
Installation and Operating Instructions

INSTALLER INSTRUCTION MANUAL

(MDC-16CE) DIGITAL CONTROL COMMUNICATOR and (MPC-32D) PERSONAL CONTROL



INTRODUCTION

All programming for the Morse MDC-16CE 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-16CE 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-16CE 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.

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EXHIBIT A

MDC-16CE PROGRAM CHART

<u>[1] DELAY TIMES</u>	<u>[2] CUTOFF TIMES</u>	<u>[3] ZONE CONFIG</u>	<u>[4] REPORT CODES</u>	<u>[5] RECEIVER</u>	<u>[6] PIN NUMBERS</u>	<u>[7] SUPERVISORY</u>	<u>[8] EMERGENCY</u>	<u>[9] OPTIONS</u>
[1] EXIT	[1] BELL	SET ZONE NUMBER	[1] REPORT MENU 1	[1] RECEIVER 1	[1] REVIEW PIN	[1] SUPERVISED	[1] REPORT CODE	[1] VIEW PROGRAM
[2] ENTRANCE	[2] SIREN	<u>[1] ALARM OUTPUTS</u>	[1] LOW BATTERY	[1] TELEPHONE	[2] INSTALLER PIN	[2] CLOSE RINGBACK	[2] STEADY BELL	[2] PRINT PROGRAM
[3] PREALARM	[3] AUX 1	[1] TELEPHONE	[2] BATTERY RESTR	[2] ACCOUNT 1-8	[3] ALL OPEN CODE	[3] OPEN RINGBACK	[3] PULSING BELL	[3] MINI LOADER
[4] SELF TEST	[4] AUX 2	[2] RADIO	[3] AC FAIL	[3] ACCOUNT 9-16	[4] ALL CLOSE CODE	[4] P.C. RINGBACK	[4] STEADY SIREN	[1] TO CONTROL
[5] AC POWER FAIL	[5] LISTEN IN	[3] STEADY BELL	[4] AC RESTORE	[4] REVIEW FORMAT	[5] OPEN CODE	[5] SIREN RINGBACK	[5] PULSING SIREN	[2] FROM CONTROL
	[6] BATTERY TEST	[4] PULSING BELL	[5] BOX TAMPER	[5] FORMAT	[6] CLOSE CODE	[6] BELL RINGBACK	[6] AUX 1 RELAY	[4] MONITOR MODE
		[5] STEADY SIREN	[6] TAMPER RESTR	<u>[1] BASIC</u>		[7] AUX 1 RINGBACK	[7] AUX 2 RELAY	[1] DISPLAY ZONE
		[6] PULSING SIREN	[7] SELF TEST	[1] 10 PPS 3-1		[8] AUX 2 RINGBACK		[2] ACKNOWLEDGE
		[7] AUX 1 RELAY	<u>[2] REPORT MENU 2</u>	[2] 10 PPS 3-1 EXT				[3] BELL
		[8] AUX 2 RELAY	[1] ENTER PROGRAM	[3] 10 PPS 4-1				[4] SIREN
		<u>[2] LOOP TYPE</u>	[2] EXIT PROGRAM	[4] 10 PPS 4-2				[5] AUX 1 RELAY
		[1] N.O. NO TRBL	[3] DURESS	[5] 20 PPS 3-1				[6] AUX 2 RELAY
		[2] N.C. NO TRBL	[4] COMM FAIL	[6] 20 PPS 3-1 EXT				[7] SCROLL OPEN ZONE
		[3] OPEN OR CLOSE		[7] 20 PPS 4-1				[8] SCROLL BYPASS ZONE
		[4] N.O. TRBL-BRK		[8] 20 PPS 4-2				[5] PROMPT MENUS
		[5] N.C. TRBL-SHRT		<u>[2] ADVANCED</u>				[1] SYSTEM READY
		<u>[3] ZONE TYPE</u>		[1] VARITECH 4-1				[2] ZONES NORMAL
		[1] PERIMETER INS		[2] VARITECH 4-2				[6] C.S. DOWNLOAD
		[2] PERIMETER DLY		[3] 40 PPS W/PAR				[1] TELEPHONE
		[3] INTERIOR INS		[4] 40 PPS W/PAR EXT				[2] RINGS
		[4] INTERIOR DLY		[5] BFSK				[3] LOCAL
		[5] 24 HOUR		<u>[2] RECEIVER 2</u>				[4] PIN NUMBER
		<u>[4] ZONE FEATURES</u>		SAME AS RECEIVER 1				[5] RDM
		[1] BYPASS		<u>[3] RECEIVER 3</u>				[7] U.L. FIRE
		[2] LOOP RESPONSE		SAME AS RECEIVER 1 (ONLY 1 ACCOUNT NUMBER)				[8] AUX ARM
		[3] ENTRANCE DELAY		<u>[4] ANTI JAM</u>				[1] PARTIAL ARM
		[4] DISPLAY ARMED		<u>[5] RESOURCES</u>				[2] GROUP ARM/USER
		[5] DISPLAY UNARMED		[1] TELCO LINES				[3] TOTAL GROUPS
		[6] MONITOR		[2] LINE TYPE				[4] GROUP NUMBER
		[7] NUMBER OF ALARM		[3] RADIO				[1] DESCRIPTION
		[8] TIME PERIOD		[4] RADIO FORMAT				[2] ZONES 1-16
		<u>[5] REPORT CODES</u>		<u>[6] GROUND START</u>				[3] OPEN CODE
		[1] ALARM						[4] CLOSE CODE
		[2] RESTORE						
		[3] CANCEL						
		[4] TROUBLE						
		[5] BYPASS						
		<u>[6] COPY ZONE</u>						
		<u>[7] NAME THAT ZONE</u>						

