name That Zone" on Page 24 of this booklet.

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 = EMRGNCYP	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-16C Control Communicator has the capability of transmitting in one of many formats. In this section we'll provide a brief description of each of the formats.

2. BASIC FORMATS

10 AND 20 PULSE FORMATS - 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 acknowledges, may be used without 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. 3-1 FORMATS

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. 3-1 EXTENDED FORMAT

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.

Example Message: 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 message 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.**

Note: 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. BFSK

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.**

Note: 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 alarm messages to certain English printout receivers.

UNDERWRITERS LABORATORIES COMPLIANCE VERIFICATION CHART
MDC-16C or MPC-32D

When programming the MDC-16C the following programs must be maintained to meet the UL requirements for Household Burglar and Fire Alarm Systems and/or Commercial Burglar and Fire Alarm Systems, and Police Connect. When using the control unit in a 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.

UL Compliance Verification Chart - MDC-16C Series:

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.

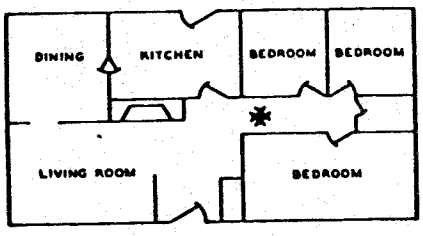

Figure B-2.1.1 A smoke detector (indicated by cross) should be located between the sleeping area and the rest of the family living unit.

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.

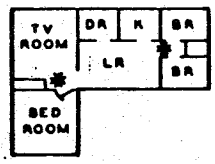

Figure B-2.1.2 In family living units with more than one sleeping area, a smoke detector (indicated by cross) should be provided to protect each.

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.

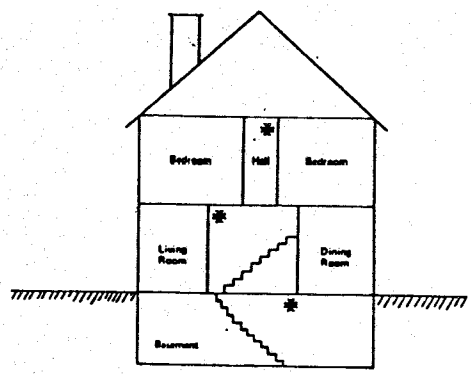

Figure B-2.1.3 A smoke detector (indicated by cross) should be located on each story.

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-16 is listed under UL 1023, UL 985, UL 1610, UL 1635, UL 365, UL 609, UL 611, UL 864.

U.L. Verification Information - MDC-16 Series:

CURRENT RATING CHART

Control (MDC-16) = 230 ma
Keypad (MPC-32D) = 70 ma
Keypad (MPC-32DL) = 130 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-16 (w/1 MPC-32D) = 300 ma x 4 hours = 1.2 ah

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

Control = $\frac{300 \text{ ma} \times 15 \text{ minutes}}{60}$ = .075

TOTAL: 1.306 ah

WORKSHEET:

Control (MDC-16)	230 ma	x	_____ Hours	=	_____ ah
Keypad (MPC-32D)	70 ma	x	_____ (keypads)	=	_____ ah
Bell	125 ma	x	15 minutes	=	.031 ah
FSM*	7 ma	x	_____ Hours	=	_____ ah
Control (while bell ringing)	230 ma	x	15 minutes	=	.057 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)