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.

<u>PROGRAM</u>	<u>DESCRIPTION</u>
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. Adjustable in 1 hour increments from 0 to 255 hours.
5 AC POWER FAIL	To delay the transmission to the central station after an AC power failure. Adjustable in one minute increments from 0 to 255 minutes.

2. CUTOFF TIMES

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

<u>PROGRAM</u>	<u>DESCRIPTION</u>
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 one second increments up to 255 seconds.

3. ZONE CONFIGURATION

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

<u>1. ALARM OUTPUTS</u>	<u>DESCRIPTION</u>
1 TELEPHONE	To program zone for digital transmission.
2 RADIO	To program zone for long range radio transmission.
3 STEADY BELL	To program zone for steady bell output on alarm.
4 PULSING BELL	To program zone for pulsing bell output on alarm.
5 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) and No Trouble Report to the central station. |
| 2 N.C. - NO TRBL | To program zone for use with normally closed sensing devices (that open on alarm) and No Trouble Report to the central station. |
| 3 OPEN OR CLOSE | To program zone for use with either open or closed circuit sensing devices with No Trouble Report to the central station. (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. (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. (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. |
| 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. |

4. ZONE FEATURES

DESCRIPTION

- | | | |
|---|------------------|--|
| 1 | BYPASS | To program zone for selective bypass by user.
CAUTION: Zones programmed for Fire should not be programmed for Bypass. |
| 2 | LOOP RESPONSE | To select a multiplier of 50 ms or 250 ms for zone Loop Response. |
| 3 | ENTRANCE DELAY | To selectively program the entry delay time of zone. Adjustable in 1 second increments from 0 to 255 seconds. |
| 4 | DISPLAY ARMED | To select the display of a violated zone in the armed mode. |
| 5 | DISPLAY UNARMED | To select the display of a violated 24 hour zone in the unarmed mode. |
| 6 | MONITOR | To select the zone to be part of the Monitor Mode. |
| 7 | NUMBER OF ALARMS | To select the number of alarms that must occur prior to automatic zone bypass (swinger shunt). |
| 8 | TIME PERIOD | To select the time (programmable in 10 minute increments) in which the number of alarms must occur prior to automatic zone bypass (swinger shunt). |

NOTE: 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 restore code 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. |

6. COPY ZONE

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

7. NAME THAT ZONE

To personalize the description of zone with English language alphanumerics.

4. REPORT CODES

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

<u>1. REPORT MENU 1</u>	<u>DESCRIPTION</u>
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.
 <u>2. REPORT MENU 2</u>	
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. 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.

<u>1. RECEIVER 1</u>	<u>DESCRIPTION</u>
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.

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|---|--------------------------|---|
| 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 and self test signals are automatically transmitted to Receiver 3.

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|---|----------------|--|
| 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 | |
| | 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 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 | To select for long range radio transmission in addition to digital. |
| 4 | RADIO FORMAT | To select the format in which the radio will transmit (if used). |

6. GROUND START

To select for use in ground start telephone systems. Telephone line output 1 and Aux Relay 1 must be used.

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.

<u>PROGRAM</u>	<u>DESCRIPTION</u>
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. SUPERVISORY

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

- | | | |
|---|-------------------------|--|
| 1 | SUPERVISED | 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. |

8. EMERGENCY

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

- | | | |
|---|-------------------|--|
| 1 | REPORT CODE | To set the code that the emergency circuit (dual keys at the Personal Control) will report to the central station. |
| 2 | STEADY BELL | To select a steady bell output. |
| 3 | PULSING BELL | To select a pulsing bell output. |
| 4 | 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 as an output. |

9. OPTIONS

The ninth main menu consists of 8 optional programs. The following sub-menus identifies each of these programs.

<u>PROGRAM</u>	<u>DESCRIPTION</u>
1 VIEW PROGRAM	To provide a quick review of all programs in the system. This feature skips functions not programmed.
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 option to display and acknowledge violated zones, in the monitor mode, with the option to select an output to be activated when a monitored zone is violated.
1 DISPLAY ZONE	To select whether violated zone will be displayed.
2 ACKNOWLEDGE	To select manual or automatic acknowledgement.
3 BELL	To select bell output.
4 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.
2 ZONES NORMAL	To rename "Zones Normal" to any other name with a maximum of 16 characters including spaces.

- | | | |
|---|-----------------------------|---|
| 6 | CENTRAL STATION
DOWNLOAD | Provides programming and system operation capability from a remote location (additional equipment required). |
| 1 | TELEPHONE | To program the remote location telephone number which is automatically dialed (security callback) before the remote location can get on line with the account. |
| 2 | NUMBER OF RINGS | To program the number of rings required before connection is made between the remote location and the control panel. |
| 3 | LOCAL DOWNLOAD | To initiate the downloading capability from the control panel. |
| 4 | DOWNLOAD PIN | To assign PIN for local download. |
| 5 | 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 | <p>To select the Partial Arm or Group Arm/User program.</p> <p>NOTE: The Auxiliary Arm program is designed for single subscriber premises partitioning. It is not recommended for multiple subscriber installations.</p> <p>NOTE: Do not use Partial Arming or Group Arm by User in U.L. installations.</p> |
| 1 | PARTIAL ARM | To select Partial Arm program. |
| 2 | GROUP ARM/USER | <p>To select Group Arm/User program.</p> <p>NOTE: Selection of either Partial Arm or Group Arm/User will automatically program "NO" for the other.</p> |
| 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. |

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-32D Personal Control will prompt you during the programming procedure. We strongly suggest that you read the programming procedure in its entirety before actually beginning the entry of the program information.

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

Press [0000] and [PROGRAM]

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

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

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

Press [6] followed by [2]. "INSTALLER PIN" with "9999" will 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-16CE back to our factory for service you must let us know what the alarm company PIN is, so that we can get into the program.

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

II. PROGRAMMING INSTRUCTIONS

Make sure the programming chart 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.

Note: Repeat steps 1-A thru 1-F for programs 4 (Self Test) and 5 (AC Power Fail).

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

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

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

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

C. Press **[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 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.

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

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

In the **"Zone Configuration"** menu you will program all of the features for each of the 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. 20), 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 OUTPUT"** 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 and your choice will appear fixed in the bottom line of the display.

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

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

This menu allows the selection of the type of zone. Only one selection is required in this menu. At this time the display reads "ZONE 1 TYPE" on top line and bottom line will be scrolling the five 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 and your choice will appear fixed in the bottom line of the display.

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

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

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

Press [1]. The display will 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 RESPX250 MS" on top line and bottom line will read "0 = NO 1 = YES". The system comes with each zone pre-programmed for a Loop Response multiplier of 50 ms. If you want to leave this zone programmed for the 50 ms multiplier press [0]. If you want to change the multiplier of this zone to 250 ms press [1]. Your choice will be flashing in the bottom line of the display until [ENTER] is pressed. At this time your choice will appear fixed in the bottom line of the display. Press [CLEAR] once.

The display will read "LOOP RESPONSE" on the top line and the bottom line will have a number times (x) the multiplier that you've selected, either 50 ms or 250 ms. To select your Loop Response for this zone, press the digit which when multiplied by the multiplier, 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.

Example: If you wanted a Loop Response of 1250 ms (1.25 sec.) and you selected the 250 ms multiplier, the digit that you would enter would be 5. Therefore, $5 \times 250 \text{ ms} = 1250 \text{ ms}$.

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: 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 "0 X 10 MIN". Select the time you want, for the number of alarms to occur prior to automatic zone shunting, by pressing the digit(s) to be multiplied by 10. 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 will 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 37) Chart A lists 63 most commonly used words that can be instantly programmed into the zone. Chart B is a table of letters and designations with a number representing each to make up words and names.

DESCRIPTION OF KEYS

- [ENTER]** Press to enter a character, after the number for that character has been selected. If **[ENTER]** is pressed without selecting a number, the character in the display where the cursor is will be blanked. The cursor will always move one space to the right after **[ENTER]** is pressed.
- [PROGRAM]** Press to advance the character at the cursor by one. To move the cursor press the right or left **[EMERGENCY]**.
- [RESET]** Press to decrease the character at the cursor by one. To move the cursor press the right or left **[EMERGENCY]**.
- [MEMORY]** Press after selecting the digits representing the name you require from Chart A.
- [EMERGENCY]** (Left) Moves the cursor one space at a time to the left.
- [EMERGENCY]** (Right) Moves the cursor one space at a time to the right.
- [CLEAR]** Press **[CLEAR]** only if you've entered a number that you wish to change prior to using **[ENTER]** or **[MEMORY]** keys.

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

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

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

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

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

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

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

This menu allows the assignment of reporting codes to be transmitted to the central station for all of the system supervisory functions. For each selection you will assign a code number 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:

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

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

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

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

The display will 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 four 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 programming all of the Report Codes press [CLEAR] until you return to the "ENTER RESPONSE" mode.

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

The "Receiver" menu is divided into six sub-menus: "Receiver 1", "Receiver 2", "Receiver 3", "Anti-Jam", "Resources" and "Ground Start".

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 button provides this function. A ":" (colon) will appear for each 3 second delay programmed.

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

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

Example #1:

A "Wait for Dial Tone" is provided before each phone number. If you require a second "Wait for Dial Tone" condition, such as in a "dial 9" type system (PBX), press [9] and then the left [EMERGENCY]. A ";" (semicolon) will appear after the "9". The communicator will wait 5 seconds for dial tone; if not received it will automatically begin dialing. Now put in the rest of your telephone number. The number you want to enter will now be flashing 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 right **[EMERGENCY]** for each three second delay you require. A ":" (colon) will appear in the display for each three second delay. Using Example #1, if you require a six second delay after the digit 9, you would press **[9]** followed by right **[EMERGENCY]** twice. Two "::" (colons) will appear after the digit 9. Enter the rest of the telephone number. The number you want to enter will be flashing in the 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 as follows:

- a) If you have not yet pressed **[ENTER]**,
press **[CLEAR]** and return to the original information that was in the display.
Note: The number that you put in that was flashing will be erased.
Now you can re-enter the number you want.
- b) If you have already entered the number by pressing **[ENTER]**, you can put in a new number by merely following the programming procedure previously outlined in this section.

After the telephone number has been entered press **[CLEAR]** and **[2]**. The display will 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. 38, 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] and your selection will be fixed in the bottom line of the display.

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

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

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

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

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

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

- C. Press [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 and/or Self Test signals you must program Receiver 3. Opening and Closing codes selected in Main Menu 6 and Self Test 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 four 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 [2]. The next program will appear in the display. Repeat this procedure for all programs in the **"Resources"** menu.

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

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

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

The display will 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 digit(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 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.

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

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

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

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

At this time the display 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 eight sub-menus.

A. Press [1] to enter "View Program" menu.

Continuously press [SCAN] to view all the programs in the system. Upon completion press [CLEAR] to return to "Options" display.

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

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

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 or 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 20 & 21).

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.

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, this feature is inhibited and a complete telephone number is required to perform the uploading or downloading programs.

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

Press [1]. The display will read "TELEPHONE NUMBER" 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 handshake. 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 not 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 four programs in this sub-menu.

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 or MPC-32DFA Personal Controls can be used.

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

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

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, will 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 20). 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. The right [EMERGENCY] moves the cursor to the right. The left [EMERGENCY] moves the cursor to the left. 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).

This concludes the programming for the MDC-16CE Personal Control. Press [CLEAR] repeatedly until you return to "System Ready" status (user operating mode). At any time you can enter your authorized access number to the programming menus and select any of the programs for review or change. You can also access the system via a Remote Downloader and effect program changes or system operation from the remote location if the system was programmed for this feature.

For example:

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

NOTE: Prior to using these Charts, review the information in "Name That Zone" on Page 20 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 = EMRGNCY	32 = LIVING	48 = SAFE	

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

CHART B

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

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

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

III. FORMAT DESCRIPTIONS

1. INTRODUCTION

The MDC-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 acknowledgements, 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.

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When programming the MDC-16C, the following programs must be maintained to meet minimum U.L. requirements for Household Burglar and Fire Alarm Systems, and/or commercial burglar alarm and fire alarm systems, and police connect. When using the control unit in a fire protective signalling system (UL 864) the Radionics D192 Bell Supervision Module must be used and the appropriate zone be 24 hour, Type 4.

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).

Recommended bells to meet minimum 85 db level Ademco AD8, AD10, AD8-12, AD10-12 or equivalent.

Battery Test - 5 seconds minimum.

Program [3] - ZONE CONFIGURATION

Burglar Alarm Loops must alarm in an open or shorted condition.

Fire Alarm Loops must indicate trouble in open condition.

Program [4] - REPORT CODES

Low Battery must be programmed to report.

Program [5] - RECEIVER

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

Program [7] - SUPERVISORY

Close Ringback - Program "Yes"

PC Ringback - Program "Yes"

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.

The Model MDC-16 is listed under UL1023, UL985, UL1610, UL1635, UL365, UL609, UL611, UL86A